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<u>Notice No</u>	<u>Contents</u>	<u>Page</u>
	I <i>Information</i>	
	
	II <i>Preparatory Acts</i>	
	Commission	
2002/C 126 E/01	Proposal for a Council Regulation adapting for the seventh time to technical progress Council Regulation (EEC) No 3821/85 on recording equipment in road transport (COM(2001) 698 <i>final</i>) ⁽¹⁾	1
2002/C 126 E/02	Proposal for a Directive of the European Parliament and of the Council on the approximation of the laws of the Member States relating to the type-approval of mirrors and supplementary systems for indirect vision and of vehicles equipped with these devices and amending Directive 70/156/EEC (COM(2001) 811 <i>final</i> — 2001/0317(COD)) ⁽¹⁾	225
2002/C 126 E/03	Proposal for a Directive of the European Parliament and of the Council amending the Directive 2001/83/EC as regards traditional herbal medicinal products (COM(2002) 1 <i>final</i> — 2002/0008(COD)) ⁽¹⁾	263
2002/C 126 E/04	Proposal for a Decision of the European Parliament and of the Council adopting an action programme for customs in the Community (Customs 2007) (COM(2002) 26 <i>final</i> — 2002/0029(COD))	268
2002/C 126 E/05	Proposal for a Council Decision approving, on behalf of the European Community, the Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous chemicals and pesticides in international trade (COM(2001) 802 <i>final</i> — 2002/0030(ACC)) ⁽¹⁾	274



⁽¹⁾ Text with EEA relevance

<u>Notice No</u>	Contents (continued)	Page
2002/C 126 E/06	Proposal for a Council Regulation concerning the export and import of dangerous chemicals (COM(2001) 803 <i>final</i> — 2002/0026(ACC)) ⁽¹⁾	291
2002/C 126 E/07	Proposal for a Directive of the European Parliament and of the Council amending Council Directive 96/48/EC and Directive 2001/16/EC on the interoperability of the trans-European rail system (COM(2002) 22 <i>final</i> — 2002/0023(COD)) ⁽¹⁾	312
2002/C 126 E/08	Proposal for a Regulation of the European Parliament and of the Council establishing a European Railway Agency (COM(2002) 23 <i>final</i> — 2002/0024(COD)) ⁽¹⁾	323
2002/C 126 E/09	Proposal for a Directive of the European Parliament and of the Council on safety on the Community's railways and amending Council Directive 95/18/EC on the licensing of railway undertakings and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification (COM(2002) 21 <i>final</i> — 2002/0022(COD)) ⁽¹⁾	332
2002/C 126 E/10	Proposal for a Council Regulation terminating the anti-dumping proceeding concerning imports of polysulphide polymers originating in the United States of America (COM(2002) 32 <i>final</i>)	350
2002/C 126 E/11	Proposal for a Council Regulation on the conclusion of the Agreement in the form of an Exchange of Letters concerning the extension of the 2000-01 Protocol setting out the fishing opportunities and financial contribution provided for in the Agreement between the European Economic Community and the Government of the Revolutionary People's Republic of Guinea on fishing off the Guinean coast for the period 1 January to 31 December 2002 (COM(2002) 41 <i>final</i> — 2002/0034(CNS))	351
2002/C 126 E/12	Proposal for a regulation of the European Parliament and of the Council on the granting of Community financial assistance to improve the environmental performance of the freight transport system (COM(2002) 54 <i>final</i> — 2002/0038(COD))	354
2002/C 126 E/13	Proposal for a Council Regulation on the conclusion of the Protocol defining, for the period from 18 January 2002 to 17 January 2005, the fishing opportunities and the financial contribution provided for by the Agreement between the European Economic Community and the Republic of Seychelles on fishing off Seychelles (COM(2002) 55 <i>final</i> — 2002/0036(CNS))	359
2002/C 126 E/14	Amended proposal for a Directive of the European Parliament and of the Council on measuring instruments (COM(2002) 37 <i>final</i> — 2000/0233(COD)) ⁽¹⁾	368
2002/C 126 E/15	Proposal for a Council Regulation extending the provisions of Regulation (EEC) No 1408/71 to nationals of third countries who are not already covered by these provisions solely on the ground of their nationality (COM(2002) 59 <i>final</i> — 2002/0039(CNS))	388



⁽¹⁾ Text with EEA relevance

<u>Notice No</u>	Contents (continued)	Page
2002/C 126 E/16	Proposal for a Council Directive amending Directive 77/388/EEC as regards the special scheme for travel agents (COM(2002) 64 <i>final</i> — 2002/0041(CNS))	390
2002/C 126 E/17	Proposal for a Council Directive on the short-term residence permit issued to victims of action to facilitate illegal immigration or trafficking in human beings who cooperate with the competent authorities (COM(2002) 71 <i>final</i> — 2002/0043(CNS))	393
2002/C 126 E/18	Proposal for a Directive of the European Parliament and of the Council amending, for the twenty-fifth time, Council Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations (substances classified as carcinogens, mutagens or substances toxic to reproduction — c/m/r) (COM(2002) 70 <i>final</i> — 2002/0040(COD)) ⁽¹⁾	398
2002/C 126 E/19	Proposal for a Decision of the European Parliament and of the Council amending Decision 96/411/EC on improving Community agricultural statistics (COM(2002) 80 <i>final</i> — 2002/0044(COD))	403

II

(Preparatory Acts)

COMMISSION

Proposal for a Council Regulation adapting for the seventh time to technical progress Council Regulation (EEC) No 3821/85 on recording equipment in road transport

(2002/C 126 E/01)

(Text with EEA relevance)

COM(2001) 698 final

(Submitted by the Commission on 30 November 2001)

THE COUNCIL OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Council Regulation (EEC) No 3821/85 of 20 December 1985 on recording equipment in road transport ⁽¹⁾, as last amended by Regulation (EC) No 2135/98 ⁽²⁾, and in particular Articles 17 and 18 thereof,

Whereas:

- (1) The technical specifications of Annex I B to Regulation (EEC) No 3821/85 must be adapted to technical progress paying particular attention to the overall security of the system and to the interoperability between the recording equipment and the driver cards.
- (2) The adaptation of the equipment also requires an adaptation of Annex II to Regulation (EEC) No 3821/85 which defines the marks and approval certificates.
- (3) The Committee set up by Article 18 of Regulation (EC) No 3821/85 did not deliver an opinion on the measures provided in the proposal.
- (4) In accordance with Article 18 paragraph 5 letter b), the Commission shall without delay, submit to the Council a proposal relating to the measures to be taken,

HAS ADOPTED THIS REGULATION:

Article 1

The Annex to Regulation (EC) No 2135/98 is replaced by the Annex to this Regulation.

Article 2

Annex II to Regulation (EEC) No 3821/85 is amended as follows:

1. Chapter I, item 1, first subparagraph is amended as follows:
 - The conventional sign for Greece 'GR' is replaced by '23';
 - The conventional sign for Ireland 'IRL' is replaced by '24';
 - The conventional sign for '12' is to be added for Austria;
 - The conventional sign for '17' is to be added for Finland;
 - The conventional sign for '5' is to be added for Sweden.
2. Chapter I, item 1, second subparagraph is amended as follows:
 - The wording 'or of a tachograph card' is inserted after the words 'record sheet'.
3. Chapter I, item 2 is amended as follows:
 - The wording 'and on each tachograph card' is inserted after the words 'record sheet'.
4. In Chapter II, the following wording is added to the title 'FOR PRODUCTS COMPLIANT WITH ANNEX I'

⁽¹⁾ OJ L 370, 31.12.1985, p. 8.

⁽²⁾ OJ L 274, 9.10.1998, p. 1.

5. The following Chapter III is added:

III. APPROVAL CERTIFICATE FOR PRODUCTS COMPLIANT WITH ANNEX I B

A State, having granted approval, shall issue the applicant with an approval certificate, the model of which is given below. When informing other Member States of approvals issued or, if the occasion should arise, withdrawn, a Member State shall use copies of that certificate.

APPROVAL CERTIFICATE FOR PRODUCTS COMPLIANT WITH ANNEX I B

Name of competent administration

Notification concerning (*):

- Approval of
- Withdrawal of approval of
- recording equipment model
- recording equipment component (**)
- a driver's card
- a workshop card
- a company card
- a controller's card

Approval No

1. Manufacturing brand or trademark
2. Name of model
3. Name of manufacturer
4. Address of manufacturer
5. Submitted for approval for
6. Laboratory(ies)
7. Date and number of the test(s)
8. Date of approval
9. Date of withdrawal of approval
10. Model of recording equipment component(s) with which the component is designed to be used
11. Place
12. Date
13. Descriptive documents annexed

14. Remarks (including the position of seals if applicable)

.....
(signature)

(*) Tick the relevant boxes.
(**) Specify the component dealt with in the notification.'

Article 3

This Regulation shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Communities*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

ANNEX

'ANNEX I B

REQUIREMENTS FOR CONSTRUCTION, TESTING, INSTALLATION AND INSPECTION

I. DEFINITIONS

In this Annex:

(a) **“activation” means:**

phase where the recording equipment becomes fully operational and implements all functions, including security functions;

Activating a recording equipment requires the use of a workshop card and the entry of its PIN code;

(b) **“authentication” means:**

A function intended to establish and verify a claimed identity;

(c) **“authenticity” means:**

The property that an information is coming from a party whose identity can be verified;

(d) **“built-in-test (BIT)” means:**

Tests run at request, triggered by the operator or by an external equipment;

(e) **“calendar day” means:**

a day ranging from 00.00 hours to 24.00 hours. All calendar days relate to UTC time (Universal Time Co-ordinated);

(f) **“calibration” means:**

updating or confirming vehicle parameters to be held in the data memory. Vehicle parameters include vehicle identification (VIN, VRN and registering Member State) and vehicle characteristics (w, k, l, tyre size, speed limiting device setting (if applicable), current UTC time, current odometer value);

Calibrating a recording equipment requires the use of a workshop card;

(g) **“card number” means:**

a 16 alpha-numerical characters number that uniquely identifies a tachograph card within a Member State. The card number includes a consecutive index (if applicable), a replacement index and a renewal index;

A card is therefore uniquely identified by the code of the issuing Member State and the card number;

(h) **“card consecutive index” means:**

the 14th alpha-numerical character of a card number that is used to differentiate the different cards issued to a company or a body entitled to be issued several tachograph cards. The company or the body is uniquely identified by the 13 first characters of the card number;

(i) **“card renewal index” means:**

the 16th alpha-numerical character of a card number which is incremented each time a tachograph card is renewed;

(j) **“card replacement index” means:**

the 15th alpha-numerical character of a card number which is incremented each time a tachograph card is replaced;

(k) **“characteristic coefficient of the vehicle” means:**

the numerical characteristic giving the value of the output signal emitted by the part of the vehicle linking it with the recording equipment (gearbox output shaft or axle) while the vehicle travels a distance of one kilometre under standard test conditions (see Chapter VI-5.). The characteristic coefficient is expressed in impulses per kilometre ($w = \dots \text{imp/km}$);

(l) **“company card” means:**

a tachograph card issued by the authorities of a Member State to the owner or holder of vehicles fitted with recording equipment;

The company card identifies the company and allows for displaying, downloading and printing of the data stored in the recording equipment which has been locked by this company;

(m) **“constant of the recording equipment” means:**

the numerical characteristic giving the value of the input signal required to show and record a distance travelled of one kilometre; this constant shall be expressed in impulses per kilometre ($k = \dots \text{imp/km}$);

(n) **“continuous driving time” is computed within the recording equipment as ⁽¹⁾:**

the continuous driving time is computed as the current accumulated driving times of a particular driver, since the end of his last AVAILABILITY or BREAK/REST or UNKNOWN ⁽²⁾ period of 45 minutes or more (this period may have been split in several periods of 15 minutes or more). The computations involved take into account, as needed, past activities stored on the driver card. When the driver has not inserted his card, the computations involved are based on the data memory recordings related to the current period where no card was inserted and related to the relevant slot;

(o) **“control card” means:**

a tachograph card issued by the authorities of a Member State to a national competent control authority;

The control card identifies the control body and possibly the control officer and allows for getting access to the data stored in the data memory or in the driver cards for reading, printing and/or downloading;

(p) **“cumulative break time” is computed within the recording equipment as ⁽¹⁾:**

the cumulative break from driving time is computed as the current accumulated AVAILABILITY or BREAK/REST or UNKNOWN ⁽²⁾ times of 15 minutes or more of a particular driver, since the end of his last AVAILABILITY or BREAK/REST or UNKNOWN ⁽²⁾ period of 45 minutes or more (this period may have been split in several periods of 15 minutes or more).

The computations involved take into account, as needed, past activities stored on the driver card. Unknown periods of negative duration (start of unknown period > end of unknown period) due to time overlaps between two different recording equipments, are not taken into account for the computation.

When the driver has not inserted his card, the computations involved are based on the data memory recordings related to the current period where no card was inserted and related to the relevant slot;

(q) **“data memory” means:**

an electronic data storage device built into the recording equipment;

⁽¹⁾ This way of computing the continuous driving time and the cumulative break time serves into the Recording Equipment for computing the continuous driving time warning. It does not prejudice the legal interpretation to be made of these times.

⁽²⁾ UNKNOWN periods correspond to periods where the driver's card was not inserted in a recording equipment and for which no manual entry of driver activities was made.

- (r) **“digital signature” means:**
data appended to, or a cryptographic transformation of, a block of data that allows the recipient of the block of data to prove the authenticity and integrity of the block of data;
- (s) **“downloading” means:**
copying together with digital signature of a part or of a complete set of data stored in the data memory of the vehicle or in the memory of a tachograph card;
Downloading may not alter or delete any stored data;
- (t) **“driver card” means:**
a tachograph card issued by the authorities of a Member State to a particular driver;
The driver card identifies the driver and allows for storage of driver activity data;
- (u) **“effective circumference of the wheel tyres” means:**
the average of the distances travelled by each of the wheels moving the vehicle (driving wheels) in the course of one complete rotation. The measurement of these distances shall be made under standard test conditions (Chapter VI-5.) and is expressed in the form “l = . . . mm”. Vehicle manufacturers may replace the measurement of these distances by a theoretical calculation which takes into account the distribution of the weight on the axles, vehicle unladen in normal running order⁽¹⁾. The methods for such theoretical calculation will be approved by a competent Member State authority;
- (v) **“event” means:**
abnormal operation detected by the recording equipment which may come from a fraud attempt;
- (w) **“fault” means:**
abnormal operation detected by the recording equipment which may come from an equipment malfunction or failure;
- (x) **“installation” means:**
mounting of the recording equipment in a vehicle;
- (y) **“motion sensor” means:**
part of the recording equipment, providing a signal representative of vehicle speed and/or distance travelled;
- (z) **“non valid card” means:**
a card detected as faulty, or which initial authentication failed, or which start of validity date is not yet reached, or which expiry date has passed;
- (aa) **“out of scope” means:**
when the use of the recording equipment is not required, according to the provisions of Council Regulation (EEC) No 3820/85;
- (bb) **“over speeding” means:**
exceeding the authorised speed of the vehicle, defined as any period of more than 60 seconds during which the vehicle's measured speed exceeds the limit for setting the speed limitation device laid down in Council Directive 92/6/EEC of 10 February 1992 on the installation and use of speed limitation devices for certain categories of motor vehicles in the Community⁽²⁾;
- (cc) **“periodic inspection” means:**
set of operations performed to control that the recording equipment works properly and that its settings correspond to the vehicle parameters;

⁽¹⁾ Directive 97/27/EC of 22 July 1997 relating to the masses and dimensions of certain categories of motor vehicles and their trailers and amending Directive 70/156/EEC (OJ L 233, 25.8.1997, p. 1).

⁽²⁾ OJ L 57, 2.3.1992, p. 27.

- (dd) **“printer” means:**
- component of the recording equipment which provides printouts of stored data;
- (ee) **“recording equipment” means:**
- the total equipment intended for installation in road vehicles to show, record and store automatically or semi-automatically details of the movement of such vehicles and of certain work periods of their drivers;
- (ff) **“renewal” means:**
- issue of a new tachograph card when an existing card reaches its expiry date, or is malfunctioning and has been returned to the issuing authority. Renewal always implies the certainty that two valid cards do not co-exist;
- (gg) **“repair” means:**
- any repair of a motion sensor or of a vehicle unit that requires disconnection of its power supply, or disconnection from other recording equipment components, or opening of it;
- (hh) **“replacement” means:**
- issue of a tachograph card in replacement of an existing card, which has been declared lost, stolen or malfunctioning and has not been returned to the issuing authority. Replacement always implies a risk that two valid cards may co-exist;
- (ii) **“security certification” means:**
- process to certify, by an ITSEC ⁽¹⁾ certification body, that the recording equipment (or component) or the tachograph card under investigation fulfils the security requirements defined in Appendix 10 Generic security targets;
- (jj) **“self test” means:**
- tests run cyclically and automatically by the recording equipment to detect faults;
- (kk) **“tachograph card” means:**
- smart card intended for use with the recording equipment. Tachograph cards allow for identification by the recording equipment of the identity (or identity group) of the cardholder and allow for data transfer and storage. A tachograph card may be of the following types:
- driver card,
 - control card,
 - workshop card,
 - company card;
- (ll) **“type approval” means:**
- process to certify, by a Member State, that the recording equipment (or component) or the tachograph card under investigation fulfils the requirements of this regulation;
- (mm) **“tyre size” means:**
- the designation of the dimensions of the tyres (external driving wheels) in accordance with Directive 92/23/EEC of 31 march 1992 ⁽²⁾;
- (nn) **“vehicle identification” means:**
- numbers identifying the vehicle: Vehicle Registration Number (VRN) with indication of the registering Member State and Vehicle Identification Number (VIN) ⁽³⁾;

⁽¹⁾ Council Recommendation 95/144/EC of 7 April 1995 on common information technology security evaluation criteria (OJ L 93, 26.4.1995, p. 27).

⁽²⁾ OJ L 129, 14.5.1992, p. 95.

⁽³⁾ Directive 76/114/EEC, 18/12/1975 (OJ L 24, 30.1.1976, p. 1).

(oo) **“vehicle unit (VU)” means:**

the recording equipment excluding the motion sensor and the cables connecting the motion sensor. The vehicle unit may either be a single unit or be several units distributed in the vehicle, as long as it complies with the security requirements of this regulation;

(pp) **for computing sake in the recording equipment “week” means:**

the period between 00.00 hours UTC on Monday and 24.00 UTC on Sunday;

(qq) **“workshop card” means:**

a tachograph card issued by the authorities of a Member State to a recording equipment manufacturer, a fitter, a vehicle manufacturer or workshop, approved by that Member State.

The workshop card identifies the cardholder and allows for testing, calibration and/or downloading of the recording equipment;

II. GENERAL CHARACTERISTICS AND FUNCTIONS OF THE RECORDING EQUIPMENT

000 Any vehicle fitted with the recording equipment complying with the provisions of this Annex, must include a speed display and an odometer. These functions may be included within the recording equipment.

1. General characteristics

The purpose of the recording equipment is to record, store, display, print, and output data related to driver activities.

001 The recording equipment includes cables, a motion sensor, and a vehicle unit.

002 The vehicle unit includes a processing unit, a data memory, a real time clock, two smart card interface devices (driver and co-driver), a printer, a display, a visual warning, a calibration/downloading connector, and facilities for entry of user's inputs.

The recording equipment may be connected to other devices through additional connectors.

003 Any inclusion in or connection to the recording equipment of any function, device, or devices, approved or otherwise, shall not interfere with, or be capable of interfering with, the proper and secure operation of the recording equipment and the provisions of the Regulation.

Recording equipment users identify themselves to the equipment via tachograph cards.

004 The recording equipment provides selective access rights to data and functions according to user's type and/or identity.

The recording equipment records and stores data in its data memory and in tachograph cards.

This is done in accordance with Directive 95/46/EC of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data ⁽¹⁾.

2. Functions

005 The recording equipment shall ensure the following functions:

- monitoring cards insertions and withdrawals,
- speed and distance measurement,
- time measurement,
- monitoring driver activities,
- monitoring driving status,

⁽¹⁾ OJ L 281, 23.11.1995, p. 31.

- drivers manual entries:
 - entry of places where daily work periods begin and/or end,
 - manual entry of driver activities,
 - entry of specific conditions,
- company locks management,
- monitoring control activities,
- detection of events and/or faults,
- built-in and self tests,
- reading from data memory,
- recording and storing in data memory,
- reading from tachograph cards,
- recording and storing in tachograph cards,
- displaying,
- printing,
- warning,
- data downloading to external media,
- output data to additional external devices,
- calibration,
- time adjustment.

3. Modes of operation

006 The recording equipment shall possess four modes of operation:

- operational mode,
- control mode,
- calibration mode,
- company mode.

007 The recording equipment shall switch to the following mode of operation according to the valid tachograph cards inserted into the card interface devices:

Mode of operation		Driver slot				
		No card	Driver card	Control card	Workshop card	Company card
Co-driver slot	No card	Operational	Operational	Control	Calibration	Company
	Driver card	Operational	Operational	Control	Calibration	Company
	Control card	Control	Control	Control (*)	Operational	Operational
	Workshop card	Calibration	Calibration	Operational	Calibration (!)	Operational
	Company card	Company	Company	Operational	Operational	Company (!)

008 (*) In these situations the recording equipment shall use only the tachograph card inserted in the driver slot.

- 009 The recording equipment shall ignore non-valid cards inserted, except displaying, printing or downloading data held on an expired card which shall be possible.
- 010 All functions listed in II.2. shall work in any mode of operation with the following exceptions:
- the calibration function is accessible in the calibration mode only,
 - the time adjustment function is limited when not in the calibration mode,
 - the driver manual entries functions are accessible in operational or calibration modes only,
 - the company locks management function is accessible in the company mode only,
 - the monitoring of control activities function is operational in the control mode only,
 - the downloading function is not accessible in the operational mode (except as provided for in Requirement 150).
- 011 The recording equipment can output any data to display, printer or external interfaces with the following exceptions:
- in the operational mode, any personal identification (surname and first name(s)) not corresponding to a tachograph card inserted shall be blanked and any card number not corresponding to a tachograph card inserted shall be partially blanked (every odd character — from left to right — shall be blanked),
 - in the company mode, driver related data (requirements 081, 084 and 087) can be output only for periods not locked by another company (as identified by the first 13 digits of the company card number),
 - when no card is inserted in the recording equipment, driver related data can be output only for the current and 8 previous calendar days.

4. Security

The system security aims at protecting the data memory in such a way as to prevent unauthorised access to and manipulation of the data and detecting any such attempts, protecting the integrity and authenticity of data exchanged between the motion sensor and the vehicle unit, protecting the integrity and authenticity of data exchanged between the recording equipment and the tachograph cards, and verifying the integrity and authenticity of data downloaded.

- 012 In order to achieve the system security, the recording equipment shall meet the security requirements specified in the motion sensor and vehicle unit generic security targets (Appendix 10).

III. CONSTRUCTION AND FUNCTIONAL REQUIREMENTS FOR RECORDING EQUIPMENT

1. Monitoring cards insertion and withdrawal

- 013 The recording equipment shall monitor the card interface devices to detect card insertions and withdrawals.
- 014 Upon card insertion the recording equipment shall detect whether the card inserted is a valid tachograph card and in such a case identify the card type.
- 015 The recording equipment shall be so designed that the tachograph cards are locked in position on their proper insertion into the card interface devices.
- 016 The release of tachograph cards may function only when the vehicle is stopped and after the relevant data have been stored on the cards. The release of the card shall require positive action by the user.

2. Speed and distance measurement

- 017 This function shall continuously measure and be able to provide the odometer value corresponding to the total distance travelled by the vehicle.
- 018 This function shall continuously measure and be able to provide the speed of the vehicle.

019 The speed measurement function shall also provide the information whether the vehicle is moving or stopped. The vehicle shall be considered as moving as soon as the function detects more than 1 imp/sec for at least 5 seconds from the motion sensor, otherwise the vehicle shall be considered as stopped.

Devices displaying speed (speedometer) and total distance travelled (odometer) installed in any vehicle fitted with a recording equipment complying with the provisions of this Regulation, shall comply with the requirements relating to maximum tolerances laid down in this Annex (Chapters III.2.1 and III.2.2).

2.1. *Measurement of distance travelled*

020 The distance travelled may be measured either:

- so as to cumulate both forward and reverse movements, or
- so as to include only forward movement.

021 The recording equipment shall measure distance from 0 to 9 999 999,9 km.

022 Distance measured shall be within the following tolerances (distances of at least 1 000 m):

- $\pm 1\%$ before installation,
- $\pm 2\%$ on installation and periodic inspection,
- $\pm 4\%$ in use.

023 Distance measured shall have a resolution better than or equal to 0,1 km.

2.2. *Measurement of speed*

024 The recording equipment shall measure speed from 0 to 220 km/h.

025 To ensure a maximum tolerance on speed displayed of ± 6 km/h in use, and taking into account:

- a ± 2 km/h tolerance for input variations (tyre variations, . . .),
- a ± 1 km/h tolerance in measurements made during installation or periodic inspections,

the recording equipment shall, for speeds between 20 and 180 km/h, and for characteristic coefficients of the vehicle between 4 000 and 25 000 imp/km, measure the speed with a tolerance of ± 1 km/h (at constant speed).

Note: The resolution of data storage brings an additional tolerance of $\pm 0,5$ km/h to speed stored by the recording equipment.

025a The speed shall be measured correctly within the normal tolerances within 2 seconds of the end of a speed change when the speed has changed at a rate up to 2 m/s^2 .

026 Speed measurement shall have a resolution better than or equal to 1 km/h.

3. **Time measurement**

027 The time measurement function shall measure permanently and digitally provide UTC date and time.

028 UTC date and time shall be used for dating throughout the recording equipment (recordings, printouts, data exchange, display, . . .).

029 In order to visualise the local time, it shall be possible to change the offset of the time displayed, in half hour steps.

030 Time drift shall be within ± 2 seconds per day in type approval conditions.

031 Time measured shall have a resolution better than or equal to 1 second.

032 Time measurement shall not be affected by an external power supply cut-off of less than 12 months in type approval conditions.

4. Monitoring driver activities

- 033 This function shall permanently and separately monitor the activities of one driver and one co-driver.
- 034 Driver activity shall be DRIVING, WORK, AVAILABILITY, or BREAK/REST.
- 035 It shall be possible for the driver and/or the co-driver to manually select WORK, AVAILABILITY, or BREAK/REST.
- 036 When the vehicle is moving, DRIVING shall be selected automatically for the driver and AVAILABILITY shall be selected automatically for the co-driver.
- 037 When the vehicle stops, WORK shall be selected automatically for the driver.
- 038 The first change of activity arising within 120 seconds of the automatic change to WORK due to the vehicle stop shall be assumed to have happened at the time of vehicle stop (therefore possibly cancelling the change to WORK).
- 039 This function shall output activity changes to the recording functions at a resolution of one minute.
- 040 Given a calendar minute, if any DRIVING activity has occurred within the minute, the whole minute shall be regarded as DRIVING.
- 041 Given a calendar minute, if any DRIVING activity has occurred within both the immediately preceding and the immediately succeeding minute, the whole minute shall be regarded as DRIVING.
- 042 Given a calendar minute that is not regarded as DRIVING according to previous requirements, the whole minute shall be regarded to be of the same type of activity as the longest continuous activity within the minute (or the latest of the equally longest).
- 043 This function shall also permanently monitor the continuous driving time and the cumulative break time of the driver.

5. Monitoring driving status

- 044 This function shall permanently and automatically monitor the driving status.
- 045 The driving status CREW shall be selected when two valid driver cards are inserted in the equipment, the driving status SINGLE shall be selected in any other case.

6. Drivers manual entries

6.1. Entry of places where daily work periods begin and/or end

- 046 This function shall allow for the entry of places where the daily work periods begin and/or end for a driver and/or a co-driver.
- 047 Places are defined as the country and, in addition where applicable, the region.
- 048 At the time of a driver (or workshop) card withdrawal, the recording equipment shall prompt the (co-)driver to enter a "place where the daily work period ends".
- 049 The recording equipment shall allow this request to be disregarded.
- 050 It shall be possible to input places where daily work periods begin and/or end without card or at times other than card insertion or withdrawal.

6.2. Manual entry of driver activities

- 050a Upon driver (or workshop) card insertion, and only at this time, the recording equipment shall:
- remind the cardholder the date and time of his last card withdrawal, and
 - ask the cardholder to identify if the current insertion of the card represents a continuation of the current daily work period.

The recording equipment shall allow the cardholder to disregard the question without answering, or to answer positively, or to answer negatively:

- In the case where the cardholder disregards the question, the recording equipment shall prompt the cardholder for a “place where the daily work period begins”. The recording equipment shall allow this request to be disregarded. If a location is entered, then it shall be recorded, in the data memory and in the tachograph card, and related to the card insertion time.
- In the case of a negative or positive answer, the recording equipment shall invite the cardholder to enter activities manually, with their dates and times of beginning and end, among WORK, AVAILABILITY, or BREAK/REST only, strictly included within the period last card withdrawal — current insertion only, and without allowing such activities to overlap mutually. This shall be done in accordance with the following procedures:
 - In the case where the cardholder answers positively to the question, the recording equipment shall invite the cardholder to enter activities manually, in chronological order, for the period last card withdrawal — current insertion. The process shall end when the end time of a manually entered activity equals the card insertion time.
 - In the case where the cardholder answers negatively to the question, the recording equipment shall:
 - Invite the card holder to enter manually activities in chronological order from the card withdrawal time up to the time of end of the related daily work period (or of the activities related to that vehicle in the case where the daily work period continues on a record sheet). The recording equipment shall therefore, before allowing the cardholder to enter manually each activity, invite the cardholder to identify if the time of end of the last recorded activity represents the end of a previous work period (see note below),

Note: In the case where the cardholder fails to declare when the previous work period ended, and manually enters an activity which end time equals the card insertion time, the recording equipment shall:

- Assume that the daily work period ended at the start of the first REST (or remaining UNKNOWN) period after card withdrawal or at the time of card withdrawal if no rest period has been entered (and if no period remains UNKNOWN),
- Assume that the start time (see below) equals the card insertion time,
- Proceed through the steps below.
- Then, if the time of end of the related work period is different from the time of card withdrawal, or if no place of end of daily work period had been entered at that time, prompt the cardholder to “confirm or enter the place where the daily work period ended” (the recording equipment shall allow this request to be disregarded). If a location is entered, it shall be recorded in the tachograph card only and only if different from the one entered at card withdrawal (if one was entered), and related to the time of end of the work period,
- Then invite the cardholder to “enter a start time” of the current daily work period (or of the activities related to the current vehicle in the case where the card holder previously used a record sheet during this period), and prompt the cardholder for a “place where the daily work period begins” (the recording equipment shall allow this request to be disregarded). If a location is entered, it shall be recorded in the tachograph card and related to this start time. If this start time is equal to the card insertion time, the location shall also be recorded in the data memory,
- Then, if this start time is different from the card insertion time, invite the cardholder to enter manually activities in chronological order from this start time up to the time of card insertion. The process shall end when the end time of a manually entered activity equals the card insertion time.
- The recording equipment shall then allow the card holder to modify any activity manually entered, until validation by selection of a specific command, and thereafter forbid any such modification.
- Such answers to the initial question followed by no activity entries, shall be interpreted by the recording equipment as if the cardholder had disregarded the question.

During this whole process, the recording equipment shall wait for entries no longer than the following time-outs:

- if no interaction with the equipment's human machine interface is happening during 1 minute (with a visual, and possibly audible, warning after 30 seconds) or,
- if the card is withdrawn or another driver (or workshop) card is inserted or,
- as soon as the vehicle is moving,

in this case the recording equipment shall validate any entries already made.

6.3. *Entry of specific conditions*

050b The recording equipment shall allow the driver to enter, in real time, the following two specific conditions:

- "OUT OF SCOPE" (begin, end)
- "FERRY/TRAIN CROSSING"

A "FERRY/TRAIN CROSSING" may not occur if an "OUT OF SCOPE" condition is opened.

An opened "OUT OF SCOPE" condition must be automatically closed, by the recording equipment, if a driver card is inserted or withdrawn.

7. **Company locks management**

051 This function shall allow the management of the locks placed by a company to restrict data access in company mode to itself.

052 Company locks consist in a start date/time (lock-in) and an end date/time (lock-out) associated with the identification of the company as denoted by the company card number (at lock-in).

053 Locks may be turned "in" or "out" in real time only.

054 Locking-out shall only be possible for the company whose lock is "in" (as identified by the first 13 digits of the company card number), or,

055 locking-out shall be automatic if another company locks in.

055a In the case where a company locks in and where the previous lock was for the same company, then it will be assumed that the previous lock has not been turned "out" and is still "in".

8. **Monitoring control activities**

056 This function shall monitor DISPLAYING, PRINTING, VU and card DOWNLOADING activities carried while in control mode.

057 This function shall also monitor OVER SPEEDING CONTROL activities while in control mode. An over speeding control is deemed to have happened when, in control mode, the "over speeding" printout has been sent to the printer or to the display, or when "events and faults" data have been downloaded from the VU data memory.

9. **Detection of events and/or faults**

058 This function shall detect the following events and/or faults:

9.1. *"Insertion of a non-valid card" event*

059 This event shall be triggered at the insertion of any non-valid card and/or when an inserted valid card expires.

9.2. "Card conflict" event

060 This event shall be triggered when any of the valid cards combination noted X in the following table arise:

Card conflict		Driver slot				
		No card	Driver card	Control card	Workshop card	Company card
Co-driver slot	No card					
	Driver card				X	
	Control card			X	X	X
	Workshop card		X	X	X	X
	Company card			X	X	X

9.3. "Time overlap" event

061 This event shall be triggered when the date/time of last withdrawal of a driver card, as read from the card, is later than the current date/time of the recording equipment in which the card is inserted.

9.4. "Driving without an appropriate card" event

062 This event shall be triggered for any tachograph cards combination noted X in the following table, when driver activity changes to DRIVING, or when there is a change of the mode of operation while driver activity is DRIVING:

Driving without an appropriate card		Driver slot				
		No (or non-valid) card	Driver card	Control card	Workshop card	Company card
Co-driver slot	No (or non-valid) card	X		X		X
	Driver card	X		X	X	X
	Control card	X	X	X	X	X
	Workshop card	X	X	X		X
	Company card	X	X	X	X	X

9.5. "Card insertion while driving" event

063 This event shall be triggered when a tachograph card is inserted in any slot, while driver activity is DRIVING.

9.6. "Last card session not correctly closed" event

064 This event shall be triggered when at card insertion the recording equipment detects that, despite the provisions laid down in paragraph III.1., the previous card session has not been correctly closed (the card has been withdrawn before all relevant data have been stored on the card). This event shall be triggered by driver and workshop cards only.

9.7. "Over speeding" event

065 This event shall be triggered for each over speeding.

9.8. "Power supply interruption" event

066 This event shall be triggered, while not in calibration mode, in case of any interruption exceeding 200 milliseconds of the power supply of the motion sensor and/or of the vehicle unit. The interruption threshold shall be defined by the manufacturer. The drop in power supply due to the starting of the engine of the vehicle shall not trigger this event.

9.9. "Motion data error" event

067 This event shall be triggered in case of interruption of the normal data flow between the motion sensor and the vehicle unit and/or in case of data integrity or data authentication error during data exchange between the motion sensor and the vehicle unit.

9.10. "Security breach attempt" event

068 This event shall be triggered for any other event affecting the security of the motion sensor and/or of the vehicle unit as specified within the generic security targets of these components, while not in calibration mode.

9.11. "Card" fault

069 This fault shall be triggered when a tachograph card failure occurs during operation.

9.12. "Recording equipment" fault

070 This fault shall be triggered for any of these failures, while not in calibration mode:

- VU internal fault
- Printer fault
- Display fault
- Downloading fault
- Sensor fault

10. Built-in and self tests

071 The recording equipment shall self-detect faults through self tests and built-in-tests, according to the following table:

Sub-assembly to test	Self test	Built-in-test
Software		Integrity
Data memory	Access	Access, data integrity
Card interface devices	Access	Access
Keyboard		Manual check
Printer	(up to manufacturer)	Printout
Display		Visual check
Downloading (performed only during downloading)	Proper operation	
Sensor	Proper operation	Proper operation

11. Reading from data memory

072 The recording equipment shall be able to read any data stored in its data memory.

12. Recording and storing in the data memory

For the purpose of this paragraph,

- "365 days" is defined as 365 calendar days of average drivers activity in a vehicle. The average activity per day in a vehicle is defined as at least 6 drivers or co-drivers, 6 card insertion withdrawal cycles, and 256 activity changes. "365 days" therefore include at least 2 190 (co-)drivers, 2 190 card insertion withdrawal cycles, and 93 440 activity changes,
- times are recorded with a resolution of one minute, unless otherwise specified,
- odometer values are recorded with a resolution of one kilometre,
- speeds are recorded with a resolution of 1 km/h.

073 Data stored into the data memory shall not be affected by an external power supply cut-off of less than twelve months in type approval conditions.

074 The recording equipment shall be able to record and store implicitly or explicitly in its data memory the following:

12.1. **Equipment identification data**

12.1.1. *Vehicle unit identification data*

075 The recording equipment shall be able to store in its data memory the following vehicle unit identification data:

- name of the manufacturer,
- address of the manufacturer,
- part number,
- serial number,
- software version number,
- software version installation date,
- year of equipment manufacture,
- approval number.

076 Vehicle unit identification data are recorded and stored once and for all by the vehicle unit manufacturer, except the software-related data and the approval number which may be changed in case of software upgrade.

12.1.2. *Motion sensor identification data*

077 The motion sensor shall be able to store in its memory the following identification data:

- name of the manufacturer,
- part number,
- serial number,
- approval number,
- embedded security component identifier (e.g. internal chip/processor part number),
- operating system identifier (e.g. software version number).

078 Motion sensor identification data are recorded and stored once and for all in the motion sensor, by the motion sensor manufacturer.

079 The vehicle unit shall be able to record and store in its data memory the following currently paired motion sensor identification data:

- serial number,
- approval number,
- first pairing date.

12.2. **Security elements**

080 The recording equipment shall be able to store the following security elements:

- European public key,
- Member State certificate,
- equipment certificate,
- equipment private key.

Recording equipment security elements are inserted in the equipment by the vehicle unit manufacturer.

12.3. **Driver card insertion and withdrawal data**

081 For each insertion and withdrawal cycle of a driver or workshop card in the equipment, the recording equipment shall record and store in its data memory:

- the card holder's surname and first name(s) as stored in the card,

- the card's number, issuing Member State and expiry date as stored in the card,
- the insertion date and time,
- the vehicle odometer value at card insertion,
- the slot in which the card is inserted,
- the withdrawal date and time,
- the vehicle odometer value at card withdrawal,
- the following information about the previous vehicle used by the driver, as stored in the card:
 - VRN and registering Member State,
 - card withdrawal date and time,
- a flag indicating whether, at card insertion, the card holder has manually entered activities or not.

082 The data memory shall be able to hold these data for at least 365 days.

083 When storage capacity is exhausted, new data shall replace oldest data.

12.4. *Driver activity data*

084 The recording equipment shall record and store in its data memory whenever there is a change of activity for the driver and/or the co-driver, and/or whenever there is a change of driving status, and/or whenever there is an insertion or withdrawal of a driver or workshop card:

- the driving status (CREW, SINGLE)
- the slot (DRIVER, CO-DRIVER),
- the card status in the relevant slot (INSERTED, NOT INSERTED) (See Note),
- the activity (DRIVING, AVAILABILITY, WORK, BREAK/REST),
- the date and time of the change,

Note: INSERTED means that a valid driver or workshop card is inserted in the slot. NOT INSERTED means the opposite, i.e. no valid driver or workshop card is inserted in the slot (e.g. a company card is inserted or no card is inserted).

Note: Activity data manually entered by a driver are not recorded in the data memory.

085 The data memory shall be able to hold driver activity data for at least 365 days.

086 When storage capacity is exhausted, new data shall replace oldest data.

12.5. *Places where daily work periods start and/or end*

087 The recording equipment shall record and store in its data memory whenever a (co-)driver enters the place where a daily work period begins and/or ends:

- if applicable, the (co-)driver card number and card issuing Member State,
- the date and time of the entry (or the date/time related to the entry when the entry is made during the manual entry procedure),
- the type of entry (begin or end, condition of entry),
- the country and region entered,
- the vehicle odometer value.

088 The data memory shall be able to hold daily work periods start and/or end data for at least 365 days (with the assumption that one driver enters two records per day).

089 When storage capacity is exhausted, new data shall replace oldest data.

12.6. *Odometer data*

090 The recording equipment shall record in its data memory the vehicle odometer value and the corresponding date at midnight every calendar day.

091 The data memory shall be able to store midnight odometer values for at least 365 calendar days.

092 When storage capacity is exhausted, new data shall replace oldest data.

12.7. Detailed speed data

093 The recording equipment shall record and store in its data memory the instantaneous speed of the vehicle and the corresponding date and time at every second of at least the last 24 hours that the vehicle has been moving.

12.8. Events data

For the purpose of this subparagraph, time shall be recorded with a resolution of 1 second.

094 The recording equipment shall record and store in its data memory the following data for each event detected according to the following storage rules:

Event	Storage rules	Data to be recorded per event
Card conflict	— the 10 most recent events.	— date and time of beginning of event, — date and time of end of event, — cards' type, number and issuing Member State of the two cards creating the conflict.
Driving without an appropriate card	— the longest event for each of the 10 last days of occurrence, — the 5 longest events over the last 365 days.	— date and time of beginning of event, — date and time of end of event, — cards' type, number and issuing Member State of any card inserted at beginning and/or end of the event, — number of similar events that day.
Card insertion while driving	— the last event for each of the 10 last days of occurrence.	— date and time of the event, — card's type, number and issuing Member State, — number of similar events that day.
Last card session not correctly closed	— the 10 most recent events.	— date and time of card insertion, — card's type, number and issuing Member State, — last session data as read from the card: — date and time of card insertion, — VRN and Member State of registration.
Over speeding ⁽¹⁾	— the most serious event for each of the 10 last days of occurrence (i.e. the one with the highest average speed), — the 5 most serious events over the last 365 days. — the first event having occurred after the last calibration	— date and time of beginning of event, — date and time of end of event, — maximum speed measured during the event, — arithmetic average speed measured during the event, — card's type, number and issuing Member State of the driver (if applicable), — number of similar events that day.

Event	Storage rules	Data to be recorded per event
Power supply interruption ⁽²⁾	<ul style="list-style-type: none"> — the longest event for each of the 10 last days of occurrence, — the 5 longest events over the last 365 days. 	<ul style="list-style-type: none"> — date and time of beginning of event, — date and time of end of event, — cards' type, number and issuing Member State of any card inserted at beginning and/or end of the event, — number of similar events that day.
Motion data error	<ul style="list-style-type: none"> — the longest event for each of the 10 last days of occurrence, — the 5 longest events over the last 365 days. 	<ul style="list-style-type: none"> — date and time of beginning of event, — date and time of end of event, — cards' type, number and issuing Member State of any card inserted at beginning and/or end of the event, — number of similar events that day.
Security breach attempt	<ul style="list-style-type: none"> — the 10 most recent events per type of event. 	<ul style="list-style-type: none"> — date and time of beginning of event, — date and time of end of event (if relevant), — cards' type, number and issuing Member State of any card inserted at beginning and/or end of the event, — type of event.

095

⁽¹⁾ The recording equipment shall also record and store in its data memory:

- the date and time of the last OVER SPEEDING CONTROL,
- the date and time of the first over speeding following this OVER SPEEDING CONTROL,
- the number of over speeding events since the last OVER SPEEDING CONTROL.

⁽²⁾ These data may be recorded at power supply reconnection only, times may be known with an accuracy to the minute.

12.9. *Faults data*

For the purpose of this subparagraph, time shall be recorded with a resolution of 1 second.

096

The recording equipment shall attempt to record and store in its data memory the following data for each fault detected according to the following storage rules:

Fault	Storage rules	Data to be recorded per fault
Card fault	<ul style="list-style-type: none"> — the 10 most recent driver card faults. 	<ul style="list-style-type: none"> — date and time of beginning of fault, — date and time of end of fault, — card's type number and issuing Member State.
Recording equipment faults	<ul style="list-style-type: none"> — the 10 most recent faults for each type of fault, — the first fault after the last calibration. 	<ul style="list-style-type: none"> — date and time of beginning of fault, — date and time of end of fault, — type of fault, — cards' type, number and issuing Member State of any card inserted at beginning and/or end of the fault.

12.10. Calibration data

- 097 The recording equipment shall record and store in its data memory data relevant to:
- known calibration parameters at the moment of activation,
 - its very first calibration following its activation,
 - its first calibration in the current vehicle (as identified by its VIN),
 - the 5 most recent calibrations (If several calibrations happen within one calendar day, only the last one of the day shall be stored).
- 098 The following data shall be recorded for each of these calibrations:
- purpose of calibration (activation, first installation, installation, periodic inspection),
 - workshop name and address,
 - workshop card number, card issuing Member State and card expiry date,
 - vehicle identification,
 - parameters updated or confirmed: w, k, l, tyre size, speed limiting device setting, odometer (old and new values), date and time (old and new values).
- 099 The motion sensor shall record and store in its memory the following motion sensor installation data:
- first pairing with a VU (date, time, VU approval number, VU serial number),
 - last pairing with a VU (date, time, VU approval number, VU serial number).

12.11. Time adjustment data

- 100 The recording equipment shall record and store in its data memory data relevant to:
- the most recent time adjustment,
 - the 5 largest time adjustments, since last calibration,
- performed in calibration mode outside the frame of a regular calibration (def. (f)).
- 101 The following data shall be recorded for each of these time adjustments:
- date and time, old value,
 - date and time, new value,
 - workshop name and address,
 - workshop card number, card issuing Member State and card expiry date.

12.12. Control activity data

- 102 The recording equipment shall record and store in its data memory the following data relevant to the 20 most recent control activities:
- date and time of the control,
 - control card number and card issuing Member State,
 - type of the control (displaying and/or printing and/or VU downloading and/or card downloading).
- 103 In case of downloading, the dates of the oldest and of the most recent days downloaded shall also be recorded.

12.13. Company locks data

- 104 The recording equipment shall record and store in its data memory the following data relevant to the 20 most recent company locks:
- lock-in date and time,
 - lock-out date and time,

- company card number and card issuing Member State,
- company name and address.

12.14. *Download activity data*

105 The recording equipment shall record and store in its data memory the following data relevant to the last data memory downloading to external media while in company or in calibration mode:

- date and time of downloading,
- company or workshop card number and card issuing Member State,
- company or workshop name.

12.15. *Specific conditions data*

105a The recording equipment shall record in its data memory the following data relevant to specific conditions:

- date and time of the entry,
- type of specific condition.

105b The data memory shall be able to hold specific conditions data for at least 365 days (with the assumption that on average, 1 condition is opened and closed per day). When storage capacity is exhausted, new data shall replace oldest data.

13. *Reading from tachograph cards*

106 The recording equipment shall be able to read from tachograph cards, where applicable, the necessary data:

- to identify the card type, the card holder, the previously used vehicle, the date and time of the last card withdrawal and the activity selected at that time,
- to check that last card session was correctly closed,
- to compute the driver's continuous driving time, cumulative break time and cumulated driving times for the previous and the current week,
- to print requested printouts related to data recorded on a driver card,
- to download a driver card to external media.

107 In case of a reading error, the recording equipment shall try again, three times maximum, the same read command, and then if still unsuccessful, declare the card faulty and non valid.

14. *Recording and storing on tachograph cards*

108 The recording equipment shall set the "card session data" in the driver or workshop card right after the card insertion.

109 The recording equipment shall update data stored on valid driver, workshop and/or control cards with all necessary data relevant to the period while the card is inserted and relevant to the card holder. Data stored on these cards are specified in Chapter IV.

109a The recording equipment shall update driver activity and location data (as specified in Chapter IV paragraphs 5.2.5 and 5.2.6), stored on valid driver and/or workshop cards, with activity and location data manually entered by the cardholder.

110 Tachograph cards data update shall be such that, when needed and taking into account card actual storage capacity, most recent data replace oldest data.

111 In the case of a writing error, the recording equipment shall try again, three times maximum, the same write command, and then if still unsuccessful, declare the card faulty and non valid.

112 Before releasing a driver card, and after all relevant data have been stored on the card, the recording equipment shall reset the card session data.

15. **Displaying**

113 The display shall include at least 20 characters.

114 The minimum character size shall be 5 mm high and 3,5 mm wide.

114a The display shall support the Latin 1 and Greek character sets defined by ISO 8859 parts 1 and 7, as specified in Appendix 1 Chapter 4 "Character sets". The display may use simplified glyphs (e.g. accented characters may be displayed without accent, or lower case letters may be shown as upper case letters).

115 The display shall be provided with adequate non-dazzling lighting.

116 Indications shall be visible from outside the recording equipment.

117 The recording equipment shall be able to display:

- default data,
- data related to warnings,
- data related to menu access,
- other data requested by a user.

Additional information may be displayed by the recording equipment, provided that it is clearly distinguishable from information required above.

118 The display of the recording equipment shall use the pictograms or pictograms combinations listed in Appendix 3. Additional pictograms or pictograms combinations may also be provided by the display, if clearly distinguishable from the aforementioned pictograms or pictograms combinations.

119 The display shall always be ON when the vehicle is moving.

120 The recording equipment may include a manual or automatic feature to turn the display OFF when the vehicle is not moving.

Displaying format is specified in Appendix 5.

15.1. **Default display**

121 When no other information needs to be displayed, the recording equipment shall display, by default, the following:

- the local time (as a result of UTC time + offset as set by the driver),
- the mode of operation,
- the current activity of the driver and the current activity of the co-driver,
- information related to the driver:
 - if his current activity is DRIVING, his current continuous driving time and his current cumulative break time,
 - if his current activity is not DRIVING, the current duration of this activity (since it was selected) and his current cumulative break time,
- information related to the co-driver:
 - the current duration of his activity (since it was selected).

122 Display of data related to each driver shall be clear, plain and unambiguous. In the case where the information related to the driver and the co-driver cannot be displayed at the same time, the recording equipment shall display by default the information related to the driver and shall allow the user to display the information related to the co-driver.

123 In the case where the display width does not allow to display by default the mode of operation, the recording equipment shall briefly display the new mode of operation when it changes.

124 The recording equipment shall briefly display the card holder name at card insertion.

124a When an "OUT OF SCOPE" condition is opened, then the default display must show using the relevant pictogram that the condition is opened (It is acceptable that the driver's current activity may not be shown at the same time).

15.2. *Warning display*

125 The recording equipment shall display warning information using primarily the pictograms of Appendix 3, completed where needed by an additional numerically coded information. A literal description of the warning may also be added in the driver's preferred language.

15.3. *Menu access*

126 The recording equipment shall provide necessary commands through an appropriate menu structure.

15.4. *Other displays*

127 It shall be possible to display selectively on request:

- the UTC date and time,
- the mode of operation (if not provided by default),
- the continuous driving time and cumulative break time of the driver,
- the continuous driving time and cumulative break time of the co-driver,
- the cumulated driving time of the driver for the previous and the current week,
- the cumulated driving time of the co-driver for the previous and the current week,
- the content of any of the six printouts under the same formats as the printouts themselves.

128 Printout content display shall be sequential, line by line. If the display width is less than 24 characters the user shall be provided with the complete information through an appropriate mean (several lines, scrolling, ...). Printout lines devoted to hand-written information may be omitted for display.

16. *Printing*

129 The recording equipment shall be able to print information from its data memory and/or from tachograph cards in accordance with the six following printouts:

- driver activities from card daily printout,
- driver activities from Vehicle Unit daily printout,
- events and faults from card printout,
- events and faults from Vehicle Unit printout,
- technical data printout,
- over speeding printout.

The detailed format and content of these printouts are specified in Appendix 4.

Additional data may be provided at the end of the printouts

Additional printouts may also be provided by the recording equipment, if clearly distinguishable from the six aforementioned printouts.

130 The "driver activities from card daily printout" and "events and faults from card printout" shall be available only when a driver card or a workshop card is inserted in the recording equipment. The recording equipment shall update data stored on the relevant card before starting printing.

- 131 In order to produce the "driver activities from card daily printout" or the "events and faults from card printout", the recording equipment shall:
- either automatically select the driver card or the workshop card if one only of these cards is inserted,
 - or provide a command to select the source card or select the card in the driver slot if two of these cards are inserted in the recording equipment.
- 132 The printer shall be able to print 24 characters per line.
- 133 The minimum character size shall be 2.1 mm high and 1.5 mm wide.
- 133a The printer shall support the Latin1 and Greek character sets defined by ISO 8859 parts 1 and 7, as specified in Appendix 1 Chapter 4 "Character sets".
- 134 Printers shall be so designed as to produce these printouts with a degree of definition likely to avoid any ambiguity when they are read.
- 135 Printouts shall retain their dimensions and recordings under normal conditions of humidity (10-90 %) and temperature.
- 136 The paper for use by the recording equipment shall bear the relevant type approval mark and the indication of the type(s) of recording equipment with which it may be used. Printouts shall remain clearly legible and identifiable under normal conditions of storage, in terms of light intensity, humidity and temperature, for at least one year.
- 137 It shall also be possible to add hand-written notes, such as the driver's signature, to these documents.
- 138 The recording equipment shall manage "paper out" events while printing by, once paper has been re-loaded, restarting printing from printout beginning or by continuing printing and providing an unambiguous reference to previously printed part.
- 17. Warnings**
- 139 The recording equipment shall warn the driver when detecting any event and/or fault.
- 140 Warning of a power supply interruption event may be delayed until the power supply is reconnected.
- 141 The recording equipment shall warn the driver 15 minutes before and at the time of exceeding 4 h. 30 min. continuous driving time.
- 142 Warnings shall be visual. Audible warnings may also be provided in addition to visual warnings.
- 143 Visual warnings shall be clearly recognisable by the user, shall be situated in the driver's field of vision and shall be clearly legible both by day and by night.
- 144 Visual warnings may be built into the recording equipment and/or remote from the recording equipment.
- 145 In the latter case it shall bear a "T" symbol and shall be amber or orange.
- 146 Warnings shall have a duration of at least 30 seconds, unless acknowledged by the user by hitting any key of the recording equipment. This first acknowledgement shall not erase warning cause display referred to in next paragraph.
- 147 Warning cause shall be displayed on the recording equipment and remain visible until acknowledged by the user using a specific key or command of the recording equipment.
- 148 Additional warnings may be provided, as long as they do not confuse drivers in relation to previously defined ones.

18. Data downloading to external media

- 149 The recording equipment shall be able to download on request data from its data memory or from a driver card to external storage media via the calibration/downloading connector. The recording equipment shall update data stored on the relevant card before starting downloading.
- 150 In addition and as an optional feature, the recording equipment may, in any mode of operation, download data through another connector to a company authenticated through this channel. In such a case, company mode data access rights shall apply to this download.
- 151 Downloading shall not alter or delete any stored data.

The calibration/downloading connector electrical interface is specified in Appendix 6.

Downloading protocols are specified in Appendix 7.

19. Output data to additional external devices

- 152 When the recording equipment does not include speed and/or odometer display functions, the recording equipment shall provide output signal(s) to allow for displaying the speed of the vehicle (speedometer) and/or the total distance travelled by the vehicle (odometer).
- 153 The vehicle unit shall also be able to output the following data using an appropriate dedicated serial link independent from an optional CAN bus connection (ISO 11898 Road vehicles — Interchange of digital information — Controller Area Network (CAN) for high speed communication), to allow their processing by other electronic units installed in the vehicle:
- current UTC date and time,
 - speed of the vehicle,
 - total distance travelled by the vehicle (odometer),
 - currently selected driver and co-driver activity,
 - information if any tachograph card is currently inserted in the driver slot and in the co-driver slot and (if applicable) information about the corresponding cards identification (card number and issuing Member State).

Other data may also be output in addition to this minimum list.

When the ignition of the vehicle is ON, these data shall be permanently broadcasted. When the ignition of the vehicle is OFF, at least any change of driver or co-driver activity and/or any insertion or withdrawal of a tachograph card shall generate a corresponding data output. In the event that data output has been withheld whilst the ignition of the vehicle is OFF, that data shall be made available once the ignition of the vehicle is ON again.

20. Calibration

- 154 The calibration function shall allow:
- to automatically pair the motion sensor with the VU,
 - to digitally adapt the constant of the recording equipment (k) to the characteristic coefficient of the vehicle (w) (vehicles with two or more axle ratios shall be fitted with a switch device whereby these various ratios will automatically be brought into line with the ratio for which the equipment has been adapted to the vehicle),
 - to adjust (without limitation) the current time,
 - to adjust the current odometer value,
 - to update motion sensor identification data stored in the data memory,
 - to update or confirm other parameters known to the recording equipment: vehicle identification, w, l, tyre size and speed limiting device setting if applicable.

155 Pairing the motion sensor to the VU shall consist, at least, in:

- updating motion sensor installation data held by the motion sensor (as needed),
- copying from the motion sensor to the VU data memory necessary motion sensor identification data.

156 The calibration function shall be able to input necessary data through the calibration/downloading connector in accordance with the calibration protocol defined in Appendix 8. The calibration function may also input necessary data through other connectors.

21. Time adjustment

157 The time adjustment function shall allow for adjusting the current time in amounts of 1 minute maximum at intervals of not less than 7 days.

158 The time adjustment function shall allow for adjusting the current time without limitation, in calibration mode.

22. Performance characteristics

159 The Vehicle Unit shall be fully operational in the temperature range -20°C to 70°C , and the motion sensor in the temperature range -40°C to 135°C . Data memory content shall be preserved at temperatures down to -40°C .

160 The recording equipment shall be fully operational in the humidity range 10 % to 90 %.

161 The recording equipment shall be protected against over-voltage, inversion of its power supply polarity, and short circuits.

162 The recording equipment shall conform to Commission Directive 95/54/EC of 31 October 1995⁽¹⁾ adapting to technical progress Council Directive 72/245/EEC, related to electromagnetic compatibility, and shall be protected against electrostatic discharges and transients.

23. Materials

163 All the constituent parts of the recording equipment shall be made of materials of sufficient stability and mechanical strength and with stable electrical and magnetic characteristics.

164 For normal conditions of use, all the internal parts of the equipment shall be protected against damp and dust.

165 The Vehicle Unit shall meet the protection grade IP 40 and the motion sensor shall meet the protection grade IP 64, as per standard IEC 529.

166 The recording equipment shall conform to applicable technical specifications related to ergonomic design.

167 The recording equipment shall be protected against accidental damage.

24. Markings

168 If the recording equipment displays the vehicle odometer value and speed, the following details shall appear on its display:

- near the figure indicating the distance, the unit of measurement of distance, indicated by the abbreviation "km",

⁽¹⁾ OJ L 266, 8.11.1995, p. 1.

— near the figure showing the speed, the entry “km/h”.

The recording equipment may also be switched to display the speed in miles per hour, in which case the unit of measurement of speed shall be shown by the abbreviation “mph”.

169 A descriptive plaque shall be affixed to each separate component of the recording equipment and shall show the following details:

- name and address of the manufacturer of the equipment,
- manufacturer's part number and year of manufacture of the equipment,
- equipment serial number,
- approval mark for the equipment type.

170 When physical space is not sufficient to show all abovementioned details, the descriptive plaque shall show at least: the manufacturer's name or logo, and the equipment's part number.

IV. CONSTRUCTION AND FUNCTIONAL REQUIREMENTS FOR TACHOGRAPH CARDS

1. Visible data

The front page will contain:

171 the words “Driver card” or “Control card” or “Workshop card” or “Company card” printed in large type in the official language or languages of the Member State issuing the card, according to the type of the card.

172 the same words in the other official languages of the Community, printed to form the background of the card:

ES	TARJETA DEL CONDUCTOR	TARJETA DE CONTROL	TARJETA DEL CENTRO DE ENSAYO	TARJETA DE LA EMPRESA
DK	FØRERKORT	KONTROLKORT	VÆRKSTEDSKORT	VIRKSOMHEDSKORT
DE	FAHRERKARTE	KONTROLLKARTE	WERKSTATTKARTE	UNTERNEHMENSKARTE
EL	KAPTA ΟΔΗΓΟΥ	KAPTA ΕΛΕΓΧΟΥ	KAPTA ΚΕΝΤΡΟΥ ΔΟΚΙΜΩΝ	KAPTA ΕΠΙΧΕΙΡΗΣΗΣ
EN	DRIVER CARD	CONTROL CARD	WORKSHOP CARD	COMPANY CARD
FR	CARTE DE CONDUCTEUR	CARTE DE CONTROLEUR	CARTE D'ATELIER	CARTE D'ENTREPRISE
GA	CÁRTA TIOMÁNAÍ	CÁRTA STIÚRTHA	CÁRTA CEARDLAINNE	CÁRTA COMHLACHTA
IT	CARTA DEL CONDUCENTE	CARTA DI CONTROLLO	CARTA DEL CENTRO DI PROVA	CARTA DELL'AZIENDA
NL	BESTUURDERS KAART	CONTROLEKAART	CONTROLESTATION KAART	BEDRIJFSKAART
PT	CARTÃO DE CONDUTOR	CARTÃO DE CONTROLO	CARTÃO DO CENTRO DE ENSAIO	CARTÃO DE EMPRESA
FIN	KULJETTAJA KORTILLA	VALVONTA KORTILLA	TESTAUSASEMA KORTILLA	YRITYSKORTILLA
SV	FÖRARKORT	KONTROLLKORT	VERKSTADSKORT	FÖRETAGSKORT

173 the name of the Member State issuing the card (optional);

174 the distinguishing sign of the Member State issuing the card, printed in negative in a blue rectangle and encircled by 12 yellow stars. The distinguishing signs shall be as follows:

B	Belgium
DK	Denmark
D	Germany
GR	Greece
E	Spain
F	France
IRL	Ireland
I	Italy
L	Luxembourg
NL	The Netherlands
A	Austria
P	Portugal
FIN	Finland
S	Sweden
UK	The United Kingdom

175 information specific to the card issued, numbered as follows:

	Driver card	Control card	Company or workshop card
1.	surname of the driver	control body name	Company or workshop card
2.	first name(s) of the driver	surname of the controller (if applicable)	surname of card holder (if applicable)
3.	birth date of the driver	first name(s) of the controller (if applicable)	first name(s) of card holder (if applicable)
4.(a)	card start of validity date		
(b)	card expiry date (if any)		
(c)	the name of the issuing authority (may be printed on page 2)		
(d)	a different number from the one under heading 5, for administrative purposes (optional)		
5.(a)	Driving licence number (at the date of issue of the driver card)	—	—
5.(b)	Card number		
6.	Photograph of the driver	photograph of the controller (optional)	—
7.	Signature of the driver	Signature of the holder (optional)	
8.	Normal place of residence, or postal address of the holder (optional)	postal address of control body	postal address of company or workshop

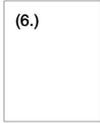
176 dates shall be written using a "dd/mm/yyyy" or "dd.mm.yyyy" format (day, month, year).

The reverse page will contain:

177 an explanation of the numbered items which appear on the front page of the card;

178 with the specific written agreement of the holder, information which is not related to the administration of the card may also be added, such addition will not alter in any way the use of the model as a tachograph card.

COMMUNITY MODEL TACHOGRAPH CARDS

FRONT	REVERSE
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>DRIVER CARD</p> <p>1. 2. 3. 4a. 4c. (4d.) 5a. 5b. 7. (8.)</p> </div> <div style="width: 45%;"> <p>MEMBER STATE</p> <p>TARJETA DEL CONDUCTOR FØRERKORT FAHRERKARTE KAPTA O ΔΗΤΟΥ 4b. DRIVER CARD CARTE DE CONDUCTEUR CÁRTA TIOMÁNAÍ CARTA DEL CONDUCENTE BESTUURDERSKAART CARTÃO DE CONDUTOR KULJETTAJAKORTILLA FÖRARKORT</p> </div> </div> <div style="margin-top: 20px;">  </div>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  </div> <div style="width: 45%;"> <p>1. Surname 2. First name(s) 3. Birth date 4a. Date of start of validity of card 4b. Administrative expiry date of card 4c. Issuing authority (4d.) No for national administrative purposes 5a. Driving license number 5b. Card number 6. Photograph 7. Signature (8.) Address</p> <p style="text-align: center;"><i>Please return to:</i></p> <div style="border: 1px solid black; padding: 2px; text-align: center;">NAME OF AUTHORITY AND ADDRESS</div> </div> </div>
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>CONTROL CARD</p> <p>1. (2.) (3.) 4a. 4c. (4d.) 5b. (7.) 8.</p> </div> <div style="width: 45%;"> <p>MEMBER STATE</p> <p>TARJETA DE CONTROL KONTROLKORT KONTROLLKARTE 4b. KAPTA ΕΛΕΓΧΟΥ CONTROL CARD CARTE DE CONTROLEUR CÁRTA STIÚRTHA CARTA DI CONTROLLO CONTROLEKAART CARTÃO DE CONTROLO VALVONTAKORTILLA KONTROLLKORT</p> </div> </div> <div style="margin-top: 20px;">  </div>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  </div> <div style="width: 45%;"> <p>1. Control Body (2.) Surname (3.) First name(s) 4a. Date of start of validity of card (4b.) Administrative expiry date of card 4c. Issuing authority (4d.) No for national administrative purposes 5b. Card number (6.) Photograph (7.) Signature 8. Address</p> <p style="text-align: center;"><i>Please return to:</i></p> <div style="border: 1px solid black; padding: 2px; text-align: center;">NAME OF AUTHORITY AND ADDRESS</div> </div> </div>
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>WORKSHOP CARD</p> <p>1. (2.) (3.) 4a. 4c. (4d.) 5b. (7.) 8.</p> </div> <div style="width: 45%;"> <p>MEMBER STATE</p> <p>TARJETA DEL CENTRO DE ENSAIO VÆRKSTEDSKORT WERKSTATTKARTE 4b. KAPTA ΚΕΝΤΡΟΥ ΔΟΚΙΜΩΝ WORKSHOP CARD CARTE D'ATELIER CÁRTA CEARDLAINNE CARTA DEL CENTRO DI PROVA CONTROLESTATIONKAART CARTÃO DO CENTRO DE ENSAIO TESTAUSASEMAKORTILLA VERKSTADSKORT</p> </div> </div> <div style="margin-top: 20px;">  </div>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  </div> <div style="width: 45%;"> <p>1. Workshop Name (2.) Surname (3.) First name(s) 4a. Date of start of validity of card 4b. Administrative expiry date of card 4c. Issuing authority (4d.) No for national administrative purposes 5b. Card number (7.) Signature 8. Address</p> <p style="text-align: center;"><i>Please return to:</i></p> <div style="border: 1px solid black; padding: 2px; text-align: center;">NAME OF AUTHORITY AND ADDRESS</div> </div> </div>
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  <p>COMPANY CARD</p> <p>1. (2.) (3.) 4a. 4c. (4d.) 5b. (7.) 8.</p> </div> <div style="width: 45%;"> <p>MEMBER STATE</p> <p>TARJETA DE LA EMPRESA VIRKSOMHEDSKORT UNTERNEHMENSKARTE 4b. KAPTA ΕΠΙΧΕΙΡΗΣΗΣ COMPANY CARD CARTE D'ENTREPRISE CÁRTA COMHLACHTA CARTA DELL'AZIENDA BEDRIJFSKAART CARTÃO DE EMPRESA YRITYSKORTILLA FÖRETAGSKORT</p> </div> </div> <div style="margin-top: 20px;">  </div>	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  </div> <div style="width: 45%;"> <p>1. Company Name (2.) Surname (3.) First name(s) 4a. Date of start of validity of card 4b. Administrative expiry date of card 4c. Issuing authority (4d.) No for national administrative purposes 5b. Card number (7.) Signature 8. Address</p> <p style="text-align: center;"><i>Please return to:</i></p> <div style="border: 1px solid black; padding: 2px; text-align: center;">NAME OF AUTHORITY AND ADDRESS</div> </div> </div>

179 Tachograph cards shall be printed with the following background predominant colours:

- driver card: white,
- control card: blue,
- workshop card: red,
- company card: yellow.

180 Tachograph cards shall bear at least the following features for protection of the card body against counterfeiting and tampering:

- a security design background with fine guilloche patterns and rainbow printing,
- in the area of the photograph, the security design background and the photograph shall overlap,
- at least one two-coloured microprint line.

- 181 After consulting the Commission, Member States may add colours or markings, such as national symbols and security features, without prejudice to the other provisions of this Annex.

2. Security

The system security aims at protecting integrity and authenticity of data exchanged between the cards and the recording equipment, protecting the integrity and authenticity of data downloaded from the cards, allowing certain write operations onto the cards to recording equipment only, ruling out any possibility of falsification of data stored in the cards, preventing tampering and detecting any attempt of that kind.

- 182 In order to achieve the system security, the tachograph cards shall meet the security requirements defined in the tachograph cards generic security target (Appendix 10).

- 183 Tachograph cards shall be readable by other equipment such as personal computers.

3. Standards

- 184 The tachograph cards shall comply with the following standards:

- ISO/IEC 7810 Identification cards — Physical characteristics,
- ISO/IEC 7816 Identification cards — Integrated circuits with contacts:
 - Part 1: Physical characteristics,
 - Part 2: Dimensions and location of the contacts,
 - Part 3: Electronic signals and transmission protocols,
 - Part 4: Inter-industry commands for interchange,
 - Part 8: Security related inter-industry commands,
- ISO/IEC 10373 Identification cards — Test methods.

4. Environmental and electrical specifications

- 185 The tachograph cards shall be capable of operating correctly in all the climatic conditions normally encountered in Community territory and at least in the temperature range -25°C to $+70^{\circ}\text{C}$ with occasional peaks of up to $+85^{\circ}\text{C}$, "occasional" meaning not more than 4 hours each time and not over 100 times during the life time of the card.

- 186 The tachograph cards shall be capable of operating correctly in the humidity range 10 % to 90 %.

- 187 The tachograph cards shall be capable of operating correctly for a five-year period if used within the environmental and electrical specifications.

- 188 During operation, the tachograph cards shall conform to Commission Directive 95/54/EC of 31 October 1995⁽¹⁾, related to electromagnetic compatibility, and shall be protected against electrostatic discharges.

5. Data storage

For the purpose of this paragraph,

- times are recorded with a resolution of one minute, unless otherwise specified,
- odometer values are recorded with a resolution of one kilometre,
- speeds are recorded with a resolution of 1 km/h.

The tachograph cards functions, commands and logical structures, fulfilling data storage requirements are specified in Appendix 2.

⁽¹⁾ JO L 266, 8.11.1995, p. 1.

189 This paragraph specifies minimum storage capacity for the various application data files. The tachograph cards shall be able to indicate to the recording equipment the actual storage capacity of these data files.

Any additional data that may be stored on tachograph cards, related to other applications eventually borne by the card, shall be stored in accordance with Directive 95/46/EC of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data ⁽¹⁾.

5.1. **Card identification and security data**

5.1.1. *Application identification*

190 The tachograph cards shall be able to store the following application identification data:

- tachograph application identification,
- type of tachograph card identification.

5.1.2. *Chip identification*

191 The tachograph cards shall be able to store the following integrated circuit (IC) identification data:

- IC serial number,
- IC manufacturing references.

5.1.3. *IC card identification*

192 The tachograph cards shall be able to store the following smart card identification data:

- card serial number (including manufacturing references),
- card type approval number,
- card personaliser identification (ID),
- embedder ID,
- IC identifier.

5.1.4. *Security elements*

193 The tachograph cards shall be able to store the following security elements data:

- European public key,
- Member State certificate,
- card certificate,
- card private key.

5.2. **Driver card**

5.2.1. *Card identification*

194 The driver card shall be able to store the following card identification data:

- card number,
- issuing Member State, issuing authority name, issue date,
- card beginning of validity date, card expiry date.

5.2.2. *Card holder identification*

195 The driver card shall be able to store the following card holder identification data:

- surname of the holder,
- first name(s) of the holder,

⁽¹⁾ OJ L 281, 23.11.1995, p. 31.

- date of birth,
- preferred language.

5.2.3. *Driving licence information*

196 The driver card shall be able to store the following driving licence data:

- issuing Member State, issuing authority name,
- driving licence number (at the date of the issue of the card).

5.2.4. *Vehicles used data*

197 The driver card shall be able to store, for each calendar day where the card has been used, and for each period of use of a given vehicle that day (a period of use includes all consecutive insertion/withdrawal cycle of the card in the vehicle, as seen from the card point of view), the following data:

- date and time of first use of the vehicle (i.e. first card insertion for this period of use of the vehicle, or 00h00 if the period of use is on-going at that time),
- vehicle odometer value at that time,
- date and time of last use of the vehicle, (i.e. last card withdrawal for this period of use of the vehicle, or 23h59 if the period of use is on-going at that time),
- vehicle odometer value at that time,
- VRN and registering Member State of the vehicle.

198 The driver card shall be able to store at least 84 such records.

5.2.5. *Driver activity data*

199 The driver card shall be able to store, for each calendar day where the card has been used or for which the driver has entered activities manually, the following data:

- the date,
- a daily presence counter (increased by one for each of these calendar days),
- the total distance travelled by the driver during this day,
- a driver status at 00:00,
- whenever the driver has changed of activity, and/or has changed of driving status, and/or has inserted or withdrawn his card:
 - the driving status (CREW, SINGLE),
 - the slot (DRIVER, CO-DRIVER),
 - the card status (INSERTED, NOT INSERTED),
 - the activity (DRIVING, AVAILABILITY, WORK, BREAK/REST),
 - the time of the change.

200 The driver card memory shall be able to hold driver activity data for at least 28 days (the average activity of a driver is defined as 93 activity changes per day).

201 The data listed under requirements 197 and 199 shall be stored in a way allowing the retrieval of activities in the order of their occurrence, even in case of a time overlap situation.

5.2.6. *Places where daily work periods start and/or end*

202 The driver card shall be able to store the following data related to places where daily work periods begin and/or end, entered by the driver:

- the date and time of the entry (or the date/time related to the entry if the entry is made during the manual entry procedure),

- the type of entry (begin or end, condition of entry),
- the country and region entered,
- the vehicle odometer value.

203 The driver card memory shall be able to hold at least 42 pairs of such records.

5.2.7. Events data

For the purpose of this subparagraph, time shall be stored with a resolution of 1 second.

204 The driver card shall be able to store data related to the following events detected by the recording equipment while the card was inserted:

- Time overlap (where this card is the cause of the event),
- Card insertion while driving (where this card is the subject of the event),
- Last card session not correctly closed (where this card is the subject of the event),
- Power supply interruption,
- Motion data error,
- Security breach attempts.

205 The driver card shall be able to store the following data for these events:

- Event code,
- Date and time of beginning of the event (or of card insertion if the event was on-going at that time),
- Date and time of end of the event (or of card withdrawal if the event was on-going at that time),
- VRN and registering Member State of vehicle in which the event happened.

Note: For the "Time overlap" event:

- Date and time of beginning of the event shall correspond to the date and time of the card withdrawal from the previous vehicle,
- Date and time of end of the event shall correspond to the date and time of card insertion in current vehicle,
- Vehicle data shall correspond to the current vehicle raising the event.

Note: For the "Last card session not correctly closed" event:

- date and time of beginning of event shall correspond to the card insertion date and time of the session not correctly closed,
- date and time of end of event shall correspond to the card insertion date and time of the session during which the event was detected (current session),
- Vehicle data shall correspond to the vehicle in which the session was not correctly closed.

206 The driver card shall be able to store data for the six most recent events of each type (i.e. 36 events).

5.2.8. *Faults data*

For the purpose of this subparagraph, time shall be recorded with a resolution of 1 second.

207 The driver card shall be able to store data related to the following faults detected by the recording equipment while the card was inserted:

- card fault (where this card is the subject of the event),
- recording equipment fault.

208 The driver card shall be able to store the following data for these faults:

- fault code,
- date and time of beginning of the fault (or of card insertion if the fault was on-going at that time),
- date and time of end of the fault (or of card withdrawal if the fault was on-going at that time),
- VRN and registering Member State of vehicle in which the fault happened.

209 The driver card shall be able to store data for the twelve most recent faults of each type (i.e. 24 faults).

5.2.9. *Control activity data*

210 The driver card shall be able to store the following data related to control activities:

- date and time of the control,
- control card number and card issuing Member State,
- type of the control (displaying and/or printing and/or VU downloading and/or card downloading (see note)),
- period downloaded, in case of downloading,
- VRN and registering Member State of the vehicle in which the control happened.

Note: security requirements imply that card downloading will only be recorded if performed through a recording equipment.

211 The driver card shall be able to hold one such record.

5.2.10. *Card session data*

212 The driver card shall be able to store data related to the vehicle which opened its current session:

- date and time the session was opened (i.e. card insertion) with a resolution of one second,
- VRN and registering Member State.

5.2.11. *Specific conditions data*

212a The driver card shall be able to store the following data related to specific conditions entered while the card was inserted (whatever the slot):

- Date and time of the entry,
- Type of specific condition.

212b The driver card shall be able to hold 56 such records.

5.3. **Workshop card**

5.3.1. *Security elements*

213 The workshop card shall be able to store a personal identification number (PIN code).

214 The workshop card shall be able to store the cryptographic keys needed for pairing motion sensors to vehicle units.

5.3.2. Card identification

215 The workshop card shall be able to store the following card identification data:

- card number,
- issuing Member State, issuing authority name, issue date,
- card beginning of validity date, card expiry date.

5.3.3. Card holder identification

216 The workshop card shall be able to store the following card holder identification data:

- workshop name,
- workshop address,
- surname of the holder,
- first name(s) of the holder,
- preferred language.

5.3.4. Vehicles used data

217 The workshop card shall be able to store vehicles used data records in the same manner as a driver card.

218 The workshop card shall be able to store at least 4 such records.

5.3.5. Driver activity data

219 The workshop card shall be able to store driver activity data in the same manner as a driver card.

220 The workshop card shall be able to hold driver activity data for at least 1 day of average driver activity.

5.3.6. Daily work periods start and/or end data

221 The workshop card shall be able to store daily works period start and/or end data records in the same manner as a driver card.

222 The workshop card shall be able to hold at least 3 pairs of such records.

5.3.7. Events and faults data

223 The workshop card shall be able to store events and faults data records in the same manner as a driver card.

224 The workshop card shall be able to store data for the three most recent events of each type (i.e. 18 events) and the six most recent faults of each type (i.e. 12 faults).

5.3.8. Control activity data

225 The workshop card shall be able to store a control activity data record in the same manner as a driver card.

5.3.9 Calibration and time adjustment data

226 The workshop card shall be able to hold records of calibrations and/or time adjustments performed while the card is inserted in a recording equipment.

227 Each calibration record shall be able to hold the following data:

- purpose of calibration (first installation, installation, periodic inspection),
- vehicle identification,
- parameters updated or confirmed (w, k, l, tyre size, speed limiting device setting, odometer (new and old values), date and time (new and old values),
- recording equipment identification (VU part number, VU serial number, motion sensor serial number).

228 The workshop card shall be able to store at least 88 such records.

229 The workshop card shall hold a counter indicating the total number of calibrations performed with the card.

230 The workshop card shall hold a counter indicating the number of calibrations performed since its last download.

5.3.10. *Specific conditions data*

230a The workshop card shall be able to store data relevant to specific conditions in the same manner as the driver card. The workshop card shall be able to store 2 such records.

5.4. **Control card**

5.4.1. *Card identification*

231 The control card shall be able to store the following card identification data:

- card number,
- issuing Member State, issuing authority name, issue date,
- card beginning of validity date, card expiry date (if any).

5.4.2. *Card holder identification*

232 The control card shall be able to store the following card holder identification data:

- control body name,
- control body address,
- surname of the holder,
- first name(s) of the holder,
- preferred language.

5.4.3. *Control activity data*

233 The control card shall be able to store the following control activity data:

- date and time of the control,
- type of the control (displaying and/or printing and/or VU downloading and/or card downloading)
- period downloaded (if any),
- VRN and Member State registering authority of the controlled vehicle,
- card number and card issuing Member State of the driver card controlled.

234 The control card shall be able to hold at least 230 such records.

5.5. **Company card**

5.5.1. *Card identification*

235 The company card shall be able to store the following card identification data:

- card number,
- issuing Member State, issuing authority name, issue date,
- card beginning of validity date, card expiry date (if any).

5.5.2. *Card holder identification*

236 The company card shall be able to store the following card holder identification data:

- company name,
- company address.

5.5.3. *Company activity data*

- 237 The company card shall be able to store the following company activity data:
- date and time of the activity,
 - type of the activity (VU locking in and/or out, and/or VU downloading and/or card downloading),
 - period downloaded (if any),
 - VRN and Member State registering authority of vehicle,
 - card number and card issuing Member State (in case of card downloading).
- 238 The company card shall be able to hold at least 230 such records.

V. INSTALLATION OF RECORDING EQUIPMENT

1. **Installation**

- 239 New recording equipment shall be delivered non-activated to fitters or vehicle manufacturers, with all calibration parameters, as listed in Chapter III.20, set to appropriate and valid default values. Where no particular value is appropriate, literal parameters shall be set to strings of "?" and numeric parameters shall be set to "0".
- 240 Before its activation, the recording equipment shall give access to the calibration function even if not in calibration mode.
- 241 Before its activation, the recording equipment shall neither record nor store data referred by points III.12.3. to III.12.9. and III.12.12 to III.12.14. inclusive.
- 242 During installation, vehicle manufacturers shall pre-set all known parameters.
- 243 Vehicle manufacturers or fitters shall activate the installed recording equipment before the vehicle leaves the premises where the installation took place.
- 244 The activation of the recording equipment shall be triggered automatically by the first insertion of a workshop card in either of its card interface devices.
- 245 Specific pairing operations required between the motion sensor and the vehicle unit, if any, shall take place automatically before or during activation.
- 246 After its activation, the recording equipment shall fully enforce functions and data access rights.
- 247 The recording and storing functions of the recording equipment shall be fully operational after its activation.
- 248 Installation shall be followed by a calibration. The first calibration will include entry of VRN and will take place within 2 weeks of this installation or of VRN allocation whichever comes last.
- 248a The recording equipment must be positioned in the vehicle in such a way as to allow the driver to access the necessary functions from his seat.

2. **Installation plaque**

- 249 After the recording equipment has been checked on installation, an installation plaque which is clearly visible and easily accessible shall be affixed on, in or beside the recording equipment. After every inspection by an approved fitter or workshop, a new plaque shall be affixed in place of the previous one.
- 250 The plaque shall bear at least the following details:
- name, address or trade name of the approved fitter or workshop,
 - characteristic coefficient of the vehicle, in the form "w = ... imp/km",
 - constant of the recording equipment, in the form "k = ... imp/km",
 - effective circumference of the wheel tyres in the form "l = ... mm",
 - tyre size,
 - the date on which the characteristic coefficient of the vehicle was determined and the effective circumference of the wheel tyres measured,
 - the vehicle identification number.

3. Sealing

- 251 The following part shall be sealed:
- any connection which, if disconnected, would cause undetectable alterations to be made or undetectable data loss,
 - the installation plaque, unless it is attached in such a way that it cannot be removed without the markings thereon being destroyed.
- 252 The seals mentioned above may be removed:
- in case of emergency,
 - to install, to adjust or to repair a speed limitation device or any other device contributing to road safety, provided that the recording equipment continues to function reliably and correctly and is resealed by an approved fitter or workshop (in accordance with Chapter VI) immediately after fitting the speed limitation device or any other device contributing to road safety or within seven days in other cases.
- 253 On each occasion that these seals are broken a written statement giving the reasons for such action shall be prepared and made available to the competent authority.

VI. CHECKS, INSPECTIONS AND REPAIRS

Requirements on the circumstances in which seals may be removed, as referred to in Article 12.5 of Regulation (EEC) No 3821/85 as last amended by Regulation (EC) No 2135/98, are defined in Chapter V,3 of this annex.

1. Approval of fitters or workshops

The Member States will approve, regularly control and certify the bodies to carry out:

- installations,
- checks,
- inspections,
- repairs.

In the framework of Article 12-1 of this Regulation, workshop cards will be issued only to fitters and/or workshops approved for the activation and/or the calibration of recording equipment in conformity with this annex and, unless duly justified:

- who are not eligible for a company card,
- and whose other professional activities do not present a potential compromise of the overall security of the system as defined in Appendix 10.

2. Check of new or repaired instruments

- 254 Every individual device, whether new or repaired, shall be checked in respect of its proper operation and the accuracy of its reading and recordings, within the limits laid down in Chapter III.2.1. and III.2.2 by means of sealing in accordance with Chapter V.3. and calibration.

3. Installation inspection

- 255 When being fitted to a vehicle, the whole installation (including the recording equipment) shall comply with the provisions relating to maximum tolerances laid down in Chapter III.2.1 and III.2.2.

4. Periodic inspections

- 256 Periodic inspections of the equipment fitted to the vehicles shall take place after any repair of the equipment, or after any alteration of the characteristic coefficient of the vehicle or of the effective circumference of the tyres, or after equipment UTC time is wrong by more than 20 minutes, or when the VRN has changed, and at least once within two years (24 months) of the last inspection.
- 257 These inspections shall include the following checks:
- that the recording equipment is working properly, including the data storage in tachograph cards function,
 - that compliance with the provisions of Chapter III.2.1 and III.2.2 on the maximum tolerances on installation is ensured,

- that the recording equipment carries the type approval mark,
- that the installation plaque is affixed,
- that the seals on the equipment and on the other parts of the installation are intact,
- the tyre size and the actual circumference of the wheel tyres.

258 These inspections shall include a calibration.

5. Measurement of errors

259 The measurement of errors on installation and during use shall be carried out under the following conditions, which are to be regarded as constituting standard test conditions:

- vehicle unladen, in normal running order,
- tyre pressures in accordance with the manufacturer's instructions,
- tyre wear, within the limits allowed by national law,
- vehicle movement:
 - the vehicle shall advance under its own engine power in a straight line on level ground and at a speed of 50 ± 5 km/h. The measuring distance shall be at least 1 000 m,
- provided that it is of comparable accuracy, alternative methods, such as a suitable test bench, may also be used for the test.

6. Repairs

260 Workshops shall be able to download data from the recording equipment to give the data back to the appropriate transport company.

261 Approved workshops shall issue to transport companies a certificate of data un-downloadability where the malfunction of the recording equipment prevents previously recorded data to be downloaded, even after repair by this workshop. The workshops will keep a copy of each issued certificate for at least one year.

VII. CARD ISSUING

The card issuing processes set-up by the Member States shall conform to the following:

262 The card number of the first issue of a tachograph card to an applicant shall have a consecutive index (if applicable) and a replacement index and a renewal index set to "0".

263 The card numbers of all non-personal tachograph cards issued to a single control body or a single workshop or a single transport company shall have the same first 13 digits, and shall all have a different consecutive index.

264 A tachograph card issued in replacement of an existing tachograph card shall have the same card number than the replaced one except the replacement index which shall be raised by "1" (in the order 0, . . . , 9, A, . . . , Z).

265 A tachograph card issued in replacement of an existing tachograph card shall have the same card expiry date as the replaced one.

266 A tachograph card issued in renewal of an existing tachograph card shall have the same card number as the renewed one except the replacement index which shall be reset to "0" and the renewal index which shall be raised by "1" (in the order 0, . . . , 9, A, . . . , Z).

267 The exchange of an existing tachograph card, in order to modify administrative data, shall follow the rules of the renewal if within the same Member State, or the rules of a first issue if performed by another Member State.

268 The "card holder surname" for non-personal workshop or control cards shall be filled with workshop or control body name.

VIII. TYPE APPROVAL OF RECORDING EQUIPMENT AND TACHOGRAPH CARDS

1. General points

For the purpose of this chapter, the words "recording equipment" mean "recording equipment or its components". No type approval is required for the cable(s) linking the motion sensor to the VU. The paper, for use by the recording equipment, shall be considered as a component of the recording equipment.

- 269 Recording equipment shall be submitted for approval complete with any integrated additional devices.
- 270 Type approval of recording equipment and of tachograph cards shall include security related tests, functional tests and interoperability tests. Positive results to each of these tests are stated by an appropriate certificate.
- 271 Member States type approval authorities will not grant a type approval certificate in accordance with Article 5 of this Regulation, as long as they do not hold:
- a security certificate,
 - a functional certificate,
 - and an interoperability certificate,

for the recording equipment or the tachograph card, subject of the request for type approval.

- 272 Any modification in software or hardware of the equipment or in the nature of materials used for its manufacture shall, before being used, be notified to the authority which granted type-approval for the equipment. This authority shall confirm to the manufacturer the extension of the type approval, or may require an update or a confirmation of the relevant functional, security and/or interoperability certificates.
- 273 Procedures to upgrade in-situ recording equipment software shall be approved by the authority which granted type approval for the recording equipment. Software upgrade must not alter nor delete any driver activity data stored in the recording equipment. Software may be upgraded only under the responsibility of the equipment manufacturer.

2. Security certificate

- 274 The security certificate is delivered in accordance with the provisions of Appendix 10 of this Annex.

3. Functional certificate

- 275 Each candidate for type approval shall provide the Member State's type approval authority with all the material and documentation that the authority deems necessary.
- 276 A functional certificate shall be delivered to the manufacturer only after all functional tests specified in Appendix 9, at least, have been successfully passed.
- 277 The type approval authority delivers the functional certificate. This certificate shall indicate, in addition to the name of its beneficiary and the identification of the model, a detailed list of the tests performed and the results obtained.

4. Interoperability certificate

- 278 Interoperability tests are carried out by a single laboratory under the authority and responsibility of the European Commission.
- 279 The laboratory shall register interoperability test requests introduced by manufacturers in the chronological order of their arrival.
- 280 Requests will be officially registered only when the laboratory is in possession of:
- the entire set of material and documents necessary for such interoperability tests,
 - the corresponding security certificate,
 - the corresponding functional certificate,

The date of the registration of the request shall be notified to the manufacturer.

- 281 No interoperability tests shall be carried out by the laboratory, for a recording equipment or a tachograph card that have not been granted a security certificate and a functional certificate.
- 282 Any manufacturer requesting interoperability tests shall commit to leave to the laboratory in charge of these tests the entire set of material and documents which he provided to carry out the tests.

283 The interoperability tests shall be carried out, in accordance with the provisions of paragraph 5 of Appendix 9 of this Annex, with respectively all the types of recording equipment or tachograph cards:

- for which type approval is still valid, or
- for which type approval is pending and that have a valid interoperability certificate.

284 The interoperability certificate shall be delivered by the laboratory to the manufacturer only after all required interoperability tests have been successfully passed.

285 If the interoperability tests are not successful with one or more of the recording equipment or tachograph card(s), as requested by requirement 283, the interoperability certificate shall not be delivered, until the requesting manufacturer has realised the necessary modifications and has succeeded the interoperability tests. The laboratory shall identify the cause of the problem with the help of the manufacturers concerned by this interoperability fault and shall attempt to help the requesting manufacturer in finding a technical solution. In the case where the manufacturer has modified its product, it is the manufacturer's responsibility to ascertain from the relevant authorities that the security certificate and the functional certificates are still valid.

286 The interoperability certificate is valid for six months. It is revoked at the end of this period if the manufacturer has not received a corresponding type approval certificate. It is forwarded by the manufacturer to the type approval authority of the Member State who has delivered the functional certificate.

287 Any element that could be at the origin of an interoperability fault shall not be used for profit or to lead to a dominant position.

5. Type approval certificate

288 The type approval authority of the Member State may deliver the type approval certificate as soon as it holds the three required certificates.

289 The type approval certificate shall be copied by the type approval authority to the laboratory in charge of the interoperability tests at the time of deliverance to the manufacturer.

290 The laboratory competent for interoperability tests shall run a public web site on which will be updated the list of recording equipment or tachograph cards models:

- for which a request for interoperability tests have been registered,
- having received an interoperability certificate (even provisional),
- having received a type approval certificate.

6. Exceptional procedure: first interoperability certificates

291 Until four months after a first couple of recording equipment and tachograph cards (driver, workshop, control and company cards) have been certified to be interoperable, any interoperability certificate delivered (including this very first one), regarding requests registered during this period, shall be considered provisional.

292 If at the end of this period, all products concerned are mutually interoperable, all corresponding interoperability certificates shall become definitive.

293 If during this period, interoperability faults are found, the laboratory in charge of interoperability tests shall identify the causes of the problems with the help of all manufacturers involved and shall invite them to realise the necessary modifications.

294 If at the end of this period, interoperability problems still remain, the laboratory in charge of interoperability tests, with the collaboration of the manufacturers concerned and with the type approval authorities who delivered the corresponding functional certificates shall find out the causes of the interoperability faults and establish which modifications should be made by each of the manufacturers concerned. The search for technical solutions shall last for a maximum of two months, after which, if no common solution is found, the Commission, after having consulted the laboratory in charge of interoperability tests, shall decide which equipment(s) and cards get a definitive interoperability certificate and state the reasons why.

295 Any request for interoperability tests, registered by the laboratory between the end of the four-month period after the first provisional interoperability certificate has been delivered and the date of the decision by the Commission referred to in requirement 294, shall be postponed until the initial interoperability problems have been solved. Those requests are then processed in the chronological order of their registration.

Appendix 1

DATA DICTIONARY**1. INTRODUCTION**

This appendix specifies data formats, data elements, and data structures for use within the recording equipment and tachograph cards.

1.1. Approach for definitions of data types

This appendix uses Abstract Syntax Notation One (ASN.1) to define data types. This enables simple and structured data to be defined without implying any specific transfer syntax (encoding rules) which will be application and environment dependent.

ASN.1 type naming conventions are done in accordance with ISO/IEC 8824-1. This implies that:

- where possible, the meaning of the data type is implied through the names being selected,
- where a data type is a composition of other data types, the data type name is still a single sequence of alphabetical characters commencing with a capital letter, however capitals are used within the name to impart the corresponding meaning,
- in general, the data types names are related to the name of the data types from which they are constructed, the equipment in which data is stored and the function related to the data.

If an ASN.1 type is already defined as part of another standard and if it is relevant for usage in the recording equipment, then this ASN.1 type will be defined in this appendix.

To enable several types of encoding rules, some ASN.1 types in this appendix are constrained by value range identifiers. The value range identifiers are defined in paragraph 3.

1.2. References

The following references are used in this Appendix:

- | | |
|----------------|---|
| ISO 639 | Code for the representation of names of languages. First Edition: 1988. |
| EN 726-3 | Identification cards systems — Telecommunications integrated circuit(s) cards and terminals — Part 3: Application independent card requirements. December 1994. |
| ISO 3779 | Road vehicles — Vehicle identification number (VIN) — Content and structure. Edition 3: 1983. |
| ISO/IEC 7816-5 | Information technology — Identification cards — Integrated circuit(s) cards with contacts — Part 5: Numbering system and registration procedure for application identifiers. First edition: 1994 + Amendment 1: 1996. |
| ISO/IEC 8824-1 | Information technology — Abstract Syntax Notation 1 (ASN.1): Specification of basic notation. Edition 2: 1998. |
| ISO/IEC 8825-2 | Information technology — ASN.1 encoding rules: Specification of Packed Encoding Rules (PER). Edition 2: 1998. |
| ISO/IEC 8859-1 | Information technology — 8 bit single-byte coded graphic character sets — Part 1: Latin alphabet No 1. First edition: 1998. |
| ISO/IEC 8859-7 | Information technology — 8 bit single-byte coded graphic character sets — Part 7: Latin/Greek alphabet. First edition: 1987. |
| ISO 16844-3 | Road vehicles — Tachograph systems — Motion Sensor Interface. WD 3-20/05/99. |

2. DATA TYPE DEFINITIONS

For any of the following data types, the default value for an "unknown" or a "not applicable" content will consist in filling the data element with 'FF'-Bytes.

2.1. ActivityChangeInfo

This data type enables to code, within a two bytes word, a slot status at 00.00 and/or a driver status at 00.00 and/or changes of activity and/or changes of driving status and/or changes of card status for a driver or a co-driver. This data type is related to requirements 084, 109a, 199 and 219.

ActivityChangeInfo ::= OCTET STRING (SIZE(2))

Value assignment — Octet Aligned: 'scpaattttttttttt'B (16 bits)

For Data Memory recordings (or slot status):

's'B	Slot:
	'0'B: DRIVER,
	'1'B: CO-DRIVER,
'c'B	Driving status:
	'0'B: SINGLE,
	'1'B: CREW,
'p'B	Driver (or workshop) card status in the relevant slot:
	'0'B: INSERTED, a card is inserted,
	'1'B: NOT INSERTED, no card is inserted (or a card is withdrawn),
'aa'B	Activity:
	'00'B: BREAK/REST,
	'01'B: AVAILABILITY,
	'10'B: WORK,
	'11'B: DRIVING,
'tttttttttttt'B	Time of the change: Number of minutes since 00h00 on the given day.

For Driver (or Workshop) card recordings (and driver status):

's'B	Slot (not relevant when 'p' = 1 except note below):
	'0'B: DRIVER,
	'1'B: 2. CO-DRIVER,
'c'B	Driving status (case 'p' = 0) or Following activity status (case 'p' = 1):
	'0'B: SINGLE, '0'B: UNKNOWN
	'1'B: CREW, '1'B: KNOWN (= manually entered)
'p'B	Card status:
	'0'B: INSERTED, the card is inserted in a recording equipment,
	'1'B: NOT INSERTED, the card is not inserted (or the card is withdrawn),

'aa'B Activity (not relevant when 'p' = 1 and 'c' = 0 except note below):

- '00'B: BREAK/REST,
- '01'B: AVAILABILITY,
- '10'B: WORK,
- '11'B: DRIVING,

'tttttttttt'B Time of the change: Number of minutes since 00h00 on the given day.

Note for the case "card withdrawal":

When the card is withdrawn:

- 's' is relevant and indicates the slot from which the card is withdrawn,
- 'c' must be set to 0,
- 'p' must be set to 1,
- 'aa' must code the current activity selected at that time,

As a result of a manual entry, the bits 'c' and 'aa' of the word (stored in a card) may be overwritten later to reflect the entry.

2.2. Address

An address.

```
address ::= SEQUENCE {
    codePage          INTEGER (0..255),
    address           OCTET STRING (SIZE(35))
}
```

codePage specifies the part of the ISO/IEC 8859 used to code the address,

address is an address coded in accordance with ISO/IEC 8859-codePage.

2.3. BCDString

BCDString is applied for Binary Code Decimal (BCD) representation. This data type is used to represent one decimal digit in one semi octet (4 bits). BCDString is based on the ISO/IEC 8824-1 'CharacterStringType'.

```
BCDString ::= CHARACTER STRING (WITH COMPONENTS {
    identification ( WITH COMPONENTS {
        fixed PRESENT }) })
```

BCDString uses an "hstring" notation. The leftmost hexadecimal digit shall be the most significant semi octet of the first octet. To produce a multiple of octets, zero trailing semi octets shall be inserted, as needed, from the leftmost semi octet position in the first octet.

Permitted digits are: 0, 1, ... 9.

2.4. CalibrationPurpose

Code explaining why a set of calibration parameters was recorded. This data type is related to requirements 097 and 098.

```
CalibrationPurpose ::= OCTET STRING (SIZE(1))
```

Value assignment:

- '00'H reserved value,
- '01'H activation: recording of calibration parameters known, at the moment of the VU activation,

'02'H first installation: first calibration of the VU after its activation,

'03'H installation: first calibration of the VU in the current vehicle,

'04'H periodic inspection.

2.5. CardActivityDailyRecord

Information, stored in a card, related to the driver activities for a particular calendar day. This data type is related to requirements 199 and 219.

```
CardActivityDailyRecord ::= SEQUENCE {
    activityPreviousRecordLength    INTEGER(0..CardActivityLengthRange),
    activityRecordLength            INTEGER(0..CardActivityLengthRange),
    activityRecordDate              TimeReal,
    activityDailyPresenceCounter    DailyPresenceCounter,
    activityDayDistance             Distance,
    activityChangeInfo              SET SIZE(1..1440) OF ActivityChangeInfo
}
```

activityPreviousRecordLength is the total length in bytes of the previous daily record. The maximum value is given by the length of the OCTET STRING containing these records (see CardActivityLengthRange paragraph 3). When this record is the oldest daily record, the value of activityPreviousRecordLength must be set to 0.

activityRecordLength is the total length in bytes of this record. The maximum value is given by the length of the OCTET STRING containing these records.

activityRecordDate is the date of the record.

activityDailyPresenceCounter is the daily presence counter for the card this day.

activityDayDistance is the total distance travelled this day.

activityChangeInfo is the set of ActivityChangeInfo data for the driver this day. It may contain at maximum 1 440 values (one activity change per minute). This set always includes the activityChangeInfo coding the driver status at 00.00.

2.6. CardActivityLengthRange

Number of bytes in a driver or a workshop card, available to store driver activity records.

```
CardActivityLengthRange ::= INTEGER(0..216-1)
```

Value assignment: see paragraph 3.

2.7. CardApprovalNumber

Type approval number of the card.

```
CardApprovalNumber ::= IA5String(SIZE(8))
```

Value assignment: Unspecified.

2.8. CardCertificate

Certificate of the public key of a card.

```
CardCertificate ::= Certificate
```

2.9. CardChipIdentification

Information, stored in a card, related to the identification of the card's Integrated Circuit (IC) (requirement 191).

```
CardChipIdentification ::= SEQUENCE {
    icSerialNumber                OCTET STRING (SIZE(4)),
    icManufacturingReferences     OCTET STRING (SIZE(4))
}
```


activityPointerOldestDayRecord is the specification of the begin of the storage place (number of bytes from the beginning of the string) of the oldest complete day record in the activityDailyRecords string. The maximum value is given by the length of the string.

activityPointerNewestRecord is the specification of the begin of the storage place (number of bytes from the beginning of the string) of the most recent day record in the activityDailyRecords string. The maximum value is given by the length of the string.

activityDailyRecords is the space available to store the driver activity data (data structure: CardActivityDailyRecord) for each calendar day where the card has been used.

Value assignment: this octet string is cyclically filled with records of CardActivityDailyRecord. At the first use storing is started at the first byte of the string. All new records are appended at the end of the previous one. When the string is full, storing continues at the first byte of the string independently of a break being inside a data element. Before placing new activity data in the string (enlarging current activityDailyRecord, or placing a new activityDailyRecord) that replaces older activity data, activityPointerOldestDayRecord must be updated to reflect the new location of the oldest complete day record, and activityPreviousRecordLength of this (new) oldest complete day record must be reset to 0.

2.14. CardDrivingLicenceInformation

Information, stored in a driver card, related to the card holder driver licence data (requirement 196).

```
CardDrivingLicenceInformation ::= SEQUENCE {
    drivingLicenceIssuingAuthority      Name,
    drivingLicenceIssuingNation         NationNumeric,
    drivingLicenceNumber                IA5String(SIZE(16))
}
```

drivingLicenceIssuingAuthority is the authority responsible for issuing the driving licence.

drivingLicenceIssuingNation is the nationality of the authority that issued the driving licence.

drivingLicenceNumber is the number of the driving licence.

2.15. CardEventData

Information, stored in a driver or workshop card, related to the events associated with the card holder (requirements 204 and 223).

```
CardEventData ::= SEQUENCE SIZE(6) OF {
    cardEventRecords                SET SIZE(NoOfEventsPerType) OF
                                     CardEventRecord
}
```

CardEventData is a sequence, ordered by ascending value of EventFaultType, of cardEventRecords (except security breach attempts related records which are gathered in the last set of the sequence).

CardEventRecords is a set of event records of a given event type (or category for security breach attempts events).

2.16. CardEventRecord

Information, stored in a driver or a workshop card, related to an event associated to the card holder (requirements 205 and 223).

```
CardEventRecord ::= SEQUENCE {
    eventType                        EventFaultType,
    eventBeginTime                   TimeReal,
    eventEndTime                     TimeReal,
    eventVehicleRegistration         VehicleRegistrationIdentification
}
```

eventType is the type of the event.

eventBeginTime is the date and time of beginning of event.

eventEndTime is the date and time of end of event.

eventVehicleRegistration is the VRN and registering Member State of vehicle in which the event happened.

2.17. CardFaultData

Information, stored in a driver or a workshop card, related to the faults associated to the card holder (requirements 207 and 223).

```
CardFaultData ::= SEQUENCE SIZE(2) OF {
    cardFaultRecords          SET SIZE(NoOfFaultsPerType) OF
                                CardFaultRecord
}
```

CardFaultData is a sequence of Recording Equipment faults set of records followed by card faults set of records.

cardFaultRecords is a set of fault records of a given fault category (Recording Equipment or card).

2.18. CardFaultRecord

Information, stored in a driver or a workshop card, related to a fault associated to the card holder (requirement 208 and 223).

```
CardFaultRecord ::= SEQUENCE {
    faultType                  EventFaultType,
    faultBeginTime             TimeReal,
    faultEndTime               TimeReal,
    faultVehicleRegistration   VehicleRegistrationIdentification
}
```

faultType is the type of the fault.

faultBeginTime is the date and time of beginning of fault.

faultEndTime is the date and time of end of fault.

faultVehicleRegistration is the VRN and registering Member State of vehicle in which the fault happened.

2.19. CardIccIdentification

Information, stored in a card, related to the identification of the integrated circuit (IC) card (requirement 192).

```
CardIccIdentification ::= SEQUENCE {
    clockStop                  OCTET STRING (SIZE(1)),
    cardExtendedSerialNumber   ExtendedSerialNumber,
    cardApprovalNumber         CardApprovalNumber
    cardPersonaliserID         OCTET STRING (SIZE(1)),
    embedderIcAssemblerId     OCTET STRING (SIZE(5)),
    icIdentifier               OCTET STRING (SIZE(2))
}
```

clockStop is the Clockstop mode as defined in EN 726-3.

cardExtendedSerialNumber is the IC card serial number and IC card manufacturing reference as defined in EN 726-3 and as further specified by the ExtendedSerialNumber data type.

cardApprovalNumber is the type approval number of the card.

cardPersonaliserID is the card personaliser ID as defined in EN 726-3.

embedderIcAssemblerId is the embedder/IC assembler identifier as defined in EN 726-3.

icIdentifier is the Identifier of the IC on the card and its IC manufacturer as defined in EN 726-3.

2.20. CardIdentification

Information, stored in a card, related to the identification of the card (requirements 194, 215, 231, 235).

```
CardIdentification ::= SEQUENCE {
    cardIssuingMemberState      NationNumeric,
    cardNumber                  CardNumber,
    cardIssuingAuthorityName    Name,
    cardIssueDate               TimeReal,
    cardValidityBegin           TimeReal,
    cardExpiryDate              TimeReal
}
```

cardIssuingMemberState is the code of the Member State issuing the card.

cardNumber is the card number of the card.

cardIssuingAuthorityName is the name of the authority having issued the Card.

cardIssueDate is the issue date of the Card to the current holder.

cardValidityBegin is the first date of validity of the card.

cardExpiryDate is the date when the validity of the card ends.

2.21. CardNumber

A card number as defined by definition g).

```
CardNumber ::= CHOICE {
    SEQUENCE {
        driverIdentification      IA5String(SIZE(14)),
        cardReplacementIndex      CardReplacementIndex,
        cardRenewalIndex          CardRenewalIndex
    }
    SEQUENCE {
        ownerIdentification       IA5String(SIZE(13)),
        cardConsecutiveIndex      CardConsecutiveIndex,
        cardReplacementIndex      CardReplacementIndex,
        cardRenewalIndex          CardRenewalIndex
    }
}
```

driverIdentification is the unique identification of a driver in a Member State.

ownerIdentification is the unique identification of a company or a workshop or a control body within a Member State.

cardConsecutiveIndex is the card consecutive index.

cardReplacementIndex is the card replacement index.

cardRenewalIndex is the card renewal index.

The first sequence of the choice is suitable to code a driver card number, the second sequence of the choice is suitable to code workshop, control, and company card numbers.

2.22. CardPlaceDailyWorkPeriod

Information, stored in a driver or a workshop card, related to the places where daily work periods begin and/or end (requirements 202 and 221).

```
CardPlaceDailyWorkPeriod ::= SEQUENCE {
    placePointerNewestRecord    INTEGER(0..NoOfCardPlaceRecords-1),
    placeRecords                SET SIZE(NoOfCardPlaceRecords) OF PlaceRecord
}
```

placePointerNewestRecord is the index of the last updated place record.

Value assignment: Number corresponding to the numerator of the place record, beginning with "0" for the first occurrence of the place records in the structure.

placeRecords is the set of records containing the information related to the places entered.

2.23. CardPrivateKey

The private key of a card.

```
CardPrivateKey ::= RSAKeyPrivateExponent
```

2.24. CardPublicKey

The public key of a card.

```
CardPublicKey ::= PublicKey
```

2.25. CardRenewalIndex

A card renewal index (definition i)).

```
CardRenewalIndex ::= IA5String(SIZE(1))
```

Value assignment: (see this Annex Chapter VII).

'0' First issue.

Order for increase: '0, ..., 9, A, ..., Z'

2.26. CardReplacementIndex

A card replacement index (definition j)).

```
CardReplacementIndex ::= IA5String(SIZE(1))
```

Value assignment: (see this Annex Chapter VII).

'0' Original card.

Order for increase: '0, ..., 9, A, ..., Z'

2.27. CardSlotNumber

Code to distinguish between the two slots of a vehicle unit.

```
CardSlotNumber ::= INTEGER {
    driverSlot                (0),
    co-driverSlot             (1)
}
```

Value assignment: not further specified.

2.28. CardSlotsStatus

Code indicating the type of cards inserted in the two slots of the vehicle unit.

```
CardSlotsStatus ::= OCTET STRING (SIZE(1))
```


vehiclePointerNewestRecord is the index of the last updated vehicle record.

Value assignment: Number corresponding to the numerator of the vehicle record, beginning with '0' for the first occurrence of the vehicle records in the structure.

cardVehicleRecords is the set of records containing information on vehicles used.

2.32. Certificate

The certificate of a public key issued by a Certification Authority.

Certificate ::= OCTET STRING (SIZE(194))

Value assignment: digital signature with partial recovery of a CertificateContent according to Appendix 11 "common security mechanisms": Signature (128 bytes) || Public Key remainder (58 Byte) || Certification Authority Reference (8 bytes).

2.33. CertificateContent

The (clear) content of the certificate of a public key according to Appendix 11 common security mechanisms.

```
CertificateContent ::= SEQUENCE {
    certificateProfileIdentifier      INTEGER(0..255),
    certificationAuthorityReference  KeyIdentifier,
    certificateHolderAuthorisation   CertificateHolderAuthorisation,
    certificateEndOfValidity         TimeReal,
    certificateHolderReference       KeyIdentifier,
    publicKey                        PublicKey
}
```

certificateProfileIdentifier is the version of the corresponding certificate.

Value assignment: '01h' for this version.

certificationAuthorityReference identifies the Certification Authority issuing the certificate. It also references the Public Key of this Certification Authority.

certificateHolderAuthorisation identifies the rights of the certificate holder.

certificateEndOfValidity is the date when the certificate expires administratively.

certificateHolderReference identifies the certificate holder. It also references his Public Key.

publicKey is the public key that is certified by this certificate.

2.34. CertificateHolderAuthorisation

Identification of the rights of a certificate holder.

```
CertificateHolderAuthorisation ::= SEQUENCE {
    tachographApplicationID         OCTET STRING(SIZE(6))
    equipmentType                    EquipmentType
}
```

tachographApplicationID is the application identifier for the tachograph application.

Value assignment: 'FFh' '54h' '41h' '43h' '48h' '4Fh'. This AID is a proprietary non-registered application identifier in accordance with ISO/IEC 7816-5.

equipmentType is the identification of the type of equipment to which the certificate is intended.

Value assignment: in accordance with EquipmentType data type. 0 if certificate is the one of a Member State.

2.35. CertificateRequestID

Unique identification of a certificate request. It can also be used as a Vehicle Unit Public Key Identifier if the serial number of the vehicle Unit to which the key is intended is not known at certificate generation time.

```
CertificateRequestID ::= SEQUENCE {
    requestSerialNumber      INTEGER(0..232-1)
    requestMonthYear         BCDString(SIZE(2))
    crIdentifier              OCTET STRING(SIZE(1))
    manufacturerCode        ManufacturerCode
}
```

requestSerialNumber is a serial number for the certificate request, unique for the manufacturer and the month below.

requestMonthYear is the identification of the month and the year of the certificate request.

Value assignment: BCD coding of month (two digits) and year (two last digits).

crIdentifier: is an identifier to distinguish a certificate request from an extended serial number.

Value assignment: 'FFh'.

manufacturerCode: is the numerical code of the manufacturer requesting the certificate.

2.36. CertificationAuthorityKID

Identifier of the Public Key of a Certification Authority (a Member State or the European Certification Authority).

```
CertificationAuthorityKID ::= SEQUENCE {
    nationNumeric            NationNumeric
    nationAlpha              NationAlpha
    keySerialNumber          INTEGER(0..255)
    additionalInfo           OCTET STRING(SIZE(2))
    caIdentifier              OCTET STRING(SIZE(1))
}
```

nationNumeric is the numerical nation code of the Certification Authority.

nationAlpha is the alphanumerical nation code of the Certification Authority.

keySerialNumber is a serial number to distinguish the different keys of the Certification Authority in the case keys are changed.

additionalInfo is a two byte field for additional coding (Certification Authority specific).

caIdentifier is an identifier to distinguish a Certification Authority Key Identifier from other Key Identifiers.

Value assignment: '01h'.

2.37. CompanyActivityData

Information, stored in a company card, related to activities performed with the card (requirement 237).

```
CompanyActivityData ::= SEQUENCE {
    companyPointerNewestRecord    INTEGER(0..NoOfCompanyActivityRecords-1),
    companyActivityRecords        SET SIZE(NoOfCompanyActivityRecords) OF
    companyActivityRecord         SEQUENCE {
        companyActivityType        CompanyActivityType,
        companyActivityTime        TimeReal,
        cardNumberInformation      FullCardNumber,
    }
```

```

    vehicleRegistrationInformation  VehicleRegistrationIdentification,
    downloadPeriodBegin            TimeReal,
    downloadPeriodEnd              TimeReal
  }
}

```

companyPointerNewestRecord is the index of the last updated companyActivityRecord.

Value assignment: Number corresponding to the numerator of the company activity record, beginning with '0' for the first occurrence of the company activity record in the structure.

companyActivityRecords is the set of all company activity records.

companyActivityRecord is the sequence of information related to one company activity.

companyActivityType is the type of the company activity.

companyActivityTime is the date and time of the company activity.

cardNumberInformation is the card number and the card issuing Member State of the card downloaded, if any.

vehicleRegistrationInformation is the VRN and registering Member State of the vehicle downloaded or locked in or out.

downloadPeriodBegin and **downloadPeriodEnd** is the period downloaded from the VU, if any.

2.38. CompanyActivityType

Code indicating an activity carried out by a company using its company card.

```

CompanyActivityType ::= INTEGER {
  card downloading          (1),
  VU downloading           (2),
  VU lock-in                (3),
  VU lock-out               (4)
}

```

2.39. CompanyCardApplicationIdentification

Information, stored in a company card related to the identification of the application of the card (requirement 190).

```

CompanyCardApplicationIdentification ::= SEQUENCE {
  typeOfTachographCardId      EquipmentType,
  cardStructureVersion         CardStructureVersion,
  noOfCompanyActivityRecords   NoOfCompanyActivityRecords
}

```

typeOfTachographCardId is specifying the implemented type of card.

cardStructureVersion is specifying the version of the structure that is implemented in the card.

noOfCompanyActivityRecords is the number of company activity records the card can store.

2.40. CompanyCardHolderIdentification

Information, stored in a company card, related to the cardholder identification (requirement 236).

```

CompanyCardHolderIdentification ::= SEQUENCE {
  companyName                 Name,
  companyAddress               Address,
  cardHolderPreferredLanguage Language
}

```

companyName is the name of the holder company.

companyAddress is the address of the holder company.

cardHolderPreferredLanguage is the preferred language of the card holder.

2.41. ControlCardApplicationIdentification

Information, stored in a control card related to the identification of the application of the card (requirement 190).

```
ControlCardApplicationIdentification ::= SEQUENCE {
    typeOfTachographCardId      EquipmentType,
    cardStructureVersion        CardStructureVersion,
    noOfControlActivityRecords   NoOfControlActivityRecords
}
```

typeOfTachographCardId is specifying the implemented type of card.

cardStructureVersion is specifying the version of the structure that is implemented in the card.

noOfControlActivityRecords is the number of control activity records the card can store.

2.42. ControlCardControlActivityData

Information, stored in a control card, related to control activity performed with the card (requirement 233).

```
ControlCardControlActivityData ::= SEQUENCE {
    controlPointerNewestRecord   INTEGER(0..NoOfControlActivityRecords-1),
    controlActivityRecords      SET SIZE(NoOfControlActivityRecords) OF
        controlActivityRecord   SEQUENCE {
            controlType          ControlType,
            controlTime          TimeReal,
            controlledCardNumber  FullCardNumber,
            controlledVehicleRegistration VehicleRegistrationIdentification,
            controlDownloadPeriodBegin TimeReal,
            controlDownloadPeriodEnd TimeReal
        }
}
```

controlPointerNewestRecord is the index of the last updated control activity record.

Value assignment: Number corresponding to the numerator of the control activity record, beginning with '0' for the first occurrence of the control activity record in the structure.

controlActivityRecords is the set of all control activity records.

controlActivityRecord is the sequence of information related to one control.

controlType is the type of the control.

controlTime is the date and time of the control.

controlledCardNumber is the card number and the card issuing Member State of the card controlled.

controlledVehicleRegistration is the VRN and registering Member State of the vehicle in which the control happened.

controlDownloadPeriodBegin and **controlDownloadPeriodEnd** is the period eventually downloaded.

2.43. ControlCardHolderIdentification

Information, stored in a control card, related to the identification of the cardholder (requirement 232).

```
ControlCardHolderIdentification ::= SEQUENCE {
    controlBodyName          Name,
    controlBodyAddress       Address,
    cardHolderName          HolderName,
    cardHolderPreferredLanguage Language
}
```

controlBodyName is the name of the control body of the card holder.

controlBodyAddress is the address of the control body of the card holder.

cardHolderName is the name and first name(s) of the holder of the Control Card.

cardHolderPreferredLanguage is the preferred language of the card holder.

2.44. ControlType

Code indicating the activities carried out during a control. This data type is related to requirements 102, 210 and 225.

```
ControlType ::= OCTET STRING (SIZE(1))
```

Value assignment — Octet aligned: 'cvpdxxxx'B (8 bits)

```
'c'B    card downloading:
        '0'B: card not downloaded during this control activity,
        '1'B: card downloaded during this control activity

'v'B    VU downloading:
        '0'B: VU not downloaded during this control activity,
        '1'B: VU downloaded during this control activity

'p'B    printing:
        '0'B: no printing done during this control activity,
        '1'B: printing done during this control activity

'd'B    display:
        '0'B: no display used during this control activity,
        '1'B: display used during this control activity

'xxxx'B  Not used.
```

2.45. CurrentDateTime

The current date and time of the recording equipment.

```
CurrentDateTime ::= TimeReal
```

Value assignment: not further specified.

2.46. DailyPresenceCounter

Counter, stored in a driver or workshop card, increased by one for each calendar day the card has been inserted in a VU. This data type is related to requirements 199 and 219.

```
DailyPresenceCounter ::= BCDString(SIZE(2))
```

Value assignment: Consecutive number with maximum value = 9 999, starting again with 0. At the time of first issuing of the card the number is set to 0.

2.47. Datef

Date expressed in a readily printable numeric format.

```
Datef ::= SEQUENCE {
    year      BCDString(SIZE(2)),
    month     BCDString(SIZE(1)),
    day       BCDString(SIZE(1))
}
```

Value assignment:

YYYY	Year
mm	Month
dd	Day
'00000000'H	denotes explicitly no date.

2.48. Distance

A distance travelled (result of the calculation of the difference between two vehicle's odometer value in kilometres).

```
Distance ::= INTEGER(0..216-1)
```

Value assignment: Unsigned binary. Value in km in the operational range 0 to 9 999 km.

2.49. DriverCardApplicationIdentification

Information, stored in a driver card related to the identification of the application of the card (requirement 190).

```
DriverCardApplicationIdentification ::= SEQUENCE {
    typeOfTachographCardId      EquipmentType,
    cardStructureVersion         CardStructureVersion,
    noOfEventsPerType           NoOfEventsPerType,
    noOfFaultsPerType           NoOfFaultsPerType,
    activityStructureLength      CardActivityLengthRange,
    noOfCardVehicleRecords      NoOfCardVehicleRecords,
    noOfCardPlaceRecords        NoOfCardPlaceRecords
}
```

typeOfTachographCardId is specifying the implemented type of card.

cardStructureVersion is specifying the version of the structure that is implemented in the card.

noOfEventsPerType is the number of events per type of event the card can record.

noOfFaultsPerType is the number of faults per type of fault the card can record.

activityStructureLength indicates the number of bytes available for storing activity records.

noOfCardVehicleRecords is the number of vehicle records the card can contain.

noOfCardPlaceRecords is the number of places the card can record.

2.50. DriverCardHolderIdentification

Information, stored in a driver card, related to the identification of the cardholder (requirement 195).

```
DriverCardHolderIdentification ::= SEQUENCE {
    cardHolderName      HolderName,
    cardHolderBirthDate Datef,
    cardHolderPreferredLanguage Language
}
```

cardHolderName is the name and first name(s) of the holder of the Driver Card.

cardHolderBirthDate is the date of birth of the holder of the Driver Card.

cardHolderPreferredLanguage is the preferred language of the card holder.

2.51. EntryTypeDailyWorkPeriod

Code to distinguish between begin and end for an entry of a daily work period place and condition of the entry.

```
EntryTypeDailyWorkPeriod ::= INTEGER
    Begin, related time = card insertion time or time of entry           (0),
    End,   related time = card withdrawal time or time of entry         (1),
    Begin, related time manually entered (start time)                   (2),
    End,   related time manually entered (end of work period)           (3),
    Begin, related time assumed by VU                                   (4),
    End,   related time assumed by VU                                   (5)
}
```

Value assignment: according to ISO/IEC8824-1.

2.52. EquipmentType

Code to distinguish different types of equipment for the tachograph application.

```
EquipmentType ::= INTEGER(0..255)
-- Reserved                (0),
-- Driver Card              (1),
-- Workshop Card            (2),
-- Control Card             (3),
-- Company Card             (4),
-- Manufacturing Card       (5),
-- Vehicle Unit             (6),
-- Motion Sensor            (7),
-- RFU                      (8..255)
```

Value assignment: According to ISO/IEC8824-1.

Value 0 is reserved for the purpose of designating a Member State or Europe in the CHA field of certificates.

2.53. EuropeanPublicKey

The European public key.

```
EuropeanPublicKey ::= PublicKey
```

2.54. EventFaultType

Code qualifying an event or a fault.

```
EventFaultType ::= OCTET STRING (SIZE(1))
```

Value assignment:

'0x'H	General events,
'00'H	No further details,
'01'H	Insertion of a non-valid card,
'02'H	Card conflict,
'03'H	Time overlap,
'04'H	Driving without an appropriate card,
'05'H	Card insertion while driving,
'06'H	Last card session not correctly closed,
'07'H	Over speeding,

'08'H	Power supply interruption,
'09'H	Motion data error,
'0A'H to '0F'H	RFU,
'1x'H	Vehicle unit related security breach attempt events,
'10'H	No further details,
'11'H	Motion sensor authentication failure,
'12'H	Tachograph card authentication failure,
'13'H	Unauthorised change of motion sensor,
'14'H	Card data input integrity error
'15'H	Stored user data integrity error,
'16'H	Internal data transfer error,
'17'H	Unauthorised case opening,
'18'H	Hardware sabotage,
'19'H to '1F'H	RFU,
'2x'H	Sensor related security breach attempt events,
'20'H	No further details,
'21'H	Authentication failure,
'22'H	Stored data integrity error,
'23'H	Internal data transfer error,
'24'H	Unauthorised case opening,
'25'H	Hardware sabotage,
'26'H to '2F'H	RFU,
'3x'H	Recording equipment faults,
'30'H	No further details,
'31'H	VU internal fault,
'32'H	Printer fault,
'33'H	Display fault,
'34'H	Downloading fault,
'35'H	Sensor fault,
'36'H to '3F'H	RFU
'4x'H	Card faults,
'40'H	No further details,
'41'H to '4F'H	RFU
'50'H to '7F'H	RFU,
'80'H to 'FF'H	Manufacturer specific.

2.55. EventFaultRecordPurpose

Code explaining why an event or a fault has been recorded.

EventFaultRecordPurpose ::= OCTET STRING (SIZE(1))

Value assignment:

'00'H	one of the 10 most recent (or last) events or faults
'01'H	the longest event for one of the last 10 days of occurrence
'02'H	one of the 5 longest events over the last 365 days
'03'H	the last event for one of the last 10 days of occurrence
'04'H	the most serious event for one of the last 10 days of occurrence
'05'H	one of the 5 most serious events over the last 365 days
'06'H	the first event or fault having occurred after the last calibration
'07'H	an active/on-going event or fault
'08'H to '7F'H	RFU
'80'H to 'FF'H	manufacturer specific

2.56. ExtendedSerialNumber

Unique identification of an equipment. It can also be used as an equipment Public Key Identifier.

```
ExtendedSerialNumber ::= SEQUENCE {
    serialNumber          INTEGER(0..232-1)
    monthYear            BCDString(SIZE(2))
    type                 OCTET STRING(SIZE(1))
    manufacturerCode     ManufacturerCode
}
```

serialNumber is a serial number for the equipment, unique for the manufacturer, the equipment's type and the month below.

monthYear is the identification of the month and the year of manufacturing (or of serial number assignment).

Value assignment: BCD coding of Month (two digits) and Year (two last digits).

type is an identifier of the type of equipment.

Value assignment: manufacturer specific, with FFh' reserved value.

manufacturerCode: is the numerical code of the manufacturer of the equipment.

2.57. FullCardNumber

Code fully identifying a tachograph card.

```
FullCardNumber ::= SEQUENCE {
    cardType              EquipmentType,
    cardIssuingMemberState NationNumeric,
    cardNumber            CardNumber
}
```

cardType is the type of the tachograph card.

cardIssuingMemberState is the code of the Member State having issued the card.

cardNumber is the card number.

2.58. HighResOdometer

Odometer value of the vehicle: Accumulated distance travelled by the vehicle during its operation.

```
HighResOdometer ::= INTEGER(0..232-1)
```

Value assignment: Unsigned binary. Value in 1/200 km in the operating range 0 to 21 055 406 km.

2.59. HighResTripDistance

A distance travelled during all or part of a journey.

```
HighResTripDistance ::= INTEGER(0..232-1)
```

Value assignment: Unsigned binary. Value in 1/200 km in the operating range 0 to 21 055 406 km.

2.60. HolderName

The surname and first name(s) of a card holder.

```
HolderName ::= SEQUENCE {
    holderSurname         Name,
    holderFirstNames     Name
}
```

holderSurname is the surname (family name) of the holder. This surname does not include titles.

Value assignment: When a card is not personal, holderSurname contains the same information as companyName or workshopName or controlBodyName.

holderFirstNames is the first name(s) and initials of the holder.

2.61. K-ConstantOfRecordingEquipment

Constant of the recording equipment (definition m)).

K-ConstantOfRecordingEquipment ::= INTEGER(0..2¹⁶-1)

Value assignment: Pulses per kilometre in the operating range 0 to 64 255 pulses/km.

2.62. KeyIdentifier

A unique identifier of a Public Key used to reference and select the key. It also identifies the holder of the key.

```
KeyIdentifier ::= CHOICE {
    extendedSerialNumber          ExtendedSerialNumber,
    certificateRequestID           CertificateRequestID,
    certificationAuthorityKID      CertificationAuthorityKID
}
```

The first choice is suitable to reference the public key of a Vehicle Unit or of a tachograph card.

The second choice is suitable to reference the public key of a Vehicle Unit (in the case the serial number of the Vehicle Unit cannot be known at certificate generation time).

The third choice is suitable to reference the public key of a Member State.

2.63. L-TyreCircumference

Effective circumference of the wheel tyres (definition u)).

L-TyreCircumference ::= INTEGER(0..2¹⁶-1)

Value assignment: Unsigned binary, value in 1/8 mm in the operating range 0 to 8 031 mm.

2.64. Language

Code identifying a language.

Language ::= IA5String(SIZE(2))

Value assignment: Two-letter lower-case coding according to ISO 639.

2.65. LastCardDownload

Date and time, stored on a driver card, of last card download (for other purposes than control). This date is updateable by a VU or any card reader.

LastCardDownload ::= TimeReal

Value assignment: not further specified.

2.66. ManualInputFlag

Code identifying whether a cardholder has manually entered driver activities at card insertion or not (requirement 081).

```
ManualInputFlag ::= INTEGER {
    noEntry                (0)
    manualEntries         (1)
}
```

Value assignment: not further specified.

2.67. ManufacturerCode

Code identifying a manufacturer.

```
ManufacturerCode ::= INTEGER(0..255)
```

Value assignment:

'00'H	No information available
'01'H	Reserved value
'02'H .. '0F'H	Reserved for Future Use
'10'H	ACTIA
'11'H .. '17'H	Reserved for manufacturers which name begins with 'A'
'18'H .. '1F'H	Reserved for manufacturers which name begins with 'B'
'20'H .. '27'H	Reserved for manufacturers which name begins with 'C'
'28'H .. '2F'H	Reserved for manufacturers which name begins with 'D'
'30'H .. '37'H	Reserved for manufacturers which name begins with 'E'
'38'H .. '3F'H	Reserved for manufacturers which name begins with 'F'
'40'H	Giesecke & Devrient GmbH
'41'H	GEM plus
'42'H .. '47'H	Reserved for manufacturers which name begins with 'G'
'48'H .. '4F'H	Reserved for manufacturers which name begins with 'H'
'50'H .. '57'H	Reserved for manufacturers which name begins with 'I'
'58'H .. '5F'H	Reserved for manufacturers which name begins with 'J'
'60'H .. '67'H	Reserved for manufacturers which name begins with 'K'
'68'H .. '6F'H	Reserved for manufacturers which name begins with 'L'
'70'H .. '77'H	Reserved for manufacturers which name begins with 'M'
'78'H .. '7F'H	Reserved for manufacturers which name begins with 'N'
'80'H	OSCARD
'81'H .. '87'H	Reserved for manufacturers which name begins with 'O'
'88'H .. '8F'H	Reserved for manufacturers which name begins with 'P'
'90'H .. '97'H	Reserved for manufacturers which name begins with 'Q'
'98'H .. '9F'H	Reserved for manufacturers which name begins with 'R'
'A0'H	SETEC
'A1'H	SIEMENS VDO
'A2'H	STONERIDGE
'A3'H .. 'A7'H	Reserved for manufacturers which name begins with 'S'
'AA'H	TACHOCONTROL
'AB'H .. 'AF'H	Reserved for manufacturers which name begins with 'T'
'B0'H .. 'B7'H	Reserved for manufacturers which name begins with 'U'
'B8'H .. 'BF'H	Reserved for manufacturers which name begins with 'V'
'C0'H .. 'C7'H	Reserved for manufacturers which name begins with 'W'
'C8'H .. 'CF'H	Reserved for manufacturers which name begins with 'X'
'D0'H .. 'D7'H	Reserved for manufacturers which name begins with 'Y'
'D8'H .. 'DF'H	Reserved for manufacturers which name begins with 'Z'

2.68. MemberStateCertificate

The certificate of the public key of a Member State issued by the European certification authority.

```
MemberStateCertificate ::= Certificate
```

2.69. MemberStatePublicKey

The public key of a Member State.

MemberStatePublicKey ::= PublicKey

2.70. Name

A name.

```
Name ::= SEQUENCE {
    codePage                INTEGER (0..255),
    name                    OCTET STRING (SIZE(35))
}
```

codePage specifies the part of the ISO/IEC 8859 used to code the name,

name is a name coded in accordance with ISO/IEC 8859-codePage.

2.71. NationAlpha

Alphabetic reference to a country, in accordance with the conventional coding of countries on car bumper stickers, and/or as used on internationally harmonised vehicle insurance papers (green card).

NationAlpha ::= IA5String(SIZE(3))

Value assignment:

' '	No information available
'A'	Austria
'AL'	Albania
'AND'	Andorra
'ARM'	Armenia
'AZ'	Azerbaijan
'B'	Belgium
'BG'	Bulgaria
'BIH'	Bosnia and Herzegovina
'BY'	Belarus
'CH'	Switzerland
'CY'	Cyprus
'CZ'	Czech Republic
'D'	Germany
'DK'	Denmark
'E'	Spain
'EST'	Estonia
'F'	France
'FIN'	Finland
'FL'	Liechtenstein
'FR'	Faeroe Islands
'UK'	United Kingdom, Alderney, Guernsey, Jersey, Isle of Man, Gibraltar
'GE'	Georgia
'GR'	Greece
'H'	Hungary
'HR'	Croatia
'I'	Italy
'IRL'	Ireland
'IS'	Iceland
'KZ'	Kazakhstan
'L'	Luxembourg
'LT'	Lithuania
'LV'	Latvia
'M'	Malta
'MC'	Monaco

'MD '	Republic of Moldova
'MK '	Macedonia
'N '	Norway
'NL '	The Netherlands
'P '	Portugal
'PL '	Poland
'RO '	Romania
'RSM'	San Marino
'RUS'	Russian Federation
'S '	Sweden
'SK '	Slovakia
'SLO'	Slovenia
'TM '	Turkmenistan
'TR '	Turkey
'UA '	Ukraine
'V '	Vatican City
'YU '	Yugoslavia
'UNK'	Unknown
'EC '	European Community
'EUR'	Rest of Europe
'WLD'	Rest of the world.

2.72. NationNumeric

Numerical reference to a country.

NationNumeric ::= INTEGER(0..255)

Value assignment:

-- No information available	(00)H,
-- Austria	(01)H,
-- Albania	(02)H,
-- Andorra	(03)H,
-- Armenia	(04)H,
-- Azerbaijan	(05)H,
-- Belgium	(06)H,
-- Bulgaria	(07)H,
-- Bosnia and Herzegovina	(08)H,
-- Belarus	(09)H,
-- Switzerland	(0A)H,
-- Cyprus	(0B)H,
-- Czech Republic	(0C)H,
-- Germany	(0D)H,
-- Denmark	(0E)H,
-- Spain	(0F)H,
-- Estonia	(10)H,
-- France	(11)H,
-- Finland	(12)H,
-- Liechtenstein	(13)H,
-- Faeroe Islands	(14)H,
-- United Kingdom	(15)H,
-- Georgia	(16)H,
-- Greece	(17)H,
-- Hungary	(18)H,
-- Croatia	(19)H,
-- Italy	(1A)H,
-- Ireland	(1B)H,
-- Iceland	(1C)H,
-- Kazakhstan	(1D)H,
-- Luxembourg	(1E)H,
-- Lithuania	(1F)H,
-- Latvia	(20)H,

-- Malta	(21)H,
-- Monaco	(22)H,
-- Republic of Moldova	(23)H,
-- Macedonia	(24)H,
-- Norway	(25)H,
-- Netherlands	(26)H,
-- Portugal	(27)H,
-- Poland	(28)H,
-- Romania	(29)H,
-- San Marino	(2A)H,
-- Russian Federation	(2B)H,
-- Sweden	(2C)H,
-- Slovakia	(2D)H,
-- Slovenia	(2E)H,
-- Turkmenistan	(2F)H,
-- Turkey	(30)H,
-- Ukraine	(31)H,
-- Vatican City	(32)H,
-- Yugoslavia	(33)H,
-- RFU	(34..FC)H,
-- European Community	(FD)H,
-- Rest of Europe	(FE)H,
-- Rest of the world	(FF)H

2.73. NoOfCalibrationRecords

Number of calibration records, a workshop card can store.

NoOfCalibrationRecords ::= INTEGER(0..255)

Value assignment: see paragraph 3.

2.74. NoOfCalibrationsSinceDownload

Counter indicating the number of calibrations performed with a workshop card since its last download (requirement 230).

NoOfCalibrationsSinceDownload ::= INTEGER(0..2¹⁶-1),

Value assignment: Not specified further.

2.75. NoOfCardPlaceRecords

Number of place records a driver or workshop card can store.

NoOfCardPlaceRecords ::= INTEGER(0..255)

Value assignment: see paragraph 3.

2.76. NoOfCardVehicleRecords

Number of vehicles used records a driver or workshop card can store.

NoOfCardVehicleRecords ::= INTEGER(0..2¹⁶-1)

Value assignment: see paragraph 3.

2.77. NoOfCompanyActivityRecords

Number of company activity records, a company card can store.

NoOfCompanyActivityRecords ::= INTEGER(0..2¹⁶-1)

Value assignment: see paragraph 3.

2.78. NoOfControlActivityRecords

Number of control activity records, a control card can store.

NoOfControlActivityRecords ::= INTEGER(0..2¹⁶-1)

Value assignment: see paragraph 3.

2.79. NoOfEventsPerType

Number of events per type of event a card can store.

NoOfEventsPerType ::= INTEGER(0..255)

Value assignment: see paragraph 3.

2.80. NoOfFaultsPerType

Number of faults per type of fault a card can store.

NoOfFaultsPerType ::= INTEGER(0..255)

Value assignment: see paragraph 3.

2.81. OdometerValueMidnight

The vehicle's odometer value at midnight on a given day (requirement 090).

OdometerValueMidnight ::= OdometerShort

Value assignment: not further specified.

2.82. OdometerShort

Odometer value of the vehicle in a short form.

OdometerShort ::= INTEGER(0..2²⁴-1)

Value assignment: Unsigned binary. Value in km in the operating range 0 to 9 999 999 km.

2.83. OverspeedNumber

Number of over speeding events since the last over speeding control.

OverspeedNumber ::= INTEGER(0..255)

Value assignment: 0 means that no over speeding event has occurred since the last over speeding control, 1 means that one over speeding event has occurred since the last over speeding control ... 255 means that 255 or more over speeding events have occurred since the last over speeding control.

2.84. PlaceRecord

Information related to a place where a daily work period begins or ends (requirements 087, 202, 221).

```
PlaceRecord ::= SEQUENCE {
    entryTime                TimeReal,
    entryTypeDailyWorkPeriod EntryTypeDailyWorkPeriod,
    dailyWorkPeriodCountry   NationNumeric,
    dailyWorkPeriodRegion    RegionNumeric,
    vehicleOdometerValue     OdometerShort
}
```

entryTime is a date and time related to the entry.

entryTypeDailyWorkPeriod is the type of entry.

dailyWorkPeriodCountry is the country entered.

dailyWorkPeriodRegion is the region entered.

vehicleOdometerValue is the odometer value at the time of place entry.

2.85. PreviousVehicleInfo

Information related to the vehicle previously used by a driver when inserting his card in a vehicle unit (requirement 081).

```
PreviousVehicleInfo ::= SEQUENCE {
    vehicleRegistrationIdentification    VehicleRegistrationIdentification,
    cardWithdrawalTime                  TimeReal
}
```

vehicleRegistrationIdentification is the VRN and the registering Member State of the vehicle.

cardWithdrawalTime is the card withdrawal date and time.

2.86. PublicKey

A public RSA key.

```
PublicKey ::= SEQUENCE {
    rsaKeyModulus                      RSAKeyModulus,
    rsaKeyPublicExponent                RSAKeyPublicExponent
}
```

rsaKeyModulus is the Modulus of the key pair.

rsaKeyPublicExponent is the public exponent of the key pair.

2.87. RegionAlpha

Alphabetic reference to a region within a specified country.

```
RegionAlpha ::= IA5STRING(SIZE(3))
```

Value assignment:

' ' ' No information available

Spain:

'AN '	Andalucía
'AR '	Aragón
'AST '	Asturias
'C '	Cantabria
'CAT '	Cataluña
'CL '	Castilla-León
'CM '	Castilla-La-Mancha
'CV '	Valencia
'EXT '	Extremadura
'G '	Galicia
'IB '	Baleares
'IC '	Canarias
'LR '	La Rioja
'M '	Madrid
'MU '	Murcia
'NA '	Navarra
'PV '	País Vasco

2.88. RegionNumeric

Numerical reference to a region within a specified country.

```
RegionNumeric ::= OCTET STRING (SIZE(1))
```

Value assignment:

'00'H No information available

Spain:

'01'H Andalucía
 '02'H Aragón
 '03'H Asturias
 '04'H Cantabria
 '05'H Cataluña
 '06'H Castilla-León
 '07'H Castilla-La-Mancha
 '08'H Valencia
 '09'H Extremadura
 '0A'H Galicia
 '0B'H Baleares
 '0C'H Canarias
 '0D'H La Rioja
 '0E'H Madrid
 '0F'H Murcia
 '10'H Navarra
 '11'H País Vasco

2.89. RSAKeyModulus

The modulus of a RSA key pair.

RSAKeyModulus ::= OCTET STRING (SIZE(128))

Value assignment: Unspecified.

2.90. RSAKeyPrivateExponent

The private exponent of a RSA key pair.

RSAKeyPrivateExponent ::= OCTET STRING (SIZE(128))

Value assignment: Unspecified.

2.91. RSAKeyPublicExponent

The public exponent of a RSA key pair.

RSAKeyPublicExponent ::= OCTET STRING (SIZE(8))

Value assignment: Unspecified.

2.92. SensorApprovalNumber

Type approval number of the sensor.

SensorApprovalNumber ::= IA5String(SIZE(8))

Value assignment: Unspecified.

2.93. SensorIdentification

Information, stored in a motion sensor, related to the identification of the motion sensor (requirement 077).

```
SensorIdentification ::= SEQUENCE {
    sensorSerialNumber          SensorSerialNumber,
    sensorApprovalNumber       SensorApprovalNumber,
    sensorSCIdentifier          SensorSCIdentifier,
    sensorOSIdentifier          SensorOSIdentifier
}
```

sensorSerialNumber is the extended serial number of the motion sensor (includes part number and manufacturer code).

sensorApprovalNumber is the approval number of the motion sensor.

sensorSCIdentifier is the identifier of the security component of the motion sensor.

sensorOSIdentifier is the identifier of the operating system of the motion sensor.

2.94. SensorInstallation

Information, stored in a motion sensor, related to the installation of the motion sensor (requirement 099).

```
SensorInstallation ::= SEQUENCE {
    sensorPairingDateFirst          SensorPairingDate,
    firstVuApprovalNumber          VuApprovalNumber,
    firstVuSerialNumber            VuSerialNumber,
    sensorPairingDateCurrent       SensorPairingDate,
    currentVuApprovalNumber        VuApprovalNumber,
    currentVUSerialNumber          VuSerialNumber
}
```

sensorPairingDateFirst is the date of the first pairing of the motion sensor with a vehicle unit.

firstVuApprovalNumber is the approval number of the first vehicle unit paired with the motion sensor.

firstVuSerialNumber is the serial number of the first vehicle unit paired with the motion sensor.

sensorPairingDateCurrent is the date of the current pairing of the motion sensor with the vehicle unit.

currentVuApprovalNumber is the approval number of the vehicle unit currently paired with the motion sensor.

currentVUSerialNumber is the serial number of the vehicle unit currently paired with the motion sensor.

2.95. SensorInstallationSecData

Information, stored in a workshop card, related to the security data needed for pairing motion sensors to vehicle units (requirement 214).

```
SensorInstallationSecData ::= TDesSessionKey
```

Value assignment: in accordance with ISO 16844-3.

2.96. SensorOSIdentifier

Identifier of the operating system of the motion sensor.

```
SensorOSIdentifier ::= IA5String(SIZE(2))
```

Value assignment: manufacturer specific.

2.97. SensorPaired

Information, stored in a vehicle unit, related to the identification of the motion sensor paired with the vehicle unit (requirement 079).

```
SensorPaired ::= SEQUENCE {
    sensorSerialNumber          SensorSerialNumber,
    sensorApprovalNumber        SensorApprovalNumber,
    sensorPairingDateFirst      SensorPairingDate
}
```

sensorSerialNumber is the serial number of the motion sensor currently paired with the vehicle unit.

sensorApprovalNumber is the approval number of the motion sensor currently paired with the vehicle unit.

sensorPairingDateFirst is the date of the first pairing with a vehicle unit of the motion sensor currently paired with the vehicle unit.

2.98. **SensorPairingDate**

Date of a pairing of the motion sensor with a vehicle unit.

SensorPairingDate ::= TimeReal

Value assignment: Unspecified.

2.99. **SensorSerialNumber**

Serial number of the motion sensor.

SensorSerialNumber ::= ExtendedSerialNumber

2.100. **SensorSCIdentifier**

Identifier of the security component of the motion sensor.

SensorSCIdentifier ::= IA5String(SIZE(8))

Value assignment: component manufacturer specific.

2.101. **Signature**

A digital signature.

Signature ::= OCTET STRING (SIZE(128))

Value assignment: in accordance with Appendix 11, "Common security mechanisms".

2.102. **SimilarEventsNumber**

The number of similar events for one given day (requirement 094).

SimilarEventsNumber ::= INTEGER(0..255)

Value assignment: 0 is not used, 1 means that only one event of that type have occurred and have been stored on that day, 2 means that 2 events of that type have occurred on that day (one only has been stored), ... 255 means that 255 or more events of that type have occurred on that day.

2.103. **SpecificConditionType**

Code identifying a specific condition (requirements 050b, 105a, 212a and 230a).

SpecificConditionType ::= INTEGER(0..255)

Value assignment:

'00'H	RFU
'01'H	Out of scope — Begin
'02'H	Out of scope — End
'03'H	Ferry/Train crossing
'04'H .. 'FF'H	RFU

2.104. **SpecificConditionRecord**

Information, stored in a driver card, a workshop card or a vehicle unit, related to a specific condition (requirements 105a, 212a and 230a).

```

SpecificConditionRecord ::= SEQUENCE {
    entryTime                TimeReal,
    specificConditionType    SpecificConditionType
}

```

entryTime is the date and time of the entry.

specificConditionType is the code identifying the specific condition.

2.105. Speed

Speed of the vehicle (km/h).

```
Speed ::= INTEGER(0..255)
```

Value assignment: kilometre per hour in the operational range 0 to 220 km/h.

2.106. SpeedAuthorised

Maximum authorised Speed of the vehicle (definition bb)).

```
SpeedAuthorised ::= Speed
```

2.107. SpeedAverage

Average speed in a previously defined duration (km/h).

```
SpeedAverage ::= Speed
```

2.108. SpeedMax

Maximum speed measured in a previously defined duration.

```
SpeedMax ::= Speed
```

2.109. TDesSessionKey

A triple DES session key.

```

TDesSessionKey ::= SEQUENCE {
    tDesKeyA                OCTET STRING (SIZE(8))
    tDesKeyB                OCTET STRING (SIZE(8))
}

```

Value assignment: not further specified.

2.110. TimeReal

Code for a combined date and time field, where the date and time are expressed as seconds past 00h.00m.00s. on 1 January 1970 GMT.

```
TimeReal{INTEGER:TimeRealRange} ::= INTEGER(0..TimeRealRange)
```

Value assignment — Octet Aligned: Number of seconds since midnight 1 January 1970 GMT.

The max. possible date/time is in the year 2106.

2.111. TyreSize

Designation of tyre dimensions.

```
TyreSize ::= IA5String(SIZE(15))
```

Value assignment: in accordance with Directive 92/23 (EEC) 31.3.1992, OJ L 129, p. 95.

2.112. VehicleIdentificationNumber

Vehicle Identification Number (VIN) referring to the vehicle as a whole, normally chassis serial number or frame number.

VehicleIdentificationNumber ::= IA5String(SIZE(17))

Value assignment: As defined in ISO 3779.

2.113. VehicleRegistrationIdentification

Identification of a vehicle, unique for Europe (VRN and Member State).

```
VehicleRegistrationIdentification ::= SEQUENCE {
    vehicleRegistrationNation      NationNumeric,
    vehicleRegistrationNumber      VehicleRegistrationNumber
}
```

vehicleRegistrationNation is the nation where the vehicle is registered.

vehicleRegistrationNumber is the registration number of the vehicle (VRN).

2.114. VehicleRegistrationNumber

Registration number of the vehicle (VRN). The registration number is assigned by the vehicle licensing authority.

```
VehicleRegistrationNumber ::= SEQUENCE {
    codePage                      INTEGER (0..255),
    vehicleRegNumber              OCTET STRING (SIZE(13))
}
```

codePage specifies the part of the ISO/IEC 8859 used to code the vehicleRegNumber,

vehicleRegNumber is a VRN coded in accordance with ISO/IEC 8859-codePage.

Value assignment: Country specific.

2.115. VuActivityDailyData

Information, stored in a VU, related to changes of activity and/or changes of driving status and/or changes of card status for a given calendar day (requirement 084) and to slots status at 00.00 that day.

```
VuActivityDailyData ::= SEQUENCE {
    noOfActivityChanges           INTEGER SIZE(0..1440),
    activityChangeInfos           SET SIZE(noOfActivityChanges) OF
    ActivityChangeInfo
}
```

noOfActivityChanges is the number of ActivityChangeInfo words in the activityChangeInfos set.

activityChangeInfos is the set of ActivityChangeInfo words stored in the VU for the day. It always includes two ActivityChangeInfo words giving the status of the two slots at 00.00 that day.

2.116. VuApprovalNumber

Type approval number of the vehicle unit.

VuApprovalNumber ::= IA5String(SIZE(8))

Value assignment: Unspecified.

2.117. VuCalibrationData

Information, stored in a vehicle unit, related to the calibrations of the recording equipment (requirement 098).

```
VuCalibrationData ::= SEQUENCE {
    noOfVuCalibrationRecords      INTEGER(0..255),
    vuCalibrationRecords          SET SIZE(noOfVuCalibrationRecords) OF
    VuCalibrationRecord
}
```

noOfVuCalibrationRecords is the number of records contained in the vuCalibrationRecords set.

vuCalibrationRecords is the set of calibration records.

2.118. VuCalibrationRecord

Information, stored in a vehicle unit, related a calibration of the recording equipment (requirement 098).

```
VuCalibrationRecord ::= SEQUENCE {
    calibrationPurpose          CalibrationPurpose,
    workshopName                Name,
    workshopAddress             Address,
    workshopCardNumber         FullCardNumber,
    workshopCardExpiryDate     TimeReal,
    vehicleIdentificationNumber VehicleIdentificationNumber,
    vehicleRegistrationIdentification VehicleRegistrationIdentification,
    wVehicleCharacteristicConstant W-VehicleCharacteristicConstant,
    kConstantOfRecordingEquipment K-ConstantOfRecordingEquipment,
    lTyreCircumference          L-TyreCircumference,
    tyreSize                    TyreSize,
    authorisedSpeed              SpeedAuthorised,
    oldOdometerValue            OdometerShort,
    newOdometerValue            OdometerShort,
    oldTimeValue                TimeReal,
    newTimeValue                TimeReal,
    nextCalibrationDate         TimeReal
}
```

calibrationPurpose is the purpose of the calibration.

workshopName, **workshopAddress** are the workshop name and address.

workshopCardNumber identifies the workshop card used during the calibration.

workshopCardExpiryDate is the card expiry date.

vehicleIdentificationNumber is the VIN.

vehicleRegistrationIdentification contains the VRN and registering Member State.

wVehicleCharacteristicConstant is the characteristic coefficient of the vehicle.

kConstantOfRecordingEquipment is the constant of the recording equipment.

lTyreCircumference is the effective circumference of the wheel tyres.

tyreSize is the designation of the dimension of the tyres mounted on the vehicle.

authorisedSpeed is the authorised speed of the vehicle.

oldOdometerValue, **newOdometerValue** are the old and new values of the odometer.

oldTimeValue, **newTimeValue** are the old and new values of date and time.

nextCalibrationDate is the date of the next calibration of the type specified in CalibrationPurpose to be carried out by the authorised inspection authority.

2.119. VuCardIWData

Information, stored in a vehicle unit, related to insertion and withdrawal cycles of driver cards or of workshop cards in the vehicle unit (requirement 081).

```
VuCardIWData ::= SEQUENCE {
    noOfIWRecords              INTEGER(0..216-1),
    vuCardIWRecords            SET SIZE(noOfIWRecords) OF
                                VuCardIWRecord
}
```

noOfIWRecords is the number of records in the set **vuCardIWRecords**.

vuCardIWRecords is a set of records related to card insertion withdrawal cycles.

2.120. **VuCardIWRecord**

Information, stored in a vehicle unit, related to an insertion and withdrawal cycle of a driver card or of a workshop card in the vehicle unit (requirement 081).

```
VuCardIWRecord ::= SEQUENCE {
    cardHolderName           HolderName,
    fullCardNumber           FullCardNumber,
    cardExpiryDate           TimeReal,
    cardInsertionTime        TimeReal,
    vehicleOdometerValueAtInsertion OdometerShort,
    cardSlotNumber           CardSlotNumber,
    cardWithdrawalTime       TimeReal,
    vehicleOdometerValueAtWithdrawal OdometerShort,
    previousVehicleInfo      PreviousVehicleInfo
    manualInputFlag          ManualInputFlag
}
```

cardHolderName is the driver or workshop card holder's surname and first names as stored in the card.

fullCardNumber is the type of card, its issuing Member State and its card number as stored in the card.

cardExpiryDate is the card's expiry date as stored in the card.

cardInsertionTime is the insertion date and time.

vehicleOdometerValueAtInsertion is the vehicle odometer value at card insertion.

cardSlotNumber is the slot in which the card is inserted.

cardWithdrawalTime is the withdrawal date and time.

vehicleOdometerValueAtWithdrawal is the vehicle odometer value at card withdrawal.

previousVehicleInfo contains information about the previous vehicle used by the driver, as stored in the card.

manualInputFlag is a flag identifying if the cardholder has manually entered driver activities at card insertion.

2.121. **VuCertificate**

Certificate of the public key of a vehicle unit.

```
VuCertificate ::= Certificate
```

2.122. **VuCompanyLocksData**

Information, stored in a vehicle unit, related to company locks (requirement 104).

```
VuCompanyLocksData ::= SEQUENCE {
    noOfLocks                INTEGER(0..20),
    vuCompanyLocksRecords    SET SIZE(noOfLocks) OF
                             VuCompanyLocksRecord
}
```

noOfLocks is the number of locks listed in **vuCompanyLocksRecords**.

vuCompanyLocksRecords is the set of company locks records.

2.123. VuCompanyLocksRecord

Information, stored in a vehicle unit, related to one company lock (requirement 104).

```
VuCompanyLocksRecord ::= SEQUENCE {
    lockInTime           TimeReal,
    lockOutTime          TimeReal,
    companyName          Name,
    companyAddress       Address,
    companyCardNumber    FullCardNumber
}
```

lockInTime, **lockOutTime** are the date and time of lock-in and lock-out.

companyName, **companyAddress** are the company name and address related with the lock-in.

companyCardNumber identifies the card used at lock-in.

2.124. VuControlActivityData

Information, stored in a vehicle unit, related to controls performed using this VU (requirement 102).

```
VuControlActivityData ::= SEQUENCE {
    noOfControls          INTEGER(0..20),
    vuControlActivityRecords SET SIZE(noOfControls) OF
                          VuControlActivityRecord
}
```

noOfControls is the number of controls listed in **vuControlActivityRecords**.

vuControlActivityRecords is the set of control activity records.

2.125. VuControlActivityRecord

Information, stored in a vehicle unit, related to a control performed using this VU (requirement 102).

```
VuControlActivityRecord ::= SEQUENCE {
    controlType           ControlType,
    controlTime           TimeReal,
    controlCardNumber     FullCardNumber,
    downloadPeriodBeginTime TimeReal,
    downloadPeriodEndTime TimeReal
}
```

controlType is the type of the control.

controlTime is the date and time of the control.

ControlCardNumber identifies the control card used for the control.

downloadPeriodBeginTime is the begin time of the downloaded period, in case of downloading.

downloadPeriodEndTime is the end time of the downloaded period, in case of downloading.

2.126. VuDataBlockCounter

Counter, stored in a card, identifying sequentially the insertion withdrawal cycles of the card in vehicle units.

```
VuDataBlockCounter ::= BCDString(SIZE(2))
```

Value assignment: Consecutive Number with max, value 9 999, starting again with 0.

2.127. VuDetailedSpeedBlock

Information, stored in a vehicle unit, related to the vehicle's detailed speed for a minute during which the vehicle has been moving (requirement 093).

```
VuDetailedSpeedBlock ::= SEQUENCE {
    speedBlockBeginDate          TimeReal,
    speedsPerSecond              SEQUENCE SIZE(60) OF Speed
}
```

speedBlockBeginDate is the date and time of the first speed value within the block.

speedsPerSecond is the chronological sequence of measured speeds every seconds for the minute starting at speedBlockBeginDate (included).

2.128. VuDetailedSpeedData

Information, stored in a vehicle unit, related to the detailed speed of the vehicle.

```
VuDetailedSpeedData ::= SEQUENCE {
    noOfSpeedBlocks              INTEGER(0..216-1),
    vuDetailedSpeedBlocks        SET SIZE(noOfSpeedBlocks) OF
    VuDetailedSpeedBlock
}
```

noOfSpeedBlocks is the number of speed blocks in the vuDetailedSpeedBlocks set.

vuDetailedSpeedBlocks is the set of detailed speed blocks.

2.129. VuDownloadablePeriod

Oldest and latest dates for which a vehicle unit holds data related to drivers activities (requirements 081, 084 or 087).

```
VuDownloadablePeriod ::= SEQUENCE {
    minDownloadableTime          TimeReal
    maxDownloadableTime          TimeReal
}
```

minDownloadableTime is the oldest card insertion or activity change or place entry date and time stored in the VU.

maxDownloadableTime is the latest card withdrawal or activity change or place entry date and time stored in the VU.

2.130. VuDownloadActivityData

Information, stored in a vehicle unit, related to its last download (requirement 105).

```
VuDownloadActivityData ::= SEQUENCE {
    downloadingTime              TimeReal,
    fullCardNumber               FullCardNumber,
    companyOrWorkshopName        Name
}
```

downloadingTime is the date and time of downloading.

fullCardNumber identifies the card used to authorise the download.

companyOrWorkshopName is the company or workshop name.

2.131. VuEventData

Information, stored in a vehicle unit, related to events (requirement 094 except over speeding event).

```
VuEventData ::= SEQUENCE {
    noOfVuEvents                 INTEGER(0..255),
    vuEventRecords               SET SIZE(noOfVuEvents) OF VuEventRecord
}
```

noOfVuEvents is the number of events listed in the vuEventRecords set.

vuEventRecords is a set of events records.

2.132. VuEventRecord

Information, stored in a vehicle unit, related to an event (requirement 094 except over speeding event).

```
VuEventRecord ::= SEQUENCE {
    eventType                EventFaultType,
    eventRecordPurpose       EventFaultRecordPurpose,
    eventBeginTime           TimeReal,
    eventEndTime             TimeReal,
    cardNumberDriverSlotBegin FullCardNumber,
    cardNumberCodriverSlotBegin FullCardNumber,
    cardNumberDriverSlotEnd  FullCardNumber,
    cardNumberCodriverSlotEnd FullCardNumber,
    similarEventsNumber      SimilarEventsNumber
}
```

eventType is the type of the event.

eventRecordPurpose is the purpose for which this event has been recorded.

eventBeginTime is the date and time of beginning of event.

eventEndTime is the date and time of end of event.

cardNumberDriverSlotBegin identifies the card inserted in the driver slot at the beginning of the event.

cardNumberCodriverSlotBegin identifies the card inserted in the co-driver slot at the beginning of the event.

cardNumberDriverSlotEnd identifies the card inserted in the driver slot at the end of the event.

cardNumberCodriverSlotEnd identifies the card inserted in the co-driver slot at the end of the event.

similarEventsNumber is the number of similar events that day.

This sequence can be used for all events other than over speeding events.

2.133. VuFaultData

Information, stored in a vehicle unit, related to faults (requirement 096).

```
VuFaultData ::= SEQUENCE {
    noOfVuFaults            INTEGER(0..255),
    vuFaultRecords          SET SIZE(noOfVuFaults) OF VuFaultRecord
}
```

noOfVuFaults is the number of faults listed in the vuFaultRecords set.

vuFaultRecords is a set of faults records.

2.134. VuFaultRecord

Information, stored in a vehicle unit, related to a fault (requirement 096).

```
VuFaultRecord ::= SEQUENCE {
    faultType                EventFaultType,
    faultRecordPurpose       EventFaultRecordPurpose,
    faultBeginTime           TimeReal,
    faultEndTime             TimeReal,
    cardNumberDriverSlotBegin FullCardNumber,
    cardNumberCodriverSlotBegin FullCardNumber,
    cardNumberDriverSlotEnd  FullCardNumber,
    cardNumberCodriverSlotEnd FullCardNumber
}
```

faultType is the type of recording equipment fault.

faultRecordPurpose is the purpose for which this fault has been recorded.

faultBeginTime is the date and time of beginning of fault.

faultEndTime is the date and time of end of fault.

cardNumberDriverSlotBegin identifies the card inserted in the driver slot at the beginning of the fault.

cardNumberCodriverSlotBegin identifies the card inserted in the co-driver slot at the beginning of the fault.

cardNumberDriverSlotEnd identifies the card inserted in the driver slot at the end of the fault.

cardNumberCodriverSlotEnd identifies the card inserted in the co-driver slot at the end of the fault.

2.135. VuIdentification

Information, stored in a vehicle unit, related to the identification of the vehicle unit (requirement 075).

```
VuIdentification ::= SEQUENCE {
    vuManufacturerName          VuManufacturerName,
    vuManufacturerAddress      VuManufacturerAddress,
    vuPartNumber               VuPartNumber,
    vuSerialNumber             VuSerialNumber,
    vuSoftwareIdentification    VuSoftwareIdentification,
    vuManufacturingDate        VuManufacturingDate,
    vuApprovalNumber           VuApprovalNumber
}
```

vuManufacturerName is the name of the manufacturer of the vehicle unit.

vuManufacturerAddress is the address of the manufacturer of the vehicle unit.

vuPartNumber is the part number of the vehicle unit.

vuSerialNumber is the serial number of the vehicle unit.

vuSoftwareIdentification identifies the software implemented in the vehicle unit.

vuManufacturingDate is the manufacturing date of the vehicle unit.

vuApprovalNumber is the type approval number of the vehicle unit.

2.136. VuManufacturerAddress

Address of the manufacturer of the vehicle unit.

```
VuManufacturerAddress ::= Address
```

Value assignment: Unspecified.

2.137. VuManufacturerName

Name of the manufacturer of the vehicle unit.

```
VuManufacturerName ::= Name
```

Value assignment: Unspecified.

2.138. VuManufacturingDate

Date of manufacture of the vehicle unit.

```
VuManufacturingDate ::= TimeReal
```

Value assignment: Unspecified.

2.139. VuOverSpeedingControlData

Information, stored in a vehicle unit, related to over speeding events since the last over speeding control (requirement 095).

```
VuOverSpeedingControlData ::= SEQUENCE {
    lastOverspeedControlTime      TimeReal,
    firstOverspeedSince           TimeReal,
    numberOfOverspeedSince       OverspeedNumber
}
```

lastOverspeedControlTime is the date and time of the last over speeding control.

firstOverspeedSince is the date and time of the first over speeding following this over speeding control.

numberOfOverspeedSince is the number of over speeding events since the last over speeding control.

2.140. VuOverSpeedingEventData

Information, stored in a vehicle unit, related to over speeding events (requirement 094).

```
VuOverSpeedingEventData ::= SEQUENCE {
    noOfVuOverSpeedingEvents      INTEGER(0..255),
    vuOverSpeedingEventRecords    SET SIZE(noOfVuOverSpeedingEvents) OF
                                   VuOverSpeedingEventRecord
}
```

noOfVuOverSpeedingEvents is the number of events listed in the vuOverSpeedingEventRecords set.

vuOverSpeedingEventRecords is a set of over speeding events records.

2.141. VuOverSpeedingEventRecord

Information, stored in a vehicle unit, related to over speeding events (requirement 094).

```
VuOverSpeedingEventRecord ::= SEQUENCE {
    eventType                     EventFaultType,
    eventRecordPurpose           EventFaultRecordPurpose,
    eventBeginTime               TimeReal,
    eventEndTime                 TimeReal,
    maxSpeedValue                SpeedMax,
    averageSpeedValue            SpeedAverage,
    cardNumberDriverSlotBegin    FullCardNumber,
    similarEventsNumber          SimilarEventsNumber
}
```

eventType is the type of the event.

eventRecordPurpose is the purpose for which this event has been recorded.

eventBeginTime is the date and time of beginning of event.

eventEndTime is the date and time of end of event.

maxSpeedValue is the maximum speed measured during the event.

averageSpeedValue is the arithmetic average speed measured during the event.

cardNumberDriverSlotBegin identifies the card inserted in the driver slot at the beginning of the event.

similarEventsNumber is the number of similar events that day.

2.142. VuPartNumber

Part number of the vehicle unit.

```
VuPartNumber ::= IA5String(SIZE(16))
```

Value assignment: VU manufacturer specific.

2.143. VuPlaceDailyWorkPeriodData

Information, stored in a vehicle unit, related to places where drivers begin or end a daily work periods (requirement 087).

```
VuPlaceDailyWorkPeriodData ::= SEQUENCE {
    noOfPlaceRecords          INTEGER(0..255),
    vuPlaceDailyWorkPeriodRecords SET SIZE(noOfPlaceRecords) OF
                                VuPlaceDailyWorkPeriodRecord
}
```

noOfPlaceRecords is the number of records listed in the vuPlaceDailyWorkPeriodRecords set.

vuPlaceDailyWorkPeriodRecords is a set of place related records.

2.144. VuPlaceDailyWorkPeriodRecord

Information, stored in a vehicle unit, related to a place where a driver begins or ends a daily work period (requirement 087).

```
VuPlaceDailyWorkPeriodRecord ::= SEQUENCE {
    fullCardNumber            FullCardNumber,
    placeRecord               PlaceRecord
}
```

fullCardNumber is the driver's card type, card issuing Member State and card number.

placeRecord contains the information related to the place entered.

2.145. VuPrivateKey

The private key of a vehicle unit.

```
VuPrivateKey ::= RSAKeyPrivateExponent
```

2.146. VuPublicKey

The public key of a vehicle unit.

```
VuPublicKey ::= PublicKey
```

2.147. VuSerialNumber

Serial number of the vehicle unit (requirement 075).

```
VuSerialNumber ::= ExtendedSerialNumber
```

2.148. VuSoftInstallationDate

Date of installation of the vehicle unit software version.

```
VuSoftInstallationDate ::= TimeReal
```

Value assignment: Unspecified.

2.149. VuSoftwareIdentification

Information, stored in a vehicle unit, related to the software installed.

```
VuSoftwareIdentification ::= SEQUENCE {
    vuSoftwareVersion          VuSoftwareVersion,
    vuSoftInstallationDate     VuSoftInstallationDate
}
```

vuSoftwareVersion is the software version number of the Vehicle Unit.

vuSoftInstallationDate is the software version installation date.

2.150. VuSoftwareVersion

Software version number of the vehicle unit.

```
VuSoftwareVersion ::= IA5String(SIZE(4))
```

Value assignment: Unspecified.

2.151. VuSpecificConditionData

Information, stored in a vehicle unit, related to specific conditions.

```
VuSpecificConditionData ::= SEQUENCE {
    noOfSpecificConditionRecords      INTEGER(0..216-1)
    specificConditionRecords          SET SIZE (noOfSpecificConditionRecords)
                                     OF SpecificConditionRecord
}
```

noOfSpecificConditionRecords is the number of records listed in the specificConditionRecords set.

specificConditionRecords is a set of specific conditions related records.

2.152. VuTimeAdjustmentData

Information, stored in a vehicle unit, related to time adjustments performed outside the frame of a regular calibration (requirement 101).

```
VuTimeAdjustmentData ::= SEQUENCE {
    noOfVuTimeAdjRecords              INTEGER(0..6),
    vuTimeAdjustmentRecords          SET SIZE(noOfVuTimeAdjRecords) OF
                                     VuTimeAdjustmentRecords
}
```

noOfVuTimeAdjRecords is the number of records in vuTimeAdjustmentRecords.

vuTimeAdjustmentRecords is a set of time adjustment records.

2.153. VuTimeAdjustmentRecord

Information, stored in a vehicle unit, related to a time adjustment performed outside the frame of a regular calibration (requirement 101).

```
VuTimeAdjustmentRecord ::= SEQUENCE {
    oldTimeValue                      TimeReal,
    newTimeValue                      TimeReal,
    workshopName                      Name,
    workshopAddress                   Address,
    workshopCardNumber                FullCardNumber
}
```

oldTimeValue, **newTimeValue** are the old and new values of date and time.

workshopName, **workshopAddress** are the workshop name and address.

workshopCardNumber identifies the workshop card used to perform the time adjustment.

2.154. W-VehicleCharacteristicConstant

Characteristic coefficient of the vehicle (definition k).

```
W-VehicleCharacteristicConstant ::= INTEGER(0..216-1)
```

Value assignment: Impulses per kilometre in the operating range 0 to 64 255 pulses/km.

2.155. WorkshopCardApplicationIdentification

Information, stored in a workshop card related to the identification of the application of the card (requirement 190).

```
WorkshopCardApplicationIdentification ::= SEQUENCE {
    typeOfTachographCardId           EquipmentType,
    cardStructureVersion              CardStructureVersion,
    noOfEventsPerType                 NoOfEventsPerType,
    noOfFaultsPerType                 NoOfFaultsPerType,
    activityStructureLength            CardActivityLengthRange,
    noOfCardVehicleRecords            NoOfCardVehicleRecords,
    noOfCardPlaceRecords              NoOfCardPlaceRecords,
    noOfCalibrationRecords            NoOfCalibrationRecords
}
```

typeOfTachographCardId is specifying the implemented type of card.

cardStructureVersion is specifying the the version of the structure that is implemented in the card.

noOfEventsPerType is the number of events per type of event the card can record.

noOfFaultsPerType is the number of faults per type of fault the card can record.

activityStructureLength indicates the number of bytes available for storing activity records.

noOfCardVehicleRecords is the number of vehicle records the card can contain.

noOfCardPlaceRecords is the number of places the card can record.

noOfCalibrationRecords is the number of calibration records the card can store.

2.156. WorkshopCardCalibrationData

Information, stored in a workshop card, related to workshop activity performed with the card (requirements 227 and 229).

```
WorkshopCardCalibrationData ::= SEQUENCE {
    calibrationTotalNumber            INTEGER(0..216-1),
    calibrationPointerNewestRecord    INTEGER(0..NoOfCalibrationRecords-1),
    calibrationRecords                SET SIZE(NoOfCalibrationRecords) OF
                                        WorkshopCardCalibrationRecord
}
```

calibrationTotalNumber is the total number of calibrations performed with the card.

calibrationPointerNewestRecord is the index of the last updated calibration record.

Value assignment: Number corresponding to the numerator of the calibration record, beginning with "0" for the first occurrence of the calibration records in the structure.

calibrationRecords is the set of records containing calibration and/or time adjustment information.

2.157. WorkshopCardCalibrationRecord

Information, stored in a workshop card, related to a calibration performed with the card (requirement 227).

```
WorkshopCardCalibrationRecord ::= SEQUENCE {
    calibrationPurpose                CalibrationPurpose,
    vehicleIdentificationNumber        VehicleIdentificationNumber,
    vehicleRegistration                VehicleRegistrationIdentification,
    wVehicleCharacteristicConstant     W-VehicleCharacteristicConstant,
    kConstantOfRecordingEquipment      K-ConstantOfRecordingEquipment,
    lTyreCircumference                 L-TyreCircumference,
    tyreSize                            TyreSize,
```

authorisedSpeed	SpeedAuthorised,
oldOdometerValue	OdometerShort,
newOdometerValue	OdometerShort,
oldTimeValue	TimeReal,
newTimeValue	TimeReal,
nextCalibrationDate	TimeReal,
vuPartNumber	VuPartNumber,
vuSerialNumber	VuSerialNumber,
sensorSerialNumber	SensorSerialNumber

}

calibrationPurpose is the purpose of the calibration.

vehicleIdentificationNumber is the VIN.

vehicleRegistration contains the VRN and registering Member State.

wVehicleCharacteristicConstant is the characteristic coefficient of the vehicle.

kConstantOfRecordingEquipment is the constant of the recording equipment.

lTyreCircumference is the effective circumference of the wheel tyres.

tyreSize is the designation of the dimensions of the tyres mounted on the vehicle.

authorisedSpeed is the maximum authorised speed of the vehicle.

oldOdometerValue, **newOdometerValue** are the old and new values of the odometer.

oldTimeValue, **newTimeValue** are the old and new values of date and time.

nextCalibrationDate is the date of the next calibration of the type specified in CalibrationPurpose to be carried out by the authorised inspection authority.

vuPartNumber, **vuSerialNumber** and **sensorSerialNumber** are the data elements for recording equipment identification.

2.158. WorkshopCardHolderIdentification

Information, stored in a workshop card, related to the identification of the cardholder (requirement 216).

```
WorkshopCardHolderIdentification ::= SEQUENCE {
    workshopName          Name,
    workshopAddress       Address,
    cardHolderName        HolderName,
    cardHolderPreferredLanguage Language
}
```

workshopName is name of the workshop of the card holder.

workshopAddress is the address of the workshop of the card holder.

cardHolderName is the name and first name(s) of the holder (e.g. the name of the mechanic).

cardHolderPreferredLanguage is the preferred language of the card holder.

2.159. mWorkshopCardPIN

Personal identification number of the Workshop Card (requirement 213).

```
WorkshopCardPIN ::= IA5String(SIZE(8))
```

Value assignment: The PIN known to the cardholder, right padded with "FF" bytes up to 8 bytes.

3. VALUE AND SIZE RANGE DEFINITIONS

Definition of variable values used for definitions in paragraph 2.

TimeRealRange ::= $2^{32}-1$

3.1. Definitions for the Driver Card:

Name of the variable value	Min	Max
CardActivityLengthRange	5 544 bytes (28 days 93 activity changes per day)	13 776 bytes (28 days 240 activity changes per day)
NoOfCardPlaceRecords	84	112
NoOfCardVehicleRecords	84	200
NoOfEventsPerType	6	12
NoOfFaultsPerType	12	24

3.2. Definitions for the Workshop Card:

Name of the variable value	Min	Max.
CardActivityLengthRange	198 bytes (1 day 93 activity changes)	492 bytes (1 day 240 activity changes)
NoOfCardPlaceRecords	6	8
NoOfCardVehicleRecords	4	8
NoOfEventsPerType	3	3
NoOfFaultsPerType	6	6
NoOfCalibrationRecords	88	255

3.3. Definitions for the Control Card:

Name of the variable value	Min	Max
NoOfControlActivityRecords	230	520

3.4. Definitions for the Company Card:

Name of the variable value	Min	Max
NoOfCompanyActivityRecords	230	520

4. CHARACTER SETS

IA5Strings use the ASCII characters as defined by ISO/IEC 8824-1. For readability and for easy referencing the value assignment is given below. The ISO/IEC 8824-1 supersedes this informative note in case of discrepancy.

```
! " # $ % & ' ( ) * + , - . / 0 1 2 3 4 5 6 7 8 9 : ; < = > ?
@ A B C D E F G H I J K L M N O P Q R S T U V W X Y Z [ \ ] ^ _
` a b c d e f g h i j k l m n o p q r s t u v w x y z { | } ~
```

Other character strings (Address, Name, VehicleRegistrationNumber) use, in addition, the characters defined by the codes 192 to 255 of ISO/IEC 8859-1 (Latin1 character set) or ISO/IEC 8859-7 (Greek character set):

5. ENCODING

When encoded with ASN.1 encoding rules, all data types defined shall be encoded according to ISO/IEC 8825-2, aligned variant.

Appendix 2

TACHOGRAPH CARDS SPECIFICATION

1. INTRODUCTION

1.1. Abbreviations

For the purpose of this appendix, the following abbreviations apply.

AC	Access conditions
AID	Application Identifier
ALW	Always
APDU	Application Protocol Data Unit (structure of a command)
ATR	Answer To Reset
AUT	Authenticated
C6, C7	Contacts No 6 and 7 of the card as described in ISO/IEC 7816-2
cc	clock cycles
CHV	Card holder Verification Information
CLA	Class byte of an APDU command
DF	Dedicated File. A DF can contain other files (EF or DF)
EF	Elementary File
ENC	Encrypted: Access is possible only by encoding data
etu	elementary time unit
IC	Integrated Circuit
ICC	Integrated Circuit Card
ID	Identifier
IFD	Interface Device
IFS	Information Field Size
IFSC	Information Field Size for the card
IFSD	Information Field Size Device (for the Terminal)
INS	Instruction byte of an APDU command
Lc	Length of the input data for a APDU command
Le	Length of the expected data (output data for a command)
MF	Master File (root DF)
P1-P2	Parameter bytes
NAD	Node Address used in T=1 protocol
NEV	Never
PIN	Personal Identification Number
PRO SM	Protected with secure messaging
PTS	Protocol Transmission Selection
RFU	Reserved for Future Use

RST	Reset (of the card)
SM	Secure Messaging
SW1-SW2	Status bytes
TS	Initial ATR character
VPP	Programming Voltage
XXh	Value XX in hexadecimal notation
	Concatenation symbol 03 04=0304

1.2. References

The following references are used in this Appendix:

- EN 726-3 Identification cards systems — Telecommunications integrated circuit(s) cards and terminals — Part 3: Application independent card requirements. December 1994.
- ISO/IEC 7816-2 Information technology — Identification cards — Integrated circuit(s) cards with contacts — Part 2: Dimensions and location of the contacts. First edition: 1999.
- ISO/IEC 7816-3 Information technology — Identification cards — Integrated circuit(s) cards with contacts — Part 3: Electronic signals and transmission protocol. Edition 2: 1997.
- ISO/IEC 7816-4 Information technology — Identification cards — Integrated circuit(s) cards with contacts — Part 4: Interindustry commands for interexchange. First edition: 1995 + Amendment 1: 1997.
- ISO/IEC 7816-6 Information technology — Identification cards — Integrated circuit(s) cards with contacts — Part 6: Interindustry data elements. First Edition: 1996 + Cor 1: 1998.
- ISO/IEC 7816-8 Information technology — Identification cards — Integrated circuit(s) cards with contacts — Part 8: Security related interindustry commands. First Edition: 1999.
- ISO/IEC 9797 Information technology — Security techniques — Data integrity mechanism using a cryptographic check function employing a block cipher algorithm. Edition 2: 1994.

2. ELECTRICAL AND PHYSICAL CHARACTERISTICS

TCS_200 All electronic signals shall be in accordance with ISO/IEC 7816-3 unless specified otherwise.

TCS_201 The location and dimensions of the card contacts shall comply with the ISO/IEC 7816-2.

2.1. Supply Voltage and Current Consumption

TCS_202 The card shall work according to specifications within the consumption limits specified in ISO/IEC 7816-3.

TCS_203 The card shall work with $V_{cc} = 3\text{ V (+/- } 0,3\text{ V)}$ or with $V_{cc} = 5\text{ V (+/- } 0,5\text{ V)}$.

Voltage selection shall be performed according to ISO/IEC 7816-3.

2.2. Programming Voltage V_{pp}

TCS_204 The card shall not require a programming voltage at pin C6. It is expected that pin C6 is not connected in an IFD. Contact C6 may be connected to V_{cc} in the card but shall not be connected to ground. This voltage should not be interpreted in any case.

2.3. Clock generation and Frequency

TCS_205 The card shall operate within a frequency range of 1 to 5 MHz. Within one card session the clock frequency may vary $\pm 2\%$. The clock frequency is generated by the Vehicle Unit and not the card itself. The duty cycle may vary between 40 and 60 %.

TCS_206 Under conditions contained into the card file EF_{ICC} , the external clock can be stopped. The first byte of the EF_{ICC} file body codes the Clockstop mode conditions (see EN 726-3 for further details):

Low	High		
Bit 3	Bit 2	Bit 1	
0	0	1	Clockstop allowed, no preferred level
0	1	1	Clockstop allowed, high level preferred
1	0	1	Clockstop allowed, low level preferred
0	0	0	Clockstop not allowed
0	1	0	Clockstop only allowed on high level
1	0	0	Clockstop only allowed on low level

Bits 4 to 8 are not used.

2.4. I/O Contact

TCS_207 The I/O contact C7 is used to receive data from and to transmit data to the IFD. During operation only either the card or the IFD shall be in transmit mode. Should both units be in transmit mode no damage shall occur to the card. Unless transmitting, the card shall enter the reception mode.

2.5. States of the Card

TCS_208 The card works in two states while the supply voltage is applied:

- Operation state while executing commands or interfacing with Digital Unit,
- Idle state at all other times; in this state all data shall be retained by the card.

3. HARDWARE AND COMMUNICATION

3.1. Introduction

This paragraph describes the minimum functionality required by Tachograph cards and VUs to ensure correct operation and interoperability.

Tachograph cards are as compliant as possible with the available ISO/IEC applicable norms (especially ISO/IEC 7816). However, commands and protocols are fully described in order to specify some restricted usage or some differences if they exist. The commands specified are fully compliant with the referred norms except where indicated.

3.2. Transmission Protocol

TCS_300 The Transmission protocol shall be compliant with ISO/IEC 7816-3. In particular, the VU shall recognise waiting time extensions sent by the card.

3.2.1. Protocols

TCS_301 The card shall provide both protocol T=0 and protocol T=1.

TCS_302 T=0 is the default protocol, a PTS command is therefore necessary to change the protocol to T=1.

TCS_303 Devices shall support direct convention in both protocols: the direct convention is hence mandatory for the card.

TCS_304 The Information Field Size Card byte shall be presented at the ATR in character TA3. This value shall be at least 'F0h' (= 240 bytes).

The following restrictions apply to the protocols:

TCS_305 T=0

- The interface device shall support an answer on I/O after the rising edge of the signal on RST from 400 cc.
- The interface device shall be able to read characters separated with 12 etu.
- The interface device shall read an erroneous character and its repetition if separated with 13 etu. If an erroneous character is detected, the Error signal on I/O can occur between 1 etu and 2 etu. The device shall support a 1 etu delay.
- The interface device shall accept a 33 bytes ATR (TS+32)
- If TC1 is present in the ATR, the Extra Guard Time shall be present for characters sent by the interface device although characters sent by the card can still be separated with 12 etu. This is also true for the ACK character sent by the card after a P3 character emitted by the interface device.
- The interface device shall take into account a NUL character emitted by the card.
- The interface device shall accept the complementary mode for ACK.
- The get-response command cannot be used in chaining mode to get a data which length could exceed 255 bytes.

TCS_306 T=1

- NAD byte: not used (NAD shall be set to '00').
- S-block ABORT: not used.
- S-block VPP state error: not used.
- The total chaining length for a data field will not exceed 255 bytes (to be ensured by the IFD).
- The Information Field Size Device (IFSD) shall be indicated by the IFD immediately after the ATR: the IFD shall transmit the S-Block IFS request after the ATR and the card shall send back S-Block IFS. The recommended value for IFSD is 254 bytes.
- The card will not ask for an IFS readjustment.

3.2.2. ATR

TCS_307 The device checks ATR bytes, according to ISO/IEC 7816-3. No verification shall be done on ATR Historical Characters.

Example of Basic Biprotocol ATR according to ISO/IEC 7816-3

Character	Value	Remarks
TS	'3Bh'	Indicates direct convention
T0	'85h'	TD1 present; 5 historical bytes are presents
TD1	'80h'	TD2 present; T=0 to be used
TD2	'11h'	TA3 present; T=1 to be used
TA3	'XXh' (mind. 'F0h')	Information Field Size Card (IFSC)
TH1 bis TH5	'XXh'	Historical characters
TCK	'XXh'	Check Character (exclusive OR)

TCS_308 After the Answer To Reset (ATR), the Master File (MF) is implicitly selected and becomes the Current Directory.

3.2.3. PTS

TCS_309 The default Protocol is T=0. To set the T=1 protocol, a PTS (also known as PPS) must be sent to the card by the device.

TCS_310 As both T=0 and T=1 protocols are mandatory for the card, the basic PTS for protocol switching is mandatory for the card.

The PTS can be used, as indicated in ISO/IEC 7816-3, to switch to higher baud rates than the default one proposed by the card in the ATR if any (TA(1) byte).

Higher baud rates are optional for the card.

TCS_311 If no other baud rate than the default one are supported (or if the selected baud rate is not supported), the card shall respond to the PTS correctly according to ISO/IEC 7816-3 by omitting the PPS1 byte.

Examples of basic PTS for protocol selection are the following:

Character	Value	Remarks
PPSS	'FFh'	The Initiate Character
PPS0	'00h' or '01h'	PPS1 to PPS3 are not present; '00h' to select T0, '01h' to select T1
PK	'XXh'	Check Character: 'XXh' = 'FFh' if PPS0 = '00h' 'XXh' = 'FEh' if PPS0 = '01h'

3.3. Access Conditions (AC)

Access Conditions (AC) for the UPDATE_BINARY and READ_BINARY commands are defined for each Elementary File.

TCS_312 The AC of the current file must be met before accessing the file via these commands.

The definitions of the available access conditions are the following:

- ALW: The action is always possible and can be executed without any restriction.
- NEV: The action is never possible.
- AUT: The right corresponding a successful external authentication must be opened up (done by the EXTERNAL_AUTHENTICATE command).
- PRO SM: Command must be transmitted with a cryptographic checksum using secure messaging (See Appendix 11).
- AUT and PRO SM (combined)

On the processing commands (UPDATE_BINARY and READ_BINARY), the following access conditions can be set in the card:

	UPDATE_BINARY	READ_BINARY
ALW	Yes	Yes
NEV	Yes	Yes
AUT	Yes	Yes
PRO SM	Yes	No
AUT and PRO SM	Yes	No

The PRO SM access condition is not available for the READ_BINARY command. It means that the presence of a cryptographic checksum for a READ command is never mandatory. However, using the value 'OC' for the class, it is possible to use the READ_BINARY command with secure messaging, as described in paragraph 3.6.2.

3.4. Data encryption

When confidentiality of data to be read from a file needs to be protected, the file is marked as "Encrypted". Encryption is performed using secure messaging (See Appendix 11).

3.5. Commands and error codes overview

Commands and file organisation are deduced from and complies with ISO/IEC 7816-4.

TCS_313 This section describes the following APDU command-response pairs:

Command	INS
SELECT FILE	A4
READ BINARY	B0
UPDATE BINARY	D6
GET CHALLENGE	84
VERIFY	20
GET RESPONSE	C0
PERFORM SECURITY OPERATION: VERIFY CERTIFICATE COMPUTE DIGITAL SIGNATURE VERIFY DIGITAL SIGNATURE HASH	2A
INTERNAL AUTHENTICATE	88
EXTERNAL AUTHENTICATE	82
MANAGE SECURITY ENVIRONMENT: SETTING A KEY	22
PERFORM HASH OF FILE	2A

TCS_314 The status word SW1 SW2 are returned in any response message and denote the processing state of the command.

SW1	SW2	Meaning
90	00	Normal processing
61	XX	Normal processing. XX = number of response bytes available
62	81	Warning processing. Part of returned data may be corrupted
63	CX	Wrong CHV (PIN). Remaining attempts counter provided by 'X'
64	00	Execution error — State of non-volatile memory unchanged. Integrity error
65	00	Execution error — State of non-volatile memory changed
65	81	Execution error — State of non-volatile memory changed — Memory failure
66	88	Security error: wrong Cryptographic checksum (during Secure Messaging) or wrong certificate (during certificate verification) or wrong cryptogram (during external authentication) or wrong signature (during signature verification)
67	00	Wrong length (wrong Lc or Le)
69	00	Forbidden command (no response available in T=0)
69	82	Security status not satisfied
69	83	Authentication method blocked
69	85	Conditions of use not satisfied
69	86	Command not allowed (no current EF)
69	87	Expected Secure Messaging Data Objects missing
69	88	Incorrect Secure Messaging Data Objects
6A	82	File not found
6A	86	Wrong parameters P1-P2
6A	88	Referenced data not found
6B	00	Wrong parameters (offset outside the EF)

SW1	SW2	Meaning
6C	XX	Wrong length, SW2 indicates the exact length. No data field is returned
6D	00	Instruction code not supported or invalid
6E	00	Class not supported
6F	00	Other checking errors

3.6. Commands description

The mandatory commands for the Tachograph cards are described in this chapter.

Additional relevant details, related to cryptographic operations involved, are given in Appendix 11 Common security mechanisms.

All commands are described independently of the used protocol (T=0 or T=1). The APDU bytes CLA, INS, P1, P2, Lc and Le are always indicated. If Lc or Le is not needed for the described command, the associated length, value and description are empty.

TCS_315 If both length bytes (Lc and Le) are requested, the described command has to be split in two parts if the IFD is using protocol T=0: the IFD sends the command as described with P3=Lc + data and then sends a GET_RESPONSE (see § 3.6.6) command with P3=Le.

TCS_316 If both length bytes are requested, and Le=0 (secure messaging):

- When using protocol T=1, the card shall answer to Le=0 by sending all available output data.
- When using protocol T=0, the IFD shall send the first command with P3=Lc + data, the card shall answer (to this implicit Le=0) by the Status bytes '61La', where La is the number of response bytes available. The IFD shall then generate a GET RESPONSE command with P3=La to read the data.

3.6.1. Select File

This command is compliant with ISO/IEC 7816-4, but has a restricted usage compared to the command defined in the norm.

The SELECT FILE command is used:

- to select an application DF (selection by name must be used)
- to select an elementary file corresponding to the submitted file ID

3.6.1.1. Selection by name (AID)

This command allows to select an application DF in the card.

TCS_317 This command can be performed from anywhere in the file structure (after the ATR or at anytime).

TCS_318 The selection of an application resets the current security environment. After performing the application selection, no current public key is selected anymore and the former session key is no longer available for secure messaging. The AUT access condition is also lost.

TCS_319 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	
INS	1	'A4h'	
P1	1	'04h'	Selection by name (AID)
P2	1	'0Ch'	No response expected
Lc	1	'NNh'	Number of bytes sent to the card (length of the AID): '06h' for the Tachograph application
#6-#(5+NN)	NN	'XX..XXh'	AID: 'FF 54 41 43 48 4F' for the Tachograph application

No response to the SELECT FILE command is needed (Le absent in T=1, or no response asked in T=0).

TCS_320 Response Message (no response asked)

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If the application corresponding with the AID is not found, the processing state returned is '6A82'.
- In T=1, if the byte Le is present, the state returned is '6700'.
- In T=0, if a response is asked after the SELECT FILE command, the state returned is '6900'.
- If the selected application is considered corrupted (integrity error is detected within the file attributes), the processing state returned is '6400' or '6581'.

3.6.1.2. Selection of an Elementary File using its File Identifier

TCS_321 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	
INS	1	'A4h'	
P1	1	'02h'	Selection of an EF under the current DF
P2	1	'0Ch'	No response expected
Lc	1	'02h'	Number of bytes sent to the card
#6-#7	2	'XXXXh'	File Identifier

No response to the SELECT FILE command is needed (Le absent in T=1, or no response asked in T=0).

TCS_322 Response Message (no response asked)

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If the file corresponding with the file identifier is not found, the processing state returned is '6A82'.
- In T=1, if the byte Le is present, the state returned is '6700'.
- In T=0, if a response is asked after the SELECT FILE command, the state returned is '6900'.
- If the selected file is considered corrupted (integrity error is detected within the file attributes), the processing state returned is '6400' or '6581'.

3.6.2. Read Binary

This command is compliant with ISO/IEC 7816-4, but has a restricted usage compared to the command defined in the norm.

The Read Binary command is used to read data from a transparent file.

The response of the card consists of returning the data read, optionally encapsulated in a secure messaging structure.

TCS_323 The command can be performed only if the security status satisfies the security attributes defined for the EF for the READ function.

3.6.2.1. *Command without secure messaging*

This command enables the IFD to read data from the EF currently selected, without secure messaging.

TCS_324 Reading data from a file marked as "Encrypted" shall not be possible through this command.

TCS_325 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	No Secure Messaging asked
INS	1	'B0h'	
P1	1	'XXh'	Offset in bytes from the beginning of the file: Most Significant Byte
P2	1	'XXh'	Offset in bytes from the beginning of the file: Least Significant Byte
Le	1	'XXh'	Length of data expected. Number of Bytes to be read

Note: bit 8 of P1 must be set to 0.

TCS_326 Response Message

Byte	Length	Value	Description
#1-#X	X	'XX..XXh'	Data read
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If no EF is selected, the processing state returned is '6986'.
- If the Access Control of the selected file are not satisfied, the command is interrupted with '6982'.
- If the Offset is not compatible with the size of the EF (Offset > EF size), the processing state returned is '6B00'.
- If the size of the data to be read is not compatible with the size of the EF (Offset + Le > EF size) the processing state returned is '6700' or '6Cxx', where 'xx' indicates the exact length.
- If an integrity error is detected within the file attributes, the card shall consider the file as corrupted and unrecoverable, the processing state returned is '6400' or '6581'.
- If an integrity error is detected within the stored data, the card shall return the demanded data, and the processing state returned is '6281'.

3.6.2.2. *Command with secure messaging*

This command enables the IDF to read data from the EF currently selected with secure messaging, in order to verify the integrity of the data received and to protect the confidentiality of the data in the case the EF is marked as "Encrypted".

TCS_327 Command Message

Byte	Length	Value	Description
CLA	1	'0Ch'	Secure Messaging asked
INS	1	'B0h'	INS
P1	1	'XXh'	P1 (offset in bytes from the beginning of the file): Most Significant Byte
P2	1	'XXh'	P2 (offset in bytes from the beginning of the file): Least Significant Byte
Lc	1	'09h'	Length of input data for secure messaging
#6	1	'97h'	T _{LE} : Tag for expected length specification
#7	1	'01h'	L _{LE} : Length of expected length
#8	1	'NNh'	Expected length specification (original Le): Number of Bytes to be read

Byte	Length	Value	Description
#9	1	'8Eh'	T _{CC} : Tag for cryptographic checksum
#10	1	'04h'	L _{CC} : Length of following cryptographic checksum
#11-#14	4	'XX..XXh'	Cryptographic checksum (4 most significant bytes)
Le	1	'00h'	As specified in ISO/IEC 7816-4

TCS_328 Response Message if EF is not marked as "Encrypted" and if Secure Messaging input format is correct:

Byte	Length	Value	Description
#1	1	'81h'	T _{PV} : Tag for plain value data
#2	L	'NNh' or '81 NNh'	L _{PV} : length of returned data (= original Le) L is 2 bytes if L _{PV} > 127 bytes
#(2+L)-#(1+L+NN)	NN	'XX..XXh'	Plain Data value
#(2+L+NN)	1	'8Eh'	T _{CC} : Tag for cryptographic checksum
#(3+L+NN)	1	'04h'	L _{CC} : Length of following cryptographic checksum
#(4+L+NN)-#(7+L+NN)	4	'XX..XXh'	Cryptographic checksum (4 most significant bytes)
SW	2	'XXXXh'	Status Words (SW1, SW2)

TCS_329 Response Message if EF is marked as "Encrypted" and if Secure Messaging input format is correct:

Byte	Length	Value	Description
#1	1	'87h'	T _{PI CG} : Tag for encrypted data (cryptogram)
#2	L	'MMh' or '81 MMh'	L _{PI CG} : length of returned encrypted data (different of original Le of the command due to padding) L is 2 byte if L _{PI CG} > 127 bytes
#(2+L)-#(1+L+MM)	MM	'01XX..XXh'	Encrypted Data: Padding Indicator and cryptogram
#(2+L+MM)	1	'8Eh'	T _{CC} : Tag for cryptographic checksum
#(3+L+MM)	1	'04h'	L _{CC} : Length of following cryptographic checksum
#(4+L+MM)-#(7+L+MM)	4	'XX..XXh'	Cryptographic checksum (4 most significant bytes)
SW	2	'XXXXh'	Status Words (SW1, SW2)

The encrypted data returned contain a first byte indicating the used padding mode. For the tachograph application, the padding indicator always takes the value '01h', indicating that the used padding mode is the one specified in ISO/IEC 7816-4 (one byte with value '80h' followed by some null bytes: ISO/IEC 9797 method 2).

The "regular" processing states, described for the READ BINARY command with no secure messaging (see § 3.6.2.1), can be returned using the response message structures described above, under a '99h' Tag (as described in TCS 335).

Additionally, some errors specifically related to secure messaging can happen. In that case, the processing state is simply returned, with no secure messaging structure involved:

TCS_330 Response Message if incorrect Secure Messaging input format

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If no current session key is available, the processing state '6A88' is returned. It happens either if the session key has not already been generated or if the session key validity has expired (in this case the IFD must re-run a mutual authentication process to set a new session key).
- If some expected data objects (as specified above) are missing in the secure messaging format, the processing state '6987' is returned: this error happens if an expected tag is missing or if the command body is not properly constructed.

— If some data objects are incorrect, the processing state returned is '6988': this error happens if all the required tags are present but some lengths are different from the ones expected.

— If the verification of the cryptographic checksum fails, the processing state returned is '6688'.

3.6.3. Update Binary

This command is compliant with ISO/IEC 7816-4, but has a restricted usage compared to the command defined in the norm.

The UPDATE BINARY command message initiates the update (erase + write) of the bits already present in an EF binary with the bits given in the command APDU.

TCS_331 The command can be performed only if the security status satisfies the security attributes defined for the EF for the UPDATE function (If the Access Control of the UPDATE function includes PRO SM, a Secure Messaging must be added in the command).

3.6.3.1. Command without secure messaging

This command enables the IFD to write data into the EF currently selected, without the card verifying the integrity of data received. This plain mode is allowed only if the related file is not marked as "Encrypted".

TCS_332 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	No Secure Messaging asked
INS	1	'D6h'	
P1	1	'XXh'	Offset in bytes from the beginning of the file: Most Significant Byte
P2	1	'XXh'	Offset in bytes from the beginning of the file: Least Significant Byte
Lc	1	'NNh'	Lc Length of data to Update. Number of bytes to be written
#6-#(5+NN)	NN	'XX..XXh'	Data to be written

Note: bit 8 of P1 must be set to 0.

TCS_333 Response Message

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

— If the command is successful, the card returns '9000'.

— If no EF is selected, the processing state returned is '6986'.

— If the Access Control of the selected file are not satisfied, the command is interrupted with '6982'.

— If the Offset is not compatible with the size of the EF (Offset > EF size), the processing state returned is '6B00'.

— If the size of the data to be written is not compatible with the size of the EF (Offset + Le > EF size) the processing state returned is '6700'.

— If an integrity error is detected within the file attributes, the card shall consider the file as corrupted and unrecoverable, the processing state returned is '6400' or '6500'.

— If writing is unsuccessful, the processing state returned is '6581'.

3.6.3.2. Command with secure messaging

This command enables the IFD to write data into the EF currently selected, with the card verifying the integrity of data received. As no confidentiality is required, the data are not encrypted.

TCS_334 Command Message

Byte	Length	Value	Description
CLA	1	'0Ch'	Secure Messaging. Asked
INS	1	'D6h'	INS
P1	1	'XXh'	Offset in bytes from the beginning of the file: Most Significant Byte
P2	1	'XXh'	Offset in bytes from the beginning of the file: Least Significant Byte
Lc	1	'XXh'	Length of the secured data field
#6	1	'81h'	T _{PV} : Tag for plain value data
#7	L	'NNh' or '81 NNh'	L _{PV} : length of transmitted data L is 2 bytes if L _{PV} > 127 bytes
#{7+L}-#{6+L+NN}	NN	'XX..XXh'	Plain Data value (Data to be written)
#{7+L+NN}	1	'8Eh'	T _{CC} : Tag for cryptographic checksum
#{8+L+NN}	1	'04h'	L _{CC} : Length of following cryptographic checksum
#{9+L+NN}-#{12+L+NN}	4	'XX..XXh'	Cryptographic checksum (4 most significant bytes)
Le	1	'00h'	As specified in ISO/IEC 7816-4

TCS_335 Response message if correct Secure Messaging input format

Byte	Length	Value	Description
#1	1	'99h'	T _{SW} : Tag for Status Words (to be protected by CC)
#2	1	'02h'	L _{SW} : length of returned Status Words
#3-#4	2	'XXXXh'	Status Words (SW1, SW2)
#5	1	'8Eh'	T _{CC} : Tag for cryptographic checksum
#6	1	'04h'	L _{CC} : Length of following cryptographic checksum
#7-#10	4	'XX..XXh'	Cryptographic checksum (4 most significant bytes)
SW	2	'XXXXh'	Status Words (SW1, SW2)

The "regular" processing states, described for the UPDATE BINARY command with no secure messaging (see §3.6.3.1), can be returned using the response message structure described above.

Additionally, some errors specifically related to secure messaging can happen. In that case, the processing state is simply returned, with no secure messaging structure involved:

TCS_336 Response Message if error in secure messaging

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If no current session key is available, the processing state '6A88' is returned.
- If some expected data objects (as specified above) are missing in the secure messaging format, the processing state '6987' is returned: this error happens if an expected tag is missing or if the command body is not properly constructed.
- If some data objects are incorrect, the processing state returned is '6988': this error happens if all the required tags are present but some lengths are different from the ones expected.
- If the verification of the cryptographic checksum fails, the processing state returned is '6688'.

3.6.4. *Get Challenge*

This command is compliant with ISO/IEC 7816-4, but has a restricted usage compared to the command defined in the norm.

The GET CHALLENGE command asks the card to issue a challenge in order to use it in a security related procedure in which a cryptogram or some ciphered data are sent to the card.

TCS_337 The Challenge issued by the card is only valid for the next command, which uses a challenge, sent to the card.

TCS_338 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	CLA
INS	1	'84h'	INS
P1	1	'00h'	P1
P2	1	'00h'	P2
Le	1	'08h'	Le (Length of Challenge expected)

TCS_339 Response Message

Byte	Length	Value	Description
#1-#8	8	'XX..XXh'	Challenge
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If Le is different from '08h', the processing state is '6700'.
- If parameters P1-P2 are incorrect, the processing state is '6A86'.

3.6.5. *Verify*

This command is compliant with ISO/IEC 7816-4, but has a restricted usage compared to the command defined in the norm.

The Verify command initiates the comparison in the card of the CHV (PIN) data sent from the command with the reference CHV stored in the card.

Note: The PIN entered by the user must be right padded with FFh' bytes up to a length of 8 bytes by the IFD.

TCS_340 If the command is successful, the rights corresponding to CHV presentation are opened and the remaining CHV attempt counter is reinitialised.

TCS_341 An unsuccessful comparison is recorded in the card in order to limit the number of further attempts of the use of the reference CHV.

TCS_342 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	CLA
INS	1	'20h'	INS
P1	1	'00h'	P1
P2	1	'00h'	P2 (the verified CHV is implicitly known)
Lc	1	'08h'	Length of CHV code transmitted
#6-#13	8	'XX..XXh'	CHV

TCS_343 Response Message

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If the reference CHV is not found, the processing state returned is '6A88'.
- If the CHV is blocked, (the remaining attempt counter of the CHV is null), the processing state returned is '6983'. Once in that state, the CHV can never be successfully presented anymore.
- If the comparison is unsuccessful, the remaining attempt Counter is decreased and the status '63CX' is returned ($X > 0$, and X equals the remaining CHV attempts counter. $X = 'F'$, the CHV attempts counter is greater than 'F').
- If the reference CHV is considered corrupted, the processing state returned is '6400' or '6581'.

3.6.6. **Get Response**

This command is compliant with ISO/IEC 7816-4.

This command (only necessary and available for T=0 Protocol) is used to transmit prepared data from the card to the interface device (case where a command had included both Lc and Le).

The GET_RESPONSE command has to be issued immediately after the command preparing the data, otherwise, the data are lost. After the execution of the GET_RESPONSE command (except if the error '61xx' or '6Cxx' occur, see below), the previously prepared data are no longer available.

TCS_344 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	
INS	1	'C0h'	
P1	1	'00h'	
P2	1	'00h'	
Le	1	'XXh'	Number of bytes expected

TCS_345 Response Message

Byte	Length	Value	Description
#1-#X	X	'XX..XXh'	Data
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If no data have been prepared by the card, the processing state returned is '6900' or '6F00'.
- If Le exceeds the number of available bytes or if Le is null, the processing state returned is '6Cxx', where 'xx' denotes the exact number of available bytes. In that case, the prepared data are still available for a subsequent GET_RESPONSE command.
- If Le is not null and is smaller than the number of available bytes, the required data are sent normally by the card, and the processing state returned is '61xx', where 'xx' indicates a number of extra bytes still available by a subsequent GET_RESPONSE command.
- If the command is not supported (protocol T=1), the card returns '6D00'.

3.6.7. **PSO: Verify Certificate**

This command is compliant with ISO/IEC 7816-8, but has a restricted usage compared to the command defined in the norm.

The VERIFY CERTIFICATE command is used by the card to obtain a Public Key from the outside and to check its validity.

TCS_346 When a VERIFY CERTIFICATE command is successful, the Public Key is stored for a future use in the Security environment. This key shall be explicitly set for the use in security related commands (INTERNAL AUTHENTICATE, EXTERNAL AUTHENTICATE or VERIFY CERTIFICATE) by the MSE command (see § 3.6.10) using its key identifier.

TCS_347 In any case, the VERIFY CERTIFICATE command uses the public key previously selected by the MSE command to open the certificate. This public key must be the one of a Member State or of Europe.

TCS_348 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	CLA
INS	1	'2Ah'	Perform Security Operation
P1	1	'00h'	P1
P2	1	'AEh'	P2: non BER-TLV coded data (concatenation of Data Elements)
Lc	1	'CEh'	Lc: Length of the certificate, 194 Bytes
#6-#199	194	'XX..XXh'	Certificate: concatenation of data Elements (as described in Appendix 11)

TCS_349 Response Message

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If the certificate verification fails, the processing state returned is '6688'. The verification and unwrapping process of the certificate is described in Appendix 11.
- If no Public Key is present in the Security Environment, '6A88' is returned.
- If the selected public key (used to unwrap the certificate) is considered corrupted, the processing state returned is '6400' or '6581'.
- If the selected public key (used to unwrap the certificate) has a CHA.LSB (CertificateHolderAuthorization.equipmentType) different from '00' (i.e. is not the one of a Member State or of Europe), the processing state returned is '6985'.

3.6.8. Internal Authenticate

This command is compliant with ISO/IEC 7816-4.

Using the INTERNAL AUTHENTICATE command, the IFD can authenticate the card.

The authentication process is described in Appendix 11. It includes the following statements:

TCS_350 The INTERNAL AUTHENTICATE command uses the card Private Key (implicitly selected) to sign authentication data including K1 (first element for session key agreement) and RND1, and uses the Public Key currently selected (through the last MSE command) to encrypt the signature and form the authentication token (more details in Appendix 11).

TCS_351 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	CLA
INS	1	'88h'	INS
P1	1	'00h'	P1
P2	1	'00h'	P2
Lc	1	'10h'	Length of data sent to the card
#6-#13	8	'XX..XXh'	Challenge used to authenticate the card
#14-#21	8	'XX..XXh'	VU.CHR (see Appendix 11)
Le	1	'80h'	Length of the data expected from the card

TCS_352 Response Message

Byte	Length	Value	Description
#1-#128	128	'XX..XXh'	Card authentication token (see Appendix 11)
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If no Public Key is present in the Security Environment, the processing state returned is '6A88'.
- If no Private Key is present in the Security Environment, the processing state returned is '6A88'.
- If VU.CHR does not match the current public key identifier, the processing state returned is '6A88'.
- If the selected private key is considered corrupted, the processing state returned is '6400' or '6581'.

TCS_353 If the INTERNAL_AUTHENTICATE command is successful, the current session key, if existing, is erased and no longer available. In order to have a new session key available, the EXTERNAL_AUTHENTICATE command must be successfully performed.

3.6.9. External Authenticate

This command is compliant with ISO/IEC 7816-4.

Using the EXTERNAL AUTHENTICATE command, the card can authenticate the IFD.

The authentication process is described in Appendix 11. It includes the following statements:

TCS_354 A GET CHALLENGE command must precede the EXTERNAL_AUTHENTICATE command immediately. The card issues a challenge to the outside (RND3).

TCS_355 The verification of the cryptogram uses RND3 (challenge issued by the card), the card private key (implicitly selected) and the public key previously selected by the MSE command.

TCS_356 The card verifies the cryptogram, and if it is correct, the AUT access condition is opened.

TCS_357 The input cryptogram carries the second element for session key agreement K2.

TCS_358 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	CLA
INS	1	'82h'	INS
P1	1	'00h'	P1
P2	1	'00h'	P2 (the public Key to be used is implicitly known, and has been previously set by the MSE command)
Lc	1	'80h'	Lc (Length of the data sent to the card)
#6-#133	128	'XX..XXh'	Cryptogram (see Appendix 11)

TCS_359 Response Message

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (Status Words (SW1, SW2))

- If the command is successful, the card returns '9000'.
- If no Public Key is present in the Security Environment, '6A88' is returned.
- If the CHA of the currently set public key is not the concatenation of the Tachograph application AID and of a VU equipment Type, the processing state returned is '6F00' (see Appendix 11).
- If no Private Key is present in the Security Environment, the processing state returned is '6A88'.
- If the verification of the cryptogram is wrong, the processing state returned is '6688'.
- If the command is not immediately preceded with a GET CHALLENGE command, the processing state returned is '6985'.
- If the selected private key is considered corrupted, the processing state returned is '6400' or '6581'.

TCS_360 If the EXTERNAL AUTHENTICATE command is successful, and if the first part of the session key is available from a successful INTERNAL AUTHENTICATE recently performed, the session key is set for future commands using secure messaging.

TCS_361 If the first session key part is not available from a previous INTERNAL AUTHENTICATE command, the second part of the session key, sent by the IFD, is not stored in the card. This mechanism ensures that the mutual authentication process is done in the order specified in Appendix 11.

3.6.10. Manage Security Environment

This command is used to set a public key for authentication purpose.

This command is compliant with ISO/IEC 7816-8. The use of this command is restricted regarding the related standard.

TCS_362 The key referenced in the MSE data field is valid for every file of the Tachograph DF.

TCS_363 The key referenced in the MSE data field remains the current public key until the next correct MSE command.

TCS_364 If the key referenced is not (already) present into the card, the security environment remains unchanged.

TCS_365 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	CLA
INS	1	'22h'	INS
P1	1	'C1h'	P1: referenced key valid for all cryptographic operations
P2	1	'B6h'	P2 (referenced data concerning Digital Signature)
Lc	1	'0Ah'	Lc: length of subsequent data field
#6	1	'83h'	Tag for referencing a public key in asymmetric cases
#7	1	'08h'	Length of the key reference (key identifier)
#8-#15	08h	'XX..XXh'	Key identifier as specified in Appendix 11

TCS_366 Response Message

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If the referenced key is not present into the card, the processing state returned is '6A88'.
- If some expected data objects are missing in the secure messaging format, the processing state '6987' is returned. This can happen if the tag '83h' is missing.
- If some data objects are incorrect, the processing state returned is '6988'. This can happen if the length of the key identifier is not '08h'.
- If the selected key is considered corrupted, the processing state returned is '6400' or '6581'.

3.6.11. **PSO: Hash**

This command is used to transfer to the card the result of a hash calculation on some data. This command is used for the verification of digital signatures. The hash value is stored in EEPROM for the subsequent command verify digital signature.

This command is compliant with ISO/IEC 7816-8. The use of this command is restricted regarding the related standard.

TCS_367 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	CLA
INS	1	'2Ah'	Perform Security Operation
P1	1	'90h'	Return Hash code
P2	1	'A0h'	Tag: data field contains DOs relevant for hashing
Lc	1	'16h'	Length Lc of the subsequent data field
#6	1	'90h'	Tag for the hash code
#7	1	'14h'	Length of the hash code
#8-#27	20	'XX..XXh'	Hash code

TCS_368 Response Message

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If some expected data objects (as specified above) are missing, the processing state '6987' is returned. This can happen if one of the tag '90h' is missing.
- If some data objects are incorrect, the processing state returned is '6988'. This error happens if the required tag is present but with a length different from '14h'.

3.6.12. **Perform Hash of File**

This command is not compliant with ISO/IEC 7816-8. Thus the CLA byte of this command indicates that there is a proprietary use of the PERFORM SECURITY OPERATION/HASH.

TCS_369 The perform hash file command is used to hash the data area of the currently selected transparent EF.

TCS_370 The result of the hash operation is stored in the card. It can then be used to get a digital signature of the file, using the PSO-COMPUTE_DIGITAL_SIGNATURE command. This result remains available for the COMPUTE DIGITAL SIGNATURE command until the next successful PERFORM HASH of FILE command.

TCS_371 Command Message

Byte	Length	Value	Description
CLA	1	'80h'	CLA
INS	1	'2Ah'	Perform Security Operation
P1	1	'90h'	Tag: Hash
P2	1	'00h'	P2: Hash the data of the currently selected transparent file

TCS_372 Response Message

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If no application is selected, the processing state '6985' is returned
- If the selected EF is considered corrupted (file attributes or stored data integrity errors), the processing state returned is '6400' or '6581'.
- If the selected file is not a transparent file, the processing state returned is '6986'.

3.6.13. PSO: Compute Digital Signature

This command is used to compute the digital signature of previously computed hash code (see PERFORM HASH of FILE, § 3.6.12).

This command is compliant with ISO/IEC 7816-8. The use of this command is restricted regarding the related standard.

TCS_373 The card private key is used to compute the digital signature and is implicitly known by the card.

TCS_374 The card performs a digital signature using a padding method compliant with PKCS1 (see Appendix 11 for details).

TCS_375 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	CLA
INS	1	'2Ah'	Perform Security Operation
P1	1	'9Eh'	Digital signature to be returned
P2	1	'9Ah'	Tag: data field contains data to be signed. As no data field is included, the data are supposed to be already present in the card (hash of file)
Le	1	'80h'	Length of the expected signature

TCS_376 Response Message

Byte	Length	Value	Description
#1-#128	128	'XX..XXh'	Signature of the previously computed hash
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If the implicitly selected private key is considered as corrupted, the processing state returned is '6400' or '6581'.

3.6.14. PSO: Verify Digital Signature

This command is used to verify the digital signature, provided as an input, in accordance with PKCS1 of a message, whose hash is known to the card. The signature algorithm is implicitly known by the card.

This command is compliant with ISO/IEC 7816-8. The use of this command is restricted regarding the related standard.

TCS_377 The Verify Digital Signature command always uses the public key selected by the previous Manage Security Environment command, and the previous hash code entered by a PSO: Hash command.

TCS_378 Command Message

Byte	Length	Value	Description
CLA	1	'00h'	CLA
INS	1	'2Ah'	Perform Security Operation
P1	1	'00h'	
P2	1	'A8h'	Tag: data field contains DOs relevant for verification
Lc	1	'83h'	Length Lc of the subsequent data field
#28	1	'9Eh'	Tag for Digital Signature
#29-#30	2	'8180h'	Length of digital signature (128 bytes, coded in accordance with ISO/IEC 7816-6)
#31-#158	128	'XX..XXh'	Digital signature content

TCS_379 Response Message

Byte	Length	Value	Description
SW	2	'XXXXh'	Status Words (SW1, SW2)

- If the command is successful, the card returns '9000'.
- If the verification of the signature fails, the processing state returned is '6688'. The verification process is described in Appendix 11.
- If no public key is selected, the processing state returned is '6A88'.
- If some expected data objects (as specified above) are missing, the processing state '6987' is returned. This can happen if one of the required tag is missing.
- If no hash code is available to process the command (as a result of a previous PSO: Hash command), the processing state returned is '6985'.
- If some data objects are incorrect, the processing state returned is '6988'. This can happen if one of the required data objects length is incorrect.
- If the selected public key is considered corrupted, the processing state returned is '6400' or '6581'.

4. TACHOGRAPH CARDS STRUCTURE

This paragraph specifies the file structures of the Tachograph cards for storage of accessible data.

It does not specify card manufacturer dependant internal structures, such as e.g. file headers, nor storage and handling of data elements needed for internal use only such as *EuropeanPublicKey*, *CardPrivateKey*, *TDesSessionKey* or *WorkshopCardPin*.

The useful storage capacity of Tachograph cards shall be of 11 Kbytes minimum. Greater capacities may be used. In such case, the structure of the card remains the same, but the number of records of some elements of the structure is increased. This paragraph specifies minimum and maximum values of these record numbers.

4.1. Driver card structure

TCS_400 After its personalisation, the driver card shall have the following permanent file structure and file access conditions:

File	File ID	Access conditions		
		Read	Update	Encrypted
MF	3F00			
EF ICC	0002	ALW	NEV	No
EF IC	0005	ALW	NEV	No
DF Tachograph	0500			
EF Application_Identification	0501	ALW	NEV	No
EF Card_Certificate	C100	ALW	NEV	No
EF CA_Certificate	C108	ALW	NEV	No
EF Identification	0520	ALW	NEV	No
EF Card_Download	050E	ALW	ALW	No
EF Driving_Licence_Info	0521	ALW	NEV	No
EF Events_Data	0502	ALW	PRO SM / AUT	No
EF Faults_Data	0503	ALW	PRO SM / AUT	No
EF Driver_Activity_Data	0504	ALW	PRO SM / AUT	No
EF Vehicles_Used	0505	ALW	PRO SM / AUT	No
EF Places	0506	ALW	PRO SM / AUT	No
EF Current_Usage	0507	ALW	PRO SM / AUT	No
EF Control_Activity_Data	0508	ALW	PRO SM / AUT	No
EF Specific_Conditions	0522	ALW	PRO SM / AUT	No

TCS_401 All EFs structures shall be transparent.

TCS_402 Read with secure messaging shall be possible for all files under the DF Tachograph.

TCS_403 The driver card shall have the following data structure:

File/Data element	No of Records	Size (bytes)		Default Values
		Min	Max	
MF		11411	24959	
EF ICC		25	25	
CardIccIdentification		25	25	
clockStop		1	1	{00}
cardExtendedSerialNumber		8	8	{00..00}
cardApprovalNumber		8	8	{20..20}
cardPersonaliserID		1	1	{00}
embedderIcAssemblerId		5	5	{00..00}
icIdentifier		2	2	{00 00}
EF IC		8	8	
CardChipIdentification		8	8	
icSerialNumber		4	4	{00..00}
icManufacturingReferences		4	4	{00..00}
DF Tachograph		11378	24926	
EF Application_Identification		10	10	
DriverCardApplicationIdentification		10	10	
typeOfTachographCardId		1	1	{00}
cardStructureVersion		2	2	{00 00}
noOfEventsPerType		1	1	{00}
noOfFaultsPerType		1	1	{00}
activityStructureLength		2	2	{00 00}
noOfCardVehicleRecords		2	2	{00 00}
noOfCardPlaceRecords		1	1	{00}
EF Card_Certificate		194	194	
CardCertificate		194	194	{00..00}
EF CA_Certificate		194	194	
MemberStateCertificate		194	194	{00..00}
EF Identification		143	143	
CardIdentification		65	65	
cardIssuingMemberState		1	1	{00}
cardNumber		16	16	{20..20}
cardIssuingAuthorityName		36	36	{20..20}
cardIssueDate		4	4	{00..00}
cardValidityBegin		4	4	{00..00}
cardExpiryDate		4	4	{00..00}
DriverCardHolderIdentification		78	78	
cardHolderName		72	72	
holderSurname		36	36	{00, 20..20}
holderFirstNames		36	36	{00, 20..20}
cardHolderBirthDate		4	4	{00..00}
cardHolderPreferredLanguage		2	2	{20 20}

EF Card_Download		4	4	
└ LastCardDownload		4	4	
EF Driving_Licence_Info		53	53	
└ CardDrivingLicenceInformation		53	53	
└ drivingLicenceIssuingAuthority		36	36	{00, 20..20}
└ drivingLicenceIssuingNation		1	1	{00}
└ drivingLicenceNumber		16	16	{20..20}
EF Events_Data		864	1728	
└ CardEventData		864	1728	
└ cardEventRecords	6	144	288	
└ CardEventRecord	n ₁	24	24	
└ eventTypes		1	1	{00}
└ eventBeginTime		4	4	{00..00}
└ eventEndTime		4	4	{00..00}
└ eventVehicleRegistration				
└ vehicleRegistrationNation		1	1	{00}
└ vehicleRegistrationNumber		14	14	{00, 20..20}
EF Faults_Data		576	1152	
└ CardFaultData		576	1152	
└ cardFaultRecords	2	288	576	
└ CardFaultRecord	n ₂	24	24	
└ faultTypes		1	1	{00}
└ faultBeginTime		4	4	{00..00}
└ faultEndTime		4	4	{00..00}
└ faultVehicleRegistration				
└ vehicleRegistrationNation		1	1	{00}
└ vehicleRegistrationNumber		14	14	{00, 20..20}
EF Driver_Activity_Data		5548	13780	
└ CardDriverActivity		5548	13780	
└ activityPointerOldestDayRecord		2	2	{00 00}
└ activityPointerNewestRecord		2	2	{00 00}
└ activityDailyRecords	n ₆	5544	13776	{00..00}
EF Vehicles_Used		2606	6202	
└ CardVehiclesUsed		2606	6202	
└ vehiclePointerNewestRecord		2	2	{00 00}
└ cardVehicleRecords		2604	6200	
└ CardVehicleRecord	n ₃	31	31	
└ vehicleOdometerBegin		3	3	{00..00}
└ vehicleOdometerEnd		3	3	{00..00}
└ vehicleFirstUse		4	4	{00..00}
└ vehicleLastUse		4	4	{00..00}
└ vehicleRegistration				
└ vehicleRegistrationNation		1	1	{00}
└ vehicleRegistrationNumber		14	14	{00, 20..20}
└ vuDataBlockCounter		2	2	{00 00}
EF Places		841	1121	
└ CardPlaceDailyWorkPeriod		841	1121	
└ placePointerNewestRecord		1	1	{00}
└ placeRecords		840	1120	
└ PlaceRecord	n ₄	10	10	
└ entryTime		4	4	{00..00}
└ entryTypeDailyWorkPeriod		1	1	{00}
└ dailyWorkPeriodCountry		1	1	{00}
└ dailyWorkPeriodRegion		1	1	{00}
└ vehicleOdometerValue		3	3	{00..00}
EF Current_Usage		19	19	
└ CardCurrentUse		19	19	
└ sessionOpenTime		4	4	{00..00}
└ sessionOpenVehicle				
└ vehicleRegistrationNation		1	1	{00}
└ vehicleRegistrationNumber		14	14	{00, 20..20}
EF Control_Activity_Data		46	46	
└ CardControlActivityDataRecord		46	46	
└ controlTypes		1	1	{00}
└ controlTime		4	4	{00..00}
└ controlCardNumber				
└ cardType		1	1	{00}
└ cardIssuingMemberState		1	1	{00}
└ cardNumber		16	16	{20..20}
└ controlVehicleRegistration				
└ vehicleRegistrationNation		1	1	{00}
└ vehicleRegistrationNumber		14	14	{00, 20..20}
└ controlDownloadPeriodBegin		4	4	{00..00}
└ controlDownloadPeriodEnd		4	4	{00..00}
EF Specific_Conditions		280	280	
└ SpecificConditionRecord	56	5	5	
└ entryTime		4	4	{00..00}
└ SpecificConditionType		1	1	{00}

TCS_404 The following values, used to provide sizes in the table above, are the minimum and maximum record number values the driver card data structure must use:

		Min	Max
n ₁	NoOfEventsPerType	6	12
n ₂	NoOfFaultsPerType	12	24
n ₃	NoOfCardVehicleRecords	84	200
n ₄	NoOfCardPlaceRecords	84	112
n ₆	CardActivityLengthRange	5 544 bytes (28 days * 93 activity changes)	13 776 bytes (28 days * 240 activity changes)

4.2. Workshop card structure

TCS_405 After its personalisation, the workshop card shall have the following permanent file structure and file access conditions:

File	File ID	Access conditions		
		Read	Update	Encrypted
MF	3F00			
EF ICC	0002	ALW	NEV	No
EF IC	0005	ALW	NEV	No
DF Tachograph	0500			
EF Application_Identification	0501	ALW	NEV	No
EF Card_Certificate	C100	ALW	NEV	No
EF CA_Certificate	C108	ALW	NEV	No
EF Identification	0520	ALW	NEV	No
EF Card_Download	0509	ALW	ALW	No
EF Calibration	050A	ALW	PRO SM / AUT	No
EF Sensor_Installation_Data	050B	ALW	NEV	Yes
EF Events_Data	0502	ALW	PRO SM / AUT	No
EF Faults_Data	0503	ALW	PRO SM / AUT	No
EF Driver_Activity_Data	0504	ALW	PRO SM / AUT	No
EF Vehicles_Used	0505	ALW	PRO SM / AUT	No
EF Places	0506	ALW	PRO SM / AUT	No
EF Current_Usage	0507	ALW	PRO SM / AUT	No
EF Control_Activity_Data	0508	ALW	PRO SM / AUT	No
EF Specific_Conditions	0522	ALW	PRO SM / AUT	No

TCS_406 All EFs structures shall be transparent.

TCS_407 Read with secure messaging shall be possible for all files under the DF Tachograph.

TCS_408 The workshop card shall have the following data structure:

File/Data element	No of Records	Size (Bytes)		Default Values
		Min	Max	
MF		11088	29061	
EF ICC		25	25	
CardIccIdentification		25	25	
clockStop		1	1	{00}
cardExtendedSerialNumber		8	8	{00..00}
cardApprovalNumber		8	8	{20..20}
cardPersonaliserID		1	1	{00}
embedderIcAssemblerId		5	5	{00..00}
icIdentifier		2	2	{00 00}
EF IC		8	8	
CardChipIdentification		8	8	
icSerialNumber		4	4	{00..00}
icManufacturingReferences		4	4	{00..00}
DF Tachograph		11055	29028	
EF Application_Identification		11	11	
WorkshopCardApplicationIdentification		11	11	
typeOfTachographCardId		1	1	{00}
cardStructureVersion		2	2	{00 00}
noOfEventsPerType		1	1	{00}
noOfFaultsPerType		1	1	{00}
activityStructureLength		2	2	{00 00}
noOfCardVehicleRecords		2	2	{00 00}
noOfCardPlaceRecords		1	1	{00}
noOfCalibrationRecords		1	1	{00}

EF Card_Certificate		194	194	
└CardCertificate		194	194	{00..00}
EF CA_Certificate		194	194	
└MemberStateCertificate		194	194	{00..00}
EF Identification		211	211	
└CardIdentification		65	65	
└└cardIssuingMemberState		1	1	{00}
└└cardNumber		16	16	{20..20}
└└cardIssuingAuthorityName		36	36	{00, 20..20}
└└cardIssueDate		4	4	{00..00}
└└cardValidityBegin		4	4	{00..00}
└└cardExpiryDate		4	4	{00..00}
└WorkshopCardHolderIdentification		146	146	
└└workshopName		36	36	{00, 20..20}
└└workshopAddress		36	36	{00, 20..20}
└└cardHolderName				
└└└holderSurname		36	36	{00, 20..20}
└└└holderFirstNames		36	36	{00, 20..20}
└└cardHolderPreferredLanguage		2	2	{20 20}
EF Card_Download		2	2	
└NoOfCalibrationsSinceDownload		2	2	{00 00}
EF Calibration		9243	26778	
└WorkshopCardCalibrationData		9243	26778	
└└calibrationTotalNumber		2	2	{00 00}
└└calibrationPointerNewestRecord		1	1	{00}
└└calibrationRecords		9240	26775	
└└└WorkshopCardCalibrationRecord	n ₅	105	105	
└└└└calibrationPurpose		1	1	{00}
└└└└vehicleIdentificationNumber		17	17	{20..20}
└└└└vehicleRegistration				
└└└└└vehicleRegistrationNation		1	1	{00}
└└└└└vehicleRegistrationNumber		14	14	{00, 20..20}
└└└wVehicleCharacteristicConstant		2	2	{00 00}
└└└kConstantOfRecordingEquipment		2	2	{00 00}
└└└lTyreCircumference		2	2	{00 00}
└└└tyreSize		15	15	{20..20}
└└└authorisedSpeed		1	1	{00}
└└└oldOdometerValue		3	3	{00..00}
└└└newOdometerValue		3	3	{00..00}
└└└oldTimeValue		4	4	{00..00}
└└└newTimeValue		4	4	{00..00}
└└└nextCalibrationDate		4	4	{00..00}
└└└vuPartNumber		16	16	{20..20}
└└└vuSerialNumber		8	8	{00..00}
└└└sensorSerialNumber		8	8	{00..00}
EF Sensor_Installation_Data		16	16	
└SensorInstallationSecData		16	16	{00..00}
EF Events_Data		432	432	
└CardEventData		432	432	
└└cardEventRecords	6	72	72	
└└└CardEventRecord	n ₁	24	24	
└└└└eventType		1	1	{00}
└└└└eventBeginTime		4	4	{00..00}
└└└└eventEndTime		4	4	{00..00}
└└└└eventVehicleRegistration				
└└└└└vehicleRegistrationNation		1	1	{00}
└└└└└vehicleRegistrationNumber		14	14	{00, 20..20}
EF Faults_Data		288	288	
└CardFaultData		288	288	
└└cardFaultRecords	2	144	144	
└└└CardFaultRecord	n ₂	24	24	
└└└└faultType		1	1	{00}
└└└└faultBeginTime		4	4	{00..00}
└└└└faultEndTime		4	4	{00..00}
└└└└faultVehicleRegistration				
└└└└└vehicleRegistrationNation		1	1	{00}
└└└└└vehicleRegistrationNumber		14	14	{00, 20..20}
EF Driver_Activity_Data		202	496	
└CardDriverActivity		202	496	
└└activityPointerOldestDayRecord		2	2	{00 00}
└└activityPointerNewestRecord		2	2	{00 00}
└└activityDailyRecords	n ₆	198	492	{00..00}
EF Vehicles_Used		126	250	
└CardVehiclesUsed		126	250	
└└vehiclePointerNewestRecord		2	2	{00 00}
└└cardVehicleRecords		124	248	
└└└CardVehicleRecord	n ₃	31	31	
└└└└vehicleOdometerBegin		3	3	{00..00}

vehicleOdometerEnd	3	3	{00..00}
vehicleFirstUse	4	4	{00..00}
vehicleLastUse	4	4	{00..00}
vehicleRegistration			
vehicleRegistrationNation	1	1	{00}
vehicleRegistrationNumber	14	14	{00, 20..20}
vuDataBlockCounter	2	2	{00 00}
EF Places	61	81	
CardPlaceDailyWorkPeriod	61	81	
placePointerNewestRecord	1	1	{00}
placeRecords	60	80	
PlaceRecord	n ₄	10	
entryTime	4	4	{00..00}
entryTypeDailyWorkPeriod	1	1	{00}
dailyWorkPeriodCountry	1	1	{00}
dailyWorkPeriodRegion	1	1	{00}
vehicleOdometerValue	3	3	{00..00}
EF Current_Usage	19	19	
CardCurrentUse	19	19	
sessionOpenTime	4	4	{00..00}
sessionOpenVehicle			
vehicleRegistrationNation	1	1	{00}
vehicleRegistrationNumber	14	14	{00, 20..20}
EF Control_Activity_Data	46	46	
CardControlActivityDataRecord	46	46	
controlType	1	1	{00}
controlTime	4	4	{00..00}
controlCardNumber			
cardType	1	1	{00}
cardIssuingMemberState	1	1	{00}
cardNumber	16	16	{20..20}
controlVehicleRegistration			
vehicleRegistrationNation	1	1	{00}
vehicleRegistrationNumber	14	14	{00, 20..20}
controlDownloadPeriodBegin	4	4	{00..00}
controlDownloadPeriodEnd	4	4	{00..00}
EF Specific_Conditions	10	10	
SpecificConditionRecord	2	5	
entryTime	4	4	{00..00}
SpecificConditionType	1	1	{00}

TCS_409 The following values, used to provide sizes in the table above, are the minimum and maximum record number values the workshop card data structure must use:

		Min	Max
n ₁	NoOfEventsPerType	3	3
n ₂	NoOfFaultsPerType	6	6
n ₃	NoOfCardVehicleRecords	4	8
n ₄	NoOfCardPlaceRecords	6	8
n ₅	NoOfCalibrationRecords	88	255
n ₆	CardActivityLengthRange	198 bytes (1 day * 93 activity changes)	492 bytes (1 day * 240 activity changes)

4.3. Control card structure

TCS_410 After its personalisation, the control card shall have the following permanent file structure and file access conditions:

File	File ID	Access conditions		
		Read	Update	Encrypted
MF	3F00			
EF ICC	0002	ALW	NEV	No
EF IC	0005	ALW	NEV	No
DF Tachograph	0500			
EF Application_Identification	0501	ALW	NEV	No
EF Card_Certificate	C100	ALW	NEV	No
EF CA_Certificate	C108	ALW	NEV	No
EF Identification	0520	AUT	NEV	No
EF Controller_Activity_Data	050C	ALW	PRO SM / AUT	No

TCS_411 All EFs structures shall be transparent.

TCS_412 Read with secure messaging shall be possible for files under the DF Tachograph.

TCS_413 The control card shall have the following data structure:

File/Data element	No of Records	Size (Bytes)		Default Values
		Min	Max	
MF		11219	24559	
EF ICC		25	25	
CardIccIdentification		25	25	
clockStop		1	1	{00}
cardExtendedSerialNumber		8	8	{00..00}
cardApprovalNumber		8	8	{20..20}
cardPersonaliserID		1	1	{00}
embedderIcAssemblerId		5	5	{00..00}
icIdentifier		2	2	{00 00}
EF IC		8	8	
CardChipIdentification		8	8	
icSerialNumber		4	4	{00..00}
icManufacturingReferences		4	4	{00..00}
DF Tachograph		11186	24526	
EF Application_Identification		5	5	
ControlCardApplicationIdentification		5	5	
typeOfTachographCardId		1	1	{00}
cardStructureVersion		2	2	{00 00}
noOfControlActivityRecords		2	2	{00 00}
EF Card_Certificate		194	194	
CardCertificate		194	194	{00..00}
EF CA_Certificate		194	194	
MemberStateCertificate		194	194	{00..00}
EF Identification		211	211	
CardIdentification		65	65	
cardIssuingMemberState		1	1	{00}
cardNumber		16	16	{20..20}
cardIssuingAuthorityName		36	36	{00, 20..20}
cardIssueDate		4	4	{00..00}
cardValidityBegin		4	4	{00..00}
cardExpiryDate		4	4	{00..00}
ControlCardHolderIdentification		146	146	
controlBodyName		36	36	{00, 20..20}
controlBodyAddress		36	36	{00, 20..20}
cardHolderName				
holderSurname		36	36	{00, 20..20}
holderFirstNames		36	36	{00, 20..20}
cardHolderPreferredLanguage		2	2	{20 20}
EF Controller_Activity_Data		10582	23922	
ControlCardControlActivityData		10582	23922	
controlPointerNewestRecord		2	2	{00 00}
controlActivityRecords		10580	23920	
controlActivityRecord	n ₇	46	46	
controlType		1	1	{00}
controlTime		4	4	{00..00}
controlledCardNumber				
cardType		1	1	{00}
cardIssuingMemberState		1	1	{00}
cardNumber		16	16	{20..20}
controlledVehicleRegistration				
vehicleRegistrationNation		1	1	{00}
vehicleRegistrationNumber		14	14	{00, 20..20}
controlDownloadPeriodBegin		4	4	{00..00}
controlDownloadPeriodEnd		4	4	{00..00}

TCS_414 The following values, used to provide sizes in the table above, are the minimum and maximum record number values the control card data structure must use:

		Min	Max
n ₇	NoOfControlActivityRecords	230	520

4.4. Company card structure

TCS_415 After its personalisation, the company card shall have the following permanent file structure and file access conditions:

File	File ID	Access conditions		
		Read	Update	Encrypted
MF	3F00			
EF ICC	0002	ALW	NEV	No
EF IC	0005	ALW	NEV	No
DF Tachograph	0500			
EF Application_Identification	0501	ALW	NEV	No
EF Card_Certificate	C100	ALW	NEV	No
EF CA_Certificate	C108	ALW	NEV	No
EF Identification	0520	AUT	NEV	No
EF Company_Activity_Data	050D	ALW	PRO SM / AUT	No

TCS_416 All EFs structures shall be transparent.

TCS_417 Read with secure messaging shall be possible for all files under the DF Tachograph.

TCS_418 The company card shall have the following data structure:

File/Data element	No of Records	Size (bytes)		Default Values
		Min	Max	
MF		11147	24487	
EF ICC		25	25	
CardIccIdentification		25	25	
clockStop		1	1	{00}
cardExtendedSerialNumber		8	8	{00..00}
cardApprovalNumber		8	8	{20..20}
cardPersonaliserID		1	1	{00}
embedderIcAssemblerId		5	5	{00..00}
icIdentifier		2	2	{00 00}
EF IC		8	8	
CardChipIdentification		8	8	
icSerialNumber		4	4	{00..00}
icManufacturingReferences		4	4	{00..00}
DF Tachograph		11114	24454	
EF Application_Identification		5	5	
CompanyCardApplicationIdentification		5	5	
typeOfTachographCardId		1	1	{00}
cardStructureVersion		2	2	{00 00}
noOfCompanyActivityRecords		2	2	{00 00}
EF Card_Certificate		194	194	
CardCertificate		194	194	{00..00}
EF CA_Certificate		194	194	
MemberStateCertificate		194	194	{00..00}
EF Identification		139	139	
CardIdentification		65	65	
cardIssuingMemberState		1	1	{00}
cardNumber		16	16	{20..20}
cardIssuingAuthorityName		36	36	{00, 20..20}
cardIssueDate		4	4	{00..00}
cardValidityBegin		4	4	{00..00}
cardExpiryDate		4	4	{00..00}
CompanyCardHolderIdentification		74	74	
companyName		36	36	{00, 20..20}
companyAddress		36	36	{00, 20..20}
cardHolderPreferredLanguage		2	2	{20 20}
EF Company_Activity_Data		10582	23922	
CompanyActivityData		10582	23922	
companyPointerNewestRecord		2	2	{00 00}
companyActivityRecords		10580	23920	
companyActivityRecord	n ₈	46	46	
companyActivityType		1	1	{00}
companyActivityTime		4	4	{00..00}
cardNumberInformation				
cardType		1	1	{00}
cardIssuingMemberState		1	1	{00}
cardNumber		16	16	{20..20}
vehicleRegistrationInformation				
vehicleRegistrationNation		1	1	{00}
vehicleRegistrationNumber		14	14	{00, 20..20}

cardNumberInformation			
cardType	1	1	{00}
cardIssuingMemberState	1	1	{00}
cardNumber	16	16	{20..20}
downloadPeriodBegin	4	4	{00..00}
downloadPeriodEnd	4	4	{00..00}

TCS_419 The following values, used to provide sizes in the table above, are the minimum and maximum record number values the company card data structure must use:

		Min	Max
n ₈	NoOfCompanyActivityRecords	230	520

Appendix 3

PICTOGRAMS

PIC_001 The recording equipment may use the following pictograms and pictograms combinations:

1. BASIC PICTOGRAMS

	People	Actions	Modes of operation
	Company		Company mode
	Controller	Control	Control mode
	Driver	Driver	Operational mode
	Workshop/test station	Inspection/calibration	Calibration mode
	Manufacturer		

	Activities	Duration
	Available	Current availability period
	Driving	Continuous driving time
	Rest	Current rest period
	Work	Current work period
	Break	Cumulative break time
	Unknown	

	Equipment	Functions
	Driver slot	
	Co-driver slot	
	Card	
	Clock	
	Display	Displaying
	External storage	Downloading
	Power supply	
	Printer/printout	Printing
	Sensor	
	Tyre size	
	Vehicle/vehicle unit	

	Specific conditions
	Out of scope
	Ferry/train crossing

	Miscellaneous
	Events
	Faults
	Start of daily work period
	End of daily work period
	Location
	Manual entry of driver activities
	Security
	Speed
	Time
	Total/summary

Qualifiers

24h	Daily
I	Weekly
II	Two weeks
+	From or to

2. PICTOGRAM COMBINATIONS**Miscellaneous**

☐♣	Control place
♣ ▶	Location start of daily work period
▶ ♣	Location end of daily work period
⊙+	From time
+⊙	To time
♠+	From vehicle
OUT+	Out of scope begin
+OUT	Out of scope end

Cards

☐☐	Driver card
☐☐	Company card
☐☐	Control card
T☐	Workshop card
☐---	No card

Driving

☐☐	Crew driving
☐	Driving time for one week
☐	Driving time for two weeks

Printouts

24h☐▼	Driver activities from card daily printout
24h♠▼	Driver activities from VU daily printout
!×☐▼	Events and faults from card printout
!×♠▼	Events and faults from VU printout
T⊙▼	Technical data printout
>>▼	Over speeding printout

Events

!☐	Insertion of a non valid card
!☐☐	Card conflict
!⊙⊙	Time overlap
!⊙☐	Driving without an appropriate card
!☐⊙	Card insertion while driving
!☐♠	Last card session not correctly closed
>>	Over speeding
!⊕	Power supply interruption
!∩	Motion data error
!⊙	Security breach
!⊙	Time adjustment (by workshop)
>☐	Over speeding control

Faults

× ■ 1	Card fault (driver slot)
× ■ 2	Card fault (co-driver slot)
× □	Display fault
× ⚡	Downloading fault
× 🖨	Printer fault
× 📡	Sensor fault
× 🏠	VU internal fault

Manual entries procedure

▶ ? ▶	Still same daily work period?
▶ ?	End of previous work period?
▶ ● ?	Confirm or enter location of end of work period
⌚ ▶ ?	Enter start time
● ▶ ?	Enter location of start of work period.

Note: Additional pictogram combinations to form printout block or record identifiers are defined in Appendix 4.

- 2 **Type of printout**
Block identifier
Printout pictogram combination (see App. 3), Speed limiting device setting (Over speeding printout only)
- 3 **Card holder identification**
Block identifier. P = people pictogram
Card holder surname
Card holder first name(s) (if any)
Card identification
Card expiry date (if any)
In the case where the card is a non-personal card, and holds no card holder surname, the company or workshop or control body name shall be printed instead.
- 4 **Vehicle identification**
Block identifier
(VIN)
Registering Member State and VRN
- 5 **VU identification**
Block identifier
VU manufacturer's name
VU part number
- 6 **Last calibration of the recording equipment**
Block identifier
Workshop name
Workshop card identification
Date of the calibration
- 7 **Last control (by a control officer)**
Block identifier
Controller's card identification
Control date, time and type
Type of the control: Up to four pictograms. The type of control can be (a combination) of:
■: Card downloading, ▴: VU downloading, ▾: printing, □: Displaying
- 8 **Driver activities stored on a card in order of occurrence**
Block identifier
Enquiry date (calendar day subject of the printout) + Daily card presence counter
- 8.1 *Period during which the card was not inserted*
- 8.1a Record identifier (start of period)
- 8.1b *Unknown period.* Start and end time, duration
- 8.1c *Activity manually entered*
Activity pictogram, start and end time (included), duration, rest periods of at least one hour are tagged with a star.
- ▾-----
Picto xxx km/h
- P-----
P Last_Name _____
First_Name _____
Card_Identification _____
dd/mm/yyyy
- A-----
A VIN _____
Nat/VRN _____
- B-----
B VU_Manufacturer _____
VU_Part_Number _____
- ▴-----
▴ Last_Name _____
Card_Identification _____
▴ dd/mm/yyyy
- Card_Identification _____
□ dd/mm/yyyy hh:mm pppp
- dd/mm/yyyy xxx
- ? hh:mm hh:mm hh:mm
A hh:mm hh:mm hh:mm *

8.2	<p><i>Card insertion in slot S</i></p> <p>Record identifier; S = Slot pictogram Vehicle registering Member State and VRN Vehicle odometer at card insertion</p>	<pre> -----S----- A Nat/VRN _____ x xxx xxx km </pre>
8.3	<p><i>Activity (while card was inserted)</i></p> <p>Activity pictogram, start and end time (included), duration, crew status (crew pictogram if CREW, blanks if SINGLE), rest periods of at least one hour are tagged with a star.</p>	<pre> A hh:mm hh:mm hh:mm 00 * </pre>
8.3a	<p><i>Specific condition.</i> Time of entry, specific condition pictogram (or pictogram combination).</p>	<pre> hh:mm ----- pppp ----- </pre>
8.4	<p><i>Card withdrawal</i></p> <p>Vehicle odometer and distance travelled since last insertion for which odometer is known</p>	<pre> x xxx xxx km; x xxx km </pre>
9	<p>Driver activities stored in a VU per slot in chronological order</p> <p>Block identifier Enquiry date (calendar day subject of the printout) Vehicle odometer at 00:00 and 24:00</p>	<pre> -----0----- dd/mm/yyyy x xxx xxx - x xxx xxx km </pre>
10	<p>Activities carried in slot S</p> <p>Block identifier</p>	<pre> ----- S ----- </pre>
10.1	<p><i>Period where no card is inserted in slot S</i></p> <p>Record identifier No Card inserted Vehicle odometer at beginning of period</p>	<pre> ----- 00 --- x xxx xxx km </pre>
10.2	<p><i>Card insertion</i></p> <p>Card insertion Record identifier Driver's name Driver's first name Driver's Card identification Driver's card expiry date Registering MS and VRN of previous vehicle used</p> <p>Date and time of card withdrawal from previous vehicle Blank line Vehicle odometer at card insertion, Manual entry of driver activities flag (M if yes, Blank if No)</p>	<pre> ----- 0 Last_Name _____ First_Name _____ Card_Identification _____ dd/mm/yyyy A+ Nat/VRN _____ dd/mm/yyyy hh:mm x xxx xxx km M </pre>
10.3	<p><i>Activity</i></p> <p>Activity pictogram, start and end time (included), duration, crew Status (crew pictogram if CREW, blanks if SINGLE), rests of at least one hour are tagged with a star.</p>	<pre> A hh:mm hh:mm hh:mm 00 * </pre>

11.8 *Activity totals (per driver both slots included)*

Total driving duration, distance travelled
 Total driving duration, distance travelled
 Total resting duration
 Total duration of crew activities
 When a daily printout is required for the current day, daily summary information is computed with available data at the time of the printout.

```

    0 hhhmm x xxxx km
    * hhhmm 0 hhhmm
    H hhhmm
    00 hhhmm
    
```

12 **Events and/or faults stored on a card**

12.1 Block identifier last 5 "Events and Faults" from a card

```

    ----- ! x 0 -----
    
```

12.2 Block identifier all recorded "Events" on a card

```

    ----- ! 0 -----
    
```

12.3 Block identifier all recorded "Faults" on a card

```

    ----- x 0 -----
    
```

12.4 *Event and/or Fault record*

Record identifier
 Event/fault pictogram, record purpose, date time of start,
 Additional event/fault code (if any), duration
 Registering Member State & VRN of vehicle in which the event or fault occurred

```

    -----
    Pic          dd/mm/yyyy hh:mm
    ! xxx              hhhmm
    A Nat/VRN _____
    
```

13 **Events and/or faults stored or on-going in a VU**

13.1 Block identifier last 5 "Events and Faults" from VU

```

    ----- ! x A -----
    
```

13.2 Block identifier all recorded or on-going "Events" in a VU

```

    ----- ! A -----
    
```

13.3 Block identifier all recorded or on-going "Faults" in a VU

```

    ----- x A -----
    
```

13.4 *Event and/or fault record*

Record identifier
 Event/fault pictogram, record purpose, date time of start,
 Additional event/fault code (if any), No of similar events this day, duration
 Identification of the cards inserted at start or end of the event or fault (up to 4 lines without repeating twice the same card numbers)

```

    -----
    Pic (p) dd/mm/yyyy hh:mm
    ! xxx (xxx) hhhmm
    Card_Identification _____
    Card_Identification _____
    Card_Identification _____
    Card_Identification _____
    0 ---
    
```

Case where no card was inserted
 The record purpose (p) is a numerical code explaining why the event or fault was recorded, coded in accordance with the data element `EventFaultRecordPurpose`.

14 **VU Identification**

Block identifier
 VU manufacturer name
 VU manufacturer address
 VU part number
 VU approval number
 VU serial number
 VU year of manufacture
 VU software version and installation date

```

-----E-----
E Name _____
  Address _____
  PartNumber _____
  Apprv _____
  S/N _____
  YYYY
  V  xx.xx.xx dd/mm/yyyy
  
```

15 **Sensor identification**

Block identifier
 Sensor serial number
 Sensor approval number
 Sensor first installation date

```

-----I-----
I S/N _____
  Apprv _____
  dd/mm/yyyy
  
```

16 **Calibration data**

Block identifier

```

-----T-----
  
```

16.1 *Calibration record*

Record identifier
 Workshop having performed the calibration
 Workshop address
 Workshop card identification
 Workshop card expiry date
 Blank line
 Calibration date + calibration purpose
 VIN
 Registering Member State & VRN
 Characteristic coefficient of vehicle
 Constant of the recording equipment
 Effective circumference of wheel tyres
 Size of tyres mounted
 Speed limiting device setting
 Old and new odometer values
 The calibration purpose (p) is a numerical code explaining why these calibration parameters were recorded, coded in accordance with the data element Calibration-Purpose.

```

-----
T Workshop_name _____
  Workshop_address _____
  Card-Identification _____
  dd/mm/yyyy

T dd/mm/yyyy (p)
A VIN _____
  Nat/VRN _____
w xx xxx Imp/km
k xx xxx Imp/km
l xx xxx mm
e TyreSize _____
> xxx km/h
x xxx xxx - x xxx xxx km
  
```

17 **Time adjustment**

Block identifier

```

-----G-----
  
```

17.1 *Time adjustment record*

Record identifier
 Old date and time
 New date and time
 Workshop having performed the time adjustment
 Workshop address
 Workshop card identification
 Workshop card expiry date

```

-----
! G dd/mm/yyyy hh:mm
  G dd/mm/yyyy hh:mm
T Workshop_name _____
  Workshop_address _____
  Card_Identification _____
  dd/mm/yyyy
  
```

18 **Most recent event and Fault recorded in the VU**

Block identifier
 Most recent event date time
 Most recent fault date time

```
----- ! x A -----
!  jj/mm/aaaa  hh:mm
x  jj/mm/aaaa  hh:mm
```

19 **Over speeding control information**

Block identifier
 Date and time of last OVER SPEEDING CONTROL
 Date/time of first over speeding and number of over speeding events since

```
----- >> -----
> d d/mm/yyyy  hh:mm
>> d d/mm/yyyy  hh:mm (nnn)
```

20 **Over speeding record**

20.1 Block identifier "First over speeding after the last calibration"

```
----- >>T -----
```

20.2 Block identifier "The 5 most serious over the last 365 days"

```
----- >>(365) -----
```

20.3 Block identifier "The most serious for each of the last 10 days of occurrence"

```
----- >>(10) -----
```

20.4 Record identifier
 Date time and duration
 Max and average speeds, No of similar events this day

 Driver's surname
 Driver's first name(s)
 Driver card identification

```
-----
>> d d/mm/yyyy  hh:mm hh:mm
xxx km/h xxx km/h (xxx)
@ Last_Name _____
  First_Name _____
Card_Identification _____
```

20.5 If no over speeding record exists in a block

```
>> - - -
```

21 **Hand-written information**

Block identifier
 21.1 Control Place
 21.2 Controller's signature
 21.3 From time
 21.4 To time
 21.5 Driver's signature
 "Hand-written information" Insert enough blank lines above a hand-written item, to be able to actually write the required information or to put a signature.

```
-----
@ * .....
@ .....
@+ .....
+@ .....
@ .....
@ .....
```

3. PRINTOUT SPECIFICATIONS

In this chapter the following notation conventions have been used:

N

Print block or record number N

N

Print block or record number N repeated as many times as necessary

X/Y

Print blocks or records X and/or Y as needed, and repeating as many times as necessary.

3.1 Driver Activities from Card Daily Printout

PRT_007 The driver activities from card daily printout shall be in accordance with the following format:

1	Date and time at which the document is printed
2	Type of printout
3	Controller identification (if a control card is inserted in the VU)
3	Driver identification (from card subject of the printout)
4	Vehicle identification (vehicle from which printout is taken)
5	VU identification (VU from which printout is taken)
6	Last calibration of this VU
7	Last control the inspected driver has been subject to
8	Driver activities delimiter
8.1a / 8.1b / 8.1c / 8.2 / 8.3 / 8.3a / 8.4	Activities of the driver in order of occurrence
11	Daily summary delimiter
11.4	Places entered in chronological order
11.5	Activity totals
12.1	Events or faults from card delimiter
12.4	Event/Fault records (Last 5 events or faults stored in the card)
13.1	Events or faults from VU delimiter
13.4	Event/Fault records (Last 5 events or faults stored or on-going in the VU)
21.1	Control place
21.2	Controller's signature
21.5	Driver's signature

3.2 Driver Activities from VU Daily Printout

PRT_008 The driver activities from VU daily printout shall be in accordance with the following format:

1	Date and time at which the document is printed
2	Type of printout
3	Card holder identification (for all cards inserted in VU)
4	Vehicle identification (vehicle from which printout is taken)
5	VU identification (VU from which printout is taken)
6	Last calibration of this VU
7	Last control on this recording equipment
9	Driver activities delimiter
10	Driver slot delimiter (slot 1)
10.1 / 10.2 / 10.3 / 10.3a / 10.4	Activities in chronological order (driver slot)
10	Co-driver slot delimiter (slot 2)
10.1 / 10.2 / 10.3 / 10.3a / 10.4	Activities in chronological order (co-driver slot)
11	Daily summary delimiter
11.1	Summary of periods without card in driver slot
11.4	Places entered in chronological order
11.6	Activity totals

11.2	Summary of periods without card in co-driver slot
11.4	Places entered in chronological order
11.7	Activity totals
11.3	Summary of activities for a driver both slots included
11.4	Places entered by this driver in chronological order
11.7	Activity totals for this driver
13.1	Events faults delimiter
13.4	Event/Fault records (Last 5 events or faults stored or on-going in the VU)
21.1	Control place
21.2	Controller's signature
21.3	From time (space available for a driver without a card to indicate which periods
21.4	To time are relevant to himself)
21.5	Driver's signature

3.3 Events and Faults from Card Printout

PRT_009 The events and faults from card printout shall be in accordance with the following format:

1	Date and time at which the document is printed
2	Type of printout
3	Controller identification (if a control card is inserted in the VU)
3	Driver identification (from card subject of the printout)
4	Vehicle identification (vehicle from which printout is taken)
12.2	Events delimiter
12.4	Event records (all events stored on the card)
12.3	Faults delimiter
12.4	Fault records (all faults stored on the card)
21.1	Control place
21.2	Controller's signature
21.5	Driver's signature

3.4 Events and Faults from VU Printout

PRT_010 The events and faults from VU printout shall be in accordance with the following format:

1	Date and time at which the document is printed
2	Type of printout
3	Card holder identification (for all cards inserted in VU)
4	Vehicle identification (vehicle from which printout is taken)
13.2	Events delimiter
13.4	Event records (All Events stored or on-going in the VU)
13.3	Faults delimiter
13.4	Fault records (All Faults stored or on-going in the VU)
21.1	Control place
21.2	Controller's signature
21.5	Driver's signature

3.5 Technical data Printout

PRT_011 The technical data printout shall be in accordance with the following format:

1	Date and time at which the document is printed
2	Type of printout
3	Card holder identification (for all cards inserted in VU)
4	Vehicle identification (vehicle from which printout is taken)
14	VU identification
15	Sensor identification
16	Calibration data delimiter
16.1	Calibration records (all records available in chronological order)
17	Time adjustment delimiter
17.1	Time adjustment records (all records available from time adjustment and from calibration data records)
18	Most recent event and Fault recorded in the VU

3.6 Over speeding Printout

PRT_012 The over speeding printout shall be in accordance with the following format:

1	Date and time at which the document is printed
2	Type of printout
3	Card holder identification (for all cards inserted in VU)
4	Vehicle identification (vehicle from which printout is taken)
19	Over speeding control information
20.1	Over speeding data identifier
20.4 / 20.5	First over speeding after the last calibration
20.2	Over speeding data identifier
20.4 / 20.5	The 5 most serious over speeding events over the last 365 days
20.3	Over speeding data identifier
20.4 / 20.5	The most serious over speeding for each of the last 10 days of occurrence
21.1	Control place
21.2	Controller's signature
21.5	Driver's signature

Appendix 5

DISPLAY

In this appendix the following format notation conventions have been used:

- characters printed in **bold** denote plain text to be displayed (display remains in normal character),
- normal characters denote variables (pictograms or data) to be replaced by their values for displaying:

dd mm yyyy: day, month, year,

hh: hours,

mm: minutes,

D: duration pictogram,

EF: event or fault pictograms combination,

O: mode of operation pictogram.

DIS_001 The recording equipment shall display data using the following formats:

Data	Format
Default display	
Local time	hh:mm
Mode of operation	O
Information related to the driver	1 Dhhmm hhmm
Information related to the co-driver	2 Dhhmm
Out of scope condition opened	OUT
Warning display	
Exceeding continuous driving time	1 ⓪ hhmm hhmm
Event or fault	EF
Other displays	
UTC date	UTC ⓪ dd/mm/yyyy or UTC ⓪ dd.mm.yyyy
time	hh:mm
Driver's continuous driving time and cumulative break time	1 ⓪ hhmm hhmm
Co-driver's continuous driving time and cumulative break time	2 ⓪ hhmm hhmm
Driver's cumulated driving time for the previous and the current week	1 ⓪ hhmm
Co-driver's cumulated driving time for the previous and the current week	2 ⓪ hhmm

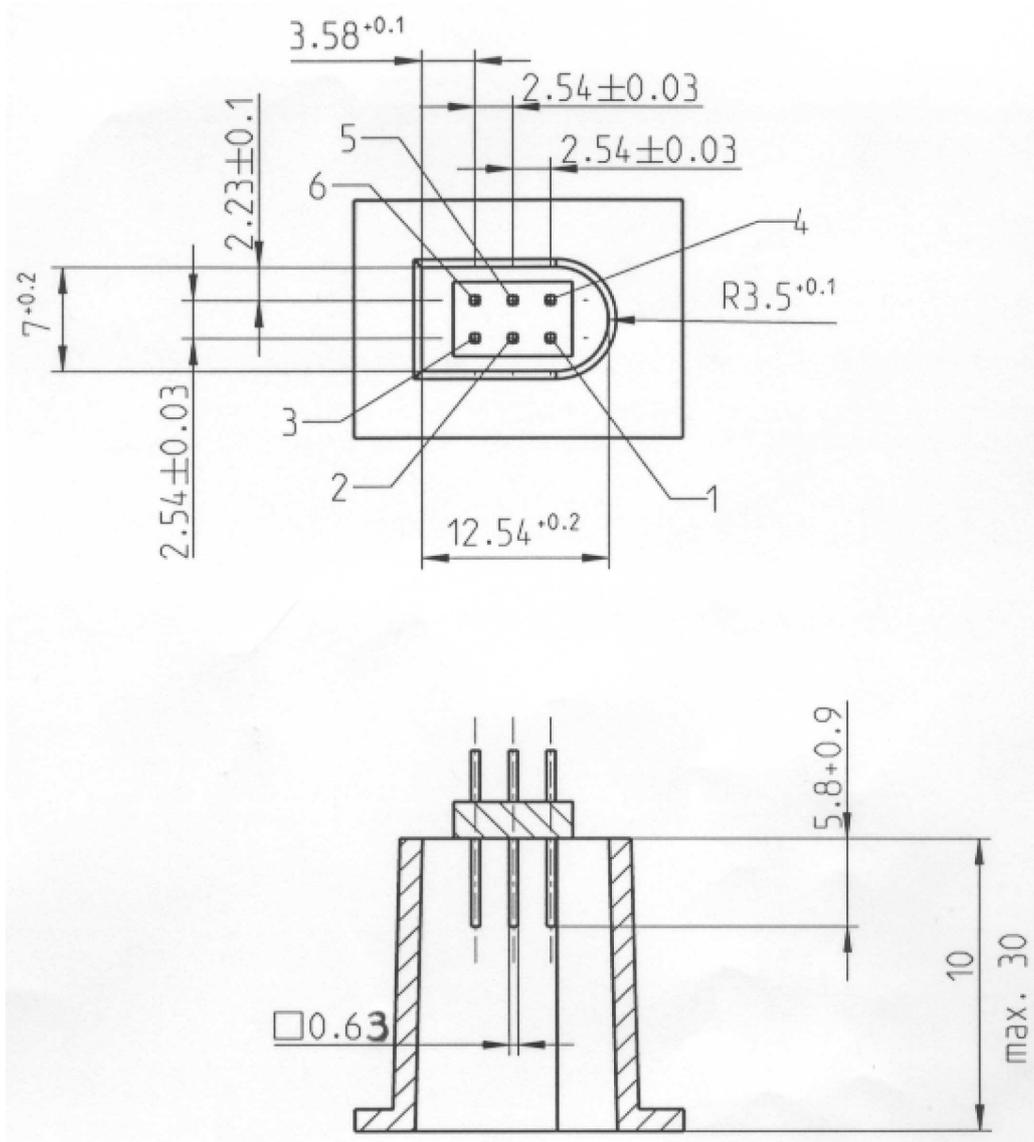
Appendix 6

EXTERNAL INTERFACES

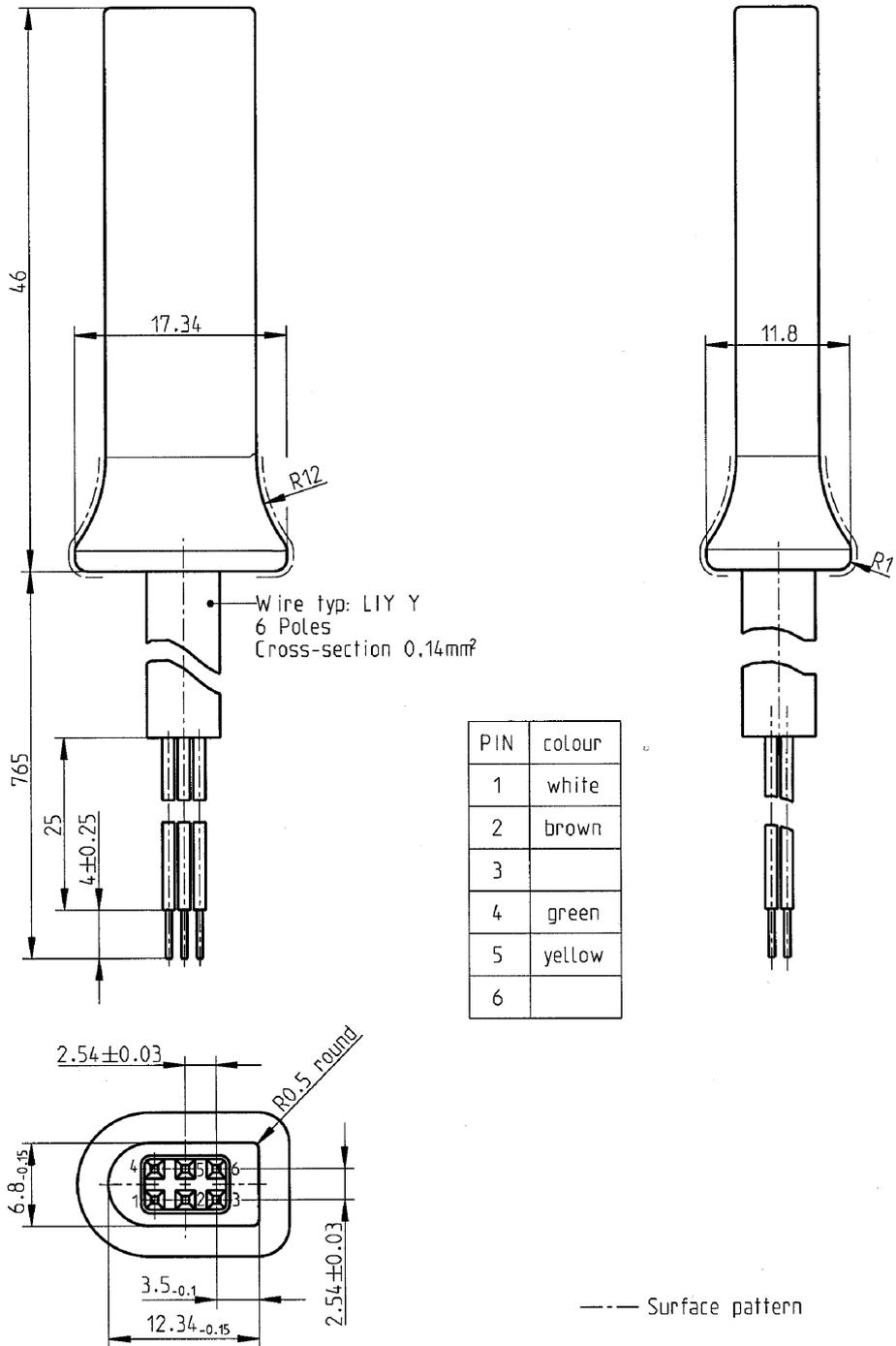
1. HARDWARE

1.1. Connector

INT_001 The downloading/calibration connector shall be a 6 pin connector, accessible on the front panel without the need to disconnect any part of the recording equipment, and shall comply with the following drawing (all dimensions in millimetres):



The following diagram shows a typical 6 pin mating plug:



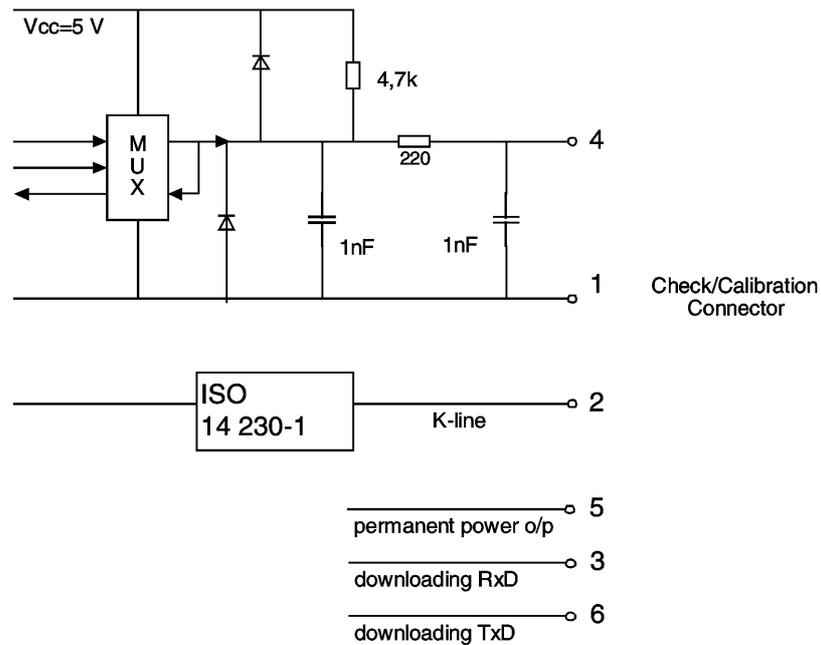
1.2. Contact allocation

INT_002 Contacts shall be allocated in accordance with the following table:

Pin	Description	Remark
1	Battery minus	Connected to the battery minus of the vehicle
2	Data communication	K-line (ISO 14230-1)
3	RxD — Downloading	Data input to recording equipment
4	Input/output signal	Calibration
5	Permanent power output	The voltage range is specified to be that of the vehicle power minus 3V to allow for the voltage drop across the protective circuitry Output 40 mA
6	TxD — Downloading	Data output from recording equipment

1.3. Block diagram

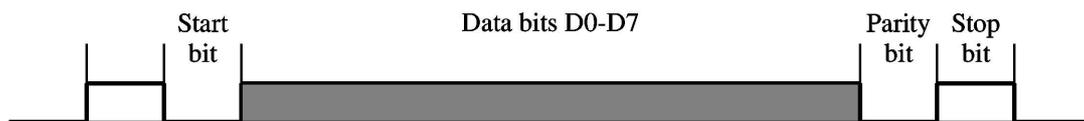
INT_003 The block diagram shall comply with the following:



2. DOWNLOADING INTERFACE

INT_004 The downloading interface shall comply to RS232 specifications.

INT_005 The downloading interface shall use one start bit, 8 data bits LSB first, one even parity bit and 1 stop bit.



Data byte organisation

- Start bit: one bit with logic level 0
- Data bits: transmitted with LSB first
- Parity bit: even parity
- Stop bit: one bit with logic level 1

When numerical data composed by more than one byte are transmitted, the most significant byte is transmitted first and the least significant byte last.

INT_006 Transmission baud rates shall be adjustable from 9 600 bps to 115 200 bps. Transmission shall be achieved at the highest possible transmission speed, the initial baud rate after a start of communication being set at 9 600 bps.

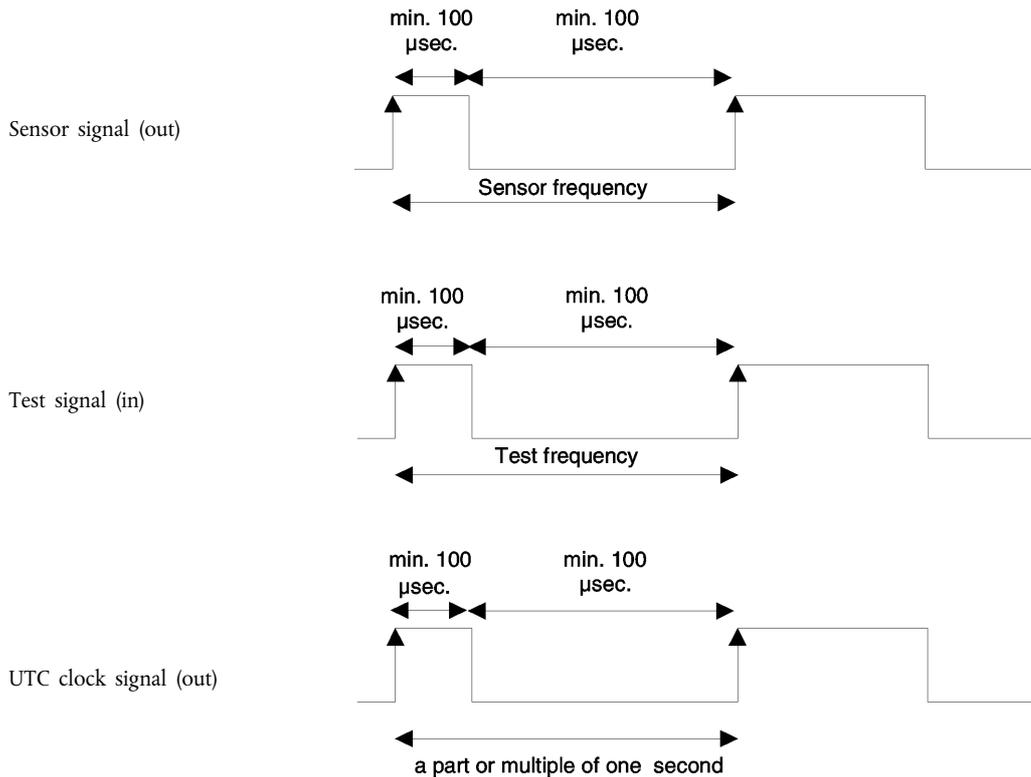
3. CALIBRATION INTERFACE

INT_007 The data communication shall comply to ISO 14230-1 Road vehicles — Diagnostic systems — Keyword protocol 2000 — Part 1: Physical layer, First edition: 1999.

INT_008 The input/output signal shall comply with the following electrical specification:

Parameter	Minimum	Typical	Maximum	Remark
U _{low} (in)			1,0 V	I = 750 µA
U _{high} (in)	4 V			I = 200 µA
Frequency			4 kHz	
U _{low} (out)			1,0 V	I = 1 mA
U _{high} (out)	4 V			I = 1 mA

INT_009 The input/output signal shall comply with the following timing diagrams:



Appendix 7

DATA DOWNLOADING PROTOCOLS

1. INTRODUCTION

This appendix specifies the procedures to follow in order to perform the different types of data download to an External Storage Medium, together with the protocols that must be implemented to assure the correct data transfer and the full compatibility of the downloaded data format to allow any controller to inspect these data and be able to control their authenticity and their integrity before analysing them.

1.1 **Scope**

Data may be downloaded to an ESM:

- from a Vehicle Unit by an Intelligent Dedicated Equipment (IDE) connected to the VU,
- from a tachograph card by an IDE fitted with a card interface device (IFD),
- from a tachograph card via a vehicle unit by an IDE connected to the VU.

To give the possibility to verify the authenticity and integrity of downloaded data stored on an ESM, data is downloaded with a signature appended in accordance with Appendix 11 Common Security Mechanisms. The source equipment (VU or card) identification and its security certificates (Member State and equipment) are also downloaded. The verifier of the data must possess independently a trusted European public key.

DDP_001 Data downloaded during one download session must be stored in the ESM within one file.

1.2 **Acronyms and notations**

The following acronyms are used in this appendix:

AID	Application Identifier
ATR	Answer To Reset
CS	Checksum byte
DF	Dedicated File
DS_	Diagnostic Session
EF	Elementary File
ESM	External Storage Medium
FID	File Identifier (File ID)
FMT	Format Byte (first byte of message header)
ICC	Integrated Circuit Card
IDE	Intelligent Dedicated Equipment: The equipment used to perform data downloading to the ESM (e.g. Personal Computer)
IFD	Interface Device
KWP	Keyword Protocol 2000
LEN	Length Byte (last byte of message header)
PPS	Protocol Parameter Selection
PSO	Perform Security Operation
SID	Service Identifier
SRC	Source byte
TGT	Target Byte
TLV	Tag Length Value
TREP	Transfer Response Parameter
TRTP	Transfer Request Parameter
VU	Vehicle Unit

2. VU DATA DOWNLOADING

2.1. Download procedure

In order to carry on a VU data download, the operator must perform the following operations:

- Insert his tachograph card inside a card slot of the VU ⁽¹⁾;
- Connect the IDE to the VU download connector;
- Establish the connection between the IDE and the VU;
- Select on the IDE the data to download and send the request to the VU;
- Close the download session.

2.2. Data download protocol

The protocol is structured on a master-slave basis, with the IDE playing the master role and the VU playing the slave role.

The message structure, types and flow are principally based on the Keyword Protocol 2000 (KWP) (ISO 14230-2 Road vehicles — Diagnostic systems — Keyword protocol 2000 — Part 2: Data link layer).

The application layer is principally based on the current draft to date of ISO 14229-1 (Road vehicles — Diagnostic systems — Part 1: Diagnostic services, version 6 of 22 February 2001).

2.2.1. Message structure

DDP_002 All the messages exchanged between the IDE and the VU are formatted with a structure consisting of three parts:

- Header composed by a Format byte (FMT), a Target byte (TGT), a Source byte (SRC) and possibly a Length byte (LEN),
- Data field composed by a Service Identifier byte (SID) and a variable number of data bytes, which can include an optional diagnostic session byte (DS_) or an optional transfer parameter byte (TRTP or TREP).
- Checksum composed by a Checksum byte (CS).

Header				Data field					Checksum
FMT	TGT	SRC	LEN	SID	DATA	CS
4 bytes				Max 225 bytes					1 byte

The TGT and SRC byte represent the physical address of the recipient and originator of the message. Values are F0 Hex for the IDE and EE Hex for the VU.

The LEN byte is the length of the Data field part.

The Checksum byte is the 8 bit sum series modulo 256 of all the bytes of the message excluding the CS itself.

FMT, SID, DS_, TRTP and TREP bytes are defined later in this document.

⁽¹⁾ The card inserted will trigger the appropriate access rights to the downloading function and to the data.

DDP_003 In the case where the data to be carried by the message is longer than the space available in the data field part, the message is actually sent in several sub messages. Each sub message bears a header, the same SID, TREP and a 2-byte sub message counter indicating the sub message number within the total message. To enable error checking and abort the IDE acknowledges every sub message. The IDE can accept the sub message, ask for it to be re-transmitted, request the VU to start again or abort the transmission.

DDP_004 If the last sub message contains exactly 255 bytes in the data field, a final sub message with an empty (except SID TREP and sub message counter) data field must be appended to show the end of the message.

Example:

Header	SID	TREP	Message			CS
4 Bytes	Longer than 255 Bytes					

Will be transmitted as:

Header	SID	TREP	00	01	Sub message 1	CS
4 Bytes	255 Bytes					

Header	SID	TREP	00	01	Sub message 2	CS
4 Bytes	255 Bytes					

...

Header	SID	TREP	xx	yy	Sub message n	CS
4 Bytes	Less than 255 Bytes					

or as:

Header	SID	TREP	00	01	Sub message 1	CS
4 Bytes	255 Bytes					

Header	SID	TREP	00	02	Sub message 2	CS
4 Bytes	255 Bytes					

...

Header	SID	TREP	xx	yy	Sub message n	CS
4 Bytes	255 Bytes					

Header	SID	TREP	xx	yy+1	CS
4 Bytes	4 bytes				

2.2.2. Message types

The communication protocol for data download between the VU and the IDE requires the exchange of 8 different message types.

The following table summarises these messages.

Message Structure	Max 4 Bytes Header				Max 255 Bytes Data			1 Byte CheckSum
	FMT	TGT	SRC	LEN	SID	DS_ / TRTP	DATA	CS
IDE ->	<- VU							
Start Communication Request	81	EE	F0		81			E0
Positive Response Start Communication	80	F0	EE	03	C1		8F,EA	9B
Start Diagnostic Session Request	80	EE	F0	02	10	81		F1
Positive Response Start Diagnostic	80	F0	EE	02	50	81		31
Link Control Service								
Verify Baud Rate (stage 1)								
9 600 Bd	80	EE	F0	04	87		01,01,01	EC
19 200 Bd	80	EE	F0	04	87		01,01,02	ED
38 400 Bd	80	EE	F0	04	87		01,01,03	ED
57 600 Bd	80	EE	F0	04	87		01,01,04	EF
115 200 Bd	80	EE	F0	04	87		01,01,05	F0
Positive Response Verify Baud Rate	80	F0	EE	02	C7		01	28
Transition Baud Rate (stage 2)	80	EE	F0	03	87		02,03	ED
Request Upload	80	EE	F0	0A	35		00,00,00,00, 00,FF,FF, FF,FF	99
Positive Response Request Upload	80	F0	EE	03	75		00,FF	D5
Transfer Data Request								
Overview	80	EE	F0	02	36	01		97
Activities	80	EE	F0	06	36	02	Date	CS
Events & Faults	80	EE	F0	02	36	03		99
Detailed Speed	80	EE	F0	02	36	04		9A
Technical Data	80	EE	F0	02	36	05		9B
Card download	80	EE	F0	02	36	06		9C
Positive Response Transfer Data	80	F0	EE	Len	76	TREP	Data	CS
Request Transfer Exit	80	EE	F0	01	37			96
Positive Response Request Transfer Exit	80	F0	EE	01	77			D6
Stop Communication Request	80	EE	F0	01	82			E1
Positive Response Stop Communication	80	F0	EE	01	C2			21
Acknowledge sub message	80	EE	F0	Len	83		Data	CS
Negative responses								
General reject	80	F0	EE	03	7F	Sid Req	10	CS
Service not supported	80	F0	EE	03	7F	Sid Req	11	CS
Sub function not supported	80	F0	EE	03	7F	Sid Req	12	CS
Incorrect Message Length	80	F0	EE	03	7F	Sid Req	13	CS
Conditions not correct or Request sequence error	80	F0	EE	03	7F	Sid Req	22	CS
Request out of range	80	F0	EE	03	7F	Sid Req	31	CS
Upload not accepted	80	F0	EE	03	7F	Sid Req	50	CS
Response pending	80	F0	EE	03	7F	Sid Req	78	CS
Data not available	80	F0	EE	03	7F	Sid Req	FA	CS

Notes:

- Sid Req = the Sid of the corresponding request.
- TREP = the TRTP of the corresponding request.
- Dark cells denotes that nothing is transmitted.
- The term upload (as seen from the IDE) is used for compatibility with ISO 14229. It means the same as download (as seen from the VU).
- Potential 2-byte sub message counters are not shown in this table.

2.2.2.1. Start Communication Request (SID 81)

DDP_005 This message is issued by the IDE to establish the communication link with the VU. Initial communications are always performed at 9 600 baud (until baud rate is eventually changed using the appropriate Link control services).

2.2.2.2. Positive Response Start Communication (SID C1)

DDP_006 This message is issued by the VU to answer positively to a start communication request. It includes the 2 key bytes '8F' 'EA' indicating that the unit supports protocol with header including target source and length information.

2.2.2.3. Start Diagnostic Session Request (SID 10)

DDP_007 The Start Diagnostic Session request message is issued by the IDE in order to request a new diagnostic session with the VU. The sub function 'default session' (81 Hex) indicates a standard diagnostic session is to be opened.

2.2.2.4. Positive Response Start Diagnostic (SID 50)

DDP_008 The Positive Response Start Diagnostic message is sent by the VU to answer positively to Diagnostic Session Request.

2.2.2.5. Link Control Service (SID 87)

DDP_052 The Link Control Service is used by the IDE to initiate a change in baud rate. This takes place in two steps. In step one the IDE proposes the baud rate change, indicating the new rate. On receipt of a positive message from the VU the IDE sends out confirmation of the baud rate change to the VU (step two). The IDE then changes to the new baud rate. After receipt of the confirmation the VU changes to the new baud rate

2.2.2.6. Link Control Positive Response (SID C7)

DDP_053 The Link Control Positive response is issued by the VU to answer positively to Link Control Service request (step one). Note that no response is given to the confirmation request (step two).

2.2.2.7. Request Upload (SID 35)

DDP_009 The Request Upload message is issued by the IDE to specify to the VU that a download operation is requested. To meet the requirements of ISO14229 data is included covering address, the size and format details for the data requested. As these are not known to the IDE prior to a download, the memory address is set to 0, format is unencrypted and uncompressed and the memory size is set to the maximum.

2.2.2.8. Positive Response Request Upload (SID 75)

DDP_010 The Positive Response Request Upload message is sent by the VU to indicate to the IDE that the VU is ready to download data. To meet the requirements of ISO 14229 data is included in this positive response message, indicating to the IDE that further Positive Response Transfer Data messages will include 00FF hex bytes maximum.

2.2.2.9. Transfer Data Request (SID 36)

DDP_011 The Transfer Data Request is sent by the IDE to specify to the VU the type of data that are to be downloaded. A one byte Transfer Request Parameter (TRTP) indicates the type of transfer.

There are six types of data transfer:

- Overview (TRTP 01),
- Activities of a specified date (TRTP 02),
- Events and faults (TRTP 03),
- Detailed speed (TRTP 04),
- Technical data (TRTP 05),
- Card download (TRTP 06).

DDP_054 It is mandatory for the IDE to request the overview data transfer (TRTP 01) during a download session as this only will ensure that the VU certificates are recorded within the downloaded file (and allow for verification of digital signature).

In the second case (TRTP 02) the Transfer Data Request message includes the indication of the calendar day `TimeReal` format) to be downloaded.

2.2.2.10. Positive Response Transfer Data (SID 76)

DDP_012 The Positive Response Transfer Data is sent by the VU in response to the Transfer Data Request. The message contains the requested data, with a Transfer Response Parameter (TREP) corresponding to the TRTP of the request.

DDP_055 In the first case (TREP 01), the VU will send data helping the IDE operator to choose the data he wants to download further. The information contained within this message is:

- Security certificates,
- Vehicle identification,
- VU current date and time,
- Min and Max downloadable date (VU data),
- Indication of cards presence in the VU,
- Previous download to a company,
- Company locks,
- Previous controls.

2.2.2.11. Request Transfer Exit (SID 37)

DDP_013 The Request Transfer Exit message is sent by the IDE to inform the VU that the download session is terminated.

2.2.2.12. Positive Response Request Transfer Exit (SID 77)

DDP_014 The Positive Response Request Transfer Exit message is sent by the VU to acknowledge the Request Transfer Exit.

2.2.2.13. Stop Communication Request (SID 82)

DDP_015 The Stop Communication Request message is sent by the IDE to disconnect the communication link with the VU.

2.2.2.14. Positive Response Stop Communication (SID C2)

DDP_016 The Positive Response Stop Communication message is sent by the VU to acknowledge the Stop Communication Request.

2.2.2.15. Acknowledge Sub Message (SID 83)

DDP_017 The Acknowledge Sub Message is sent by the IDE to confirm receipt of each part of a message that is being transmitted as several sub messages. The data field contains the SID received from the VU and a 2-byte code as follows:

- `MsgC +1` Acknowledges correct receipt of sub message number `MsgC`.
Request from the IDE to the VU to send next sub message
- `MsgC` indicates a problem with the receipt of sub message number `MsgC`.
Request from the IDE to the VU to send the sub message again.
- `FFFF` requests termination of the message.
This can be used by the IDE to end the transmission of the VU message for any reason.

The last sub message of a message (`LEN` byte < 255) may be acknowledged using any of these codes or not acknowledged.

The VU responses that will consist of several sub messages are:

- Positive Response Transfer Data (SID 76)

2.2.2.16. Negative Response (SID 7F)

DDP_018 The Negative Response message is sent by the VU in response to the above request messages when the VU cannot satisfy the request. The data fields of the message contains the SID of the response (7F), the SID of the request, and a code specifying the reason of the negative response. The following codes are available:

- 10 general reject
The action cannot be performed for a reason not covered below.
- 11 service not supported
The SID of the request is not understood.
- 12 sub function not supported
The DS_ or TRTP of the request is not understood, or there are no further sub messages to be transmitted.
- 13 incorrect message length
The length of the received message is wrong.
- 22 conditions not correct or request sequence error
The required service is not active or the sequence of request messages is not correct.
- 31 Request out of range
The request parameter record (data field) is not valid.
- 50 upload not accepted
The request cannot be performed (VU in a non appropriate mode of operation or internal fault of the VU).
- 78 response pending
The action requested cannot be completed in time and the VU is not ready to accept another request.
- FA data not available
The data object of a data transfer request are not available in the VU (e.g. no card is inserted, ...).

2.2.3. Message flow

A typical message flow during a normal data download procedure is the following:

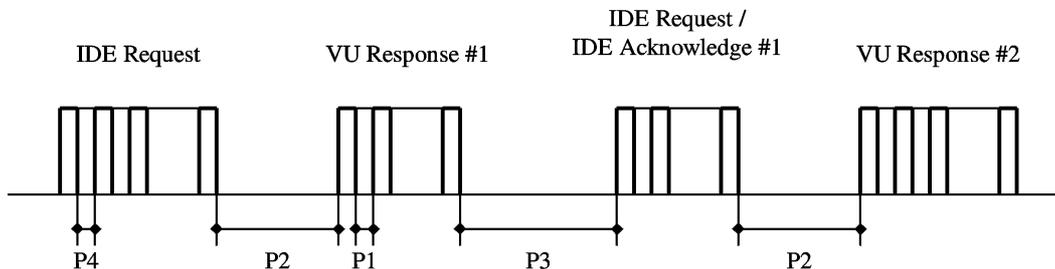
IDE		FE
Start Communication Request	⇔ ⇐	Positive Response
Start Diagnostic Service Request	⇔ ⇐	Positive Response
Request Upload	⇔ ⇐	Positive Response
Transfer Data Request Overview	⇔ ⇐	Positive Response Transfer
Data Request #2	⇔	Positive Response #1
Acknowledge Sub Message #1	⇐ ⇔	Positive Response #2
Acknowledge Sub Message #2	⇐ ⇔	Positive Response #m
Acknowledge Sub Message #m	⇐ ⇔	Positive Response (Data Field < 255 Bytes)
Acknowledge Sub Message (optional)	⇐ ⇔	
...		
Transfer Data Request #n	⇔ ⇐	Positive Response
Request Transfer Exit	⇔ ⇐	Positive Response
Stop Communication Request	⇔ ⇐	Positive Response

2.2.4. **Timing**

DDP_019 During normal operation the timing parameters shown in the following figure are relevant:

Figure 1

Message flow, timing



Where:

P1 = Inter byte time for VU response.

P2 = Time between end of IDE request and start of VU response, or between end of IDE acknowledge and start of next VU response.

P3 = Time between end of VU response and start of new IDE request, or between end of VU response and start of IDE acknowledge, or between end of IDE request and start of new IDE request if VU fails to respond.

P4 = Inter byte time for IDE request.

P5 = Extended value of P3 for card downloading.

The allowed values for the timing parameters are showed in the following table (KWP extended timing parameters set, used in case of physical addressing for faster communication).

Timing Parameter	Lower limit Value (ms)	Upper limit value (ms)
P1	0	20
P2	20	1 000 (*)
P3	10	5 000
P4	5	20
P5	10	20 minutes

(*) If the VU responds with a Negative Response containing a code meaning "request correctly received, response pending", this value is extended to the same upper limit value of P3.

2.2.5. **Error handling**

If an error occurs during the message exchange, the message flow scheme is modified depending on which equipment has detected the error and on the message generating the error.

In figure 2 and figure 3 the error handling procedures for the VU and the IDE are respectively shown.

2.2.5.1. *Start Communication phase*

DDP_020 If the IDE detects an error during the Start Communication phase, either by timing or by the bit stream, then it will wait for a period P3min before issuing again the request.

DDP_021 If the VU detects an error in the sequence coming from the IDE, it shall send no response and wait for another Start Communication Request message within a period P3 max.

2.2.5.2. *Communication phase*

Two different error handling areas can be defined:

1. The VU detects an IDE transmission error.

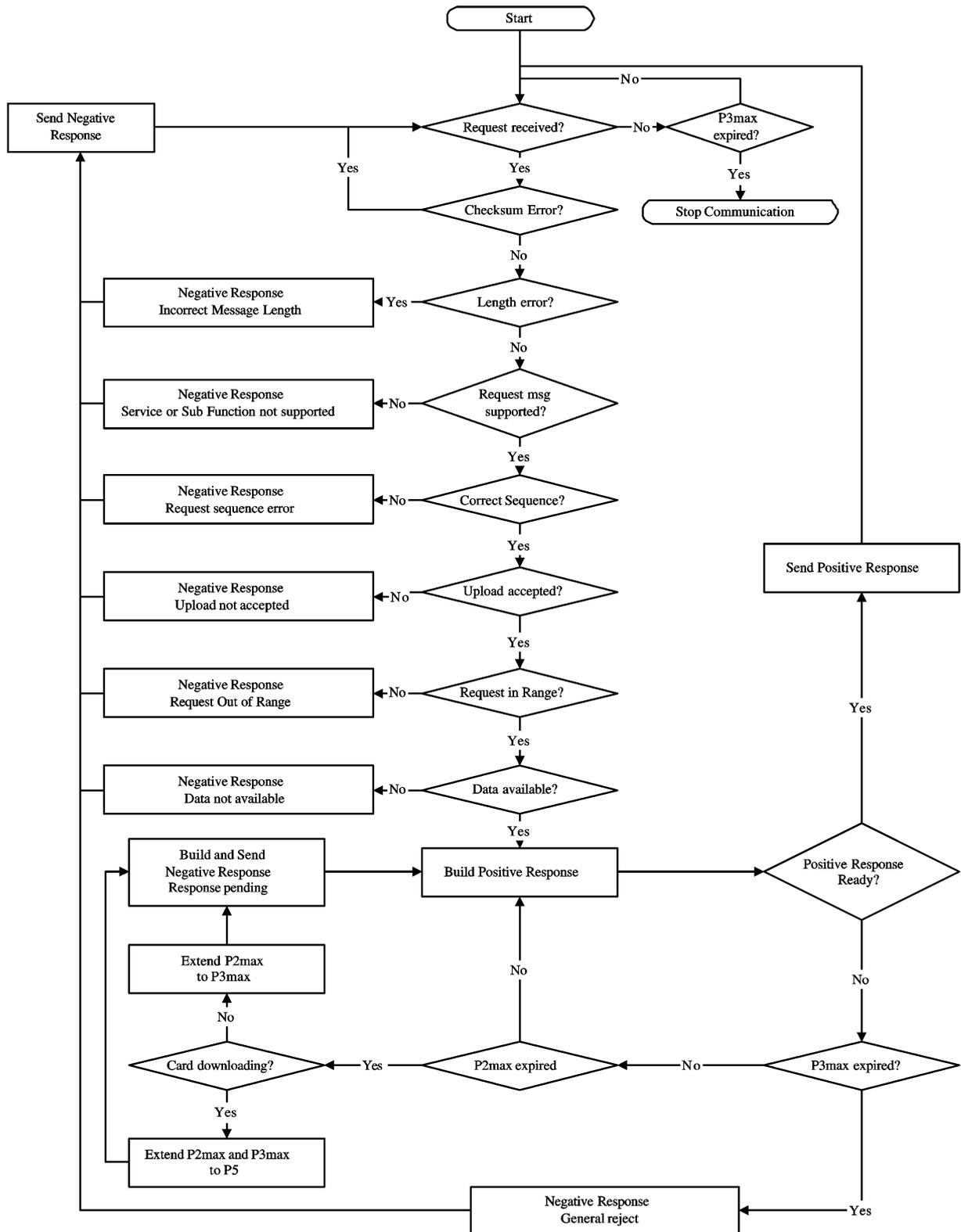
DDP_022 For every received message the VU shall detect timing errors, byte format errors (e.g. start and stop bit violations) and frame errors (wrong number of bytes received, wrong checksum byte).

DDP_023 If the VU detects one of the above errors, then it sends no response and ignores the message received.

DDP_024 The VU may detect other errors in the format or content of the received message (e.g. message not supported) even if the message satisfies the length and checksum requirements; in such a case, the VU shall respond to the IDE with a Negative Response message specifying the nature of the error.

Figure 2

VU error handling



2. The IDE detects a VU transmission error.

DDP_025 For every received message the IDE shall detect timing errors, byte format errors (e.g. start and stop bit violations) and frame errors (wrong number of bytes received, wrong checksum byte).

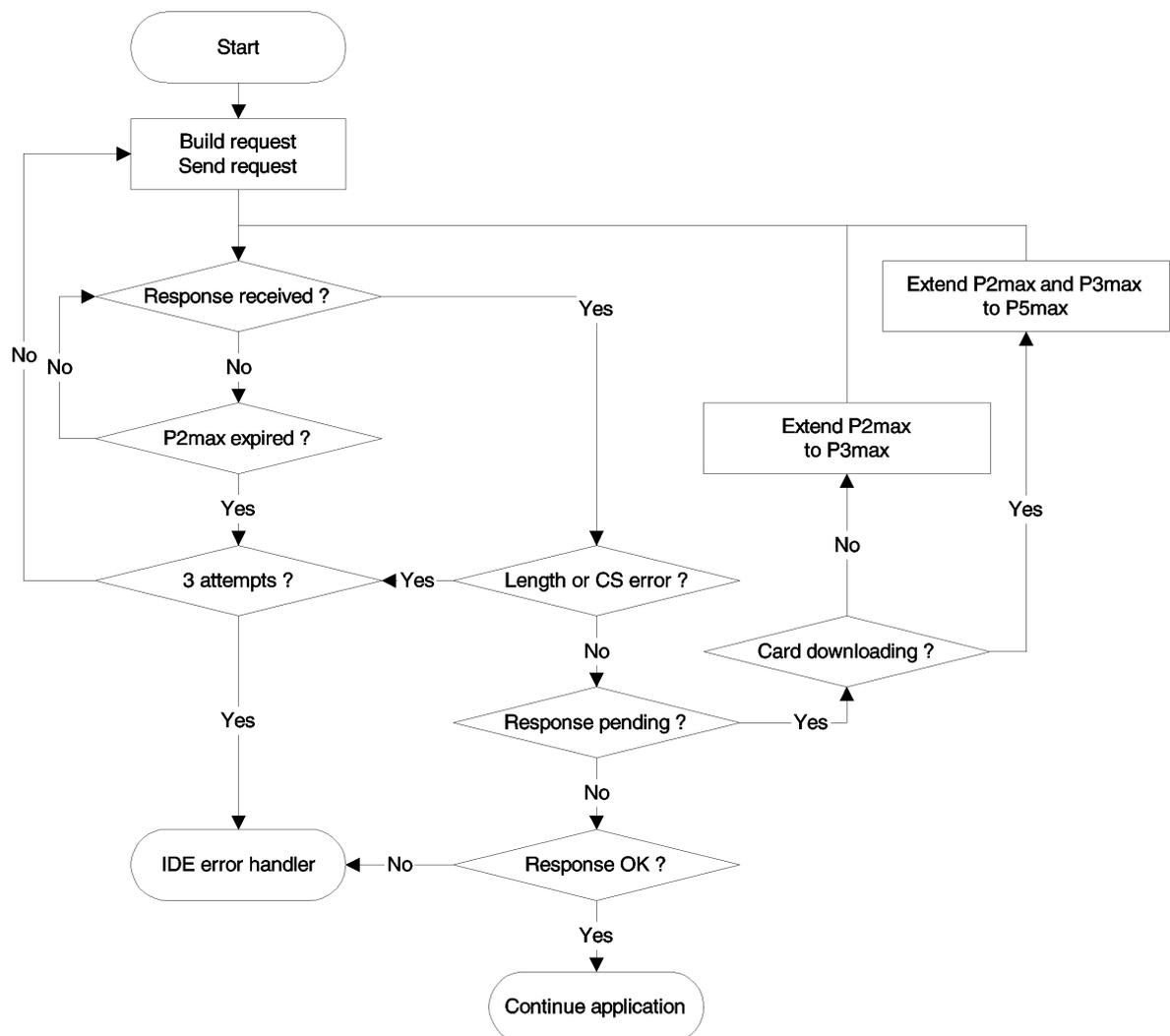
DDP_026 The IDE shall detect sequence errors, e.g. incorrect sub message counter increments in successive received messages.

DDP_027 If the IDE detects an error or there was no response from the VU within a P2max period, the request message will be sent again for a maximum of three transmissions in total. For the purposes of this error detection a sub message acknowledge will be considered as a request to the VU.

DDP_028 The IDE shall wait at least for a period of P3min before beginning each transmission; the wait period shall be measured from the last calculated occurrence of a stop bit after the error was detected.

Figure 3

IDE error handling



2.2.6. Response Message content

This paragraph specifies the content of the data fields of the various positive response messages.

Data elements are defined in Appendix 1 data dictionary.

2.2.6.1. Positive Response Transfer Data Overview

DDP_029 The data field of the "Positive Response Transfer Data Overview" message shall provide the following data in the following order under the SID 76 Hex, the TREP 01 Hex and appropriate sub message splitting and counting:

Data element	Length (Bytes)	Comment	
MemberStateCertificate	194	VU Security certificates	
VUCertificate	194		
VehicleIdentificationNumber	17	Vehicle identification	
VehicleRegistrationIdentification	1		
vehicleRegistrationNation vehicleRegistrationNumber	14		
CurrentDateTime	4	VU current date and time	
VuDownloadablePeriod		Downloadable period	
minDownloadableTime maxDownloadableTime	4 4		
CardSlotsStatus	1	Type of cards inserted in the VU	
VuDownloadActivityData		Previous VU download	
downloadingTime	4		
fullCardNumber	18		
companyOrWorkshopName	36		
VuCompanyLocksData		All company locks stored. If the section is empty, only noOfLocks = 0 is sent.	
noOfLocks	1		
...	(98)		
Vu Company Locks Record	lockInTime		4
	lockOutTime		4
	companyName		36
	companyAddress		36
	companyCardNumber		18
...			
VuControlActivityData			All control records stored in the VU. If the section is empty, only noOfControls = 0 is sent.
noOfControls	1		
..	(31)		
Vu Control Activity Record	controlType	1	
	controlTime	4	
	controlCardNumber	18	
	downloadPeriodBeginTime	4	
	downloadPeriodEndTime	4	
...			
Signature	128	RSA signature of all data (except certificates) starting from VehicleIdentificationNumber down to last byte of last VuControlActivityRecord.	

2.2.6.2. Positive Response Transfer Data Activities

DDP_030 The data field of the "Positive Response Transfer Data Activities" message shall provide the following data in the following order under the SID 76 Hex, the TREP 02 Hex and appropriate sub message splitting and counting:

Data element	Length (Bytes)	Comment
TimeReal	4	Date of day downloaded
OdometerValueMidnight	3	Odometer at end of downloaded day
VuCardIWData		Cards insertion withdrawal cycles data.
noOfVuCardIWRecords	2	— If this section contains no available data, only noOfVuCardIWRecords = 0 is sent.
...	(129)	
VuCardIWRecord		— When a VuCardIWRecord lies across 00:00 (card insertion on previous day) or across 24:00 (card withdrawal the following day) it shall appear in full within the two days involved.
cardHolderName	36	
holderSurname	36	
holderFirstNames	36	
fullCardNumber	18	
cardExpiryDate	4	
cardInsertionTime	4	
vehicleOdometerValueAtInsertion	3	
cardSlotNumber	1	
cardWithdrawalTime	4	
vehicleOdometerValueAtWithdrawal	3	
previousVehicleInfo		
vehicleRegistrationIdentification		
vehicleRegistrationNation	1	
vehicleRegistrationNumber	14	
cardWithdrawalTime	4	
manualInputFlag	1	
...		
VuActivityDailyData		Slots status at 00:00 and activity changes recorded for the day downloaded.
noOfActivityChanges	2	
...		
ActivityChangeInfo	2	
...		
VuPlaceDailyWorkPeriodData		Places related data recorded for the day downloaded. If the section is empty, only noOfPlaceRecords = 0 is sent.
noOfPlaceRecords	1	
...	(28)	
VuPlaceDailyWorkPeriodRecord		
fullCardNumber	18	
placeRecord		
entryTime	4	
entryTypeDailyWorkPeriod	1	
dailyWorkPeriodCountry	1	
dailyWorkPeriodRegion	1	
vehicleOdometerValue	3	
...		
VuSpecificConditionData		Specific conditions data recorded for the day downloaded. If the section is empty, only noOfSpecificConditionRecords = 0 is sent
noOfSpecificConditionRecords	2	
...	(5)	
SpecificConditionRecord		
EntryTime	4	
specificConditionType	1	
...		
Signature	128	RSA signature of all data starting from TimeReal down to last byte of last specific condition record.

2.2.6.3. Positive Response Transfer Data Events and Faults

DDP_031 The data field of the "Positive Response Transfer Data Events and Faults" message shall provide the following data in the following order under the SID 76 Hex, the TREP 03 Hex and appropriate sub message splitting and counting:

Data element		Length (Bytes)	Comment	
VuFaultData				
NoOfVuFaults		1	All faults stored or on-going in the VU. If the section is empty, only noOfVuFaults = 0 is sent.	
...		(82)		
VuFaultRecord	FaultType	1		
	FaultRecordPurpose	1		
	FaultBeginTime	4		
	FaultEndTime	4		
	CardNumberDriverSlotBegin	18		
	CardNumberCodriverSlotBegin	18		
...		18		
...		18		
VuEventData				
NoOfVuEvents		1	All events (except over speeding) stored or on-going in the VU. If the section is empty, only noOfVuEvents = 0 is sent.	
...		(83)		
VuEventRecord	EventType	1		
	EventRecordPurpose	1		
	EventBeginTime	4		
	EventEndTime	4		
	CardNumberDriverSlotBegin	18		
	CardNumberCodriverSlotBegin	18		
	CardNumberDriverSlotEnd	18		
	CardNumberCodriverSlotEnd	18		
	SimilarEventsNumber	1		
...		1		
VuOverSpeedingControlData				
LastOverspeedControlTime		4	Data related to last over speeding control (default value if no data).	
FirstOverspeedSince		4		
NumberOfOverspeedsSince		1		
VuOverSpeedingEventData				
NoOfVuOverSpeedingEvents		1	All over speeding events stored in the VU. If the section is empty, only noOfVuOverSpeedingEvents = 0 is sent.	
...		(31)		
VuOverSpeedingEventRecord	EventType	1		
	EventRecordPurpose	1		
	EventBeginTime	4		
	EventEndTime	4		
	MaxSpeedValue	1		
	AverageSpeedValue	1		
	CardNumberDriverSlotBegin	18		
	SimilarEventsNumber	1		
...		1		
VuTimeAdjustmentData				
NoOfVuTimeAdjRecords		1	All time adjustment events stored in the VU (outside the frame of a full calibration). If the section is empty, only noOfVuTimeAdjRecords = 0 is sent.	
...		(98)		
VuTimeAdjustmentRecord	OldTimeValue	4		
	NewTimeValue	4		
	WorkshopName	36		
	WorkshopAddress	36		
	WorkshopCardNumber	18		
...		18		
Signature		128		RSA signature of all data starting from noOfVuFaults down to last byte of last time adjustment record.

2.2.6.4. Positive Response Transfer Data Detailed Speed

DDP_032 The data field of the "Positive Response Transfer Data Detailed Speed" message shall provide the following data in the following order under the SID 76 Hex, the TREP 04 Hex and appropriate sub message splitting and counting:

Data element		Length (Bytes)	Comment
VuDetailedSpeedData			
NoOfSpeedBlocks		2	All time adjustment events stored in the VU (outside the frame of a full calibration). If the section is empty, only noOfVuTimeAdjRecords = 0 is sent.
...			
VuDetailedSpeedBlock	SpeedBlockBeginDate	4	
	speedsPerSecond	60	
Signature		128	RSA signature of all data starting from noOfVuFaults down to last byte of last time adjustment record.

2.2.6.5. Positive Response Transfer Data Technical Data

DDP_033 The data field of the "Positive Response Transfer Data Technical Data" message shall provide the following data in the following order under the SID 76 Hex, the TREP 05 Hex and appropriate sub message splitting and counting:

Data element		Length (Bytes)	Comment
VuIdentification			
vuManufacturerName		36	
vuManufacturerAddress		36	
vuPartNumber		16	
vuSerialNumber		8	
vuSoftwareIdentification			
vuSoftwareVersion		4	
vuSoftInstallationDate		4	
vuManufacturingDate		4	
vuApprovalNumber		8	
SensorPaired			
sensorSerialNumber		8	
sensorApprovalNumber		8	
sensorPairingDateFirst		4	
VuCalibrationData			All calibration records stored in the VU.
noOfVuCalibrationRecords		1	
...		(164)	
VuCalibrationRecord	calibrationPurpose	1	
	workshopName	36	
	workshopAddress	36	
	workshopCardNumber	18	
	workshopCardExpiryDate	4	
	vehicleIdentificationNumber	17	
	vehicleRegistrationIdentification		
	vehicleRegistrationNation	1	
	vehicleRegistrationNumber	14	
	wVehicleCharacteristicConstant	2	
	kConstantOfRecordingEquipment	2	
	lTyreCircumference	2	
	tyreSize	15	
	authorisedSpeed	1	
	oldOdometerValue	3	
newOdometerValue	3		
oldTimeValue	4		
newTimeValue	4		
nextCalibrationDate	4		
Signature		128	RSA signature of all data starting from vuManufacturerName down to last byte of last VuCalibrationRecord.

2.3. ESM File storage

DDP_034 When a download session has included a VU data transfer, the IDE shall store within one physical file all data received from the VU during the download session within Positive Response Transfer Data messages. Data stored excludes message headers, sub-message counters, empty sub-messages and checksums but include the SID and TREP (of the first sub-message only if several sub-messages).

3. TACHOGRAPH CARDS DOWNLOADING PROTOCOL

3.1. Scope

This paragraph describes the direct card data downloading of a tachograph card to an IDE. The IDE is not part of the secure environment; therefore no authentication between the card and the IDE is performed.

3.2. Definitions

Download session:

Each time a download of the ICC data is performed. The session covers the complete procedure from the reset of the ICC by an IFD until the deactivation of the ICC (withdraw of the card or next reset).

Signed Data File:

A file from the ICC. The file is transferred to the IFD in plain text. On the ICC the file is hashed and signed and the signature is transferred to the IFD.

3.3. Card Downloading

DDP_035 The download of a tachograph card includes the following steps:

- Download the common information of the card in the EFs ICC and IC. This information is optional and is not secured with a digital signature.
- Download the EFs Card_Certificate and CA_Certificate. This information is not secured with a digital signature.

It is mandatory to download these files for each download session.

- Download the other application data EFs (within Tachograph DF) except EF Card_Download. This information is secured with a digital signature.
 - It is mandatory to download at least the EFs Application_Identification and ID for each download session.
 - When downloading a driver card it is also mandatory to download the following EFs:
 - Events_Data,
 - Faults_Data,
 - Driver_Activity_Data,
 - Vehicles_Used,
 - Places,
 - Control_Activity_Data,
 - Specific_Conditions.
 - When downloading a driver card, update the LastCardDownload date in EF Card_Download,
 - When downloading a workshop card, reset the calibration counter in EF Card_Download.

3.3.1. Initialisation sequence

DDP_036 The IDE shall initiate the sequence as follows:

Card	Direction	IDE / IFD	Meaning / Remarks
	←	Hardware reset	
ATR	⇒		

It is optional to use PPS to switch to a higher baudrate as long as the ICC supports it.

3.3.2. Sequence for un-signed data files

DDP_037 The sequence to download the ICC, IC, Card_Certificate and CA_Certificate is as follows:

Card	Direction	IDE / IFD	Meaning / Remarks
	←	Select File	Select File Select by File identifiers
OK	⇒		
	←	Read Binary	If the file contains more data than the buffer size of the reader or the card the command has to be repeated until the complete file is read.
File Data OK	⇒	Store data to ESM	according to 3.4, Data storage format

Note: Before selecting the Card_Certificate EF, the Tachograph Application must be selected (selection by AID).

3.3.3. Sequence for Signed data files

DDP_038 The following sequence shall be used for each of the following files that has to be downloaded with their signature:

Card	Direction	IDE / IFD	Meaning / Remarks
	←	Select File	
OK	⇒		
	←	Perform Hash of File	Calculates the hash value over the data content of the selected file using the prescribed hash algorithm in accordance with Appendix 11. This command is not an ISO-Command.
Calculate Hash of File and store Hash value temporarily			
OK	⇒		
	←	Read Binary	If the file contains more data than the buffer of the reader or the card can hold, the command has to be repeated until the complete file is read.
File Data OK	⇒	Store received data to ESM	according to 3.4, Data storage format
	←	PSO: Compute Digital Signature	
Perform Security Operation "Compute Digital Signature" using the temporarily stored Hash value			
Signature OK	⇒	Append data to the previous stored data on the ESM	according to 3.4, Data storage format

3.3.4. Sequence for resetting the calibration counter

DDP_039 The sequence to reset the NoOfCalibrationsSinceDownload counter in the EF Card_Download in a workshop card is the following:

Card	Direction	IDE / IFD	Meaning / Remarks
OK	↔	Select File EF Card_Download	Select by File identifiers
	↔	Update Binary NoOfCalibrationsSinceDownload = '00 00'	
resets card download number			
OK	↔		

3.4. Introduction

3.4.1. Introduction

DDP_040 The downloaded data has to be stored according to the following conditions:

- The data shall be stored transparent. This means that the order of the bytes as well as the order of the bits inside the byte that are transferred from the card has to be preserved during storage.
- All files of the card downloaded within a download session are stored in one file on the ESM.

3.4.2. File format

DDP_041 The file format is a concatenation of several TLV objects.

DDP_042 The tag for an EF shall be the FID plus the appendix "00".

DDP_043 The tag of an EF's signature shall be the FID of the file plus the appendix "01".

DDP_044 The length is a two byte value. The value defines the number of bytes in the value field. The value "FF FF" in the length field is reserved for future use.

DDP_045 When a file is not downloaded nothing related to the file shall be stored (no tag and no zero length).

DDP_046 A signature shall be stored as the next TLV object directly after the TLV object that contains the data of the file.

Definition	Meaning	Length
FID (2 Bytes) "00"	Tag for EF (FID)	3 Bytes
FID (2 Bytes) "01"	Tag for Signature of EF(FID)	3 Bytes
xx xx	Length of Value field	2 Bytes

Example of data in a download file on an ESM:

Tag	Length	Value
00 02 00	00 11	Data of EF ICC
C1 00 00	00 C2	Data of EF Card_Certificate
		...
05 05 00	0A 2E	Data of EF Vehicles_Used
05 05 01	00 80	Signature of EF Vehicles_Used

4. DOWNLOADING A TACHOGRAPH CARD VIA A VEHICLE UNIT

- DDP_047 The VU must allow for downloading the content of a driver card inserted to a connected IDE.
- DDP_048 The IDE shall send a "Transfer Data Request Card Download" message to the VU to initiate this mode (see 2.2.2.9).
- DDP_049 The VU shall then download the whole card, file by file, in accordance with the card downloading protocol defined in paragraph 3, and forward all data received from the card to the IDE within the appropriate TLV file format (see 3.4.2) and encapsulated within a "Positive Response Transfer Data" message.
- DDP_050 The IDE shall retrieve card data from the "Positive Response Transfer Data" message (stripping all headers, SIDs, TREPs, sub message counters, and checksums) and store them within one physical file as described in paragraph 2.3.
- DDP_051 The VU shall then, as applicable, update the `Control_Activity_Data` or the `Card_Download` file of the driver card.
-

Appendix 8

CALIBRATION PROTOCOL

1. INTRODUCTION

This appendix describes how data is exchanged between a vehicle unit and a tester via the K-line which forms part of the calibration interface described in Appendix 6. It also describes control of the input/output signal line on the calibration connector.

Establishing K-line communications is described in Section 4 "Communication Services".

This appendix uses the idea of diagnostic "sessions" to determine the scope of K-line control under different conditions. The default session is the "StandardDiagnosticSession" where all data can be read from a vehicle unit but no data can be written to a vehicle unit.

Selection of the diagnostic session is described in Section 5 "Management Services".

CPR_001 The "ECUProgrammingSession" allows data entry into the vehicle unit. In the case of entry of calibration data (requirements 097 and 098), the vehicle unit must, in addition be in the CALIBRATION mode of operation.

Data transfer via K-line is described in Section 6 "Data Transmission Services". Formats of data transferred are detailed in Section 8 "dataRecords formats".

CPR_002 The "ECUAdjustmentSession" allows the selection of the I/O mode of the calibration I/O signal line via the K-line interface. Control of the calibration I/O signal line is described in section 7 "Control of Test Pulses — Input/Output Control functional unit".

CPR_003 Throughout this document the address of the tester is referred to as 'tt'. Although there may be preferred addresses for testers, the VU shall respond correctly to any tester address. The physical address of the VU is 0xEE.

2. TERMS, DEFINITIONS AND REFERENCES

The protocols, messages and error codes are principally based on the current draft to date of ISO 14229-1 (Road vehicles — Diagnostic systems — Part 1: Diagnostic services, version 6 of 22 February 2001).

Byte encoding and hexadecimal values are used for the service identifiers, the service requests and responses, and the standard parameters.

The term "tester" refers to the equipment used to enter programming/calibration data into the VU.

The terms "client" and "server" refer to the tester and the VU respectively.

The term ECU means "Electronic Control Unit" and refers to the VU.

References:

ISO 14230-2: Road Vehicles — Diagnostic Systems — Keyword Protocol 2000- Part 2: Data Link Layer. First edition: 1999. Vehicles — Diagnostic Systems.

3. OVERVIEW OF SERVICES

3.1. **Services available**

The following table provides an overview of the services that will be available in the recording equipment and are defined in this document.

CPR_004 The table indicates the services that are available in an enabled diagnostic session.

— The 1st column lists the services that are available.

— The 2nd column includes the section number in this appendix where of service is further defined.

- The 3rd column assigns the assigns the service identifier values for request messages.
- The 4th column specifies the services of the “StandardDiagnosticSession” (SD) which must be implemented in each VU.
- The 5th column specifies the services of the “ECUAdjustmentSession” (ECUAS) which must be implemented to allow control of the I/O signal line in the front panel calibration connector of the VU.
- The 6th column specifies the services of the “ECUProgrammingSession” (ECUPS) which must be implemented to allow for programming of parameters in the VU.

Table 1

Service Identifier value summary table

Diagnostic Service Name	Section No	SId Req.Value	Diagnostic Sessions		
			SD	ECUAS	ECUPS
StartCommunication	4.1	81	■	■	■
StopCommunication	4.2	82	■		
TesterPresent	4.3	3E	■	■	■
StartDiagnosticSession	5.1	10	■	■	■
SecurityAccess	5.2	27	■	■	■
ReadDataByIdentifier	6.1	22	■	■	■
WriteDataByIdentifier	6.2	2E			■
InputOutputControlByIdentifier	7.1	2F		■	

■ This symbol indicates that the service is mandatory in this diagnostic session.
 No symbol indicates that this service is not allowed in this diagnostic session.

3.2. Response codes

Response codes are defined for each service.

4. COMMUNICATION SERVICES

Some services are necessary to establish and maintain communication. They do not appear on the application layer. The services available are detailed in the following table:

Table 2

Communication Services

Service name	Description
StartCommunication	The client requests to start a communication session with a server(s)
StopCommunication	The client requests to stop the current communication session
TesterPresent	The client indicates to the server that it is still present

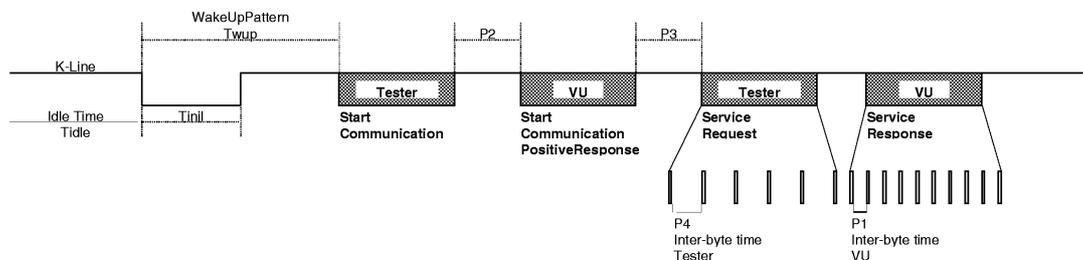
CPR_005 The StartCommunication Service is used for starting a communication. In order to perform any service, communication must be initialised and the communication parameters need to be appropriate for the desired mode.

4.1. StartCommunication Service

CPR_006 Upon receiving a StartCommunication indication primitive, the VU shall check if the requested communication link can be initialised under the present conditions. Valid conditions for the initialisation of a communication link are described in document ISO 14230-2.

CPR_007 Then the VU shall perform all actions necessary to initialise the communication link and send a StartCommunication response primitive with the Positive Response parameters selected.

- CPR_008 If a VU that is already initialised (and has entered any diagnostic session) receives a new StartCommunication Request (e.g. due to error recovery in the tester) the request shall be accepted and the VU shall be reinitialised.
- CPR_009 If the communication link cannot be initialised for any reason, the VU shall continue operating as it was immediately prior to the attempt to initialise the communication link.
- CPR_010 The StartCommunication Request message must be physically addressed.
- CPR_011 Initialising the VU for services is performed through a "fast initialisation" method,
- There is a bus-idle time prior to any activity.
 - The tester then sends an initialisation pattern.
 - All information which is necessary to establish communication is contained in the response of the VU.
- CPR_012 After completion of the initialisation,
- All communication parameters are set to values defined in Table 4 according to the key bytes.
 - The VU is waiting for the first request of the tester.
 - The VU is in the default diagnostic mode, i.e. StandardDiagnosticSession.
 - The calibration I/O signal line is in the default state, i.e. disabled state.
- CPR_014 The data rate on the K-line shall be 10 400 Baud.
- CPR_016 The fast initialisation is started by the tester transmitting a Wake up pattern (Wup) on the K-line. The pattern begins after the idle time on K-line with a low time of T_{inil} . The tester transmits the first bit of the StartCommunication Service after a time of T_{wup} following the first falling edge.



- CPR_017 The timing values for the fast initialisation and communications in general are detailed in the tables below. There are different possibilities for the idle time:
- First transmission after power on, $T_{idle} = 300$ ms.
 - After completion of a StopCommunication Service, $T_{idle} = P3$ min.
 - After stopping communication by time-out $P3$ max, $T_{idle} = 0$.

Table 3

Timing values for fast initialisation

Parameter		min value	max value
T_{inil}	25 ± 1 ms	24 ms	26 ms
T_{wup}	50 ± 1 ms	49 ms	51 ms

Table 4

Communication timing values

Timing Parameter	Parameter Description	lower limit values (ms)	upper limit values (ms)
		min.	max.
P1	Inter byte time for VU response	0	20
P2	Time between tester request and VU response or two VU responses	25	250
P3	Time between end of VU responses and start of new tester request	55	5 000
P4	Inter byte time for tester request	5	20

CPR_018 The message format for fast initialisation is detailed in the following tables:

Table 5

StartCommunication Request Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	81	FMT
#2	Target address byte	EE	TGT
#3	Source address byte	tt	SRC
#4	StartCommunication Request Service Id	81	SCR
#5	Checksum	00-FF	CS

Table 6

StartCommunication Positive Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	03	LEN
#5	StartCommunication Positive Response Service Id	C1	SCRPR
#6	Key byte 1	EA	KB1
#7	Key byte 2	8F	KB2
#8	Checksum	00-FF	CS

CPR_019 There is no negative response to the StartCommunication Request message, if there is no positive response message to be transmitted then the VU is not initialised, nothing is transmitted and it remains in its normal operation.

4.2. StopCommunication Service

4.2.1. Message description

The purpose of this communication layer service is to terminate a communication session.

CPR_020 Upon receiving a StopCommunication indication primitive, the VU shall check if the current conditions allow to terminate this communication. In this case the VU shall perform all actions necessary to terminate this communication.

- CPR_021 If it is possible to terminate the communication, the VU shall issue a StopCommunication response primitive with the Positive Response parameters selected, before the communication is terminated.
- CPR_022 If the communication cannot be terminated by any reason, the VU shall issue a StopCommunication response primitive with the Negative Response parameter selected.
- CPR_023 If time-out of P3max is detected by the VU, the communication shall be terminated without any response primitive being issued.

4.2.2. Message format

- CPR_024 The message formats for the StopCommunication primitives are detailed in the following tables:

Table 7

StopCommunication Request Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	EE	TGT
#3	Source address byte	tt	SRC
#4	Additional length byte	01	LEN
#5	StopCommunication Request Service Id	82	SPR
#6	Checksum	00-FF	CS

Table 8

StopCommunication Positive Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	01	LEN
#5	StopCommunication Positive Response Service Id	C2	SPRPR
#6	Checksum	00-FF	CS

Table 9

StopCommunication Negative Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	03	LEN
#5	negative Response Service Id	7F	NR
#6	StopCommunication Request Service Identification	82	SPR
#7	responseCode = generalReject	10	RC_GR
#8	Checksum	00-FF	CS

4.2.3. Parameter Definition

This service does not require any parameter definition.

4.3. TesterPresent Service

4.3.1. Message description

The TesterPresent service is used by the tester to indicate to the server that it is still present, in order to prevent the server from automatically returning to normal operation and possibly stopping the communication. This service, sent periodically, keeps the diagnostic session/communication active by resetting the P3 timer each time a request for this service is received.

4.3.2. Message format

CPR_079 The message formats for the TesterPresent primitives are detailed in the following tables.

Table 10

TesterPresent Request Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	EE	TGT
#3	Source address byte	tt	SRC
#4	Additional length byte	02	LEN
#5	TesterPresent Request Service Id	3E	TP
#6	Sub Function = responseRequired = [yes no]	01 02	RESPREQ_Y RESPREQ_NO
#7	Checksum	00-FF	CS

CPR_080 If the responseRequired parameter is set to “yes”, then the server shall respond with the following positive response message. If set to “no”, then no response is sent by the server.

Table 11

TesterPresent Positive Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	01	LEN
#5	TesterPresent Positive Response Service Id	7E	TPPR
#6	Checksum	00-FF	CS

CPR_081 The service shall support the following negative responses codes:

Table 12

TesterPresent Negative Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	03	LEN
#5	negative Response Service Id	7F	NR
#6	TesterPresent Request Service Identification	3E	TP
#7	responseCode = [SubFunctionNotSupported-InvalidFormat incorrectMessageLength]	12	RC_SFNS_IF
		13	RC_IML
#8	Checksum	00-FF	CS

5. MANAGEMENT SERVICES

The services available are detailed in the following table:

Table 13

Management Services

Service name	Description
StartDiagnosticSession	The client requests to start a diagnostic session with a VU
SecurityAccess	The client requests access to functions restricted to authorised users

5.1. StartDiagnosticSession service

5.1.1. Message description

CPR_025 The service StartDiagnosticSession is used to enable different diagnostic sessions in the server. A diagnostic session enables a specific set of services according to Table 17. A session can enable vehicle manufacturer specific services which are not part of this document. Implementation rules shall conform to the following requirements:

- There shall be always exactly one diagnostic session active in the VU.
- The VU shall always start the StandardDiagnosticSession when powered up. If no other diagnostic session is started, then the StandardDiagnosticSession shall be running as long as the VU is powered.
- If a diagnostic session which is already running has been requested by the tester, then the VU shall send a positive response message.
- Whenever the tester requests a new diagnostic session, the VU shall first send a StartDiagnosticSession positive response message before the new session becomes active in the VU. If the VU is not able to start the requested new diagnostic session, then it shall respond with a StartDiagnosticSession negative response message, and the current session shall continue.

CPR_026 diagnostic session shall only be started if communication has been established between the client and the VU.

CPR_027 The timing parameters defined in Table 4 shall be active after a successful StartDiagnosticSession with the diagnosticSession parameter set to "StandardDiagnosticSession" in the request message if another diagnostic session was previously active.

5.1.2. **Message format**

CPR_028 The message formats for the StartDiagnosticSession primitives are detailed in the following tables:

Table 14

StartDiagnosticSession Request Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	EE	TGT
#3	Source address byte	tt	SRC
#4	Additional length byte	02	LEN
#5	StartDiagnosticSession Request Service Id	10	STDS
#6	diagnosticSession = [one value from Table 17]	xx	DS_...
#7	Checksum	00-FF	CS

Table 15

StartDiagnosticSession Positive Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	02	LEN
#5	StartDiagnosticSession Positive Response Service Id	50	STDSPR
#6	DiagnosticSession = [same value as in byte #6 Table 14]	xx	DS_...
#7	Checksum	00-FF	CS

Table 16

StartDiagnosticSession Negative Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	03	LEN
#5	Negative Response Service Id	7F	NR
#6	StartDiagnosticSession Request Service Id	10	STDS
#7	ResponseCode = [subFunctionNotSupported ^(a)	12	RC_SFNS
	incorrectMessageLength ^(b)	13	RC_I ML
	conditionsNotCorrect ^(c)	22	RC_CNC
#8	Checksum	00-FF	CS

^(a) The value inserted in byte #6 of the request message is not supported, i.e. not in Table 17.

^(b) The length of the message is wrong.

^(c) The criteria for the request StartDiagnosticSession are not met.

5.1.3. Parameter definition

CPR_029 The parameter *diagnosticSession* (DS_) is used by the StartDiagnosticSession service to select the specific behaviour of the server(s). The following diagnostic sessions are specified in this document:

Table 17

Definition of diagnosticSession Values

Hex	Description	Mnemonic
81	StandardDiagnosticSession This diagnostic session enables all services specified in Table 1 column 4 "SD". These services allow reading of data from a server (VU). This diagnostic Session is active after the initialisation has been successfully completed between client (tester) and server (VU). This diagnostic session may be overwritten by other diagnostic sessions specified in this section.	SD
85	ECUProgrammingSession This diagnostic session enables all services specified in Table 1 column 6 "ECUPS". These services support the memory programming of a server (VU) This diagnostic session may be overwritten by other diagnostic sessions specified in this section.	ECUPS
87	ECUAdjustmentSession This diagnostic session enables all services specified in Table 1 column 5 "ECUAS". These services support the input/output control of a server (VU). This diagnostic session may be overwritten by other diagnostic sessions specified in this section.	ECUAS

5.2. SecurityAccess service

Writing of calibration data or access to the calibration input/output line is not possible unless the VU is in CALIBRATION mode. In addition to insertion of a valid workshop card into the VU, it is necessary to enter the appropriate PIN into the VU before access to the CALIBRATION mode is granted.

The SecurityAccess service provides a means to enter the PIN and to indicate to the tester whether or not the VU is in CALIBRATION mode.

It is acceptable that the PIN may be entered through alternative methods.

5.2.1. Message Description

The SecurityAccess service consists of a SecurityAccess "requestSeed" message, eventually followed by a SecurityAccess "sendKey" message. The SecurityAccess service must be carried out after the StartDiagnosticSession service.

CPR_033 The tester shall use the SecurityAccess "requestSeed" message to check if the vehicle unit is ready to accept a PIN.

CPR_034 If the vehicle unit is already in CALIBRATION mode, it shall answer the request by sending a "seed" of 0x0000 using the service SecurityAccess Positive Response.

CPR_035 If the vehicle unit is ready to accept a PIN for verification by a workshop card, it shall answer the request by sending a "seed" greater than 0x0000 using the service SecurityAccess Positive Response.

CPR_036 If the vehicle unit is not ready to accept a PIN from the tester, either because the workshop card inserted is not valid, or because no workshop card has been inserted, or because the vehicle unit expects the PIN from another method, it shall answer the request with a Negative Response with a response code set to conditionsNotCorrectOrRequestSequenceError.

CPR_037 The tester shall then, eventually, use the SecurityAccess "sendKey" message to forward a PIN to the Vehicle Unit. To allow time for the card authentication process to take place, the VU shall use the negative response code requestCorrectlyReceived-ResponsePending to extend the time to respond. However, the maximum time to respond shall not exceed 5 minutes. As soon as the requested service has been completed, the VU shall send a positive response message or negative response message with a response code different from this one. The negative response code requestCorrectlyReceived-ResponsePending may be repeated by the VU until the requested service is completed and the final response message is sent.

CPR_038 The vehicle unit shall answer to this request using the service SecurityAccess Positive Response only when in CALIBRATION mode.

CPR_039 In the following cases, the vehicle unit shall answer to this request with a Negative Response with a response code set to:

- subFunctionNot supported: Invalid format for the subfunction parameter (accessType),
- conditionsNotCorrectOrRequestSequenceError: Vehicle unit not ready to accept a PIN entry,
- invalidKey: PIN not valid and number of PIN checks attempts not exceeded,
- exceededNumberOfAttempts: PIN not valid and number of PIN checks attempts exceeded,
- generalReject: Correct PIN but mutual authentication with workshop card failed.

5.2.2. Message format — SecurityAccess — requestSeed

CPR_040 The message formats for the SecurityAccess “requestSeed” primitives are detailed in the following tables:

Table 18

SecurityAccess Request — requestSeed Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	EE	TGT
#3	Source address byte	tt	SRC
#4	Additional length byte	02	LEN
#5	SecurityAccess Request Service Id	27	SA
#6	accessType — requestSeed	7D	AT_RSD
#7	Checksum	00-FF	CS

Table 19

SecurityAccess — requestSeed Positive Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	04	LEN
#5	SecurityAccess Positive Response Service Id	67	SAPR
#6	accessType — requestSeed	7D	AT_RSD
#7	Seed High	00-FF	SEEDH
#8	Seed Low	00-FF	SEEDL
#9	Checksum	00-FF	CS

Table 20

SecurityAccess Negative Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	03	LEN
#5	negativeResponse Service Id	7F	NR
#6	SecurityAccess Request Service Id	27	SA
#7	responseCode = [conditionsNotCorrectOrRequestSequenceError incorrectMessageLength]	22 13	RC_CNC RC_IML
#8	Checksum	00-FF	CS

5.2.3. Message format — SecurityAccess — sendKey

CPR_041 The message formats for the SecurityAccess “sendKey” primitives are detailed in the following tables:

Table 21

SecurityAccess Request — sendKey Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	EE	TGT
#3	Source address byte	tt	SRC
#4	Additional length byte	m+2	LEN
#5	SecurityAccess Request Service Id	27	SA
#6	accessType — sendKey	7E	AT_SK
#7 to #m+6	Key #1 (High) ... Key #m (low, m must be a minimum of 4, and a maximum of 8)	xx ... xx	KEY
#m+7	Checksum	00-FF	CS

Table 22

SecurityAccess — sendKey Positive Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	02	LEN
#5	SecurityAccess Positive Response Service Id	67	SAPR
#6	accessType — sendKey	7E	AT_SK
#7	Checksum	00-FF	CS

Table 23

SecurityAccess Negative Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	03	LEN
#5	NegativeResponse Service Id	7F	NR
#6	SecurityAccess Request Service Id	27	SA
#7	ResponseCode = [generalReject subFunctionNotSupported incorrectMessageLength conditionsNotCorrectOrRequestSequenceError invalidKey exceededNumberOfAttempts requestCorrectlyReceived-ResponsePending]	10 12 13 22 35 36 78	RC_GR RC_SFNS RC_IML RC_CNC RC_IK RC_ENA RC_RCR_RP
#8	Checksum	00-FF	CS

6. DATA TRANSMISSION SERVICES

The services available are detailed in the following table:

Table 24

Data Transmission Services

Service name	Description
ReadDataByIdentifier	The client requests the transmission of the current value of a record with access by recordDataIdentifier
WriteDataByIdentifier	The client requests to write a record accessed by recordDataIdentifier

6.1. ReadDataByIdentifier service**6.1.1. Message description**

CPR_050 The ReadDataByIdentifier service is used by the client to request data record values from a server. The data are identified by a recordDataIdentifier. It is the VU manufacturer's responsibility that the server conditions are met when performing this service.

6.1.2. Message format

CPR_051 The message formats for the ReadDataByIdentifier primitives are detailed in the following tables:

Table 25

ReadDataByIdentifier Request Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	EE	TGT
#3	Source address byte	tt	SRC
#4	Additional length byte	03	LEN
#5	ReadDataByIdentifier Request Service Id	22	RDBI
#6 and #7	recordDataIdentifier = [a value fromTable 28]	xxxx	RDI_ . .
#8	Checksum	00-FF	CS

Table 26

ReadDataByIdentifier Positive Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	m+3	LEN
#5	ReadDataByIdentifier Positive Response Service Id	62	RDBIPR
#6 and #7	recordDataIdentifier = [the same value as bytes #6 and #7 Table 25]	xxxx	RDI_...
#8 to #m+7	dataRecord[] = [data#1 : data#m]	xx : xx	DREC_DATA1 : DREC_DATAm
#m+8	Checksum	00-FF	CS

Table 27

ReadDataByIdentifier Negative Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	03	LEN
#5	NegativeResponse Service Id	7F	NR
#6	ReadDataByIdentifier Request Service Id	22	RDBI
#7	ResponseCode = [requestOutOfRange incorrectMessageLength conditionsNotCorrect]	31 13 22	RC_ROOR RC_IML RC_CNC
#8	Checksum	00-FF	CS

6.1.3. Parameter Definition

CPR_052 The parameter recordDataIdentifier (RDI_) in the ReadDataByIdentifier request message identifies a data record.

CPR_053 recordDataIdentifier values defined by this document are shown in the table below.

The recordDataIdentifier table consists of four columns and multiple lines.

- The 1st column (Hex) includes the “Hex Value” assigned to the recordDataIdentifier specified in the 3rd column.
- The 2nd column (Data element) specifies the data element of Appendix 1 on which the recordDataIdentifier is based (transcoding is sometimes necessary).
- The 3rd column (Description) specifies the corresponding recordDataIdentifier name.
- The 4th column (Mnemonic) specifies the mnemonic of this recordDataIdentifier.

Table 28

Definition of recordDataIdentifier values

Hex	Data element	recordDataIdentifier Name (see format in Section 8.2)	Mnemonic
F90B	CurrentDateTime	TimeDate	RDI_TD
F912	HighResOdometer	HighResolutionTotalVehicleDistance	RDI_HRTVD
F918	K-ConstantOfRecordingEquipment	Kfactor	RDI_KF
F91C	L-TyreCircumference	LfactorTyreCircumference	RDI_LF
F91D	W-VehicleCharacteristicConstant	WvehicleCharacteristicFactor	RDI_WVCF
F921	TyreSize	TyreSize	RDI_TS
F922	nextCalibrationDate	NextCalibrationDate	RDI_NCD
F92C	SpeedAuthorised	SpeedAuthorised	RDI_SA
F97D	vehicleRegistrationNation	RegisteringMemberState	RDI_RMS
F97E	VehicleRegistrationNumber	VehicleRegistrationNumber	RDI_VRN
F190	VehicleIdentificationNumber	VIN	RDI_VIN

CPR_054 The parameter dataRecord (DREC_) is used by the ReadDataByIdentifier positive response message to provide the data record value identified by the recordDataIdentifier to the client (tester). Data formats are specified in section 8. Additional user optional dataRecords including VU specific input, internal and output data may be implemented, but are not defined in this document.

6.2. WriteDataByIdentifier service**6.2.1. Message description**

CPR_056 The WriteDataByIdentifier service is used by the client to write data record values to a server. The data are identified by a recordDataIdentifier. It is the VU manufacturer's responsibility that the server conditions are met when performing this service. To update the parameters listed in Table 28 the VU must be in CALIBRATION mode.

6.2.2. Message format

CPR_057 The message formats for the WriteDataByIdentifier primitives are detailed in the following tables:

Table 29

WriteDataByIdentifier Request Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	EE	TGT
#3	Source address byte	tt	SRC
#4	Additional length byte	m+3	LEN
#5	WriteDataByIdentifier Request Service Id	2E	WDBI
#6 and #7	recordDataIdentifier = [a value from Table 28]	xxxx	RDI_...
#8 to #m+7	dataRecord[] = [data#1 : data#m]	xx : xx	DREC_DATA1 : DREC_DATAm
#m+8	Checksum	00-FF	CS

Table 30

WriteDataByIdentifier Positive Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	03	LEN
#5	WriteDataByIdentifier Positive Response Service Id	6E	WDBIPR
#6 and #7	recordDataIdentifier = [the same value as bytes #6 and #7 Table 29]	xxxx	RDI_...
#8	Checksum	00-FF	CS

Table 31

WriteDataByIdentifier Negative Response Message

Byte #	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	03	LEN
#5	NegativeResponse Service Id	7F	NR
#6	WriteDataByIdentifier Request Service Id	2E	WBDI
#7	ResponseCode = [requestOutOfRange incorrectMessageLength conditionsNotCorrect]	31 13 22	RC_ROOR RC_IML RC_CNC
#8	Checksum	00-FF	CS

6.2.3. Parameter definition

The parameter recordDataIdentifier (RDI_) is defined in Table 28.

The parameter dataRecord (DREC_) is used by the WriteDataByIdentifier request message to provide the data record values identified by the recordDataIdentifier to the server (VU). Data formats are specified in section 8.

7. CONTROL OF TEST PULSES — INPUT/OUTPUT CONTROL FUNCTIONAL UNIT

The services available are detailed in the following table:

Table 32

Input/Output Control functional unit

Service name	Description
InputOutputControlByIdentifier	The client requests the control of an input/output specific to the server

7.1. InputOutputControlByIdentifier service**7.1.1. Message description**

There is a connection via the front connector which allows test pulses to be controlled or monitored using a suitable tester.

CPR_058 This calibration I/O signal line can be configured by K-line command using the InputOutputControlByIdentifier service to select the required input or output function for the line. The available states of the line are:

- disabled,
- speedSignalInput, where the calibration I/O signal line is used to input a speed signal (test signal) replacing the motion sensor speed signal,
- realTimeSpeedSignalOutputSensor, where the calibration I/O signal line is used to output the speed signal of the motion sensor,
- RTCOutput, where the calibration I/O signal line is used to output the UTC clock signal.

CPR_059 The vehicle unit must have entered an adjustment session and must be in CALIBRATION mode to configure the state of the line. On exit of the adjustment session or of the CALIBRATION mode the vehicle unit must ensure the calibration I/O signal line is returned to the "disabled" (default) state.

CPR_060 If speed pulses are received at the real time speed signal input line of the VU while the calibration I/O signal line is set to input then the calibration I/O signal line shall be set to output or returned to the disabled state.

CPR_061 The sequence shall be:

- Establish communications by StartCommunication Service
- Enter an adjustment session by StartDiagnosticSession Service and be in CALIBRATION mode of operation (the order of these two operation is not important).
- Change the state of the output by InputOutputControlByIdentifier Service.

7.1.2. Message format

CPR_062 The message formats for the InputOutputControlByIdentifier primitives are detailed in the following tables:

Table 33

InputOutputControlByIdentifier Request Message

Byte	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	EE	TGT
#3	Source address byte	tt	SRC
#4	Additional length byte	xx	LEN
#5	InputOutputControlByIdentifier Request Sid	2F	IOCBI
#6 and #7	InputOutputIdentifier = [CalibrationInputOutput]	F960	IOI_CIO
#8 or #8 to #9	ControlOptionRecord = [inputOutputControlParameter — one value from Table 36 controlState — one value from Table 37 (see note below)]	xx	COR_... IOCP_... CS_...
#9 or #10	Checksum	00-FF	CS

Note: The controlState parameter is present only in some cases (see 7.1.3).

Table 34

InputOutputControlByIdentifier Positive Response Message

Byte	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	xx	LEN
#5	inputOutputControlByIdentifier Positive Response SId	6F	IOCBIPR
#6 and #7	inputOutputIdentifier = [CalibrationInputOutput]	F960	IOI_CIO
#8 or #8 to #9	controlStatusRecord = [inputOutputControlParameter (same value as byte #8 Table 33) controlState (same value as byte #9 Table 33)] (if applicable)	xx xx	CSR_ IOCP_... CS_...
#9 or #10	Checksum	00-FF	CS

Table 35

InputOutputControlByIdentifier Negative Response Message

Byte	Parameter Name	Hex Value	Mnemonic
#1	Format byte — physical addressing	80	FMT
#2	Target address byte	tt	TGT
#3	Source address byte	EE	SRC
#4	Additional length byte	03	LEN
#5	negativeResponse Service Id	7F	NR
#6	inputOutputControlByIdentifier Request SId	2F	IOCBIR
#7	responseCode = [incorrectMessageLength conditionsNotCorrect requestOutOfRange deviceControlLimitsExceeded]	13 22 31 7A	RC_IML RC_CNC RC_ROOR RC_DCLE
#8	Checksum	00-FF	CS

7.1.3. Parameter definition

CPR_064 The parameter inputOutputControlParameter (IOCP_) is defined in the following table:

Table 36

Definition of inputOutputControlParameter values

Hex	Description	Mnemonic
00	ReturnControlToECU This value shall indicate to the server (VU) that the tester does no longer have control about the calibration I/O signal line.	RCTECU
01	ResetToDefault This value shall indicate to the server (VU) that it is requested to reset the calibration I/O signal line to its default state.	RTD
03	ShortTermAdjustment This value shall indicate to the server (VU) that it is requested to adjust the calibration I/O signal line to the value included in the controlState parameter.	STA

CPR_065 The parameter controlState is present only when the inputOutputControlParameter is set to ShortTermAdjustment and is defined in the following table:

Table 37

Definition of controlState values

Mode	Hex Value	Description
Disable	00	I/O line is disabled (default state)
Enable	01	Enable calibration I/O line as speedSignalInput
Enable	02	Enable calibration I/O line as realTimeSpeedSignalOutputSensor
Enable	03	Enable calibration I/O line as RTCOutput

8. DATARECORDS FORMATS

This section details:

- general rules that shall be applied to ranges of parameters transmitted by the vehicle unit to the tester,
- formats that shall be used for data transferred via the Data Transmission Services described in section 6.

CPR_067 All parameters identified shall be supported by the VU.

CPR_068 Data transmitted by the VU to the tester in response to a request message shall be of the measured type (i.e. current value of the requested parameter as measured or observed by the VU).

8.1. Transmitted parameter ranges

CPR_069 Table 38 defines the ranges used to determine the validity of a transmitted parameter.

CPR_070 The values in the range “error indicator” provide a means for the vehicle unit to immediately indicate that valid parametric data is not currently available due to some type of error in the recording equipment.

CPR_071 The values in the range “not available” provide a means for the vehicle unit to transmit a message which contains a parameter that is not available or not supported in that module. The values in the range “not requested” provide a means for a device to transmit a command message and identify those parameters where no response is expected from the receiving device.

CPR_072 If a component failure prevents the transmission of valid data for a parameter, the error indicator as described in Table 38 should be used in place of that parameter's data. However, if the measured or calculated data has yielded a value that is valid yet exceeds the defined parameter range, the error indicator should not be used. The data should be transmitted using the appropriate minimum or maximum parameter value.

Table 38

dataRecords ranges

Range Name	1 byte (Hex value)	2 bytes (Hex value)	4 bytes (Hex value)	ASCII
Valid signal	00 to FA	0000 to FAFF	00000000 to FAFFFFFF	1 to 254
Parameter specific indicator	FB	FB00 to FBFF	FB000000 to FBFFFFFF	none
Reserved range for future indicator bits	FC to FD	FC00 to FDFF	FC000000 to FDFFFFFF	none
Error indicator	FE	FE00 to FEFF	FE000000 to FEFFFFFF	0
Not available or not requested	FF	FF00 to FFFF	FF000000 to FFFFFFFF	FF

CPR_073 For parameters coded in ASCII, the ASCII character "*" is reserved as a delimiter.

8.2. dataRecords formats

Table 39 to Table 42 below detail the formats that shall be used via the ReadDataByIdentifier and WriteDataByIdentifier Services.

CPR_074 Table 39 provides the length, resolution and operating range for each parameter identified by its recordDataIdentifier:

Table 39

Format of dataRecords

Parameter Name	Data length (bytes)	Resolution	Operating range
TimeDate	8	See details in Table 40	
HighResolutionTotalVehicleDistance	4	5 m/bit gain, 0 m offset	0 to + 21 055 406 km
Kfactor	2	0,001 pulse/m/bit gain, offset 0	0 to 64,255 pulse/m
LfactorTyreCircumference	2	0,125 10 ⁻³ /bit gain 0 offset	0 to 8 031 m
WvehicleCharacteristicFactor	2	0,001 pulse/m/bit gain, 0 offset	0 to 64,255 pulse/m
TyreSize	15	ASCII	ASCII
NextCalibrationDate	3	See details in Table 41	
SpeedAuthorised	2	1/256 km/h/bit gain, 0 offset	0 to 250 996 km/h
RegisteringMemberState	3	ASCII	ASCII
VehicleRegistrationNumber	14	See details in Table 42	
VIN	17	ASCII	ASCII

CPR_075 Table 40 details the formats of the different bytes of the TimeDate parameter:

Table 40

Detailed format of TimeDate (recordDataIdentifier value # F00B)

Byte	Parameter definition	Resolution	Operating range
1	Seconds	0,25 s/bit gain, 0 s offset	0 to 59,75 s
2	Minutes	1 min/bit gain, 0 min offset	0 to 59 min
3	Hours	1 h/bit gain, 0 h offset	0 to 23 h
4	Month	1 month/bit gain, 0 month offset	1 to 12 month
5	Day	0,25 day/bit gain, 0 day offset (see Note below Table 41)	0,25 to 31,75 day
6	Year	1 year/bit gain, +1985 year offset (see Note below Table 41)	1985 to 2235 year
7	Local Minute Offset	1 min/bit gain, - 125 min offset	- 59 to 59 min
8	Local Hour Offset	1 h/bit gain, - 125 offset	- 23 to + 23 h

CPR_076 Table 41 details the formats of the different bytes of the NextCalibrationDate parameter:

Table 41

Detailed format of NextCalibrationDate (recordDataIdentifier value # F022)

Byte	Parameter definition	Resolution	Operating range
1	Month	1 month/bit gain, 0 month offset	1 to 12 month
2	Day	0,25 day/bit gain, 0 day offset (see Note below)	0,25 to 31,75 day
3	Year	1 Year/bit gain, +1985 year offset (see Note below)	1985 to 2235 year

Note concerning the use of the "Day" parameter:

1. A value of 0 for the date is null. The values 1, 2, 3, and 4 are used to identify the first day of the month; 5, 6, 7, and 8 identify the second day of the month; etc.
2. This parameter does not influence or change the hours parameter above.

Note concerning the use of byte "Year" parameter:

A value of 0 for the year identifies the year 1985; a value of 1 identifies 1986; etc.

CPR_078 Table 42 details the formats of the different bytes of the VehicleRegistrationNumber parameter:

Table 42

Detailed format of VehicleRegistrationNumber (recordDataIdentifier value # F07E)

Byte	Parameter definition	Resolution	Operating range
1	Code Page (as defined in Appendix 1)	ASCII	01 to 0A
2 to 14	Vehicle Registration Number (as defined in Appendix 1)	ASCII	ASCII

Appendix 9

TYPE APPROVAL — LIST OF MINIMUM REQUIRED TESTS

1. INTRODUCTION

1.1. **Type approval**

The EEC type approval for a recording equipment (or component) or a tachograph card is based on:

- a security certification, performed by an ITSEC authority, against a security target fully compliant with Appendix 10 to this Annex,
- a functional certification performed by a Member State authority certifying that the item tested fulfils the requirements of this Annex in terms of functions performed, measurement accuracy and environmental characteristics,
- an interoperability certification performed by the competent body certifying that the recording equipment (or tachograph card) is fully interoperable with the necessary tachograph card (or recording equipment) models (see Chapter VIII of this Annex).

This Appendix specifies which tests, as a minimum, must be performed by a Member State authority during the functional tests, and which tests, as a minimum, must be performed by the competent body during the interoperability tests. Procedures to follow to carry out the tests or the type of tests are not specified further.

The security certification aspects are not covered by this Appendix. If some tests requested for type approval are performed during the security evaluation and certification process, then these tests do not need to be performed again. In this case, only the results of these security tests may be inspected. For information, the requirements expected to be tested (or closely related to tests expected to be performed) during the security certification, are marked with a “*” in this Appendix.

This Appendix considers separately the type approval of the motion sensor and of the vehicle unit, as components of the recording equipment. Interoperability between every model of motion sensor and every model of vehicle unit is not required, therefore the type approval for a motion sensor can be granted only in combination with the type approval of a vehicle unit and vice versa.

1.2. **References**

The following references are used in this Appendix:

- | | |
|---------------|---|
| IEC 68-2-1 | Environmental testing — Part 2: Tests — Tests A: Cold. 1990 + Amendment 2: 1994. |
| IEC 68-2-2 | Environmental testing — Part 2: Tests — Tests B: Dry heat. 1974 + Amendment 2: 1994. |
| IEC 68-2-6 | Basic environmental testing procedures — Test methods — Test Fc and guidance: Vibration (sinusoidal). 6th edition: 1985. |
| IEC 68-2-14 | Basic environmental testing procedures — Test methods — Test N: Change of temperature. Modification 1: 1986. |
| IEC 68-2-27 | Basic environmental testing procedures — Test methods — Test Ea and guidance: Shock. Edition 3: 1987. |
| IEC 68-2-30 | Basic environmental testing procedures — Test methods — Test Db and guidance: Damp heat, cyclic (12 + 12 — hour cycle). Modification 1: 1985. |
| IEC 68-2-35 | Basic environmental testing procedure — Test methods — Test Fda: Random vibration wide band — Reproducibility High. Modification 1: 1983. |
| IEC 529 | Degrees of protection provided by enclosures (IP code). Edition 2: 1989. |
| IEC 61000-4-2 | Electromagnetic Compatibility (EMC) — Testing and measurement techniques — Electrostatic discharge immunity test: 1995/Amendment 1: 1998 |
| ISO 7637-1 | Road vehicles — Electrical disturbance by conduction and coupling — Part 1: Passenger cars and light commercial vehicles with nominal 12 V supply voltage — Electrical transient conduction along supply lines only. Edition 2: 1990. |

- ISO 7637-2 Road vehicles — Electrical disturbance by conduction and coupling — Part 1: Passenger cars and light commercial vehicles with nominal 12 V supply voltage — Electrical transient conduction along supply lines only. Edition 2: 1990.
- ISO 7637-3 Road vehicles — Electrical disturbance by conduction and coupling — Part 3: Vehicles with 12 V or 24 V supply voltage — Electrical transient transmission by capacitive and inductive coupling via lines other than supply lines. First Edition: 1995 + Cor 1: 1995.
- ISO/IEC 7816-1 Identification cards — Integrated circuit(s) cards with contacts — Part 1: Physical characteristics. First edition: 1998.
- ISO/IEC 7816-2 Information technology — Identification cards — Integrated circuit(s) cards with contacts — Part 2: Dimensions and location of the contacts. First edition: 1999.
- ISO/IEC 7816-3 Information technology — Identification cards — Integrated circuit(s) cards with contacts — Part 3: Electronic signals and transmission protocol. Edition 2: 1997.
- ISO/IEC 10373 Identification cards — Test methods. First edition: 1993.

2. VEHICLE UNIT FUNCTIONAL TESTS

No	Test	Description	Related requirements
1.	Administrative examination		
1.1.	Documentation	Correctness of documentation	
1.2.	Manufacturer test results	Results of manufacturer test performed during integration. Paper demonstrations	070, 071, 073
2.	Visual inspection		
2.1.	Compliance with documentation		
2.2.	Identification/markings		168, 169
2.3.	Materials		163 to 167
2.4.	Sealing		251
2.5.	External interfaces		
3.	Functional tests		
3.1.	Functions provided		002, 004, 244
3.2.	Modes of operation		006*, 007*, 008*, 009*, 106, 107
3.3.	Functions and data access rights		010*, 011*, 240, 246, 247
3.4.	Monitoring cards insertion and withdrawal		013, 014, 015*, 016*, 106
3.5.	Speed and distance measurement		017 to 026
3.6.	Time measurement (test performed at 20 °C)		027 to 032

No	Test	Description	Related requirements
3.7.	Monitoring driver activities		033 to 043, 106
3.8.	Monitoring driving status		044, 045, 106
3.9.	Manual entries		046 to 050b
3.10.	Company locks management		051 to 055
3.11.	Monitoring control activities		056, 057
3.12.	Detection of events and/or faults		059 to 069, 106
3.13.	Equipment identification data		075*, 076*, 079
3.14.	Driver card insertion and withdrawal data		081* to 083*
3.15.	Driver activity data		084* to 086*
3.16.	Places data		087* to 089*
3.17.	Odometer data		090* to 092*
3.18.	Detailed speed data		093*
3.19.	Events data		094*, 095
3.20.	Faults data		096*
3.21.	Calibration data		097*, 098*
3.22.	Time adjustment data		100*, 101*
3.23.	Control activity data		102*, 103*
3.24.	Company locks data		104*
3.25.	Download activity data		105*
3.26.	Specific conditions data		105a*, 105b*
3.27.	Recording and storing on tachographs cards		108, 109*, 109a*, 110*, 111, 112
3.28.	Displaying		072, 106, 113 to 128, PIC_001, DIS_001
3.29.	Printing		072, 106, 129 to 138, PIC_001, PRT_001 to PRT_012
3.30.	Warning		106, 139 to 148, PIC_001
3.31.	Data downloading to external media		072, 106, 149 to 151
3.32.	Output data to additional external devices		152, 153
3.33.	Calibration		154*, 155*, 156*, 245
3.34.	Time adjustment		157*, 158*
3.35.	Non-interference of additional functions		003, 269

No	Test	Description	Related requirements
4.	Environmental tests		
4.1.	Temperature	<p>Verify functionality through:</p> <ul style="list-style-type: none"> — IEC 68-2-1, test Ad, with a test duration of 72 hours at the lower temperature (– 20 °C), 1 hour operating, 1 hour non operating, — IEC 68-2-2, test Bd, with a test duration of 72 hours at the higher temperature (+ 70 °C), 1 hour operating, 1 hour non operating <p>Temperature cycles: verify that the vehicle unit can withstand rapid changes in the environment temperature through IEC 68-2-14 test Na, 20 cycles, each with temperature varying from the lower temperature (– 20 °C) to the higher temperature (+ 70 °C) and a 2 hours stay at both the lower and the higher temperature</p> <p>A reduced set of tests (among those defined in section 3 of this table) can be carried out at the lower temperature, the higher temperature and during the temperature cycles</p>	159
4.2.	Humidity	<p>Verify that the vehicle unit can withstand a cyclic damp (heat test) through IEC 68-2-30, test Db, six 24 hours cycles, each temperature varying from + 25 °C to + 55 °C and a relative humidity of 97 % at + 25 °C and equal to 93 % at + 55 °C</p>	160
4.3.	Vibration	<p>1. Sinusoidal vibrations:</p> <p>verify that the vehicle unit can withstand sinusoidal vibrations with the following characteristics:</p> <p>constant displacement between 5 and 11 Hz: 10 mm peak</p> <p>constant acceleration between 11 and 300 Hz: 5 g</p> <p>This requirement is verified through IEC 68-2-6, test Fc, with a minimum test duration of 3 × 12 hours (12 hours per axis)</p> <p>2. Random vibrations:</p> <p>verify that the vehicle unit can withstand random vibrations with the following characteristics:</p> <p>frequency 5-150 Hz, level 0,02 g²/Hz</p> <p>This requirement is verified through IEC 68-2-35, test Ffda, with a minimum test duration of 3 × 12 hours (12 hours per axis), 1 hour operating, 1 hour non operating</p> <p>The two tests described above are performed on two different samples of the equipment type being tested</p>	163
4.4.	Protection against water and foreign bodies	<p>Verify that the vehicle unit protection index according to IEC 529 is at least IP 40, when mounted in operating conditions in a vehicle</p>	164, 165
4.5.	Over-voltage protection	<p>Verify that the vehicle unit can withstand a power supply of:</p> <p>24V versions: 34 V at + 40 °C 1 hour</p> <p>12V versions: 17 V at + 40 °C 1 hour</p>	161
4.6.	Reverse polarity protection	<p>Verify that the vehicle unit can withstand an inversion of its power supply</p>	161
4.7.	Short-circuit protection	<p>Verify that input output signals are protected against short circuits to power supply and ground</p>	161

No	Test	Description	Related requirements
5.	EMC tests		
5.1.	Radiated emissions and susceptibility	Compliance with Directive 95/54/EEC	162
5.2.	Electrostatic discharge	Compliance with IEC 61000-4-2, ± 2 kV (level 1)	162
5.3.	Conducted transient susceptibility on power supply	<p>For 24V versions: compliance with ISO 7637-2:</p> <p>pulse 1a: $V_s = -100$ V, $R_i = 10$ ohms</p> <p>pulse 2: $V_s = +100$ V, $R_i = 10$ ohms</p> <p>pulse 3a: $V_s = -100$ V, $R_i = 50$ ohms</p> <p>pulse 3b: $V_s = +100$ V, $R_i = 50$ ohms</p> <p>pulse 4: $V_s = -16$ V $V_a = -12$ V, $t_6 = 100$ ms</p> <p>pulse 5: $V_s = +120$ V, $R_i = 2,2$ ohms, $t_d = 250$ ms</p> <p>For 12V versions: compliance with ISO 7637-1:</p> <p>pulse 1: $V_s = -100$ V, $R_i = 10$ ohms</p> <p>pulse 2: $V_s = +100$ V, $R_i = 10$ ohms</p> <p>pulse 3a: $V_s = -100$ V, $R_i = 50$ ohms</p> <p>pulse 3b: $V_s = +100$ V, $R_i = 50$ ohms</p> <p>pulse 4: $V_s = -6$ V, $V_a = -5$ V, $t_6 = 15$ ms</p> <p>pulse 5: $V_s = +65$ V, $R_i = 3$ ohms, $t_d = 100$ ms</p> <p>Pulse 5 shall be tested only for vehicle units designed to be installed in vehicles for which no external common protection against load dump is implemented</p>	162

3. MOTION SENSOR FUNCTIONAL TESTS

No	Test	Description	Related requirements
1.	Administrative examination		
1.1.	Documentation	Correctness of documentation	
2.	Visual inspection		
2.1.	Compliance with documentation		
2.2.	Identification/markings		169, 170
2.3.	Materials		163 to 167
2.4.	Sealing		251
3.	Functional tests		
3.1.	Sensor identification data		077*
3.2.	Motion sensor — vehicle unit pairing		099*, 155
3.3.	Motion detection Motion measurement accuracy		022 to 026

No	Test	Description	Related requirements
4.	Environmental tests		
4.1.	Operating temperature	Verify functionality (as defined in test No 3.3) in temperature range $[-40\text{ }^{\circ}\text{C}; +135\text{ }^{\circ}\text{C}]$ through: — IEC 68-2-1 test Ad, with a test duration of 96 hours at the lowest temperature T_{min} — IEC 68-2-2 test Bd, with a test duration of 96 hours at the highest temperature T_{max}	159
4.2.	Temperature cycles	Verify functionality (as defined in test No 3.3) through IEC 68-2-14 test Na, 20 cycles, each with temperature varying from the lower temperature $(-40\text{ }^{\circ}\text{C})$ to the higher temperature $(+135\text{ }^{\circ}\text{C})$ and a 2 hours stay at both the lower and the higher temperature A reduced set of tests (among those defined in test 3.3) can be carried out at the lower temperature, the higher temperature and during the temperature cycles	159
4.3.	Humidity cycles	Verify functionality (as defined in test No 3.3) through IEC 68-2-30, test Db, six 24 hours cycles, each temperature varying from $+25\text{ }^{\circ}\text{C}$ to $+55\text{ }^{\circ}\text{C}$ and a relative humidity of 97 % at $+25\text{ }^{\circ}\text{C}$ and equal to 93 % at $+55\text{ }^{\circ}\text{C}$	160
4.4.	Vibration	Verify functionality (as defined in test No 3.3) through IEC 68-2-6, test Fc, with a test duration of 100 frequency cycles: constant displacement between 10 and 57 Hz: 1,5 mm peak constant acceleration between 57 and 500 Hz: 20 g	163
4.5.	Mechanical shock	Verify functionality (as defined in test No 3.3) through IEC 68-2-27, test Ea, 3 shocks in both directions of the 3 perpendicular axes	163
4.6.	Protection against water and foreign bodies	Verify that the motion sensor protection index according to IEC 529 is at least IP 64, when mounted in operating conditions in a vehicle	165
4.7.	Reverse polarity protection	Verify that the motion sensor can withstand an inversion of its power supply	161
4.8.	Short circuit protection	Verify that input output signals are protected against short circuits to power supply and ground	161
5.	EMC		
5.1.	Radiated emissions and susceptibility	Verify compliance with Directive 95/54/EEC	162
5.2.	Electrostatic discharge	Compliance with IEC 61000-4-2, $\pm 2\text{ kV}$ (level 1)	162
5.3.	Conducted transient susceptibility on data lines)	Compliance with ISO7637-3 (level III)	162

4. TACHOGRAPH CARDS FUNCTIONAL TESTS

No	Test	Description	Related requirements
1.	Administrative examination		
1.1.	Documentation	Correctness of documentation	
2.	Visual inspection		
2.1.		Make sure that all features for protection and visible data are correctly printed on the card and compliant	171 to 181
3.	Physical tests		
3.1.		Check dimension of the card and location of the contacts	184 ISO/IEC 7816-1 ISO/IEC 7816-2
4.	Protocol tests		
4.1.	ATR	Check that the ATR is compliant	ISO/IEC 7816-3 TCS 304, 307, 308
4.2.	T=0	Check that T=0 protocol is compliant	ISO/IEC 7816-3 TCS 302, 303, 305
4.3.	PTS	Check that the PTS command is compliant by setting T=1 from T=0	ISO/IEC 7816-3 TCS 309 to 311
4.4.	T=1	Check that T=1 protocol is compliant	ISO/IEC 7816-3 TCS 303, / 306
5.	Card structure		
5.1.		Test that the file structure of the card is compliant by checking the presence of the mandatory files in the card and their access conditions	TCS 312 TCS 400*, 401, 402, 403*, 404, 405*, 406, 407, 408*, 409, 410*, 411, 412, 413*, 414, 415*, 416, 417, 418*, 419
6.	Functional tests		
6.1.	Normal processing	Test at least once each allowed usage of each command (ex: test the UPDATE BINARY command with CLA = '00', CLA = '0C' and with different P1, P2 and Lc parameters) Check that the operations have actually been performed in the card (ex: by reading the file the command has been performed on)	TCS 313 to TCS 379
6.2.	Error messages	Test at least once each error message (as specified in Appendix 2) for each command Test at least once every generic error (except '6400' integrity errors checked during security certification)	
7.	Environmental tests		
7.1.		Make sure that the cards work within the limit conditions defined in accordance with ISO/IEC 10373	185 to 188 ISO/IEC 7816-1

5. INTEROPERABILITY TESTS

No	Test	Description
1.	Mutual authentication	Check that the mutual authentication between the vehicle unit and the tachograph card runs normally
2.	Write/read tests	Execute a typical activity scenario on the vehicle unit. The scenario shall be adapted to the type of card being tested and involve writings in as many EFs as possible in the card Verify through a card downloading that all corresponding recordings have been properly made Verify through a card daily printout that all corresponding recordings can be properly read

Appendix 10

GENERIC SECURITY TARGETS

This appendix specifies the minimum required content of motion sensor, vehicle unit and tachograph card security targets.

In order to form the security targets against which they may seek security certification, manufacturers shall refine and complete the documents as necessary, without amending nor deleting existing threats, objectives, procedural means and security enforcing functions specifications.

MOTION SENSOR GENERIC SECURITY TARGET

1. Introduction

This document contains a description of the motion sensor, of the threats it must be able to counteract and of the security objectives it must achieve. It specifies the required security enforcing functions. It states the claimed minimum strength of security mechanisms and the required level of assurance for the development and the evaluation.

Requirements referred to in the document, are those of the body of Annex I B. For clarity of reading, duplication sometimes arises between Annex I B body requirements and security target requirements. In case of ambiguity between a security target requirement and the Annex I B body requirement referred by this security target requirement, the Annex I B body requirement shall prevail.

Annex I B body requirements not referred by security targets are not the subject of security enforcing functions.

Unique labels have been assigned to threats, objectives, procedural means and SEF specifications for the purpose of traceability to development and evaluation documentation.

2. Abbreviations, definitions and references**2.1. Abbreviations**

ROM Read Only Memory

SEF Security Enforcing Function

TBD To Be Defined

TOE Target Of Evaluation

VU Vehicle Unit

2.2. Definitions

Digital Tachograph Recording Equipment

Entity A device connected to the motion sensor

Motion data The data exchanged with the VU, representative of speed and distance travelled

Physically separated parts Physical components of the motion sensor that are distributed in the vehicle as opposed to physical components gathered into the motion sensor casing

Security data	The specific data needed to support security enforcing functions (e.g. crypto keys)
System	Equipment, people or organisations, involved in any way with the recording equipment
User	A human user of the motion sensor (when not used in the expression "user data")
User data	Any data, other than motion or security data, recorded or stored by the motion sensor

2.3. References

ITSEC ITSEC Information Technology Security Evaluation Criteria 1991

3. Product rationale

3.1. Motion sensor description and method of use

The motion sensor is intended to be installed in road transport vehicles. Its purpose is to provide a VU with secured motion data representative of vehicle's speed and distance travelled.

The motion sensor is mechanically interfaced to a moving part of the vehicle, which movement can be representative of vehicle's speed or distance travelled. It may be located in the vehicle's gear box or in any other part of the vehicle.

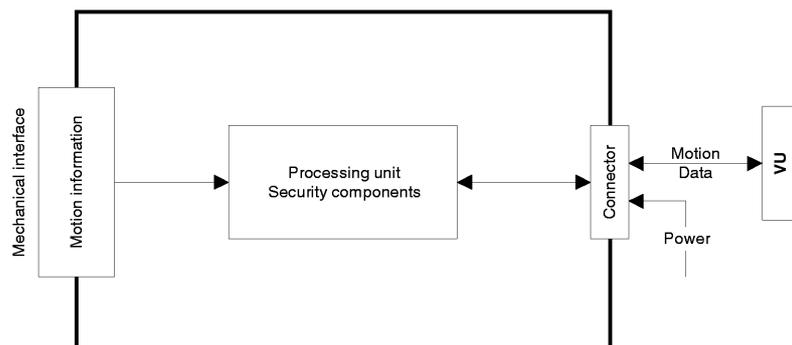
In its operational mode, the motion sensor is connected to a VU.

It may also be connected to specific equipment for management purposes (TBD by manufacturer)

The typical motion sensor is described in the following figure:

Figure 1

Typical motion sensor

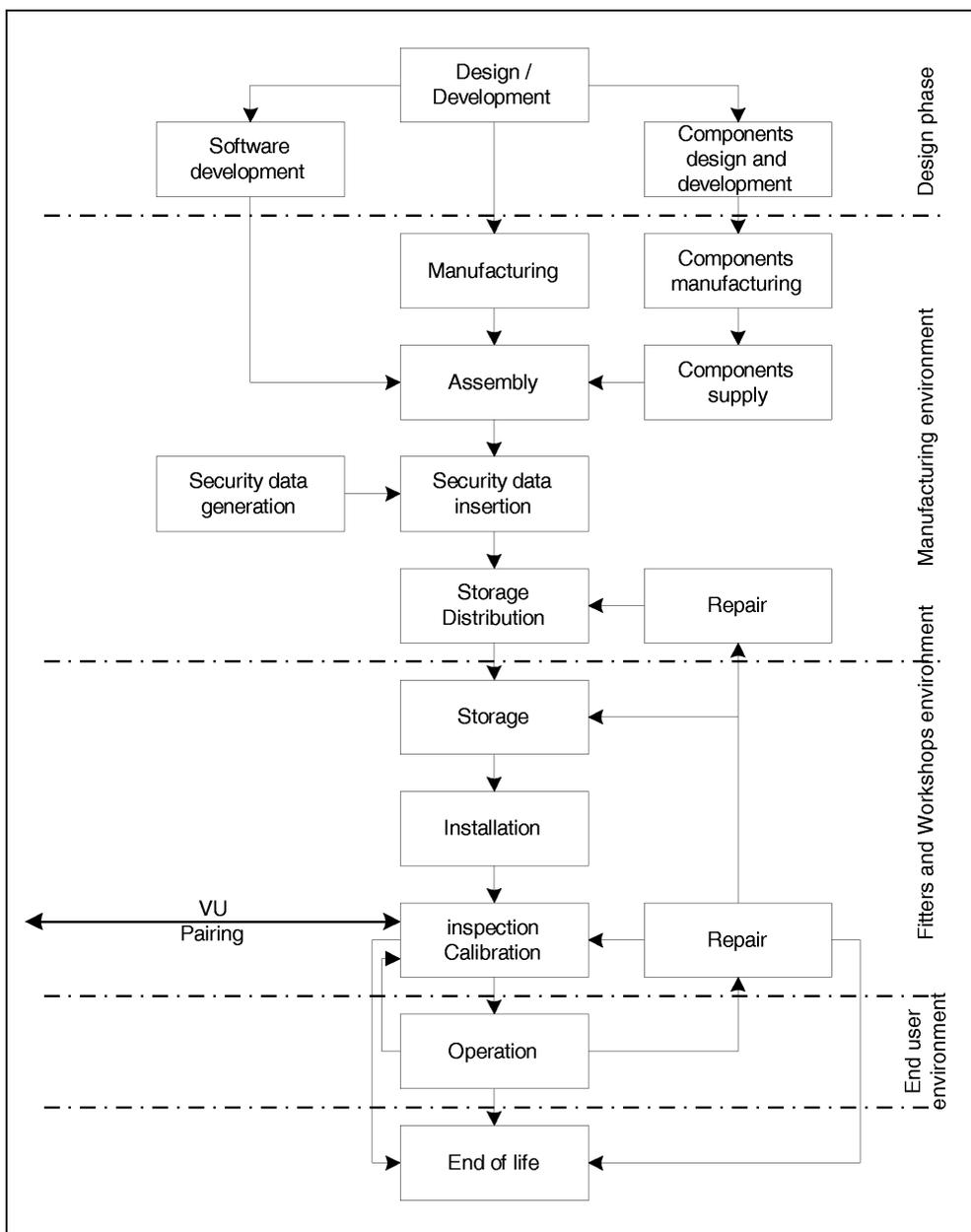


3.2. *Motion sensor life cycle*

The typical life cycle of the motion sensor is described in the following figure:

Figure 2

Motion sensor typical life cycle



3.3. *Threats*

This paragraph describes the threats the motion sensor may face.

3.3.1. *Threats to access control policies*

T.Access

Users could try to access functions not allowed to them

3.3.2. *Design related threats*

T.Faults	Faults in hardware, software, communication procedures could place the motion sensor in unforeseen conditions compromising its security
T.Tests	The use of non invalidated test modes or of existing back doors could compromise the motion sensor security
T.Design	Users could try to gain illicit knowledge of design either from manufacturer's material (through theft, bribery, ...) or from reverse engineering

3.3.3. *Operation oriented threats*

T.Environment	Users could compromise the motion sensor security through environmental attacks (thermal, electromagnetic, optical, chemical, mechanical, ...)
T.Hardware	Users could try to modify motion sensor hardware
T.Mechanical_Origin	Users could try to manipulate the motion sensor input (e.g. unscrewing from gearbox, ...)
T.Motion_Data	Users could try to modify the vehicle's motion data (addition, modification, deletion, replay of signal)
T.Power_Supply	Users could try to defeat the motion sensor security objectives by modifying (cutting, reducing, increasing) its power supply
T.Security_Data	Users could try to gain illicit knowledge of security data during security data generation or transport or storage in the equipment
T.Software	Users could try to modify motion sensor software
T.Stored_Data	Users could try to modify stored data (security or user data)

3.4. *Security objectives*

The main security objective of the digital tachograph system is the following:

O.Main	The data to be checked by control authorities must be available and reflect fully and accurately the activities of controlled drivers and vehicles in terms of driving, work, availability and rest periods and in terms of vehicle speed
--------	---

Therefore the security objective of the motion sensor, contributing to the global security objective, is:

O.Sensor_Main	The data transmitted by the motion sensor must be available to the VU so as to allow the VU to determine fully and accurately the movement of the vehicle in terms of speed and distance travelled
---------------	--

3.5. *Information Technology Security Objectives*

The specific IT security objectives of the motion sensor contributing to its main security objective, are the following:

O.Access	The motion sensor must control connected entities' access to functions and data
O.Audit	The motion sensor must audit attempts to undermine its security and should trace them to associated entities
O.Authentication	The motion sensor must authenticate connected entities

O.Processing	The motion sensor must ensure that processing of input to derive motion data is accurate
O.Reliability	The motion sensor must provide a reliable service
O.Secured_Data_Exchange	The motion sensor must secure data exchanges with the VU

3.6. **Physical, personnel or procedural means**

This paragraph describes physical, personnel or procedural requirements that contribute to the security of the motion sensor.

3.6.1. *Equipment design*

M.Development	Motion sensor developers must ensure that the assignment of responsibilities during development is done in a manner which maintains IT security
M.Manufacturing	Motion sensor manufacturers must ensure that the assignment of responsibilities during manufacturing is done in a manner which maintains IT security, and that during the manufacturing process the motion sensor is protected from physical attacks which might compromise IT security

3.6.2. *Equipment delivery*

M.Delivery	Motion sensor manufacturers, vehicle manufacturers and fitters or workshops must ensure that handling of the motion sensor is done in a manner which maintains IT security
------------	--

3.6.3. *Security data generation and delivery*

M.Sec_Data_Generation	Security data generation algorithms must be accessible to authorised and trusted persons only
M.Sec_Data_Transport	Security data must be generated, transported, and inserted into the motion sensor, in such a way to preserve its appropriate confidentiality and integrity

3.6.4. *Recording equipment installation, calibration, and inspection*

M.Approved_Workshops	Installation, calibration and repair of recording equipment must be carried by trusted and approved fitters or workshops
M.Mechanical_Interface	Means of detecting physical tampering with the mechanical interface must be provided (e.g. seals)
M.Regular_Inspections	Recording equipment must be periodically inspected and calibrated

3.6.5. *Law enforcement control*

M.Controls	Law enforcement controls must be performed regularly and randomly, and must include security audits
------------	---

3.6.6. *Software upgrades*

M.Software_Upgrade	Software revisions must be granted security certification before they can be implemented in a motion sensor
--------------------	---

4. **Security enforcing functions**

4.1. **Identification and authentication**

UIA_101 The motion sensor shall be able to establish, for every interaction, the identity of any entity it is connected to.

UIA_102 The identity of a connected entity shall consist of:

- an entity group:
 - VU,
 - Management device,
 - Other,
- an entity ID (VU only).

UIA_103 The entity ID of a connected VU shall consist of the VU approval number and the VU serial number.

UIA_104 The motion sensor shall be able to authenticate any VU or management device it is connected to:

- at entity connection,
- at power supply recovery

UIA_105 The motion sensor shall be able to periodically re-authenticate the VU it is connected to.

UIA_106 The motion sensor shall detect and prevent use of authentication data that has been copied and replayed.

UIA_107 After (TBD by manufacturer and not more than 20) consecutive unsuccessful authentication attempts have been detected, the SEF shall:

- generate an audit record of the event,
- warn the entity,
- continue to export motion data in a non secured mode.

4.2. Access control

Access controls ensure that information is read from, created in, or modified into the TOE only by those authorised to do so.

4.2.1. Access control policy

ACC_101 The motion sensor shall control access rights to function and data.

4.2.2. Data access rights

ACC_102 The motion sensor shall ensure that motion sensor identification data can be written once only (requirement 078).

ACC_103 The motion sensor shall accept and/or store user data from authenticated entities only.

ACC_104 The motion sensor shall enforce appropriate read and write access rights to security data.

4.2.3. File structure and access conditions

ACC_105 Application and data files structure and access conditions shall be created during the manufacturing process, and then locked from any future modification or deletion.

4.3. Accountability

ACT_101 The motion sensor shall hold in its memory motion sensor identification data (requirement 077).

ACT_102 The motion sensor shall store in its memory installation data (requirement 099).

ACT_103 The motion sensor shall have a capability to output accountability data to authenticated entities at their request.

4.4. **Audit**

AUD_101 The motion sensor shall, for events impairing its security, generate audit records of the events.

AUD_102 The events affecting the security of the motion sensor are the following:

- security breach attempts:
 - authentication failure,
 - stored data integrity error,
 - internal data transfer error,
 - unauthorised case opening,
 - hardware sabotage.
- Sensor fault,

AUD_103 Audit records shall include the following data:

- date and time of the event,
- type of event,
- connected entity identity.

when required data is not available, an appropriate default indication shall be given (TBD by manufacturer).

AUD_104 The motion sensor shall send the generated audit records to the VU at the moment of their generation, and may also store them in its memory.

AUD_105 In the case where the motion sensor stores audit records, it shall ensure that 20 audit records will be maintained independent of audit storage exhaustion, and shall have a capability to output stored audit records to authenticated entities at their request.

4.5. **Accuracy**

4.5.1. *Information flow control policy*

ACR_101 The motion sensor shall ensure that motion data may only be processed and derived from sensor mechanical input.

4.5.2. *Internal data transfers*

The requirements of this paragraph apply only if the motion sensor makes use of physically separated parts.

ACR_102 If data are transferred between physically separated parts of the motion sensor, the data shall be protected from modification.

ACR_103 Upon detection of a data transfer error during an internal transfer, transmission shall be repeated and the SEF shall generate an audit record of the event.

4.5.3. *Stored data integrity*

ACR_104 The motion sensor shall check user data stored in its memory for integrity errors.

ACR_105 Upon detection of a stored user data integrity error, the SEF shall generate an audit record.

4.6. **Reliability of service**

4.6.1. *Tests*

RLB_101 All commands, actions, or test points, specific to the testing needs of the manufacturing phase shall be disabled or removed before the end of the manufacturing phase. It shall not be possible to restore them for later use.

RLB_102 The motion sensor shall run self-tests, during initial start-up, and during normal operation to verify its correct operation. The motion sensor self-tests shall include a verification of the integrity of security data and a verification of the integrity of stored executable code (if not in ROM).

RLB_103 Upon detection of an internal fault during self-test, the SEF shall generate an audit record (sensor fault).

4.6.2. Software

RLB_104 There shall be no way to analyse or debug the motion sensor software in the field.

RLB_105 Inputs from external sources shall not be accepted as executable code.

4.6.3. Physical protection

RLB_106 If the motion sensor is designed so that it can be opened, the motion sensor shall detect any case opening, even without external power supply for a minimum of 6 months. In such a case, the SEF shall generate an audit record of the event (It is acceptable that the audit record is generated and stored after power supply reconnection).

If the motion sensor is designed so that it cannot be opened, it shall be designed such that physical tampering attempts can be easily detected (e.g. through visual inspection).

RLB_107 The motion sensor shall detect specified (TBD by manufacturer) hardware sabotage.

RLB_108 In the case described above, the SEF shall generate an audit record and the motion sensor shall: (TBD by manufacturer).

4.6.4. Power supply interruptions

RLB_109 The motion sensor shall preserve a secure state during power supply cut-off or variations.

4.6.5. Reset conditions

RLB_110 In case of a power supply interruption, or if a transaction is stopped before completion, or on any other reset conditions, the motion sensor shall be reset cleanly.

4.6.6. Data availability

RLB_111 The motion sensor shall ensure that access to resources is obtained when required and that resources are not requested nor retained unnecessarily.

4.6.7. Multiple applications

RLB_112 If the motion sensor provides applications other than the tachograph application, all applications shall be physically and/or logically separated from each other. These applications shall not share security data. Only one task shall be active at a time.

4.7. Data exchange

DEX_101 The motion sensor shall export motion data to the VU with associated security attributes, such that the VU will be able to verify its integrity and authenticity.

4.8. Cryptographic support

The requirements of this paragraph are applicable only where needed, depending upon security mechanisms used and upon the manufacturer's solutions.

CSP_101 Any cryptographic operation performed by the motion sensor shall be in accordance with a specified algorithm and a specified key size.

CSP_102 If the motion sensor generates cryptographic keys, it shall be in accordance with specified cryptographic key generation algorithms and specified cryptographic key sizes.

CSP_103 If the motion sensor distributes cryptographic keys, it shall be in accordance with specified key distribution methods.

CSP_104 If the motion sensor accesses cryptographic keys, it shall be in accordance with specified cryptographic keys access methods.

CSP_105 If the motion sensor destroys cryptographic keys, it shall be in accordance with specified cryptographic keys destruction methods.

5. Definition of security mechanisms

The security mechanisms, fulfilling the motion sensor security enforcing functions, are defined by the motion sensor manufacturers.

6. Minimum strength of security mechanisms

The minimum strength of the motion sensor security mechanisms is High, as defined in [ITSEC].

7. Level of assurance

The target level of assurance for the motion sensor is ITSEC level E3, as defined in [ITSEC].

8. Rationale

The following matrixes give a rationale for the SEFs by showing:

- which SEFs or means counteract which threats,
- which SEFs fulfil which IT security objectives.

	Threats											IT Objectives						
	Access	Faults	Tests	Design	Environment	Hardware	Mechanical_Origin	Motion_Data	Power_Supply	Security_Data	Software	Stored_Data	Access	Audit	Authentication	Processing	Reliability	Secured_Data_Exchange
Physical Personnel Procedural means																		
Development		x	x	x														
Manufacturing			x	x														
Delivery						x					x	x						
Security Data Generation										x								
Security Data Transport										x								
Approved Workshops							x											
Mechanical interface							x											
Regular Inspection						x	x		x		x							
Law enforcement controls					x	x	x		x	x	x							
Software Upgrades											x							
Security Enforcing Functions																		
Identification and authentication																		
UIA_101 Entities identification	x							x				x	x					x
UIA_102 Entities identity	x											x	x					
UIA_103 VU identity													x					
UIA_104 Entities authentication	x						x				x	x						x
UIA_105 re-authentication	x						x				x	x						x
UIA_106 Unforgeable authentication	x						x				x	x						
UIA_107 Authentication failure							x					x					x	
Access control																		
ACC_101 Access control policy	x									x	x	x						
ACC_102 Motion sensor ID											x	x						

VEHICLE UNIT GENERIC SECURITY TARGET

1. Introduction

This document contains a description of the vehicle unit, of the threats it must be able to counteract and of the security objectives it must achieve. It specifies the required security enforcing functions. It states the claimed minimum strength of security mechanisms and the required level of assurance for the development and the evaluation.

Requirements referred to in the document, are those of the body of Annex I B. For clarity of reading, duplication sometimes arises between Annex I B body requirements and security target requirements. In case of ambiguity between a security target requirement and the Annex I B body requirement referred by this security target requirement, the Annex I B body requirement shall prevail.

Annex I B body requirements not referred by security targets are not the subject of security enforcing functions.

Unique labels have been assigned to threats, objectives, procedural means and SEF specifications for the purpose of traceability to development and evaluation documentation.

2. Abbreviations, definitions and references**2.1. Abbreviations**

PIN Personal Identification Number

ROM Read Only Memory

SEF Security Enforcing Function

TBD To Be Defined

TOE Target Of Evaluation

VU Vehicle Unit

2.2. Definitions

Digital tachograph	Recording equipment
Motion data	The data exchanged with the motion sensor, representative of speed and distance travelled
Physically separated parts.	Physical components of the VU that are distributed in the vehicle as opposed to physical components gathered into the VU casing
Security data	The specific data needed to support security enforcing functions (e.g. crypto keys)
System	Equipment, people or organisations, involved in any way with the recording equipment
User	Users are to be understood as human user of the equipment. Normal users of the VU comprise drivers, controllers, workshops and companies
User data	Any data, other than security data, recorded or stored by the VU, required by Chapter III.12

2.3. References

ITSEC ITSEC Information Technology Security Evaluation Criteria 1991

3. Product rationale**3.1. Vehicle Unit description and method of use**

The VU is intended to be installed in road transport vehicles. Its purpose is to record, store, display, print and output data related to driver activities.

It is connected to a motion sensor with which it exchanges vehicle's motion data.

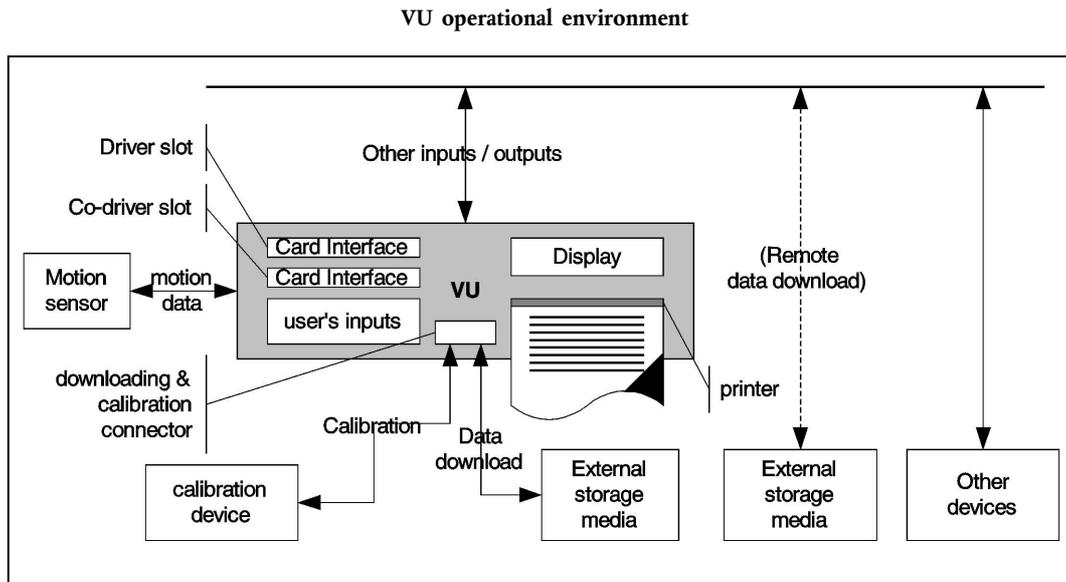
Users identify themselves to the VU using tachograph cards.

The VU records and stores user activities data in its data memory, it also records user activities data in tachograph cards.

The VU outputs data to display, printer and external devices.

The vehicle unit's operational environment while installed in a vehicle is described in the following figure:

Figure 1

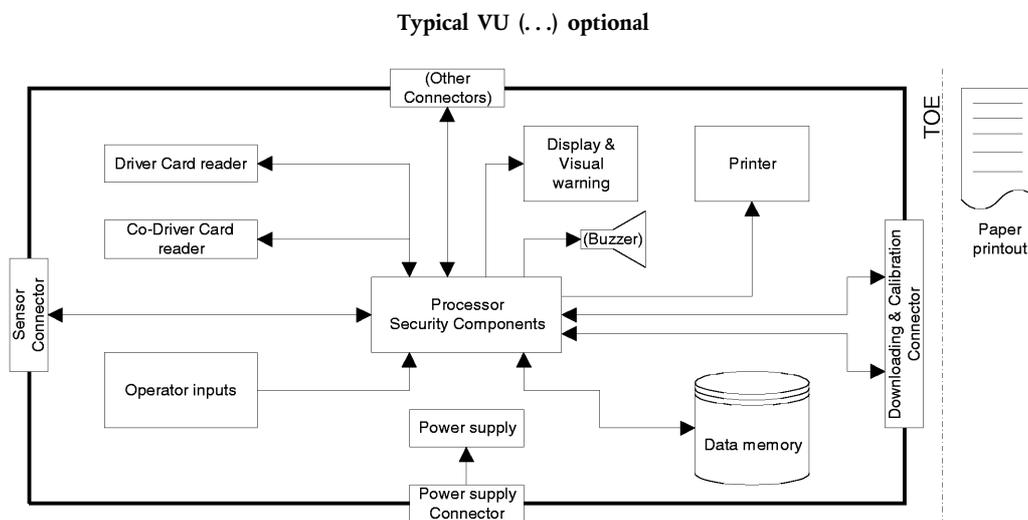


The VU general characteristics, functions and mode of operations are described in Chapter II of Annex I B.

The VU functional requirements are specified in Chapter III of Annex I B.

The typical VU is described in the following figure:

Figure 2



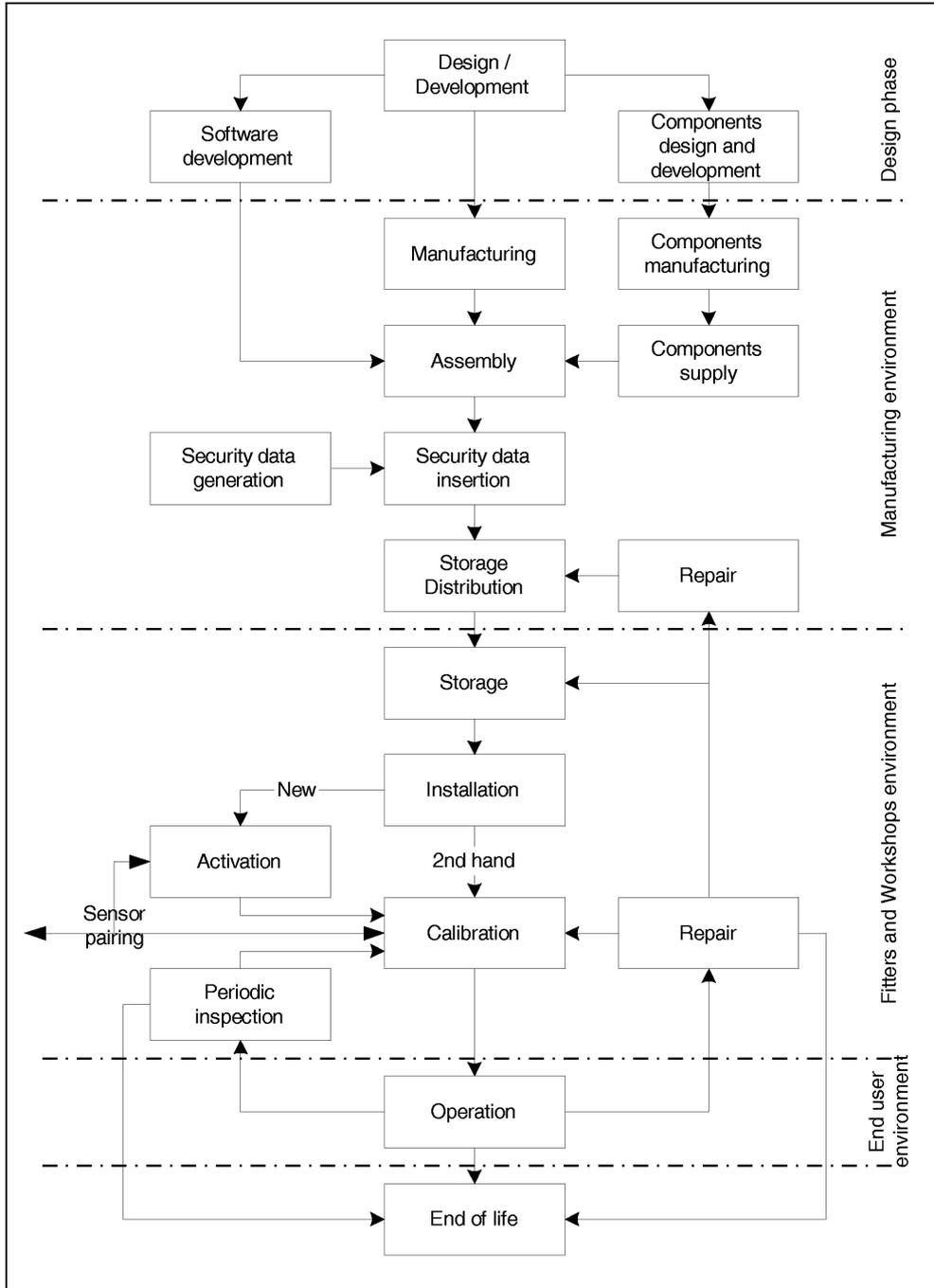
It must be noted that although the printer mechanism is part of the TOE, the paper document once produced is not.

3.2. **Vehicle Unit life cycle**

The typical life cycle of the VU is described in the following figure:

Figure 3

VU typical life cycle



3.3. **Threats**

This paragraph describes the threats the VU may face.

3.3.1. *Threats to identification and access control policies*

- T.Access Users could try to access functions not allowed to them (e.g. drivers gaining access to calibration function)
- T.Identification Users could try to use several identifications or no identification

3.3.2. Design related threats

T.Faults	Faults in hardware, software, communication procedures could place the VU in unforeseen conditions compromising its security
T.Tests	The use of non invalidated test modes or of existing back doors could compromise the VU security
T.Design	Users could try to gain illicit knowledge of design either from manufacturer's material (through theft, bribery, ...) or from reverse engineering

3.3.3. Operation oriented threats

T.Calibration_Parameters	Users could try to use mis-calibrated equipment (through calibration data modification, or through organisational weaknesses)
T.Card_Data_Exchange	Users could try to modify data while exchanged between VU and tachograph cards (addition, modification, deletion, replay of signal)
T.Clock	Users could try to modify internal clock
T.Environment	Users could compromise the VU security through environmental attacks (thermal, electromagnetic, optical, chemical, mechanical, ...)
T.Fake_Devices	Users could try to connect fake devices (motion sensor, smart cards) to the VU
T.Hardware	Users could try to modify VU hardware
T.Motion_Data	Users could try to modify the vehicle's motion data (addition, modification, deletion, replay of signal)
T.Non_Activated	Users could use non activated equipment
T.Output_Data	Users could try to modify data output (print, display or download)
T.Power_Supply	Users could try to defeat the VU security objectives by modifying (cutting, reducing, increasing) its power supply
T.Security_Data	Users could try to gain illicit knowledge of security data during security data generation or transport or storage in the equipment
T.Software	Users could try to modify VU software
T.Stored_Data	Users could try to modify stored data (security or user data)

3.4. Security objectives

The main security objective of the digital tachograph system is the following:

O.Main	The data to be checked by control authorities must be available and reflect fully and accurately the activities of controlled drivers and vehicles in terms of driving, work, availability and rest periods and in terms of vehicle speed
--------	---

Therefore the security objectives of the VU, contributing to the global security objective, are the following:

- | | |
|-------------|--|
| O.VU_Main | The data to be measured and recorded and then to be checked by control authorities must be available and reflect accurately the activities of controlled drivers and vehicles in terms of driving, work, availability and rest periods and in terms of vehicle speed |
| O.VU_Export | The VU must be able to export data to external storage media in such a way as to allow for verification of their integrity and authenticity |

3.5. *Information Technology Security Objectives*

The specific IT security objectives of the VU contributing to its main security objectives, are the following:

- | | |
|-------------------------|--|
| O.Access | The VU must control user access to functions and data |
| O.Accountability | The VU must collect accurate accountability data |
| O.Audit | The VU must audit attempts to undermine system security and should trace them to associated users |
| O.Authentication | The VU should authenticate users and connected entities (when a trusted path needs to be established between entities) |
| O.Integrity | The VU must maintain stored data integrity |
| O.Output | The VU must ensure that data output reflects accurately data measured or stored |
| O.Processing | The VU must ensure that processing of inputs to derive user data is accurate |
| O.Reliability | The VU must provide a reliable service |
| O.Secured_Data_Exchange | The VU must secure data exchanges with the motion sensor and with tachograph cards |

3.6. *Physical, personnel or procedural means*

This paragraph describes physical, personnel or procedural requirements that contribute to the security of the VU.

3.6.1. *Equipment design*

- | | |
|-----------------|---|
| M.Development | VU developers must ensure that the assignment of responsibilities during development is done in a manner which maintains IT security |
| M.Manufacturing | VU manufacturers must ensure that the assignment of responsibilities during manufacturing is done in a manner which maintains IT security, and that during the manufacturing process the VU is protected from physical attacks which might compromise IT security |

3.6.2. *Equipment delivery and activation*

- | | |
|--------------|---|
| M.Delivery | VU manufacturers, vehicle manufacturers and fitters or workshops must ensure that handling of non activated VUs is done in a manner which maintains VU security |
| M.Activation | Vehicle manufacturers and fitters or workshops must activate the VU after its installation before the vehicle leaves the premises where installation took place |

3.6.3. *Security data generation and delivery*

- | | |
|-----------------------|---|
| M.Sec_Data_Generation | Security data generation algorithms must be accessible to authorised and trusted persons only |
| M.Sec_Data_Transport | Security data must be generated, transported, and inserted into the VU, in such a way to preserve its appropriate confidentiality and integrity |

3.6.4. *Cards delivery*

- M.Card_Availability Tachograph cards must be available and delivered to authorised persons only
- M.Driver_Card_Uniqueness Drivers must possess, at one time, **one** valid driver card only
- M.Card_Traceability Card delivery must be traceable (white lists, black lists), and black lists must be used during security audits

3.6.5. *Recording equipment installation, calibration, and inspection*

- M.Approved_Workshops Installation, calibration and repair of recording equipment must be carried by trusted and approved fitters or workshops
- M.Regular_Inspections Recording equipment must be periodically inspected and calibrated
- M.Faithful_Calibration Approved fitters and workshops must enter proper vehicle parameters in recording equipment during calibration

3.6.6. *Equipment operation*

- M.Faithful_Drivers Drivers must play by the rules and act responsibly (e.g. use their driver cards, properly select their activity for those that are manually selected, . . .)

3.6.7. *Law enforcement control*

- M.Controls Law enforcement controls must be performed regularly and randomly, and must include security audits

3.6.8. *Software upgrades*

- M.Software_Upgrade Software revisions must be granted security certification before they can be implemented in a VU

4. Security enforcing functions**4.1. Identification and authentication**4.1.1. *Motion sensor identification and authentication*

- UIA_201 The VU shall be able to establish, for every interaction, the identity of the motion sensor it is connected to.
- UIA_202 The identity of the motion sensor shall consist of the sensor approval number and the sensor serial number.
- UIA_203 The VU shall authenticate the motion sensor it is connected to:
- at motion sensor connection,
 - at each calibration of the recording equipment,
 - at power supply recovery.

Authentication shall be mutual and triggered by the VU.

- UIA_204 The VU shall periodically (period TBD by manufacturer and more frequently than once per hour) re-identify and re-authenticate the motion sensor it is connected to, and ensure that the motion sensor identified during the last calibration of the recording equipment has not been changed.
- UIA_205 The VU shall detect and prevent use of authentication data that has been copied and replayed.

UIA_206 After (TBD by manufacturer and not more than 20) consecutive unsuccessful authentication attempts have been detected, and/or after detecting that the identity of the motion sensor has changed while not authorised (i.e. while not during a calibration of the recording equipment), the SEF shall:

- generate an audit record of the event,
- warn the user,
- continue to accept and use non secured motion data sent by the motion sensor.

4.1.2. User identification and authentication

UIA_207 The VU shall permanently and selectively track the identity of two users, by monitoring the tachograph cards inserted in respectively the driver slot and the co-driver slot of the equipment.

UIA_208 The user identity shall consist of:

- a user group:
 - DRIVER (driver card),
 - CONTROLLER (control card),
 - WORKSHOP (workshop card),
 - COMPANY (company card),
 - UNKNOWN (no card inserted),
- a user ID, composed of:
 - the card issuing Member State code and of the card number,
 - UNKNOWN if user group is UNKNOWN.

UNKNOWN identities may be implicitly or explicitly known.

UIA_209 The VU shall authenticate its users at card insertion.

UIA_210 The VU shall re-authenticate its users:

- at power supply recovery,
- periodically or after occurrence of specific events (TBD by manufacturers and more frequently than once per day).

UIA_211 Authentication shall be performed by means of proving that the card inserted is a valid tachograph card, possessing security data that only the system could distribute. Authentication shall be mutual and triggered by the VU.

UIA_212 In addition to the above, workshops shall be required to be successfully authenticated through a PIN check. PINs shall be at least 4 characters long.

Note: In the case the PIN is transferred to the VU from an outside equipment located in the vicinity of the VU, PIN confidentiality need not be protected during the transfer.

UIA_213 The VU shall detect and prevent use of authentication data that has been copied and replayed.

UIA_214 After 5 consecutive unsuccessful authentication attempts have been detected, the SEF shall:

- generate an audit record of the event,
- warn the user,
- assume the user as UNKNOWN, and the card as non valid (definition z) and requirement 007).

4.1.3. *Remotely connected company identification and authentication*

Company remote connection capability is optional. This paragraph therefore applies only if this feature is implemented.

UIA_215 For every interaction with a remotely connected company, the VU shall be able to establish the company's identity.

UIA_216 The remotely connected company's identity shall consist of its company card issuing Member State code and of its company card number.

UIA_217 The VU shall successfully authenticate the remotely connected company before allowing any data export to it.

UIA_218 Authentication shall be performed by means of proving that the company owns a valid company card, possessing security data that only the system could distribute.

UIA_219 The VU shall detect and prevent use of authentication data that has been copied and replayed.

UIA_220 After 5 consecutive unsuccessful authentication attempts have been detected, the VU shall:

— warn the remotely connected company.

4.1.4. *Management device identification and authentication*

VU manufacturers may foresee dedicated devices for additional VU management functions (e.g. Software upgrading, security data reloading, . . .). This paragraph therefore applies only if this feature is implemented.

UIA_221 For every interaction with a management device, the VU shall be able to establish the device identity.

UIA_222 Before allowing any further interaction, the VU shall successfully authenticate the management device.

UIA_223 The VU shall detect and prevent use of authentication data that has been copied and replayed.

4.2. **Access control**

Access controls ensure that information is read from, created in, or modified into the TOE only by those authorised to do so.

It must be noted that the user data recorded by the VU, although presenting privacy or commercial sensitivity aspects, are not of a confidential nature. Therefore, the functional requirement related to data read access rights (requirement 011) is not the subject of a security enforcing function.

4.2.1. *Access control policy*

ACC_201 The VU shall manage and check access control rights to functions and to data.

4.2.2. *Access rights to functions*

ACC_202 The VU shall enforce the mode of operation selection rules (requirements 006 to 009).

ACC_203 The VU shall use the mode of operation to enforce the functions access control rules (requirement 010).

4.2.3. *Access rights to data*

ACC_204 The VU shall enforce the VU identification data write access rules (requirement 076)

ACC_205 The VU shall enforce the paired motion sensor identification data write access rules (requirements 079 and 155)

ACC_206 After the VU activation, the VU shall ensure that only in calibration mode, may calibration data be input into the VU and stored into its data memory (requirements 154 and 156).

ACC_207 After the VU activation, the VU shall enforce calibration data write and delete access rules (requirement 097).

ACC_208 After the VU activation, the VU shall ensure that only in calibration mode, may time adjustment data be input into the VU and stored into its data memory (This requirement does not apply to small time adjustments allowed by requirements 157 and 158).

ACC_209 After the VU activation, the VU shall enforce time adjustment data write and delete access rules (requirement 100).

ACC_210 The VU shall enforce appropriate read and write access rights to security data (requirement 080).

4.2.4. File structure and access conditions

ACC_211 Application and data files structure and access conditions shall be created during the manufacturing process, and then locked from any future modification or deletion.

4.3. Accountability

ACT_201 The VU shall ensure that drivers are accountable for their activities (requirements 081, 084, 087, 105a, 105b, 109 and 109a).

ACT_202 The VU shall hold permanent identification data (requirement 075).

ACT_203 The VU shall ensure that workshops are accountable for their activities (requirements 098, 101 and 109).

ACT_204 The VU shall ensure that controllers are accountable for their activities (requirements 102, 103 and 109).

ACT_205 The VU shall record odometer data (requirement 090) and detailed speed data (requirement 093).

ACT_206 The VU shall ensure that user data related to requirements 081 to 093 and 102 to 105b inclusive are not modified once recorded, except when becoming oldest stored data to be replaced by new data.

ACT_207 The VU shall ensure that it does not modify data already stored in a tachograph card (requirements 109 and 109a) except for replacing oldest data by new data (requirement 110) or in the case described in Appendix 1 Paragraph 2.1 Note.

4.4. Audit

Audit capabilities are required only for events that may indicate a manipulation or a security breach attempt. It is not required for the normal exercising of rights even if relevant to security.

AUD_201 The VU shall, for events impairing the security of the VU, record those events with associated data (requirements 094, 096 and 109).

AUD_202 The events affecting the security of the VU are the following:

- Security breach attempts:
 - motion sensor authentication failure,
 - tachograph card authentication failure,
 - unauthorised change of motion sensor,
 - card data input integrity error,
 - stored user data integrity error,
 - internal data transfer error,
 - unauthorised case opening,
 - hardware sabotage,

- Last card session not correctly closed,
- Motion data error event,
- Power supply interruption event,
- VU internal fault,

AUD_203 The VU shall enforce audit records storage rules (requirement 094 and 096).

AUD_204 The VU shall store audit records generated by the motion sensor in its data memory.

AUD_205 It shall be possible to print, display and download audit records.

4.5. **Object reuse**

REU_201 The VU shall ensure that temporary storage objects can be reused without this involving inadmissible information flow.

4.6. **Accuracy**

4.6.1. *Information flow control policy*

ACR_201 The VU shall ensure that user data related to requirements 081, 084, 087, 090, 093, 102, 104, 105, 105a and 109 may only be processed from the right input sources:

- vehicle motion data,
- VU's real time clock,
- recording equipment calibration parameters,
- tachograph cards,
- user's inputs.

ACR_201a The VU shall ensure that user data related to requirement 109a may only be entered for the period last card withdrawal — current insertion (requirement 050a).

4.6.2. *Internal data transfers*

The requirements of this paragraph apply only if the VU makes use of physically separated parts.

ACR_202 If data are transferred between physically separated parts of the VU, the data shall be protected from modification.

ACR_203 Upon detection of a data transfer error during an internal transfer, transmission shall be repeated and the SEF shall generate an audit record of the event.

4.6.3. *Stored data integrity*

ACR_204 The VU shall check user data stored in the data memory for integrity errors.

ACR_205 Upon detection of a stored user data integrity error, the SEF shall generate an audit record.

4.7. **Reliability of service**

4.7.1. *Tests*

RLB_201 All commands, actions or test points, specific to the testing needs of the manufacturing phase of the VU shall be disabled or removed before the VU activation. It shall not be possible to restore them for later use.

RLB_202 The VU shall run self tests, during initial start-up, and during normal operation to verify its correct operation. The VU self tests shall include a verification of the integrity of security data and a verification of the integrity of stored executable code (if not in ROM).

RLB_203 Upon detection of an internal fault during self test, the SEF shall:

- generate an audit record (except in calibration mode) (VU internal fault),
- Preserve the stored data integrity.

4.7.2. *Software*

RLB_204 There shall be no way to analyse or debug software in the field after the VU activation.

RLB_205 Inputs from external sources shall not be accepted as executable code.

4.7.3. *Physical protection*

RLB_206 If the VU is designed so that it can be opened, the VU shall detect any case opening, except in calibration mode, even without external power supply for a minimum of 6 months. In such a case, the SEF shall generate an audit record (It is acceptable that the audit record is generated and stored after power supply reconnection).

If the VU is designed so that it cannot be opened, it shall be designed such that physical tampering attempts can be easily detected (e.g. through visual inspection).

RLB_207 After its activation, the VU shall detect specified (TBD by manufacturer) hardware sabotage.

RLB_208 In the case described above, the SEF shall generate an audit record and the VU shall: (TBD by manufacturer).

4.7.4. *Power supply interruptions*

RLB_209 The VU shall detect deviations from the specified values of the power supply, including cut-off.

RLB_210 In the case described above, the SEF shall:

- generate an audit record (except in calibration mode),
- preserve the secure state of the VU,
- maintain the security functions, related to components or processes still operational,
- preserve the stored data integrity.

4.7.5. *Reset conditions*

RLB_211 In case of a power supply interruption, or if a transaction is stopped before completion, or on any other reset conditions, the VU shall be reset cleanly.

4.7.6. *Data availability*

RLB_212 The VU shall ensure that access to resources is obtained when required and that resources are not requested nor retained unnecessarily.

RLB_213 The VU must ensure that cards cannot be released before relevant data have been stored to them (requirements 015 and 016)

RLB_214 In the case described above, the SEF shall generate an audit record of the event.

4.7.7. *Multiple applications*

RLB_215 If the VU provides applications other than the tachograph application, all applications shall be physically and/or logically separated from each other. These applications shall not share security data. Only one task shall be active at a time.

4.8. *Data exchange*

This paragraph addresses data exchange between the VU and connected devices.

4.8.1. *Data exchange with motion sensor*

DEX_201 The VU shall verify the integrity and authenticity of motion data imported from the motion sensor

DEX_202 Upon detection of a motion data integrity or authenticity error, the SEF shall:

- generate an audit record,
- continue to use imported data.

4.8.2. Data exchange with tachograph cards

DEX_203 The VU shall verify the integrity and authenticity of data imported from tachograph cards.

DEX_204 Upon detection of card data integrity or authenticity error, the VU shall:

- generate an audit record,
- not use the data.

DEX_205 The VU shall export data to tachograph smart cards with associated security attributes such that the card will be able to verify its integrity and authenticity.

4.8.3. Data exchange with external storage media (downloading function)

DEX_206 The VU shall generate an evidence of origin for data downloaded to external media.

DEX_207 The VU shall provide a capability to verify the evidence of origin of downloaded data to the recipient.

DEX_208 The VU shall download data to external storage media with associated security attributes such that downloaded data integrity and authenticity can be verified.

4.9. Cryptographic support

The requirements of this paragraph are applicable only where needed, depending upon security mechanisms used and upon the manufacturer's solutions.

CSP_201 Any cryptographic operation performed by the VU shall be in accordance with a specified algorithm and a specified key size.

CSP_202 If the VU generates cryptographic keys, it shall be in accordance with specified cryptographic key generation algorithms and specified cryptographic key sizes.

CSP_203 If the VU distributes cryptographic keys, it shall be in accordance with specified key distribution methods.

CSP_204 If the VU accesses cryptographic keys, it shall be in accordance with specified cryptographic keys access methods.

CSP_205 If the VU destroys cryptographic keys, it shall be in accordance with specified cryptographic keys destruction methods.

5. Definition of security mechanisms

Required security mechanisms are specified in Appendix 11.

All other security mechanisms are to be defined by manufacturers.

6. Minimum strength of security mechanisms

The minimum strength of the Vehicle Unit security mechanisms is High, as defined in [ITSEC].

7. Level of assurance

The target level of assurance for the Vehicle Unit is ITSEC level E3, as defined in [ITSEC].

8. Rationale

The following matrixes give a rationale for the SEFs by showing:

- which SEFs or means counteract which threats,
- which SEFs fulfil which IT security objectives.

	Threats														IT Objectives													
	Access	Identification	Faults	Tests	Design	Calibration_Parameters	Card_Data_Exchange	Clock	Environment	Fake_Devices	Hardware	Motion_Data	Non_Activated	Output_Data	Power_Supply	Security_Data	Software	Stored_Data	Access	Accountability	Audit	Authentication	Integrity	Output	Processing	Reliability	Secured_Data_Exchange	
Physical Personnel Procedural Means																												
Development			x	x	x																							
Manufacturing				x	x																							
Delivery														x														
Activation	x												x															
Security Data Generation																x												
Security Data Transport																x												
Card Availability		x																										
One Driver Card		x																										
Card Traceability		x																										
Approved Workshops					x		x																					
Regular Inspection Calibration					x		x		x				x				x											
Faithful workshops					x		x																					
Faithful drivers		x																										
Law enforcement controls		x				x	x	x		x		x	x	x		x	x											
Software Upgrade																	x											
Security Enforcing Functions																												
Identification and Authentication																												
UIA_201 Sensor identification									x		x											x						x
UIA_202 Sensor identity									x		x											x						
UIA_203 Sensor authentication									x		x											x						x
UIA_204 Sensor re-identification and re-authentication									x		x											x						x
UIA_205 Unforgeable authentication									x		x											x						
UIA_206 Authentication failure									x		x											x						x
UIA_207 Users identification	x	x							x										x			x						x
UIA_208 User identity	x	x							x										x			x						
UIA_209 User authentication	x	x							x										x			x						x
UIA_210 User re-authentication	x	x							x										x			x						x
UIA_211 Authentication means	x	x							x										x			x						
UIA_212 PIN checks	x	x				x		x											x			x						
UIA_213 Unforgeable authentication	x	x							x										x			x						

	Threats																IT Objectives										
	Access	Identification	Faults	Tests	Design	Calibration_Parameters	Card_Data_Exchange	Clock	Environment	Fake_Devices	Hardware	Motion_Data	Non_Activated	Output_Data	Power_Supply	Security_Data	Software	Stored_Data	Access	Accountability	Audit	Authentication	Integrity	Output	Processing	Reliability	Secured_Data_Exchange
UIA_214 Authentication failure	x	x							x											x							
UIA_215 Remote user identification	x	x																	x		x						x
UIA_216 Remote user identity	x	x																	x		x						
UIA_217 Remote user authentication	x	x																	x		x						x
UIA_218 Authentication means	x	x																	x		x						
UIA_219 Unforgeable authentication	x	x																	x		x						
UIA_220 Authentication failure	x	x																									
UIA_221 Management device Identification	x	x																	x		x						
UIA_222 Management device Authentication	x	x																	x		x						
UIA_223 Unforgeable authentication	x	x																	x		x						
Access Control																											
ACC_201 Access control policy	x				x	x										x	x	x									
ACC_202 Access rights to functions	x				x	x														x							
ACC_203 Access rights to functions	x				x	x														x							
ACC_204 VU ID																			x	x							
ACC_205 Connected sensor ID									x										x	x							
ACC_206 Calibration data	x				x														x	x							
ACC_207 Calibration data					x															x	x						
ACC_208 Time adjustment data									x											x	x						
ACC_209 Time adjustment data									x											x	x						
ACC_210 Security Data																			x	x	x						
ACC_211 File structure and access conditions	x				x														x	x	x						
Accountability																											
ACT_201 Drivers accountability																					x						
ACT_202 VU ID data																				x	x						
ACT_203 Workshops accountability																					x						
ACT_204 Controllers accountability																					x						
ACT_205 Vehicle movement accountability																					x						
ACT_206 Accountability data modification																				x				x			x
ACT_207 Accountability data modification																					x				x		x

TACHOGRAPH CARD GENERIC SECURITY TARGET

1. Introduction

This document contains a description of the tachograph card, of the threats it must be able to counteract and of the security objectives it must achieve. It specifies the required security enforcing functions. It states the claimed minimum strength of security mechanisms, and the required level of assurance for the development and the evaluation.

Requirements referred to in the document, are those of the body of Annex I B. For clarity of reading, duplication sometimes arises between Annex I B body requirements and security target requirements. In case of ambiguity between a security target requirement and the Annex I B requirement referred by this security target requirement, the Annex I B body requirement shall prevail.

Annex I B body requirements not referred by security targets are not the subject of security enforcing functions.

A tachograph card is a standard smart card carrying a dedicated tachograph application, and shall comply to up-to-date functional and assurance security requirements applicable to smart cards. This security target therefore incorporates only the extra security requirements needed by the tachograph application.

Unique labels have been assigned to threats, objectives, procedural means and SEF specifications for the purpose of traceability to development and evaluation documentation.

2. Abbreviations, definitions and references**2.1. Abbreviations**

IC Integrated Circuit (Electronic component designed to perform processing and/or memory functions)

OS Operating system

PIN Personal Identification Number

ROM Read Only Memory

SFP Security Functions Policy

TBD To Be Defined

TOE Target of Evaluation

TSF TOE Security Function

VU Vehicle Unit

2.2. Definitions

Digital tachograph Recording equipment

Sensitive data Data stored by the tachograph card that need to be protected for integrity, unauthorised modification and confidentiality (where applicable for security data). Sensitive data includes security data and user data

Security data The specific data needed to support security enforcing functions (e.g. crypto keys)

System Equipment, people or organisations involved in any way with the recording equipment

User Any entity (human user or external IT entity) outside the TOE that interacts with the TOE (when not used in the expression "user data")

User data	Sensitive data stored in the tachograph card, other than security data. User data include identification data and activity data
Identification data	Identification data include card identification data and cardholder identification data
Card identification data	User data related to card identification as defined by requirements 190, 191, 192, 194, 215, 231 and 235
Cardholder identification data	User data related to cardholder identification as defined by requirements 195, 196, 216, 232 and 236
Activity data	Activity data include cardholder activities data, events and faults data and control activity data
Cardholder activities data	User data related to the activities carried by the cardholder as defined by requirements 197, 199, 202, 212, 212a, 217, 219, 221, 226, 227, 229, 230a, 233 and 237
Events and faults data	User data related to events or faults as defined by requirements 204, 205, 207, 208 and 223
Control activity data	User data related to law enforcement controls as defined by requirements 210 and 225

2.3. References

- ITSEC ITSEC Information Technology Security Evaluation Criteria 1991
- IC PP Smartcard Integrated Circuit Protection Profile — version 2.0 — issue September 1998. Registered at French certification body under the number PP/9806
- ES PP Smart Card Integrated Circuit With Embedded Software Protection Profile — version 2.0 — issue June 99. Registered at French certification body under the number PP/9911

3. Product Rationale

3.1. Tachograph card description and method of use

A tachograph card is a smart card, as described in [IC PP] and [ES PP], carrying an application intended for its use with the recording equipment.

The basic functions of the tachograph card are:

- to store card identification and card holder identification data. These data are used by the vehicle unit to identify the cardholder, provide accordingly functions and data access rights, and ensure cardholder accountability for his activities,
- to store cardholder activities data, events and faults data and control activities data, related to the cardholder.

A tachograph card is therefore intended to be used by a card interface device of a vehicle unit. It may also be used by any card reader (e.g. of a personal computer) which shall have full read access right on any user data.

During the end-usage phase of a tachograph card life-cycle (phase 7 of life-cycle as described in [ES PP]), vehicle units only may write user data to the card.

The functional requirements for a tachograph card are specified in Annex I B body text and Appendix 2.

3.2. Tachograph card life-cycle

The tachograph card life-cycle conforms to smart card life cycle described in [ES PP].

3.3. Threats

In addition to the smart card general threats listed in [ES PP] and [IC PP], the tachograph card may face the following threats:

3.3.1. Final aims

The final aim of attackers will be to modify user data stored within the TOE.

T.Ident_Data	A successful modification of identification data held by the TOE (e.g. the type of card, or the card expiry date or the cardholder identification data) would allow a fraudulent use of the TOE and would be a major threat to the global security objective of the system.
T.Activity_Data	A successful modification of activity data stored in the TOE would be a threat to the security of the TOE.
T.Data_Exchange	A successful modification of activity data (addition, deletion, modification) during import or export would be a threat to the security of the TOE.

3.3.2. Attack paths

TOE's assets may be attacked by:

- trying to gain illicit knowledge of TOE's hardware and software design and especially of its security functions or security data. Illicit knowledge may be gained through attacks to designer or manufacturer material (theft, bribery, ...) or through direct examination of the TOE (physical probing, inference analysis, ...).
- taking advantage of weaknesses in TOE design or realisation (exploit errors in hardware, errors in software, transmission faults, errors induced in TOE by environmental stress, exploit weaknesses of security functions such as authentication procedures, data access control, cryptographic operations, ...).
- modifying the TOE or its security functions through physical, electrical or logical attacks or combination of these.

3.4. Security Objectives

The main security objective of the entire digital tachograph system is the following:

O.Main	The data to be checked by control authorities must be available and reflect fully and accurately the activity of controlled drivers and vehicles in terms of driving, work, availability and rest period and in terms of vehicle speed.
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Therefore the main security objectives of the TOE, contributing to this global security objective are the following:

O.Card_Identification_Data	The TOE must preserve card identification data and cardholder identification data stored during card personalisation process.
O.Card_Activity_Storage	The TOE must preserve user data stored in the card by vehicle units.

3.5. Information Technology security objectives

In addition to the smart card general security objectives listed in [ES PP] and [IC PP], the specific IT security objectives of the TOE that contributes to its main security objectives during its end-usage life-cycle phase are the following:

O.Data_Access	The TOE must limit user data write access rights to authenticated vehicle units.
O.Secure_Communications	The TOE must be able to support secure communication protocols and procedures between the card and the card interface device when required by the application.

3.6. Physical, personnel or procedural means

The physical, personnel or procedural requirements that contribute to the security of the TOE are listed in [ES PP] and [IC PP] (chapters security objectives for the environment).

4. Security enforcing functions

This paragraph refines some of the permitted operations such as assignment or selection of [ES PP] and provides additional SEF functional requirements.

4.1. Compliance to protection profiles

CPP_301 The TOE shall comply with [IC PP].

CPP_302 The TOE shall comply with [ES PP] as refined further.

4.2. User Identification and authentication

The card must identify the entity in which it is inserted and know whether it is an authenticated vehicle unit or not. The card may export any user data whatever the entity it is connected to, except the control card which may export card holder identification data to authenticated vehicle units only (such that a controller is ensured that the vehicle unit is not a fake one by seeing his name on display or printouts).

4.2.1. User identification

Assignment (FIA_UID.1.1) *List of TSF mediated actions:* none.

Assignment (FIA_ATD.1.1) *List of security attributes:*

USER_GROUP: VEHICLE_UNIT, NON_VEHICLE_UNIT,

USER_ID: Vehicle Registration Number (VRN) and registering Member State Code (USER_ID is known for USER_GROUP = VEHICLE_UNIT only).

4.2.2. User authentication

Assignment (FIA_UAU.1.1) *List of TSF mediated actions:*

- Driver and Workshop cards: Export user data with security attributes (card data download function),
- Control card: Export user data without security attributes except cardholder identification data.

UIA_301 Authentication of a vehicle unit shall be performed by means of proving that it possesses security data that only the system could distribute.

Selection (FIA_UAU.3.1 and FIA_UAU.3.2): prevent.

Assignment (FIA_UAU.4.1) *Identified authentication mechanism(s):* any authentication mechanism.

UIA_302 The Workshop card shall provide an additional authentication mechanism by checking a PIN code (This mechanism is intended for the Vehicle Unit to ensure the identity of the card holder, it is not intended to protect Workshop card content).

4.2.3. Authentication failures

The following assignments describe the card reaction for each single user authentication failure.

Assignment (FIA_AFL.1.1) *Number: 1, list of authentication events:* authentication of a card interface device.

Assignment (FIA_AFL.1.2) *List of actions:*

- warn the entity connected,
- assume the user as NON_VEHICLE_UNIT.

The following assignments describe the card reaction in the case of failure of the additional authentication mechanism required in UIA_302.

Assignment (FIA_AFL.1.1) *Number: 5, list of authentication events:* PIN checks (workshop card).

Assignment (FIA_AFL.1.2) *List of actions:*

- warn the entity connected,
- block the PIN check procedure such that any subsequent PIN check attempt will fail,
- be able to indicate to subsequent users the reason of the blocking.

4.3. Access control

4.3.1. Access control policy

During end-usage phase of its life-cycle, the tachograph card is the subject of one single access control Security Function Policy (SFP) named AC_SFP.

Assignment (FDP_ACC.2.1) *Access control SFP: AC_SFP.*

4.3.2. Access control functions

Assignment (FDP_ACF.1.1) *Access control SFP: AC_SFP.*

Assignment (FDP_ACF.1.1) *Named group of security attributes: USER_GROUP.*

Assignment (FDP_ACF.1.2) *Rules governing access among controlled subjects and controlled objects using controlled operations on controlled objects:*

- GENERAL_READ: User data may be read from the TOE by any user, except cardholder identification data which may be read from control cards by VEHICLE_UNIT only.
- IDENTIF_WRITE: Identification data may only be written once and before the end of phase 6 of card's life-cycle. No user may write or modify identification data during end-usage phase of card's life-cycle.
- ACTIVITY_WRITE: Activity data may be written to the TOE by VEHICLE_UNIT only.
- SOFT_UPGRADE: No user may upgrade TOE's software.
- FILE_STRUCTURE: Files structure and access conditions shall be created before end of phase 6 of TOE's life-cycle and then locked from any future modification or deletion by any user.

4.4. Accountability

ACT_301 The TOE shall hold permanent identification data.

ACT_302 There shall be an indication of the time and date of the TOE's personalisation. This indication shall remain unalterable.

4.5. Audit

The TOE must monitor events that indicate a potential violation of its security.

Assignment (FAU_SAA.1.2) *Subset of defined auditable events:*

- cardholder authentication failure (5 consecutive unsuccessful PIN checks),
- self test error,
- stored data integrity error,
- activity data input integrity error.

4.6. Accuracy

4.6.1. Stored Data Integrity

Assignment (FDP_SDI.2.2) *Actions to be taken:* warn the entity connected,

4.6.2. Basic data authentication

Assignment (FDP_DAU.1.1) *List of objects or information types:* Activity data.

Assignment (FDP_DAU.1.2) *List of subjects:* Any.

4.7. **Reliability of service**

4.7.1. *Tests*

Selection (FPT_TST.1.1): during initial start-up, periodically during normal operation.

Note: during initial start-up means before code is executed (and not necessarily during Answer To Reset procedure).

- RLB_301 The TOE's self tests shall include the verification of the integrity of any software code not stored in ROM.
- RLB_302 Upon detection of a self test error the TSF shall warn the entity connected.
- RLB_303 After OS testing is completed, all testing-specific commands and actions shall be disabled or removed. It shall not be possible to override these controls and restore them for use. Command associated exclusively with one life cycle state shall never be accessed during another state.

4.7.2. *Software*

- RLB_304 There shall be no way to analyse, debug or modify TOE's software in the field.
- RLB_305 Inputs from external sources shall not be accepted as executable code.

4.7.3. *Power supply*

- RLB_306 The TOE shall preserve a secure state during power supply cut-off or variations.

4.7.4. *Reset conditions*

- RLB_307 If power is cut (or if power variations occur) from the TOE, or if a transaction is stopped before completion, or on any other reset conditions, the TOE shall be reset cleanly.

4.8. **Data exchange**

4.8.1. *Data exchange with a vehicle unit*

- DEX_301 The TOE shall verify the integrity and authenticity of data imported from a vehicle unit.
- DEX_302 Upon detection of an imported data integrity error, the TOE shall:
- Warn the entity sending the data,
 - not use the data.
- DEX_303 The TOE shall export user data to the vehicle unit with associated security attributes, such that the vehicle unit will be able to verify the integrity and authenticity of data received.

4.8.2. *Export of data to a non-vehicle unit (download function)*

- DEX_304 The TOE shall be able to generate an evidence of origin for data downloaded to external media.
- DEX_305 The TOE shall be able to provide a capability to verify the evidence of origin of downloaded data to the recipient.
- DEX_306 The TOE shall be able to download data to external storage media with associated security attributes such that downloaded data integrity can be verified.

4.9. **Cryptographic Support**

- CSP_301 If the TSF generates cryptographic keys, it shall be in accordance with specified cryptographic key generation algorithms and specified cryptographic key sizes. Generated cryptographic session keys shall have a limited (TBD by manufacturer and not more than 240) number of possible use.
- CSP_302 If the TSF distributes cryptographic keys, it shall be in accordance with specified cryptographic key distribution methods.

5. **Definition of Security Mechanisms**

Required security mechanisms are specified in Appendix 11.

All other security mechanisms are to be defined by the TOE manufacturer.

Appendix 11

COMMON SECURITY MECHANISMS

1. GENERALITIES

This appendix specifies the security mechanisms ensuring:

- The mutual authentication between VUs and tachograph cards, including session key agreement,
- The confidentiality, integrity and authentication of data transferred between VUs and tachograph cards,
- The integrity and authentication of data downloaded from VUs to external storage media,
- The integrity and authentication of data downloaded from tachograph cards to external storage media.

1.1. References

The following references are used in this Appendix:

SHA-1	National Institute of Standards and Technology (NIST). FIPS Publication 180-1: Secure Hash Standard. April 1995
PKCS1	RSA Laboratories. PKCS # 1: RSA Encryption Standard. Version 2.0. October 1998
TDES	National Institute of Standards and Technology (NIST). FIPS Publication 46-3: Data Encryption Standard. Draft 1999
TDES-OP	ANSI X9.52, Triple Data Encryption Algorithm Modes of Operation. 1998
ISO/IEC 7816-4	Information Technology — Identification cards — Integrated circuit(s) cards with contacts — Part 4: Interindustry commands for interexchange. First edition: 1995 + Amendment 1: 1997
ISO/IEC 7816-6	Information Technology — Identification cards — Integrated circuit(s) cards with contacts — Part 6: Interindustry data elements. First edition: 1996 + Cor 1: 1998
ISO/IEC 7816-8	Information Technology — Identification cards — Integrated circuit(s) cards with contacts — Part 8: Security related interindustry commands. First edition 1999
ISO/IEC 9796-2	Information Technology — Security techniques — Digital signature schemes giving message recovery — Part 2: Mechanisms using a hash function. First edition: 1997
ISO/IEC 9798-3	Information Technology — Security techniques — Entity authentication mechanisms — Part 3: Entity authentication using a public key algorithm. Second edition 1998
ISO 16844-3	Road vehicles — Tachograph systems — Part 3: Motion sensor interface

1.2. Notations and abbreviated terms

The following notations and abbreviated terms are used in this Appendix:

(K_a, K_b, K_c)	a key bundle for use by the Triple Data Encryption Algorithm
CA	Certification Authority
CAR	Certification Authority Reference
CC	Cryptographic Checksum
CG	Cryptogram
CH	Command Header
CHA	Certificate Holder Authorisation
CHR	Certificate Holder Reference
D()	Decryption with DES
DE	Data Element
DO	Data Object
d	RSA private key, private exponent
e	RSA public key, public exponent
E()	Encryption with DES
EQT	Equipment
<i>Hash()</i>	hash value, an output of <i>Hash</i>
<i>Hash</i>	hash function
KID	Key Identifier
Km	TDES key. Master Key defined in ISO 16844-3
Km _{VU}	TDES key inserted in vehicle units
Km _{WC}	TDES key inserted in workshop cards
m	message representative an integer between 0 and $n-1$
n	RSA keys, modulus
PB	Padding Bytes
PI	Padding Indicator byte (for use in Cryptogram for confidentiality DO)
PV	Plain Value
s	signature representative, an integer between 0 and $n-1$
SSC	Send Sequence Counter
SM	Secure Messaging
TCBC	TDEA Cipher Block Chaining Mode of Operation
TDEA	Triple Data Encryption Algorithm
TLV	Tag Length Value
VU	Vehicle Unit
X.C	the certificate of user X issued by a certification authority
X.CA	a certification authority of user X
X.CA.PK _o X.C	the operation of unwrapping a certificate to extract a public key. It is an infix operator, whose left operand is the public key of a certification authority, and whose right operand is the certificate issued by that certification authority. The outcome is the public key of the user X whose certificate is the right operand,

X.PK	public key of a user X
X.PK[I]	RSA encipherment of some information I, using the public key of user X
X.SK	RSA private key of a user X
X.SK[I]	RSA encipherment of some information I, using the private key of user X
'xx'	a Hexadecimal value
	concatenation operator

2. CRYPTOGRAPHIC SYSTEMS AND ALGORITHMS

2.1. Cryptographic systems

CSM_001 Vehicle units and tachograph cards shall use a classical RSA public-key cryptographic system to provide the following security mechanisms:

- authentication between vehicle units and cards,
- transport of Triple-DES session keys between vehicle units and tachograph cards,
- digital signature of data downloaded from vehicle units or tachograph cards to external media.

CSM_002 Vehicle units and tachograph cards shall use a Triple DES symmetric cryptographic system to provide a mechanism for data integrity during user data exchange between vehicle units and tachograph cards, and to provide, where applicable, confidentiality of data exchange between vehicle units and tachograph cards.

2.2. Cryptographic algorithms

2.2.1. RSA algorithm

CSM_003 The RSA algorithm is fully defined by the following relations:

$$\begin{aligned} X.SK[m] &= s = m^d \bmod n \\ X.PK[s] &= m = s^e \bmod n \end{aligned}$$

A more comprehensive description of the RSA function can be found in reference [PKCS1].

2.2.2. Hash algorithm

CSM_004 The digital signature mechanisms shall use the SHA-1 hash algorithm as defined in reference [SHA-1].

2.2.3. Data Encryption Algorithm

CSM_005 DES based algorithms shall be used in Cipher Block Chaining mode of operation.

3. KEYS AND CERTIFICATES

3.1. Keys generation and distribution

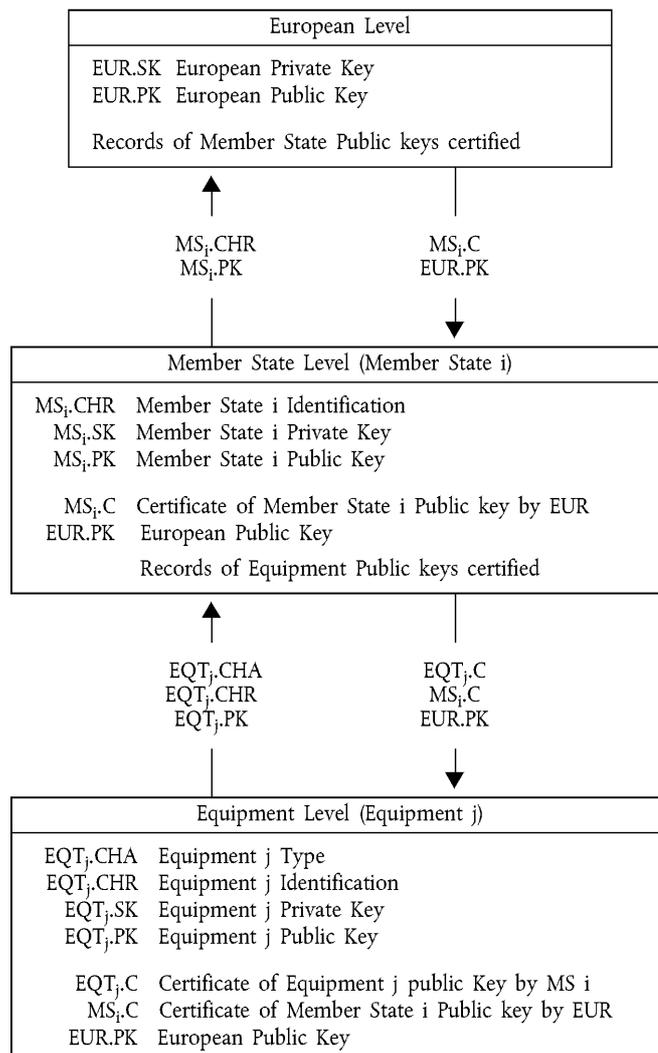
3.1.1. RSA Keys generation and distribution

CSM_006 RSA keys shall be generated through three functional hierarchical levels:

- European level,
- Member State level,
- Equipment level.

- CSM_007 At European level, a single European key pair (EUR.SK and EUR.PK) shall be generated. The European private key shall be used to certify the Member States public keys. Records of all certified keys shall be kept. These tasks shall be handled by a European Certification Authority, under the authority and responsibility of the European Commission.
- CSM_008 At Member State level, a Member State key pair (MS.SK and MS.PK) shall be generated. Member States public keys shall be certified by the European Certification Authority. The Member State private key shall be used to certify public keys to be inserted in equipment (vehicle unit or tachograph card). Records of all certified public keys shall be kept with the identification of the equipment to which it is intended. These tasks shall be handled by a Member State Certification Authority. A Member State may regularly change its key pair.
- CSM_009 At equipment level, one single key pair (EQT.SK and EQT.PK) shall be generated and inserted in each equipment. Equipment public keys shall be certified by a Member State Certification Authority. These tasks may be handled by equipment manufacturers, equipment personalisers or Member State authorities. This key pair is used for authentication, digital signature and encipherment services
- CSM_010 Private keys confidentiality shall be maintained during generation, transport (if any) and storage.

The following picture summarises the data flow of this process:



3.1.2. **RSA Test keys**

CSM_011 For the purpose of equipment testing (including interoperability tests) the European Certification Authority shall generate a different single European test key pair and at least two Member State test key pairs, the public keys of which shall be certified with the European private test key. Manufacturers shall insert, in equipment undergoing type approval tests, test keys certified by one of these Member State test keys.

3.1.3. **Motion sensor keys**

The confidentiality of the three TDES keys described below shall be appropriately maintained during generation, transport (if any) and storage.

In order to support recording equipment compliant with ISO 16844, the European Certification Authority and the Member State Certification Authorities shall, in addition, ensure the following:

CSM_036 The European Certification authority shall generate $K_{m_{VU}}$ and $K_{m_{WC}}$, two independent and unique Triple DES keys, and generate K_m as:

$$K_m = K_{m_{VU}} \text{ XOR } K_{m_{WC}}$$

The European Certification Authority shall forward these keys, under appropriately secured procedures, to Member States Certification Authorities at their request.

CSM_037 Member States Certification Authorities shall:

- use K_m to encrypt motion sensor data requested by motion sensor manufacturers (data to be encrypted with K_m is defined in ISO 16844-3),
- forward $K_{m_{VU}}$ to vehicle unit manufacturers, under appropriately secured procedures, for insertion in vehicle units,
- ensure that $K_{m_{WC}}$ will be inserted in all workshop cards (`SensorInstallationSecData` in `Sensor_Installation_Data` elementary file) during card personalisation.

3.1.4. **T-DES session keys generation and distribution**

CSM_012 Vehicle units and tachograph cards shall, as a part of the mutual authentication process, generate and exchange necessary data to elaborate a common Triple DES session key. This exchange of data shall be protected for confidentiality through an RSA crypt-mechanism.

CSM_013 This key shall be used for all subsequent cryptographic operations using secure messaging. Its validity shall expire at the end of the session (withdrawal of the card or reset of the card) and/or after 240 use (one use of the key = one command using secure messaging sent to the card and associated response).

3.2. **Keys**

CSM_014 RSA keys shall have (whatever the level) the following lengths: modulus n 1024 bits, public exponent e 64 bits maximum, private exponent d 1024 bits.

CSM_015 Triple DES keys shall have the form (K_a, K_b, K_a) where K_a and K_b are independent 64 bits long keys. No parity error detecting bits shall be set.

3.3. **Certificates**

CSM_016 RSA Public key certificates shall be "non self-descriptive" "Card Verifiable" certificates (Ref.: ISO/IEC 7816-8)

3.3.1. *Certificates content*

CSM_017 RSA Public key certificates are built with the following data in the following order:

Data	Format	Bytes	Obs
CPI	INTEGER	1	Certificate Profile Identifier ('01' for this version)
CAR	OCTET STRING	8	Certification Authority Reference
CHA	OCTET STRING	7	Certificate Holder Authorisation
EOV	TimeReal	4	Certificate end of validity. Optional, 'FF' padded if not used
CHR	OCTET STRING	8	Certificate Holder Reference
<i>n</i>	OCTET STRING	128	Public key (modulus)
<i>e</i>	OCTET STRING	8	Public key (public exponent)
		164	

Notes:

1. The "Certificate Profile Identifier" (CPI) delineates the exact structure of an authentication certificate. It can be used as an equipment internal identifier of a relevant headerlist which describes the concatenation of Data Elements within the certificate.

The headerlist associated with this certificate content is as follows:

'4D'	'16'	'5F 29'	'01'	'42'	'08'	'5F 4B'	'07'	'5F 24'	'04'	'5F 20'	'08'	'7F 49'	'05'	'81'	'81 80'	'82'	'08'
Extended Headerlist Tag	Length of header list	CPI Tag	CPI Length	CAR Tag	CAR Length	CHA Tag	CHA Length	EOV Tag	EOV Length	CHR Tag	CHR Length	Public Key Tag (Constructed)	Length of subsequent DOs	modulus Tag	modulus length	public exponent Tag	public exponent length

2. The "Certification Authority Reference" (CAR) has the purpose of identifying the certificate issuing CA, in such a way that the Data Element can be used at the same time as an Authority Key Identifier to reference the Public Key of the Certification Authority (for coding, see Key Identifier below).
3. The "Certificate Holder Authorisation" ((CHA) is used to identify the rights of the certificate holder. It consists of the Tachograph Application ID and of the type of equipment to which the certificate is intended (according to EquipmentType data element, "00" for a Member State).
4. "Certificate Holder Reference" (CHR) has the purpose of identifying uniquely the certificate holder, in such a way that the Data Element can be used at the same time as a Subject Key Identifier to reference the Public Key of the certificate holder.
5. Key Identifiers uniquely identify certificate holder or certification authorities. They are coded as follows:

5.1. Equipment (VU or Card):

Data	Equipment serial number	Date	Type	Manufacturer
Length	4 Bytes	2 Bytes	1 Byte	1 Byte
Value	Integer	mm jj BCD coding	Manufacturer specific	Manufacturer code

In the case of a VU, the manufacturer, when requesting certificates, may or may not know the identification of the equipment in which the keys will be inserted.

In the first case, the manufacturer will send the equipment identification with the public key to its Member State authority for certification. The certificate will then contain the equipment identification, and the manufacturer must ensure that keys and certificate are inserted in the intended equipment. The Key identifier has the form shown above.

In the later case, the manufacturer must uniquely identify each certificate request and send this identification with the public key to its Member State authority for certification. The certificate will contain the request identification. The manufacturer must feed back its Member State authority with the assignment of key to equipment (i.e. certificate request identification, equipment identification) after key installation in the equipment. The key identifier has the following form:

Data	Certificate request serial number	Date	Type	Manufacturer
Length	4 Bytes	2 Bytes	1 Byte	1 Byte
Value	BCD coding	mm jj BCD coding	'FF'	Manufacturer code

5.2. Certification Authority:

Data	Authority Identification	Key serial number	Additional info	Identifier
Length	4 Bytes	1 Byte	2 Bytes	1 Byte
Value	1 Byte nation numerical code 3 Bytes nation alpha-numerical code	Integer	additional coding (CA specific) 'FF FF' if not used	'01'

The key serial number is used to distinguish the different keys of a Member State, in the case the key is changed.

6. Certificate verifiers shall implicitly know that the public key certified is an RSA key relevant to authentication, digital signature verification and encipherment for confidentiality services (the certificate contains no Object Identifier to specify it).

3.3.2. Certificates issued

CSM_018 The certificate issued is a digital signature with partial recovery of the certificate content in accordance with ISO/IEC 9796-2, with the "Certification Authority Reference" appended.

$$X.C = X.CA.SK[6A] \parallel C_r \parallel Hash(Cc) \parallel BC \parallel C_n \parallel X.CAR$$

With certificate content = Cc = $\begin{matrix} C_r & \parallel & C_n \\ 106 \text{ Bytes} & & 58 \text{ Bytes} \end{matrix}$

Notes:

1. This certificate is 194 bytes long.
2. CAR, being hidden by the signature, is also appended to the signature, such that the Public Key of the Certification Authority may be selected for the verification of the certificate.
3. The certificate verifier shall implicitly know the algorithm used by the Certification Authority to sign the certificate.

4. The headerlist associated with this issued certificate is as follows:

'7F 21'	'09'	'5F 37'	'81 80'	'5F 38'	'3A'	'42'	'08'
CV Certificate Tag (Constructed)	Length of subsequent DOs	Signature Tag	Signature Length	Remainder Tag	Remainder Length	CAR Tag	CAR Length

3.3.3. Certificate verification and unwrapping

Certificate verification and unwrapping consists in verifying the signature in accordance with ISO/IEC 9796-2, retrieving the certificate content and the public key contained: $X.PK = X.CA.PK_oX.C$, and verifying the validity of the certificate.

CSM_019 It involves the following steps:

Verify signature and retrieve content:

- from X.C retrieve Sign, C_n' and CAR': $X.C = \underset{128 \text{ Bytes}}{\text{Sign}} \parallel \underset{58 \text{ Bytes}}{C_n'} \parallel \underset{8 \text{ Bytes}}{\text{CAR}'}$
- from CAR' select appropriate Certification Authority Public Key (if not done before through other means)
- open Sign with CA Public Key: $S_r' = X.CA.PK [\text{Sign}]$,
- check S_r' starts with '6A' and ends with 'BC'
- compute C_r' and H' from: $S_r' = \text{'6A'} \parallel \underset{106 \text{ Bytes}}{C_r'} \parallel \underset{20 \text{ Bytes}}{H'} \parallel \text{'BC'}$
- Recover certificate content $C' = C_r' \parallel C_n'$,
- check $\text{Hash}(C') = H'$

If the checks are OK the certificate is a genuine one, its content is C' .

Verify validity. From C' :

- if applicable, check End of validity date,

Retrieve and store public key, Key Identifier, Certificate Holder Authorisation and Certificate End of Validity from C' :

- $X.PK = n \parallel e$
- $X.KID = CHR$
- $X.CHA = CHA$
- $X.EOV = EOVS$

4. MUTUAL AUTHENTICATION MECHANISM

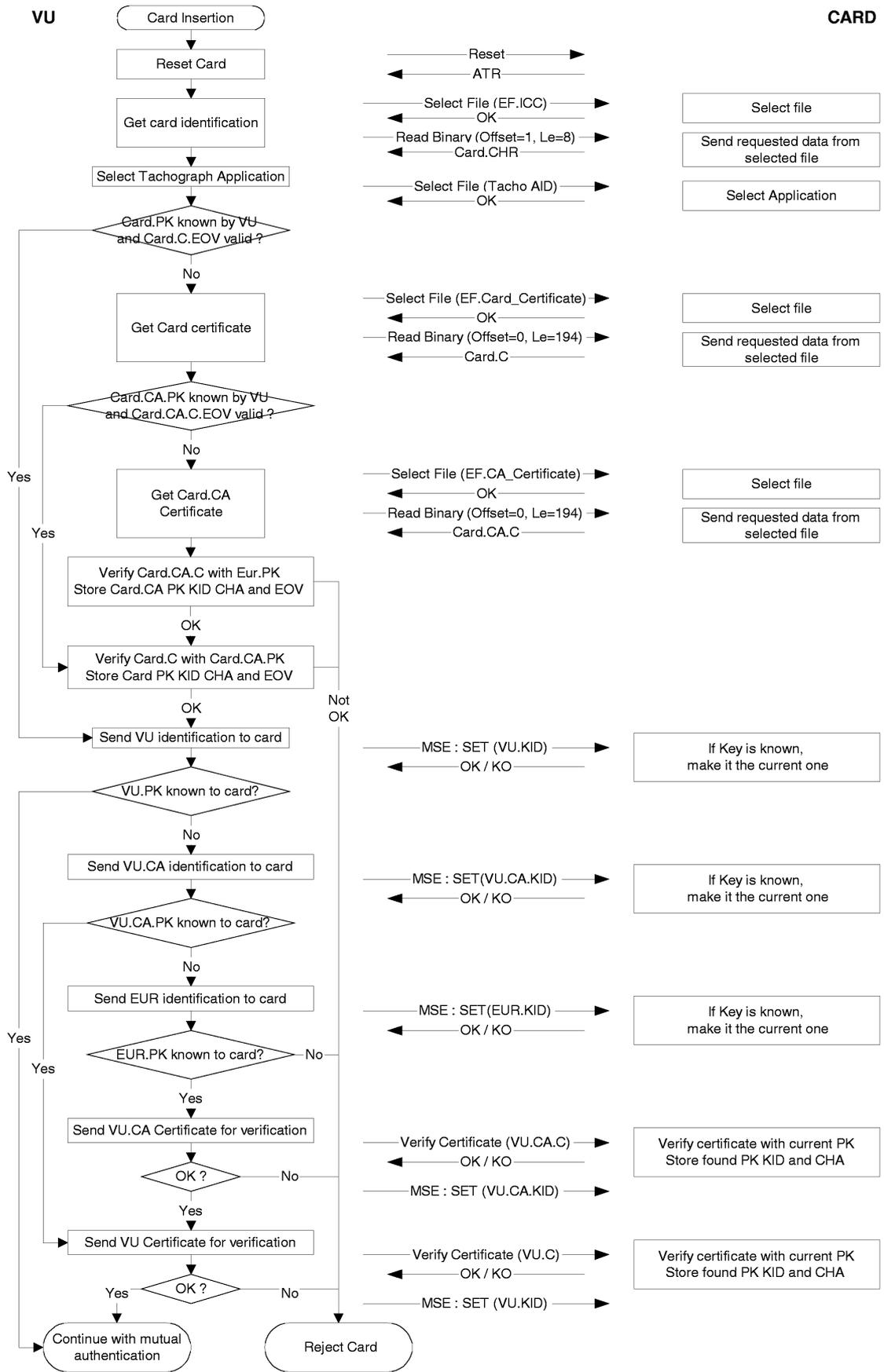
Mutual authentication between cards and VUs is based on the following principle:

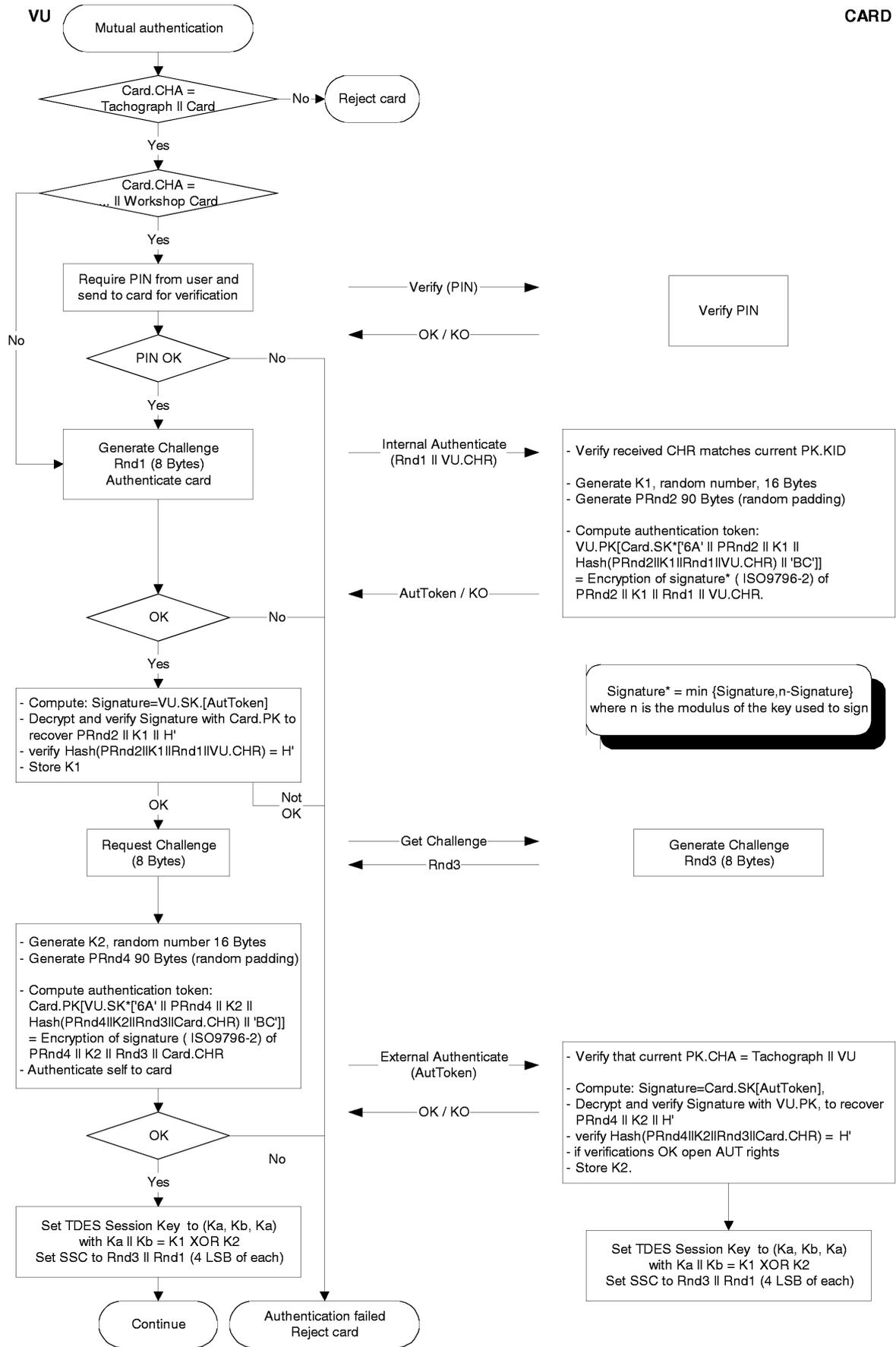
Each party shall demonstrate to the other that it owns a valid key pair, the public key of which has been certified by a Member State certification authority, itself being certified by the European certification authority.

Demonstration is made by signing with the private key a random number sent by the other party, who must recover the random number sent when verifying this signature.

The mechanism is triggered at card insertion by the VU. It starts with the exchange of certificates and unwrapping of public keys, and ends with the setting of a session key.

CSM_020 The following protocol shall be used (arrows indicate commands and data exchanged (see Appendix 2)):





5. VU-CARDS DATA TRANSFER CONFIDENTIALITY, INTEGRITY AND AUTHENTICATION MECHANISMS

5.1 Secure Messaging

- CSM_021 VU-Cards data transfers integrity shall be protected through Secure Messaging in accordance with references [ISO/IEC 7816-4] and [ISO/IEC 7816-8].
- CSM_022 When data need to be protected during transfer, a Cryptographic Checksum Data Object shall be appended to the Data Objects sent within the command or the response. The Cryptographic Checksum shall be verified by the receiver.
- CSM_023 The cryptographic checksum of data sent within a command shall integrate the command header, and all data objects sent (= > CLA = '0C', and all data objects shall be encapsulated with tags in which b1 = 1).
- CSM_024 The response status-information bytes shall be protected by a cryptographic checksum when the response contains no data field.
- CSM_025 Cryptographic checksums shall be 4 Bytes long.

The structure of commands and responses when using secure messaging is therefore the following:

The DOs used are a partial set of the Secure Messaging DOs described in ISO/IEC 7816-4:

Tag	Mnemonic	Meaning
'81'	T _{PV}	Plain Value not BER-TLV coded data (to be protected by CC)
'97'	T _{LE}	Value of Le in the unsecured command (to be protected by CC)
'99'	T _{SW}	Status-Info (to be protected by CC)
'8E'	T _{CC}	Cryptographic Checksum
'87'	T _{PI CG}	Padding Indicator Byte Cryptogram (Plain Value not coded in BER-TLV)

Given an unsecured command response pair:

Command header				Command body		
CLA	INS	P1	P2	[L _c -field]	[Data field]	[L _e -field]
four bytes				L bytes, denoted as B ₁ to B _L		

Response body		Response trailer	
[Data field]		SW1	SW2
L _r data bytes		two bytes	

The corresponding secured command response pair is:

Secured command:

Command header (CH)				Command body										
CLA	INS	P1	P2	[New L _c field]	[New Data field]						[New L _e field]			
'0C'				Length of New Data field	T _{PV}	L _{PV}	PV	T _{LE}	L _{LE}	L _e	T _{CC}	L _{CC}	CC	'00'
					'81'	L _c	Data field	'97'	'01'	L _e	'8E'	'04'	CC	

Data to be integrated in checksum = CH || PB || T_{PV} || L_{PV} || PV || T_{LE} || L_{LE} || L_e || PB

PB = Padding Bytes (80 .. 00) in accordance with ISO-IEC 7816-4 and ISO 9797 method 1.

DOs PV and LE are present only when there is some corresponding data in the unsecured command.

Secured response:

1. Case where response data field is not empty and needs not to be protected for confidentiality:

Response body						Response trailer
[New Data field]						new SW1 SW2
T _{PV}	L _{PV}	PV	T _{CC}	L _{CC}	CC	
'81'	L _r	Datafield	'8E'	'04'	CC	

Data to be integrated in checksum = T_{PV} || L_{PV} || PV || PB

2. Case where response data field is not empty and needs to be protected for confidentiality:

Response body						Response trailer
[New Data field]						new SW1 SW2
T _{PI CG}	L _{PI CG}	PI CG	T _{CC}	L _{CC}	CC	
'87'		PI CG	'8E'	'04'	CC	

Data to be carried by CG: non BER-TLV coded data and padding bytes.

Data to be integrated in checksum = T_{PI CG} || L_{PI CG} || PI CG || PB

3. Case where response data field is empty:

Response body						Response trailer
[New Data field]						new SW1 SW2
T _{SW}	L _{SW}	SW	T _{CC}	L _{CC}	CC	
'99'	'02'	New SW1 SW2	'8E'	'04'	CC	

Data to be integrated in checksum = T_{SW} || L_{SW} || SW || PB

5.2. Treatment of Secure Messaging errors

CSM_026 When the tachograph card recognises an SM error while interpreting a command, then the status bytes must be returned without SM. In accordance with ISO/IEC 7816-4, the following status bytes are defined to indicate SM errors:

'66 88': Verification of Cryptographic Checksum failed,

'69 87': Expected SM Data Objects missing,

'69 88': SM Data Objects incorrect.

CSM_027 When the tachograph card returns status bytes without SM DOs or with an erroneous SM DO, the session must be aborted by the VU.

5.3. Algorithm to compute Cryptographic Checksums

CSM_028 Cryptographic checksums are built using a retail MACs in accordance with ANSI X9.19 with DES:

- Initial stage: The initial check block y_0 is $E(K_a, SSC)$.
- Sequential stage: The check blocks y_1, \dots, y_n are calculated using K_a .
- Final stage: The cryptographic checksum is calculated from the last check block y_n as follows: $E(K_a, D(K_b, y_n))$.

where $E()$ means encryption with DES, and $D()$ means decryption with DES.

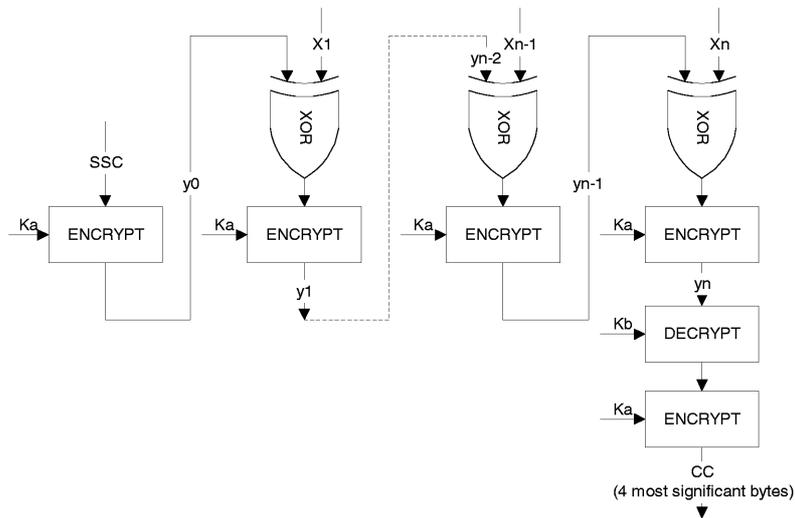
The four most significant bytes of the cryptographic checksum are transferred

CSM_029 The Send Sequence Counter (SSC) shall be initiated during key agreement procedure to:

Initial SSC: Rnd3 (4 least significant bytes) || Rnd1 (4 least significant bytes).

CSM_030 The Send Sequence Counter shall be increased by 1 each time before a MAC is calculated (i.e. the SSC for the first command is Initial SSC + 1, the SSC for the first response is Initial SSC + 2).

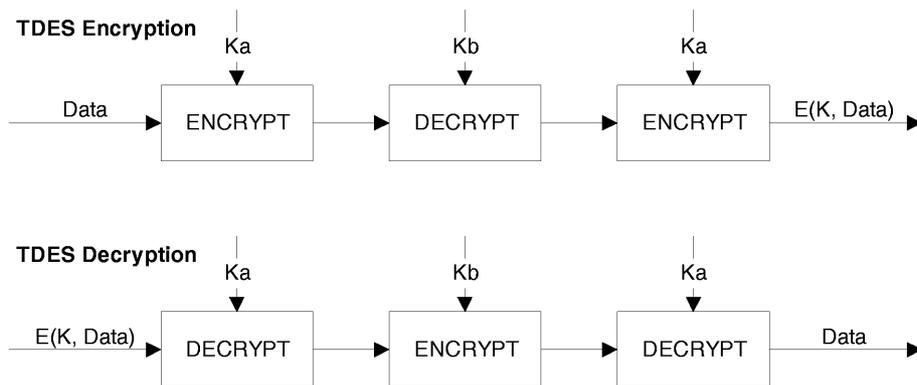
The following figure shows the calculation of the retail MAC:



5.4. Algorithm to compute cryptograms for confidentiality DOs

CSM_031 Cryptograms are computed using TDEA in TCBC mode of operation in accordance with references [TDES] and [TDES-OP] and with the Null vector as Initial Value block.

The following figure shows the application of keys in TDES:



6. DATA DOWNLOAD DIGITAL SIGNATURE MECHANISMS

CSM_032 The Intelligent Dedicated Equipment (IDE) stores data received from an equipment (VU or card) during one download session within one physical data file. This file must contain the certificates MS_i.C and EQT.C. The file contains digital signatures of data blocks as specified in Appendix 7 Data Downloading Protocols.

CSM_033 Digital signatures of downloaded data shall use a digital signature scheme with appendix such, that downloaded data may be read without any decipherment if desired.

6.1. Signature generation

CSM_034 Data signature generation by the equipment shall follow the signature scheme with appendix defined in reference [PKCS1] with the SHA-1 hash function:

$$\text{Signature} = \text{EQT.SK}[\text{'00'} \parallel \text{'01'} \parallel \text{PS} \parallel \text{'00'} \parallel \text{DER}(\text{SHA-1}(\text{Data}))]$$

PS = Padding string of octets with value 'FF' such that length is 128.

DER(SHA-1(M)) is the encoding of the algorithm ID for the hash function and the hash value into an ASN.1 value of type `DigestInfo` (distinguished encoding rules):

'30' || '21' || '30' || '09' || '06' || '05' || '2B' || '0E' || '03' || '02' || '1A' || '05' || '00' || '04' || '14' || Hash Value.

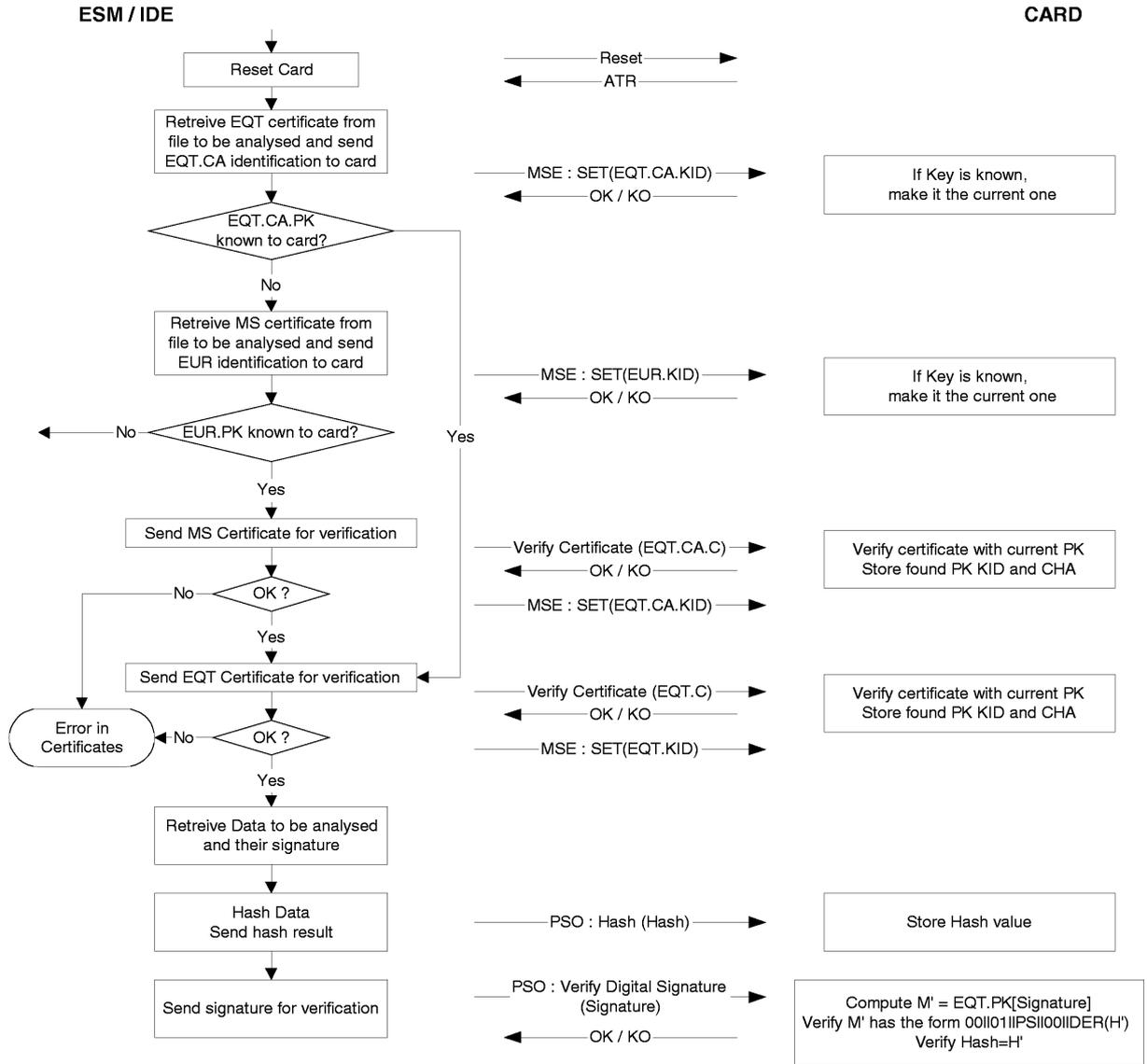
6.2. Signature verification

CSM_035 Data signature verification on downloaded data shall follow the signature scheme with appendix defined in reference [PKCS1] with the SHA-1 hash function.

The European public key EUR.PK needs to be known independently (and trusted) by the verifier.

The following table illustrates the protocol an IDE carrying a Control card can follow to verify the integrity of data downloaded and stored on the ESM (External Storage media). The control card is used to perform the decipherment of digital signatures. This function may in this case not be implemented in the IDE.

The equipment that has downloaded and signed the data to be analysed is denoted EQT.



Proposal for a Directive of the European Parliament and of the Council on the approximation of the laws of the Member States relating to the type-approval of mirrors and supplementary systems for indirect vision and of vehicles equipped with these devices and amending Directive 70/156/EEC

(2002/C 126 E/02)

(Text with EEA relevance)

COM(2001) 811 final — 2001/0317(COD)

(Submitted by the Commission on 7 January 2002)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

improving road safety and to permit the use of mirrors to be supplemented by other technologies.

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof,

(5) Taking into account the nature and the number of changes necessary to the requirements in force today, it is advisable to replace Directive 71/127/EEC by this Directive. Since the type-approval and the conformity of production procedures are now provided for in Directive 70/156/EEC, it is not necessary to repeat them in this Directive.

Having regard to the proposal from the Commission,

(6) The Annexes to Council Directive 70/156/EEC should be amended accordingly,

Having regard to the opinion of the Economic and Social Committee,

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

HAVE ADOPTED THIS DIRECTIVE:

Whereas:

Article 1

(1) Council Directive 71/127/EEC of 1 March 1971 on the approximation of the laws of the Member States relating to the rear-view mirrors of motor vehicles ⁽¹⁾ was adopted as one of the separate directives of the EC type-approval procedure which has been established by Council Directive 70/156/EEC of 6 February 1970 on the approximation of the laws of the Member States relating to the type-approval of motor vehicles and their trailers ⁽²⁾. Consequently, the provisions laid down in Directive 70/156/EEC relating to vehicle systems, components and separate technical units apply to Directive 71/127/EEC.

For the purpose of this Directive 'vehicle' means any motor vehicle as defined in Section A of Annex II to Directive 70/156/EEC

Article 2

(2) Existing provisions, in particular in the case of categories N₂ and N₃, have proved inadequate as regards the exterior lateral field of vision to the side and rear of the vehicle. In order to remedy this shortcoming, it is necessary to require an extension of the field of vision.

1. With effect from [18 months after adoption] Member States shall not, on grounds relating to mirrors and supplementary systems for indirect vision,

(3) In the case of categories N₂ and N₃, existing provisions have also proved inadequate as regards the field of vision in front of the vehicle. It is therefore necessary to require the fitting of devices which enable the area in front of the vehicle to be observed.

— refuse to grant EC type-approval or national type-approval of a vehicle, a mirror or a supplementary system for indirect vision,

— prohibit the registration, sale or entry into service of vehicles, mirrors or supplementary systems for indirect vision,

(4) In the light of the experience gained and the present state of the art, it is now possible to amplify certain requirements of Directive 71/127/EEC with a view to

if the vehicles, mirrors or supplementary systems for indirect vision comply with the requirements of this Directive.

⁽¹⁾ OJ L 68, 22.3.1971, p. 1 Directive as last amended by Commission Directive 88/321/EEC (OJ L 147, 14.6.1988, p. 77).

⁽²⁾ OJ L 42, 23.2.1970, p. 1; Directive as last amended by Commission Directive 2001/92/EC (OJ L 291, 8.11.2001, p. 24).

2. With effect from [6 months later], Member States shall, on grounds relating to mirrors and supplementary systems for indirect vision, refuse to grant EC type-approval or national type-approval for any new type of vehicle, mirror or supplementary system for indirect vision if the requirements of this Directive are not fulfilled.

3. With effect from [12 months later], the Member States shall, on grounds relating to mirrors and supplementary systems for indirect vision, prohibit the sale, registration or entry into service of vehicles, mirrors or supplementary systems for indirect vision, if the vehicles, mirrors or supplementary systems for indirect vision do not comply with the requirements of this Directive.

4. Notwithstanding paragraphs 2 and 3, for the purposes of replacement parts, Member States shall continue to grant EC type-approval and to permit the sale and entry into service of components or separate technical units intended for use on vehicle types which have been approved before [24 months after adoption] pursuant to Directive 71/127/EEC and, where applicable, subsequent extensions to those approvals.

Article 3

Within 4 years of the date referred to in Article 2(3), the Commission shall carry out a detailed study to ascertain whether the amendments introduced by this Directive have a positive effect on road safety, in particular as regards pedestrians, cyclists and other vulnerable road users. On the basis of those findings, the Commission shall, if necessary, propose additional legislative measures for further improvement of the field of indirect vision.

Article 4

Directive 70/156/EEC is amended as follows:

1. In Annex I the following items are added:

9.9.8. Systems for indirect vision

9.9.8.1. type and characteristics (such as a complete description of the system, detection angle (°), detection distance (mm), contrast, luminance range, glare correction, display performance (black and white/colour), image repetition frequency, luminance reach of the monitor);

9.9.8.2. sufficiently detailed drawings to identify the complete system, including installation prescriptions; the position for the EC type-approval mark has to be indicated on the drawings.

2. In Annex III the following items are added:

9.9.8. Systems for indirect vision

9.9.8.1. type and characteristics (such as a complete description of the system, detection angle (°), detection distance (mm), contrast, luminance

range, glare correction, display performance (black and white/colour), image repetition frequency, luminance reach of the monitor);

9.9.8.2. sufficiently detailed drawings to identify the complete system, including installation prescriptions; the position for the EC type-approval mark has to be indicated on the drawings.

3. In item 8 of Part I of Annex IV, the term 'rear-view mirrors' is replaced by 'mirrors and supplementary systems for indirect vision'.

4. In item 8 of Part II of Annex IV, the term 'rear-view mirrors' is replaced by 'mirrors and supplementary systems for indirect vision'.

5. In item 8 of Appendices 1 and 2 to Annex XI, the term 'rear-view mirrors' is replaced by 'mirrors and supplementary systems for indirect vision'.

Article 5

1. Member States shall adopt and publish, before [9 months after adoption], the provisions necessary to comply with this Directive. They shall forthwith inform the Commission thereof.

2. When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

3. Member States shall communicate to the Commission the text of the main provisions of national law which they adopt in the field covered by this Directive.

Article 6

Directive 71/127/EEC is repealed with effect from [24 months after adoption].

References to the repealed Directive shall be construed as references to this Directive and shall be read in accordance with the correlation table in Annex IV.

Article 7

This Directive shall enter into force on the third day following its publication in the *Official Journal of the European Communities*.

Article 8

This Directive is addressed to the Member States.

ANNEX I

DEFINITIONS

1. **Systems for Indirect Vision** means devices to observe the traffic area adjacent to the vehicle which cannot be observed by direct vision. This can be conventional mirrors or supplementary systems able to submit information about the indirect field of vision to the driver.
2. **Type of system for indirect vision** means devices that do not differ on the following essential characteristics:
 - design, shape or materials of the system, inclusive the attachment to the bodywork;
 - in case of mirrors the dimensions and radius of curvature of the mirror's reflecting surface;
 - in case of supplementary systems the detection distance and the range of vision.
3. **Mirror type system for indirect vision** means a system as defined in item 1, where the field of vision is obtained by means of a mirror as defined in item 6.
4. **Camera-monitor type system for indirect vision** means a system as defined by item 1, where the field of vision is obtained by means of a camera-monitor combination as defined in items 23 and 24.
5. **Alternative system for indirect vision** means a system as defined in item 1, where the field of vision is not obtained by means of a Mirror type system for indirect vision or a Camera-monitor type system for indirect vision.
6. **Mirror** means any device, excluding complex optical systems such as periscopes, intended to give a clear view to the rear and side of the vehicle within the fields of vision defined in item 5 of Annex III.
7. **Interior mirror** means a device as defined in item 1, which can be fitted in the passenger compartment of a vehicle.
8. **Exterior mirror** means a device as defined in item 1, which can be mounted on the external surface of a vehicle.
9. **Surveillance system** means a mirror other than a device of the type defined in item 6 which can be fitted to the inside or outside of the vehicle in order to provide fields of vision other than those specified in item 5 of Annex III.
10. **Class of mirror** means all devices having one or more common characteristics or functions. They are classified as follows:
 - Class I: 'Interior rear-view mirror', giving the field of vision defined in item 5.1 of Annex III.
 - Class II and III: 'Main exterior rear-view mirror', giving the fields of vision defined in items 5.2 and 5.3 of Annex III.
 - Class IV: 'Wide-angle exterior mirror', giving the field of vision defined in item 5.4 of Annex III.
 - Class V: 'Close-proximity exterior mirror', giving the field of vision defined in item 5.5 of Annex III.
 - Class VI: 'Front mirror', giving the field of vision defined in item 5.6 of Annex III.
11. **r** means the average of the radii of curvature measured over the reflecting surface, in accordance with the method described in item 2 of Appendix 1 to this Annex.
12. **The principal radii of curvature at one point on the reflecting surface (r_i)** means the values obtained with the apparatus defined in Appendix 1, measured on the arc of the reflecting surface passing through the centre of this surface parallel to the segment b, as defined in item 2.2.1 of Annex II and on the arc perpendicular to this segment.

13. **The radius of curvature at one point on the reflecting surface (r_p)** means the arithmetical average of the principal radii of curvature r_i und r'_i , i. e.:

$$r_p = \frac{r_i + r'_i}{2}$$

14. **Spherical surface** means a surface, which has a constant and equal radius in all directions.
15. **Aspherical surface** means a surface, which has only in one plane a constant radius.
16. **Aspherical mirrors** means a mirror comprising of a spherical and an aspherical part, in which the transition of the reflecting surface from the spherical to the aspherical part has to be marked. The curvature of the main axis of the mirror is defined in the x/y Co-ordinate system defined by the radius of the spherical primary calotte with:

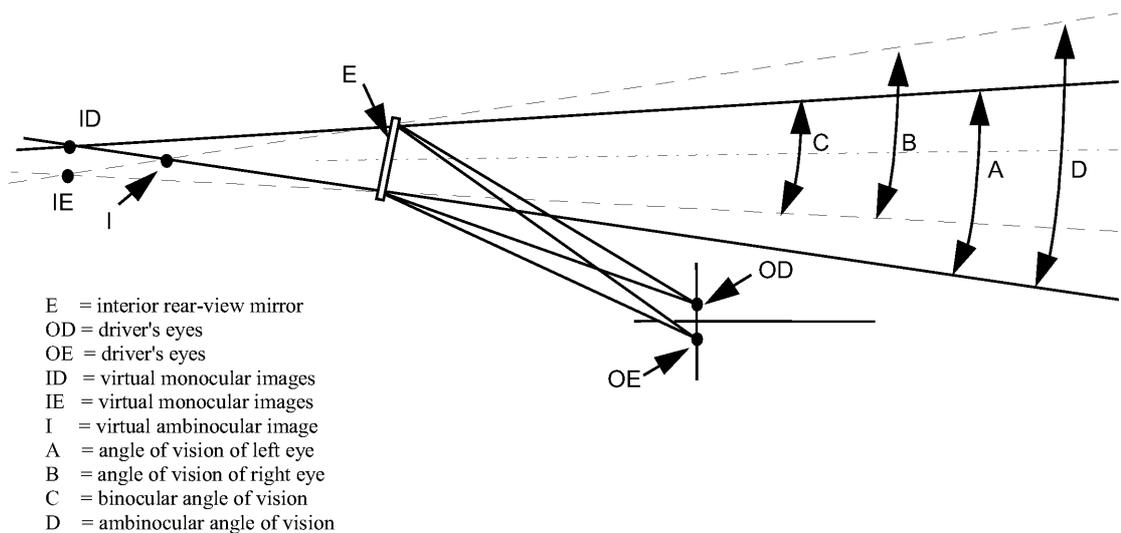
$$Y = R - \sqrt{(R^2 - x^2)} + k(x - a)^3$$

R: nominal radius in the spherical part

k: constant for the change of curvature

a: constant for the spherical size of the spherical primary calotte

17. **Centre of the reflecting surface** means the centre of the visible area of the reflecting surface.
18. **The radius of curvature of the constituent parts of the mirror** means the radius 'c' of the arc of the circle which most closely approximates to the curved form of the part in question.
19. **The driver's ocular points** means two points 65 mm apart and 635 mm vertically above point R of the driver's seat as defined in Appendix 2 to this Annex. The straight line joining these points runs perpendicular to the vertical longitudinal median plane of the vehicle. The centre of the segment joining the two ocular points is in a vertical longitudinal plane which must pass through the centre of the driver's designated seating position, as specified by the vehicle manufacturer.
20. **Ambinocular vision** means the total field of vision obtained by the superimposition of the monocular fields of the right eye and the left eye (see figure 1 below).



21. **Type of vehicle as regards mirrors** means motor vehicles, which are identical in respect of the following basic features:
- 21.1. the bodywork features which reduce the field of vision;
 - 21.2. the co-ordinates of point R;
 - 21.3. the prescribed positions and types of compulsory and (if fitted) optional mirror.
22. **Vehicles of categories M₁, M₂, M₃, N₁, N₂, N₃** means those defined in Annex II, Part A to Directive 70/156/EEC.
23. **Camera** means a device that renders an image of the outside world by means of a lens onto a light-sensitive electronic detector that then converts this image into a standardised video signal.
24. **Monitor** means a device that converts a standardised video signal into images that are rendered into the visual spectrum.
25. **Detection** means the ability to distinguish an object from its background/surroundings at certain distance.
26. **Contrast** means the difference in brightness between an object and its immediate background/surrounding that allows the object to be distinguished from its background/surroundings.
27. **Resolution** means the smallest detail that can be discerned with a perceptual system, i.e. perceived as separate from the larger whole. The resolution of the human eye is indicated as 'visual acuity'.
28. **Critical object** means a circular object with a diameter $D_0 = 0,8$ m ⁽¹⁾.
29. **Critical perception** means the level of perception that the human eye is generally capable of achieving under various conditions. For traffic conditions the limiting value for a critical perception is 8 arc-minutes of visual angle.
30. **Field of vision** means the section of the tri-dimensional space in which a critical object can be observed and rendered by the system for indirect vision. This is based on the view on ground level offered by a system and might possibly be limited on the basis of the applicable maximum detection distance of the system.
31. **Detection distance** means the distance measured at ground level from the projection of the viewing reference point to the extreme point at which a critical object just can be perceived (the limiting value for a critical perception just barely achieved).
32. **Critical field of vision** means the area in which a critical object has to be detected by means of a system for indirect vision and that is defined by an angle and one or more detection distances.
33. **Viewing reference point** means the point linked to the vehicle to which the prescribed field of vision is related. This point is the intersection of the projection on the ground plane of the line through the centre of vision, across the vehicle and the line in the longitudinal direction of the vehicle 20 cm outside the vehicle.
34. **Visual spectrum** means light with a wavelength within the range within the perceptual limits of the human eyes: 380-780 nm.
35. **Non interpretative rendering** means the rendering of an image in the visible spectrum of the field of vision (i.e. a portrayal), without drawing conclusions from the image by a processing system.

⁽¹⁾ A system for indirect vision is intended to detect relevant road users. The relevancy of a road user is defined by his or her position and (potential) speed. More or less in proportion with the speed of the pedestrian-cyclist-moped driver, the dimensions of these road users increase as well. For detection purposes a moped driver ($D = 0,8$) at 40 m distance would be equal to a pedestrian ($D = 0,5$) at a distance of 25 m. Considering the speeds, the moped driver would be selected as the criterion for the detection size; for that reason an object with a size of 0,8 m shall be used for determining the detection performance.

*Appendix 1 to Annex I***Procedure for determining the radius of curvature 'r' of the reflecting surface of a mirror**

1. MEASUREMENT

1.1. **Equipment**

A 'spherometer' similar to the one described in Figure 2 having the indicated distances between the tracing pin of the dial gauge and the fixed legs of the bar is used.

1.2. **Measuring points**

1.2.1. The principal radii of curvature shall be measured at three points situated as close as possible to positions at one-third, one-half and two-thirds of the distance along the arc of the reflecting surface passing through the centre of this surface and parallel to segment b, or of the arc passing through the centre of the reflecting surface which is perpendicular to it if this arc is the longer.

1.2.2. Where, owing to the size of the reflecting surface, it is impossible to obtain measurements in the directions defined in item 12 of this Annex, the technical services responsible for the tests may take measurements at the said point in two perpendicular directions as close as possible to those prescribed above.

2. CALCULATION OF THE RADIUS OF CURVATURE 'r'

'r' expressed in mm is calculated from the formula:

$$r = \frac{r_{p1} + r_{p2} + r_{p3}}{3}$$

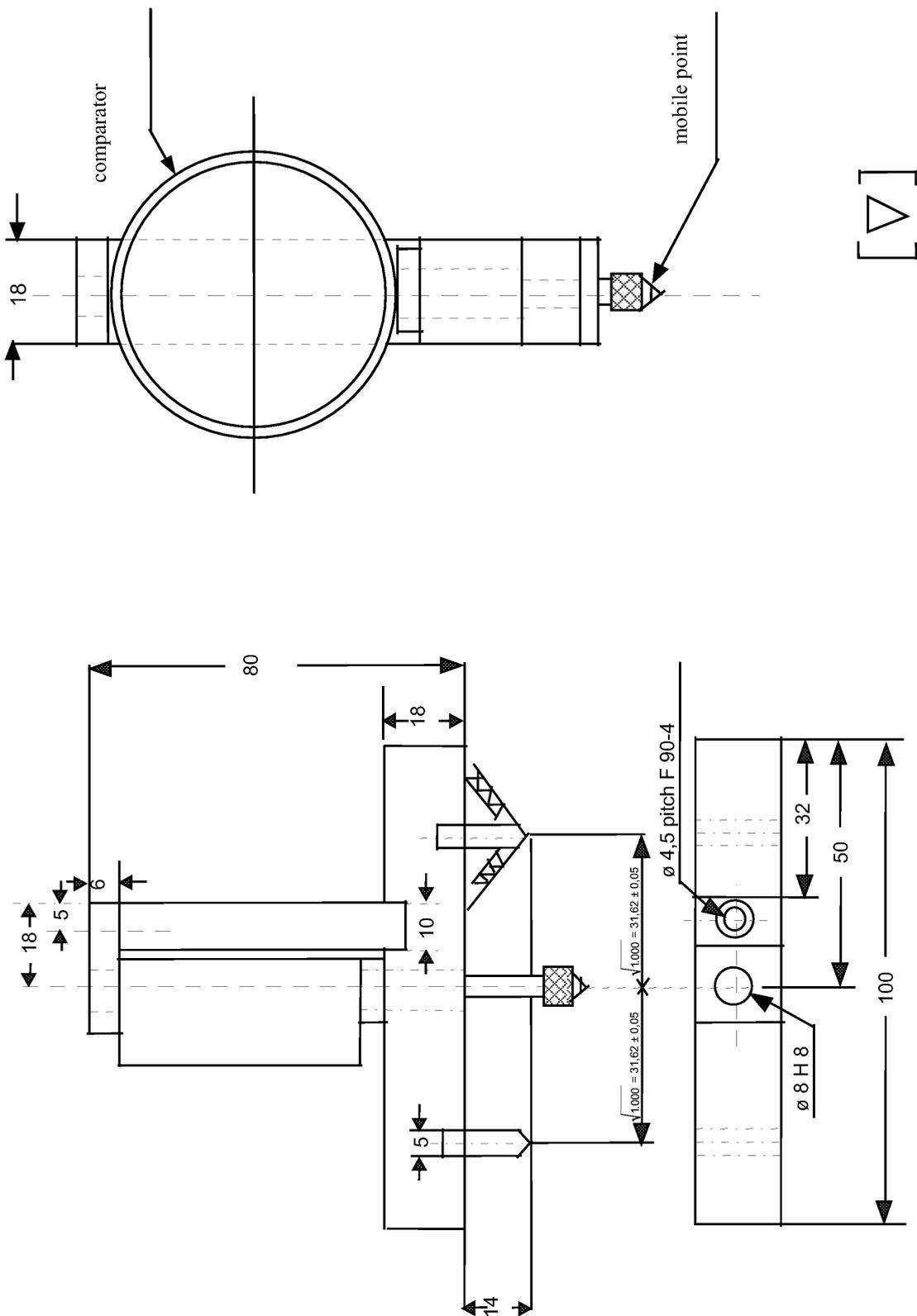
where:

r_{p1} = the radius of curvature at the first measuring point,

r_{p2} = the radius of curvature at the second measuring point,

r_{p3} = the radius of curvature at the third measuring point.

Figure 2
Spherometer



Appendix 2 to Annex I

Procedure for determining the h point and verifying the relative positions of the r and h points

The relevant parts of Annex III to Directive 77/649/EEC are applicable.

ANNEX II

DESIGN SPECIFICATIONS AND TESTS REQUIRED FOR EC COMPONENT TYPE-APPROVAL OF MIRRORS AND SUPPLEMENTARY SYSTEMS FOR INDIRECT VISION**A. Mirrors**

1. GENERAL SPECIFICATIONS

- 1.1. All mirrors must be adjustable.
- 1.2. The edge of the reflecting surface must be enclosed in a protective housing (holder, etc.) which, on its perimeter, must have a value 'c' greater than or equal to 2,5 mm at all points and in all directions. If the reflecting surface projects beyond the protective housing, the radius of curvature 'c' on the edge of the projecting part must be not less than 2,5 mm and the reflecting surface must return into the protective housing under a force of 50 N applied to the point of greatest projection, relative to the protective housing, in a horizontal direction, approximately parallel to the longitudinal median plane of the vehicle.
- 1.3. When the mirror is mounted on a plane surface, all parts, irrespective of the adjustment position of the device, including those parts remaining attached to the support after the test provided for in 4.2, which are in potential, static contact with a sphere either 165 mm in diameter in the case of an interior mirror or 100 mm in diameter in the case of an exterior mirror, must have a radius of curvature 'c' of not less than 2,5 mm.
- 1.3.1. Edges of fixing holes or recesses of which the diameter or longest diagonal is less than 12 mm are exempt from the radius requirements of item 1.3 provided that they are blunted.
- 1.4. The device for the attachment of mirrors to the vehicle must be so designed that a cylinder with a 70 mm radius, having as its axis the axis, or one of the axes, of pivot or rotation which ensures deflection of the mirror in the direction of impact concerned, passes through at least part of the surface to which the device is attached.
- 1.5. The parts of exterior mirrors referred to in items 1.2 and 1.3 which are made of a material with a Shore A hardness not exceeding 60 are exempt from the relevant provisions.
- 1.6. In the case of those parts of interior mirrors which are made of a material with a Shore A hardness of less than 50 and which are mounted on a rigid support, the requirements of items 1.2 and 1.3 shall only apply to the support.

2. DIMENSIONS

2.1. Interior rear-view mirrors (Class I)

The dimensions of the reflecting surface must be such that it is possible to inscribe thereon a rectangle one side of which is 40 mm and the other 'a' mm in length, where

$$a = 150 \text{ mm} \times \frac{1}{1 + \frac{1\,000}{r}}$$

and r is the radius of curvature.

2.2. Main exterior rear-view mirrors (Classes II and III)

- 2.2.1. The dimensions of the reflecting surface must be such that it is possible to inscribe therein:
 - a rectangle 40 mm high the base length of which, measured in millimetres, has the value 'a';
 - a segment which is parallel to the height of the rectangle and the length of which, expressed in millimetres, has the value 'b'.

2.2.2. The minimum values of 'a' and 'b' are given in the table below:

Class of rear-view mirror	a [mm]	b [mm]
II	$\frac{170}{1 + \frac{1\,000}{r}}$	200
III	$\frac{130}{1 + \frac{1\,000}{r}}$	70

2.3. 'Wide-angle' exterior mirrors (Class IV)

The contours of the reflecting surface must be of simple geometric form and its dimensions such that it provides, if necessary in conjunction with a Class II exterior mirror, the field of vision specified in item 5.4 of Annex III.

2.4. 'Close-proximity' exterior mirrors (Class V)

The contours of the reflecting surface must be of simple geometric form and its dimensions such that the mirror provides the field of vision specified in item 5.5 of Annex III.

2.5. Front mirrors (Class VI)

The contours of the reflecting surface must be of simple geometric form and its dimensions such that the mirror provides the field of vision specified in item 5.6 of Annex III.

3. REFLECTING SURFACE AND COEFFICIENTS OF REFLECTION

3.1. The reflecting surface of a mirror must be either flat or spherically convex. Main exterior rear-view mirrors (Classes II and III) of vehicles of categories M₁ and N₁ must be equipped with an additional aspherical part. For all other categories of vehicles an aspherical part may be added to the main exterior rear-view mirrors.

3.2. Differences between the radii of curvature of mirrors.

3.2.1. The difference between r_i or r'_i and r_p at each reference point must not exceed 0,15 r.

3.2.2. The difference between any of the radii of curvature (r_{p1}, r_{p2}, and r_{p3}) and 'r' must not exceed 0,15 r.

3.2.3. When r is not less than 3 000 mm, the value of 0,15 r quoted in items 3.2.1 and 3.2.2 is replaced by 0,25 r.

3.3. Requirements for aspherical parts of mirrors

3.3.1. Aspherical mirrors shall be of sufficient size and shape to provide useful information to the driver. This would normally mean a minimum width of 30 mm at some point. The maximum width shall not exceed 1/3 of the reflector width.

3.3.2. For vehicle categories other than M₁ and N₁ aspherical parts are permitted as a supplement, provided that the main exterior rear-view mirror fulfils the requirements of the indirect field of vision.

3.3.3. The field of vision requirements must be met without taking into consideration any aspheric reflecting surface.

3.3.4. The radius of curvature r_i of the aspherical part shall not be less than 150 mm.

3.3.5. The items 3.2.1 to 3.2.3 and 3.4.1 to 3.4.3 are valid only for the spherical part of mirrors.

3.4. Value of 'r' must not be less than:

3.4.1. 1 200 mm for interior rear-view mirrors (Class I);

3.4.2. 1 200 mm for Class II and III main exterior rear-view mirrors;

- 3.4.3. 300 mm for 'wide-angle' exterior mirrors (Class IV) and 'close-proximity' exterior mirrors (Class V);
- 3.4.4. 200 mm for front mirrors (Class VI).
- 3.5. The value of the normal coefficient of reflection, as determined according to the method described in Appendix 1 to this Annex, must be not less than 40 %.

In the case of reflecting surfaces with a changeable degree of reflection, the 'day' position must allow the colours of the signals used for road traffic to be recognised. The value of the normal coefficient of reflection in the 'night' position must be not less than 4 %.

- 3.6. The reflecting surface must retain the characteristics laid down in item 3.5 in spite of prolonged exposure to adverse weather conditions in normal use.

4. TESTS

- 4.1. Mirrors shall be subjected to the tests described in items 4.2.
- 4.1.1. The test provided for in item 4.2 shall not be required in the case of any exterior mirror of which no part is less than 2 m from the ground, regardless of the adjustment position, when the vehicle is under a load corresponding to its maximum technically permissible weight.

This derogation also applies to the attachments of mirrors (attachment plates, arms, swivel joints, etc.) which are situated less than 2 m from the ground and which do not project beyond the overall width of the vehicle, measured in the transverse plane passing through the lowest mirror attachments or any other point forward of this plane if this configuration produces a greater overall width.

In such cases, a description specifying that the mirror must be mounted so as to conform to the above-mentioned conditions for the positioning of its attachments on the vehicle must be provided.

Where advantage is taken of this derogation, the arm shall be indelibly marked with the symbol

$$\frac{\triangle}{2 \text{ m}}$$

and the type-approval certificate shall be endorsed to this effect.

The test according to 4.2 is not to be carried out for systems integrated in the superstructure of the vehicle and providing a frontal deflecting area of an angle not more than 45° measured from the longitudinal centre plane of the vehicle, or systems not protrude more than 100 mm measured according to Directive 74/483/EEC beyond the circumscribing superstructure of the vehicle.

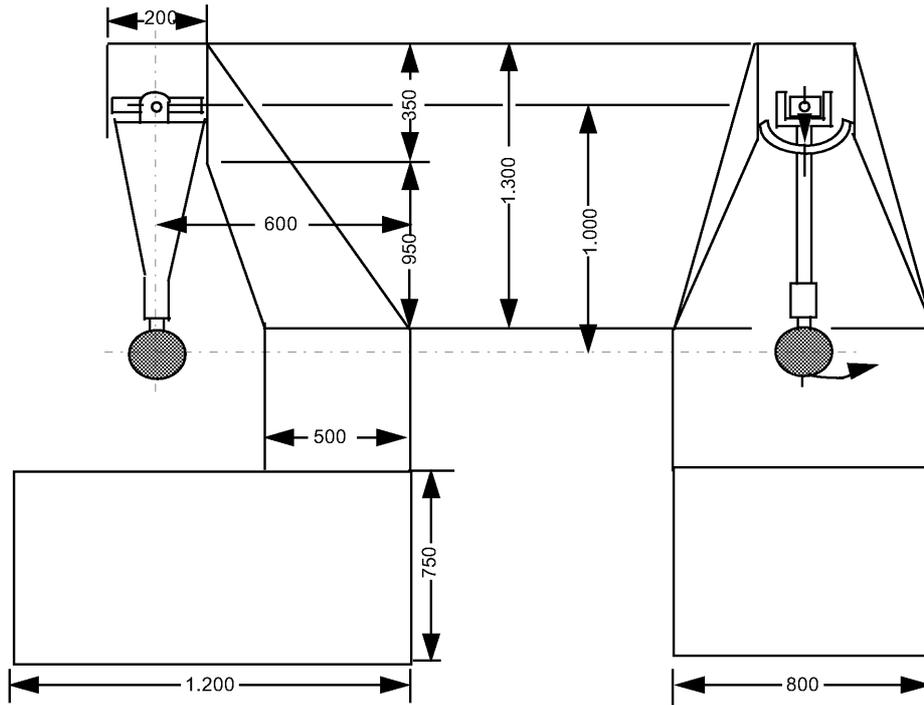
- 4.2. Impact test
- 4.2.1. Description of the test rig
- 4.2.1.1. The test rig consists of a pendulum capable of swinging about two horizontal axes at right angles to each other, one of which is perpendicular to the plane containing the 'release' trajectory of the pendulum.

The end of the pendulum comprises a hammer formed by a rigid sphere with a diameter of 165 ± 1 mm having a 5 mm thick rubber covering of Shore A hardness 50.

A device is provided which permits determination of the maximum angle assumed by the arm in the plane of release.

A support firmly fixed to the structure of the pendulum serves to hold the specimens in compliance with the impact requirements specified in item 4.2.2.6.

Figure 3 below gives the dimensions of the test rig and the special design specifications:



- 4.2.1.2. The centre of percussion of the pendulum coincides with the centre of the sphere, which forms the hammer. It is at a distance 'l' from the axis of oscillation in the release plane, which is equal to $1 \text{ m} \pm 5 \text{ mm}$. The reduced mass of the pendulum is $m_o = 6,8 \pm 0,05$ kilograms (the relationship of 'm_o' to the total mass 'm' of the pendulum and to the distance 'd' between the centre of gravity of the pendulum and its axis of rotation is expressed in the equation:

$$m_o = m \times \left(\frac{d}{l}\right)$$

- 4.2.2. Description of the test.

- 4.2.2.1. The procedure used to clamp the mirror to the support shall be that recommended by the manufacturer of the device or, where appropriate, by the vehicle manufacturer.

- 4.2.2.2. Positioning of the mirror for the test.

- 4.2.2.2.1. Mirrors shall be positioned on the pendulum impact rig such that the axes which are horizontal and vertical when the mirror is installed on a vehicle in accordance with the applicant's mounting instructions are in a similar position.

- 4.2.2.2.2. When a mirror is adjustable with respect to the base, the test position shall be that in which any pivoting device is least likely to operate, within the limits of adjustment provided by the applicant.

- 4.2.2.2.3. When the mirror has a device for adjusting its distance from the base, the device must be set in the position in which the distance between the housing and the base is shortest.

- 4.2.2.2.4. When the reflecting surface is mobile in the housing, it shall be so adjusted that the upper corner, which is furthest from the vehicle, is in the position of greatest projection relative to the housing.

- 4.2.2.3. Except in the case of test 2 for interior mirrors (see item 4.2.2.6.1), when the pendulum is in a vertical position the horizontal and longitudinal vertical planes passing through the centre of the hammer shall pass through the centre of the reflecting surface as defined in item 17 of Annex I. The longitudinal direction of oscillation of the pendulum shall be parallel to the longitudinal median plane of the vehicle.

- 4.2.2.4. When, under the conditions governing adjustment laid down in items 4.2.2.1 and 4.2.2.2 parts of the mirror limit the return of the hammer, the point of impact must be displaced in a direction perpendicular to the axis of rotation or pivoting in question.

The displacement must be no greater than is strictly necessary for the execution of the test; it must be limited in such a way that:

- either the sphere delimiting the hammer remains at least tangential to the cylinder as defined in paragraph 1.4;
- or the point of contact with the hammer is located at least 10 mm from the periphery of the reflecting surface.

- 4.2.2.5. The test consists in allowing the hammer to fall from a height corresponding to a pendulum angle of 60° from the vertical so that the hammer strikes the mirror at the moment when the pendulum reaches the vertical position.

- 4.2.2.6. The mirrors are subjected to impact under the following different conditions:

4.2.2.6.1. Interior mirrors

- Test 1: The points of impact shall be as defined in item 4.2.2.3. The impact must be such that the hammer strikes the mirror on the reflecting surface side.
- Test 2: Point of impact on the edge of the protective housing, such that the impact produced makes an angle of 45° with the plane of the reflecting surface and is situated in the horizontal plane passing through the centre of that surface. The impact must occur on the reflecting surface side.

4.2.2.6.2. Exterior mirrors

- Test 1: The point of impact shall be as defined in item 4.2.2.3 or 4.2.2.4. The impact must be such that the hammer strikes the mirror on the reflecting surface side.
- Test 2: The point of impact shall be as defined in item 4.2.2.3 or 4.2.2.4. The impact must be such that the hammer strikes the mirror on the side opposite to the reflecting surface.

Where Class II or III rear-view mirrors are fixed to the same mounting as Class IV mirrors, the above-mentioned tests shall be executed on the lower mirror. Nevertheless, the technical service responsible for testing may repeat one or both of these tests on the upper mirror if this is less than 2 m from the ground.

5. RESULTS OF THE TEST

- 5.1. In the tests described in item 4.2, the pendulum must continue to swing after impact in such a way that the projection of the position assumed by the arm on the plane of release makes an angle of at least 20° with the vertical. The accuracy of measurement of the angle shall be within ± 1°.

- 5.1.1. This requirement is not applicable to mirrors stuck to the windscreen, in respect of which the requirement stipulated in item 5.2 shall apply after the test.

- 5.1.2. The required angle to the vertical is reduced from 20° to 10° for all Class II and Class IV mirrors and for Class III rear-view mirrors which are attached to the same mounting as Class IV mirrors.

- 5.2. Should the mounting of the mirror break during the tests described in item 4.2. for mirrors stuck to the windscreen, the part remaining must not project beyond the base by more than 10 mm and the configuration remaining after the test must satisfy the conditions laid down in item 1.3.

- 5.3. The reflecting surface must not break during the tests described in items 4.2. However breakage of the reflecting surface will be allowed if one of the following conditions is fulfilled:

- 5.3.1. the fragments of glass still adhere to the back of the housing or to a surface firmly attached to the housing; partial separation of the glass from its backing is admissible provided this does not exceed 2,5 mm on either side of the cracks. It is permissible for small splinters to become detached from the surface of the glass at the point of impact;
- 5.3.2. the reflecting surface is made of safety glass.

B. Supplementary systems for indirect vision

1. GENERAL REQUIREMENTS

- 1.1. If adjustment by the user is needed, the system for indirect vision shall be adjustable without the use of tools.
- 1.2. If a system for indirect vision can only render the total prescribed field of vision by scanning the field of vision, the total process of scanning, rendering and reset to its initial position together shall not take more than 2 seconds.

2. SUPPLEMENTARY SYSTEM FOR INDIRECT VISION INCLUDING MIRRORS

The requirements of part A of this Annex are applicable to a supplementary system including a mirror.

3. CAMERA-MONITOR TYPE SYSTEM FOR INDIRECT VISION

3.1. General requirements

- 3.1.1. When the camera-monitor type system for indirect vision is mounted on a plane surface, all parts, irrespective of the adjustment position of the system which are in potential, static contact with a sphere either 165 mm in diameter in the case of a monitor or 100 mm in diameter in the case of a camera, must have a radius of curvature 'c' of not less than 2,5 mm.
- 3.1.2. Edges of fixing holes or recesses of which the diameter or longest diagonal is less than 12 mm are exempt from the radius requirements of item 3.1.1. provided that they are blunted.
- 3.1.3. For parts of the camera and the monitor which are made of a material with a Shore A hardness of less than 60 and which are mounted on a rigid support, the requirements of item 3.1.1 shall only apply to the support.

3.2. Functional requirements

- 3.2.1. The camera shall provide a contrast of $> 0,33$ under the following conditions:
 - daylight conditions (intensity of light > 10 lx) and
 - low sun condition outside the part of the image where the light source is reproduced (condition as defined in EN 12368; the light source shall have an intensity of 40 000 lx and illuminate the area that has to be observed at an angle of 10°).
- 3.2.2. The monitor shall render contrast $> 0,33$ when an intensive light source shines on the screen of the monitor.
- 3.2.3. It shall be possible to adjust the average luminance of the monitor either manually or automatically to the ambient conditions.
- 3.2.4. The measurements for the contrast shall be carried out according to Appendix 2 of this Annex.

4. ALTERNATIVE SYSTEM FOR INDIRECT VISION

It has to be proved that the system meets the following requirements:

- 4.1. The system shall perceive the visual spectrum and shall always render this image without the need for interpretation into the visual spectrum.
- 4.2. The functionality shall be guaranteed under the circumstances of use in which the system shall be put into service. Depending on the technology used in obtaining images and presenting them item 3.2 shall be applicable entirely or partly. In other cases this can be achieved by establishing and demonstrating by means of system sensitivity analogous to item 3.2 that a function is ensured that is comparable to or better than what is required for and by demonstrating that a functionality is guaranteed that is equivalent or better than the one that is required for mirror- or camera-monitor type systems for indirect vision.

Appendix I to Annex II

Test method for determining reflectivity

1. DEFINITIONS

- 1.1. CIE standard illuminate A ⁽¹⁾: Colorimetric illuminate, respecting the full radiator at $T_{68} = 2\,855,6$ K.
- 1.2. CIE standard source A ⁽¹⁾: Gas-filled tungsten filament lamp operating at a correlated colour temperature of $T_{68} = 2\,855,6$ K.
- 1.3. CIE 1931 standard colorimetric observer ⁽¹⁾ Receptor of radiation whose colorimetric characteristics correspond to the spectral tristimulus values $\bar{x}(\lambda), \bar{y}(\lambda), \bar{z}(\lambda)$ (see table).
- 1.4. CIE spectral tristimulus values ⁽¹⁾: Tristimulus values of the spectral components of an equi-energy spectrum in the CIE (XYZ) system.
- 1.5. Photopic vision ⁽¹⁾: Vision by the normal eye when it is adapted to levels of luminance of at least several candelas per square metre.

2. APPARATUS

2.1. General

The apparatus shall consist of a light source, a holder for the test sample, a receiver unit with a photodetector and an indicating meter (see Figure 4), and means of eliminating the effects of extraneous light.

The receiver may incorporate a light-integrating sphere to facilitate measuring the reflectance of non-flat (convex) mirrors (see Figure 5).

2.2. Spectral characteristics of light source and receiver

The light source shall consist of a CIE standard source A and associated optics to provide a near-collimated light beam. A voltage stabiliser is recommended in order to maintain a fixed lamp voltage during instrument operation.

The receiver shall have a photodetector with a spectral response proportional to the photopic luminosity function of the CIE (1931) standard colorimetric observer (see table). Any other combination of illuminate-filter-receptor giving the overall equivalent of CIE standard illuminate A and photopic vision may be used. When an integrating sphere is used in the receiver, the interior surface of the sphere shall be coated with a matt (diffusive) spectrally non-selective white coating.

2.3. Geometrical conditions

The angle of the incident beam (θ) should preferably be $0,44 \pm 0,09$ rad ($25 \pm 5^\circ$) from the perpendicular to the test surface and shall not exceed the upper limit of the tolerance (i.e. $0,53$ rad or 30°). The axis of the receptor shall make an angle (θ) with this perpendicular equal to that of the incident beam (see Figure 4). The incident beam upon arrival at the test surface shall have a diameter of not less than 13 mm ($0,5$ in.). The reflected beam shall not be wider than the sensitive area of the photodetector, shall not cover less than 50% of such area, and as nearly as possible shall cover the same area segment as used during instrument calibration.

When an integrating sphere is used in the receiver section, the sphere shall have a minimum diameter of 127 mm (5 in.). The sample and incident beam apertures in the sphere wall shall be of such a size as to admit the entire incident and reflected light beams. The photodetector shall be so located as not to receive direct light from either the incident or the reflected beam.

2.4. Electrical characteristics of the photodetector-indicator unit

The photodetector output as read on the indicating meter shall be a linear function of the light intensity of the photosensitive area. Means (electrical and/or optical) shall be provided to facilitate zeroing and calibration adjustments. Such means shall not affect the linearity or the spectral characteristics of the instrument. The accuracy of the receptor-indicator unit shall be within $\pm 2\%$ of full scale, or $\pm 10\%$ of the magnitude of the reading, whichever is the smaller.

⁽¹⁾ Definitions taken from CIE publication 50 (45), International Electrotechnical Vocabulary, Group 45: Lighting.

2.5. Sample holder

The mechanism shall be capable of locating the test sample so that the axes of the source arm and receptor intersect at the reflecting surface. The reflecting surface may lie within or at either face of the mirror sample, depending on whether it is a first-surface, second-surface or prismatic 'flip'-type mirror.

3. PROCEDURE

3.1. Direct calibration method

In the direct calibration method, air is used as the reference standard. This method is applicable for those instruments, which are so constructed as to permit calibration at the 100 % point by swinging the receiver to a position directly on the axis of the light source (see Figure 4).

It may be desired in some cases (such as when measuring low-reflectivity surfaces) to use an intermediate calibration point (between 0 and 100 % on the scale) with this method. In these cases, a neutral density filter of known transmittance shall be inserted in the optical path, and the calibration control shall then be adjusted until the meter reads the percentage transmission of the neutral density filter. This filter shall be removed before reflectivity measurements are performed.

3.2. Indirect calibration method

The indirect calibration method is applicable in the case of instruments with fixed source and receiver geometry. A properly calibrated and maintained reflectance standard is required. This reference standard should preferably be a flat mirror with a reflectance value as near as possible to that of the test samples.

3.3. Flat mirror measurement

The reflectance of flat mirror samples can be measured on instruments employing either the direct or the indirect calibration method. The reflectance value is read directly from the indicating meter.

3.4. Non-flat (convex) mirror measurement

Measurement of the reflectance of non-flat (convex) mirrors requires the use of instruments which incorporate an integrating sphere in the receiver unit (see Figure 5). If the instrument-indicating meter indicates n_e divisions with a standard mirror of E % reflectance, then, with a mirror of unknown reflectance, n_x divisions will correspond to a reflectance of X %, in accordance with the formula:

$$X = E \frac{n_x}{n_e}$$

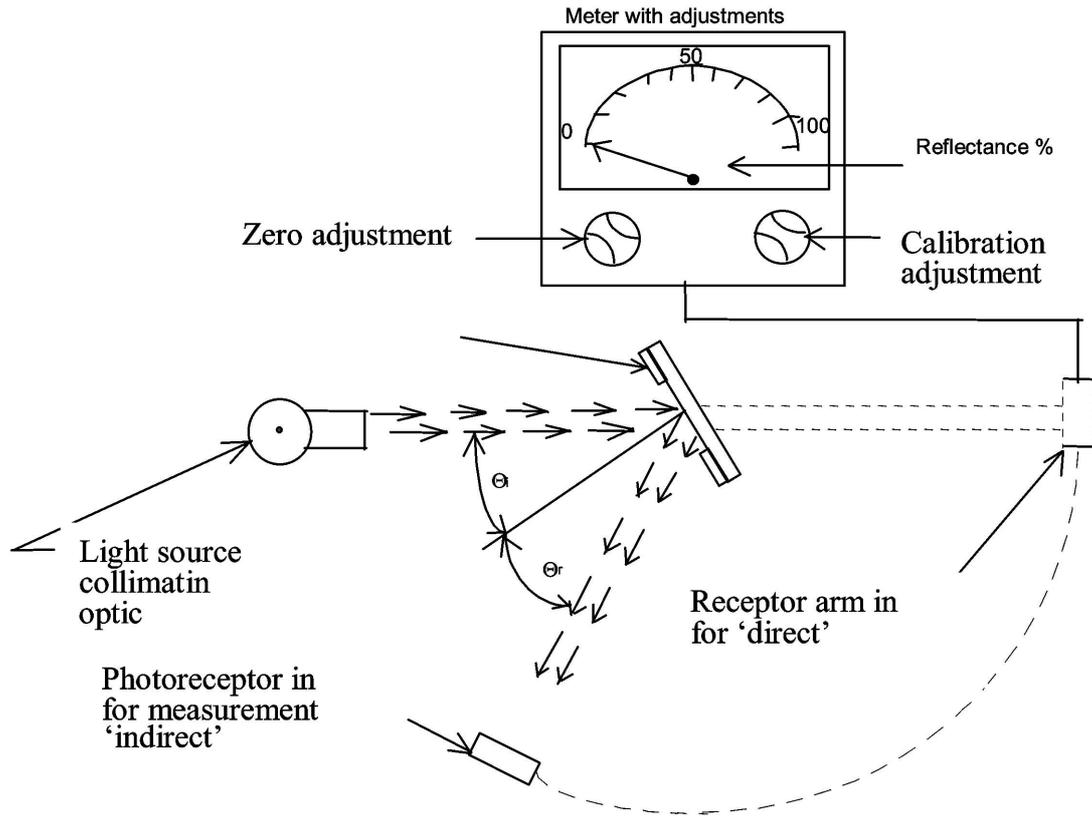


Figure 4

Generalised reflectometer showing experimental set-ups for the two calibration methods

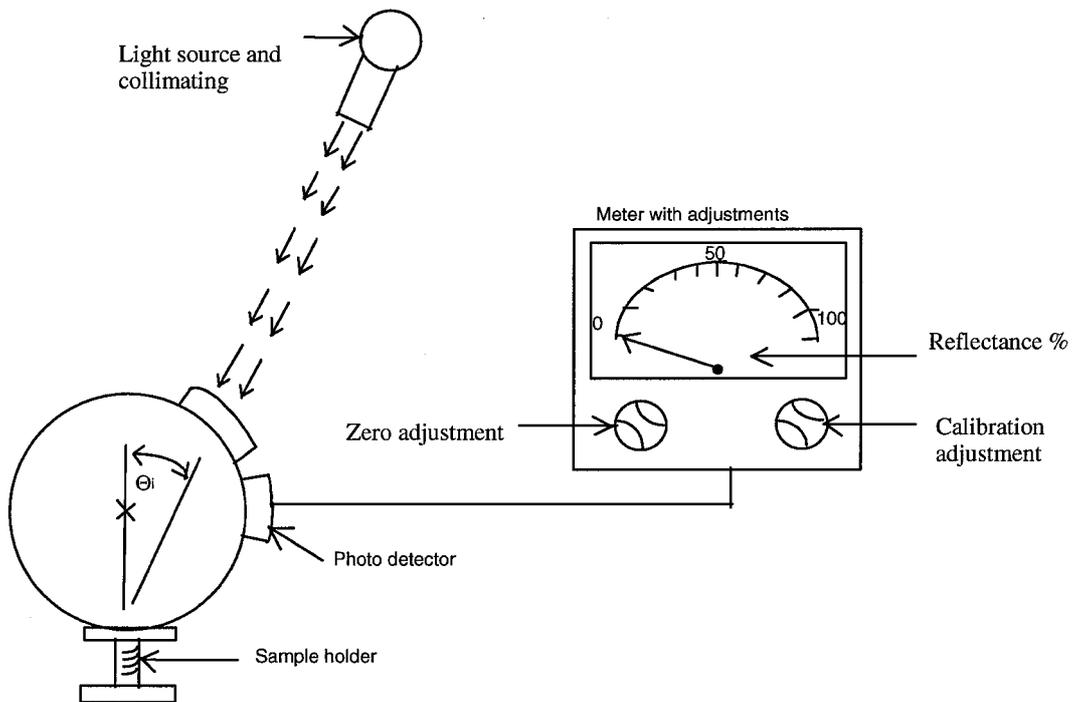


Figure 5

Generalised reflectometer, incorporating an integrating sphere in the receiver

Spectral tristimulus values for the CIE 1931 standard colorimetric observer ⁽¹⁾

This table is taken from CIE publication 50 (45) (1970)

λ nm	$\bar{x}(\lambda)$	$\bar{y}(\lambda)$	$\bar{z}(\lambda)$
380	0,001 4	0,000 0	0,006 5
390	0,004 2	0,000 1	0,020 1
400	0,014 3	0,000 4	0,067 9
410	0,043 5	0,001 2	0,207 4
420	0,134 4	0,004 0	0,645 6
430	0,283 9	0,011 6	1,385 6
440	0,348 3	0,023 0	1,747 1
450	0,336 2	0,038 0	1,772 1
460	0,290 8	0,060 0	1,669 2
470	0,195 4	0,091 0	1,287 6
480	0,095 6	0,139 0	0,813 0
490	0,032 0	0,208 0	0,465 2
500	0,004 9	0,323 0	0,272 0
510	0,009 3	0,503 0	0,158 2
520	0,063 3	0,710 0	0,078 2
530	0,165 5	0,862 0	0,042 2
540	0,290 4	0,954 0	0,020 3
550	0,433 4	0,995 0	0,008 7
560	0,594 5	0,995 0	0,003 9
570	0,762 1	0,952 0	0,002 1
580	0,916 3	0,870 0	0,001 7
590	1,026 3	0,757 0	0,001 1
600	1,062 2	0,631 0	0,000 8
610	1,002 6	0,503 0	0,000 3
620	0,854 4	0,381 0	0,000 2
630	0,642 4	0,265 0	0,000 0
640	0,447 9	0,175 0	0,000 0
650	0,283 5	0,107 0	0,000 0
660	0,164 9	0,061 0	0,000 0
670	0,087 4	0,032 0	0,000 0
680	0,046 8	0,017 0	0,000 0
690	0,022 7	0,008 2	0,000 0
700	0,011 4	0,004 1	0,000 0
710	0,005 8	0,002 1	0,000 0
720	0,002 9	0,001 0	0,000 0
730	0,001 4	0,000 5	0,000 0
740	0,000 7	0,000 2 (*)	0,000 0
750	0,000 3	0,000 1	0,000 0
760	0,000 2	0,000 1	0,000 0
770	0,000 1	0,000 0	0,000 0
780	0,000 0	0,000 0	0,000 0

(*) Changed in 1966 (from 3 to 2).

⁽¹⁾ Abridged table. The values of $\bar{y}(\lambda) = V(\lambda)$ are rounded off to four decimal places.

Appendix 2 to Annex II

Establishing of the minimum and maximum luminance of the monitor

1. The minimum contrast ratio reproduced by the monitor shall be established according to draft ISO standard ISO/DIS 15008, where the contrast has to be determined under the influence of a disturbance source under an angle varying between 0° and 90° with the normal of the monitor.

The luminance L (lx) of the rendered image of a black and a white surface has to be measured. This measurement shall be done with a luminance meter with an accuracy of $\pm 5\%$. The contrast shall be determined with the formula:

$$C = \frac{|L_{\text{black}} - L_{\text{white}}|}{L_{\text{white}}}$$

2. The contrast shall not be less than 0,33, even under the influence of the disturbance source with a luminance of 40 000 lx.

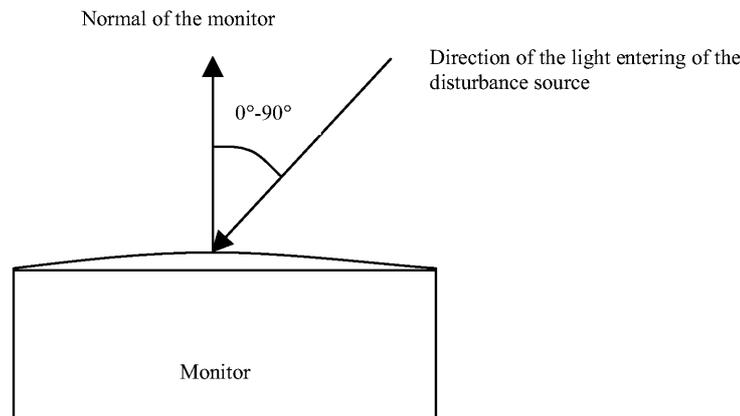


Figure 6

Measuring arrangement

3. For establishing the monitor performance the contrast shall be determined per 15°, so for 0°, 15°, 30°, 45°, 60°, 75°, and 90°. The obtained results shall be recorded in a diagram.

Appendix 3 to Annex II

Conditions governing the EC component type-approval and marking of mirrors and supplementary systems for indirect vision

1. APPLICATION FOR EC COMPONENT TYPE-APPROVAL
 - 1.1. Application for EC component type-approval for a type of mirror or supplementary system for indirect vision shall be made by the manufacturer.
 - 1.2. For each type of mirror the application shall be accompanied by:
 - 1.2.1. a technical description, specifying in particular the type(s) of vehicle for which the mirror or supplementary system for indirect vision is intended;
 - 1.2.2. sufficiently detailed drawings for identification of the mirror, together with instructions for mounting: the drawings must show the proposed position of the component type-approval number and the additional symbol in relation to the rectangle which forms part of the EC component type-approval mark;

- 1.2.3. four mirrors: three for use in the tests and one to be retained by the laboratory for any further examination that might subsequently prove necessary. Additional specimens may be called for at the request of the laboratory.
- 1.3. For each type of supplementary system for indirect vision the application shall be accompanied by:
 - 1.3.1. a technical description of the system including the detection angle and detection distance;
 - 1.3.2. in case of a camera-monitor type also:
 - contrast and range of luminance;
 - glare correction;
 - display performance;
 - image repetition frequency;
 - range of luminance of the monitor;
 - 1.3.3. sufficiently detailed drawings for identification of the system, together with instructions for mounting: the drawings must show the proposed position of the component type-approval mark;
 - 1.3.4. four examples in case of a type of supplementary system for indirect vision including one or more mirrors or one example of all parts in case of other systems. Additional specimens may be called for at the request of the laboratory.

2. INSCRIPTIONS

Specimens of a type of mirror or supplementary system for indirect vision submitted for EC component type-approval must bear the applicant's clearly visible and indelible trade mark or name and must allow sufficient space for the inscription of the EC component type-approval mark; this space must be indicated in the diagrams referred to in item 1.2.2. or 1.3.3.

3. EC COMPONENT TYPE-APPROVAL

- 3.1. EC component type-approval shall be granted and a component type-approval number issued in respect of any mirror or supplementary system for indirect vision submitted in accordance with the provisions of item 1 above which satisfies the requirements of Annex II.
- 3.2. This number shall not be assigned to any other type of mirror or supplementary system for indirect vision.

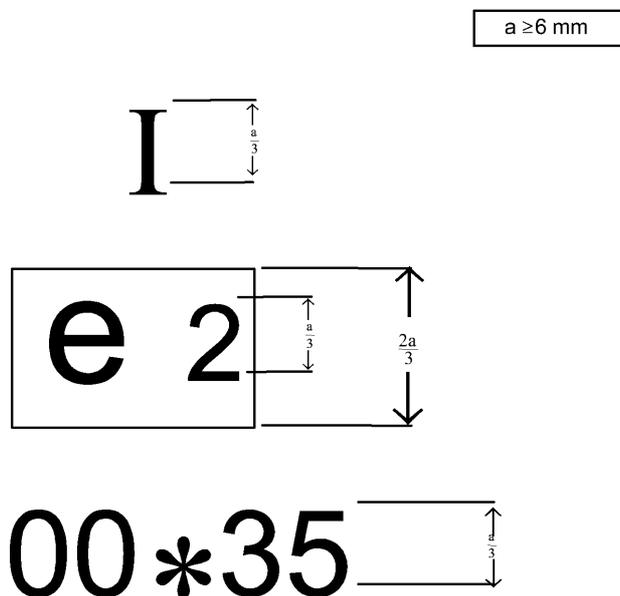
4. MARKING

- 4.1. Any rear-view mirror or supplementary system for indirect vision conforming to a type in respect of which component type-approval has been granted pursuant to this Directive shall bear an EC component type-approval mark.
- 4.2. The EC component type-approval mark shall consist of a rectangle surrounding the lower case letter 'e' followed by the distinguishing letter(s) or number of the Member State which has granted the component type-approval: 1 for Germany, 2 for France, 3 for Italy, 4 for the Netherlands, 5 for Sweden, 6 for Belgium, 9 for Spain, 11 for the United Kingdom, 12 for Austria, 13 for Luxembourg, 16 for Norway, 18 for Denmark, 21 for Portugal, 23 for Greece, 24 for Ireland. It must also include in the vicinity of the rectangle the EC component type-approval number. This number shall consist of the component type-approval number shown on the certificate completed for the type (see Appendix 3), preceded by two figures indicating the sequence number of the latest amendment to this Directive on the date EC component type-approval was granted. The amendment sequence number and the component type-approval number shown on the certificate shall be separated by an asterisk.
- 4.3. The EC component type-approval mark shall be completed by the addition of the symbol I or II or III or IV or V or VI, specifying the class to which the type of mirror belongs or the symbol S in case of any supplementary system for indirect vision. The additional symbol shall be placed in any convenient position in the vicinity of the rectangle containing the letter 'e'.
- 4.4. The EC component type-approval mark and the additional symbol shall be indelibly inscribed on an integral part of the mirror or supplementary system for indirect vision in such a way as to be clearly visible even after the mirror or supplementary system for indirect vision has been mounted on a vehicle.

4.5. Five examples of EC component type-approval marks, completed by the additional symbol are given below.

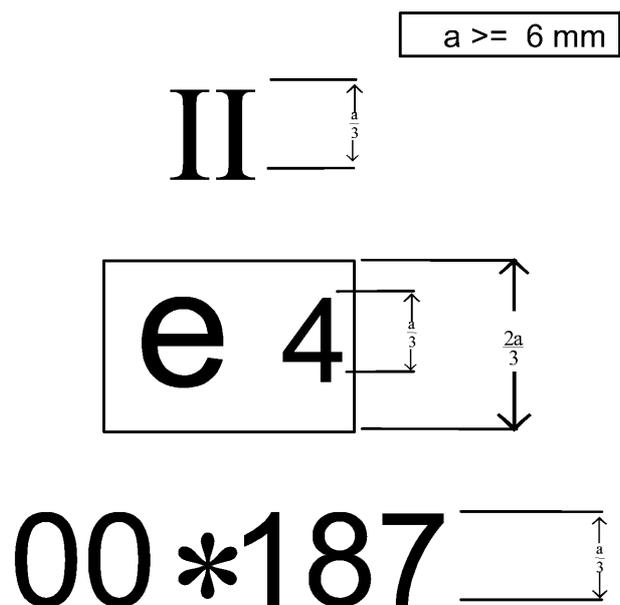
Examples of EC component type-approval marks and the additional symbol

Example No 1



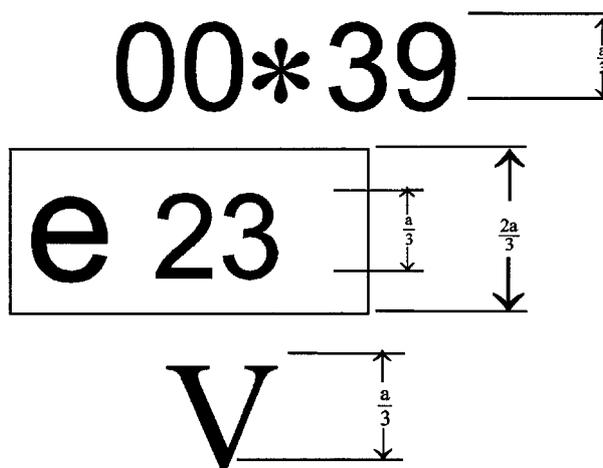
The mirror bearing the EC component type-approval mark shown above is a Class I mirror (interior rear-view), which has been approved in France (e2) under the number 00*35.

Example No 2



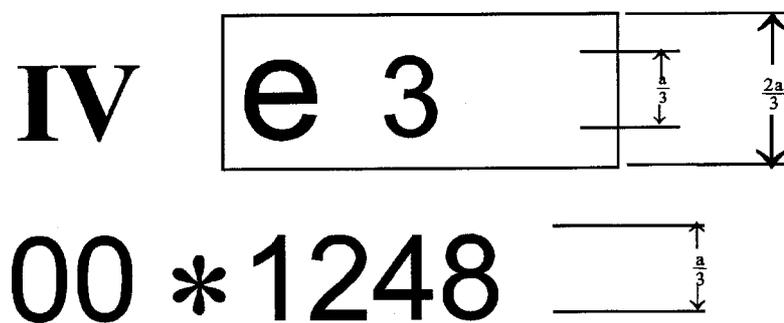
The mirror bearing the EC component type-approval mark shown above is a Class II mirror (exterior rear-view), which has been approved in the Netherlands (e4) under the number 00*187.

Example No 3



The mirror bearing the EC component type-approval mark shown above is a Class V mirror (close proximity), which has been approved in Greece (e23) under the number 00*39.

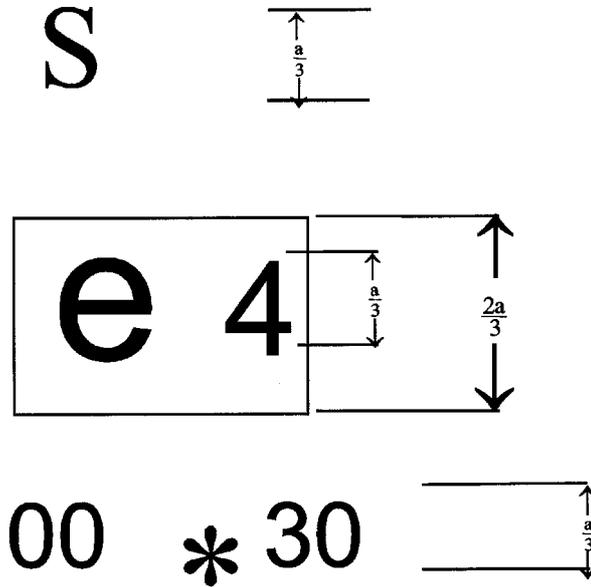
Example No 4



$a \geq 6 \text{ mm}$

The mirror bearing the EC component type-approval mark shown above is a Class IV mirror (wide angle), which has been approved in Italy (e3) under the number 00*1248.

Example No 5

 $a \geq 6$ 

Explanation:

The system for indirect vision bearing the EC component type-approval mark shown above is a supplementary system for indirect vision (S), which has been approved in the Netherlands (e4) under number 00*30.

Appendix 4 to Annex II

Model EC component type-approval certificate for a mirror or supplementary system for indirect vision

Notification concerning the grant, refusal, withdrawal or extension of EC component type-approval for a type of mirror or supplementary system for indirect vision

Name of Administration

EC component type-approval No

1. Trade name or mark:

2. Class (I, II, III, IV, V, VI, S) ⁽¹⁾

3. Name and address of manufacturer:

.....
.....

4. If applicable, name and address of manufacturer's authorised representative:

.....

5. Symbol $\frac{\Delta}{m}$ defined in item 4.1.1 of part A of Annex II: yes/no ⁽¹⁾

6. Submitted for type-approval on:

7. Test laboratory:

8. Date and number of laboratory report:

9. Date of grant/refusal/withdrawal/extension of EC component type-approval ⁽¹⁾:

.....

10. Place:

11. Date:

12. The following documents, bearing the type-approval number shown above, are annexed to this type-approval certificate:

.....
.....
.....

(Descriptive notes, drawings, diagrams and plans)

These documents must be supplied to the competent authorities of the other Member States at their express request

Remarks, if any, particularly as regards restrictions on use and/or conditions for fitting:

.....
.....
.....
.....

.....
(Signature)

⁽¹⁾ Delete where inapplicable.

ANNEX III

REQUIREMENTS CONCERNING THE FITTING OF MIRRORS AND SUPPLEMENTARY SYSTEMS FOR INDIRECT VISION TO VEHICLES

GENERAL

- 1.1. Mirrors and supplementary systems for indirect vision must be fitted in such a way that the mirror or supplementary system does not move so as significantly to change the field of vision as measured or vibrate to an extent which would cause the driver to misinterpret the nature of the image perceived.
- 1.2. The conditions laid down in item 1.1 must be maintained when the vehicle is moving at speeds of up to 80 % of its maximum design speed, but not exceeding 150 km/h.
- 1.3. The fields of vision defined below shall be established using ambinocular vision, the eyes being at the 'driver's ocular points' as defined in Annex I, item 19. The fields of vision shall be determined when the vehicle is in running order as defined in Directive 97/27/EC, Annex I, item 2.5. They shall be established through windows which have a total light transmission factor of at least 70 % measured normal to the surface.

MIRRORS

2. Number

2.1. Minimum number of compulsory mirrors

- 2.1.1. The fields of vision prescribed in point 5 shall be obtained from the minimum number of mandatory mirrors set out in the following table.

Vehicle category	Interior mirror	Exterior mirrors				
	Interior mirror Class I	Main mirror (large) Class II	Main mirror (small) Class III	Wide-angle mirror Class IV	Close-proximity mirror Class V	Front mirror Class VI
M ₁	Compulsory Unless a mirror would not provide rearward vision (as defined in item 5.1 Annex III) Optional If the mirror does not provide rearward vision	Optional	Compulsory 1 on the driver's side and 1 on the passenger's side Class II mirrors may be fitted as an alternative	Optional 1 on the driver's side and/or 1 on the passenger's side	Optional 1 on the driver's side and 1 on the passenger's side (both must be fitted at least 2 m above the ground)	Optional (must be fitted at least 2 m above the ground)
M ₂	Optional (no requirements for the field of view)	Compulsory 1 on the driver's side and 1 on the passenger's side	Not permitted	Optional 1 on the driver's side and/or 1 on the passenger's side	Optional 1 on the driver's side and 1 on the passenger's side (both must be fitted at least 2 m above the ground)	Optional (must be fitted at least 2 m above the ground)
M ₃	Optional (no requirements for the field of view)	Compulsory 1 on the driver's side and 1 on the passenger's side	Not permitted	Optional 1 on the driver's side and/or 1 on the passenger's side	Optional 1 on the driver's side and 1 on the passenger's side (both must be fitted at least 2 m above the ground)	Optional (must be fitted at least 2 m above the ground)
N ₁	Compulsory Unless a mirror would not provide rearward vision (as defined in item 5.1 Annex III) Optional If the mirror does not provide rearward vision	Optional	Compulsory 1 on the driver's side and 1 on the passenger's side Class II mirrors may be fitted as an alternative	Optional 1 on the driver's side and/or 1 on the passenger's side	Optional 1 on the driver's side and 1 on the passenger's side (both must be fitted at least 2 m above the ground)	Optional (must be fitted at least 2 m above the ground)

Vehicle category	Interior mirror	Exterior mirrors				
	Interior mirror Class I	Main mirror (large) Class II	Main mirror (small) Class III	Wide-angle mirror Class IV	Close-proximity mirror Class V	Front mirror Class VI
N ₂ ≤ 7,5 t	Optional (no requirements for the field of view)	Compulsory 1 on the driver's side and 1 on the passenger's side	Not permitted	Compulsory 1 on the driver's side and 1 on the passenger's side	Compulsory, see Annex III items 3.7 and 5.5.5 1 on the passenger's side Optional 1 on driver's side (both must be fitted at least 2 m above the ground)	Compulsory, see Annex III items 2.1.2. and 5.6.2 (must be fitted at least 2 m above the ground)
N ₂ > 7,5 t	Optional (no requirements for the field of view)	Compulsory 1 on the driver's side and 1 on the passenger's side	Not permitted	Compulsory 1 on the driver's side and 1 on the passenger's side	Compulsory, see Annex III items 3.7 and 5.5.5 1 on the passenger's side Optional 1 on driver's side (both must be fitted at least 2 m above the ground)	Compulsory, see Annex III items 2.1.2. and 5.6.2 (must be fitted at least 2 m above the ground)
N ₃	Optional (no requirements for the field of view)	Compulsory 1 on the driver's side and 1 on the passenger's side	Not permitted	Compulsory 1 on the driver's side and 1 on the passenger's side	Compulsory, see Annex III items 3.7 and 5.5.5 1 on the passenger's side Optional 1 on driver's side (both must be fitted at least 2 m above the ground)	Compulsory, see Annex III items 2.1.2. and 5.6.2 (must be fitted at least 2 m above the ground)

- 2.1.2. In case the described field of vision of a front mirror prescribed in item 5.6. can be obtained by a supplementary system for indirect vision that is approved according to Annex II, part B and that is installed according to this Annex, this system can be used instead of a front mirror.

In case a camera/monitor system is used the monitor must exclusively show the field of vision prescribed in item 5.6 while the vehicle is moving forward with a speed up to 30 km/h. In case the vehicle is moving with higher speed or moving backwards the monitor can be used to display the field of vision of other cameras mounted to the vehicle.

- 2.2. The provisions of this Directive do not apply to the surveillance mirrors defined in item 9 of Annex I. Nevertheless, these mirrors must be mounted at least 2 m above the ground when the vehicle is under a load corresponding to its maximum technical permissible mass.

3. Position

- 3.1. Mirrors must be so placed that the driver, when sitting on the driving seat in a normal driving position, has a clear view of the road to the rear and side(s) of the vehicle.
- 3.2. Exterior mirrors shall be visible through the side windows or through the portion of the windscreen that is swept by the windscreen wiper. Nevertheless, for design reasons this provision shall not apply to:

- exterior mirrors on the passenger side for existing types of vehicles of categories M² and M³;
- Class VI mirrors fitted to vehicles of categories N² and N³.

- 3.3. In the case of any vehicle, which is in chassis/cab form when the field of vision is measured, the minimum and maximum body widths shall be stated by the manufacturer and, if necessary, simulated by dummy headboards. All vehicles and mirror configurations taken into consideration during the tests shall be shown on the EC type-approval certificate for a vehicle with regard to the installation of mirrors (see Appendix 2 to Annex III).
- 3.4. The prescribed exterior mirror on the driver's side of the vehicle must be so located that an angle of not more than 55° is formed between the vertical longitudinal median plane of the vehicle and the vertical plane passing through the centre of the mirror and through the centre of the straight line 65 mm long which joins the driver's two ocular points.
- 3.5. Mirrors must not project beyond the external bodywork of the vehicle substantially more than is necessary to comply with the requirements concerning fields of vision laid down in item 5.
- 3.6. Where the lower edge of an exterior mirror is less than 2 m above the ground when the vehicle is loaded to its maximum permissible all-up weight, this mirror must not project more than 250 mm beyond the overall width of the vehicle measured without mirrors.
- 3.7. Class V mirrors shall be mounted on vehicles in such a way that, regardless of their position after adjustment, no part of these mirrors or their holders is less than 2 m from the ground when the vehicle is under a load corresponding to its maximum technical permissible mass.

These mirrors shall not, however, be mounted on vehicles the cab height of which is such as to prevent compliance with this requirement.

- 3.8. Subject to the requirements of items 3.5, 3.6 and 3.7, mirrors may project beyond the permissible maximum widths of vehicles.

4. Adjustment

- 4.1. The interior mirror must be capable of being adjusted by the driver from his driving position.
- 4.2. The exterior mirror situated on the driver's side must be capable of being adjusted from inside the vehicle while the door is closed, although the window may be open. The mirror may, however, be locked in position from the outside.
- 4.3. The requirements of item 4.2 do not apply to exterior mirrors which, after having been knocked out of alignment, can be returned to their former position without the need for adjustment.

5. Fields of vision

- 5.1. Interior rear-view mirror (Class I)

The field of vision must be such that the driver can see at least a 20-m-wide, flat, horizontal portion of the road centred on the vertical longitudinal median plane of the vehicle and extending from 60 m behind the driver's ocular points (Figure 7) to the horizon.

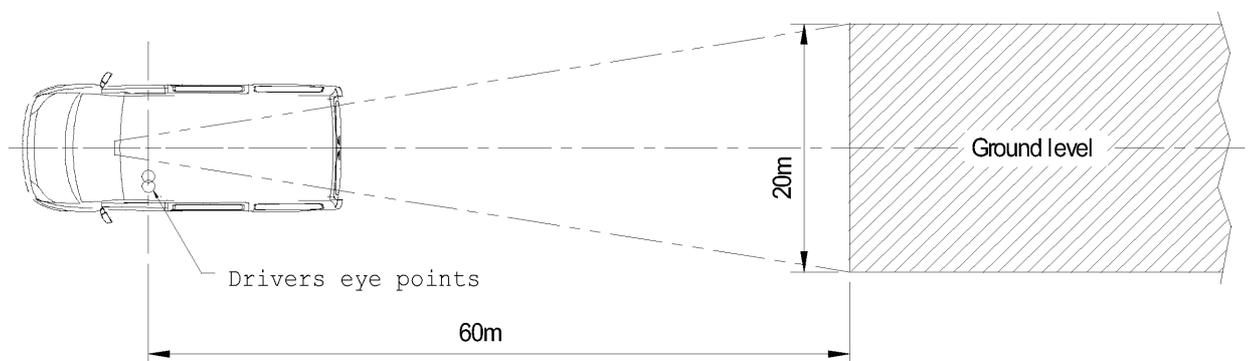


Figure 7

Field of vision of Class I mirror

5.2. Main exterior rear-view mirrors Class II

5.2.1. Exterior rear-view mirror on the driver's side

The field of vision must be such that the driver can see at least a 5-m-wide, flat, horizontal portion of the road, which is bounded by a plane which is parallel to the median longitudinal vertical plane and passing through the outermost point of the vehicle on the driver's side of the vehicle and extends from 30 m behind the driver's ocular points to the horizon.

In addition, the road must be visible to the driver over a width of 1 m, which is bounded by a plane parallel to the median longitudinal vertical plane and passing through the outermost point of the vehicle starting from a point 4 m behind the vertical plane passing through the driver's ocular points (see Figure 8).

5.2.2. Exterior rear-view mirror on the passenger's side

The field of vision must be such that the driver can see at least a 5-m-wide, flat, horizontal portion of the road, which is bounded on the passenger's side by a plane parallel to the median longitudinal vertical plane of the vehicle and passing through the outermost point of the vehicle on the passenger's side and which extends from 30 m behind the driver's ocular points to the horizon.

In addition, the road must be visible to the driver over a width of 1 m, which is bounded by a plane parallel to the median longitudinal vertical plane and passing through the outermost point of the vehicle starting from a point 4 m behind the vertical plane passing through the driver's ocular points (see Figure 8).

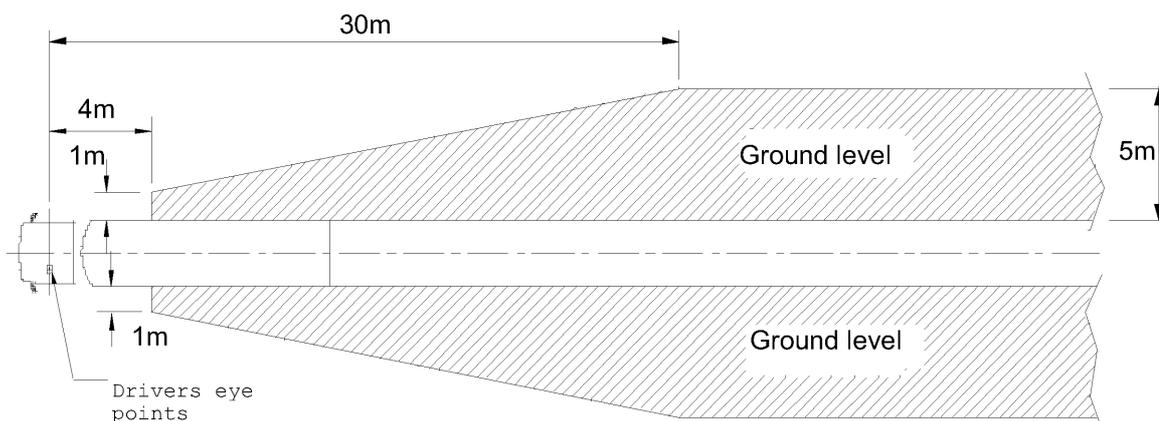


Figure 8

Field of vision of Class II mirrors

5.3. Main exterior rear-view mirrors Class III

5.3.1. Exterior rear-view mirror on the driver's side

The field of vision must be such that the driver can see at least a 4 m wide, flat, horizontal portion of the road, which is bounded by a plane parallel to the median longitudinal vertical plane and passing through the outermost point of the vehicle on the driver's side of the vehicle and extends from 20 m behind the driver's ocular points to the horizon (see Figure 9).

In addition, the road must be visible to the driver over a width of 1 m, which is bounded by a plane parallel to the median longitudinal vertical plane and passing through the outermost point of the vehicle starting from a point 4 m behind the vertical plane passing through the driver's ocular points.

5.3.2. Exterior rear-view mirror on the passenger's side

The field of vision must be such that the driver can see at least a 4-m-wide flat, horizontal portion of the road which is bounded by a plane parallel to the median longitudinal vertical plane passing through the outermost point of the vehicle on the passenger's side and which extends from 20 m behind the driver's ocular points to the horizon (see Figure 9).

In addition, the road must be visible to the driver over a width of 1 m which is bounded by a plane which is parallel to the median longitudinal vertical plane and passing through the outermost point of the vehicle starting from a point 4 m behind the vertical plane passing through the driver's ocular points.

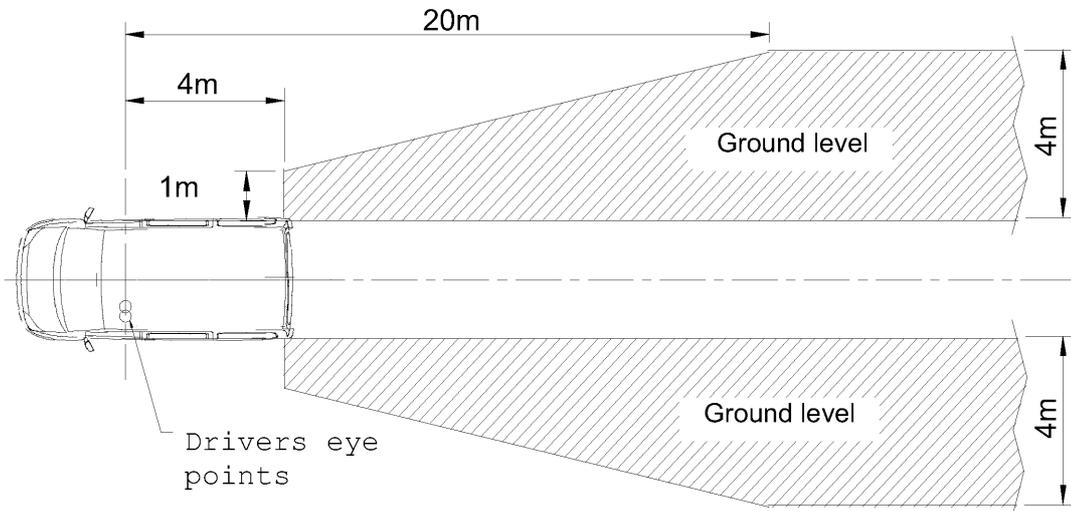


Figure 9

Field of vision of Class III mirrors

5.4. 'Wide-angle' exterior mirror (Class IV)

5.4.1. 'Wide-angle' exterior mirror on the driver's side

The field of vision must be such that the driver can see at least a 15-m-wide, flat, horizontal portion of the road, which is bounded by a plane parallel to the median longitudinal vertical plane of the vehicle and passing through the outermost point of the vehicle on the driver's side and which extends from at least 10 m to 25 m behind the driver's ocular points.

In addition, the road must be visible to the driver over a width of 4,5 m, which is bounded by a plane parallel to the median longitudinal vertical plane and passing through the outermost point of the vehicle starting from a point 1,5 m behind the vertical plane passing through the driver's ocular points (see Figure 10).

5.4.2. 'Wide-angle' exterior mirror on the passenger's side

The field of vision must be such that the driver can see at least a 15-m-wide, flat, horizontal portion of the road, which is bounded by a plane parallel to the median longitudinal vertical plane of the vehicle and passing through the outermost point of the vehicle on the passenger's side and which extends from at least 10 m to 25 m behind the driver's ocular points.

In addition, the road must be visible to the driver over a width of 4,5 m, which is bounded by a plane parallel to the median longitudinal vertical plane and passing through the outermost point of the vehicle starting from a point 1,5 m behind the vertical plane passing through the driver's ocular points (see Figure 10).

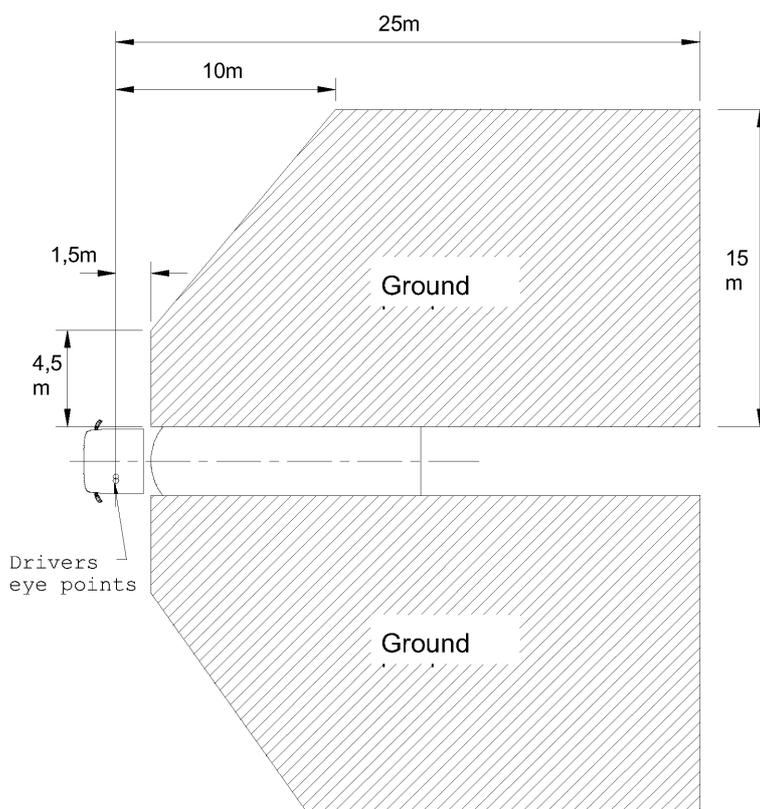


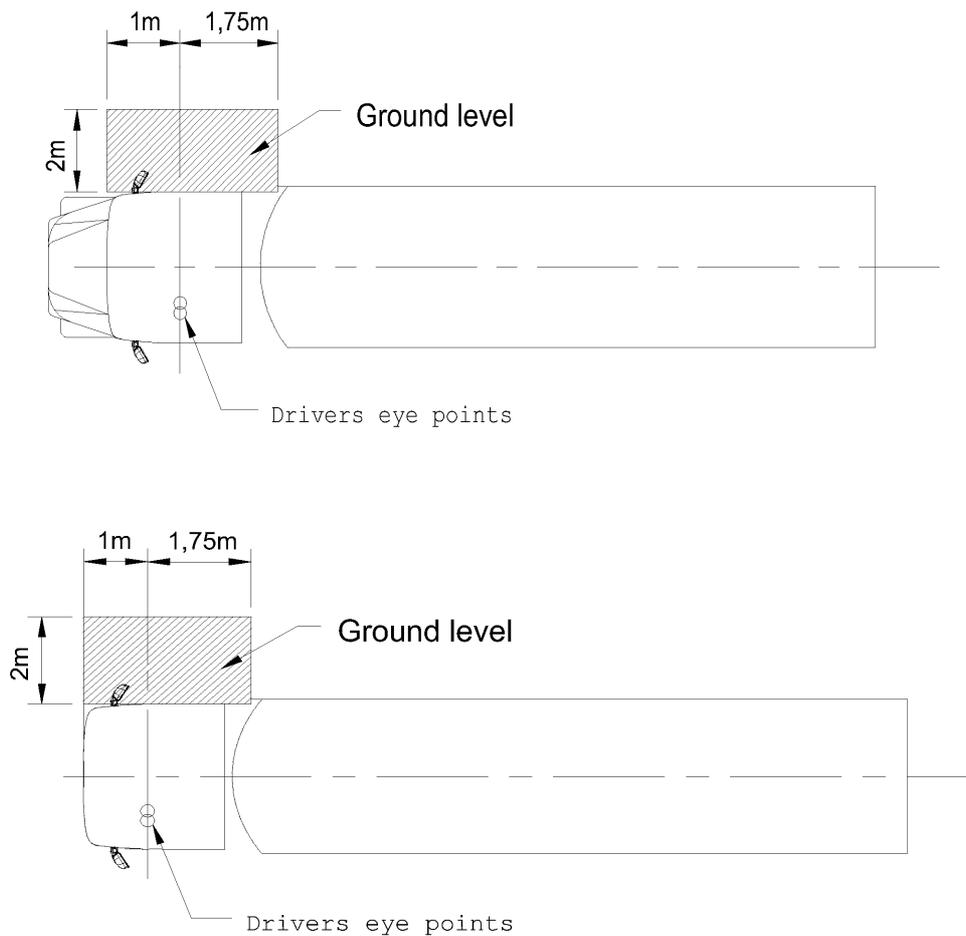
Figure 10

Field of vision of Class IV wide-angle mirrors

5.5. 'Close-proximity' exterior mirror (Class V)

The field of vision must be such that the driver can see a flat horizontal portion of the road along the side of the vehicle, bounded by the following vertical planes (see Figures 11a and 11b):

- 5.5.1. the plane parallel to the median longitudinal vertical plane of the vehicle which passes through the outermost point of the vehicle cab on the passenger's side;
- 5.5.2. in the transverse direction, the parallel plane passing at a distance of 2 m in front of the plane mentioned in item 5.5.1;
- 5.5.3. to the rear, the plane parallel to the vertical plane passing through the driver's ocular points and situated at a distance of 1,75 m behind that plane;
- 5.5.4. to the front, the plane parallel to the vertical plane passing through the driver's ocular points and situated at a distance of 1 m in front of that plane. If the vertical transverse plane passing through the leading edge of the vehicle bumper is less than 1 m in front of the vertical plane passing through the driver's ocular points, the field of vision shall be limited to that plane.
- 5.5.5. In case the field of vision described in Figure 11 can be perceived through the combination of the field of vision from a Class IV wide-angle mirror and that of a Class VI front mirror, the installation of a class V close proximity mirror is not compulsory.



Figures 11a and 11b

Field of vision of Class V close-proximity mirror

5.6. Front mirror (Class VI)

5.6.1. The field of vision must be such that the driver can see at least a flat horizontal portion of the road, which is bounded by:

- one traverse vertical plane through the outermost point of the front of the vehicle-cab
- one traverse vertical plane 2 000 mm in front of the vehicle
- one longitudinal vertical plane parallel to the longitudinal vertical median plane going through the outermost side of the vehicle at the driver's side and
- one longitudinal vertical plane parallel to the longitudinal vertical median plane 2 000 mm outside the outermost side of the vehicle opposite to the driver's side.

The front of this field of vision opposite to the driver's side may be rounded off with a radius of 2 000 mm (see Figure 12).

The provisions for front mirrors are compulsory for forward controlled (as defined in Directive 70/156/EEC, Annex I (a), Footnote (2)) vehicles of categories N₂ and N₃.

If vehicles of these categories with other construction characteristics regarding the bonnet cannot fulfil the requirements by using a front mirror a camera/monitor system shall be used. If either of these options do not provide the adequate field of vision then any other detection systems shall be used. This system must be able to detect an object of 50 cm height and with a diameter of 30 cm within the field defined in Figure 12.

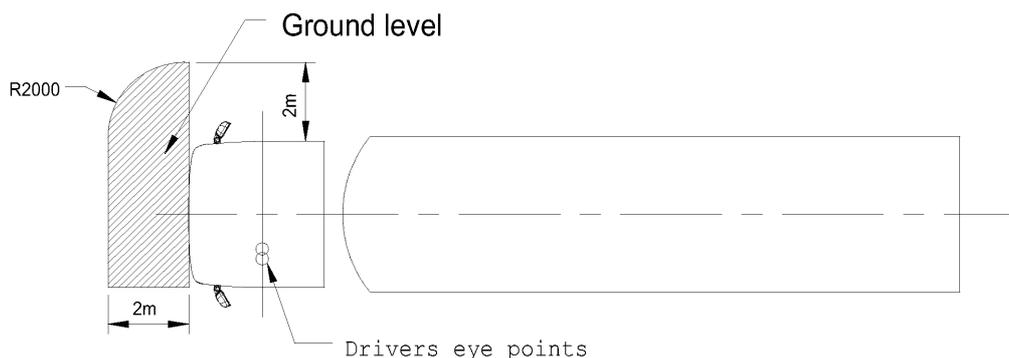


Figure 12

Field of vision of Class VI front mirror

- 5.6.2. However, if the driver can see, taking into account the obstructions by the A-pillars, a straight line 300 mm in front of the vehicle at a height of 1 200 mm above the road surface and which is situated between a longitudinal vertical plane parallel to the longitudinal vertical median plane going through the outermost side of the vehicle at the driver's side and a longitudinal vertical plane parallel to the longitudinal vertical median plane 900 mm outside the outermost side of the vehicle opposite to the driver's side, a front mirror of class VI is not mandatory.
- 5.7. In the case of mirrors consisting of several reflecting surfaces which are either of different curvature or make an angle with each other, at least one of the reflecting surfaces must provide the field of vision and have the dimensions (see item 2.2.2 of Annex II) specified for the class to which they belong.
- 5.8. Obstructions
- 5.8.1. Interior rear-view mirror (Class I)
- The field of vision may be reduced by the presence of headrest and devices such as, in particular, sun visors, rear windscreen wipers, heating elements and stop lamp of category S 3 or by components of bodywork such as window columns of rear split doors, provided that all these devices together do not obscure more than 15 % of the prescribed field of vision when projected onto a vertical plane perpendicular to the longitudinal median plane of the vehicle. The degree of obstruction shall be measured with the headrests adjusted to their lowest possible position and with the sun visors folded back.
- 5.8.2. Exterior mirrors (Classes II, III, IV, V and VI)
- In the fields of vision specified above, obstruction due to the bodywork and some of its components, such as other mirrors, door handles, outline marker lights, direction indicators and rear bumpers, as well as reflective-surface cleaning components, shall not be taken into account if they are responsible for a total obstruction of less than 10 % of the specified field of vision.
- 5.9. Test procedure
- The field of vision shall be determined by placing powerful light sources at the ocular points and examining the light reflected on the vertical monitoring screen. Other, equivalent, methods may be used.

SUPPLEMENTARY SYSTEMS FOR INDIRECT VISION

6. A system for indirect vision shall give such performances that the critical object can be observed within the described field of vision, taken into account the critical perception.
7. Obstruction of the driver's direct view caused by the installation of a system for indirect vision shall be restricted to a minimum.
8. For the determination in case of a mirror type or camera-monitor type system for indirect vision, the procedure of Appendix 1 of this Annex shall be applied.
9. Installation requirements for the monitor
- The viewing direction of the monitor shall roughly be the same direction as the one for the main mirror.

Appendix 1 to Annex III

Calculation of the detection distance

1. MIRROR TYPE

The detection distance that can be obtained by a mirror is dependent of the size of the defined critical object, the resolution threshold of the eye under in use circumstances (multiplied by an increasing factor) and the magnification of the system that can be obtained.

1.1. Magnification

1.1.1. The mean perpendicular magnification V_{bl} of a mirror type system for indirect vision can be defined by the formula:

$$V_{bl} = \frac{a}{\beta_m} = \left(\frac{4}{\alpha} \arcsin \left(\frac{w}{2R} \right) + 1 \right)$$

where

$$\alpha = 2 \cdot \arctan \left(\frac{w/2}{x} \right)$$

$$\beta_m = \alpha + 4 \arcsin \left(\frac{w}{2R} \right)$$

where

R — radius of curvature measured over the reflecting surface (mm); to be determined according to Appendix 1 of Annex I

w — mirror width (mm); the width of the rectangle with a height of 4 cm that just can be described in the mirror surface

β_m — angle of vision through the mirror (°)

V_{bl} — approached magnification for great distance (m/m)

α — vision angle of observer's eyes (°)

x — distance between the eye position of the observer and the mirror (mm); a drawing showing the installation position as prescribed by the manufacturer has to be supplied to the technical service

1.1.2. Distortion of mirror type systems for indirect vision

1.1.2.1. The angle Θ between the line linking the midpoint of the mirror plane with the centre of vision and the normal vector of the mirror to the midpoint of the mirror plane shall be determined from the supplied drawing.

1.1.2.2. The actual magnification of the mirror at its midpoint is described by:

$$V_w = V_{bl} \cdot \cos(\Theta)$$

where:

V_w — actual magnification of large distance (m/m)

V_{bl} — magnification of large distance for perpendicular (m/m)

Θ — angle between the vision direction and the normal of the mirror (°)

1.1.2.3. The minimum magnification of the mirror has to be determined by adding half the opening angle of the mirror Θ_{sh} to Θ .

$$\Theta_{sh} = \arcsin \left(\frac{w}{2R} \right)$$

where:

Θ_{sh} half aperture angle of the mirror (°)

w mirror width (mm); the width of the rectangle with a height of 4 cm that just can be described in the mirror surface

R radius of curvature measured over the reflecting surface (mm); to be determined according to Appendix 1 of Annex I

1.1.2.4. The minimum magnification produced by the mirror system has to be determined by:

$$V_{w,min} = V_{bl} \cdot \cos(\Theta + \Theta_{sh})$$

where:

$V_{w,min}$ actual minimum magnification (m/m)

V_{bl} magnification of long distance for perpendicular (m/m)

Θ angle between the vision direction and the normal of the mirror (°)

1.2. Determination of the detection distance

The detection distance of an image on the midpoint of a mirror is defined:

$$r_{dm} = \frac{D_o \cdot V_x}{2 \tan \cdot \omega_{eye}/120}$$

where:

r_{dm} detection distance from the midpoint of the mirror (m)

D_o size of the critical object: 0,8 (m)

$V_{w,min}$ actual magnification of large distance (m/m)

ω_{eye} resolution threshold of the observer (arc-min).

This involves the magnification obtained at the midpoint of the mirror surface of the system. The magnification is smaller for image points that are further from the driver. The detection distance — in case of convex mirrors at the foremost edge of the field of vision — is defined by substituting V_w by $V_{w,min}$:

$$r_d = \frac{D_o \cdot V_{wmin}}{2 \tan \cdot \omega_{eye}/120}$$

where:

r_d detection distance (m)

D_o size of the critical object: 0,8 (m)

$V_{w,min}$ actual magnification of large distance (m/m)

ω_{eye} resolution threshold of the observer (minutes of arch)

2. CAMERA MONITOR TYPE

2.1. Resolution threshold of a camera

The resolution threshold of a camera is defined by the formula:

$$\omega_c = 60 \frac{\beta_c}{2N_c}$$

where:

ω_c — resolution threshold of the camera (arc-min)

β_c — angle of vision of the camera (°)

N_c — number of video lines of the camera (#)

The manufacturer shall supply the values for β_c and N_c

2.2. Determination of the critical viewing distance of the monitor

For a monitor having certain dimensions and properties, a distance to the monitor can be calculated within which the detection distance is dependent only on the performances of the camera. This critical viewing distance $r_{m,c}$ is defined by:

$$r_{m,c} = \frac{H_m}{N_m \cdot 2 \cdot \tan\left(\frac{\omega_{eye}}{2 \cdot 60}\right)}$$

where:

$r_{m,c}$ — critical viewing distance (m)

H_m — height of the monitor image (m)

N_m — number of video lines of the monitor

ω_{eye} — resolution threshold of the observer (minutes of arch)

The number 60 is for conversion from minutes of arches to degrees.

The manufacturer shall supply the values for H_m , N_m and D_m .

$\omega_{eye} = 8$

2.3. Determination of the detection distance

2.3.1. Maximum detection distance within the critical viewing distance where, due to the installation, the distance eye-monitor is less than the critical viewing distance, the maximum attainable detection distance shall be defined by:

$$r_d = \frac{D_o}{\tan\left(\frac{f \cdot \omega_c}{60}\right)} = \frac{D_o}{\tan\left(\frac{f \cdot \beta_c}{2 \cdot N_c}\right)}$$

where:

r_d — detection distance [m]

D_o — diameter of the object [m]

f — threshold increasing factor

ω_c , β_c and N_c according to item 2.1

$D_o = 0,8$ m

$f = 8$

- 2.3.2. Detection distance greater than the critical viewing distance. Where, due to the installation, the distance eye-monitor is more than the critical viewing distance, the maximum obtainable detection distance shall be defined:

$$r_d = \frac{D_o}{\text{tg} \left[\frac{f \cdot \beta_c}{2N_c} \cdot \frac{N_c}{0.01524 \cdot D_m} \cdot r_m \cdot \tan \left(\frac{\omega_{eye}}{60} \right) \right]}$$

where:

r_m — viewing distance to the monitor (m)

D_m — diagonal of the monitor screen (inch)

N_m — number of video lines of the monitor

β_c and N_c according to item 2.1

N_m , and ω_{eye} according to item 2.2

3. SECONDARY FUNCTIONAL REQUIREMENTS

Based on the installation conditions, a determination shall be made to discover whether the entire system can still satisfy the functional requirements listed in Annex II, especially the glare correction, the maximum and minimum luminance of the monitor. It shall also be determined the degree to which the glare correction will be addressed and the angle at which sunlight can strike a monitor and compared to the corresponding measuring results from the system measurements.

This can be done as based on a CAD-generated model, a determination of the angles of light for the system when mounted on the relevant vehicle, or by carrying out relevant measurements on the relevant vehicle as described in Annex II, part B, item 3.2.

Appendix 2 to Annex III

Annex to the EC type-approval certificate for a vehicle with regard to the installation of mirrors and supplementary systems for indirect vision

Articles 4(2) and 10 of Council Directive 70/156/EEC of 6 February 1970 on the approximation of the laws of the Member States relating to the type-approval of motor vehicles and their trailers

Name of Administration

- EC type-approval No extension ⁽¹⁾
- 1. Trade name of mark of vehicle:
- 2. Type of vehicle:
- 3. Category of vehicle (M₁, M₂, M₃, N₁ ≤ 2 t, N₁, N₂, N₃) ⁽²⁾
- 3.1. Type of category N₃ vehicle: rigid lorry/trailer/semi-trailer ⁽²⁾
- 4. Name and address of vehicle manufacturer:
- 5. If applicable, name and address of authorised representative:
- 6. Trade name or mark of mirrors and supplementary systems for indirect vision and component type-approval number:
- 7. Class(es) of mirrors and systems for indirect vision (I, II, III, IV, V, VI, S) ⁽²⁾
- 8. Extension of EC type-approval of the vehicle to cover the following mirror type and supplementary system for indirect vision
- 9. Date for identification of the R point of the driver's seating position
- 10. Maximum and minimum bodywork widths in respect of which the mirror and supplementary system for indirect vision has been granted type-approval (in the case of chassis/cabs referred to in item 3.3 of Annex III):
- 11. Vehicle submitted for EC type-approval on:
- 12. Technical department responsible for checking conformity for the purpose of EC type-approval:
- 13. Date of report issued by that department:
- 14. Number of report issued by that department:
- 15. EC type-approval in respect of the installation of mirrors and supplementary systems for indirect vision has been granted/refused ⁽²⁾

16. An extension of EC type-approval in respect of the installation of mirrors and supplementary systems for indirect vision has been granted/refused ⁽²⁾

17. Place:

18. Date:

19. Signature:

20. The following documents, bearing the type-approval number shown above, are annexed to this certificate:

- drawings showing the mountings of the mirrors and supplementary systems for indirect vision;
- drawings and plans showing the mounting positions and characteristics of the part of the structure where the mirrors and supplementary systems for indirect vision are mounted;
- general view from the front, the rear and the passenger compartment showing where the mirrors and supplementary systems for indirect vision are fitted.

These documents must be supplied to the competent authorities of the other Member States at their express request.

⁽¹⁾ Where appropriate, state whether the extension of the initial EC type-approval is the first, second, etc.

⁽²⁾ Delete where inapplicable.



ANNEX IV

CORRELATION TABLE PROVIDED FOR IN ARTICLE 6

Directive 71/127/EEC as amended	This Directive
—	Article 1
—	Article 2
Article 1	—
Article 2	—
Article 3	—
Article 4	—
Article 5	—
Article 6	—
Article 7	Article 3
Article 8	—
—	Article 4
Article 9	—
Article 10	Article 5
—	Article 6
—	Article 7
Annex 11	Annex 8
Annex I	Annex I
Appendix 1 to Annex I	Appendix 1 to Annex I
Appendix 2 to Annex I	Appendix 2 to Annex I
Annex II	Annex II, A
—	Annex II, B
Appendix 1 to Annex II	Appendix 1 to Annex II
—	Appendix 2 to Annex II
Appendix 2 to Annex II	Appendix 3 to Annex II
Appendix 3 to Annex II	Appendix 4 to Annex II
Annex III	Annex III
—	Appendix 1 to Annex III
Appendix to Annex III	Appendix 2 to Annex III
—	Annex IV

Proposal for a Directive of the European Parliament and of the Council amending the Directive 2001/83/EC as regards traditional herbal medicinal products

(2002/C 126 E/03)

(Text with EEA relevance)

COM(2002) 1 final — 2002/0008(COD)

(Submitted by the Commission on 17 January 2002)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee,

Acting in accordance with the procedure laid down in Article 251 of the Treaty ⁽¹⁾,

Whereas:

- (1) Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to medicinal products for human use ⁽²⁾ requires that applications for the authorisation to place a medicinal product on the market have to be accompanied by a dossier containing particulars and documents relating in particular to the results of physico-chemical, biological or microbiological as well as pharmacological and toxicological tests and clinical trials carried out on the product and thus proving its quality, safety and efficacy.
- (2) Where the applicant can demonstrate by detailed references to published scientific literature that the constituent or the constituents of the medicinal product have a well established medicinal use with recognised efficacy and an acceptable level of safety in the sense of Directive 2001/83/EC, he should not be required to provide the results of pre-clinical tests or the results of clinical trials.
- (3) A significant number of medicinal products, despite their long tradition, do not fulfil the requirements of a well established medicinal use with recognised efficacy and an acceptable level of safety and are not eligible for a marketing authorisation. To maintain these products on the market, the Member States have enacted different procedures and provisions. These differences currently existing between the provisions laid down in the Member States may hinder trade in traditional medicinal

products within the Community and lead to discrimination and distortion of competition between manufacturers of these products. They may also have impact on the protection of public health since the necessary guarantees of quality, safety and efficacy are not always given at present.

- (4) Having regard to the particular characteristics of these medicinal products, especially their long tradition, it is desirable to provide a special, simplified registration procedure for certain traditional medicinal products. However, this simplified procedure should be eligible only where no marketing authorisation under Directive 2001/83/EC, in particular due to lack of sufficient scientific literature demonstrating a well established medicinal use with recognised efficacy and an acceptable level of safety, can be obtained. It should likewise not apply to homeopathic medicinal product eligible for a marketing authorisation or for a registration under Directive 2001/83/EC.
- (5) The long tradition of the medicinal product enables to renounce clinical trials, insofar as the efficacy of the medicinal product is plausible on the basis of long-term use and experience. Pre-clinical tests do not seem necessary, where the medicinal product on the basis of the information on its traditional use proves not to be harmful in specified conditions of use. However, even the long tradition does not exclude that there may be concerns with regard to the product's safety, so that the competent authorities should be entitled to ask for all data necessary for assessing the safety. The quality aspect of the medicinal product is independent of its traditional use so that no derogation should be made with regard to the necessary physico-chemical, biological and microbiological tests.
- (6) The vast majority of medicinal products with a sufficiently long and coherent tradition are based on herbal substances. It therefore seems appropriate to limit the scope of the simplified registration in a first step to traditional herbal medicinal products.
- (7) The facilitated registration should be acceptable only where the herbal medicinal product may rely on a sufficiently long medicinal use in the Community. Medicinal use outside the Community should be taken into account only, if the medicinal product has been used within the Community for a certain time.

⁽¹⁾ OJ C 95, 30.3.1998, p. 1.

⁽²⁾ OJ L 311, 28.11.2001, p. 67.

- (8) With the objective to further facilitate the registration of certain traditional herbal medicinal products and to further enhance harmonisation, there should be the possibility to establish a Community list with herbal substances that fulfil certain criteria, such as being in medicinal use for a sufficiently long time, and hence do not seem harmful in the normal conditions of use.
- (9) Having regard to the particularities of herbal medicinal products, a specific committee should be established within the European Agency for the Evaluation of Medicinal Products set up by Council Regulation (EEC) No 2309/93 of 22 July 1993 laying down Community procedures for the authorisation and supervision of medicinal products for human and veterinary use and establishing a European Agency for the Evaluation of Medicinal Products⁽¹⁾ (hereinafter: the Agency). The committee should be composed of experts in the field of herbal medicinal products. Its tasks should relate in particular to establishing Community herbal monographs relevant for the registration as well as the authorisation of herbal medicinal products.
- (10) It is important to ensure full consistency between the new committee and the committee for human medicinal products already existing at the Agency, in particular in case of a procedure regarding an application, which concerns a herbal medicinal product and relies on Directive 2001/83/EC, appropriate coordination between the two committees should be ensured, relying on the provisions of Article 55(2) of Regulation 2309/93.
- (11) When deciding upon an application for registration of a traditional herbal medicinal product, the Member State concerned should be obliged to take due account of authorisations or registrations previously granted by another Member State for that product. In case where the authorisation or registration refers to a herbal medicinal product for which a monograph has been established under this Directive, it should be recognised, unless there are major objections of public health.
- (12) The Commission should present a report on the application of the chapter on traditional herbal medicinal products to the European Parliament and to the Council including an assessment on the possible extension of traditional use registration to other categories of medicinal products.
- (13) It is therefore appropriate to amend Directive 2001/83/EC accordingly,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Directive 2001/83/EC is amended as follows:

1. In Article 1 the following points 29 to 32 are added:

'29. Traditional herbal medicinal product:

a herbal medicinal product that fulfils the conditions laid down in Article 16a;

30. Herbal medicinal product:

any medicinal product, containing as active ingredients one or more herbal substances or one or more herbal preparations, or one or more such herbal substances in combination with one or more such herbal preparations;

31. Herbal substances:

all mainly whole, fragmented or cut plants, plant parts, algae, fungi, lichen in an unprocessed, usually in dried form but sometimes fresh. Certain exudates that have not been subjected to a specific treatment are also considered to be herbal substances. Herbal substances are precisely defined by the plant part used and the botanical name according to the binomial system (genus, species, variety and author);

32. Herbal preparations:

preparations obtained by subjecting herbal substances to treatments such as extraction, distillation, expression, fractionation, purification, concentration and fermentation. These include comminuted or powdered herbal substances, tinctures, extracts, essential oils, expressed juices and processed exudates.'

2. The following new chapter 2a is inserted in title III.

'Chapter 2a: Specific provisions applicable to traditional herbal medicinal products

Article 16a

A simplified registration procedure (hereinafter "traditional use registration") is hereby installed for herbal medicinal products which fulfil the following criteria:

- (a) they are indicated exclusively for indications adapted to a traditional herbal medicinal product, which, by virtue of its composition and purpose, is intended and designed for use without the intervention of a medical practitioner for diagnostic purposes or for prescription or monitoring of treatment;

⁽¹⁾ OJ L 214, 24.8.1993, p. 1, Regulation as last amended by Commission Regulation (EC) No 649/1998 (OJ L 88, 24.3.1998, p. 7).

- (b) they are exclusively for administration in accordance with a specified strength;
- (c) they are an oral, external and/or inhalation preparation;
- (d) the period of traditional use as stipulated in Article 16c(1)(c) has elapsed;
- (e) the data on the traditional use of the medicinal product is sufficient, in particular the product proves not to be harmful in the specified conditions of use and the pharmacological effects or efficacy of the medicinal product are plausible on the basis of long-term use and experience.

However, in cases where the competent authorities judge that a traditional herbal medicinal product fulfils the criteria for an authorisation in accordance with Article 6 or a registration pursuant to Article 14, the provisions of this chapter do not apply.

Article 16b

1. The applicant and registration holder shall be established in the Community.
2. In order to obtain traditional use registration, the applicant shall submit an application to the competent authority of the Member State concerned.

Article 16c

1. The application shall be accompanied by:
 - (a) the particulars and documents:
 - (i) referred to in Article 8(3)(a) to (h), (j) and (k),
 - (ii) the results of pharmaceutical tests referred to in the first indent of Article 8(3)(i),
 - (iii) the summary of product characteristics without the data specified in Article 11(4),
 - (iv) in case of a combination, as referred to in Article 1(30), the information data referred to in Article 16a(e) relating to the combination as such; if the individual active ingredients are not sufficiently known, the data need also relate to the individual active ingredients;
 - (b) any authorisation or registration obtained by the applicant in another Member State, or in a third country, to place the medicinal product on the market, and details of any decision to refuse to grant an authorisation or registration, whether in the

Community or a third country, and the reasons for such a decision;

- (c) bibliographical or expert evidence to the effect that the medicinal product in question, or a corresponding medicinal product has been in medicinal use in the Community throughout a period of at least thirty years preceding the date of application;
- (d) a bibliographic review of safety data together with an expert report, and where required by the competent authority, upon justified request, data necessary for assessing the safety of the medicinal product.

Annex I shall apply by analogy to the particulars and documents specified in point (a).

2. A corresponding medicinal product, as referred to in paragraph 1(c), is characterised by having the same active ingredients, irrespective of the excipients used, the same or similar intended purpose, equivalent strength and the same or similar route of administration as the medicinal product applied for.

3. The requirement to show medicinal use throughout the period of thirty years, referred to in paragraph 1(c), is satisfied even where the marketing of the product has not been based on a specific authorisation. It is likewise satisfied if the number or quantity of ingredients of the medicinal product has been reduced during that period.

4. If the product has been available within the Community for at least 15 years, the applicant may supply evidence of medicinal use throughout a period of time, which completes the period of 30 years in a specified territory or territories outside the Community.

Article 16d

When evaluating an application for traditional use registration, each Member State shall take due account of registrations or authorisations granted by another Member State.

Article 16e

1. Traditional use registration shall be refused if the application does not comply with Articles 16a, 16b or 16c or if at least one of the following conditions is fulfilled:
 - (a) the qualitative and/or quantitative composition is not as declared,
 - (b) the therapeutic indications do not comply with the conditions laid down in Article 16a,
 - (c) the product could be harmful in the normal conditions of use,

(d) data on traditional use is insufficient, especially if pharmacological effects or efficacy are not plausible on the basis of long-term use and experience,

(e) the pharmaceutical quality is not satisfactorily demonstrated.

2. The competent authorities of the Member States shall provide the applicant, the Commission and any competent authority requesting this, with any decision it makes to refuse traditional use registration on safety grounds and the reasons for this.

Article 16f

1. The Committee referred to in Article 16h shall set up a list of herbal substances. The list shall contain with regard to each herbal substance the therapeutic indication, the specified strength, the route of administration and any other information necessary for the safe use of the herbal substance.

2. If an application for traditional use registration relates to a herbal substance contained in the list, referred to in paragraph 1, the data specified in Article 16c(1)(b)(c) and (d) does not need to be provided. Article 16e(1)(c) and (d) shall not apply.

3. If a herbal substance ceases to be included in the list, referred to in paragraph 1, registrations pursuant to paragraph 2 for herbal medicinal products containing this substance shall be revoked unless the particulars and documents, referred to in Article 16c(1) are submitted within three months.

Article 16g

1. Articles 3(1) and (2), 4(4), 12, 17(1), 19, 20, 23, 24, 25, 40 to 52, 70 to 85, 101 to 108, 111(1) and (3), 112, 116 to 118, 122, 123, 125, 126 second indent, 127 of this Directive as well as Commission Directive 91/356/EEC⁽¹⁾ shall apply, by analogy, to traditional use registration granted under this chapter.

2. In addition to the provisions laid down in Articles 54 to 65 any labelling and user package leaflet shall contain a statement to the effect that:

(a) the product is a herbal medicinal product for traditional use in a specified indication and that the efficacy of the product has not been clinically proven but relies exclusively on long-term use and experience; and

(b) the user should consult a doctor or a qualified practitioner if the symptoms persist during the use of the medicinal product.

A Member State may provide that the labelling and the user package leaflet shall also state the nature of the tradition in question.

3. In addition to the provisions laid down in Articles 86 to 99 any advertisement for a medicinal product registered under this chapter shall contain the following statement: "traditional herbal medicinal product for use in [specified indication] for which efficacy has not been proven".

Article 16h

1. A Committee for Herbal Medicinal Products is hereby established. That Committee shall be part of the Agency.

2. The Committee for Herbal Medicinal Products shall consist of one member nominated by each Member State for a term of 3 years, which shall be renewable. They shall, as appropriate, be chosen by reason of their role and experience in the evaluation of herbal medicinal products and shall represent their competent authorities.

3. The Committee shall establish Community herbal monographs for herbal medicinal products with regard to the application of Article [10a] [10(1)(a)(ii)] as well as traditional herbal medicinal products. The appropriate co-ordination with the committee for human medicinal products shall be ensured by the Executive Directive of the Agency according to Article 55(2) of Regulation 2309/93. The Committee shall fulfil further responsibilities conferred upon it by provisions of this chapter and other Community law.

When Community herbal monographs in the sense of this paragraph have been established they shall be used as the basis for any application.

When new Community herbal monographs are established, the registration holder shall within one year after the date of establishment of such monograph, introduce a modification to the registration dossier in order to comply with that monograph. The registration holder shall notify that modification to the competent authority of the Member State concerned.

4. The Committee shall adopt its own rules of procedure.

Article 16i

Until ... [date], the Commission shall present a report to the European Parliament and the Council concerning the application of the provisions of this chapter.

The report shall include an assessment on the possible extension of traditional use registration to other categories of medicinal products.'

⁽¹⁾ OJ L 193, 17.7.1991, p. 30.

Article 2

1. The Member States shall take the measures necessary to comply with this Directive by 31 December 2004. They shall forthwith inform the Commission thereof. When Member States adopt the said measures, they shall contain a reference to this Directive or be accompanied by such a reference when officially published.

2. For the traditional herbal medicinal products as referred to in Article 1 of this Directive, which are already on the market on the entry into force of this Directive, the

competent authorities shall apply the provisions of the present Directive within five years after its entry into force.

Article 3

This Directive shall enter into force on the day of its publication in the *Official Journal of the European Communities*.

Article 4

This Directive is addressed to the Member States.

Proposal for a Decision of the European Parliament and of the Council adopting an action programme for customs in the Community (Customs 2007)

(2002/C 126 E/04)

COM(2002) 26 final — 2002/0029(COD)

(Submitted by the Commission on 23 January 2002)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee,

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

Whereas:

- (1) The experience gained from previous programmes in the customs field, in particular Customs 2002, set out in Decision No 210/97/EC of the European Parliament and the Council of 19 December 1996 adopting an action programme for customs in the Community⁽¹⁾, indicates that there would be a strong Community interest to continue, and even to enlarge this programme. The new programme should be built on the achievements of the previous programmes. The need for more focused and measurable objectives has been established as a result of the previous programmes. Decision No 210/97/EC should accordingly be repealed.
- (2) Customs administrations have a vital role to protect the Community's interests, particularly its financial interests, to provide an equivalent level of protection to the Community's citizens and economic operators, at any point in the Community customs territory where customs clearance formalities are carried out, and to ensure that business can compete in the global marketplace. In this context, the strategic policy defined by the Customs Policy Group, made up of heads of Customs Administrations from the Commission and the Member States, or their representatives, should ensure that national customs administrations may operate as efficiently and effectively as would one single administration.
- (3) This Decision establishes the principles by which the customs policy will be guided over the next five years

and supports and complements actions undertaken by Member States in the customs field. The implementation of this programme is coordinated and organised in partnership between the Commission and the Member States within the strategic policy defined by the Customs Policy Group.

- (4) The Community commitment to the process of accession by applicant countries, requires the provision of practical means whereby the customs administrations of these countries are able to undertake the full range of tasks required under Community legislation from the date of their accession, including the management of the future external border. In order to achieve this, the programme should be opened to the applicant countries.
- (5) A range of instruments can be used in order to achieve the objectives of this programme, including communication and information exchange systems, management groups, project groups, benchmarking, exchanges of officials, seminars, workshops, training activities, monitoring, and external actions.
- (6) There is a need for customs action to give priority to improving anti-fraud controls, minimising the cost of compliance with customs legislation for economic operators and preparing for enlargement. The Community must therefore be able, within the framework of its own powers, to support the action of Member States' customs administrations and full advantage should be taken of every possibility for administrative cooperation that Community rules provide.
- (7) Increasing globalisation of trade, the development of new markets, and changes in the methods and speed of the movement of goods, require customs administrations to strengthen relations between the Community's customs administrations, business, legal and scientific circles, and operators engaged in foreign trade.
- (8) The desirability of an efficient system of evaluation of the programme necessitates the establishment of a set of indicators in order to measure the effective and efficient management of the programme.
- (9) This decision lays down, for the entire duration of the programme, a financial framework constituting the principal point of reference, within the meaning of point 33 of the Interinstitutional Agreement of 6 May 1999 between the European Parliament, the Council and the Commission on budgetary discipline and improvement of the budgetary procedure.

⁽¹⁾ OJ L 33, 4.2.1997, p. 24, as amended by Decision 105/2000/EC (OJ L 13, 19.1.2000, p. 1).

(10) Since the measures necessary for the implementation of this Decision are management measures within the meaning of Article 2 of Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽¹⁾, they should be adopted by use of the management procedure provided for in Article 4 of that Decision,

HAVE ADOPTED THIS DECISION:

CHAPTER I

SCOPE AND OBJECTIVES

Article 1

Establishment of the programme

A multiannual Community action programme (Customs 2007) hereinafter referred to as 'the programme', is hereby established for the period 1 January 2003 to 31 December 2007 to support and complement the action undertaken by Member States in the customs field.

Article 2

Participation of candidate countries

1. The Programme shall be open to the participation of:
 - (a) the candidate countries of central and eastern Europe, in accordance with the conditions laid down in the Europe Agreements, in the additional protocols thereto and in the decisions of the respective Association Councils.
 - (b) Cyprus, Malta and Turkey, on the basis of bilateral agreements on this matter concluded with these countries.
 - (c) other countries when agreements and procedures so allow.
2. For the purposes of this Decision 'participating countries' means the Member States and the countries referred to in paragraph 1.

Article 3

Overall objectives

1. In the framework of the management of the customs union, the overall objectives of the programme shall be to ensure that Member States' customs administrations:
 - (a) interact and perform their duties as efficiently as though they were one administration and achieve equivalent results at every point of the Community customs territory;

(b) are making the necessary preparations for enlargement, including the sharing of experience and knowledge with the customs administrations of the applicant countries.

2. A Customs Policy Group, composed of the heads of the customs administrations of the Commission and the Member States or their representatives shall be established which shall develop a strategic common policy on which the overall objectives of this programme should be based. The Commission shall keep the Customs Policy Group regularly informed of measures relating to the implementation of the programme.

Article 4

Specific objectives

1. The programme establishes the following specific objectives:
 - (a) to reduce the cost of compliance with customs legislation on economic operators through improved standardisation, particularly for data input and risk management;
 - (b) to identify, develop and apply best working practices, especially in the areas of post-clearance audit control, risk analysis and simplified procedures;
 - (c) to establish a system of the measurement of Member States' performance in customs administrations and setting standards for different types of control;
 - (d) to support actions to prevent irregularities by providing control information rapidly to front line customs posts and to improve the standardisation and simplification of customs systems and controls;
 - (e) to support the creation of e-customs via the development of communication systems coupled with the necessary legislative and administrative changes;
 - (f) to maintain existing communication and information systems and, where appropriate, to develop new systems;
 - (g) to undertake actions which will provide support to the customs services of the applicant countries in their preparation for accession;
 - (h) to contribute to the establishment of high quality customs services in third countries;
 - (i) to develop and reinforce common training;
 - (j) to seek to develop a managed training infrastructure to coordinate the provision of training to the Community's customs officials.
2. Further specific objectives may be fixed in accordance with the procedure referred to in Article 17(2).

⁽¹⁾ OJ L 184, 17.7.1999, p. 23.

*Article 5***Fixing objectives and indicators**

All actions proposed in order to achieve the objectives outlined in this programme shall have defined objectives, measurable indicators to ensure suitable evaluation, a clear indication of the anticipated costs and should be constructed so that the results achieved the expected impact of the action.

CHAPTER II

PROGRAMME ACTIONS*Article 6***Communication and Information exchange systems**

1. The Commission and the participating countries shall ensure that the following communication and information exchange systems, together with manuals and guides, are operational, in so far as their operation is necessary under Community legislation:

- (a) the Common Communications Network/Common Systems Interface (CCN/CSI) to the extent necessary to support the functioning of the systems set out in this paragraph;
- (b) the Data Dissemination System (DDS);
- (c) the New Computerised Transit System (NCTS/NSTI);
- (d) the Information system on the Integrated Tariff of the Community (TARIC);
- (e) the information system for Transfer of Origin Stamps and the transmission of Transit Stamps (TCO/TCT);
- (f) the European Customs Inventory of Chemical Substances (ECICS);
- (g) the European Binding Tariff Information System (EBTI/RTCE);
- (h) the Tariff Quota Surveillance management system (TQS);
- (i) the Inward Processing Relief system (IPR);
- (k) the UNIT VALUES system;
- (l) the SUSPENSIONS information system.

2. New communication and information-exchange systems may be established in accordance with the procedure referred to in Article 17(2).

3. The Community components of the communication and information-exchange systems shall be the hardware, software and network connections, which must be common to all participating countries so as to ensure the inter-connection and interoperability of the systems, whether they be installed at the premises of the Commission or a designated sub-contractor or at premises of participating countries or a

designated sub-contractor. The Commission shall conclude the necessary contracts to assure the operational nature of these components in the name of the Community.

4. The non-Community components of the communication and information-exchange systems shall comprise the national databases forming part of these systems, the network connections between the Community and non-Community components and such software and hardware as each participating country shall deem appropriate for the full operation of those systems throughout its administration. The participating countries will ensure that the non-Community components are kept operational and will assure the interoperability of these components with the Community components.

5. The Commission shall coordinate, in cooperation with the participating countries, those aspects of the establishment and functioning of the Community and non-Community elements of the systems and infrastructure referred to in the first paragraph.

*Article 7***Benchmarking**

Benchmarking activities may be organised involving one or more participating countries or other third countries, particularly the Community's main trading partners, in order to improve the performance of their customs administration.

For the purposes of this Decision, 'benchmarking' means the use of agreed, common indicators to measure performance which are used to identify differences in performance and the processes involved in order share experiences and learn from good practice in order to improve efficiency and effectiveness.

*Article 8***Exchanges of officials**

1. The Commission and the participating countries shall organise exchanges of officials from customs administrations in support of the programme's specific objectives. Each exchange shall focus on a specific aspect of customs work and shall be thoroughly prepared and subsequently evaluated by the officials and authorities concerned. Exchanges may be operational or targeted on specific priority activities.

2. Where appropriate, participating countries shall take the necessary steps to enable exchange officials to be operational in the host service. To this end, exchange officials shall be authorised to carry out the formalities relating to the duties entrusted to them. If circumstances so require, and, in particular, in order to take account of the specific requirements of the legal system of each participating country, the competent authorities in the participating countries may limit the said authorisation.

3. For the duration of the exchange, the official shall, in the exercise of his duties, bear the same civil liability as national officials of the host authorities. Officials taking part in an exchange shall be subject to the same rules on professional confidentiality as the national officials of the host country.

4. The Commission and the participating countries may also organise exchanges with other third countries in support of the objectives of this programme.

5. Participating countries shall provide periodic evaluations of the exchanges, including the impact on their administration, as required by the Commission.

Article 9

Seminars, workshops and project groups

The Commission and the participating countries shall organise seminars, workshops and conferences to be attended by participating country and Commission officials and, where appropriate, other experts in the field. Seminars, workshops and conferences may also be attended by officials from other administrations where this is appropriate to the objectives of the activity.

Project Groups may be established to carry out specific tasks to be completed within a specified time-scale.

Article 10

Training activities

1. In order to encourage structured cooperation between national training bodies and officials responsible for customs training in administrations, participating countries shall, in cooperation with the Commission:

- (a) set training standards, develop existing training programmes and, where necessary, devise new programmes to provide a common core of training for officials relating to the full range of customs rules and procedures so as to enable them to acquire the necessary common professional skills and knowledge;
- (b) where appropriate, open customs training courses provided by each participating country for its own officials to officials from all participating countries;
- (c) develop the necessary infrastructure and common tools for customs training and customs training management.

2. Participating countries shall also ensure that their officials receive the initial and continuous training necessary to acquire the common professional skills and knowledge in accordance with the common training programmes and the linguistic

training necessary for those officials to attain a sufficient standard of linguistic competence.

Article 11

Monitoring actions

1. The Commission shall decide, in accordance with the procedure referred to in Article 17(2), which specific sectors of Community customs legislation will be subject to monitoring.

2. Such monitoring shall be carried out by joint teams made up of customs officials from the Member States and the Commission. These teams shall, on the basis of a theme-by-theme or regional approach, visit different points in Community customs territory where customs administrations carry out their duties. At the end of these visits, they shall draw up a report identifying and analysing the best working methods as well as any difficulties in implementing the rules observed and, where appropriate, including suggestions for the adaptation of both Community rules and working methods in order to improve the efficiency of customs actions as a whole. These experts' reports shall be communicated to the Member States and the Commission.

Article 12

External actions in the form of technical assistance and training

1. The Commission shall ensure the coordination of the training and technical assistance and cooperation actions carried out by the Community and the Member States with third countries' administrations, to ensure the consistency of Community actions, both external and internal.

2. The Commission shall also ensure the implementation of training and technical assistance and cooperation actions for the benefit of:

- (a) the applicant countries to enable them to comply with Community customs legislation. Particular attention should be paid to the inter-connectivity of customs information and technology systems;
- (b) third-country administrations to support them in the modernisation of their administrations.

Article 13

Other actions

The Commission may, in accordance with the procedure referred to in Article 17(2) develop and use any other tools necessary to meet the objectives of the programme.

CHAPTER III

FINANCIAL PROVISIONS*Article 14***Financial framework**

1. The financial framework for the implementation of the programme for the period 1 January 2003 to 31 December 2007 is hereby set at EUR 133 million.
2. The annual appropriations shall be authorised by the budgetary authority within the limits of the financial perspective.

*Article 15***Expenditure**

1. The expenditure necessary for the implementation of the programme shall be divided between the Community and the participating countries in accordance with the following paragraphs.
2. The Community shall bear expenditure as follows:
 - (a) the cost of the development, purchase, installation and maintenance of the Community components of the information exchange and communication systems described in Article 6 and the cost of the day-to-day operation of the Community components installed at the premises of the Commission or those of a designated sub-contractor;
 - (b) the travel and subsistence expenses incurred by participating countries relating to benchmarking activities, exchanges of officials, seminars, workshops and project groups, training and monitoring actions referred to in Articles 7 to 11;
 - (c) the organisational costs of seminars and workshops;
 - (d) the costs relating to the actions referred to in Articles 12 and 13.

The Commission shall, in accordance with the Financial Regulation applicable to the general budget of the European Communities, determine the rules relating to the payment of expense and shall communicate them to participating countries.

3. Participating countries shall bear expenditure as follows:
 - (a) the difference between the expenditure paid by the Community in accordance with paragraph 2 above, and the actual cost of the activity;
 - (b) the costs relating to the initial and continuing training, including the linguistic training, of their officials;
 - (c) the costs relating to the establishment and functioning of the non-Community components of the communication and information-exchange systems provided for in Article 4 and the cost of the day-to-day operation of the Community components of those systems installed at their premises or those of a designated sub-contractor.

*Article 16***Financial control**

Financing decisions and any agreements or contracts resulting from this Decision shall be subject to financial control, and if necessary, on-the-spot audits by the Commission, including the European Anti-fraud Office (OLAF) and by the European Court of Auditors. Any grants made pursuant to this Decision will be subject to agreement in writing in advance by the beneficiaries. This agreement shall contain the acceptance by the beneficiaries to an audit by the European Court of Auditors into the use made of the financing granted.

CHAPTER IV

OTHER PROVISIONS*Article 17***Committee**

1. The Commission shall be assisted by a committee, called the 'Customs 2007 Committee', composed of the representatives of the Member States and chaired by the representatives of the Commission.
2. Where reference is made to this paragraph, the management procedure laid down in Article 4 of Decision 1999/468/EC shall apply, in compliance of Articles 7 and 8 thereof.
3. The period provided for in Article 4(3) of Decision 1999/468/EC shall be three months.

*Article 18***Evaluation and reports**

1. This programme shall be subject to continuous evaluation, carried out in partnership between the Commission and the participating countries. The evaluation shall be pursued by means of the reports referred to in paragraph 2 and by means of specific activities.
2. Participating countries shall forward to the Commission:
 - (a) by 31 December 2004 at the latest, an interim report on the effectiveness and efficiency of the programme, and
 - (b) by 31 December 2007 at the latest, a final report on the effectiveness and efficiency of the programme.
3. The Commission shall submit:
 - (a) to the Customs 2007 Committee, by 30 June 2005 at the latest, an interim report evaluating the efficiency and effectiveness of the programme;
 - (b) to the European Parliament and to the Council, by 30 June 2008 at the latest, a final report establishing the impact achieved by the programme. The final report shall also be forwarded to the Economic and Social Committee for information.

4. The final report referred to in paragraph 3 shall analyse all the progress achieved in the case of each measure in the programme and shall include an analysis of the strengths and weaknesses of any kind of customs computerisation systems involved in the implementation of the internal market. The report shall set out any useful proposals for ensuring that identical treatment is reserved for operators throughout the Community customs territory and that the gathering of information serves the proper protection of the Community's financial interests.

Article 19

Repeal

Decision No 210/97/EC is hereby repealed.

Article 20

Entry into force

This Decision shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Communities*.

It shall apply from 1 January 2003.

Article 21

Addressees

This Decision is addressed to Member States.

Proposal for a Council Decision approving, on behalf of the European Community, the Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous chemicals and pesticides in international trade

(2002/C 126 E/05)

(Text with EEA relevance)

COM(2001) 802 *final* — 2002/0030(ACC)

(Submitted by the Commission on 24 January 2002)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 133, in conjunction with the first sentence of the first subparagraph of Article 300(2) and the first subparagraph of Article 300(3) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

Whereas:

- (1) The Commission participated on behalf of the Community in the negotiation of the Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous chemicals and pesticides in international trade, in accordance with the negotiating mandate given by the Council.
- (2) Upon the conclusion of the negotiations, the Convention was signed on behalf of the Community in Rotterdam on 11 September 1998.
- (3) The Convention is an important step in improving the international regulation of trade in certain hazardous chemicals and pesticides in order to protect human health and the environment from potential harm and to promote the environmentally sound use of such substances.
- (4) The Convention is open to ratification, acceptance or approval by States and by regional economic integration organisations.

(5) Under the terms of the Convention, a regional economic integration organisation must declare in its instrument of ratification, acceptance, approval or accession the extent of its competence in respect of the matters governed by the Convention.

(6) In consequence, the Community can approve the Convention,

HAS DECIDED AS FOLLOWS:

Article 1

The Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous chemicals and pesticides in international trade, signed on 11 September 1998, is hereby approved on behalf of the Community.

The text of the Convention is contained in the Annex to this Decision.

Article 2

1. The President of the Council is hereby authorised to designate the person or persons empowered to deposit the instrument of approval on behalf of the Community with the Secretary-General of the United Nations, in accordance with Article 25(1) of the Convention.

2. The person or persons empowered to deposit the instrument of approval shall at the same time deposit a declaration of competence, as required by Article 25(3) of the Convention, stating that the Community is competent in respect of all matters governed by the Convention.

ANNEX

Rotterdam Convention on the Prior Informed Consent Procedure for certain hazardous chemicals and pesticides in international trade

THE PARTIES TO THIS CONVENTION,

Aware of the harmful impact on human health and the environment from certain hazardous chemicals and pesticides in international trade,

Recalling the pertinent provisions of the Rio Declaration on Environment and Development and chapter 19 of Agenda 21 on 'Environmentally sound management of toxic chemicals, including prevention of illegal international traffic in toxic and dangerous products',

Mindful of the work undertaken by the United Nations Environment Programme (UNEP) and the Food and Agriculture Organization of the United Nations (FAO) in the operation of the voluntary Prior Informed Consent procedure, as set out in the UNEP Amended London Guidelines for the Exchange of Information on Chemicals in International Trade (hereinafter referred to as the 'Amended London Guidelines') and the FAO International Code of Conduct on the Distribution and Use of Pesticides (hereinafter referred to as the 'International Code of Conduct'),

Taking into account the circumstances and particular requirements of developing countries and countries with economies in transition, in particular the need to strengthen national capabilities and capacities for the management of chemicals, including transfer of technology, providing financial and technical assistance and promoting cooperation among the Parties,

Noting the specific needs of some countries for information on transit movements,

Recognizing that good management practices for chemicals should be promoted in all countries, taking into account, inter alia, the voluntary standards laid down in the International Code of Conduct and the UNEP Code of Ethics on the International Trade in Chemicals,

Desiring to ensure that hazardous chemicals that are exported from their territory are packaged and labelled in a manner that is adequately protective of human health and the environment, consistent with the principles of the Amended London Guidelines and the International Code of Conduct,

Recognizing that trade and environmental policies should be mutually supportive with a view to achieving sustainable development,

Emphasizing that nothing in this Convention shall be interpreted as implying in any way a change in the rights and obligations of a Party under any existing international agreement applying to chemicals in international trade or to environmental protection,

Understanding that the above recital is not intended to create a hierarchy between this Convention and other international agreements,

Determined to protect human health, including the health of consumers and workers, and the environment against potentially harmful impacts from certain hazardous chemicals and pesticides in international trade,

HAVE AGREED AS FOLLOWS:

Article 1

Objective

The objective of this Convention is to promote shared responsibility and cooperative efforts among Parties in the international trade of certain hazardous chemicals in order to protect human health and the environment from potential harm and to contribute to their environmentally sound use, by facilitating information exchange about their characteristics, by providing for a national decision-making process on their import and export and by disseminating these decisions to Parties.

Article 2

Definitions

For the purposes of this Convention:

- (a) 'chemical' means a substance whether by itself or in a mixture or preparation and whether manufactured or obtained from nature, but does not include any living organism. It consists of the following categories: pesticide (including severely hazardous pesticide formulations) and industrial;
- (b) 'banned chemical' means a chemical all uses of which within one or more categories have been prohibited by final regulatory action, in order to protect human health or the environment. It includes a chemical that has been refused approval for first-time use or has been withdrawn by industry either from the domestic market or from further consideration in the domestic approval process and where there is clear evidence that such action has been taken in order to protect human health or the environment;
- (c) 'severely restricted chemical' means a chemical virtually all use of which within one or more categories has been prohibited by final regulatory action in order to protect human health or the environment, but for which certain specific uses remain allowed. It includes a chemical that has, for virtually all use, been refused for approval or been withdrawn by industry either from the domestic market or from further consideration in the domestic approval process, and where there is clear evidence that such action has been taken in order to protect human health or the environment;
- (d) 'severely hazardous pesticide formulation' means a chemical formulated for pesticidal use that produces severe health or environmental effects observable within a short period of time after single or multiple exposure, under conditions of use;
- (e) 'final regulatory action' means an action taken by a Party, that does not require subsequent regulatory action by that Party, the purpose of which is to ban or severely restrict a chemical;
- (f) 'export' and 'import' mean, in their respective connotations, the movement of a chemical from one Party to another Party, but exclude mere transit operations;
- (g) 'Party' means a State or regional economic integration organization that has consented to be bound by this Convention and for which the Convention is in force;
- (h) 'regional economic integration organization' means an organization constituted by sovereign States of a given region to which its Member States have transferred competence in respect of matters governed by this Convention and which has been duly authorized, in accordance with its internal procedures, to sign, ratify, accept, approve or accede to this Convention;
- (i) 'Chemical Review Committee' means the subsidiary body referred to in paragraph 6 of Article 18.

Article 3

Scope of the Convention

1. This Convention applies to:

- (a) banned or severely restricted chemicals; and
- (b) severely hazardous pesticide formulations.

2. This Convention does not apply to:

- (a) narcotic drugs and psychotropic substances;
- (b) radioactive materials;
- (c) wastes;
- (d) chemical weapons;
- (e) pharmaceuticals, including human and veterinary drugs;
- (f) chemicals used as food additives;
- (g) food;

(h) chemicals in quantities not likely to affect human health or the environment provided they are imported:

- (i) for the purpose of research or analysis; or
- (ii) by an individual for his or her own personal use in quantities reasonable for such use.

Article 4

Designated national authorities

1. Each Party shall designate one or more national authorities that shall be authorized to act on its behalf in the performance of the administrative functions required by this Convention.

2. Each Party shall seek to ensure that such authority or authorities have sufficient resources to perform their tasks effectively.

3. Each Party shall, no later than the date of the entry into force of this Convention for it, notify the name and address of such authority or authorities to the Secretariat. It shall forthwith notify the Secretariat of any changes in the name and address of such authority or authorities.

4. The Secretariat shall forthwith inform the Parties of the notifications it receives under paragraph 3.

Article 5

Procedures for banned or severely restricted chemicals

1. Each Party that has adopted a final regulatory action shall notify the Secretariat in writing of such action. Such notification shall be made as soon as possible, and in any event no later than ninety days after the date on which the final regulatory action has taken effect, and shall contain the information required by Annex I, where available.

2. Each Party shall, at the date of entry into force of this Convention for it, notify the Secretariat in writing of its final regulatory actions in effect at that time, except that each Party that has submitted notifications of final regulatory actions under the Amended London Guidelines or the International Code of Conduct need not resubmit those notifications.

3. The Secretariat shall, as soon as possible, and in any event no later than six months after receipt of a notification under paragraphs 1 and 2, verify whether the notification contains the information required by Annex I. If the notification contains the information required, the Secretariat shall forthwith forward to all Parties a summary of the information

received. If the notification does not contain the information required, it shall inform the notifying Party accordingly.

4. The Secretariat shall every six months communicate to the Parties a synopsis of the information received pursuant to paragraphs 1 and 2, including information regarding those notifications which do not contain all the information required by Annex I.

5. When the Secretariat has received at least one notification from each of two Prior Informed Consent regions regarding a particular chemical that it has verified meet the requirements of Annex I, it shall forward them to the Chemical Review Committee. The composition of the Prior Informed Consent regions shall be defined in a decision to be adopted by consensus at the first meeting of the Conference of the Parties.

6. The Chemical Review Committee shall review the information provided in such notifications and, in accordance with the criteria set out in Annex II, recommend to the Conference of the Parties whether the chemical in question should be made subject to the Prior Informed Consent procedure and, accordingly, be listed in Annex III.

Article 6

Procedures for severely hazardous pesticide formulations

1. Any Party that is a developing country or a country with an economy in transition and that is experiencing problems caused by a severely hazardous pesticide formulation under conditions of use in its territory, may propose to the Secretariat the listing of the severely hazardous pesticide formulation in Annex III. In developing a proposal, the Party may draw upon technical expertise from any relevant source. The proposal shall contain the information required by part 1 of Annex IV.

2. The Secretariat shall, as soon as possible, and in any event no later than six months after receipt of a proposal under paragraph 1, verify whether the proposal contains the information required by part 1 of Annex IV. If the proposal contains the information required, the Secretariat shall forthwith forward to all Parties a summary of the information received. If the proposal does not contain the information required, it shall inform the proposing Party accordingly.

3. The Secretariat shall collect the additional information set out in part 2 of Annex IV regarding the proposal forwarded under paragraph 2.

4. When the requirements of paragraphs 2 and 3 above have been fulfilled with regard to a particular severely hazardous pesticide formulation, the Secretariat shall forward the proposal and the related information to the Chemical Review Committee.

5. The Chemical Review Committee shall review the information provided in the proposal and the additional information collected and, in accordance with the criteria set out in part 3 of Annex IV, recommend to the Conference of the Parties whether the severely hazardous pesticide formulation in question should be made subject to the Prior Informed Consent procedure and, accordingly, be listed in Annex III.

Article 7

Listing of chemicals in Annex III

1. For each chemical that the Chemical Review Committee has decided to recommend for listing in Annex III, it shall prepare a draft decision guidance document. The decision guidance document should, at a minimum, be based on the information specified in Annex I, or, as the case may be, Annex IV, and include information on uses of the chemical in a category other than the category for which the final regulatory action applies.

2. The recommendation referred to in paragraph 1 together with the draft decision guidance document shall be forwarded to the Conference of the Parties. The Conference of the Parties shall decide whether the chemical should be made subject to the Prior Informed Consent procedure and, accordingly, list the chemical in Annex III and approve the draft decision guidance document.

3. When a decision to list a chemical in Annex III has been taken and the related decision guidance document has been approved by the Conference of the Parties, the Secretariat shall forthwith communicate this information to all Parties.

Article 8

Chemicals in the voluntary Prior Informed Consent procedure

For any chemical, other than a chemical listed in Annex III, that has been included in the voluntary Prior Informed Consent procedure before the date of the first meeting of the Conference of the Parties, the Conference of the Parties shall decide at that meeting to list the chemical in Annex III, provided that it is satisfied that all the requirements for listing in that Annex have been fulfilled.

Article 9

Removal of chemicals from Annex III

1. If a Party submits to the Secretariat information that was not available at the time of the decision to list a chemical in Annex III and that information indicates that its listing may no longer be justified in accordance with the relevant criteria in

Annex II or, as the case may be, Annex IV, the Secretariat shall forward the information to the Chemical Review Committee.

2. The Chemical Review Committee shall review the information it receives under paragraph 1. For each chemical that the Chemical Review Committee decides, in accordance with the relevant criteria in Annex II or, as the case may be, Annex IV, to recommend for removal from Annex III, it shall prepare a revised draft decision guidance document.

3. A recommendation referred to in paragraph 2 shall be forwarded to the Conference of the Parties and be accompanied by a revised draft decision guidance document. The Conference of the Parties shall decide whether the chemical should be removed from Annex III and whether to approve the revised draft decision guidance document.

4. When a decision to remove a chemical from Annex III has been taken and the revised decision guidance document has been approved by the Conference of the Parties, the Secretariat shall forthwith communicate this information to all Parties.

Article 10

Obligations in relation to imports of chemicals listed in Annex III

1. Each Party shall implement appropriate legislative or administrative measures to ensure timely decisions with respect to the import of chemicals listed in Annex III.

2. Each Party shall transmit to the Secretariat, as soon as possible, and in any event no later than nine months after the date of dispatch of the decision guidance document referred to in paragraph 3 of Article 7, a response concerning the future import of the chemical concerned. If a Party modifies this response, it shall forthwith submit the revised response to the Secretariat.

3. The Secretariat shall, at the expiration of the time period in paragraph 2, forthwith address to a Party that has not provided such a response, a written request to do so. Should the Party be unable to provide a response, the Secretariat shall, where appropriate, help it to provide a response within the time period specified in the last sentence of paragraph 2 of Article 11.

4. A response under paragraph 2 shall consist of either:

(a) a final decision, pursuant to legislative or administrative measures:

(i) to consent to import;

(ii) not to consent to import; or

(iii) to consent to import only subject to specified conditions; or

(b) an interim response, which may include:

(i) an interim decision consenting to import with or without specified conditions, or not consenting to import during the interim period;

(ii) a statement that a final decision is under active consideration;

(iii) a request to the Secretariat, or to the Party that notified the final regulatory action, for further information;

(iv) a request to the Secretariat for assistance in evaluating the chemical.

5. A response under subparagraphs (a) or (b) of paragraph 4 shall relate to the category or categories specified for the chemical in Annex III.

6. A final decision should be accompanied by a description of any legislative or administrative measures upon which it is based.

7. Each Party shall, no later than the date of entry into force of this Convention for it, transmit to the Secretariat responses with respect to each chemical listed in Annex III. A Party that has provided such responses under the Amended London Guidelines or the International Code of Conduct need not resubmit those responses.

8. Each Party shall make its responses under this Article available to those concerned within its jurisdiction, in accordance with its legislative or administrative measures.

9. A Party that, pursuant to paragraphs 2 and 4 above and paragraph 2 of Article 11, takes a decision not to consent to import of a chemical or to consent to its import only under specified conditions shall, if it has not already done so, simultaneously prohibit or make subject to the same conditions:

(a) import of the chemical from any source; and

(b) domestic production of the chemical for domestic use.

10. Every six months the Secretariat shall inform all Parties of the responses it has received. Such information shall include a description of the legislative or administrative measures on which the decisions have been based, where available. The

Secretariat shall, in addition, inform the Parties of any cases of failure to transmit a response.

Article 11

Obligations in relation to exports of chemicals listed in Annex III

1. Each exporting Party shall:

(a) implement appropriate legislative or administrative measures to communicate the responses forwarded by the Secretariat in accordance with paragraph 10 of Article 10 to those concerned within its jurisdiction;

(b) take appropriate legislative or administrative measures to ensure that exporters within its jurisdiction comply with decisions in each response no later than six months after the date on which the Secretariat first informs the Parties of such response in accordance with paragraph 10 of Article 10;

(c) advise and assist importing Parties, upon request and as appropriate:

(i) to obtain further information to help them to take action in accordance with paragraph 4 of Article 10 and paragraph 2(c) below; and

(ii) to strengthen their capacities and capabilities to manage chemicals safely during their life-cycle.

2. Each Party shall ensure that a chemical listed in Annex III is not exported from its territory to any importing Party that, in exceptional circumstances, has failed to transmit a response or has transmitted an interim response that does not contain an interim decision, unless:

(a) it is a chemical that, at the time of import, is registered as a chemical in the importing Party; or

(b) it is a chemical for which evidence exists that it has previously been used in, or imported into, the importing Party and in relation to which no regulatory action to prohibit its use has been taken; or

(c) explicit consent to the import has been sought and received by the exporter through a designated national authority of the importing Party. The importing Party shall respond to such a request within sixty days and shall promptly notify the Secretariat of its decision.

The obligations of exporting Parties under this paragraph shall apply with effect from the expiration of a period of six months from the date on which the Secretariat first informs the Parties, in accordance with paragraph 10 of Article 10, that a Party has failed to transmit a response or has transmitted an interim response that does not contain an interim decision, and shall apply for one year.

Article 12

Export notification

1. Where a chemical that is banned or severely restricted by a Party is exported from its territory, that Party shall provide an export notification to the importing Party. The export notification shall include the information set out in Annex V.

2. The export notification shall be provided for that chemical prior to the first export following adoption of the corresponding final regulatory action. Thereafter, the export notification shall be provided before the first export in any calendar year. The requirement to notify before export may be waived by the designated national authority of the importing Party.

3. An exporting Party shall provide an updated export notification after it has adopted a final regulatory action that results in a major change concerning the ban or severe restriction of that chemical.

4. The importing Party shall acknowledge receipt of the first export notification received after the adoption of the final regulatory action. If the exporting Party does not receive the acknowledgement within thirty days of the dispatch of the export notification, it shall submit a second notification. The exporting Party shall make reasonable efforts to ensure that the importing Party receives the second notification.

5. The obligations of a Party set out in paragraph 1 shall cease when:

- (a) the chemical has been listed in Annex III;
- (b) the importing Party has provided a response for the chemical to the Secretariat in accordance with paragraph 2 of Article 10; and
- (c) the Secretariat has distributed the response to the Parties in accordance with paragraph 10 of Article 10.

Article 13

Information to accompany exported chemicals

1. The Conference of the Parties shall encourage the World Customs Organization to assign specific Harmonized System

customs codes to the individual chemicals or groups of chemicals listed in Annex III, as appropriate. Each Party shall require that, whenever a code has been assigned to such a chemical, the shipping document for that chemical bears the code when exported.

2. Without prejudice to any requirements of the importing Party, each Party shall require that both chemicals listed in Annex III and chemicals banned or severely restricted in its territory are, when exported, subject to labelling requirements that ensure adequate availability of information with regard to risks and/or hazards to human health or the environment, taking into account relevant international standards.

3. Without prejudice to any requirements of the importing Party, each Party may require that chemicals subject to environmental or health labelling requirements in its territory are, when exported, subject to labelling requirements that ensure adequate availability of information with regard to risks and/or hazards to human health or the environment, taking into account relevant international standards.

4. With respect to the chemicals referred to in paragraph 2 that are to be used for occupational purposes, each exporting Party shall require that a safety data sheet that follows an internationally recognized format, setting out the most up-to-date information available, is sent to each importer.

5. The information on the label and on the safety data sheet should, as far as practicable, be given in one or more of the official languages of the importing Party.

Article 14

Information exchange

1. Each Party shall, as appropriate and in accordance with the objective of this Convention, facilitate:

- (a) the exchange of scientific, technical, economic and legal information concerning the chemicals within the scope of this Convention, including toxicological, ecotoxicological and safety information;
- (b) the provision of publicly available information on domestic regulatory actions relevant to the objectives of this Convention; and
- (c) the provision of information to other Parties, directly or through the Secretariat, on domestic regulatory actions that substantially restrict one or more uses of the chemical, as appropriate.

2. Parties that exchange information pursuant to this Convention shall protect any confidential information as mutually agreed.

3. The following information shall not be regarded as confidential for the purposes of this Convention:

- (a) the information referred to in Annexes I and IV, submitted pursuant to Articles 5 and 6 respectively;
- (b) the information contained in the safety data sheet referred to in paragraph 4 of Article 13;
- (c) the expiry date of the chemical;
- (d) information on precautionary measures, including hazard classification, the nature of the risk and the relevant safety advice; and
- (e) the summary results of the toxicological and ecotoxicological tests.

4. The production date of the chemical shall generally not be considered confidential for the purposes of this Convention.

5. Any Party requiring information on transit movements through its territory of chemicals listed in Annex III may report its need to the Secretariat, which shall inform all Parties accordingly.

Article 15

Implementation of the Convention

1. Each Party shall take such measures as may be necessary to establish and strengthen its national infrastructures and institutions for the effective implementation of this Convention. These measures may include, as required, the adoption or amendment of national legislative or administrative measures and may also include:

- (a) the establishment of national registers and databases including safety information for chemicals;
- (b) the encouragement of initiatives by industry to promote chemical safety; and
- (c) the promotion of voluntary agreements, taking into consideration the provisions of Article 16.

2. Each Party shall ensure, to the extent practicable, that the public has appropriate access to information on chemical handling and accident management and on alternatives that are safer for human health or the environment than the chemicals listed in Annex III.

3. The Parties agree to cooperate, directly or, where appropriate, through competent international organizations, in the implementation of this Convention at the sub-regional, regional and global levels.

4. Nothing in this Convention shall be interpreted as restricting the right of the Parties to take action that is more stringently protective of human health and the environment than that called for in this Convention, provided that such action is consistent with the provisions of this Convention and is in accordance with international law.

Article 16

Technical assistance

The Parties shall, taking into account in particular the needs of developing countries and countries with economies in transition, cooperate in promoting technical assistance for the development of the infrastructure and the capacity necessary to manage chemicals to enable implementation of this Convention. Parties with more advanced programmes for regulating chemicals should provide technical assistance, including training, to other Parties in developing their infrastructure and capacity to manage chemicals throughout their life-cycle.

Article 17

Non-compliance

The Conference of the Parties shall, as soon as practicable, develop and approve procedures and institutional mechanisms for determining non-compliance with the provisions of this Convention and for treatment of Parties found to be in non-compliance.

Article 18

Conference of the Parties

1. A Conference of the Parties is hereby established.

2. The first meeting of the Conference of the Parties shall be convened by the Executive Director of UNEP and the Director-General of FAO, acting jointly, no later than one year after the entry into force of this Convention. Thereafter, ordinary meetings of the Conference of the Parties shall be held at regular intervals to be determined by the Conference.

3. Extraordinary meetings of the Conference of the Parties shall be held at such other times as may be deemed necessary by the Conference, or at the written request of any Party provided that it is supported by at least one third of the Parties.

4. The Conference of the Parties shall by consensus agree upon and adopt at its first meeting rules of procedure and financial rules for itself and any subsidiary bodies, as well as financial provisions governing the functioning of the Secretariat.

5. The Conference of the Parties shall keep under continuous review and evaluation the implementation of this Convention. It shall perform the functions assigned to it by the Convention and, to this end, shall:

- (a) establish, further to the requirements of paragraph 6 below, such subsidiary bodies as it considers necessary for the implementation of the Convention;
- (b) cooperate, where appropriate, with competent international organizations and intergovernmental and non-governmental bodies; and
- (c) consider and undertake any additional action that may be required for the achievement of the objectives of the Convention.

6. The Conference of the Parties shall, at its first meeting, establish a subsidiary body, to be called the Chemical Review Committee, for the purposes of performing the functions assigned to that Committee by this Convention. In this regard:

- (a) the members of the Chemical Review Committee shall be appointed by the Conference of the Parties. Membership of the Committee shall consist of a limited number of government-designated experts in chemicals management. The members of the Committee shall be appointed on the basis of equitable geographical distribution, including ensuring a balance between developed and developing Parties;
- (b) the Conference of the Parties shall decide on the terms of reference, organization and operation of the Committee;
- (c) the Committee shall make every effort to make its recommendations by consensus. If all efforts at consensus have been exhausted, and no consensus reached, such recommendation shall as a last resort be adopted by a two-thirds majority vote of the members present and voting.

7. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State not Party to this Convention, may be represented at meetings of the Conference of the Parties as observers. Any body or agency, whether national or international, governmental or non-governmental, qualified in matters covered by the Convention, and which has informed the Secretariat of its

wish to be represented at a meeting of the Conference of the Parties as an observer may be admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure adopted by the Conference of the Parties.

Article 19

Secretariat

1. A Secretariat is hereby established.
2. The functions of the Secretariat shall be:
 - (a) to make arrangements for meetings of the Conference of the Parties and its subsidiary bodies and to provide them with services as required;
 - (b) to facilitate assistance to the Parties, particularly developing Parties and Parties with economies in transition, on request, in the implementation of this Convention;
 - (c) to ensure the necessary coordination with the secretariats of other relevant international bodies;
 - (d) to enter, under the overall guidance of the Conference of the Parties, into such administrative and contractual arrangements as may be required for the effective discharge of its functions; and
 - (e) to perform the other Secretariat functions specified in this Convention and such other functions as may be determined by the Conference of the Parties.
3. The Secretariat functions for this Convention shall be performed jointly by the Executive Director of UNEP and the Director-General of FAO, subject to such arrangements as shall be agreed between them and approved by the Conference of the Parties.
4. The Conference of the Parties may decide, by a three-fourths majority of the Parties present and voting, to entrust the Secretariat functions to one or more other competent international organizations, should it find that the Secretariat is not functioning as intended.

Article 20

Settlement of disputes

1. Parties shall settle any dispute between them concerning the interpretation or application of this Convention through negotiation or other peaceful means of their own choice.

2. When ratifying, accepting, approving or acceding to this Convention, or at any time thereafter, a Party that is not a regional economic integration organization may declare in a written instrument submitted to the Depositary that, with respect to any dispute concerning the interpretation or application of the Convention, it recognizes one or both of the following means of dispute settlement as compulsory in relation to any Party accepting the same obligation:

- (a) arbitration in accordance with procedures to be adopted by the Conference of the Parties in an annex as soon as practicable; and
- (b) submission of the dispute to the International Court of Justice.

3. A Party that is a regional economic integration organization may make a declaration with like effect in relation to arbitration in accordance with the procedure referred to in paragraph 2(a).

4. A declaration made pursuant to paragraph 2 shall remain in force until it expires in accordance with its terms or until three months after written notice of its revocation has been deposited with the Depositary.

5. The expiry of a declaration, a notice of revocation or a new declaration shall not in any way affect proceedings pending before an arbitral tribunal or the International Court of Justice unless the parties to the dispute otherwise agree.

6. If the parties to a dispute have not accepted the same or any procedure pursuant to paragraph 2, and if they have not been able to settle their dispute within twelve months following notification by one party to another that a dispute exists between them, the dispute shall be submitted to a conciliation commission at the request of any party to the dispute. The conciliation commission shall render a report with recommendations. Additional procedures relating to the conciliation commission shall be included in an annex to be adopted by the Conference of the Parties no later than the second meeting of the Conference.

Article 21

Amendments to the Convention

1. Amendments to this Convention may be proposed by any Party.
2. Amendments to this Convention shall be adopted at a meeting of the Conference of the Parties. The text of any proposed amendment shall be communicated to the Parties by the Secretariat at least six months before the meeting at

which it is proposed for adoption. The Secretariat shall also communicate the proposed amendment to the signatories to this Convention and, for information, to the Depositary.

3. The Parties shall make every effort to reach agreement on any proposed amendment to this Convention by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a three-fourths majority vote of the Parties present and voting at the meeting.

4. The amendment shall be communicated by the Depositary to all Parties for ratification, acceptance or approval.

5. Ratification, acceptance or approval of an amendment shall be notified to the Depositary in writing. An amendment adopted in accordance with paragraph 3 shall enter into force for the Parties having accepted it on the ninetieth day after the date of deposit of instruments of ratification, acceptance or approval by at least three fourths of the Parties. Thereafter, the amendment shall enter into force for any other Party on the ninetieth day after the date on which that Party deposits its instrument of ratification, acceptance or approval of the amendment.

Article 22

Adoption and amendment of annexes

1. Annexes to this Convention shall form an integral part thereof and, unless expressly provided otherwise, a reference to this Convention constitutes at the same time a reference to any annexes thereto.

2. Annexes shall be restricted to procedural, scientific, technical or administrative matters.

3. The following procedure shall apply to the proposal, adoption and entry into force of additional annexes to this Convention:

- (a) additional annexes shall be proposed and adopted according to the procedure laid down in paragraphs 1, 2 and 3 of Article 21;
- (b) any Party that is unable to accept an additional annex shall so notify the Depositary, in writing, within one year from the date of communication of the adoption of the additional annex by the Depositary. The Depositary shall without delay notify all Parties of any such notification received. A Party may at any time withdraw a previous notification of non-acceptance in respect of an additional annex and the annex shall thereupon enter into force for that Party subject to subparagraph (c) below; and

(c) on the expiry of one year from the date of the communication by the Depositary of the adoption of an additional annex, the annex shall enter into force for all Parties that have not submitted a notification in accordance with the provisions of subparagraph (b) above.

4. Except in the case of Annex III, the proposal, adoption and entry into force of amendments to annexes to this Convention shall be subject to the same procedures as for the proposal, adoption and entry into force of additional annexes to the Convention.

5. The following procedure shall apply to the proposal, adoption and entry into force of amendments to Annex III:

(a) amendments to Annex III shall be proposed and adopted according to the procedure laid down in Articles 5 to 9 and paragraph 2 of Article 21;

(b) the Conference of the Parties shall take its decisions on adoption by consensus;

(c) a decision to amend Annex III shall forthwith be communicated to the Parties by the Depositary. The amendment shall enter into force for all Parties on a date to be specified in the decision.

6. If an additional annex or an amendment to an annex is related to an amendment to this Convention, the additional annex or amendment shall not enter into force until such time as the amendment to the Convention enters into force.

Article 23

Voting

1. Each Party to this Convention shall have one vote, except as provided for in paragraph 2 below.

2. A regional economic integration organization, on matters within its competence, shall exercise its right to vote with a number of votes equal to the number of its Member States that are Parties to this Convention. Such an organization shall not exercise its right to vote if any of its Member States exercises its right to vote, and vice versa.

3. For the purposes of this Convention, 'Parties present and voting' means Parties present and casting an affirmative or negative vote.

Article 24

Signature

This Convention shall be open for signature at Rotterdam by all States and regional economic integration organizations on

11 September 1998, and at United Nations Headquarters in New York from 12 September 1998 to 10 September 1999.

Article 25

Ratification, acceptance, approval or accession

1. This Convention shall be subject to ratification, acceptance or approval by States and by regional economic integration organizations. It shall be open for accession by States and by regional economic integration organizations from the day after the date on which the Convention is closed for signature. Instruments of ratification, acceptance, approval or accession shall be deposited with the Depositary.

2. Any regional economic integration organization that becomes a Party to this Convention without any of its Member States being a Party shall be bound by all the obligations under the Convention. In the case of such organizations, one or more of whose Member States is a Party to this Convention, the organization and its Member States shall decide on their respective responsibilities for the performance of their obligations under the Convention. In such cases, the organization and the Member States shall not be entitled to exercise rights under the Convention concurrently.

3. In its instrument of ratification, acceptance, approval or accession, a regional economic integration organization shall declare the extent of its competence in respect of the matters governed by this Convention. Any such organization shall also inform the Depositary, who shall in turn inform the Parties, of any relevant modification in the extent of its competence.

Article 26

Entry into force

1. This Convention shall enter into force on the ninetieth day after the date of deposit of the fiftieth instrument of ratification, acceptance, approval or accession.

2. For each State or regional economic integration organization that ratifies, accepts or approves this Convention or accedes thereto after the deposit of the fiftieth instrument of ratification, acceptance, approval or accession, the Convention shall enter into force on the ninetieth day after the date of deposit by such State or regional economic integration organization of its instrument of ratification, acceptance, approval or accession.

3. For the purpose of paragraphs 1 and 2, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by Member States of that organization.

*Article 27***Reservations**

No reservations may be made to this Convention.

*Article 28***Withdrawal**

1. At any time after three years from the date on which this Convention has entered into force for a Party, that Party may withdraw from the Convention by giving written notification to the Depositary.

2. Any such withdrawal shall take effect upon expiry of one year from the date of receipt by the Depositary of the notification of withdrawal, or on such later date as may be specified in the notification of withdrawal.

*Article 29***Depositary**

The Secretary-General of the United Nations shall be the Depositary of this Convention.

*Article 30***Authentic texts**

The original of this Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

In witness whereof the undersigned, being duly authorized to that effect, have signed this Convention.

Done at Rotterdam on this tenth day of September, one thousand nine hundred and ninety-eight.

*Annex I***Information requirements for notifications made pursuant to Article 5**

Notifications shall include:

1. Properties, identification and uses

- (a) Common name;
- (b) chemical name according to an internationally recognized nomenclature (for example, International Union of Pure and Applied Chemistry (IUPAC)), where such nomenclature exists;
- (c) trade names and names of preparations;
- (d) code numbers: Chemicals Abstract Service (CAS) number, Harmonized System customs code and other numbers;
- (e) information on hazard classification, where the chemical is subject to classification requirements;
- (f) use or uses of the chemical;
- (g) physico-chemical, toxicological and ecotoxicological properties.

2. Final regulatory action

- (a) Information specific to the final regulatory action:
 - (i) summary of the final regulatory action;
 - (ii) reference to the regulatory document;
 - (iii) date of entry into force of the final regulatory action;
 - (iv) indication of whether the final regulatory action was taken on the basis of a risk or hazard evaluation and, if so, information on such evaluation, covering a reference to the relevant documentation;

- (v) reasons for the final regulatory action relevant to human health, including the health of consumers and workers, or the environment;
 - (vi) summary of the hazards and risks presented by the chemical to human health, including the health of consumers and workers, or the environment and the expected effect of the final regulatory action.
- (b) Category or categories where the final regulatory action has been taken, and for each category:
- (i) use or uses prohibited by the final regulatory action;
 - (ii) use or uses that remain allowed;
 - (iii) estimation, where available, of quantities of the chemical produced, imported, exported and used.
- (c) An indication, to the extent possible, of the likely relevance of the final regulatory action to other States and regions.
- (d) Other relevant information that may cover:
- (i) assessment of socio-economic effects of the final regulatory action;
 - (ii) information on alternatives and their relative risks, where available, such as:
 - integrated pest management strategies;
 - industrial practices and processes, including cleaner technology.

Annex II

Criteria for listing banned or severely restricted chemicals in Annex III

In reviewing the notifications forwarded by the Secretariat pursuant to paragraph 5 of Article 5, the Chemical Review Committee shall:

- (a) confirm that the final regulatory action has been taken in order to protect human health or the environment;
- (b) establish that the final regulatory action has been taken as a consequence of a risk evaluation. This evaluation shall be based on a review of scientific data in the context of the conditions prevailing in the Party in question. For this purpose, the documentation provided shall demonstrate that:
 - (i) data have been generated according to scientifically recognized methods;
 - (ii) data reviews have been performed and documented according to generally recognized scientific principles and procedures;
 - (iii) the final regulatory action was based on a risk evaluation involving prevailing conditions within the Party taking the action;
- (c) consider whether the final regulatory action provides a sufficiently broad basis to merit listing of the chemical in Annex III, by taking into account:
 - (i) whether the final regulatory action led, or would be expected to lead, to a significant decrease in the quantity of the chemical used or the number of its uses;
 - (ii) whether the final regulatory action led to an actual reduction of risk or would be expected to result in a significant reduction of risk for human health or the environment of the Party that submitted the notification;

- (iii) whether the considerations that led to the final regulatory action being taken are applicable only in a limited geographical area or in other limited circumstances;
- (iv) whether there is evidence of ongoing international trade in the chemical;
- (d) take into account that intentional misuse is not in itself an adequate reason to list a chemical in Annex III.

Annex III

Chemicals subject to the Prior Informed Consent Procedure

Chemical	Relevant CAS number(s)	Category
2,4,5-T	93-76-5	Pesticide
Aldrin	309-00-2	Pesticide
Captafol	2425-06-1	Pesticide
Chlordane	57-74-9	Pesticide
Chlordimeform	6164-98-3	Pesticide
Chlorobenzilate	510-15-6	Pesticide
DDT	50-29-3	Pesticide
Dieldrin	60-57-1	Pesticide
Dinoseb and dinoseb salts	88-85-7	Pesticide
1,2-dibromoethane (EDB)	106-93-4	Pesticide
Fluoroacetamide	640-19-7	Pesticide
HCH (mixed isomers)	608-73-1	Pesticide
Heptachlor	76-44-8	Pesticide
Hexachlorobenzene	118-74-1	Pesticide
Lindane	58-89-9	Pesticide
Mercury compounds, including inorganic mercury compounds, alkyl mercury compounds and alkyloxyalkyl and aryl mercury compounds		Pesticide
Pentachlorophenol	87-86-5	Pesticide
Monocrotophos (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l)	6923-22-4	Severely hazardous pesticide formulation

Chemical	Relevant CAS number(s)	Category
Methamidophos (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l)	10265-92-6	Severely hazardous pesticide formulation
Phosphamidon (Soluble liquid formulations of the substance that exceed 1 000 g active ingredient/l)	13171-21-6 (mixture, (E)&(Z) isomers) 23783-98-4 ((Z)-isomer) 297-99-4 ((E)-isomer)	Severely hazardous pesticide formulation
Methyl-parathion (emulsifiable concentrates (EC) with 19,5 %, 40 %, 50 %, 60 % active ingredient and dusts containing 1,5 %, 2 % and 3 % active ingredient)	298-00-0	Severely hazardous pesticide formulation
Parathion (all formulations — aerosols, dustable powder (DP), emulsifiable concentrate (EC), granules (GR) and wettable powders (WP) of this substance are included, except capsule suspensions (CS))	56-38-2	Severely hazardous pesticide formulation
Crocidolite	12001-28-4	Industrial
Polybrominated biphenyls (PBB)	36355-01-8 (hexa-) 27858-07-7 (octa-) 13654-09-6 (deca-)	Industrial
Polychlorinated biphenyls (PCB)	1336-36-3	Industrial
Polychlorinated terphenyls (PCT)	61788-33-8	Industrial
Tris (2,3-dibromopropyl) phosphate	126-72-7	Industrial

Annex IV

Information and criteria for listing severely hazardous pesticide formulations in Annex III*Part 1: Documentation required from a proposing Party*

Proposals submitted pursuant to paragraph 1 of Article 6 shall include adequate documentation containing the following information:

- (a) name of the hazardous pesticide formulation;
- (b) name of the active ingredient or ingredients in the formulation;
- (c) relative amount of each active ingredient in the formulation;
- (d) type of formulation;
- (e) trade names and names of the producers, if available;
- (f) common and recognized patterns of use of the formulation within the proposing Party;
- (g) a clear description of incidents related to the problem, including the adverse effects and the way in which the formulation was used;
- (h) any regulatory, administrative or other measure taken, or intended to be taken, by the proposing Party in response to such incidents.

Part 2: Information to be collected by the Secretariat

Pursuant to paragraph 3 of Article 6, the Secretariat shall collect relevant information relating to the formulation, including:

- (a) the physico-chemical, toxicological and ecotoxicological properties of the formulation;
- (b) the existence of handling or applicator restrictions in other States;
- (c) information on incidents related to the formulation in other States;
- (d) information submitted by other Parties, international organizations, non-governmental organizations or other relevant sources, whether national or international;
- (e) risk and/or hazard evaluations, where available;
- (f) indications, if available, of the extent of use of the formulation, such as the number of registrations or production or sales quantity;
- (g) other formulations of the pesticide in question, and incidents, if any, relating to these formulations;
- (h) alternative pest-control practices;
- (i) other information which the Chemical Review Committee may identify as relevant.

Part 3: Criteria for listing severely hazardous pesticide formulations in Annex III

In reviewing the proposals forwarded by the Secretariat pursuant to paragraph 5 of Article 6, the Chemical Review Committee shall take into account:

- (a) the reliability of the evidence indicating that use of the formulation, in accordance with common or recognized practices within the proposing Party, resulted in the reported incidents;
 - (b) the relevance of such incidents to other States with similar climate, conditions and patterns of use of the formulation;
 - (c) the existence of handling or applicator restrictions involving technology or techniques that may not be reasonably or widely applied in States lacking the necessary infrastructure;
 - (d) the significance of reported effects in relation to the quantity of the formulation used;
 - (e) that intentional misuse is not in itself an adequate reason to list a formulation in Annex III.
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*Annex V***Information requirements for export notification**

1. Export notifications shall contain the following information:
 - (a) name and address of the relevant designated national authorities of the exporting Party and the importing Party;
 - (b) expected date of export to the importing Party;
 - (c) name of the banned or severely restricted chemical and a summary of the information specified in Annex I that is to be provided to the Secretariat in accordance with Article 5. Where more than one such chemical is included in a mixture or preparation, such information shall be provided for each chemical;
 - (d) a statement indicating, if known, the foreseen category of the chemical and its foreseen use within that category in the importing Party;
 - (e) information on precautionary measures to reduce exposure to, and emission of, the chemical;
 - (f) in the case of a mixture or a preparation, the concentration of the banned or severely restricted chemical or chemicals in question;
 - (g) name and address of the importer;
 - (h) any additional information that is readily available to the relevant designated national authority of the exporting Party that would be of assistance to the designated national authority of the importing Party.
 2. In addition to the information referred to in paragraph 1, the exporting Party shall provide such further information specified in Annex I as may be requested by the importing Party.
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Proposal for a Council Regulation concerning the export and import of dangerous chemicals

(2002/C 126 E/06)

(Text with EEA relevance)

COM(2001) 803 final — 2002/0026(ACC)

(Submitted by the Commission on 24 January 2002)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 133 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

Having regard to the opinion of the Economic and Social Committee,

Whereas,

(1) Council Regulation (EEC) No 2455/92 of 23 July 1992 concerning the export and import of certain dangerous chemicals⁽¹⁾ establishes *inter alia* a common system of notification and information for exports to third countries of chemicals which are banned or severely restricted in the Community on account of their effects on human health and the environment. The Regulation applies on a mandatory basis the international 'prior informed consent' (PIC) procedure under the non-binding provisions of the London Guidelines for the Exchange of Information on Chemicals in International Trade (London Guidelines) of the United Nations Environment Programme (UNEP), as amended in 1989, and under the International Code of Conduct on the Distribution and Use of Pesticides, as amended in 1990, of the Food and Agriculture Organisation (FAO).

(2) On 11 September 1998, the Community signed the Rotterdam Convention on the prior informed consent procedure for certain hazardous chemicals and pesticides in international trade (the PIC Convention). At the same time, a Resolution on interim arrangements laid down in the Final Act of the Diplomatic Conference was adopted, setting up an interim PIC procedure based on the Convention text.

(3) It is appropriate that the Community should act to implement the rules of the Convention, including, until

such time as it enters into force, the interim PIC procedure, without in any way weakening the level of protection afforded to the environment and the general public of importing countries under Regulation (EEC) No 2455/92.

(4) With the same objective in mind, it is also necessary and appropriate to go further than the provisions of the Convention in certain respects. Article 15(4) of the Convention allows Parties the right to take action that is more stringently protective of human health and the environment than that called for in the Convention, provided that such action is consistent with the provisions of the Convention and is in accordance with international law.

(5) As regards the participation of the Community in the Convention, it is essential to have a single contact point for Community interaction with the Secretariat and other Parties to the Convention as well as with other countries. The Commission should act as this contact point.

(6) Exports of dangerous chemicals that are banned or severely restricted within the Community should continue to be subject to a common export notification procedure. Accordingly, dangerous chemicals, whether in the form of a substance by itself or in a preparation, which have been banned or severely restricted by the Community as plant protection products, as other forms of pesticides, or as industrial chemicals for use by professional users or by the public, should be subject to similar export notification rules to those applicable to such chemicals when they are banned or severely restricted within one or more of the use categories laid down in the Convention, namely as pesticides or chemicals for industrial use. In addition, chemicals subject to the international PIC procedure should also be subject to the same rules. This export notification procedure should apply to Community exports to all third countries, whether or not they are Parties to the Convention or participate in its provisions. Member States should be permitted to charge administrative fees, in order to cover their costs in carrying out this procedure.

(7) Exporters and importers should be obliged to provide information about the quantities of chemicals in international trade covered by this Regulation in order that the impact and effectiveness of the arrangements laid down therein can be monitored and assessed.

⁽¹⁾ OJ L 251, 29.8.1992, p. 13. Regulation as last amended by Commission Regulation (EC) No 2247/98 (OJ L 282, 20.10.1998, p. 12).

- (8) Community notifications to the Secretariat of the Convention of Community regulatory actions banning or severely restricting chemicals, with a view to their inclusion in the international PIC procedure, should be submitted by the Commission and should relate to those cases meeting the criteria laid down in the Convention in this regard. Additional information to support such notifications should be sought where necessary.
- (9) In cases where Community regulatory actions do not qualify for notification because they do not meet the criteria, information about the actions should nevertheless be conveyed to the Convention Secretariat and other Parties to the Convention in the interests of information exchange.
- (10) It is also necessary to ensure that the Community takes decisions with regard to the import into the Community of chemicals that are subject to the international PIC procedure. These decisions should be based on applicable Community legislation. Where justified, modifications of Community legislation should be prepared.
- (11) Arrangements are needed to ensure that Member States and exporters are aware of the decisions of importing countries as regards chemicals that are subject to the international PIC procedure, and that exporters comply with these decisions. Furthermore, in order to prevent undesired exports, for example because of failures by importing countries to provide such import decisions or to react to export notifications, no chemicals banned or severely restricted within the Community that meet the Convention criteria or that are covered under the international PIC procedure should be exported without the explicit consent of the importing country concerned, whether or not that country is a party to the Convention.
- (12) It is also important that all exported chemicals have an adequate shelf-life so that they may be used effectively and safely. In particular as regards pesticides, and especially those exported to developing countries, it is essential that information about appropriate storage conditions is provided and that suitable packaging and sizes of containers are used to avoid creating obsolete stocks.
- (13) Articles containing chemicals are not within the scope of the Convention. Nevertheless, it seems appropriate that articles containing chemicals that could be released under conditions of use or disposal and that are banned or severely restricted in the Community within one or more of the use categories laid down in the Convention or are subject to the international PIC procedure should also be subject to the export notification rules.
- Furthermore, certain chemicals and articles containing specific chemicals falling outside the scope of the Convention but giving rise to particular concern should not be exported at all. Decisions as to which chemicals should be subject to such a strict control should be decided by the Council by a qualified majority.
- (14) In accordance with the Convention, information on transit movements of chemicals subject to the international PIC procedure should be provided to Parties to the Convention requesting such information.
- (15) Community rules on packaging and labelling and other safety information should apply to all dangerous chemicals when intended for export to all other countries unless these provisions would conflict with any specific requirements of those countries taking into account relevant international standards.
- (16) In order to ensure effective control and enforcement of the rules, the customs services of the Member States have a key role to play and should act in a targeted and co-ordinated way. Member States should provide for appropriate sanctions in the event of infringements.
- (17) Information exchange, shared responsibility and co-operative efforts between the Community and its Member States and third countries should be promoted with a view to ensuring a sound management of chemicals, whether or not those third countries are Parties to the Convention. In particular, technical assistance to developing countries and countries with economies in transition should be provided directly by the Commission and the Member States, or indirectly via support for projects by non-governmental organisations (NGOs), especially assistance seeking to enable those countries to implement the Convention.
- (18) There should be regular monitoring of the operation of the procedures if they are to be effective. To this end, Member States should regularly submit reports to the Commission, which will in turn regularly report to the European Parliament and the Council.
- (19) Since the measures necessary for the implementation of this Regulation are measures of general scope within the meaning of Article 2 of Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission⁽¹⁾, they should be adopted by use of the advisory procedure provided for in Article 3 or the regulatory procedure provided for in Article 5 of that Decision, as appropriate.
- (20) In the light of the above, Regulation (EEC) No 2455/92 should be repealed and replaced,

⁽¹⁾ OJ L 184, 17.7.1999, p. 23.

HAS ADOPTED THIS REGULATION:

Article 1

Objectives

1. The objectives of this Regulation are:

- (a) to implement the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade;
- (b) to promote shared responsibility and co-operative efforts in the international trade of hazardous chemicals in order to protect human health and the environment from potential harm; and
- (c) to contribute to their environmentally sound use.

They shall be achieved by facilitating information exchange about the characteristics of such chemicals, by providing for a decision-making process within the Community on their import and export and by disseminating decisions to Parties and other countries as appropriate.

2. The objective of this Regulation is also to ensure that the provisions of Council Directive 67/548/EEC⁽¹⁾, and Directive 1999/45/EC of the European Parliament and the Council⁽²⁾ regarding the classification, packaging and labelling of chemicals dangerous to man or the environment when they are placed on the market in the European Community shall also apply to all such chemicals when they are exported from the Member States to other parties or other countries, unless these provisions would conflict with any specific requirements of those parties or other countries.

Article 2

Scope

1. This Regulation applies to:

- (a) certain hazardous chemicals that are subject to the prior informed consent procedure under the Rotterdam Convention;
- (b) certain hazardous chemicals that are banned or severely restricted within the Community; and
- (c) all chemicals when exported in so far as their classification, packaging and labelling are concerned.

⁽¹⁾ OJ L 196, 16.8.1967, p. 1.

⁽²⁾ OJ L 200, 30.7.1999, p. 1.

2. This Regulation shall not apply to:

- (a) narcotic drugs and psychotropic substances covered by Council Regulation (EEC) No 3677/90⁽³⁾;
- (b) radioactive materials and substances covered by Council Directive 96/29/Euratom⁽⁴⁾;
- (c) wastes covered by Council Directives 75/442/EEC⁽⁵⁾ and 91/689/EEC⁽⁶⁾;
- (d) chemical weapons covered by Council Regulation (EC) No 1334/2000⁽⁷⁾;
- (e) food and food additives covered by Council Directive 89/397/EEC⁽⁸⁾;
- (f) feedingstuffs covered by Council Directive 96/25/EC⁽⁹⁾;
- (g) genetically modified organisms as covered by Directive 2001/18/EC of the European Parliament and of the Council⁽¹⁰⁾;
- (h) proprietary medicinal products and veterinary medicinal products covered by Directive 2001/83/EC of the European Parliament and of the Council⁽¹¹⁾ and Directive 2001/82/EC of the European Parliament and of the Council⁽¹²⁾, except disinfectants, insecticides and parasiticides;
- (i) chemicals in quantities not likely to affect health or the environment, provided that they are imported for the purpose of research or analysis.

Article 3

Definitions

For the purposes of this Regulation, the following definitions shall apply:

- 1. 'chemical' means a substance as defined in Directive 67/548/EEC, whether by itself or in a preparation and whether manufactured or obtained from nature, but does not include living organisms. It consists of two categories: pesticides, including severely hazardous pesticide formulations; and industrial chemicals;

⁽³⁾ OJ L 357, 20.12.1990, p. 1.

⁽⁴⁾ OJ L 159, 29.6.1996, p. 1.

⁽⁵⁾ OJ L 194, 25.7.1975, p. 39.

⁽⁶⁾ OJ L 377, 31.12.1991, p. 20.

⁽⁷⁾ OJ L 159, 30.6.2000, p. 1.

⁽⁸⁾ OJ L 186, 30.6.1989, p. 23.

⁽⁹⁾ OJ L 125, 23.5.1996, p. 35.

⁽¹⁰⁾ OJ L 106, 17.4.2001, p. 1.

⁽¹¹⁾ OJ L 311, 28.11.2001, p. 67.

⁽¹²⁾ OJ L 311, 28.11.2001, p. 1.

2. 'preparation' means a mixture or a solution composed of two or more substances as defined in Directive 1999/45/EC if the preparation is subject to compulsory labelling under Community legislation, on account of the presence of any of those substances;
3. 'article' means a finished product containing or including a chemical which has been banned or severely restricted by Community legislation for use in that product;
4. 'pesticides' means pesticides in either of the following two sub-categories:
 - (a) pesticides used as plant protection products as covered by Council Directive 91/414/EEC ⁽¹⁾;
 - (b) other pesticides, and in particular biocidal products under Directive 98/8/EC of the European Parliament and the Council ⁽²⁾;
5. 'industrial chemicals' means chemicals in either of the following two sub-categories:
 - (a) chemicals for use by professionals;
 - (b) chemicals for use by the public;
6. 'chemical subject to export notification' means any chemical that is banned or severely restricted within the Community within one or more categories or sub-categories, and any chemical that is subject to the PIC procedure listed in Part 1 of Annex I;
7. 'chemical qualifying for PIC notification' means any chemical that is banned or severely restricted within the Community within one or more categories. These chemicals are listed in Part 2 of Annex I;
8. 'chemical subject to the PIC procedure' means any chemical listed in Annex III to the Convention or, before its entry into force under the interim PIC procedure. These chemicals are listed in Part 3 of Annex I to this Regulation;
9. 'banned chemical' means:
 - (a) a chemical all uses of which within one or more categories or sub-categories have been prohibited by final regulatory action by the Community, in order to protect human health or the environment; or
 - (b) a chemical that has been refused approval for first-time use or has been withdrawn by industry either from the Community market or from further consideration in a notification, registration or approval process and where there is evidence that the chemical raises concerns for human health or the environment;
10. 'severely restricted chemical' means:
 - (a) a chemical virtually all use of which within one or more categories or sub-categories has been prohibited by final regulatory action in order to protect human health or the environment, but for which certain specific uses remain allowed; or
 - (b) a chemical that has, for virtually all use, been refused for approval or been withdrawn by industry either from the Community market or from further consideration in a notification, registration or approval process, and where there is evidence that the chemical raises concern for human health or the environment;
11. 'final regulatory action' means a legislative act, the purpose of which is to ban or severely restrict a chemical;
12. 'convention' means the Rotterdam Convention of 10 September 1998 on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade;
13. 'PIC procedure' means the Prior Informed Consent Procedure established by the Convention;
14. 'severely hazardous pesticide formulation' means a chemical formulated for pesticidal use that produces severe health or environmental effects observable within a short period of time after single or multiple exposure, under conditions of use;
15. 'export' means:
 - (a) the permanent or temporary export of a chemical meeting the conditions of Article 23(2) of the Treaty;
 - (b) the re-export of a chemical not meeting the conditions referred to in (a) which are placed under a customs procedure other than transit procedure;

⁽¹⁾ OJ L 230, 19.8.1991, p. 1.

⁽²⁾ OJ L 123, 24.4.1998, p. 1.

16. 'import' means the physical introduction into the customs territory of the Community of a chemical which is placed under a customs procedure other than transit procedure;
17. 'exporter' means any natural or legal person on whose behalf an export declaration is made, that is to say the person who, at the time when the declaration is accepted, holds the contract with the consignee in a party or other country and has the power for determining the sending of the chemical out of the customs territory of the Community. If no export contract has been concluded or if the holder of the contract does not act on its own behalf, the power for determining the sending of the chemical out of the customs territory of the Community shall be decisive;
18. 'importer' means any natural or legal person who at the time of import into the customs territory of the Community is the consignee for the chemical;
19. 'Party to the Convention' means a State or a Regional economic integration organisation that has consented to be bound by the Convention and for which the Convention is in force;
20. 'Party' means:
- (a) a party to the Convention;
 - (b) any country which has not ratified the Convention but which participates in the PIC procedure;
 - (c) before the entry into force of the Convention, any country participating in the interim PIC procedure established by the Resolution on interim arrangements adopted in Rotterdam on 11 September 1998;
21. 'other country' means any country that is not a Party as defined in point 20;
22. 'the Conference of the Parties' means the body established by Article 18 of the Convention to perform certain functions linked to implementation of the Convention;
23. 'Chemical Review Committee' means the subsidiary body established by the Conference of the Parties in accordance with Article 18(6) of the Convention or, before its entry into force, the interim Chemical Review Committee established by the resolution on interim arrangements;
24. 'the Secretariat' means the Secretariat of the Convention or, before its entry into force, the interim Secretariat established by the resolution on interim arrangements;

25. 'Decision Guidance Document' means the technical document prepared by the Chemical Review Committee for chemicals subject to the PIC procedure.

Article 4

Designated National Authorities

Each Member State shall designate the authority or authorities, hereinafter referred to as the 'Designated National Authority' or 'Designated National Authorities', to act for the performance of the administrative functions required by this Regulation.

It shall inform the Commission of such designation at the latest three months after the entry into force of this Regulation.

Article 5

Participation of the Community in the Convention

The Commission shall act on behalf of all the Designated National Authorities as a unique and common designated authority in the performance of the functions required by the Convention. It shall work in close co-operation with the Designated National Authorities of the Member States.

In particular, the Commission shall co-ordinate the Community input on all issues related to the Convention, the preparation of the Conference of the Parties, the Chemical Review Committee and other subsidiary bodies. A network of Member State rapporteurs shall be established, as appropriate, to deal with the preparation of technical documents such as Decision Guidance Documents.

The Commission and the Member States shall take the necessary initiatives to ensure appropriate representation of the Community in the different bodies implementing the Convention. In particular, they shall seek to ensure that the Commission receives a seat in the subsidiary bodies established by the Convention.

Article 6

Chemicals subject to export notification, qualifying for PIC notification, and subject to the PIC procedure

1. The chemicals covered by the provisions of this Regulation relating to export notification, PIC notification and the PIC procedure respectively shall be as listed in Annex I.

2. Chemicals in Annex I shall be assignable to one or more of three categories, set out respectively as Parts 1, 2 and 3 of that Annex.

The chemicals listed in Part 1 shall be subject to export notification as laid down in Article 7, with detailed information on the identity of the substance, on the use category and/or sub-category subject to restriction, the type of restriction and, where appropriate, additional information, in particular on exemptions to requirements for export notification.

The chemicals listed in Part 2 shall, in addition to being subject to the export notification procedure under Article 7, qualify for the PIC notification procedure laid down in Article 10, with detailed information on the identity of the substance and on the use category.

The chemicals listed in Part 3 shall be subject to the PIC procedure with the use category and, where appropriate, additional information, in particular on any requirements for export notification.

3. The lists shall be made available to the public via the internet.

Article 7

Export notifications forwarded to parties and other countries

1. When an exporter is due to export a chemical listed in Part 1 of Annex I from the Community to a party or other country for the first time following the date as of which it becomes subject to the provisions of this Regulation, the exporter shall notify the Designated National Authority of the Member State in which he is established, no later than 30 days before the export of the chemical is due to take place. Thereafter the exporter shall notify the first export of the chemical each calendar year to the Designated National Authority 8 days before the export of the chemical takes place. The notification shall comply with the requirements set out in Annex III.

The Designated National Authority shall check compliance of the information with Annex III and promptly forward the notification received from the exporter to the Commission.

The Commission shall take the necessary measures to ensure that the appropriate authorities of the importing party or other country receive notification at least 15 days prior to the first intended export of the chemical and thereafter before the first export of the chemical in any subsequent calendar year. This shall apply regardless of the expected use of the chemical in the importing party or other country.

Each export notification shall be registered in a database at the Commission and an updated list of the chemicals concerned and the importing parties and other countries for each calendar year shall be kept available to the public, and distributed to the Designated National Authorities of the Member States as appropriate.

2. If the Commission does not receive from the importing party or other country an acknowledgement of receipt of the first export notification made after the chemical is included in the Part 1 of Annex I within 30 days of the dispatch of the notification, it shall submit a second notification. The Commission shall make reasonable efforts to ensure that the appropriate authority in the importing party or other country receives the second notification.

3. A new export notification according to paragraph 1 shall be given for exports which take place subsequent to changes to Community legislation concerning the marketing, use or labelling of substances in question or whenever the composition of the preparation in question changes so that the labelling of such preparation is altered. The new notification shall comply with the requirements set out in Annex III and shall indicate that it is a revision of a previous notification.

4. Where the export of a chemical relates to an emergency situation in which any delay may endanger public health or the environment in the importing party or other country, the provisions referred to above may be waived wholly or partly at the discretion of the Designated National Authority of the exporting Member State, in consultation with the Commission.

5. The obligations set out in paragraphs 1, 2 and 3 shall cease when:

- (a) the chemical has become a chemical subject to the PIC procedure; and
- (b) the importing country being a party to the Convention has provided a response in accordance with Article 10(2) of the Convention to the Secretariat whether to consent or not to consent to importation of the chemical; and
- (c) the Commission has received this information from the Secretariat and has forwarded it to Member States.

That rule shall not apply where the importing country being party to the Convention explicitly requires continued export notification by exporting Parties, for example through its import decision or otherwise.

The obligations set out in paragraphs 1, 2 and 3 shall also cease when:

- (a) the appropriate authority of the importing party or other country has waived the requirement to be notified before the export of the chemical; and
- (b) the Commission has received the information from the Secretariat or from the appropriate authority of the importing party or other country and has forwarded it to Member States and made it available on the internet.

6. The Commission, the relevant Designated National Authorities of the Member States and the exporters shall provide importing parties and other countries with available additional information on the exported chemicals, when requested.

7. Member States may establish systems obliging the exporter to pay an administrative fee for each export notification made, corresponding to their costs in carrying out the procedures associated with the provisions of this Article.

Article 8

Export notifications received from parties

1. Export notifications received by the Commission from the Designated National Authority of a party concerning the export to the Community of a chemical the manufacture, use, handling, consumption, transport and/or sale of which is subject to prohibition or severe restriction under that party's legislation shall be made available on internet through the database maintained by the Commission.

The Commission shall acknowledge receipt of the first export notification received for each chemical from each party.

Upon request, the Designated National Authority of the Member State shall receive a copy of any notification received together with all available information.

2. Should the Designated National Authorities of the Member States receive any export notifications either directly or indirectly from the Designated National Authorities of parties, they shall forthwith forward these notifications to the Commission together with all available information.

Article 9

Information on trade in chemicals

1. Each exporter of a chemical listed in Annex I shall, during the first quarter each year, inform the Designated National Authority of its Member State on the quantity of the chemical (as a substance and as contained in preparations) shipped to each party or other country during the preceding year. This information shall be given together with a list of the names and addresses of each importer to which shipment took place during the same time period.

2. Each importer within the Community shall provide the same information for the quantities imported into Community.

3. Upon request from the Commission or the Designated National Authority, the exporter or importer shall provide any additional information related to chemicals that is necessary to implement this Regulation.

4. Each Member State shall provide the Commission with aggregated information in accordance with Annex IV each year. The Commission shall summarise this information at Community level and shall make the non-confidential information publicly available on its database/internet.

Article 10

Participation in the notification of banned or severely restricted chemicals under the Convention

1. Unless it has already done so prior to the entry into force of this Regulation, the Commission shall notify the Secretariat in writing of the chemicals that qualify for PIC notification.

2. As and when further chemicals qualify for PIC notification and are added to Part 2 of Annex I, the Commission shall notify the Secretariat. The notification shall be submitted as soon as possible after adoption of the relevant final Community regulatory action banning or severely restricting the chemical, and no later than 90 days after the date on which the final regulatory action has to be applied.

It shall provide all relevant information as required in Annex II.

3. In determining priorities for notifications, the Commission shall take into account whether the chemical is already listed in Part 3 of Annex I, to what extent the information requirements laid down in Annex II can be met, and the severity of the risks presented by the chemical, in particular for developing countries.

When a chemical qualifies for PIC notification, but the information is insufficient to meet the requirements of Annex II, identified exporters and/or importers shall, upon request by the Commission, provide all relevant information available to them, including that from other national or international chemical control programmes.

4. The Commission shall notify the Secretariat in writing when a final regulatory action notified under paragraphs 1 or 2 is modified as soon as possible after adoption of the new final regulatory action, and no later than 60 days after the date on which the new final regulatory action has to be applied.

It shall provide all relevant information that was not available at the time when the initial notification was made under paragraphs 1 or 2 respectively.

5. Upon request from any party or from the Secretariat, the Commission shall provide additional information on the chemical or on the regulatory action, as far as practicable. The Member States shall, upon request, assist the Commission as necessary in compiling the information.

6. The Commission shall forward forthwith to the Member States information that it receives from the Secretariat regarding chemicals notified as banned or severely restricted by other parties.

The Commission shall evaluate, in close co-operation with the Member States, the need to propose measures at Community level in order to prevent any unacceptable risks for human health and the environment within the Community.

7. Member States shall not submit notifications to the Secretariat regarding final regulatory actions.

Article 11

Information to be transmitted to the Secretariat about banned or severely restricted chemicals not qualifying for PIC notification

When a chemical is listed only in the Part 1 of Annex I, the Commission shall provide the Secretariat with information about the relevant regulatory actions that lead to the chemical's inclusion, so that this information can be disseminated to other parties to the Convention as appropriate.

Article 12

Obligations in relation to imports of chemicals

1. The Commission shall forward forthwith to the Member States Decision Guidance Documents which it receives from the Secretariat. The Commission shall take an import decision, in the form of a final or interim import response on behalf of the Community, concerning the future importation into the Community of the chemical concerned: it shall do so in accordance with existing Community legislation and the procedure referred to in Article 24(2). It shall then communicate the decision to the Secretariat as soon as possible, and no later than nine months after the date of dispatch of the Decision Guidance Document by the Secretariat.

If any chemical is subject to additional or modified restrictions under Community legislation, the Commission shall revise the import decision in accordance with the same procedure and communicate it to the Secretariat.

2. An import decision under paragraph 1 shall relate to the category or categories specified for the chemical in the Decision Guidance Document.

3. When communicating the import decision to the Secretariat, the Commission shall provide a description of the legislative or administrative measure upon which it is based.

4. Each Designated National Authority within the Community shall make the import decisions under paragraph 1 available to those concerned within its competence, in accordance with its legislative or administrative measures.

5. Where appropriate, the Commission shall evaluate, in close co-operation with the Member States, the need to

propose measures at Community level in order to prevent any unacceptable risks for human health and the environment within the Community, taking into account the information contained in the Decision Guidance Document.

Article 13

Obligations in relation to exports of chemicals other than export notification requirements

1. The Commission shall forward forthwith to the Member States and European industry associations, information which it receives, whether in the form of circulars or otherwise, from the Secretariat regarding chemicals subject to the PIC procedure and the decisions of importing Parties regarding import conditions on these chemicals. It shall also forward forthwith to the Member States information on any cases of failure to transmit a response. The Commission shall keep all information regarding import decisions available in its database, which will be publicly available on the internet, and provide anyone with the information upon request.

2. For each chemical listed in Annex I the Commission shall assign a classification in the European Community's Combined Nomenclature. These classifications shall be revised as necessary in the light of any changes effected by the World Customs Organisation to the Harmonised System nomenclature for the chemicals concerned.

3. Each Member State shall communicate the responses forwarded by the Commission under paragraph 1 to those concerned within its jurisdiction.

4. Exporters shall comply with decisions in each import response no later than six months after the Secretariat has first informed the Commission of such response under paragraph 1.

5. The Commission and the Member States shall advise and assist importing parties, upon request and as appropriate, to obtain further information to help them to make a response to the Secretariat concerning importation of a given chemical.

6. No chemicals listed in the Parts 2 or 3 of Annex I shall be exported unless:

(a) explicit consent to the importation has been sought and received by the exporter through his Designated National Authority and the Designated National Authority of the importing party or an appropriate authority in an importing other country; or

(b) in the case of chemicals listed in Part 3 of Annex I, the latest circular issued by the Secretariat pursuant to paragraph 1 indicates that the importing party has given consent to importation.

7. No chemical shall be exported later than six months before the expiry date, when such a date exists or can be inferred from the production date, unless the intrinsic properties of the chemical render this impracticable. In particular, in the case of pesticides exporters shall ensure that the size and packaging of pesticide containers is optimised so as to minimise the risks of creating obsolete stocks.

8. When exporting pesticides, exporters shall ensure that the label contains specific information about storage conditions and storage stability under the climatic conditions of the importing party or other country. In addition, they shall ensure that the exported pesticides comply with the purity specification established by Community legislation.

Article 14

Controls on export of certain chemicals and articles containing chemicals

1. Articles containing chemicals listed in Parts 2 or 3 of Annex I in unreacted form shall be subject to the export notification procedure laid down in Article 7.

2. Chemicals and articles the use of which is prohibited in the Community, as listed in Annex V, shall not be exported.

Article 15

Information on transit movements

1. Parties to the Convention requiring information on transit movements of chemicals subject to the PIC procedure together with the information required for each party to the Convention having expressed such need through the Secretariat shall be as listed in Annex VI.

2. When a chemical listed in Part 3 of Annex I is transported through the territory of a party to the Convention listed in Annex VI, the exporter shall, as far as practicable, provide the Designated National Authority of the Member State in which he is established with the information required by the party to the Convention in accordance with Annex VI 30 days before the first transit takes place and 8 days before each subsequent transit movement.

3. The Designated National Authority of the Member State shall forward to the Commission the information received from

the exporter under paragraph 2 together with any available additional information.

4. The Commission shall forward the information received under paragraph 3 to the Designated National Authorities of Parties to the Convention which requested such information, together with any available additional information, 15 days before first transit movement and prior to any subsequent transit movement.

Article 16

Information to accompany exported chemicals

1. Chemicals that are intended for export shall be subject to the measures on packaging and labelling established in, or pursuant to, Directive 67/548/EEC, Directive 1999/45/EC, Directive 91/414/EEC and Directive 98/8/EC, or any other specific Community legislation. This obligation shall be without prejudice to any specific requirements of the importing party or other country taking into account relevant international standards.

2. Where appropriate, the expiry date and the production date of chemicals referred to in paragraph 1 or listed in Annex I shall be indicated on the label, and if necessary such expiry dates shall be given for different climate zones.

3. A safety data sheet in accordance with Commission Directive 91/155/EEC⁽¹⁾ shall accompany chemicals referred to in paragraph 1, when exported. The exporter shall send such a safety data sheet to each importer.

4. The information on the label and on the safety data sheet shall as far as practicable be given in the official language(s), or in one or more of the principal languages, of the country of destination or of the area of intended use.

Article 17

Obligations of the customs services of the Member States

Each Member State shall designate a limited number of customs offices that shall have the responsibility of controlling the import and export of chemicals listed in Annex I.

The Commission and the Member States shall act in a targeted and co-ordinated way in controlling compliance of exporters with this Regulation.

Each Member State shall, in its regular reports on the operation of procedures pursuant to Article 21(1), include details of the activities of its customs services in this regard.

⁽¹⁾ OJ L 76, 22.3.1991, p. 35.

*Article 18***Penalties**

Member States shall determine the penalties applicable to infringements of the provisions of this Regulation and take all necessary measures to ensure correct implementation of these provisions. The penalties must be effective, proportional and dissuasive. Member States shall notify these measures to the Commission not later than six months after the adoption of this Regulation and shall also notify any further modifications as soon as possible after their adoption.

*Article 19***Information exchange**

1. The Commission and the Member States shall, as appropriate, facilitate the provision of scientific, technical, economic and legal information concerning chemicals subject to this Regulation, including toxicological, ecotoxicological and safety information.

The Commission, with the support of the Member States as necessary, shall, as appropriate, ensure:

- (a) the provision of publicly available information on regulatory actions relevant to the objectives of the Convention; and
- (b) the provision of information to parties and other countries directly or through the Secretariat on those actions which substantially restrict one or more uses of a chemical.

2. The Commission and the Member States shall protect any confidential information received from another party as mutually agreed.

3. As regards the transmission of information under this Regulation, and without prejudice to Council Directive 90/313/EEC⁽¹⁾ concerning freedom of access to information on the environment, the following shall not be regarded as confidential:

- (a) the information in Annex II and Annex III;
- (b) the information contained in safety data sheets referred to in paragraph 3 of Article 16;
- (c) the expiry date of the chemical;
- (d) the production date of the chemical;
- (e) information on precautionary measures, including hazard classification, the nature of the risk and the relevant safety advice; and

- (f) the summary results of the toxicological and ecotoxicological tests.

The Commission and the Member States shall actively participate in the Information Network on capacity building set up by the Intergovernmental Forum on Chemical Safety, by providing information on the projects they are supporting or financing to improve the management of chemicals in developing countries and countries with economies in transition.

A compilation of these activities shall be prepared regularly by the Commission on the basis of the contributions of Member States.

*Article 20***Technical assistance**

The Commission and the Designated National Authorities of the Member States shall, taking into account in particular the needs of developing countries and countries with economies in transition, co-operate in promoting technical assistance, including training, for the development of the infrastructure, the capacity and the expertise necessary to manage chemicals properly throughout their life cycle.

In particular, and with a view to enabling these countries to implement the Convention, technical assistance shall be promoted by providing technical information on chemicals, by promoting the exchange of experts, by giving support for the establishment or maintenance of Designated National Authorities, by providing technical expertise for the identification of hazardous pesticides formulations and for the preparation of notifications to the Secretariat.

The Commission and the Member States shall also consider giving support to non-governmental organisations.

*Article 21***Monitoring and reporting**

1. Member States shall regularly forward to the Commission information on the operation of the procedures provided for in this Regulation, including the customs controls, infringements, penalties, and remedial action.

2. The Commission shall regularly compile a report on the performance of the functions provided for in this Regulation for which it is responsible and shall integrate it in a synthesis report compiling the information provided by the Member States under paragraph 1. A summary of the report, which will be published on the internet, shall be forwarded to the European Parliament and the Council.

⁽¹⁾ OJ L 158, 23.6.1990, p. 56.

3. As regards the information supplied pursuant to paragraphs 1 and 2, the Member States and the Commission shall comply with relevant obligations to protect the confidentiality of data and ownership.

Article 22

Updating annexes

1. The list of chemicals in Annex I shall be reviewed by the Commission at regular intervals, on the basis of developments under Community legislation and under the Convention.

2. In determining whether a final regulatory action under Community legislation constitutes a ban or a severe restriction, the effect of the action shall be assessed at the level of the sub-categories within the categories 'pesticides' and 'industrial chemicals'. If the regulatory action bans or severely restricts a chemical in any one of the sub-categories it shall be included in the Part 1 of Annex I.

In determining whether a final regulatory action under Community legislation constitutes a ban or a severe restriction such that the chemical concerned qualifies for PIC notification under Article 10, the effect of the action shall be assessed at the level of the categories 'pesticides' and 'industrial chemicals'. If the regulatory action bans or severely restricts the use of a chemical within either of the categories it shall also be included in Part 2 of Annex I.

3. The Commission shall take a decision to include chemicals in Annex I, or to modify their entry where appropriate, without undue delay.

4. Inclusion of a chemical in the Parts 1 or 2 of Annex I pursuant to paragraph 2 following regulatory action under Community legislation shall be decided in accordance with the procedure referred to in Article 24(3).

5. All other amendments to Annex I, including modifications to existing entries, and amendments to Annexes II, III, IV and VI, shall be adopted by the procedure referred to in Article 24(2).

Article 23

Technical notes for guidance

The Commission, in accordance with the procedure referred to in Article 24(2), shall draw up technical notes for guidance to facilitate the day-to-day application of this Regulation.

These technical notes shall be published in the 'C' series of the *Official Journal of the European Communities*.

Article 24

Committee

1. The Commission shall be assisted by the committee established by Article 29 of Directive 67/548/EEC.

2. Where reference is made to this paragraph, the advisory procedure laid down in Article 3 of Decision 1999/468/EC shall apply, in compliance with Article 7 thereof.

3. Where reference is made to this paragraph, the regulatory procedure laid down in Article 5 of Decision 1999/468/EC shall apply, in compliance with Article 7 thereof.

The period provided for in Article 5(6) of Decision 1999/468/EC shall be three months.

Article 25

Repeal

Regulation (EEC) No 2455/92 is hereby repealed.

Article 26

Entry into force

This Regulation shall enter into force on 1 January 2003.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

ANNEX I

PART 1: LIST OF CHEMICALS SUBJECT TO EXPORT NOTIFICATION PROCEDURE

(Article 7 of the Regulation)

It should be noted that where chemicals listed in this part of the Annex are subject to the PIC procedure, the export notification obligations set out in paragraphs 1 to 3 of Article 7 of the Regulation shall not apply provided that the conditions laid down in subparagraphs (b) and (c) of paragraph 5 of the same Article have been fulfilled. Such chemicals, which are identified by the symbol # in the list below, are listed again in Part 3 of this Annex for ease of reference.

It should also be noted that where the chemicals listed in this part of the Annex qualify for PIC notification because of the nature of the Community's final regulatory action, these chemicals are also listed in Part 2 of this Annex. Such chemicals are identified by the symbol + in the list below.

Chemical	CAS No	EC No	CN Code	Sub-category (*)	Use limitation (**)	Countries for which no notification is required
1,1,1-Trichloroethane	71-55-6	200-756-3	2903 19 10	i(2)	b	
1,2-Dibromoethane (Ethylene dibromide) #	106-93-4	203-444-5	2903 30 36	p(1)	b	Please refer to PIC circular at www.pic.int/
1,2-Dichloroethane (ethylene dichloride) #	107-06-2	203-458-1	2903 15 00	p(1) i(2)	b b	Please refer to PIC circular at www.pic.int/
2-Naphtylamine and its salts +	91-59-8 and others	202-080-4 and others	2921 45 00	i(1) i(2)	b b	
2,4,5-T #	93-76-5	202-273-3	2918 90 90			Please refer to PIC circular at www.pic.int/
4-Aminobiphenyl and its salts +	92-67-1 and others	202-177-1 and others	2921 49 90	i(1) i(2)	b b	
4-Nitrobiphenyl +	92-92-3	202-204-7	2904 20 00	i(1) i(2)	b b	
Aldrin #	309-00-2	206-215-8	2903 59 90	p(1)	b	Please refer to PIC circular at www.pic.int/
Arsenic compounds				p(2)	sr	
Asbestos Fibres +:						Please refer to PIC circular at www.pic.int/
Crocidolite #	12001-28-4	310-127-6	2524 00	i(1)-i(2)	b-b	
Amosite	12172-73-5		2524 00	i(1)-i(2)	b-b	
Antophyllite	77536-67-5		2524 00	i(1)-i(2)	b-b	
Actinolite	77536-66-4		2524 00	i(1)-i(2)	b-b	
Tremolite	77536-68-6		2524 00	i(1)-i(2)	b-b	
Chrysotile	132207-32-0		2524 00	i(1)-i(2)	b-b	
Azinphos-ethyl	2642-71-9	220-147-6	2933 90 95	p(1)	b	
Benzene	71-43-2	200-753-7	2902 20	i(2)	sr	
Benzidine and its salts +	92-87-5	202-199-1	2921 59 90	i(1)-i(2)	sr-b	
Benzidine derivatives +	—	—		i(2)	b	
Binapacryl #	485-31-4	207-612-9	2916 19 80	p(1) i(2)	b b	Please refer to PIC circular at www.pic.int/

Chemical	CAS No	EC No	CN Code	Sub-category (*)	Use limitation (**)	Countries for which no notification is required
Cadmium and its Compounds	7440-43-9 and others	231-152-8 and others	8107 3206 30 00 and others	i(1)	sr	
Camphechlor (Toxaphene) #	8001-35-2	232-283-3	3808 10 20	p(1)	b	Please refer to PIC circular at www.pic.int/
Captafol #	2425-06-1	219-363-3	2930 90 70	p(1)-p(2)	b-b	Please refer to PIC circular at www.pic.int/
Carbon tetrachloride	56-23-5	200-262-8	2903 14 00	i(2)	b	
Chlordane #	57-74-9	200-349-0	2903 59 90	p(1)	b	Please refer to PIC circular at www.pic.int/
Chlordimeform #	6164-98-3	228-200-5	2925 20 00			Please refer to PIC circular at www.pic.int/
Chlorfenapyr +	122453-73-0		2933 99 90	p(1)	b	
Chlorobenzilate #	510-15-6	208-110-2	2918 19 80			Please refer to PIC circular at www.pic.int/
Chloroform	67-66-3	200-663-8	2903 13 00	i(2)	b	
Chlozolinate +	84332-86-5	282-714-4	2934 99 90	p(1)	b	
Creosote and Creosote related substances	8001-58-9 61789-28-4 84650-04-4 90640-84-9 65996-91-0 90640-80-5 65996-82-2 8021-39-4 122384-78-5	232-287-5 263-047-8 283-484-8 292-605-3 2266-026-1 292-602-7 266-019-3 232-419-1 310-191-5	2707 91 00	} i(2)	b	
Cyhalothrine	68085-85-8	268-450-2	2926 90 95	p(1)	b	
DBB (Di- μ -oxo-di-n-butylstannio-hydroxyborane)	75113-37-0	401-040-5	2931 00 95	i(1)	b	
DDT (1,1,1-trichloro-2,2-bis(p-chlorophenyl)ethane) #	50-29-3	200-024-3	2903 62 00	p(1)	b	Please refer to PIC circular at www.pic.int/
Dicofol containing < 78 % p,p'-Dicofol or 1 g/kg of DDT and DDT related compounds +	115-32-2	204-082-0	2906 29 00	p(1)	b	
Dieldrin #	60-57-1	200-484-5	2910 90 00	p(1)	b	Please refer to PIC circular at www.pic.int/
Dinoseb, its acetate and salts #	88-85-7 and others	201-861-7 and others	2908 90 00 2915 39 90	p(1) i(2)	b b	Please refer to PIC circular at www.pic.int/
Dinoterb +	1420-07-1	215-813-8	2908 90 00	p(1)	b	

Chemical	CAS No	EC No	CN Code	Sub-category (*)	Use limitation (**)	Countries for which no notification is required
DNOC +	534-52-1	208-601-1	2908 90 00	p(1)	b	
Endrin +	72-20-8	200-775-7	2910 90 00	p(1)	b	
Ethylene oxide (Oxirane) #	75-21-8	200-849-9	2910 10 00	p(1)	b	Please refer to PIC circular at www.pic.int/
Fenvalerate	51630-58-1	257-326-3	2926 90 95	p(1)	b	
Ferbam	14484-64-1	238-484-2	2930 20 00	p(1)	b	
Fluoroacetamide #	640-19-7	211-363-1	2924 19 00			Please refer to PIC circular at www.pic.int/
HCH containing less than 99,0 % of the gamma isomer #	608-73-1	210-168-9	2903 51 00	p(1)	b	Please refer to PIC circular at www.pic.int/
Heptachlor #	76-44-8	200-962-3	2903 59 90	p(1)	b	Please refer to PIC circular at www.pic.int/
Hexachlorobenzene #	118-74-1	204-273-9	2903 62 00	p(1)-p(2) i(2)	b-sr b	Please refer to PIC circular at www.pic.int/
Hexachloroethane	67-72-1	200-666-4	2903 19 90	i(1)	sr	
Lindane (γ -HCH) #	58-89-9	200-401-2	2903 51 10	p(1)	b	Please refer to PIC circular at www.pic.int/
(a) Maleic hydrazide, and its salts, other than choline, potassium and sodium salts;	123-33-1	204-619-9	2933 99 90	p(1)	b	
(b) Choline, potassium and sodium salts of maleic hydrazide containing more than 1 mg/kg of free hydrazine expressed on the basis of the acid equivalent	51542-52-0					
Mercury compounds #	10112-91-1, 21908-53-2 and others	—		p(1)-p(2)	b-sr	Please refer to PIC circular at www.pic.int/
Methamidophos (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l) #	10265-92-6	233-606-0	3808 10 40			Please refer to PIC circular at www.pic.int/
Methyl-parathion (emulsifiable concentrates (EC) with 19,5 %, 40 %, 50 %, 60 % active ingredient and dusts containing 1,5 %, 2 % and 3 % active ingredient) #	298-00-0	206-050-1	3808 10 40			Please refer to PIC circular at www.pic.int/
Monocrotophos (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l) #	6923-22-4	230-042-7	3808 10 40 3808 90 90			Please refer to PIC circular at www.pic.int/
Monolinuron	1746-81-2	217-129-5	2928 00 90	p(1)	b	
Monomethyl-dibromo-diphenyl methane Tradename: DBBT +	99688-47-8	401-210-1	2903 69 90	i(1)	b	
Monomethyl-Dichloro-Diphenyl methane; Tradename: Ugilec 121 or Ugilec 21 +	—	400-140-6	2903 69 90	i(1)-i(2)	b-b	

Chemical	CAS No	EC No	CN Code	Sub-category (*)	Use limitation (**)	Countries for which no notification is required
Monomethyl-Tetrachlorodiphenyl methane; Tradename: Ugilec 141 +	76253-60-6	278-404-3	2903 69 90	i(1)-i(2)	b-b	
Nitrofen +	1836-75-5	217-406-0	2909 30 90	p(1)	b	
Organostannic compounds	—	—	2931 00 95	p(2) i(2)	sr sr	
Parathion # +	56-38-2	200-271-7	2920 10 00	p(1)	b	Please refer to PIC circular at www.pic.int/
Pentachlorophenol #	87-86-5	201-778-6	2908 10 00			Please refer to PIC circular at www.pic.int/
Permethrin	52645-53-1	258-067-9	2916 20 00	p(1)	b	
Phosphamidon (Soluble liquid formulations of the substance that exceed 1 000 g active ingredient/l) #	13171-21-6 (mixture, (E)&(Z) isomers) 23783-98-4 ((Z)-isomer) 297-99-4 ((E)-isomer)	236-116-5	3808 10 40 3808 90 90			Please refer to PIC circular at www.pic.int/
Polybrominated biphenyls (PBB) #	13654-09-06 36355-01-08 27858-07-7	—	2903 69 90	i(1)	sr	Please refer to PIC circular at www.pic.int/
Polychlorinated biphenyls (PCB) #	1336-36-3 and others	215-648-1 and others	2903 69 90	i(1)	b	Please refer to PIC circular at www.pic.int/
Polychlorinated terphenyls (PCT) #	61788-33-8	262-968-2	2903 69 90	i(1)	b	Please refer to PIC circular at www.pic.int/
Propham	122-42-9	204-542-0	2924 29 95	p(1)	b	
Pyrazophos +	13457-18-6	236-656-1	2933 59 95	p(1)	b	
Quintozene +	82-68-8	201-435-0	2904 90 85	p(1)	b	
Tecnazene +	117-18-0	204-178-2	2904 90 85	p(1)	b	
Tris (2,3- dibromopropyl) phosphate #	126-72-7	204-799-9	2919 00 90	i(1)	sr	Please refer to PIC circular at www.pic.int/
Tris-aziridinyl-phosphin oxide +	545-55-1	208-892-5	2933 99 90	i(1)	sr	
Zineb	12122-67-7	235-180-1	3824 90 99	p(1)	b	

(*) Sub-category: p(1) — pesticide in the group of plant protection products, p(2) — other pesticide including biocides. i(1) — industrial chemical for professional use and i(2) — industrial chemical for public use.

(**) Use limitation: sr — severe restriction, b — ban (for the sub-category or sub-categories concerned) according to Community legislation.

CAS: Chemical Abstracts Service.

Chemical subject or partially subject to the PIC procedure.

+ Chemical qualifying for PIC notification.

PART 2: LIST OF CHEMICALS QUALIFYING FOR PIC NOTIFICATION

(Article 10 of the Regulation)

This list comprises chemicals qualifying for PIC notification. It generally does not include chemicals that are already subject to the PIC procedure, which are listed in Part 3 of this Annex.

Chemical	CAS No	EC No	CN Code	Category (*)	Use limitation (**)
2-Naphtylamine and its salts	91-59-8 and others	202-080-4 and others	2921 45 00	i	b
4-Aminobiphenyl and its salts	92-67-1 and others	202-177-1 and others	2921 49 90	i	b
4-Nitrobiphenyl	92-92-3	202-204-7	2904 20 00	i	b
Asbestos Fibres:					
Crocidolite #	12001-28-4		2524 00	i	b
Amosite	12172-73-5		2524 00	i	b
Antophyllite	77536-67-5		2524 00	i	b
Actinolite	77536-66-4		2524 00	i	b
Tremolite	77536-68-6		2524 00	i	b
Chrysotile	132207-32-0		2524 00	i	b
Benzidine and its salts	912-87-5	202-199-1	2921 59 90	i	sr
Benzidine derivatives	—	—			
Chlorfenapyr	122453-73-0			p	sr
Chlozolinate	84332-86-5	282-714-4	2934 90 96	p	b
Dicofol containing < 78 % p,p'-Dicofol or 1 g/kg of DDT and DDT related compounds	115-32-3	204-082-0	2906 29 00	p	sr
Dinoterb	1420-07-1	215-813-8	2908 90 00	p	b
DNOC	534-52-1	208-601-1	2908 90 00	p	b
Endrin	72-20-8	200-775-7	2910 90 00	p	b
Monomethyl-dibromo-diphenyl methane Tradename: DBBT	99688-47-8	401-210-1	2903 69 90	i	b
Monomethyl-Dichloro-Diphenyl methane; Tradename: Ugilec 121 or Ugilec 21	—	400-140-6	2903 69 90	i	b
Monomethyl-Tetrachlorodiphenyl methane; Tradename: Ugilec 141	76253-60-6	278-404-3	2903 69 90	i	b
Nitrofen	1836-75-5	217-406-0	2909 30 90	p	b
Parathion #	56-38-2	200-271-7	2920 10 00	p	sr
Pyrazophos	13457-18-6	236-656-1	2933 59 70	p	b
Quintozene	82-68-8	201-435-0	2904 90 85	p	b
Tecnazene	117-18-0	204-178-2	2904 90 85	p	sr

(*) Category: p — pesticide s. i — industrial chemical.

(**) Use limitation: sr — severe restriction, b — ban (for the category or categories concerned).

CAS: Chemical Abstracts Service.

Chemical subject or partially subject to the PIC procedure.

PART 3: LIST OF CHEMICALS SUBJECT TO THE PIC PROCEDURE UNDER THE ROTTERDAM CONVENTION

(Articles 12 and 13 of the Regulation)

(The categories shown are those referred to in the Convention)

Chemical	Relevant CAS number(s)	Category
2,4,5-T	93-76-5	Pesticide
Aldrin	309-00-2	Pesticide
Binapacryl	485-31-4	Pesticide
Captafol	2425-06-1	Pesticide
Chlordane	57-74-9	Pesticide
Chlordimeform	6164-98-3	Pesticide
Chlorobenzilate	510-15-6	Pesticide
DDT	50-29-3	Pesticide
Dieldrin	60-57-1	Pesticide
Dinoseb and dinoseb salts	88-85-7	Pesticide
1,2-dibromoethane (EDB)	106-93-4	Pesticide
Ethylene dichloride	107-06-2	Pesticide
Ethylene oxide	75-21-8	Pesticide
Fluoroacetamide	640-19-7	Pesticide
HCH (mixed isomers)	608-73-1	Pesticide
Heptachlor	76-44-8	Pesticide
Hexachlorobenzene	118-74-1	Pesticide
Lindane	58-89-9	Pesticide
Mercury compounds, including inorganic mercury compounds, alkyl mercury compounds and alkyloxyalkyl and aryl mercury compounds		Pesticide

Chemical	Relevant CAS number(s)	Category
Pentachlorophenol	87-86-5	Pesticide
Toxaphene	87-86-5	Pesticide
Methamidophos (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l)	10265-92-6	Severely hazardous pesticide formulation
Methyl-parathion (emulsifiable concentrates (EC) with 19,5 %, 40 %, 50 %, 60 % active ingredient and dusts containing 1,5 %, 2 % and 3 % active ingredient)	298-00-0	Severely hazardous pesticide formulation
Monocrotophos (Soluble liquid formulations of the substance that exceed 600 g active ingredient/l)	6923-22-4	Severely hazardous pesticide formulation
Parathion (all formulations — aerosols, dustable powder (DP), emulsifiable concentrate (EC), granules (GR) and wettable powders (WP) — of this substance are included, except capsule suspensions (CS))	56-38-2	Severely hazardous pesticide formulation
Phosphamidon (Soluble liquid formulations of the substance that exceed 1 000 g active ingredient/l)	13171-21-6 (mixture, (E)&(Z) isomers) 23783-98-4 ((Z)-isomer) 297-99-4 ((E)-isomer)	Severely hazardous pesticide formulation
Crocidolite	12001-28-4	Industrial
Polybrominated biphenyls (PBB)	36355-01-8(hexa-) 27858-07-7(octa-) 13654-09-6 (deca-)	Industrial
Polychlorinated biphenyls (PCB)	1336-36-3	Industrial
Polychlorinated terphenyls (PCT)	61788-33-8	Industrial
Tris (2,3-dibromopropyl) phosphate	126-72-7	Industrial

ANNEX II

NOTIFICATION OF A BANNED OR SEVERELY RESTRICTED CHEMICAL TO THE SECRETARIAT OF THE CONVENTION**Information requirements for notifications pursuant to Article 10**

Notifications shall include:

1. properties, identification and uses

- (a) common name;
- (b) chemical name according to an internationally recognised nomenclature (for example International Union of Pure and Applied Chemistry (IUPAC)), where such nomenclature exists;
- (c) trade names and names of preparations;
- (d) code numbers: Chemicals Abstract Service (CAS) number, Harmonised System customs code and other numbers;
- (e) information on hazard classification, where the chemical is subject to classification requirements;
- (f) use or uses of the chemical:
 - in the EU
 - in the importing country;
- (g) the physico-chemical, toxicological and ecotoxicological properties;

2. final regulatory action

- (a) information specific to the final regulatory action:
 - (i) summary of the final regulatory action;
 - (ii) reference to the regulatory document;
 - (iii) date of entry into force of the final regulatory action;
 - (iv) indication of whether the final regulatory action was taken on the basis of a risk or hazard evaluation and, if so, include information on such an evaluation, covering a reference to the relevant documentation;
 - (v) reasons for the final regulatory action relevant to human health, including the health of consumers and workers, or the environment;
 - (vi) summary of the hazards and risks presented by the chemical to human health, including the health of consumers and workers, or the environment and the expected effect of the final regulatory action;
 - (b) category or categories where the final regulatory action has been taken, and for each category:
 - (i) Use or uses prohibited by the final regulatory action;
 - (ii) Use or uses that remain allowed;
 - (iii) Estimation, where available, of quantities of the chemical produced, imported, exported and used;
 - (c) an indication, to the extent possible, of the likely relevance of the final regulatory action to other States and regions;
 - (d) other relevant information that may cover:
 - (i) assessment of socio-economic effects of the final regulatory action;
 - (ii) information on alternatives and their relative risks, where available, such as:
 - integrated pest management strategies;
 - industrial practices and processes, including cleaner technology.
-

ANNEX III

EXPORT NOTIFICATION**Information required pursuant to Article 7**

1. Identity of the substance to be exported:
 - (a) name in nomenclature of the International Union of Pure and Applied Chemistry
 - (b) other names (usual names, trade names, and abbreviations)
 - (c) EC number and CAS number
 - (d) CUS number and Combined Nomenclature Code
 - (e) main impurities of the substance, when particularly relevant.
 2. Identity of the preparation to be exported:
 - (a) trade name or designation of the preparation
 - (b) for each substance listed in Annex I, percentage and details as specified under item 1.
 3. Information on the export:
 - (a) country of destination
 - (b) country of origin
 - (c) expected date of first export this year
 - (d) intended use in the country of destination, if known
 - (e) name, address and other relevant particulars of the importer or importing company
 - (f) name, address and other relevant particulars of the exporter or exporting company.
 4. Designated national authorities:
 - (a) The name, address, telephone and telex, fax number or E-mail of the designated authority in the European Union from which further information may be obtained.
 - (b) The name, address, telephone and telex, fax number or E-mail of the designated authority in the importing country.
 5. Information on precautions to be taken, including category of danger and risk and safety advice.
 6. A summary on physico-chemical, toxicological and ecotoxicological properties.
 7. Use of the chemical in the European Union:
 - (a) Uses and category(ies)/subcategory(ies) subject to control measure (ban or severe restriction)
 - (b) Uses for which the chemical is not severely restricted or banned
(Use categories and subcategories as defined in Annex I to the Regulation)
 - (c) Estimation, where available, of quantities of the chemical produced, imported, exported and used.
 8. Information on precautionary measures to reduce exposure to, and emission of, the chemical.
 9. Summary of regulatory restrictions and reasons for them.

Summary of information given in Annex II under paragraph 2(a), (c) and (d).

Additional information provided by the exporting party because considered of concern or further information specified in Annex II when requested by the importing party.
-

ANNEX IV

INFORMATION TO BE PROVIDED BY THE DESIGNATED NATIONAL AUTHORITIES OF THE MEMBER STATES TO THE COMMISSION IN ACCORDANCE WITH ARTICLE 9

1. Summary of quantities of chemicals (in the form of substances and preparations) subject to Annex I exported during the previous year.

(a) Year of which exports took place

(b) Table summarising quantities of exported chemicals (in the form of substances and preparations) as outlined below.

Chemical	Importing country	Quantity
...		
...		
...		

2. List of importers

² Chemical	Importing country	Importer or importing company	Address and other relevant particulars of the importer or the importing company

ANNEX V

CHEMICALS AND ARTICLES SUBJECT TO EXPORT BAN

(Article 14 of the Regulation)

Description of chemicals/Article(s) subject to export ban	Additional details, where relevant (e.g. name of chemical, EC No, CAS No etc.)
Cosmetic soaps containing mercury	CN Nos 3401 11 00, 3401 19 00, 3401 20 10, 3401 20 90, 3401 30 00

ANNEX VI

LIST OF PARTIES TO THE CONVENTION REQUIRING INFORMATION ON TRANSIT MOVEMENTS OF CHEMICALS SUBJECT TO THE PIC PROCEDURE

(Article 15 of the Regulation)

Country	Required information

Proposal for a Directive of the European Parliament and of the Council amending Council Directive 96/48/EC and Directive 2001/16/EC on the interoperability of the trans-European rail system

(2002/C 126 E/07)

(Text with EEA relevance)

COM(2002) 22 final — 2002/0023(COD)

(Submitted by the Commission on 24 January 2002)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Articles 71 and 156 thereof,

Having regard to the Commission proposal,

Having regard to the opinion of the Economic and Social Committee,

Having regard to the opinion of the Committee of the Regions,

Acting in accordance with the procedure referred to in Article 251 of the Treaty,

Whereas:

- (1) Under Articles 154 and 155 of the Treaty, the Community must contribute to the establishment and development of trans-European networks in the transport sector. In order to achieve these objectives, the Community must take any action necessary to ensure the interoperability of the networks, particularly in the field of technical standardisation.
- (2) An initial measure was taken in the rail sector with the adoption of Council Directive 96/48/EC of 23 July 1996 on the interoperability of the trans-European high-speed rail system⁽¹⁾. In order to implement the objectives of that Directive, technical specifications for interoperability (TSIs) are drafted by the European Association for Railway Interoperability (AEIF) which was designated as the joint representative body in the framework of the Directive.
- (3) On 10 September 1999 the Commission adopted a report to the Council and the European Parliament⁽²⁾ which gave an initial assessment of progress made in implementing the interoperability of the trans-European high-speed rail system. In its resolution of 17 May

2000, the European Parliament called on the Commission to present proposals for amending Directive 96/48/EC on the basis of the model used for the Directive on the interoperability of the conventional rail system.

- (4) Directive 2001/16/EC of the Parliament and of the Council of 19 March 2001 on the interoperability of the conventional rail system⁽³⁾ introduces, like the Directive on the high-speed system, Community procedures for the preparation and adoption of TSIs, and common rules for assessing conformity with the specifications. A mandate for the development of the first group of TSIs has been given to the AEIF, also designated as the Joint Representative Body.
- (5) A number of lessons have been learned from the work on developing TSIs in the high-speed sector, the application of Directive 96/48/EC to specific projects and the work of the committee set up under that Directive, which have led the Commission to propose changes to the two Directives on railway interoperability.
- (6) The adoption of Regulation ... setting up a European Railway Agency responsible for safety and interoperability and of Directive ... on railway safety mean that certain provisions of the two Directives on railway interoperability need to be recast. In particular, once the Agency is established, the task of drafting any new or revised TSIs will be entrusted to it by the Commission.
- (7) The entry into force of Directives 2001/12/EC⁽⁴⁾, 2001/13/EC⁽⁵⁾ and 2001/14/EC⁽⁶⁾ has an impact on the implementation of interoperability. In particular, Directive 2001/12/EC provides for complete opening up of the rail network to international freight services in 2008. As in the case of other transport modes, the extension of access rights must be accompanied by the requisite harmonisation measures. It is therefore necessary to implement interoperability on the whole network by extending the geographical scope of Directive 2001/16/EC. It is also necessary to extend the legal basis of Directive 2001/16/EC to Article 71 of the Treaty, on which Directive 2001/12/EC is founded.

⁽¹⁾ OJ L 235, 17.9.1996, p. 6.

⁽²⁾ Report COM(1999) 414 final.

⁽³⁾ OJ L 110, 20.4.2001, p. 1.

⁽⁴⁾ OJ L 75, 15.3.2001, p. 1.

⁽⁵⁾ OJ L 75, 15.3.2001, p. 26.

⁽⁶⁾ OJ L 75, 15.3.2001, p. 29.

- (8) The White Paper on European transport policy announces this Directive, which is part of the Commission's strategy to revitalise rail transport and, consequently, to shift the balance between transport modes, with the ultimate objective of reducing congestion on Europe's roads.
- (9) The TSIs developed in the framework of Directive 96/48/EC do not explicitly concern the work on renewing infrastructure and rolling stock, nor replacements in the context of preventive maintenance. This is the case, however, under Directive 2001/16/EC on the conventional rail system, and the two Directives should be harmonised on this point.
- (10) The development of TSIs in the high-speed sector has shown the need to clarify the relationship between the essential requirements of Directive 96/48/EC and the TSIs on the one hand, and the European standards and other documents of a normative nature on the other. In particular, a clear distinction must be made between the standards or parts of standards which must be made mandatory in order to achieve the objectives of the Directive, and the 'harmonised' standards that have been developed in the spirit of the new approach to technical harmonisation ⁽¹⁾.
- (11) As a rule, the European specifications are developed in the spirit of the new approach to technical harmonisation and standardisation. They enable a presumption to be made of conformity with certain essential requirements of the Directive, particularly in the case of interoperability constituents and interfaces. These European specifications (or the applicable parts) are not mandatory and no explicit reference may be made in the TSIs. References to these European specifications are published in the *Official Journal of the European Communities*, and Member States publish the references to the national standards transposing the European standards.
- (12) TSIs may in certain cases make an explicit reference to European standards or specifications where this is strictly necessary in order to achieve the objectives of this Directive. Such explicit reference has consequences which must be made clear; in particular, these European standards and specifications become mandatory from the moment the TSI is applicable.
- (13) The TSI sets all the conditions to which an interoperability constituent must conform, and the procedure to be followed in assessing conformity. In addition, it is necessary to specify that every constituent must undergo the procedure for assessing conformity and suitability for the use indicated in the TSIs and have the corresponding certificate.
- (14) It is necessary for safety reasons to require Member States to assign an identification code to each vehicle placed in service. The vehicle is then entered in a national vehicle register. The national registers must be open to consultation by all Member States and by certain Community economic players. The registers must be consistent as regards the data format. They must therefore be covered by common operational and technical specifications.
- (15) The procedure to be followed in the case of essential requirements applicable to a subsystem which have not yet been covered by detailed specifications in the corresponding TSI must be specified. In such case, the bodies responsible for the conformity assessment and verification procedures should be those already notified under Article 20 of Directives 96/48/EC and 2001/16/EC.
- (16) The necessary measures must be adopted to implement this Directive in conformity with Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽²⁾.
- (17) The definition of rolling stock in Annex I to Directive 96/48/EC needs to be clarified. The Directive must also concern rolling stock designed to operate only on track upgraded for high speeds, at speeds of the order of 200 km/h.
- (18) The application of this Directive must, as far as possible, preserve the work already undertaken in the framework of Directives 96/48/EC and 2001/16/EC and the application of these Directives by Member States in the framework of projects which are at an advanced stage of development when the Directive enters into force.
- (19) As the objective of the planned action, i.e. the interoperability of the trans-European rail system, cannot be adequately achieved by the Member States and can therefore, given its trans-European character as recognised by the Treaty, be achieved better at the Community level, the Community can take action in conformity with the subsidiarity principle enshrined in Article 5 of the Treaty. In keeping with the proportionality principle set out in that Article, this Directive does not go beyond what is required to achieve that objective.
- ⁽¹⁾ The principles of the new approach to technical harmonisation and standardisation were adopted in 1985 (OJ C 136, 4.6.1985). According to this approach, directives define the essential requirements which products must meet when they are placed on the market, but they do not specify the technical means to be used in order to meet these requirements.
- ⁽²⁾ OJ L 184, 17.7.1999, p. 23.

(20) It is therefore necessary to amend Directives 96/48/EC and 2001/16/EC,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

Directive 96/48/EC is amended as follows:

1. Article 1 is replaced by the following:

'Article 1

1. The aim of this Directive is to establish the conditions to be met to achieve interoperability within Community territory of the trans-European high-speed rail system as described in Annex I.

These conditions concern the design, construction, putting into service, upgrading, renewal, operation and maintenance of the parts of this system put into service after the date of entry into force of this Directive, as well as the qualifications and health and safety conditions of the staff who contribute to its operation.

2. The pursuit of this objective must lead to the definition of a minimum level of technical harmonisation and make it possible to:

- (a) facilitate, improve and develop international rail transport services within the European Union and with third countries;
- (b) contribute to the gradual creation of the internal market in equipment and services for the construction, renewal, upgrading and operation of the trans-European high-speed rail system;
- (c) contribute to the interoperability of the high-speed rail system.'

2. The following points are inserted in Article 2:

'(j) "basic parameter" means any regulatory, technical or operational condition which is critical to interoperability and requires a decision or recommendation in accordance with the procedure laid down in Article 21(2) before any development of complete draft TSIs;

(k) "specific case" means any part of the trans-European high-speed rail system which needs special provisions in the TSIs, either temporary or definitive, because of geographical, topographical or urban environment constraints or those affecting compatibility with the existing system. This may include in particular railway lines and networks isolated from the rest of the Community, the loading gauge, the track gauge or space between the tracks;

(l) "upgrading" means any major modification work on a subsystem or part subsystem which changes the performance of the subsystem;

(m) "substitution in the framework of maintenance" means any replacement of components by parts of identical function and performance in the framework of preventive or corrective maintenance;

(n) "renewal" means any major substitution work on a subsystem or part subsystem which does not change the performance of the subsystem;

(o) "existing rail system" means the structure composed of the railway infrastructures, comprising lines and fixed installations of the existing rail system plus the existing rolling stock of all categories and origin travelling on that infrastructure;

(p) "putting into or placing in service" means all the operations by which a subsystem is put into its design operating state.'

3. Article 5 is amended as follows:

(a) paragraph 1 is replaced by the following:

'1. Each of the subsystems shall be covered by one or more TSIs. In the case of subsystems concerning the environment or users, TSIs will be drawn up only to the extent necessary. A supplementary TSI may prove necessary, in particular to promote the use of the high-speed rail system for the carriage of high value-added goods or for applications necessary in order to interconnect the high-speed rail system with airports.'

(b) Paragraph 3 is replaced by the following:

— point (f) is replaced by the following:

'(f) state, in each case under consideration, which procedures are to be used in order to assess either the conformity or the suitability for use of the interoperability constituents, or the "EC" verification of the subsystems. These procedures shall be based on the modules defined in Decision 93/465/EEC;'

— The following points (g) et (h) are inserted:

'(g) indicate the strategy for implementing the TSIs, in particular the stages to be completed in order to make a gradual transition from the existing situation to the final situation in which compliance with the TSIs shall be the norm;

(h) indicate, for the staff concerned, the professional qualifications and health and safety conditions at work required for the operation and maintenance of the above subsystem, as well as for the implementation of the TSIs.'

(c) The following paragraph 6 is inserted:

'6. TSIs may make an explicit reference to European standards or specifications where this is strictly necessary in order to achieve the objectives of this Directive. In such case, these European standards or specifications (or the relevant parts) shall be regarded as annexes to the TSI concerned and shall become mandatory from the moment the TSI is applicable. In the absence of European specifications and pending their development, reference may be made to other normative documents; in such case, this shall concern documents that are easily accessible and in the public domain.'

4. Article 6 is replaced by the following:

'Article 6

1. Draft TSIs shall be drawn up under a mandate from the Commission by the European Railway Agency, hereinafter referred to as the "Agency", in accordance with the procedure set out in Article 21(2).

TSIs shall be adopted and reviewed by the procedure set out in Article 21(2). They shall be published by the Commission in the *Official Journal of the European Communities*.

2. The Agency shall be responsible for preparing the review and updating of TSIs and making any recommendations to the Committee referred to in Article 21 in order to take account of developments in technology or social requirements.

3. The preparation, adoption and review of TSIs shall take account of the estimated cost of technical solutions by which they may be met, with a view to defining and implementing the most viable solutions. To that end, the Agency shall attach to each draft TSI an assessment of the estimated costs and benefits of those technical solutions for all the economic operators and agents concerned.

4. The Committee referred to in Article 21 shall be kept regularly informed of the preparatory work on the TSIs by the Agency. The Committee may give the Agency any useful recommendation or brief regarding the design of the TSIs, on the basis of the essential requirements or regarding the cost assessment.

5. When each TSI is adopted, the date of its entry into force shall be laid down in accordance with the procedure referred to in Article 21(2).

6. The adoption and review of the TSIs shall take account of the opinion of users, as regards the characteristics which have a direct impact on the conditions in which they use the subsystems. To that end the Agency shall consult associations and bodies representing users during the drafting and review phases of the TSIs. They shall enclose with the draft TSI a report on the results of this consultation.

The list of associations and bodies to be consulted shall be finalised by the Committee referred to in Article 21 before adopting the mandate to review the TSIs and may be re-examined and updated at the request of a Member State or the Commission.

7. The adoption and review of the TSIs shall take account of the opinion of the social partners as regards the conditions referred to in Article 5(3)(g). To that end, the social partners shall be consulted before the draft TSI is submitted, for adoption or review, to the Committee referred to in Article 21. The social partners shall be consulted in the context of the sectoral dialogue committee set up in accordance with Commission Decision 98/500/EC (*). The social partners shall issue their opinion within three months.

(*) OJ L 255, 12.8.1998, p. 27.'

5. The following subparagraph is inserted in Article 9:

'In particular, they may not require checks which have already been carried out as part of the procedure leading to the "EC" declaration of conformity or suitability for use.'

6. Article 10 is amended as follows:

(a) Paragraph 2 is replaced by the following:

'2. All constituents shall be subject to the procedure for assessing conformity and suitability for the use indicated in the respective TSI and be accompanied by the corresponding certificate.'

(b) Paragraphs 3, 4 and 5 are deleted.

7. Article 11 is replaced by the following:

'Article 11

Where it appears to a Member State or the Commission that European specifications used directly or indirectly for the purposes of this Directive do not meet the essential requirements, partial or total withdrawal of the specifications concerned from the publications containing them, or their amendment, may be decided upon in accordance with the procedure set out in Article 21(2) after consultation of the Committee set up under Council Directive 98/34/EC (*).

(*) OJ L 217, 5.8.1998, p. 18.'

8. Article 14 is replaced by the following:

'Article 14

1. Each Member State shall authorise the putting into service of those structural subsystems constituting the trans-European high-speed rail system which are located or operated in its territory.

To this end, Member States shall take all appropriate steps to ensure that these subsystems may be put into service only if they are designed, constructed and installed in such a way that they do not compromise satisfaction of the essential requirements concerning them when integrated into the trans-European high-speed rail system.

In particular, they shall check the compatibility of these subsystems with the system into which they are being integrated.

2. Each Member State shall check, when the subsystems are put into service and at regular intervals thereafter, that they are operated and maintained in accordance with the essential requirements concerning them. To that end, the assessment and verification procedures laid down in the respective structural and functional TSIs shall be used.

3. In the event of renewal or upgrading, the manager of the rail infrastructure or enterprise shall send the Member State concerned a file describing the project. The Member State shall examine this file and, taking account of the implementation strategy indicated in the applicable TSI, shall decide whether the size of the works means that a new authorisation for putting into service within the meaning of this Directive is needed.

Such new authorisation for putting into service shall be required each time the safety level may be affected by the works envisaged.

4. Where Member States authorise the putting into service of rolling stock, they shall assign to each vehicle an alphanumeric identification code. This code must be marked on each vehicle and figure in a national vehicle register that meets the following criteria:

- (a) the national vehicle register shall comply with the common specifications defined in paragraph 5;
- (b) the national vehicle register shall be kept up-to-date by a body independent of the manager of the infrastructure or of any railway company;
- (c) the national vehicle register shall be accessible to the authorities designated in Articles 12 and 18 of Directive .../.../EC of the European Parliament and of the Council (*) in respect of information concerning

railway safety; it shall also be accessible, for any legitimate request, to the authorities designated in Article 30 of Directive 2001/14/EC (**), to the Agency, to the railway companies and to the infrastructure managers.

5. The common specifications for the vehicle register shall be adopted in accordance with the procedure set out in Article 21(2), on the basis of a draft prepared by the Agency. The register shall contain at least the following information:

- (a) references of the "EC" declaration of verification and the issuing body;
- (b) references of the register of rolling stock mentioned in Article 22a;
- (c) identification of the owner of the vehicle and of the railway company that uses it;
- (d) any restrictions on how the vehicle may be used;
- (e) data relating to the state of maintenance of the vehicle.

(*) OJ L ...

(**) OJ L 75, 15.3.2001, p. 29.'

9. The following subparagraph is inserted in Article 15:

'In particular, they may not require checks which have already been carried out as part of the procedure leading to the "EC" declaration of verification.'

10. The following subparagraph is inserted in Article 16(3):

'On that occasion, Member States shall also designate the bodies responsible for carrying out, in the case of these technical regulations, the procedures for assessing conformity or suitability for the use referred to in Article 13 and the verification procedure referred to in Article 18.'

11. The following subparagraph is inserted in Article 17:

'In such a case, the TSIs shall be reviewed in accordance with Article 6(2). If certain technical aspects corresponding to the essential requirements cannot be immediately and explicitly covered in a TSI, they shall be clearly identified in an annex to the TSI. Article 16(3) shall apply to these aspects.'

12. The following subparagraph is inserted in Article 18(2):

'They shall also cover verification of the interfaces of the subsystem in question in relation to the system in which it is integrated, based on the information available in the respective TSI and the registers defined in Article 22a.'

13. Article 20(5) is replaced by the following:

'5. The Commission shall set up a notified bodies coordination group (hereinafter the "coordination group") which shall discuss any matter related to the application of the procedures for assessing conformity or suitability for the use referred to in Article 13 and the verification procedure referred to in Article 18, or to application of the relevant TSIs.

The Commission shall inform the committee referred to in Article 21(1) of the work carried out in the framework of this coordination group. Member States' representatives may take part in the work of the coordination group as observers.'

14. Article 21 is replaced by the following ⁽¹⁾:

'Article 21

1. The Commission shall be assisted by a committee composed of representatives of the Member States and chaired by the representative of the Commission (hereinafter referred to as "the Committee").

2. Where reference is made to this paragraph, Article 5 of Decision 1999/468/EC shall apply, having regard to the provisions of Articles 7 and 8 thereof.

The period laid down in Article 5(6) of Decision 1999/468/EC shall be set at three months.

3. The Committee shall adopt its rules of procedure.'

15. The following Articles 21a, 21b and 21c are inserted:

'Article 21a

1. The Committee may discuss any matter relating to the interoperability of the trans-European rail system, including questions relating to interoperability between the trans-European rail system and the rail system of third countries.

2. The Committee may discuss any matter relating to the implementation of this Directive. If necessary, the Commission shall adopt an implementing recommendation in accordance with the procedure set out in Article 21(2).

Article 21b

1. The Commission may decide, on its own initiative or at the request of a Member State, in accordance with the

procedure set out in Article 21(2), to draft a TSI for an additional subject, to the extent that it concerns a subsystem referred to in Annex II.

2. In accordance with the procedure laid down in Article 21(2), the Committee shall adopt a work programme conforming to the objectives of this Directive and Directive 2001/16/EC.

Article 21c

The Annexes may be amended by the procedure set out in Article 21(2).'

16. The following Article 22a is inserted:

'Article 22a

1. Member States shall ensure that a register of infrastructure and a register of rolling stock respectively are published and updated annually. These registers shall indicate the main features of each subsystem or part subsystem involved, e.g. the basic parameters, and their correlation with the features laid down by the applicable TSIs. To that end, each TSI shall indicate precisely which information must be included in the registers of infrastructure and of rolling stock.

2. A copy of those registers shall be sent to the Member States concerned and to the Agency and shall be made available for consultation by the public.'

17. Annex I is replaced by the text in Annex I to this Directive.

18. Annex II is replaced by the text in Annex II to this Directive.

19. The following subparagraph is inserted in Annex VII, point 2:

'In particular, the body and the staff responsible for the checks must be contractually, hierarchically and functionally independent of the authorities designated to issue authorisations for putting into service in the framework of this Directive, licences in the framework of Directive 2000/13/EC and safety certificates in the framework of Directive ... on rail safety, and of the bodies in charge of inspections in the event of accidents.'

Article 2

Directive 2001/16/EC is amended as follows:

1. The title is replaced by the following: 'Directive 2001/16/EC of the European Parliament and of the Council on the interoperability of the conventional rail system'.

⁽¹⁾ Paragraphs 1 to 3 of this Article are to be deleted in the event that the SG proposal for streamlining all committees is adopted before this proposal.

2. The following paragraph 3 is inserted in Article 1:

'3. With effect from 1 January 2008, the scope of this Directive shall be extended to the whole rail system, except for infrastructure and rolling stock reserved for a strictly local, historical or touristic use and isolated from the rest of the rail system.'

3. Article 2 is amended as follows:

(a) Points (l) and (m) are replaced by the following:

(l) "upgrading" means any major modification work on a subsystem or part subsystem which changes the performance of the subsystem;

(m) "renewal" means any major substitution work on a subsystem or part subsystem which does not change the performance of the subsystem;

(b) The following points (o) and (p) are inserted:

(o) "substitution in the framework of maintenance" means any replacement of components by parts of identical function and performance in the framework of preventive or corrective maintenance;

(p) "putting into or placing in service" means all the operations by which a subsystem is put into its design operating state.'

4. Article 5 is amended as follows:

(a) Point (e) in paragraph 3 is replaced by the following:

(e) state, in each case under consideration, which procedures are to be used in order to assess either the conformity or the suitability for use of the interoperability constituents, or the EC verification of the subsystems. These procedures shall be based on the modules defined in Decision 93/465/EEC;

(b) The following paragraph 7 is added:

'7. TSIs may make an explicit reference to European standards or specifications where this is strictly necessary in order to achieve the objectives of this Directive. In such case, these European standards or specifications (or the relevant parts) shall be regarded as annexes to the TSI concerned and shall become mandatory from the moment the TSI is applicable. In the absence of European specifications and pending their development, reference may be made to other normative documents; in such case, this shall concern documents that are easily accessible and in the public domain.'

5. Article 6 is replaced by the following:

'Article 6

1. Draft TSIs shall be drawn up by the Agency under a mandate from the Commission in accordance with the procedure set out in Article 21(2). TSIs shall be adopted and reviewed by the same procedure. They shall be published by the Commission in the *Official Journal of the European Communities*.

2. The Agency shall be responsible for preparing the review and updating of TSIs and making any recommendations to the Committee referred to in Article 21 in order to take account of developments in technology or social requirements.

3. Each draft TSI shall be drawn up in two stages.

4. First of all, the Agency shall identify the basic parameters for this TSI as well as the interfaces with the other subsystems and any other specific cases that may be necessary. The most viable alternative solutions accompanied by technical and economic justification shall be put forward for each of these parameters and interfaces. A decision shall be taken in accordance with the procedure set out in Article 21(2); if necessary, specific cases shall be cited.

The Agency shall then draw up the draft TSI on the basis of these basic parameters. Where appropriate, the Agency shall take account of technical progress, of standardisation work already carried out, of working parties already in place and of acknowledged research work. An overall assessment of the estimated costs and benefits of the implementation of the TSIs shall be attached to the draft TSI; this assessment shall indicate the likely impact for all the operators and economic agents involved.

5. The drafting, adoption and review of each TSI (including the basic parameters) shall take account of the estimated costs and benefits of all the technical solutions considered together with the interfaces between them, so as to establish and implement the most viable solutions. The Member States shall participate in this assessment by providing the requisite data.

6. The Committee referred to in Article 21 shall be kept regularly informed of the preparatory work on the TSIs. During this work the Committee may formulate any terms of reference or useful recommendations concerning the design of the TSIs and the cost-benefit analysis. In particular, the Committee may, at the request of a Member State, require that alternative solutions be examined and that the assessment of the cost and benefits of these alternative solutions be set out in the report annexed to the draft TSI.

7. On the adoption of each TSI, the date of entry into force of that TSI shall be established in accordance with the procedure provided for in Article 21(2). Where different subsystems have to be put into service simultaneously for reasons of technical compatibility, the dates of entry into force of the corresponding TSIs shall be the same.

8. The drafting and review of the TSIs shall take account of the opinions of the users, as regards the characteristics which have a direct impact on the conditions in which they use the subsystems. To that end the Agency shall consult associations and bodies representing users during the drafting and review phases of the TSIs. They shall enclose with the draft TSI a report on the results of this consultation.

The list of associations and bodies to be consulted shall be finalised by the Committee referred to in Article 21 before adopting the mandate of the first TSI and may be re-examined and updated at the request of a Member State or the Commission.

9. The drafting and review of the TSIs shall take account of the opinion of the social partners as regards the conditions referred to in Article 5(3)(g).

To this end, the social partners shall be consulted before the draft TSI is submitted, for adoption or review, to the Committee referred to in Article 21.

The social partners shall be consulted in the context of the Sectoral Dialogue Committee set up in accordance with Commission Decision 98/500/EC⁽¹⁾. The social partners shall issue their opinion within three months.'

6. Article 10 is amended as follows:

(a) Paragraph 2 is replaced by the following:

'2. All constituents shall be subject to the procedure for assessing conformity and suitability for the use indicated in the respective TSI and shall be accompanied by the corresponding certificate.'

(b) Paragraphs 4, 5 and 6 are deleted.

7. Article 11 is replaced by the following:

'Article 11

Where it appears to a Member State or the Commission that European specifications used directly or indirectly to achieve the objectives of this Directive do not meet the essential requirements, partial or total withdrawal of the specifications concerned from the publications containing them, or their amendment, may be decided upon in accordance with the procedure laid down in Article 21(2) after consultation of the committee set up under Council Directive 98/34/EC^(*).

^(*) OJ L 204, 21.7.1998, p. 37.'

⁽¹⁾ Commission Decision 98/500/EC of 20 May 1998 on the establishment of Sectoral Dialogue Committees promoting the dialogue between the social partners at European level (OJ L 255, 12.8.1998, p. 27).

8. Article 14 is amended as follows:

(a) The following subparagraph is inserted in paragraph 2:

'To that end, the assessment and verification procedures laid down in the respective structural and functional TSIs shall be used.'

(b) The following paragraphs 4 and 5 are inserted:

'4. Where Member States authorise the putting into service of rolling stock, they shall assign to each vehicle an alphanumeric identification code. This code must be marked on each vehicle and figure in a national vehicle register that meets the following criteria:

(a) the national vehicle register shall comply with the common specifications defined in paragraph 5;

(b) the national vehicle register shall be kept up-to-date by a body independent of the manager of the infrastructure or of any railway company;

(c) the national vehicle register shall be accessible to the authorities designated in Articles 12 and 18 of Directive . . . [of the European Parliament and of the Council?]^(*) in respect of information concerning railway safety. It shall also be accessible, for any legitimate request, to the authorities designated in Article 30 of Directive 2001/14/EC^(**), to the Agency, to the railway companies and to the infrastructure managers.

5. The common specifications for the vehicle register shall be adopted in accordance with the procedure laid down in Article 21(2), on the basis of a draft prepared by the Agency. The register shall contain at least the following information:

(a) references of the EC declaration of verification and the issuing body;

(b) references of the register of rolling stock mentioned in Article 24;

(c) identification of the owner of the vehicle and of the railway company that uses it;

(d) any restrictions on how the vehicle may be used;

(e) data relating to the state of maintenance of the vehicle.

^(*) OJ L . . .

^(**) OJ L 75, 15.3.2001, p. 29.'

9. The following subparagraph is inserted in Article 16(3):

'On that occasion, Member States shall also designate the bodies responsible for carrying out, in the case of these technical regulations, the procedures for assessing conformity or suitability for the use referred to in Article 13 and the verification procedure referred to in Article 18.'

10. The following subparagraph is inserted in Article 17:

'In such a case, the TSIs shall be reviewed in accordance with the procedure referred to in Article 6(2). If certain technical aspects corresponding to the essential requirements cannot be explicitly covered in a TSI, they shall be clearly identified in an annex to the TSI.

Article 16(3) shall apply to these aspects.'

11. Article 20(5) is replaced by the following:

'5. The Commission shall set up a notified bodies coordination group which shall discuss any matter related to the application of the procedures for assessing conformity or suitability for the use referred to in Article 13 and the verification procedure referred to in Article 18, or to application of the relevant TSIs. The Commission shall inform the Committee referred to in Article 21(1) of the work carried out in the framework of this coordination group. Member States' representatives may take part in the work of the coordination group as observers.'

12. The following Articles 21a and 21b are inserted:

Article 21a

The Commission may submit to the Committee any matter relating to the implementation of this Directive. If necessary, the Commission shall adopt an implementing recommendation in accordance with the procedure set out in Article 21(2).

Article 21b

The Annexes may be amended by the procedure set out in Article 21(2).'

13. The following subparagraph is inserted in Annex VII, point 2:

'In particular, the body and the staff responsible for the checks must be contractually, hierarchically and functionally independent of the authorities designated to issue authorisations for putting into service in the framework of this Directive, licences in the framework of Directive 2000/13/EC and safety certificates in the framework of Directive ... on rail safety, and of the bodies in charge of inspections in the event of accidents.'

14. Annex VIII is deleted.

Article 3

The Commission shall take all necessary measures to ensure that the application of the provisions of this Directive preserve as far as possible the TSI development work already mandated in the framework of Directives 96/48/EC and 2001/16/EC, and the application of these Directives by Member States in the framework of projects that are at an advanced stage of development when this Directive enters into force.

Article 4

Member States shall bring into force the laws, regulations and administrative provisions needed to comply with this Directive no later than [...] ⁽¹⁾. They shall forthwith inform the Commission thereof.

When Member States adopt these measures, they shall contain a reference to this Directive or be accompanied by such reference on the occasion of their official publication. The methods of making such reference shall be laid down by the Member States.

Article 5

This Directive shall enter into force on the [...] day following its publication in the *Official Journal of the European Communities*.

Article 6

This Directive is addressed to the Member States.

⁽¹⁾ 24 months after the date of entry into force of this Directive.

ANNEX I

THE TRANS-EUROPEAN HIGH-SPEED RAIL SYSTEM**1. The infrastructure**

The infrastructure of the trans-European high-speed rail system shall be that of the lines of the trans-European transport network identified in Decision No 1692/96/EC of the European Parliament and of the Council of 23 July 1996 on Community guidelines for the development of the trans-European transport network⁽¹⁾ or listed in any update to the same Decision as a result of the revision provided for in Article 21 of that Decision.

The high-speed lines shall comprise:

- specially built high-speed lines equipped for speeds generally equal to or greater than 250 km/h,
- specially upgraded high-speed lines equipped for speeds of the order of 200 km/h,
- specially upgraded high-speed lines which have special features as a result of topographical, relief or town-planning constraints, on which the speed must be adapted to each case.

This infrastructure includes traffic management, tracking and navigation systems; technical installations for data processing and telecommunications intended for passenger services on these lines in order to guarantee the safe and harmonious operation of the network and efficient traffic management.

2. The rolling stock

The rolling stock referred to in this Directive shall comprise trains designed to operate:

- either at speeds of at least 250 km/h on lines specially built for high speeds, while enabling operation at speeds exceeding 300 km/h in appropriate circumstances,
- or at speeds of the order of 200 km/h, on existing lines specially upgraded for high-speed operation.

3. Compatibility of the trans-European conventional railway system

The quality of rail services in Europe depends, inter alia, on excellent compatibility between the characteristics of the infrastructure (in the broadest sense, i.e. the fixed parts of all the subsystems concerned) and those of the rolling stock (including the onboard components of all the subsystems concerned). Performance levels, safety, quality of service and cost depend upon that compatibility.

⁽¹⁾ OJ L 228, 9.9.1996, p. 1.

ANNEX II

SUBSYSTEMS**1. List of subsystems**

For the purposes of this Directive, the system constituting the trans-European high-speed rail system may be broken down into the following subsystems:

- (a) either structural areas:
- infrastructure;
 - energy;
 - control and command and signalling;
 - traffic operation and management;
 - rolling stock;

(b) or operational areas:

- maintenance;
- telematics applications for passenger and freight services.

2. Areas to be covered

For each subsystem, the list of aspects relating to interoperability is indicated in the mandates for drawing up TSIs given to the Agency.

Under the provisions of Article 6(1), these mandates shall be established in accordance with the procedure laid down in Article 21(2).

Where necessary, the list of aspects relating to interoperability indicated in the mandates is specified by the Agency in accordance with the provisions of Article 5(3)(c).

3. Basic parameters

Within the meaning of Article 5(3)(b), the following in particular are regarded as basic parameters for achieving interoperability ⁽¹⁾:

- Minimum infrastructure gauges
- Minimum radius of curvature
- Track gauge
- Maximum track stressing
- Minimum platform length
- Platform height
- Power-supply voltage
- Catenary geometry
- ERTMS characteristics ⁽²⁾
- Axle loading
- Maximum train length
- Gauge of rolling stock
- Minimum braking characteristics
- Boundary electrical characteristics of rolling stock
- Boundary mechanical characteristics of rolling stock
- Operating characteristics linked to train safety
- Boundary characteristics linked to outside noise
- Boundary characteristics linked to outside vibrations
- Boundary characteristics linked to outside electromagnetic interference
- Boundary characteristics linked to inside noise
- Boundary characteristics linked to air conditioning
- Characteristics linked to the carriage of disabled persons.

⁽¹⁾ Cf. Commission recommendation 2001/290/EC.

⁽²⁾ European Rail Traffic Management System: cf. Commission Decisions 1999/569/EC and 2001/260/EC.

Proposal for a Regulation of the European Parliament and of the Council establishing a European Railway Agency

(2002/C 126 E/08)

(Text with EEA relevance)

COM(2002) 23 final — 2002/0024(COD)

(Submitted by the Commission on 24 January 2002)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF
THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 71(1) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee,

Having regard to the opinion of the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

Whereas:

- (1) The progressive establishment of a European railway area without frontiers requires Community action in the field of the technical regulations applicable to railways with regard to both the technical aspects and the safety aspects, the two being inextricably linked.
- (2) Directive 91/440/EEC on the development of the Community's railways, as amended by Directive 2001/12/EC of the European Parliament and of the Council ⁽¹⁾, provides for opening up rights of access to the infrastructure to any licensed Community railway undertakings which wish to operate international goods services.
- (3) Council Directive 95/18/EC on the licensing of railway undertakings ⁽²⁾, as amended by Directive 2001/13/EC of the European Parliament and of the Council ⁽³⁾, stipulates that all railway undertakings must hold a licence and that a licence issued in a Member State shall be valid throughout the territory of the Community.
- (4) Directive 2001/14/EC of the European Parliament and of the Council of 26 February 2001 on the allocation of railway infrastructure capacity and the levying of

charges for the use of railway infrastructure and safety certification establishes a new framework with the aim of creating a European railway area without frontiers.

- (5) The technical and operational differences between the railway systems of the Member States have compartmentalised the national rail markets and prevented dynamic development of this sector on a European scale. Council Directive 96/48/EC of 23 July 1996 on the interoperability of the trans-European high-speed rail system ⁽⁴⁾ and Directive 2001/16/EC on the interoperability of the trans-European conventional rail system ⁽⁵⁾ defined essential requirements and established a mechanism for defining mandatory technical specifications for interoperability.
- (6) Simultaneous pursuit of the goals of safety and interoperability requires substantial technical work which must be led by a specialised body. That is why it is necessary to create, within the existing institutional framework and with respect for the balance of power in the Community, a European Agency responsible for railway safety and interoperability. Creation of such an Agency provides a means of considering the safety and interoperability targets for the European rail network jointly and with a high level of expertise and in this way contributing to revitalising the railways and to the general objectives of the common transport policy.
- (7) Directive ... of the European Parliament and of the Council of ... [on railway safety] provides for the development of common safety indicators, common safety targets and common safety methods. Development of these tools requires independent technical expertise.
- (8) In order to facilitate the procedures for issuing safety certificates to railway undertakings, and with a view to mutual recognition of these certificates in the long term, it is essential to implement a progressive approach to mutual recognition of as many elements thereof as possible.
- (9) Directive ... of the European Parliament and of the Council of ... [on railway safety] provides for examination of national safety measures from the point of view of interoperability. To this end, an opinion based on independent and neutral expertise is essential.

⁽¹⁾ OJ L 75, 15.3.2001, p. 1.

⁽²⁾ OJ L 143, 27.6.1995, p. 70.

⁽³⁾ OJ L 75, 15.3.2001, p. 26.

⁽⁴⁾ OJ L 235, 17.9.1996, p. 6.

⁽⁵⁾ OJ L 110, 20.4.2001, p. 1.

- (10) In the field of safety, it is important to ensure the greatest possible transparency and an effective flow of information. An analysis of performances, based on common indicators and linking all players in the sector, does not yet exist and such a tool should be introduced. In the case of the statistical aspects, close collaboration with Eurostat is necessary.
- (11) The national railway safety organisations, regulators and other national authorities must be able to request an independent technical opinion when they require information concerning several Member States.
- (12) Rolling stock maintenance is an important part of the safety system. There is no genuine European market for the maintenance of rail equipment due to the lack of a system for certification of maintenance workshops. This situation adds to the costs for the sector and results in journeys without loads. A European certification system for maintenance workshops should therefore gradually be developed.
- (13) Directive 2001/16/EC stipulates that a first group of technical specifications for interoperability must be drawn up not later than 20 April 2004. The Commission has given a mandate to carry out this work to the European Association for Railway Interoperability (AEIF), which brings together the manufacturers of railway equipment and the infrastructure managers and operators. Steps must be taken to preserve the experience built up by professionals from the industry in the context of the AEIF. The continuity of the work and the development of the TSIs over time require a permanent technical framework.
- (14) The interoperability of the trans-European network must be enhanced and the new investment projects chosen for support by the Community must be in line with the objective of interoperability set in Decision No 1692/96/EC of the European Parliament and of the Council of 23 July 1996 on Community guidelines for the development of the trans-European transport network⁽¹⁾.
- (15) The vocational qualifications required for train drivers are a major factor in both safety and interoperability in Europe. They are also a precondition for the free movement of workers in the railway industry. This question must be tackled with respect for the existing framework for social dialogue. The Agency must provide the technical support necessary in order to take account of this aspect at European level.
- (16) Registration is first and foremost an act of recognition of the capability of rolling stock to operate under specified conditions. The registration of equipment must be transparent and non-discriminatory and falls within the competence of the public authorities. The Agency must provide technical support in order to establish a system for registration of rolling stock.
- (17) In order to ensure the greatest possible transparency and equal access for all parties to relevant information, the documents envisaged for the interoperability process must be accessible to the public. The same applies to licences and safety certificates. The Agency must provide an efficient means of exchanging this information.
- (18) Promotion of innovation in the field of railway safety and interoperability, particularly use of new technologies, is an important task which the Agency must encourage.
- (19) In order to perform its tasks properly, the Agency must have legal personality and an autonomous budget funded mainly through a contribution by the Community. In order to ensure the Agency's independence in its daily management and in the opinions and recommendations which it issues, the Executive Director should have full responsibility and the Agency's personnel should be independent.
- (20) The membership of the Agency's administrative board must reflect the balance between the two branches of the Community's executive and safeguard the principle of the executive's responsibility before the European Parliament. Based on the principles proposed in the White Paper on European governance⁽²⁾, the Commission and the Member States must therefore be equally represented on an administrative board with the powers necessary to draw up the budget, verify its implementation, adopt appropriate financial rules, set up transparent working procedures for the Agency's decisions and appoint the Executive Director. In order to guarantee the transparency of the administrative board's decisions, representatives of the sectors concerned must participate in the deliberations, but without the right to vote, which is reserved for the representatives of public authorities who must answer to the democratic control authorities. These independent members must be designated by the Commission on the basis of their merit and experience in the railway industry and not as representatives of any particular trade associations.
- (21) The Agency's work must be transparent and its management must be subject to all the existing provisions concerning sound management and combating fraud. The effective control of the European Parliament must be ensured and, to this end, the European Parliament must have the possibility of a hearing with the Executive Director of the Agency.

⁽¹⁾ OJ L 228, 9.9.1996, p. 1. Decision amended by Decision No 1346/2001/EC (OJ L 185, 6.7.2001, p. 1).

⁽²⁾ COM(2001) 428 final.

(22) Since the objectives of the action proposed, namely to establish a specialised body to formulate common solutions on matters concerning railway safety and interoperability, cannot be sufficiently achieved by the Member States and, by reason of the joint nature of the work to be done, can therefore be better achieved by the Community, the Community may take action, in accordance with the subsidiarity principle enshrined in Article 5 of the Treaty. In accordance with the proportionality principle enshrined in the same article, this regulation does not go beyond what is necessary to achieve these objectives,

HAVE ADOPTED THIS REGULATION:

CHAPTER 1

PRINCIPLES

Article 1

Establishment and objectives of the Agency

1. This Regulation establishes a European Railway Agency, hereinafter referred to as 'the Agency'.

2. The objective of the Agency shall be to contribute, on technical matters, to implementation of the Community legislation aiming at enhancing the level of interoperability of railway systems and at developing a common approach to safety on the European railway system, in order to contribute to creating a European railway area without frontiers and guaranteeing a high level of safety.

3. In pursuing these objectives, the Agency shall take full account of the process of enlargement of the European Union and of the specific constraints relating to rail links with third countries.

Article 2

Type of acts of the Agency

The Agency may adopt:

- (a) recommendations addressed to the Commission concerning the application of Articles 6, 7, 12, 14, 16, 17 and 18;
- (b) opinions issued to the Commission or to the authorities concerned in the Member States pursuant to Articles 8, 10, 13 and 15.

Article 3

Participation of professionals from the sector

1. For drawing up the recommendations provided for in Articles 6, 7, 12, 14, 16, 17 and 18, the Agency shall take as a basis the expertise built up by professionals from the sectors, in particular the experience gained by the European Association for Railway Interoperability (AEIF).

2. To this end, following adoption of the annual work programme, the Agency shall agree on the composition of the working parties with the professional organisations from the sector, which shall put forward proposals to the Agency for that purpose. The Agency shall ensure that these working parties are representative and work transparently.

3. The working parties shall be chaired by a representative of the Agency.

Article 4

Consultation of the social partners

Whenever the work provided for in Articles 6, 12 and 17 has a direct impact on the social environment or working conditions of workers in the industry the Agency shall consult the social partners within the framework of the social dialogue committee.

These consultations shall be held before the Agency submits its recommendations to the Commission. The opinions expressed by the social dialogue committee shall be forwarded by the Agency to the Commission and by the Commission to the committee referred to in Article 21 of Directive 2001/16/EC.

Article 5

Consultation of users

Whenever the work provided for in Articles 6 and 12 has a direct impact on customers the Agency shall consult the organisations representing rail freight users and customers. The list of organisations to be consulted shall be drawn up by the committee referred to in Article 21 of Directive 2001/16/EC.

These consultations shall be held before the Agency submits its proposals to the Commission. The opinions expressed by the organisations concerned shall be forwarded by the Agency to the Commission and by the Commission to the committee referred to in Article 21 of Directive 2001/16/EC.

CHAPTER 2

SAFETY

Article 6

Technical support

1. The Agency shall recommend to the Commission the common safety targets and the common safety methods provided for in Article 5 of Directive ... [on railway safety].

2. The Agency shall recommend, at the request of the Commission or of the committee referred to in Article 21 of Directive ... [on railway safety] or on its own initiative, other measures in the field of safety.

3. For the transition period preceding adoption of the common safety targets (CSTs), of the common safety methods (CSMs) and of the technical specifications for interoperability (TSIs), as well as for matters concerning equipment and infrastructure not covered by the TSIs, the Agency may make any appropriate recommendation to the Commission. The Agency shall ensure consistency between these recommendations and the TSIs already existing or being drawn up.

4. The Agency shall present a cost-benefit analysis in support of the recommendations which it submits pursuant to this Article.

5. The Agency shall organise and facilitate cooperation between the national safety authorities and the inspection bodies defined by Directive ... [on railway safety].

Article 7

Safety certificates

With a view to application of Article 14 of the Directive on railway safety concerning the harmonisation of safety certificates, the Agency shall draft and recommend a harmonised format for safety certificates, including an electronic version, and a harmonised format for applications for safety certificates, including the list of the essential details to be provided.

Article 8

National safety measures

1. At the request of the Commission, the Agency shall carry out a technical examination of the new national safety measures submitted to the Commission in accordance with Article 8 of Directive ... [on railway safety].

2. The Agency shall examine the compatibility of the above-mentioned measures with the common safety targets (CSTs) and common safety methods (CSMs) defined by Directive ... [on railway safety] and with the technical specifications for interoperability (TSIs) in force.

3. If, after having taken account of the reasons given by the Member State, the Agency considers that any of these measures is incompatible with the rules mentioned in paragraph 2, it shall submit an opinion to the Commission within two months of transmission of the rules to the Agency by the Commission.

Article 9

Monitoring of safety performance

1. The Agency shall establish a network with the national authorities responsible for safety and the national authorities

responsible for the inspections provided for by Directive ... [on railway safety] in order to define the content of the common indicators listed in Annex 1 to Directive ... of the European Parliament and of the Council of ... [on railway safety] and to collect all the data available on railway safety.

2. On the basis of the safety indicators, national reports on safety and accidents and its own information, every two years the Agency shall submit a report on safety performance, which shall be made public. The first such report shall be published during the Agency's third year in operation.

3. The Agency shall draw on the data collected by Eurostat and shall cooperate with Eurostat to avoid any duplication of work and to ensure methodological consistency between the railway safety indicators and the indicators used in other modes of transport.

Article 10

Technical opinions

1. The national regulatory bodies referred to in Article 30 of Directive 2001/14/EC may request a technical opinion from the Agency concerning the safety-related aspects of matters drawn to their attention.

2. The committees provided for in Article 35 of Directive 2001/14/EC and Article 11a of Directive 91/440/EEC, as last amended, may request a technical opinion from the Agency concerning safety-related aspects within their respective areas of competence.

3. The Agency shall give its opinion within two months. This opinion shall be made public by the Agency in a version from which all data concerning any trade or industrial secret have been expurgated.

Article 11

Public register of documents

1. The Agency shall be responsible for keeping a public list of the following documents:

- (a) the licences issued in accordance with Directive 95/18/EC;
- (b) the safety certificates issued in accordance with Directive ... [on railway safety];
- (c) the inspection reports forwarded to the Agency in accordance with Article 23 of Directive ... [on railway safety];
- (d) the national provisions notified to the Commission in accordance with Article 8 of Directive ... [on railway safety].

2. The national authorities responsible for issuing the documents referred to in paragraph 1 shall notify the Agency within one month of each individual decision to issue, refuse or withdraw them. The Agency may ask to inspect the files justifying the issue, refusal or withdrawal of one of these documents. In this case, the authorities concerned shall send the file to the Agency within fifteen working days.

3. The Agency may add to this public database any document or link relevant to the objectives of this Regulation.

CHAPTER 3

INTEROPERABILITY

Article 12

Technical support provided by the Agency

The Agency shall contribute to the development and implementation of rail interoperability in accordance with the principles and definitions laid down in Directives 96/48/EC and 2001/16/EC. To this end, the Agency shall:

- (a) carry out, on a mandate from the Commission, the work on drafting the TSIs and forward the draft TSIs to the Commission;
- (b) ensure that the TSIs are adapted to technical progress and market trends and to the social requirements and propose to the Commission the amendments to the TSIs which it considers necessary;
- (c) ensure coordination between the development and updating of the TSIs on the one hand and the development of the European standards which prove necessary for interoperability on the other and maintain the relevant contacts with the European standardisation bodies;
- (d) organise and facilitate the cooperation of notified bodies.

Article 13

Inspection and control of notified bodies

Without prejudice to the responsibility of Member States for the notified bodies which they designate, the Agency may, at the request of the Commission or on its own initiative, inspect the quality of the work of notified bodies. It shall submit an opinion to the Commission where appropriate.

Article 14

Monitoring the level of interoperability

1. The Agency shall recommend, at the request of the Commission, procedures for implementing interoperability by

facilitating coordination between operators and between infrastructure managers, in particular to organise systems migration.

2. The Agency shall monitor progress with the interoperability of the railway systems. Every two years it shall present and publish a report on progress with interoperability. The first such report shall be published during the Agency's second year in operation.

Article 15

Interoperability of the trans-European network

At the request of the Commission, the Agency shall examine, from the point of view of interoperability, any infrastructure project for which Community support is requested. The Agency shall give an opinion within one month.

Article 16

Certification of maintenance workshops

The Agency shall develop a European system for certification of maintenance workshops for rolling stock and shall make recommendations with a view to implementation of such a system.

Article 17

Vocational qualifications

1. The Agency shall set out the essential qualifications required in order to drive trains as well as the training systems. It shall distinguish between the general qualifications required for each major type of rolling stock and the qualifications specific to each line and each piece of equipment.

2. For the general qualifications, the Agency shall compile, by major type of equipment, the minimum qualifications and training required for drivers in order to ensure safe operation.

3. The Agency shall make recommendations with a view to putting in place a system for accreditation of training institutes and of the diplomas which they issue.

4. The Agency shall promote and support exchanges of drivers and trainers between railway companies from different Member States.

Article 18

Registration of rolling stock

The Agency shall draw up and recommend to the Commission a standard format for the registration of rolling stock in accordance with Article 14 of Directive 96/48/EC and Article 14 of Directive 2001/16/EC.

*Article 19***Register of documents on interoperability**

1. The Agency shall keep a public list of the following documents provided for by Directives 2001/16/EC and 96/48/EC:

- (a) the declarations of verification of subsystems;
- (b) the declarations of conformity of constituents;
- (c) the authorisations for putting into service, including the corresponding registration numbers;
- (d) the registers of infrastructure and rolling stock.

2. The bodies concerned shall submit these documents to the Agency, which shall determine the practical procedures for submitting them.

3. The Agency shall set up an electronic database for these documents. This database shall be accessible to the public through a website.

CHAPTER 4

STUDIES AND PROMOTION OF INNOVATION*Article 20***Studies**

Where required for implementation of the tasks set by this Regulation, the Agency shall order studies, financed from its own budget.

*Article 21***Promotion of innovation**

The Commission may entrust the Agency with the task of promoting innovations aimed at improving railway interoperability and safety, particularly the use of new information technologies and tracking and tracing systems.

CHAPTER 5

INTERNAL STRUCTURE AND OPERATION*Article 22***Legal status, location**

1. The Agency shall be a body of the Community. It shall have legal personality.

2. The location of the Agency shall be decided by the competent authorities, at the latest six months after the adoption of this Regulation, on a proposal from the Commission.

3. In each Member State, the Agency shall enjoy the most extensive legal capacity accorded to legal persons under their

national laws. In particular, the Agency shall have powers to acquire or to transfer movable and immovable property and to be a party to legal proceedings.

4. The Agency shall be represented by its Executive Director.

*Article 23***Privileges and immunities**

The Protocol on the Privileges and Immunities of the European Communities shall apply to the Agency and its staff.

*Article 24***Staff**

1. The Agency's staff shall be subject to the rules and regulations applicable to the officials and other servants of the European Communities. The administrative board, in agreement with the Commission, shall adopt the necessary implementing procedures.

2. Without prejudice to Article 26, the powers conferred on the appointing authority and on the contracting authority by the Staff Regulations of Officials of the European Communities, as well as by the Conditions of Employment of Other Servants of the European Communities, shall be exercised by the Agency in respect of its own staff.

3. Without prejudice to Article 26(1), the Agency's staff shall consist of temporary employees recruited by the Agency for a maximum of five years. The temporary staff shall consist of:

- staff recruited from among professionals from the sector on the basis of their qualifications and experience in the field of railway safety and interoperability;
- officials assigned or seconded by the Commission to carry out management duties;
- other servants, as defined in the Conditions of Employment of Other Servants of the European Communities, to carry out implementing or secretarial tasks.

4. The experts who participate in the working parties organised by the Agency shall not belong to the Agency's staff. Their travel and subsistence expenses shall be met by the Agency, based on rules and scales adopted by the administrative board.

*Article 25***Functions and powers of the Executive Director**

1. The Agency shall be managed by its Executive Director, who shall be responsible for the day-to-day management of the Agency and shall act completely independently. The Executive Director shall neither request nor accept any instruction from any government or from any other body or company.

2. The Executive Director shall:
- (a) prepare the work programme and, after agreement by the Commission, submit it to the administrative board;
 - (b) make the necessary arrangements for implementation of the work programme and comply with all requests for assistance from the Commission;
 - (c) take the necessary steps, in particular the adoption of internal administrative instructions and the publication of orders, to ensure the operation of the Agency in accordance with this Regulation;
 - (d) establish an effective monitoring system in order to compare the Agency's results with its operational objectives and, on this basis, prepare each year a draft general report and submit it to the administrative board;
 - (e) establish a regular assessment system corresponding to recognised professional standards;
 - (f) exercise the powers laid down in Article 23(2) in respect of the staff;
 - (g) draw up estimates of the revenue and expenditure of the Agency pursuant to Article 38 and implement the budget pursuant to Article 39.
3. The Executive Director may be assisted by one or more heads of unit. The Executive Director may not delegate the powers conferred on him.

Article 26

Appointments within the Agency

1. The Executive Director of the Agency shall be appointed by the administrative board on a proposal by the Commission. The administrative board, acting on a proposal by the Commission, shall have the power to dismiss the Executive Director. The term of office of the Executive Director shall be five years. This term of office may be extended once for a maximum of a further two years.
2. The Executive Director of the Agency shall appoint the other members of the Agency's staff in accordance with the principles laid down in Article 23 of this Regulation.

Article 27

Hearing of the Executive Director before the European Parliament

Each year the Executive Director shall submit to the European Parliament the general report on the Agency's activities. The European Parliament may also ask at any time for a hearing with the Executive Director on any subject related to the Agency's activities.

Article 28

Establishment and powers of the administrative board

1. The Agency shall have an administrative board.

2. The administrative board shall:
 - (a) appoint the Executive Director in accordance with Article 26;
 - (b) before 31 March each year, adopt the general report of the Agency for the previous year and submit it to the Commission, the Council and the European Parliament;
 - (c) before 30 October each year, adopt the Agency's work programme for the next year and submit it to the Commission, the Council and the European Parliament;
 - (d) adopt the Agency's final budget before the beginning of the financial year and adjust it, if necessary, to the Community contribution and the Agency's other revenue;
 - (e) exercise its functions in relation to the Agency's budget, pursuant to the provisions of Chapter 6;
 - (f) exercise disciplinary authority over the Executive Director and ensure that the Agency operates with the necessary transparency and neutrality.

Article 29

Composition of the administrative board

1. The administrative board shall be made up of:
 - six representatives of the Council;
 - six representatives of the Commission; and
 - three independent members, with no vote, appointed by the Commission for their recognised expertise in the sector.
2. The Council and the Commission shall designate their representatives, plus one alternate for each of them, who may represent them and be entitled to vote in their absence. The term of office of the members of the administrative board shall be five years. This term of office may be renewed once.

Article 30

Chair of the administrative board

1. The administrative board shall elect a Chairperson and a Deputy Chairperson from among its members. The Deputy Chairperson shall *ex-officio* replace the Chairperson in the event of the Chairperson being unable to attend to his/her duties.
2. The terms of office of the Chairperson and Deputy Chairperson shall be three years and shall expire when their membership of the administrative board ends. This term of office may be renewed once.

Article 31

Meetings

1. Meetings of the administrative board shall be convened by its Chairperson. The Executive Director of the Agency shall participate in the deliberations.

2. The administrative board shall meet at least twice a year. It shall also meet at the instance of the Chairperson, at the request of the Commission or at the request of the majority of its members.

Article 32

Voting

The administrative board shall take its decisions by a two-thirds majority of its members entitled to vote. Each member shall have one vote, with the exception of the three independent members and of the Executive Director, who shall not be entitled to vote.

Article 33

Inspections in the Member States

1. In order to fulfil the tasks entrusted to it by Articles 8, 9, 10, 13 and 15, the Agency may, at the request of the Commission, conduct inspections in the Member States. The national authorities in the Member States shall facilitate the work of the Agency's staff to ensure that the inspections proceed smoothly. The Agency officials shall be empowered:

- (a) to examine files, data, reports and any other documents relevant to implementation of the Community legislation on railway interoperability and safety;
- (b) to take copies of all or extracts from such files, data, reports and other documents;
- (c) to ask for oral explanations on the spot;
- (d) to have access to any premises, site or means of transport.

2. The Agency shall inform the Member State concerned of the planned inspection, the names of the delegated officials and the date on which the inspection is due to start. The Agency officials delegated to carry out these inspections shall exercise their powers on presentation of a decision from the Executive Director of the Agency specifying the subject-matter and purpose of their mission.

3. At the end of each inspection, and after having listened to the entities inspected, the Agency shall draw up a report and send it to the Commission and to the Member State concerned.

Article 34

Liability

1. The contractual liability of the Agency shall be governed by the law applicable to the contract in question.

2. The Court of Justice of the European Communities shall have jurisdiction to give judgment pursuant to any arbitration clause contained in a contract concluded by the Agency.

3. In the case of non-contractual liability, the Agency shall, in accordance with the general principles common to the laws of the Member States, make good any damage caused by its departments or by its staff in the course of performance of their duties.

4. The Court of Justice of the European Communities shall have jurisdiction in disputes relating to compensation for the damage referred to in paragraph 3.

5. The personal liability of its staff towards the Agency shall be governed by the provisions laid down in the Staff Regulations or Conditions of Employment applicable to them.

Article 35

Languages

1. The in-house working languages of the Agency shall be English, French and German. The Member States may address the Agency in the Community language of their choice.

2. The translation services required for the functioning of the Agency shall be provided by the Translation Centre for the Bodies of the Union.

Article 36

Participation by third countries

1. The Agency shall be open to participation by European countries which have concluded agreements with the European Community whereby the countries concerned have adopted and are applying the Community legislation in the field covered by this Regulation.

2. In accordance with the relevant provisions of the above-mentioned agreements, arrangements shall be made which shall specify the detailed rules for participation by these countries in the work of the Agency, in particular the nature and extent of such participation. These arrangements shall include, inter alia, provisions on financial contributions and staff. They may provide for representation, without vote, on the administrative board.

Article 37

Transparency

Regulation (EC) No 1049/2001 regarding public access to European Parliament, Council and Commission documents shall apply to the documents held by the Agency.

The administrative board shall adopt the practical measures for implementation of Regulation (EC) No 1049/2001.

CHAPTER 6

FINANCIAL PROVISIONS

Article 38

Budget

1. The revenue of the Agency shall consist of:

- a contribution from the Community;
- any contribution from third countries participating in the work of the Agency, as provided for by Article 36;

— charges for publications, training and any other services provided by the Agency.

2. The expenditure of the Agency shall include staff, administrative, infrastructure and operational expenses.

3. The Executive Director shall draw up an estimate of the revenue and expenditure of the Agency for the following financial year and shall submit it to the administrative board together with an establishment plan.

4. Revenue and expenditure shall be in balance.

5. The administrative board shall adopt, by 31 March at the latest, the draft budget for the following financial year and submit it to the Commission, which, on this basis, shall enter the corresponding estimates in the preliminary draft general budget of the European Communities, which it shall submit to the Council in accordance with Article 272 of the Treaty.

6. The administrative board shall adopt, by 15 January at the latest, the Agency's budget, adjusting it, where necessary, to the Community contribution decided by the budgetary authority.

Article 39

Implementation and control of the budget

1. The Executive Director shall implement the budget of the Agency.

2. Control of commitment and payment of all expenditure and control of the existence and receipt of all revenue of the Agency shall be carried out by the Financial Controller of the Commission.

3. By 31 March of each year at the latest, the Executive Director shall submit to the Commission, the administrative board and the Court of Auditors the detailed accounts of all revenue and expenditure from the previous financial year.

The Court of Auditors shall examine these accounts in accordance with Article 248 of the Treaty. It shall publish a report on the Agency's activities every year.

4. The European Parliament, acting on a recommendation from the administrative board, shall give a discharge to the Executive Director of the Agency in respect of the implementation of the budget.

Article 40

Financial Regulation

The administrative board, after receiving the agreement of the Commission and the endorsement of the Court of Auditors, shall adopt the Agency's Financial Regulation, which shall, in particular, specify the procedure to be used for drawing up and implementing the Agency's budget, in accordance with Article 142 of the Financial Regulation applicable to the general budget of the European Union.

Article 41

Combating fraud

1. For the purposes of combating fraud, corruption and other unlawful acts, the provisions of Regulation (EC) No 1073/1999⁽¹⁾ of the European Parliament and of the Council of 25 May 1999 concerning investigations conducted by the European Anti-Fraud Office (OLAF) shall apply in full.

2. The Agency shall accede to the Interinstitutional Agreement of 25 May 1999 concerning internal investigations by the European Anti-Fraud Office (OLAF)⁽¹⁾ and shall immediately adopt the necessary provisions applicable to all employees of the Agency.

3. The decisions concerning funding and the implementing agreements and instruments resulting from them shall explicitly stipulate that the Court of Auditors and OLAF may, if necessary, carry out on-the-spot checks on the recipients of the Agency's funding.

CHAPTER 7

GENERAL AND FINAL PROVISIONS

Article 42

Start of the Agency's activities

The Agency shall be operational within 24 months of the entry into force of this Regulation.

Article 43

Evaluation

Within five years of the Agency taking up its duties, the Commission shall carry out an evaluation of implementation of this Regulation, the results obtained by the Agency and its working methods. This evaluation shall take account of the views of the representatives of the profession, of the social partners and of customers' organisations. The findings of the evaluation shall be made public. The Commission shall propose, if necessary, an amendment to this Regulation.

Article 44

This Regulation shall enter into force on the day following its publication in the *Official Journal of the European Communities*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

⁽¹⁾ OJ L 136, 31.5.1999.

Proposal for a Directive of the European Parliament and of the Council on safety on the Community's railways and amending Council Directive 95/18/EC on the licensing of railway undertakings and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification

(2002/C 126 E/09)

(Text with EEA relevance)

COM(2002) 21 final — 2002/0022(COD)

(Submitted by the Commission on 25 January 2002)

THE EUROPEAN PARLIAMENT AND THE COUNCIL
OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 71(1) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee,

Having regard to the opinion of the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

Whereas:

(1) In order to pursue efforts to establish a single market for rail transport services, initiated by Council Directive 91/440/EEC of 29 July 1991 on the development of the Community's railways⁽¹⁾, it is necessary to establish a common regulatory framework for railway safety. Member States have until now developed their safety rules and standards mainly on national lines, based on national technical and operational concepts. Simultaneously differences in principles, approach and culture have made it difficult to break through the technical barriers and establish international transport operations.

(2) Directive 91/440/EEC, Council Directive 95/18/EC of 19 June 1995 on the licensing of railway undertakings⁽²⁾ and Directive 2001/14/EC of the European Parliament and

of the Council of 26 February 2001 on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure and safety certification⁽³⁾ provide the first steps towards regulation of the European rail transport market by opening the market for international rail freight services. However, the provisions on safety have proved to be insufficient and different safety requirements still present major barriers to seamless rail transport in the Community. It is of particular importance to harmonise the regulatory structure in the Member States, the content of safety rules, safety certification of railway undertakings, the tasks and roles of the safety authorities and the investigation of accidents.

(3) Metros, trams and other light rail systems are in many Member States subject to local or regional safety rules and are often supervised by local or regional authorities and not covered by the requirements on Community interoperability or licensing. Trams are furthermore often subject to road safety legislation and could therefore not be fully covered by railway safety rules. For these reasons and according to the principle of subsidiarity as set out in Article 5 of the Treaty, Member States should be allowed to exclude such local rail systems from the scope of this Directive.

(4) Safety levels in the Community rail system are generally high, in particular compared to road transport. It is important that safety is maintained during the current restructuring phase, which will separate functions of previously integrated railway companies and move the railway sector further from self-regulation to public regulation. In line with technical and scientific progress safety should be further improved, when reasonably practical and taking into account the competitiveness of the rail transport mode.

(5) All those operating the railway system, infrastructure managers and railway undertakings, should bear the full responsibility for the safety of the system, each for his part. Member States should make a clear distinction between this immediate responsibility for safety and the safety authorities' task of providing a national regulatory framework and supervising the performance of the operators.

⁽¹⁾ OJ L 237, 24.8.1991, p. 25. Directive as amended by Directive 2001/12/EC (OJ L 75, 15.3.2001, p. 1).

⁽²⁾ OJ L 143, 27.6.1995, p. 70. Directive as amended by Directive 2001/13/EC of the European Parliament and of the Council (OJ L 75, 15.3.2001, p. 26).

⁽³⁾ OJ L 75, 15.3.2001, p. 29.

- (6) Requirements on safety of the subsystems of the trans-European rail networks are laid down in Council Directive 96/48/EC of 23 July 1996 on the interoperability of the trans-European high-speed rail system⁽¹⁾ and Directive 2001/16/EC of the European Parliament and of the Council of 19 March 2001 on the interoperability of the trans-European conventional rail system⁽²⁾. However, those Directives do not define common requirements at system level and do not deal in detail with regulation, management and supervision of safety. When minimum safety levels of the subsystems are defined by technical specifications for interoperability (TSI) it will be increasingly important to establish safety targets at system level as well.
- (7) Common safety targets (CST) and common safety methods (CSM) should be gradually introduced to ensure that a high level of safety is maintained and to provide tools for assessment of the safety level and the performance of the operators on the European level as well as in the Member States.
- (8) Information on safety of the railway system is scarce and not generally publicly available. It is thus necessary to establish common safety indicators (CSI) in order to assess that the system complies with the CST and to facilitate the monitoring of railway safety performance.
- (9) National safety rules, which are often based on national technical standards, should gradually be replaced by rules based on common standards, established by TSI. New national rules should be in line with Community legislation and facilitate the migration towards a common approach to railway safety. They should therefore be subject to a Community approval process.
- (10) The development of CST, CSM and CSI as well as the need to facilitate the process towards a common approach to railway safety requires technical support on Community level. The European Railway Agency instituted by Regulation (EC) No .../... of the European Parliament and of the Council is set up to deliver recommendations concerning CST, CSM and CSI and further harmonisation measures and to monitor the development of railway safety in the Community.
- (11) In carrying out their duties and fulfilling their responsibilities, infrastructure managers and railway undertakings should implement a safety management system, fulfilling Community requirements and containing common elements. Information on safety and the implementation of the safety management system should be submitted to the safety authority in the Member State.
- (12) The safety management system should take into account that the provisions of Council Directive 89/391/EC of 12 June 1989⁽³⁾ on the introduction of measures to encourage improvements in the safety and health of workers at work and its relevant individual directives are fully applicable to the protection of the health and safety of workers engaged in railway transport.
- (13) To ensure a high level of safety on the railways and equal conditions for all railway undertakings, they should be subject to the same safety requirements. The safety certificate should give evidence that the railway undertaking has established its safety management system and is able to comply with the relevant safety standards and rules. For international transport services it should be enough to approve the safety management system in one Member State and give the approval Community validity. Adherence to national rules on the other hand should be subject to additional certification in each Member State. The final aim should be to establish a common safety certificate with Community validity.
- (14) Member States should make efforts to assist applicants wanting to enter the market as railway undertakings. In particular they should provide information and act promptly on requests for safety certification. For railway undertakings operating international transport services, it is important that the procedures are similar in different Member States. Although the safety certificate will contain national parts for the foreseeable future, it should nevertheless be possible to harmonise the common parts of it and facilitate the creation of a common template.
- (15) Certification of train staff and in-use rollingstock for the different national networks are often insurmountable barriers to new entrants. Member States should be responsible for providing training and certification of train staff and mutual acceptance of basic requirements of train staff should be guaranteed. A common procedure should be established for mutual acceptance of in-use rolling stock.
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- (1) OJ L 262, 16.10.1996, p. 18 (Directive as amended by Directive .../.../EC of the European Parliament and of the Council amending Council Directive 96/48/EC and Directive 2001/16/EC (OJ L ...)).
- (2) OJ L 110, 20.4.2001, p. 1. (Directive as amended by Directive .../.../EC of the European Parliament and of the Council amending Council Directive 96/48/EC and Directive 2001/16/EC (OJ L ...)).
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- (3) OJ L 183, 29.6.1989, p. 1.

- (16) As part of the new common regulatory framework for safety, national authorities should be set up in all Member States to regulate and supervise railway safety. To facilitate cooperation between them at Community level, they should be given the same minimum tasks and responsibilities. The safety authorities should be granted a high degree of independence. They should carry out their tasks in an open and non-discriminatory way to help to create a single Community rail system and cooperate to coordinate their decision-making criteria, in particular concerning safety certification of railway undertakings carrying out international rail transport.
- (17) Serious accidents on the railways are rare. However, they can have disastrous consequences and raise concern among the public about the safety performance of the railway system. All accidents should, therefore, be investigated from a safety perspective to avoid recurrence and the results of the investigations should be made public. Near misses and other incidents are significant precursors to serious accidents and should also, be subject to safety investigations.
- (18) A safety investigation should be kept separate from the judicial inquiry into the same incident and be granted access to evidence and witnesses. It should be carried out by a permanent body, independent of the actors including the safety authority, under as much openness as possible. For each occurrence the investigation body should establish the relevant investigation group with necessary expertise to find the immediate causes and underlying causes of the incident.
- (19) The reports on investigations and any findings and recommendations provide crucial information for the further improvement of rail safety and should be made publicly available at Community level. Safety recommendations should be acted upon by the addressees and actions reported back to the investigating body.
- (20) Since the objectives of the proposed action, namely to coordinate activities in the Member States to regulate and supervise safety and to investigate accidents and to establish at Community level common safety targets, common safety methods, common safety indicators and common requirements of safety certificates, cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale of the action, be better achieved at Community level, the Community may adopt measures in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Directive does not go beyond what is necessary in order to achieve those objectives.
- (21) Since most of the measures necessary for the implementation of this Directive are measures of general scope within the meaning of Article 2 of Council Decision 1999/468/EC of 28 June 1999 laying down the

procedure for the exercise of implementing powers conferred on the Commission⁽¹⁾, they should be adopted by use of the regulatory procedure provided for in Article 5 of that Decision. In accordance with Article 2 of Decision 1999/468/EC, some measures for the implementation of this Directive should be adopted by use of the advisory procedure provided for in Article 3 of that Decision.

- (22) Since some provisions of Directive 95/18/EC and Directive 2001/14/EC are superseded by this Directive, those Directives should be amended.
- (23) The Member States should lay down rules on penalties applicable to infringements of the provisions of this Directive and ensure that they are implemented. Those penalties must be effective, proportionate and dissuasive,

HAVE ADOPTED THIS DIRECTIVE:

CHAPTER I

INTRODUCTORY PROVISIONS

Article 1

Subject-matter

The purpose of this Directive is to ensure the development and improvement of safety on the Community's railways by:

- (a) harmonising the regulatory structure in the Member States,
- (b) defining responsibilities between the actors,
- (c) developing common safety targets and common safety methods,
- (d) requiring the establishment, in every Member State, of national safety authorities and independent national bodies for accident investigation,
- (e) defining common principles for the management, regulation and supervision of railway safety.

Article 2

Scope

1. This Directive applies to the railway system in the Member States, which may be broken down into subsystems for structural and operational areas. It covers safety requirements on the system as a whole, including the safe management of infrastructure and of traffic operation and the interaction between railway undertakings and infrastructure managers.

⁽¹⁾ OJ L 184, 17.7.1999, p. 23.

2. Member States may exclude from the measures they adopt in implementation of this Directive:

- (a) metros, trams and other light rail systems;
- (b) networks that are technically separated from any part of the trans-European conventional and high-speed rail systems and intended only for the operation of local, urban or suburban passenger services and railway undertakings operating solely on these networks;
- (c) privately owned railway infrastructure that exists solely for use by the infrastructure owner for its own freight operations.

Article 3

Definitions

For the purpose of this Directive, the following definitions shall apply:

- (a) 'railway system' means the totality of the subsystems for structural and operational areas, such as infrastructure, energy, control and command and signalling, rolling stock, traffic operation and management, maintenance, telematics applications for passenger and freight services, environment and users, as defined in Directives 96/48/EC and 2001/16/EC, as well as the management and operation of the system as a whole;
- (b) 'infrastructure manager' means any body or undertaking that is responsible in particular for establishing and maintaining railway infrastructure, or a part thereof, as defined in Article 3 of Directive 91/440/EEC, which may also include the management of infrastructure control and safety systems. The functions of the infrastructure manager on a network or part of a network may be allocated to different bodies or undertakings;
- (c) 'railway undertaking' means any public or private undertaking, the activity of which is to provide transport of goods and/or passengers by rail with a requirement that the undertaking must ensure traction; this also includes undertakings which provide traction only;
- (d) 'technical specification for interoperability (TSI)' means the specifications by which each subsystem or part of a subsystem is covered in order to meet the essential requirements and ensure the interoperability of the trans-European high-speed and conventional rail systems as defined in Directive 96/48/EC and Directive 01/16/EC;
- (e) 'common safety targets (CST)' means the minimum safety levels that must be reached by different parts of the rail system (the conventional rail system, the high speed rail system or lines solely used for freight transport) and by the system as a whole, expressed in risk acceptance criteria;
- (f) 'common safety methods (CSM)' means the methods that shall be developed to describe how the CST are reached and how compliance is assessed;
- (g) 'safety authority' means the national body entrusted with the task to regulate and supervise railway safety according to the provisions of this Directive;
- (h) 'national safety rules' means all rules containing railway safety requirements imposed at Member State level and applicable to more than one railway undertaking, irrespective of the body issuing them;
- (i) 'safety management system' means the organisation and arrangements established by an infrastructure manager or a railway undertaking to ensure the safe management of its operations;
- (j) 'investigator-in-charge' means a person responsible for the organisation, conduct and control of an investigation;
- (k) 'serious accident' means:
 - (a) accidents caused by collision or derailment of trains, resulting in at least one killed person or five or more seriously injured persons,
 - (b) other railway accidents causing the loss of human lives, multiple serious injuries or extensive damage to rollingstock, the infrastructure or the environment and with an obvious impact on railway safety regulation or the management of safety;
- (l) 'incident' means any occurrence, other than serious accidents, associated with the operation of trains and affecting the safety of operation;
- (m) 'investigation' means a process conducted for the purpose of accident and incident prevention which includes the gathering and analysis of information, the drawing of conclusions, including the determination of causes and, when appropriate, the making of safety recommendations;
- (n) 'causes' means actions, omissions, events or conditions, or a combination thereof, which led to the accident or incident;
- (o) 'Agency' means the European Railway Agency, the Community agency for railway safety and interoperability, established by Regulation (EC) No .../... of the European Parliament and of the Council;

- (p) 'notified bodies' means the bodies which are responsible for assessing the conformity or suitability for use of the interoperability constituents or for appraising the EC procedure for verification of the subsystems, as defined in Directive 96/48/EC and Directive 2001/16/EC;
- (q) 'interoperability constituents' means any elementary component, group of components, subassembly or complete assembly of equipment incorporated or intended to be incorporated into a subsystem upon which the high-speed or conventional rail system depends directly or indirectly, as defined in Directives 96/48/EC and 2001/16/EC. The concept of a 'constituent' covers both tangible objects and intangible objects such as software.

CHAPTER II

DEVELOPMENT AND MANAGEMENT OF SAFETY

Article 4

Development and improvement of railway safety

1. Member States shall ensure that railway safety is generally maintained and, where reasonably practicable, continuously improved, taking into consideration the development of Community legislation and the technical and scientific progress and giving priority to the prevention of serious accidents.

Member States shall ensure that safety rules are laid down, applied and enforced in an open and non-discriminatory manner, fostering the development of a single European rail transport system.

2. Member States shall ensure that the responsibility for the safe operation of the railway system and the control of risks created on it shall be laid upon the infrastructure managers and railway undertakings, obliging them to implement necessary risk control measures, to apply national safety rules and standards, and to establish safety management systems according to the provisions of this Directive.

Each infrastructure manager and railway undertaking shall be made responsible for its part of the system and its safe operation, including supply of material and contracting of services, vis-à-vis users, customers and third parties.

Article 5

Common safety targets, common safety methods

1. The CST and CSM shall be adopted by the Commission, by [date] ⁽¹⁾ at the latest, in accordance with the procedure referred to in Article 26(2). They shall be published in the *Official Journal of the European Communities*.

Prior to the adoption of CST and CSM, non-binding guidelines on CST and CSM may be adopted in accordance with the

procedure referred to in Article 26(3). They shall be published in the *Official Journal of the European Communities*.

2. Draft CST and CSM and draft non-binding guidelines shall be drawn up by the Agency under a mandate which shall be adopted in accordance with the procedure referred to in Article 26(2).

The draft CST and CSM shall be based on an examination of existing targets and methods in the Member States and take account of the estimated costs and benefits. They shall analyse the possible impact on TSI for the subsystems and contain, where appropriate, consequential proposals for amendments to the TSI.

3. The CST shall define in particular the minimum safety levels that must be reached by different parts of the railway system and by the system as a whole expressed in risk acceptance criteria for:

- (a) individual risks related to passengers, staff including the staff of contractors, level crossing users and unauthorised persons on railway premises,
- (b) societal risks.

4. The CSM shall describe how compliance with the CST is assessed by elaborating and defining:

- (a) risk evaluation and assessment methods,
- (b) methods for assessing conformity with requirements in safety certificates issued in accordance with Article 10, and
- (c) methods to check that the structural subsystems of the trans-European high-speed and conventional rail systems are operated and maintained in accordance with the relevant essential requirements.

5. The CST and CSM shall be revised at regular intervals, in accordance with the procedure referred to in Article 26(2), taking into account the global development of railway safety and technical and scientific progress.

Article 6

Common safety indicators

1. In order to facilitate the assessment of conformity with the CST and to provide for the monitoring of the general development of railway safety, Member States shall collect information on common safety indicators (CSI) through the annual reports of the safety authorities as referred to in Article 17.

The first reference year for the CSI will be ... ⁽²⁾ to be reported with the annual report the year after.

The CSI are established as set out in Annex I.

⁽¹⁾ Five years after entry into force of the Directive.

⁽²⁾ Two years after the year of entry into force of this Directive.

2. By [date] ⁽¹⁾ at the latest Annex I shall be revised in accordance with the procedure referred to in Article 26(2), in particular to include common definitions of the CSI and common methods to calculate accident costs.

Article 7

National safety rules

1. Member States shall ensure that the national safety rules are published and made available to all infrastructure managers, railway undertakings and applicants for a safety certificate.

2. Member States shall ensure that the safety authorities are made responsible for adoption of national safety rules.

3. By [date] ⁽²⁾ at the latest Member States shall notify the Commission of all the relevant national safety rules in force, as set out in Annex II, and indicate their area of application.

The notification shall further provide information on the principal content of the rules with references to the legal texts, on the form of legislation and on which body or organisation is responsible for its publication.

Article 8

Adoption of new national safety rules

1. When a Member State intends to introduce new national safety rules or amendments to existing rules as referred to in Annex II, it shall send the draft rule to the Commission, unless the rules are wholly related to the implementation of TSI.

If the draft rule is not in conformity with Community legislation a Decision, addressed to the Member State concerned, shall be adopted in accordance with the procedure referred to in Article 26(2);

If no Decision is adopted within six months after the submission of the draft, the Member State shall be free to adopt the rule.

2. Paragraph 1 shall not apply in those cases where adoption of a new rule is urgent for safety reasons. The Member State shall in such a case inform the Commission of its intention to adopt the rule without following the procedure referred to in paragraph 1 and give the reasons which warrant the urgency of the measures taken. The Commission shall give its views on the information as soon as possible.

Article 9

Safety management systems

1. Infrastructure managers and railway undertakings shall establish their safety management systems to ensure that the

⁽¹⁾ Five years after entry into force of the Directive.

⁽²⁾ Twelve months after entry into force of the Directive.

railway system is in conformity with CST and with safety requirements laid down in TSI and that the relevant parts of CSM are applied.

In the absence of TSI, CST and CSM, the safety management system shall meet requirements laid down in national safety rules as described in Article 7 and Annex II.

2. The safety management system shall meet the requirements and contain the elements laid down in Annex III, adapted to the character, size and other conditions of the activity pursued. It shall ensure the control of all risks created by the activity of the infrastructure manager or railway undertaking, including the supply of maintenance and material and the use of contractors, and, where appropriate, the risks arising as a result of operations by other parties.

3. The safety management system of any infrastructure manager shall take into account the effects of operations by different railway undertakings on the network and make provisions to allow all railway undertakings to operate in accordance with TSI and national safety rules and with conditions laid down in their safety certificate. It shall furthermore be developed with the aim of coordinating the emergency procedures of the infrastructure manager with all railway undertakings that operate on its infrastructure.

4. Each year all infrastructure managers and railway undertakings shall submit to the safety authority by 30 June at the latest an annual safety report concerning the preceding year. The safety report shall contain:

- (a) information on how the organisation's corporate safety targets are met and the results of safety plans;
- (b) the development of national safety indicators and of the CSI laid down in Annex I, as far as it is relevant to the reporting organisation;
- (c) the results of internal safety auditing;
- (d) observations on deficiencies and malfunctions of railway operations and infrastructure management that might be relevant for the safety authority.

CHAPTER III

SAFETY CERTIFICATION

Article 10

Safety certificates

1. In order to be granted access to the railway infrastructure a railway undertaking must hold a safety certificate according to the provisions of this Chapter. The safety certificate may cover the whole railway network of a Member State or only a defined part thereof.

The purpose of the safety certificate is to give evidence that the railway undertaking has established its safety management system and can meet requirements laid down in TSI and other relevant Community legislation and in national safety rules in order to control risks and operate safely on the network.

2. The safety certificate shall comprise:

(a) certification confirming acceptance of the railway undertaking's safety management system as described in Article 9 and Annex III, and

(b) certification confirming acceptance of the provisions made by the railway undertaking to meet specific requirements necessary for the safe operation on the relevant network concerning the application of TSI and national safety rules and the certification of staff and rollingstock, based on documentation submitted by the railway undertaking as described in Annex IV.

3. The safety authority in the Member State where the railway undertaking first establishes its operation shall grant the certification according to paragraph 2(a) and (b).

The certification according to paragraph 2(a) must specify the type and extension of the railway operations covered. It shall be valid throughout the Community for equivalent rail transport operations.

4. The safety authority in the Member State in which the railway undertaking is planning to operate additional rail transport services shall grant the additional national certification necessary according to paragraph 2(b).

5. The safety certificate shall be renewed every fifth year. It shall be wholly or partly updated whenever the type or extension of the operation is substantially altered.

The holder of the safety certificate shall without delay inform the competent safety authority of all major changes in the conditions of the safety certificate. It shall furthermore notify the competent safety authority whenever new categories of staff or new types of rolling stock are introduced.

The safety authority may require that the safety certificate be revised following substantial changes in the safety regulatory framework.

If the safety authority finds that a holder no longer satisfies the conditions for a safety certificate, it shall revoke the certificate immediately giving reasons for its decision.

6. The safety authority shall inform the Agency on the safety certificates referred to in paragraph 2(a) that have been issued, renewed, amended or revoked. The information shall state the name and address of the railway undertaking, the

issuing date, scope and validity of the safety certificate and, in case of revocation, the reasons for the decision.

7. By [date] ⁽¹⁾ at the latest the Agency shall evaluate the development of safety certification and submit a report to the Commission with recommendations on a migration strategy towards a single Community safety certificate. The Commission shall take appropriate action following the recommendation.

Article 11

Application requirements

1. The safety authority shall take a decision on an application for safety certification without delay, but not more than four months after all information required and any supplementary information requested by the safety authority has been submitted. If the applicant is requested to submit supplementary information, such requests shall be communicated promptly.

2. In order to facilitate the establishment of new railway undertakings and the submission of applications from railway undertakings from other Member States, the safety authority shall give detailed guidance on how to obtain the safety certificate. It shall list all requirements that have been laid down for the purpose of Article 10(2) and make all relevant documents available to the applicant.

Special guidance shall be given to railway undertakings that apply for a safety certificate concerning services on a defined limited part of an infrastructure, specifically identifying the rules that are valid for the part in question.

3. An application guidance document describing and explaining the requirements and listing the documents that must be submitted shall be made available to the applicants free of charge.

Article 12

Training and certification of train staff

1. Train drivers and staff accompanying the trains of a railway undertaking that have been certified according to Article 10(2)(b) in one Member State to meet basic requirements concerning minimum or maximum age, basic abilities, fitness and health status shall be mutually accepted by other Member States.

2. Member States shall ensure that railway undertakings applying for a safety certificate have fair and non-discriminatory access to training facilities for train drivers and staff accompanying the trains, whenever such training is necessary for the fulfilment of requirements to obtain the safety certificate.

The services offered must include necessary route knowledge, operating rules, the signalling and control command system and emergency procedures applied on the routes operated.

⁽¹⁾ Five years after the entry into force of the Directive.

If the training services do not include examination and certification, Member States shall ensure that railway undertakings have access to such certification if it is a requirement of the safety certificate.

The safety authority shall ensure that the provision of training services or, where appropriate, certification meets the safety requirements laid down in TSI or national safety rules described in Article 7 and Annex II.

3. If the training facilities are available only through the services of one single railway undertaking or the infrastructure manager, Member States shall ensure that they are made available to other railway undertakings at a reasonable and non-discriminatory price.

Article 13

Certification of in-use rolling stock

1. Railway undertakings operating rollingstock that are certified in one Member State according to Article 10(2)(b) and not, fully in compliance with a TSI shall be certified in additional Member States.

2. The railway undertaking applying for certification in additional Member States shall submit a technical file concerning the rollingstock or type of rollingstock to the relevant safety authority, indicating its intended use on the network. The file shall contain the following information:

- (a) evidence that the rolling stock has been certified by a safety authority in another Member State and records that show its history of operation, maintenance and, where applicable, technical modifications undertaken after certification;
- (b) relevant technical data and operational characteristics requested by the safety authority and needed for its complementary certification;
- (c) evidence on technical and operational characteristics that show that the rollingstock is in compliance with the energy supply system, the signalling and control command system, the track gauge and infrastructure gauges, the maximum allowed axle load and other constraints of the network;
- (d) information on exemptions from national safety rules that are needed to grant certification and evidence, based on risk assessment, showing that the acceptance of the rolling stock does not import undue risks on the network.

3. The safety authority may request that test runs on the network be undertaken to verify compliance with the restrictive parameters referred to in paragraph 2(c) and shall in that case prescribe their range and content.

4. The safety authority shall adopt its decision on an application according to this Article without delay and not

later than four months after the complete technical file, including documentation of the test runs, has been submitted. The certificate may contain conditions for use and other restrictions.

Article 14

Harmonisation of safety certificates

1. By [date] ⁽¹⁾ at the latest, decisions on common harmonised requirements according to Article 10(2)(b) and Annex IV and a common format for application guidance documents shall be adopted in accordance with the procedure referred to in Article 26(2).

2. Prior to the adoption of harmonised requirements and a common format for application guidance documents non-binding guidelines may be adopted in accordance with the procedure referred to in Article 26(3).

3. The Agency shall recommend harmonised requirements and a common format for application guidance documents under a mandate which shall be adopted in accordance with the procedure referred to in Article 26(2).

CHAPTER IV

SAFETY AUTHORITY

Article 15

Tasks of the safety authority

1. Each Member State shall establish a safety authority to supervise and regulate railway safety. It shall be independent in its organisation, legal structure and decision-making from any railway undertaking, infrastructure manager and applicant.

2. The safety authority shall be entrusted with at least the following regulatory tasks:

- (a) authorising the bringing into service of the structural subsystems constituting the trans-European high-speed rail system according to Article 14 of Directive 96/48/EC;
- (b) authorising the bringing into service of the structural subsystems constituting the trans-European conventional rail system, according to Article 14 of Directive 2001/16/EEC;
- (c) authorising the bringing into service of new and substantially altered rollingstock that are not yet covered by a TSI;
- (d) the issue, renewal, amendments and revocation of relevant parts of safety certificates according to Article 10;
- (e) the adoption of legally binding national safety rules as described in Article 7 and Annex II, unless the rules are issued by the national Parliament or the Government.

⁽¹⁾ Five years after entry into force of the Directive.

3. The safety authority shall be entrusted with the following supervisory tasks:

- (a) checking that the structural subsystems of the trans-European high-speed rail system are operated and maintained in accordance with the relevant essential requirements;
- (b) checking that the structural subsystems of the trans-European conventional rail system are operated and maintained in accordance with the relevant essential requirements;
- (c) carrying out the Member State responsibility concerning the supervision of the interoperability constituents and their compliance with the essential requirements;
- (d) checking that infrastructure managers and railway undertakings are operating under the requirements laid down in rules under Community or national law and that conditions and requirements laid down in safety certificates are met;
- (e) supervising that rollingstock are duly registered and that safety related information in the national register, established in accordance with Article [...] of Directive 96/48/EC and Article [...] of Directive 2001/16/EC is accurate and kept up to date.

4. The tasks referred to in paragraphs 2 and 3 may not be transferred or contracted to any infrastructure manager or railway undertaking.

Article 16

Decision-making principles of the safety authority

1. The safety authority shall carry out its tasks in an open, non-discriminatory and transparent way. In particular shall it allow all parties to be heard and give reasons for decisions.

It shall promptly respond to requests and applications and communicate its requests for information and its decisions without undue delay.

In the process of developing the national regulatory framework the safety authority shall consult all involved and interested parties, including infrastructure managers, railway undertakings, manufacturers and maintenance providers, users and staff representatives.

2. The safety authority shall be free to carry out all inspections and investigations that are needed for accomplishment of its supervisory task and it shall be granted access to all relevant documents and to premises, installations and equipment of infrastructure managers and railway undertakings.

3. Member States shall take the measures necessary to ensure that decisions taken by the safety authority are subject to judicial review.

4. The safety authorities shall conduct an active exchange of views and experience for the purpose of harmonising their decision-making criteria across the Community. The cooperation shall in particular aim at facilitating and coordinating the safety certification of railway undertakings which have been granted international train paths according to the procedure laid down in Article 15 of Directive 2001/14/EC.

The Agency shall support them in these tasks.

Article 17

Annual report

Each year the safety authority shall publish an annual report concerning its activities in the preceding year and send it to the Agency by 30 September at the latest. The report shall contain information on:

- (a) the development of railway safety, including an aggregation on Member State level of the CSI laid down in Annex I;
- (b) important changes in legislation and regulation concerning railway safety;
- (c) the development of safety certification;
- (d) results of and experiences from the supervision of infrastructure managers and railway undertakings.

CHAPTER V

ACCIDENT AND INCIDENT INVESTIGATION

Article 18

Occurrences that shall be investigated

1. Member States shall ensure that an investigation is carried out after serious accidents and incidents on the railway system, the objective of which is possible improvement of railway safety and the prevention of future accidents and incidents.

2. Occurrences that shall be investigated include:

- (a) serious accidents;
- (b) incidents that under slightly altered conditions might have led to serious accidents, including technical failures to the structural subsystems or to interoperability constituents of the trans-European high-speed or conventional rail systems.

3. The extent of investigations and the procedure to be followed in carrying out such investigations shall be determined by the investigating body referred to in Article 20, taking into account the principles and the objectives of Articles 19 and 21 and depending on the lessons it expects to draw from the accident or incident for the improvement of safety.

It is at the discretion of the investigating body to decide whether an investigation of an occurrence referred to in paragraph 2(b) shall be established or not. In its decision it shall take into account:

- (a) the seriousness of the incident,
 - (b) whether it forms part of a series of incidents with relevance on system level,
 - (c) its impact on railway safety in a Community perspective, and
 - (d) requests from infrastructure managers, railway undertakings or the safety authority.
4. The investigation shall in no case be concerned with apportioning blame or liability.

Article 19

Status of investigation

1. Member States shall define, in the framework of their respective internal legal systems, a legal status of the investigation that will enable the investigators-in-charge to carry out their task in the most efficient way and within the shortest time.
2. In accordance with the legislation in force in the Member States and, where appropriate, in cooperation with the authorities responsible for the judicial inquiry, the investigators shall, as soon as possible, be given:
 - (a) access to the site of the accident or incident as well as to the rolling stock involved, the related infrastructure and traffic control and signalling installations;
 - (b) the right to an immediate listing of evidence and controlled removal of wreckage, infrastructure installations or components for examination or analysis purposes;
 - (c) access to and use of the contents of on-board recorders and equipment for recording of verbal messages and registration of the operation of the signalling and control system;
 - (d) access to the results of examination of the bodies of victims;
 - (e) access to the results of examinations of the train staff and other railway staff involved in the accident or incident;
 - (f) the opportunity to examine involved railway staff and other witnesses;
 - (g) access to any relevant information or records held by the infrastructure manager, the railway undertakings involved and the safety authority.

3. The investigation shall be accomplished independent of any judicial inquiry and the progress of work may in no case be delayed or restrained by the judicial proceedings.

Article 20

Investigating body

1. Each Member State shall ensure that investigations of accidents and incidents referred to in Article 18(2) are conducted by a permanent body. This body shall be independent in its organisation, legal structure and decision-making from any infrastructure manager, railway undertaking, charging body, allocation body, and notified body. It shall furthermore be independent of the safety authority, of any regulator of railways and of any party whose interests could conflict with the tasks entrusted to the investigating body.
2. The investigating body shall be given the means required to carry out its responsibilities independent of the organisations referred to in paragraph 1 and shall be able to obtain sufficient resources to do so. Its investigators shall be afforded status giving them the necessary guarantees of independence. It shall comprise at least one investigator able to perform the function of investigator-in-charge in the event of an accident or incident.
3. Member States shall make provisions that railway undertakings, infrastructure managers and, where appropriate, the safety authority, are obliged to immediately report accidents and incidents referred to in Article 18(2) to the investigating body. The investigating body shall be able to respond to such reports and make necessary arrangements to establish the investigation without delay.
4. The investigating body may combine its tasks under this Directive with the tasks to investigate other occurrences than railway accidents and incidents as long as such investigations do not endanger the independence of the body.
5. If necessary the body may request the assistance of investigating bodies from other Member States or from the Agency to supply expertise or to carry out technical inspections, analyses or evaluations.
6. Member States may entrust the investigating body with the task to carry out investigations of other rail accidents and incidents than those referred to in Article 18(2).
7. The investigating bodies shall conduct an active exchange of views and experience for the purpose of developing common investigation methods, elaborating common principles for follow-up of safety recommendations and adapt to the development of technical and scientific progress.

The Agency shall support them in this task.

*Article 21***Accomplishment of investigations**

1. An accident or incident referred to in Article 18(2) shall be investigated by the investigation body of the Member State in which it occurred. If it is not possible to establish in which Member State it occurred or if it occurred on the border between two Member States the relevant bodies shall agree which one of them that will carry out the investigation or agree to carry it out in cooperation. The other body shall in the first case be allowed to participate in the investigation and fully share its results.

2. For each accident or incident the body responsible for the investigation shall arrange for the appropriate means, comprising the necessary operational and technical expertise to carry out the task.

3. The investigation shall be accomplished under as much openness as possible, allowing for all parties to be heard and sharing the results. The relevant infrastructure manager and railway undertakings, the safety authority, victims and their relatives, owners of damaged property, manufacturers, the emergency services involved and representatives of staff and users shall be informed of the investigation and its results and be given, as far as practicable, the opportunity to take part in the proceedings.

*Article 22***Reports**

1. An investigation of an accident or incident referred to in Article 18(2) shall be the subject of reports in a form appropriate to the type and seriousness of the accident or incident and the relevance of the findings. The reports shall state the objectives of the investigations as referred to in Article 18(1) and contain, where appropriate, safety recommendations.

2. The investigating body shall make public the final report in the shortest possible time and normally not later than 12 months after the date of the occurrence. The report shall, as close as possible, follow the reporting structure laid down in Annex V. The report, including the safety recommendations shall be communicated to the relevant parties referred to in Article 21(3) and to bodies and parties concerned in other Member States.

3. Each year the investigating body shall publish by 30 September at the latest an annual report accounting for the investigations carried out in the preceding year, the safety recommendations that were issued and actions taken according to recommendations issued previously.

*Article 23***Information to be sent to the Agency**

1. Within one week after the decision to open an investigation the investigating body shall inform the Agency thereof.

The information shall indicate the date, time and place of the occurrence, as well as its type and its consequences as regards loss of lives, injuries and damage.

2. The investigating body shall send the Agency a copy of the final reports referred to in Article 22(2) and of the annual report referred to in Article 22(3).

*Article 24***Safety recommendations**

1. A safety recommendation issued by an investigating body shall in no case create a presumption of blame or liability for an accident or incident.

2. Recommendations shall be addressed to the safety authority and, where needed by reason of the character of the recommendation, to other bodies or authorities in the Member State or to other Member States. Member States and their safety authorities shall take the necessary measures to ensure that the safety recommendations issued by the investigating bodies are duly taken into consideration, and, where appropriate, acted upon.

3. The safety authority and other authorities or bodies or, when appropriate, other Member States to which recommendations have been addressed, shall report back to the investigating body on measures that are taken or planned as a consequence of the recommendation.

CHAPTER VI

IMPLEMENTING POWERS*Article 25***Adaptation of Annexes**

The Annexes shall be adapted to technical and scientific progress, in accordance with the procedure referred to in Article 26(2).

*Article 26***Committee**

1. The Commission shall be assisted by the Committee instituted by Article 21 of Directive 96/48/EC.

2. Where reference is made to this paragraph, the regulatory procedure laid down in Article 5 of Decision 1999/468/EC shall apply, in compliance with Articles 7 and 8 thereof.

The period provided for in Article 5(6) of Decision 1999/468/EC shall be three months.

3. Where reference is made to this paragraph, the advisory procedure laid down in Article 3 of Decision 1999/468/EC shall apply, in compliance with Articles 7 and 8 thereof.

CHAPTER VII

GENERAL AND FINAL PROVISIONS

Article 27

Amendments to Directive 95/18/EC

Directive 95/18/EC is amended as follows:

1. Article 8 is replaced by the following:

'Article 8

The requirements relating to professional competence shall be met when an applicant railway undertaking has or will have a management organisation which possesses knowledge and/or experience necessary to exercise safe and reliable operational control and supervision of the type of operations specified in the licence.'

2. In the Annex, Section II is deleted.

Article 28

Amendments to Directive 2001/14/EC

Directive 2001/14/EC is amended as follows:

1. The title is replaced by the following:

'Directive 2001/14/EC of the European Parliament and of the Council of 26 February 2001 on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure.'

2. In Article 30(2), point (f) is deleted.
3. Article 32 is deleted.
4. In Article 34, paragraph 2 is replaced by the following:

'2. At the request of a Member State or on its own initiative the Commission shall, in a specific case, examine the application and enforcement of provisions concerning charging, capacity allocation, and within two months of receipt of such a request decide in accordance with the advisory procedure referred to in Article 35(2) whether the related measure may continue to be applied. The Commission shall communicate its decision to the European Parliament, the Council and to the Member States.

Without prejudice to Article 226 of the Treaty, any Member State may refer the Commission's decision to the Council within a time limit of one month. The Council, acting by a qualified majority, may in exceptional circumstances take a different decision within a period of one month.'

Article 29

Report

The Commission shall submit to the European Parliament and to the Council by [date] ⁽¹⁾ at the latest and every five years thereafter a report on the implementation of this Directive.

The report shall be accompanied where necessary by proposals for further Community action.

Article 30

Penalties

The Member States shall lay down the rules on penalties applicable to infringements of the national provisions adopted pursuant to this Directive and shall take all measures necessary to ensure that they are implemented. The penalties provided for must be effective, proportionate, non-discriminatory and dissuasive.

The Member States shall notify those provision to the Commission by the date specified in Article 31 by the latest and shall notify it without delay of any subsequent amendment affecting them.

Article 31

Implementation

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by [. . .] ⁽²⁾ at the latest. They shall forthwith inform the Commission thereof.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

Article 32

Entry into force

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Communities*.

Article 33

Addressees

This Directive is addressed to the Member States.

⁽¹⁾ Five years after entry into force of the Directive.

⁽²⁾ Two years after the entry into force of this Directive.

ANNEX I

COMMON SAFETY INDICATORS

Common Safety Indicators to be reported by the safety authorities:

Indicators related to activities according to Article 2(2), (a) and (b), should be accounted for separately, if they are submitted.

If new facts or errors are discovered after the submission of the report the indicators for one particular year shall be amended or corrected by the safety authority at the first convenient opportunity and latest with the next annual report.

As indicators related to accidents under heading 1 below Community statistics provided for by Regulation (EC) . . . of the European Parliament and of the Council on rail transport statistics shall be used as far as the information is available.

1. Indicators relating to accidents

1. Total and relative (to train kilometres) number of accidents and a break-down on the following types of accidents:

- collisions of trains, including collisions with obstacles within the clearance gauge;
- derailments of trains;
- level-crossing accidents, including accidents involving pedestrians at level-crossings;
- accidents to persons caused by rollingstock in motion;
- fires in rollingstock.

Only the primary accident shall be accounted for, even if the consequences of the secondary accident are more severe, e.g. a fire following a derailment.

2. Total and relative (to train kilometres) number of persons seriously injured and killed by type of accident divided into the following categories:

- passengers (also in relation to total number of passenger-kilometres);
- employees including the staff of contractors;
- level-crossing users;
- unauthorised persons on railway premises;
- others.

2. Indicators relating to incidents and near-misses

1. Total and relative (to train kilometres) number of broken rails, track buckles and wrong-side signalling failures.

2. Total and relative (to train kilometres) number of signals passed at danger.

3. Total and relative (to train kilometres) number of broken wheels and axles on rollingstock in service.

3. Indicators relating to consequences of accidents

1. Total and relative (to train kilometres) costs in euro of all accidents where, if possible, the following costs should be calculated and included:

- deaths and injuries;
- compensation for loss of or damages to property of passengers, staff or third parties, including damages caused to the environment;

- replacement or repair of damaged rollingstock and railway installations;
- delays, disturbances and re-routing of traffic, including extra costs for staff and loss of goodwill.

From the costs shall be deducted indemnity or compensation recovered from third parties such as motor vehicle owners involved in level crossing accidents. Compensation recovered by insurance policies held by railway undertakings or infrastructure managers shall not be deducted.

2. Total and relative (to number of hours worked) number of working hours of staff and contractors lost as a consequence of accidents.

4. Indicators related to technical safety of infrastructure

1. Percentage of tracks with Automatic Train Protection (ATP) ⁽¹⁾ in operation and percentage of train kilometres on ATP equipped tracks.
2. Number of level crossings (total and per line kilometre). Percentage of level crossings with automatic or manual protection.

5. Indicators relating to the management of safety

Accomplished internal audits by infrastructure managers and railway undertakings as set out in the documentation of the safety management system. Total number of completed audits and the number as a percentage of required (and/or planned) audits.

6. Definitions

The reporting authorities may use nationally applied definitions of the indicators and methods for calculation of costs when data according to this Annex are submitted. All definitions and calculation methods in use shall be explained in an Annex to the annual report described in Article 17.

⁽¹⁾ If there are several different ATP systems in use they should be accounted for separately.

ANNEX II

NOTIFICATION OF NATIONAL SAFETY RULES

National rules that shall be notified to the Commission according to the procedure described in Article 7:

1. rules concerning existing national safety targets and safety methods as described in Article 5(2) and (3);
2. rules concerning requirements on safety management systems and safety certification of railway undertakings;
3. rules concerning requirements for the authorisation of placing into service and maintenance of new and substantially altered rollingstock that are not yet covered by a TSI. The notification shall include rules for exchange of rollingstock between railway undertakings, registration systems and requirements on testing procedures;
4. common operating rules of the railway network that are not yet covered by TSI, including rules relating to the signalling and traffic management system;
5. rules laying down requirements on additional internal operating rules (company rules) that must be established by infrastructure managers and railway undertakings;
6. rules concerning requirements on staff executing safety critical tasks, including selection criteria, health status and vocational training and certification as far as they are not yet covered by a TSI;
7. rules concerning the investigation of accidents and incidents.

ANNEX III

SAFETY MANAGEMENT SYSTEMS**1. Requirements on the safety management system**

The safety management system must be documented in all relevant parts and shall in particular describe the distribution of responsibilities within the organisation of the infrastructure manager or the railway undertaking. It shall show how control from the management on different levels is secured, how staff and their representatives on all levels are involved and how continuous improvement of the safety management system is ensured.

Sufficient resources must be allocated to ensure that staff with expert knowledge and experience in safety management maintains key functions.

2. Basic elements of the safety management system

The basic elements of the safety management system are:

- (a) a safety policy approved by the organisation's chief executive and communicated to all staff;
 - (b) qualitative and quantitative corporate targets for the maintenance and enhancement of safety and plans for reaching the targets;
 - (c) procedures to meet existing, new and altered technical and operational standards laid down in TSI or in national rules referred to in Article 7 and Annex II or in other relevant rules and procedures to assure compliance with the standards throughout the life-cycle of equipment and operations;
 - (d) procedures and methods to carry out risk evaluation and implement risk control measures whenever a change of the operating conditions or new material imposes new risks on the infrastructure or on operations;
 - (e) provision of programmes for training of staff and systems to ensure that the staff's competence is maintained and tasks carried out accordingly;
 - (f) arrangements for the provision of sufficient information within the organisation and, where appropriate, between organisations operating on the same infrastructure;
 - (g) procedures and formats for how safety information shall be documented and designation of procedure for configuration control of vital safety information;
 - (h) procedures to ensure that accidents, incidents, near misses and other dangerous occurrences are reported, investigated and analysed and that necessary preventive measures are taken;
 - (i) provision of plans for action and alert and information in case of emergency, agreed upon with the appropriate public authorities;
 - (j) provisions for recurrent internal auditing of the safety management system.
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ANNEX IV

DECLARATIONS FOR NETWORK SPECIFIC PART OF SAFETY CERTIFICATE

The following documents must be submitted to enable the safety authority to deliver the network specific part of the safety certificate. To avoid duplication of work and to reduce the amount of information only summary documentation should be submitted concerning elements that comply with TSI and other requirements of Directives 96/48/EC and 2001/14/EC:

- a documentation by the railway undertaking of the TSI or parts of TSI and, where relevant, national safety rules and other rules applicable to its operations, its staff and its rolling stock and how compliance is ensured by the safety management system;
- a documentation by the railway undertaking of the different categories of staff employed or contracted for the operation, including evidence that they meet requirements of TSI or national rules and have been duly certified;
- a documentation by the railway undertaking of the different types of rollingstock used for the operation, including evidence that they meet requirements of TSI or national rules and have been duly certified.

ANNEX V

PRINCIPAL CONTENT OF ACCIDENT AND INCIDENT INVESTIGATION REPORT**1. Summary**

The summary shall contain a short description of the occurrence, when and where it took place and the consequences it led to. It shall state the direct causes as well as contributing factors and underlying causes established by the investigation. The main recommendations shall be quoted and information shall be given on to whom they are addressed.

A translation of the summary into one of the working languages of the Agency shall be included in the report, where appropriate.

2. Immediate facts of the occurrence*1. The occurrence:*

- date, exact time and location of the occurrence;
- description of the events and the accident site including the efforts of the rescue and emergency services;
- the decision to establish an investigation, the composition of the team of investigators and the accomplishment of the investigation.

2. The settings of the occurrence:

- involved staff and contractors and other parties and witnesses;
- the trains and their composition including the registration number of involved rollingstock;
- the description of the infrastructure and signalling system — track types, switches, interlocking, signals, train protection;
- means of communication;
- works carried out at or in the vicinity of the site;
- trigger of the railway emergency plan and its chain of events;
- trigger of the emergency plan of the public rescue services, the police and the medical services and its chain of events.

3. Fatalities, injuries and material damages:

- passengers and third parties, staff, including contractors;
- cargo, luggage and other property;
- rollingstock, infrastructure and the environment.

4. *External circumstances:*

- weather conditions and geographical references.

3. Record of investigations and inquiries

1. *Summary of testimonies (subject to the protection of identity of persons):*

- railway employees, including contractors;
- other witnesses.

2. *The safety management system:*

- the framework organisation and how orders are given and carried out;
- requirements on staff and how they are ensured;
- routines for internal checks and audits and their results;
- interface between different actors on the infrastructure.

3. *Rules and regulations:*

- relevant EU and national laws and public regulation;
- other rules like operating rules, local instructions, staff requirements, maintenance prescriptions and applicable standards.

4. *Functioning of rollingstock and technical installations:*

- signalling and control command system, including registration from automatic data recorders;
- infrastructure;
- communications equipment;
- rollingstock, including account of automatic data registration.

5. *Documentation of the operative system:*

- measures taken by staff for traffic control and signalling;
- exchange of verbal messages in connection with the occurrence, including documentation from recordings;
- measures taken to protect and safeguard the site of the occurrence.

6. *Man-machine-organisation interface:*

- working time applied to the involved staff;
- medical and personal circumstances with influence on the occurrence, including existence of physical or psychological stress;
- design of equipment with impact on man-machine interface.

7. *Previous occurrences of a similar character.*

4. Analysis and conclusions

1. *Final account of the event chain:*

- establishing the conclusions on what happened, based on the facts discovered in Chapter 3.

2. *Discussion:*

- analysis of the facts established in Chapter 3 with the aim to draw conclusions on the causes of the occurrence and the performance of the rescue services.

3. *Conclusions:*

- direct and immediate causes of the occurrence including contributing factors related to actions taken by involved persons or conditions of rollingstock or technical installations;
- underlying causes related to skills, procedures and maintenance;
- root causes related to the regulatory framework conditions and application of the safety management system.

4. *Additional observations:*

- deficiencies and shortcomings discovered during the investigation, but without relevance to the conclusions on causes.

5. **Measures that have been taken**

Record of measures already taken or adopted as a consequence of the occurrence.

6. **Recommendations**

Proposal for a Council Regulation terminating the anti-dumping proceeding concerning imports of polysulphide polymers originating in the United States of America

(2002/C 126 E/10)

COM(2002) 32 *final*

(Submitted by the Commission on 25 January 2002)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community,

Having regard to Council Regulation (EC) No 384/96 of 22 December 1995 on protection against dumped imports from countries not members of the European Community ⁽¹⁾, and in particular Article 9 thereof,

Having regard to the proposal submitted by the Commission after consulting the Advisory Committee,

Whereas:

A. PROCEDURE

- (1) Definitive anti-dumping duties were imposed on polysulphide polymers originating in the United States of America in September 1998 ⁽²⁾.
- (2) These duties were imposed following a complaint lodged by Akcros Chemicals GmbH & Co. KG, Germany, the sole Community producer of polysulphide polymers.

B. WITHDRAWAL OF THE COMPLAINT AND TERMINATION OF THE PROCEEDING

- (3) By a letter of 20 July 2001 to the Commission, Akcros Chemicals GmbH & Co. KG formally withdrew its complaint and requested that the measures should be repealed. This request was based on the fact that the sole exporting producer in the country concerned had decided to cease production of the product concerned.
- (4) In accordance with Article 9(1) of Regulation (EC) No 384/96 a proceeding may be terminated where the complaint is withdrawn, unless such termination would not be in the Community interest.
- (5) The Commission announced its intention to investigate whether the measures should be retained in a Notice published on 4 October 2001 ⁽³⁾. Two responses were received following this Notice from the user industry, both supporting the termination of the measures. In addition, the sole Community producer confirmed its position that the measures were no longer appropriate. It is, therefore, considered that termination would not be against the Community interest.
- (6) It is therefore concluded that the anti-dumping proceeding concerning polysulphide polymers originating in the United States of America should be terminated,

HAS ADOPTED THIS REGULATION:

Sole Article

The anti-dumping proceeding concerning imports of polysulphide polymers currently classifiable within CN code ex 4002 99 90 and originating in the United States of America is hereby terminated.

⁽¹⁾ OJ L 56, 6.3.1996, p. 1. Regulation as last amended by Regulation (EC) No 2238/2000 (OJ L 257, 11.10.2000, p. 2).

⁽²⁾ Council Regulation (EC) No 1965/98 (OJ L 255, 17.9.1998, p. 1).

⁽³⁾ OJ C 280, 4.10.2001, p. 5.

Proposal for a Council Regulation on the conclusion of the Agreement in the form of an Exchange of Letters concerning the extension of the 2000-01 Protocol setting out the fishing opportunities and financial contribution provided for in the Agreement between the European Economic Community and the Government of the Revolutionary People's Republic of Guinea on fishing off the Guinean coast for the period 1 January to 31 December 2002

(2002/C 126 E/11)

COM(2002) 41 final — 2002/0034(CNS)

(Submitted by the Commission on 28 January 2002)

THE COUNCIL OF THE EUROPEAN UNION,

Article 2

Having regard to the Treaty establishing the European Community, and in particular Article 37, in conjunction with Article 300(2) and the first subparagraph of Article 300(3) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

Whereas:

- (1) The European Community and the Republic of Guinea have held negotiations to determine the amendments or additions to be made to the Agreement between the European Economic Community and the Government of the Revolutionary People's Republic of Guinea on fishing off the Guinean coast⁽¹⁾ at the end of the period of application of the Protocol thereto.
- (2) During the negotiations, the two parties have decided to extend the current Protocol⁽²⁾ for one year, from 1 January 2002 to 31 December 2002, by means of an Agreement in the form of an Exchange of Letters initialled on 22 October 2001, pending the conclusion of the negotiations on the amendments to be made to the Protocol.
- (3) It is in the Community's interest to approve that extension.
- (4) The allocation of the fishing opportunities for trawlers and tuna boats among the Member States should be confirmed,

HAS ADOPTED THIS REGULATION:

Article 1

The Agreement in the form of an Exchange of Letters concerning the extension of the Protocol setting out the fishing opportunities and financial contribution provided for in the Agreement between the European Economic Community and the Government of the Revolutionary People's Republic of Guinea on fishing off the Guinean coast for the period 1 January 2002 to 31 December 2002 is hereby approved on behalf of the European Community.

The text of this Agreement is attached to this Regulation.

The fishing opportunities for trawlers and tuna boats fixed in Article 1 of the Protocol shall be allocated *pro rata temporis* among the Member States as follows:

(a) fin-fish/cephalopods:

Spain: 844 GRT

Italy: 750 GRT

Greece: 906 GRT

(b) shrimps:

Spain: 1 050 GRT

Portugal: 300 GRT

Greece: 150 GRT

(c) tuna seiners:

France: 19 vessels

Spain: 19 vessels

(d) pole-and-line tuna vessels:

France: 7 vessels

Spain: 7 vessels

(e) surface longliners:

Spain: 14 vessels

Portugal: 2 vessels

If licence applications from these Member States do not cover all the fishing opportunities fixed by the Protocol, the Commission may take into consideration licence applications from any other Member State.

Article 3

This Regulation shall enter into force on the third day following that of its publication in the *Official Journal of the European Communities*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

⁽¹⁾ OJ L 111, 27.4.1983, p. 1.

⁽²⁾ The current Protocol was approved by Council Regulation (EC) No 445/2001 of 26 February 2001 (OJ L 64, 6.3.2001). For the text of the Protocol, see OJ L 250, 5.10.2000.

AGREEMENT

in the form of an Exchange of Letters concerning the extension of the Protocol setting out the fishing opportunities and financial contribution provided for in the Agreement between the European Economic Community and the Government of the Revolutionary People's Republic of Guinea on fishing off the Guinean coast for the period 1 January to 31 December 2002

A. Letter from the Community

Sirs,

I have the honour to confirm that we agree to the following interim arrangements for the extension of the Protocol currently in force (1 January 2000 to 31 December 2001) setting out the fishing opportunities and financial contribution provided for in the Agreement between the European Economic Community and the Government of the Revolutionary People's Republic of Guinea on fishing off the Guinean coast, pending the negotiations on the amendments to be made to the Protocol to the Fisheries Agreement:

1. The arrangements applicable over the last two years will be extended for the period from 1 January to 31 December 2002. The Community's financial contribution under the interim arrangements will correspond to the yearly amount provided for in Article 2 of the Protocol currently in force. Payment will be made no later than 30 June 2002. Payment of the financial contribution provided for in Article 6 and the terms relating thereto will also apply.
2. During the interim period, fishing licences will be granted within the limits set in Article 1 of the Protocol currently in force, by means of fees or advances corresponding to those set in point 1 of the Annex to the Protocol. The fees applicable to trawlers will be those for the second year.

I should be obliged if you would acknowledge receipt of this letter and confirm that you are in agreement with its contents.

Please accept, Sirs, the assurance of my highest consideration.

On behalf of the Council of the European Union

B. Letter from the Government of the Republic of Guinea

Sirs,

I have the honour to acknowledge receipt of your letter of today's date, which reads as follows:

I have the honour to confirm that we agree to the following interim arrangements for the extension of the Protocol currently in force (1 January 2000 to 31 December 2001) setting out the fishing opportunities and financial contribution provided for in the Agreement between the European Economic Community and the Government of the Revolutionary People's Republic of Guinea on fishing off the Guinean coast, pending the negotiations on the amendments to be made to the Protocol to the Fisheries Agreement:

1. The arrangements applicable over the last two years will be extended for the period from 1 January to 31 December 2002. The Community's financial contribution under the interim arrangements will correspond to the yearly amount provided for in Article 2 of the Protocol currently in force. Payment will be made no later than 30 June 2002. Payment of the financial contribution provided for in Article 6 and the terms relating thereto will also apply.
2. During the interim period, fishing licences will be granted within the limits set in Article 1 of the Protocol currently in force, by means of fees or advances corresponding to those set in point 1 of the Annex to the Protocol. The fees applicable to trawlers will be those for the second year.

I should be obliged if you would acknowledge receipt of this letter and confirm that you are in agreement with its contents.'

I have the honour to confirm that the above is acceptable to the Government of the Republic of Guinea and that your letter and this letter constitute an agreement in accordance with your proposal.

Please accept, Sirs, the assurance of my highest consideration.

For the Government of the Republic of Guinea

Proposal for a regulation of the European Parliament and of the Council on the granting of Community financial assistance to improve the environmental performance of the freight transport system

(2002/C 126 E/12)

COM(2002) 54 final — 2002/0038(COD)

(Submitted by the Commission on 4 February 2002)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF
THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Articles 71(1) and 80(2) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee,

Having regard to the opinion of the Committee of the Regions,

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

Whereas:

- (1) The European Council held at Gothenburg on 15 and 16 June 2001 has declared that shifting the balance between the modes is at the heart of the sustainable development strategy.
- (2) If no decisive action is taken, total road freight transport in Europe is set to grow by about 50 % by 2010. The effect would be a growth of international road freight of about 12 billion tonne-kilometres per year.
- (3) In its White Paper — European Transport Policy for 2010: time to decide ⁽¹⁾, the Commission proposed to take measures which should make the market shares of the modes of transport return, by 2010, to their 1998 levels. This will prepare the ground for a shift of balance from 2010 onwards.
- (4) It is necessary to establish a programme, hereinafter referred to as the 'Marco Polo programme', to improve the environmental performance of the freight transport system within the Community. The programme should contribute to shifting the expected aggregate increase of international road freight traffic to short sea shipping, rail and inland waterways.
- (5) The Marco Polo programme features three types of action: (1) modal shift actions, which should focus on shifting as much cargo as possible under current market conditions from road to short sea shipping, rail and inland waterways; (2) catalyst actions, which should change the way non-road freight transport is conducted in the Community; and (3) common learning actions, which should enhance knowledge in the freight logistics sector

and foster advanced methods and procedures of co-operation in the freight market.

- (6) Actions must involve the territory of at least two countries. If these two countries are Member States or other countries participating in the programme according to the conditions laid down in the Regulation, the programme will re-imburse the costs accrued to the participating undertakings within the limits laid down in the Regulation.
- (7) Applicants should be able to submit projects which best match current market needs. Suitable projects should therefore not be discouraged by any over-rigid definition of allowable actions.
- (8) The results of the catalyst and common learning actions of the programme should be adequately disseminated, in order to ascertain replication, publicity and transparency.
- (9) During the project selection procedure and during the life time of the project, it is necessary to ensure that the project chosen makes a real contribution to the common transport policy and does not cause unacceptable distortions of competition. The Commission shall therefore evaluate the implementation of this Regulation. It shall present, not later than 31 December 2006, an assessment report on the results of the Marco Polo programme, accompanied if necessary by a proposal for the amendment of this Regulation.
- (10) Since the objective of the proposed programme, cannot be sufficiently achieved by the Member States and can therefore, by reason of the scope of the programme, be better achieved at Community level, the Community may adopt measures, in accordance with the principle of subsidiarity as set out in Article 5 of the Treaty. In accordance with the principle of proportionality, as set out in that Article, this Regulation does not go beyond what is necessary in order to achieve that objective.
- (11) In accordance with Article 2 of Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽²⁾, measures for the implementation of this Regulation should be adopted by use of the advisory procedure provided for in Article 3 of that Decision.

⁽¹⁾ COM(2001) 370 final.

⁽²⁾ OJ L 184, 17.7.1999, p. 23.

(12) A financial reference amount, within the meaning of point 33 of the Interinstitutional Agreement of 6 May 1999 between the European Parliament, the Council and the Commission on budgetary discipline and improvement of the budgetary procedure is inserted in this Regulation for the entire duration of the programme, without the powers of the budgetary authority as defined by the Treaty being affected thereby.

(13) In order to administer funding under this Regulation in the most expedient and speedy way, this Regulation should enter into force as fast as possible after its adoption,

HAVE ADOPTED THIS REGULATION:

CHAPTER I

SUBJECT-MATTER, DEFINITIONS AND SCOPE

Article 1

Subject-matter

1. This Regulation establishes a single financing instrument for actions reducing road congestion and improving the environmental performance of the transport system, hereinafter referred to as the 'Marco Polo programme', for the period from 1 January 2003 to 31 December 2010.

2. The Marco Polo programme shall contribute to maintaining the modal repartition in freight transport at its 1998 levels. To achieve this objective, it shall support actions in the freight transport, logistics and other relevant markets. These actions should contribute to reducing environmental impacts from freight transport. By the end of the programme, a traffic shift of the expected yearly aggregate increase of international road freight traffic, measured in tonne-kilometres, to short sea shipping, rail and inland waterways should be achieved. The implementation of the programme shall aim at maximising the environmental benefits achieved, given the resources available

Article 2

Definitions

For the purposes of this Regulation:

- (a) 'action' means any project related to the logistics market, executed by undertakings, which contributes to reducing congestion in the road freight transport system and/or to a better environmental performance of the transport system;
- (b) 'modal shift action' means any action directly and immediately shifting freight from road to short sea shipping, rail or inland waterways, without being catalyst actions;

(c) 'catalyst action' means any innovative action aimed at overcoming Community-relevant structural barriers in the market for freight transport, which impede the efficient functioning of the markets, the competitiveness of short sea shipping, rail, or inland waterways, and/or the efficiency of transport chains making use of these modes; for the purpose of this definition, 'structural market barrier' means any non-regulatory, factual and not only temporary impediment to the proper functioning of the freight transport chain;

(d) 'common learning action' means any action aimed at improving co-operation for optimising working methods and procedures in the freight transport chain, taking into account the requirements of logistics;

(e) 'accompanying measure' means any measure which seeks to prepare for or to support current or future actions, inter alia dissemination activities and project monitoring and evaluation, and the collection and analysis of statistical data. Measures devoted to the commercialisation of products, processes or services, marketing activities and sales promotion are not 'accompanying measures';

(f) 'consortium' means any formal or informal arrangement by which at least two undertakings execute together and share the risk concerning, an action;

(g) 'undertaking' means any entity engaged in an economic activity, regardless of the legal status of the entity and the way in which it is financed;

(h) 'ancillary' means necessary, but sub-ordinate, to achieve the goals of 'modal shift actions' or 'catalyst actions'.

Article 3

Scope

1. This Regulation is applicable to modal shift actions, catalyst actions and common learning actions:

- (a) involving the territory of at least two Member States;
- (b) involving the territory of at least one Member State and the territory of a third country.

2. Where an action involves the territory of a third country, costs arising in the territory of such a country shall not be covered by the programme, except in the circumstances mentioned in paragraphs 3 and 4 of this article.

3. The present programme is open to participation of eastern and central European countries, which are candidates to the accession. The participation will be governed by the conditions laid down in the Association Agreements with these countries, and on the basis of the rules foreseen in the decision of the Association Council for each country concerned.

4. The present programme is also open to participation of the countries being members of the EFTA and the EEA, and to Cyprus, Malta and Turkey on the basis of supplementary credits and in conformity with the procedures to be agreed with these countries.

CHAPTER II

ELIGIBLE APPLICANTS AND ACTIONS

Article 4

Eligible applicants

1. Projects shall be submitted by a consortium of two or more undertakings, established in at least two different Member States or participant countries according to Article 3(3) and 3(4) of the Regulation.

2. Undertakings established outside the Community and outside a participant country according to Article 3(3) and 3(4) of the Regulation may be associated to the project. They may not be recipient of Community funding under this Regulation.

Article 5

Modal shift actions

1. Modal shift actions shall be eligible for funding under the present Regulation under the following conditions:

- (a) The modal shift action is forecast to lead to an actual, substantial and sustainable modal shift of freight transport from road to short sea, rail or inland waterways;
 - (b) According to its realistic business plan, the modal shift action is viable on its own after a maximum of 36 months of Community funding;
 - (c) The modal shift action does not lead to unacceptable distortions of competition in the relevant markets;
 - (d) When the action requires reliance on services provided by third parties not part of the consortium, the applicant it submits proof of tendering or market inquiry for such services, evidenced by at least two competitive bids.
2. Community financial assistance for modal shift actions shall be limited to a maximum of 30 % of all expenditure necessary to achieve the objectives of, and caused by, the action. Such expenditure shall be eligible for Community financial assistance, as far as it relates directly to the implementation of the action. Ancillary infrastructure expenditure shall also be re-imbursable to a maximum of 30 %. Expenditure

incurred as of the date of the submission of an application in the selection procedure is reimbursable. Contribution towards to costs of assets is contingent on the obligation to use such assets, for the duration of the assistance, for the action only, as defined by the subsidy agreement.

3. The Community financial assistance under paragraph 2 shall take the form of an external cost savings award. This award means Community financial assistance, calculated by the Commission on the basis of savings of external costs resulting from the use of short sea, inland waterways and rail transport instead of road freight transport. The award shall take the form of a lump sum payment based on the tonne-kilometres shifted from road and shall not surpass 30 % of the eligible costs for an action.

The Commission may re-examine, from time to time as necessary, the developments concerning the external cost items, on which the award according to this Article is based.

4. The Community financial assistance for modal shift actions shall be granted on the basis of subvention contracts. As a rule, the maximum duration of these contracts shall not be longer than 38 months.

5. The minimum subsidy threshold per modal shift action shall be 1 million EUR.

Article 6

Catalyst actions

1. Catalyst actions shall be eligible for funding under the present Regulation under the following conditions:

- (a) The catalyst action achieves its objectives within a period of a maximum of 48 months, and stays viable after that period, as ascertained by its realistic business plan;
- (b) The catalyst action is innovative on a European level, in terms of logistics, technology, methods, equipment, products or services rendered. In this context, catalyst actions enforcing the concept of 'motorways of the seas' deserve special attention;
- (c) The catalyst action is forecast to lead to an actual and sustainable modal shift from road to short sea shipping, inland waterways, or rail;
- (d) The catalyst action proposes a realistic plan with concrete milestones towards its objectives and identifies the need for Commission steering assistance;
- (e) The catalyst action does not lead to unacceptable distortions of competition in the relevant markets;

- (f) When the action requires reliance on services provided by third parties not part of the consortium, the applicant submits proof of tendering or market inquiry for such services, evidenced by at least two competitive bids;
- (g) Catalyst actions in transport markets take place on the trans-European networks, within the meaning of the Decision of Council and Parliament No 1692/96/EC.

2. The results and methods of catalyst actions shall be disseminated. Articles 18 and 19 of Council Decision 1999/65/EC⁽¹⁾ shall apply *mutatis mutandis*.

3. Community financial assistance for catalyst actions shall be limited to a maximum of 35 % of all expenditure necessary to achieve the objectives of, and caused by, the action. Such expenditure shall be eligible for Community financial assistance, as far as it relates directly to the implementation of the action. Expenditure for ancillary measures related to infrastructure works, and preparatory measures concerning the action shall also be re-imbursable to a maximum of 35 %. Expenditure incurred as of the date of the submission of an application in the selection procedure is reimbursable. Contribution towards costs of assets is contingent on the obligation to use such assets, for the duration of the assistance, for the action only, as defined by the subsidy agreement.

4. The Community financial assistance for catalyst actions shall be granted on the basis of subvention contracts, with appropriate provisions for steering and monitoring. As a rule, the maximum duration of these contracts shall not be longer than 50 months.

5. The Commission shall make known, through publication in the *Official Journal of the European Communities*, on or before the first publication of the invitation to submit catalyst actions under this Regulation, the political priority targets for such actions in the selection procedure. It shall put specific emphasis on actions enforcing the concept of 'motorways of the seas'. The Commission may review the political priority targets from time to time.

6. The minimum subsidy threshold per catalyst action shall be 3 million EUR.

Article 7

Common learning actions

1. Common learning actions shall be eligible for funding under the present Regulation under the following conditions:

- (a) The action leads to the improvement of commercial services in the market;

⁽¹⁾ OJ L 26, 1.2.1999, p. 46.

- (b) The action is innovative on a European level;

- (c) The action does not lead to unacceptable distortions of competition in the relevant markets;

- (d) The common learning action proposes a realistic plan with concrete milestones towards its objectives and identifies the need for Commission steering assistance;

2. The results and methods of common learning actions shall be disseminated. Articles 18 and 19 of Decision 1999/65/EC shall apply *mutatis mutandis*.

3. Community financial assistance for common learning actions shall be limited to a maximum of 50 % of all expenditure necessary to achieve the objectives, and caused by, the action. Such expenditure shall be eligible for Community financial assistance, as far as it relates directly to the implementation of the action. Expenditure incurred as of the date of the submission of an application in the selection procedure is reimbursable. Contribution towards the costs of assets is contingent on the obligation to use such assets, for the duration of the assistance, for the action only, as defined by the subsidy agreement.

4. The Community financial assistance for common learning actions shall be granted on the basis of subvention contracts, with appropriate provisions for steering and monitoring. As a rule, the maximum duration period of the contract shall not be longer than 26 months.

5. The Commission shall make known, through publication in the *Official Journal of the European Communities*, on or before the first publication of the invitation to submit common learning actions under this Regulation, the political priority targets for such actions in the selection procedure. The Commission may review the political priority targets from time to time.

6. The minimum subsidy threshold per common learning action shall be 500 000 EUR.

Article 8

Detailed rules

The Commission shall issue detailed rules for the procedure for submission, selection, execution, dissemination and individual reporting and verification requirements concerning actions under this Regulation in accordance with the procedure referred to in Article 11(2).

CHAPTER III

SUBMISSION AND SELECTION OF PROJECTS*Article 9***Submission of projects**

Projects for actions shall be submitted to the Commission according to the detailed rules issued under Article 8. The submission shall contain all the elements necessary to enable the Commission to make its selection in accordance with Article 10.

*Article 10***Selection of projects — Granting of financial assistance**

Submitted projects shall be evaluated by the Commission. The Commission shall decide whether to grant financial assistance under this Regulation taking into account, for the selection of the project, the objective referred to in Article 1, and the conditions referred to in Articles 5, 6, and 7, as appropriate. The selection will take into account the relative environmental merits of the proposed actions and their contribution to reducing road congestion. This decision shall be taken in accordance with the procedure referred to in Article 11(2) of this Regulation.

The Commission shall inform the beneficiaries and the Member States of its decision.

CHAPTER IV

FINAL PROVISIONS*Article 11***Committee**

1. The Commission shall be assisted by a committee, composed of representatives of the Member States and chaired by the representative of the Commission.

2. Where reference is made to this paragraph, the advisory procedure laid down in Article 3 of Decision 1999/468/EC shall apply, in compliance with Article 7 and Article 8 thereof.

*Article 12***Budget**

The financial framework for the implementation of the Marco Polo programme, for the period 1 January 2003 to 31 December 2007, shall be EUR 115 million.

Annual appropriations shall be authorised by the budgetary authority within the limits of the financial perspective.

*Article 13***Set aside for accompanying measures and programme evaluation**

Up to 5 % of the budget provided for in this Regulation shall be set aside for accompanying measures and independent evaluation of the implementation of the Regulation.

*Article 14***Evaluation**

By 31 December 2006 at the latest, the Commission shall present to the European Parliament, the Council, the Economic and Social Committee and the Committee of the Regions an assessment report on the results of the Marco Polo programme, having regard to its objective, and accompanied if necessary by a proposal for the amendment of this Regulation.

*Article 15***Entry into force**

This Regulation shall enter into force on the day following that of its publication in the *Official Journal of the European Communities*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

Proposal for a Council Regulation on the conclusion of the Protocol defining, for the period from 18 January 2002 to 17 January 2005, the fishing opportunities and the financial contribution provided for by the Agreement between the European Economic Community and the Republic of Seychelles on fishing off Seychelles

(2002/C 126 E/13)

COM(2002) 55 final — 2002/0036(CNS)

(Submitted by the Commission on 4 February 2002)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 37 in conjunction with Article 300(2) and the first subparagraph of Article 300(3) thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

Whereas:

(1) In accordance with the Agreement between the European Economic Community and the Republic of Seychelles on fishing off Seychelles, signed in Brussels on 28 October 1987 ⁽¹⁾, the two Parties held negotiations with a view to determining amendments to be made to that Agreement at the end of the period of application of the Protocol attached to the said Agreement;

(2) As a result of these negotiations, a new Protocol defining for the period from 18 January 2002 to 17 January 2005 the fishing opportunities and the financial contribution provided for by the abovementioned Agreement was initialled on 28 September 2001;

(3) It is in the Community's interest to approve that Protocol;

(4) The allocation of fishing possibilities among the Member States should be determined on the basis of the traditional allocation of fishing possibilities under the fisheries agreement,

HAS ADOPTED THIS REGULATION:

Article 1

The Protocol defining, for the period from 18 January 2002 to 17 January 2005, the fishing opportunities and the financial contribution provided for by the Agreement between the European Economic Community and the Republic of Seychelles on fishing off Seychelles is hereby approved on behalf of the European Community.

The text of the Protocol is attached to this Regulation.

Article 2

The fishing possibilities provided for in the Protocol are allocated among the Member States as follows:

(a) Tuna seiners:

Spain: 18 vessels

France: 20 vessels

Italy: 1 vessel

United Kingdom: 1 vessel

(b) Surface longliners:

Spain: 15 vessels

France: 5 vessels

Portugal: 7 vessels

If licence applications from these Member States do not exhaust the fishing possibilities provided for in the Protocol the Commission may take into consideration licence applications from any other Member State.

Article 3

The Member States whose vessels are fishing under this Protocol shall notify the Commission of the quantities of each stock taken in Seychelles waters in accordance with the arrangements laid down in Commission Regulation (EC) No 500/2001 of 14 March 2001 ⁽²⁾.

Article 4

The President of the Council is hereby authorised to designate the persons empowered to sign the Protocol in order to bind the Community.

Article 5

This Regulation shall enter into force on the third day following that of its publication in the *Official Journal of the European Communities*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

⁽¹⁾ OJ L 119, 7.5.1987, p. 26.

⁽²⁾ OJ L 73, 15.3.2001, p. 8

PROTOCOL

defining for the period 18 January 2002 to 17 January 2005 the fishing possibilities and the financial contribution provided for by the Agreement between the European Economic Community and the Republic of Seychelles on fishing off Seychelles*Article 1*

Pursuant to Article 2 of the Agreement, and notwithstanding Article 12 of the Agreement relating to further periods of the Agreement, annual licences to fish simultaneously in Seychelles waters shall be granted to

- (a) 40 ocean-going tuna seiners and
- (b) 27 surface long-liners

for a period of 3 years beginning on 18 January 2002.

Article 2

The financial contribution (contrepartie financière) referred to in Article 6 of the Agreement shall be fixed at EUR 3 460 000 per year, out of which Seychelles agrees to allocate EUR 1 160 000 per year for the purpose of the matters specified in Article 3. The balance (EUR 2 300 000), hereinafter referred to as financial compensation, shall be paid into an account belonging to the Government of Seychelles notified by the Central Bank of Seychelles.

The financial contribution corresponds to a catch of 46 000 tons of tuna per year in Seychelles waters. If the catch by Community vessels in Seychelles waters exceeds 46 000 tons, the Community shall increase the financial contribution proportionately.

The first instalment of the financial compensation is to be paid not later than 30 September 2002 and the others by 18 January 2003 and 18 January 2004.

Article 3

During the 3-year period referred to in Article 1, the measures set out below shall be financed from the financial contribution provided for in Article 2, to the total amount of EUR 3 480 000, broken down as follows:

- (a) EUR 1 230 000 for the development of local fisheries;
- (b) EUR 1 000 000 for the setting up and development of a monitoring control and surveillance system, including appropriate technical assistance;
- (c) EUR 950 000 for scientific and technical programmes aiming at greater knowledge of fish stocks;
- (d) EUR 300 000 for training courses in the various scientific, technical and economic fields linked to fishing and for attending international meetings.

The above amounts shall be made available no later than 30 September 2002. They shall be paid, as and when requested by the Seychelles Fishing Authority, into a bank account of the

Seychelles Fishing Authority, the Seychelles authority responsible for the management of these programmes.

All these measures shall be decided by the Seychelles Fishing Authority who will inform the European Commission.

The competent Seychelles authorities shall transmit an annual report on the implementation of these measures and the results achieved to the Delegation of the European Commission in charge of the Seychelles, three months after the anniversary date of the Protocol. The European Commission reserves the right to request further information on these results from the competent Seychelles authorities and to review the payments concerned in the light of the actual implementation of such measures, after consultation in the framework of the Joint Committee as provided for in Article 7 of the Agreement.

Article 4

If the European Community fails to make the payments provided for in Articles 2 and 3, Seychelles may suspend the implementation of this Protocol.

Article 5

Where as a result of circumstances solely attributable to the fault or negligence of Seychelles fishing activities cannot be carried out in Seychelles waters, the European Community may, after prior consultation with Seychelles, suspend the payment of the financial contribution, provided that the Community shall pay any amount which has become due at the time of the suspension.

Payment of the financial contribution shall recommence once the situation has returned to normal and following consultation and agreement between the two Parties confirming that the situation is likely to allow a return to normal fishing activities.

Article 6

The Protocol and Annex I, dated 17 January 1999, to the Agreement between the European Economic Community and the Republic of Seychelles on fishing off Seychelles, which came into force on 28 October 1987, are hereby rescinded and replaced by this Protocol and its Annex I.

Article 7

This Protocol and its Annex will enter into force when the Parties exchange the notification concerning the accomplishment of the respective appropriate adoption procedures

They are applicable from 18 January 2002.

ANNEX I

**CONDITIONS FOR THE PURSUIT OF FISHING ACTIVITIES BY
COMMUNITY VESSELS IN SEYCHELLES WATERS****1. Licence application and issuing formalities**

The procedure for applications for, and issue of, licences enabling Community vessels to fish in Seychelles waters shall be as follows:

- 1.1. the European Commission shall present to the Seychelles Fishing Authority (SFA), via its Delegation in charge of Seychelles, an application, made by the ship-owner, for each vessel that wishes to fish under this Agreement at least 20 days before the date of commencement of the period of validity requested. The application shall be made on the form provided for that purpose by Seychelles, a specimen of which is annexed as Appendix 1;
- 1.2. every licence shall be issued for one designated vessel. At the request of the European Commission, the licence for a vessel may, and, in case of force majeure, will be replaced by a licence for another Community vessel;
- 1.3. the licences shall be delivered by the Seychelles authorities to the ship-owners, or their representatives or agents. The Delegation of the European Commission in charge of Seychelles shall be notified of the licences granted by the Seychelles authorities;
- 1.4. the licence document must be held on board at all times; however, on reception of notification of payment of the advance sent to the Seychelles authorities by the European Commission, the vessel shall be entered on a list of vessels authorised to fish, which shall be sent to the Seychelles authorities responsible for inspection. A copy of the said licence may be obtained by fax pending arrival of the licence itself; that copy shall be kept on board;
- 1.5. the authorities of Seychelles shall communicate before the date of entry into force of the Agreement the arrangements for payment of the licence fees, and in particular the details of the bank accounts and the currencies to be used.

2. Validity of licences and payment

- 2.1. Licences shall be valid for a period of one year. They are renewable.
- 2.2. The fee shall be set at EUR 25 per ton caught within Seychelles waters.

Licences shall be issued following advance payments to Seychelles of a lump sum, per year and for each vessel, of EUR 10 000 for tuna seiners, EUR 2 000 for surface long-liners of more than 150 GRT and EUR 1 500 for surface long-liners of 150 GRT or less. Such amounts are equivalent to the fees for respectively 400 tons, 80 tons and 60 tons caught within Seychelles waters per year.

- 2.3. Surface long-liners shall, before the starting of their fishing campaign in Seychelles waters and at the end of it, call into Port Victoria to check the catches held on board. However, at the request of the ship-owner, the Seychelles authorities might exempt the vessel of that requirement.

Fishing licences for surface long-liners shall authorise the fishing of not only tuna but also swordfish, marlin and sailfish.

- 2.4. The Seychelles Fishing Authority (SFA) will draw up a statement of fees due in respect of the previous calendar year on the basis of catch declarations by Community vessels and other information in the possession of SFA.

The statement will be sent to the Commission before 31 March of the current year. The Commission will transmit it before 15 April simultaneously to ship-owners and national authorities of the concerned Member States.

Where the ship-owners do not agree with the statement submitted by the SFA, they may consult the scientific institutes competent for verifying catch statistics such as the IRD (Institut de Recherche pour le Développement), the IEO (Instituto Español de Oceanografía) and IPIMAR (Instituto de Investigação das Pescas e do Mar), and thereafter discuss together with the Seychelles authorities to establish the final statement before 15 May of the current year. In the absence of observations by the ship-owners at that date, the statement submitted by the SFA is considered as the final one.

The Member States will notify the Commission of the final statement relating to their own fleet.

Ship-owners shall make any additional payment above the advance to the Seychelles fishery authorities at the latest by 31 May of the same year.

Where the final statement is less than the abovementioned advance, the balance shall not be recoverable by the ship-owner.

3. Declarations of catches

3.1. The Community vessels licensed to fish in Seychelles waters shall fill a fishing form as set out in Appendices 2 and 3, for each trip it undertakes in Seychelles waters. In the absence of catches, the fishing forms shall still be filled in.

3.2. For the periods for which a Community vessel referred to in point 3.1 was not present in Seychelles waters, it shall provide the abovementioned fishing form with the notation 'Outside Seychelles EEZ'.

3.3. As far as the release of the fishing forms referred to in points 3.1 and 3.2 is concerned, the Community vessels shall:

- in the case they call into Port Victoria, submit the completed forms to the Seychelles authorities within five days of arrival, or in any event before it leaves port, whichever occurs first;
- in any other case, send the completed forms to the Seychelles authorities within 14 days of arrival in any port other than Victoria.

Copies of these fishing forms must also be sent to the scientific institutes referred to in point 2.4.

3.4. In the event of failure to comply with these provisions, the sanctions referred to in point 11 will be applicable.

4. Observers

Tuna seiner vessels shall, at the request of the Seychelles authorities, take on board one observer, and when the Seychelles authorities think it appropriate and necessary, two observers, designated by the said authorities in order to check the position of vessels and catches made in Seychelles waters including scientific research.

Observers shall have all facilities necessary for the performance of these duties, including access to places, documents and communication equipment. An observer must not be present for longer than the time required to fulfil his duties. Observers shall be granted officer status while on board. Should a tuna seiner with a Seychelles observer on board leave Seychelles waters, every step will be taken to ensure that the observer returns to Seychelles as soon as possible, at the ship-owner's expense.

If an observer is not present at the time and place agreed and during the twelve hours following the time agreed, ship-owners shall be automatically absolved of their obligation to take the observer on board.

The salary and the social contributions of the observer shall be borne by the relevant Seychelles authorities.

5. Vessel monitoring systems

Community vessels fishing under the Agreement shall be monitored, *inter alia*, by vessel monitoring systems, without discrimination, under the conditions to be agreed by the Parties.

6. Employment of seamen

Each tuna seiner shall take on board at least two Seychelles seamen designated by the Seychelles authorities, in agreement with the ship-owner, during its fishing campaign.

The employment contracts of the seamen shall be drawn up in Victoria between the ship-owners representatives and the seamen in agreement with the Seychelles Ministry responsible for employment.

These contracts shall also cover the social security arrangements applicable to the seamen including life, accident and sickness insurance.

7. Landing

Tuna seiners landing in the port of Victoria will endeavour to make their by-catches available to the Seychelles authorities at the local market price.

Furthermore, the Community tuna seiners shall participate in supplying tuna to the Seychelles canneries at international market price.

8. Communications

Within three hours of each entry and exit of the zone and every three days during their fishing activities in Seychelles waters, Community vessels shall communicate directly to the Seychelles authorities, in priority by fax or, in the event of failure, by radio, their position and the volume of catches held on board.

The number of the fax and the radio frequency shall be indicated on the licence.

A copy of the communications by fax or a record of the radio communications referred to above shall be kept by the Seychelles authorities and the ship-owners until the approval by both parties of the final statement of the fees referred to in point 2.4.

In the event of failure to comply with these provisions, the sanctions referred to in point 11 will be applicable.

9. Fishing zones

To avoid any adverse effect on small-scale fisheries in Seychelles waters, fishing by Community vessels shall not be authorised in the zones defined in Seychelles regulations nor within three miles around any fish-aggregating device placed by Seychelles authorities, the geographical positions of which have been communicated to the ship-owners' representatives or agents.

10. Port equipment and use of supplies and services

Community vessels shall endeavour to procure in Seychelles all supplies and services required for their operations. The Seychelles authorities will lay down, in agreement with the ship-owners, the conditions for using port equipment and, if necessary, supplies and services.

11. Sanctions

Failure to observe any one of the above rules, the management and conservation of living resources measures or the Seychelles legislation may be penalised by suspension, revocation or non-renewal of the vessel's fishing licence. Suspension or revocation of a fishing licence shall be regarded as force majeure for the purpose of point 1.2 of this Annex.

The European Commission will immediately be fully informed of any suspension or revocation and of all relevant facts related thereto.

12. Arrest of fishing vessels

The Seychelles authorities shall inform the Delegation of the European Commission and the flag State, within 48 hours, of the arrest of any fishing vessel flying the flag of a Member State of the Community fishing under the Agreement in Seychelles fishing zone and shall transmit a brief report of the circumstances and reasons leading to such arrest. The Delegation and the flag State shall be kept informed of any proceedings initiated and penalties imposed.

Appendix 1

APPLICATION FORM FOR A FOREIGN FISHING VESSEL LICENCE

Name of applicant:

Address of applicant:

.....

Name and address of charterer of vessel if different from above:

.....

Name and address of other legal representative in Seychelles:

.....

Name and address of master of vessel:

.....

Name of vessel:

Type of vessel:

Length and registered net tonnage of vessel:

Engine type, horse power and gross registered tonnage:

Port and country of registry:

Registration number:

Fishing vessel external identification:

Radio call sign/signal letters:

Frequency:

Particulars of equipment:

Number and nationality of crew:

Proposed fishing area and species of fish:

.....

.....

Description of fishing operations, joint ventures and other contractual arrangements:

.....

.....

.....

.....

I certify that the above particulars are correct

Date: Signature:

Appendix 3

STATEMENT OF CATCH FOR SURFACE LONG-LINERS

Name of vessel: Skipper's name:

Date of setting: Start of trip: at:

Trip number: Setting number:

Wind direction:	Force: (Beaufort)
Sea conditions:	Swell:
Surface temperature: °C	Current: speed: Direction:
Moon: New moon + days	Moon rises:
	Moon sets: 0 to 24 hours

Setting details

Start time: Finishing time:

Section	Position	Heading	Speed	Remarks
Depart: radio buoy number 1				
Radio buoy number 2				
Radio buoy number 3				
Radio buoy number 4				
Radio buoy number 5				
Radio buoy number 6				
Radio buoy number 7				

Number of hooks:
Length: Buoy lines: Branch lines:
Length of line:
Recorded depth of the line (sunder):
Bait: Shrimp:% Mackerel:% :

Details of catch

	Time (0 to 24 H)		Latitude			Longitude		
Start of turn								
End of turn								

Species	Number	Estimated unit weight	Total weight	Number of fish eaten
Swordfish (*)				
Yellowfin (**)				
Bigeye (**)				
Marlin (**)				
Sailfish (*)				
Seabream				
Shark				
Other (give details)				
Total weight				

Total weight of catch landed (weighed)

(*) VDK;

(**) with head, gilled

state the type of weight used (VAT, VDK, whole) if different from that specified.

Amended proposal for a Directive of the European Parliament and of the Council on measuring instruments ⁽¹⁾

(2002/C 126 E/14)

(Text with EEA relevance)

COM(2002) 37 final — 2000/0233(COD)

(Submitted by the Commission pursuant to Article 250(2) of the EC Treaty on 6 February 2002)

⁽¹⁾ OJ C 62 E, 27.2.2001, p. 1.

INITIAL PROPOSAL

AMENDED PROPOSAL

THE EUROPEAN PARLIAMENT AND THE COUNCIL
OF THE EUROPEAN UNION,

Unchanged

Having regard to the Treaty establishing the European Community, and in particular Article 95 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social Committee,

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

Whereas:

(1) A number of measuring instruments are covered by specific Directives, adopted on the basis of Directive 71/316/EEC on common provisions for both measuring instruments and methods of metrological control⁽¹⁾. Specific directives that are technically outdated should be repealed and replaced by an independent directive, which is in the spirit of Council Resolution of 7 May 1985 on a new approach to technical harmonisation and standards⁽²⁾. Specific Directives that are not outdated should remain governed by Directive 71/316/EEC.

(2) Measuring instruments can be used for a variety of measurement tasks. Those responding to reasons of public the daily life of citizens in many ways directly and indirectly, require the use of legally controlled measuring instruments.

(2) Measuring instruments can be used for a variety of measurement tasks. Those responding to reasons of public interest such as public health, safety and order, of protection of the environment and the consumer, of levying taxes and duties and of fair trading, which affect the daily life of citizens in many ways directly and indirectly, require the use of legally controlled measuring instruments.

⁽¹⁾ OJ L 202, 6.9.1971, p. 1.

⁽²⁾ OJ C 136, 4.6.1985, p. 1.

INITIAL PROPOSAL

AMENDED PROPOSAL

(3) Legal metrological control should not lead to barriers to the free movement of measuring instruments, the provision concerned should be the same in all Member States and proof of conformity accepted throughout the Community.

Unchanged

(4) Legal metrological control requires conformity with specified performance requirements. The performance requirements that the measuring instruments must meet should provide a high level of protection. The assessment of conformity should provide a high level of confidence.

(5) The performance of measuring instruments is particularly sensitive to the electromagnetic environment. Immunity of measuring instruments to electromagnetic interference forms an integral part of this Directive and the immunity requirements of Council Directive 89/336/EEC of 3 May 1989 on electromagnetic compatibility ⁽¹⁾, as last amended by Directive 93/68/EEC ⁽²⁾, would therefore not apply.

(6) Member States should retain the option to prescribe legal metrological control. Where legal metrological control is prescribed, only measuring instruments complying with common requirements should be used.

(7) The responsibilities of the 'manufacturer' for compliance with the requirements of this directive should be specifically stated.

(6) Community legislation should specify essential requirements that do not impede technical progress. The legal requirements should therefore preferably be performance requirements. Regulations to remove technical barriers to trade should follow the new approach provided for in the Council Resolution of 7 May 1985 on a new approach to technical harmonisation and standards.

(8) Community legislation should specify essential requirements that do not impede technical progress. The legal requirements should therefore preferably be performance requirements. Regulations to remove technical barriers to trade should follow the new approach provided for in the Council Resolution of 7 May 1985 on a new approach to technical harmonisation and standards.

⁽¹⁾ OJ L 139, 23.5.1989, p. 19.

⁽²⁾ OJ L 220, 30.8.1993, p. 1.

INITIAL PROPOSAL

- (7) European technical standards should therefore be drawn up whose technical and performance specifications comply with the essential requirements laid down by this Directive. Conformity with the specifications of those standards would give rise to a presumption of conformity with the essential requirements laid down by this Directive. Standards harmonised at European level are drawn up by private bodies and must retain their non-mandatory status. For this purpose, the European Committee for Standardisation (CEN) and the European Committee for Electrotechnical Standardisation (Cenelec) are recognised as being the bodies that are competent to adopt harmonised standards that follow the general guidelines for cooperation between the Commission and those two bodies signed on 13 November 1984.
- (8) The drawing up of harmonised standards by CEN and Cenelec is to be carried out at the request of the Commission pursuant to Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on Information Society services ⁽¹⁾, as amended by Directive 98/48/EC ⁽²⁾. In relation to standardisation, it is advisable for the Commission to be assisted by the Committee set up under Directive 98/34/EC. The Committee will, if necessary, consult technical experts.
- (9) In certain specialised fields the technical and performance specifications of internationally agreed normative documents can also comply, in part or in full, with the product specifications laid down in legislation. In those cases the use of these internationally agreed normative documents can be an alternative to the use of European technical standards.
- (10) Conformity with the essential requirements laid down by this Directive can also be provided by specifications that are not supplied by a European technical standard or internationally agreed normative document. The use of European technical standards or internationally agreed normative documents should therefore be optional.

AMENDED PROPOSAL

- (9) European technical standards should therefore be drawn up whose technical and performance specifications comply with the essential requirements laid down by this Directive. Conformity with the specifications of those standards would give rise to a presumption of conformity with the essential requirements laid down by this Directive. Standards harmonised at European level are drawn up by private bodies and must retain their non-mandatory status. For this purpose, the European Committee for Standardisation (CEN) and the European Committee for Electrotechnical Standardisation (Cenelec) are recognised as being the bodies that are competent to adopt harmonised standards that follow the general guidelines for cooperation between the Commission and those two bodies signed on 13 November 1984.
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⁽¹⁾ OJ L 204, 21.7.1998, p. 37.

⁽²⁾ OJ L 217, 5.8.1998, p. 18.

⁽¹⁾ OJ L 204, 21.7.1998, p. 37.

⁽²⁾ OJ L 217, 5.8.1998, p. 18.

INITIAL PROPOSAL

(11) The state of the art in measurement technology is subject to constant evolution which may lead to changes in the needs for conformity assessments. Therefore, for each category of measurement there must be an appropriate procedure or a choice between different procedures of equivalent stringency. The procedures adopted are as required by Council Decision 93/465/EEC of 22 July 1993 concerning the modules for the various phases of the conformity assessment procedures and the rules for the affixing and use of the CE marking, which are intended to be used in the technical harmonisation Directives ⁽¹⁾.

(12) In accordance with Article 2 of the Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽²⁾, measures necessary for the implementation of this Directive should be adopted by use of the advisory procedure provided for in Article 3 of that Decision.

(13) The Member States should actively survey their markets and take all appropriate measures to prevent non-complying instruments from being placed on their markets or being used. Adequate cooperation among the market surveillance authorities of the Member States is therefore necessary to ensure a Community-wide effect of the market surveillance activities.

(14) Member States should take all appropriate measures to ensure that measuring instruments that carry the CE marking and supplementary marking are correctly placed on the market. Manufacturers should be informed of the grounds on which negative decisions in respect of their products were taken, and the legal remedies available to them.

(15) This Directive should repeal the Community legislation in respect of the measuring instruments covered by the following Council Directives:

- 71/318/EEC of 26 July 1971 on the approximation of the laws of the Member States relating to gas meters ⁽³⁾, as last amended by Commission Directive 82/623/EEC ⁽⁴⁾;

⁽¹⁾ OJ L 220, 30.8.1993, p. 23.

⁽²⁾ OJ L 184, 17.7.1999, p. 23.

⁽³⁾ OJ L 202, 6.9.1971, p. 21.

⁽⁴⁾ OJ L 252, 27.8.1982, p. 5.

AMENDED PROPOSAL

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(14) In accordance with Article 2 of the Council Decision 1999/468/EC of 28 June 1999 laying down the procedures for the exercise of implementing powers conferred on the Commission ⁽²⁾, measures necessary for the implementation of this Directive should be adopted by use of the advisory procedure provided for in Article 3 of that Decision or by use of the regulatory procedure provided for in Article 2 of that Decision.

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⁽²⁾ OJ L 184, 17.7.1999, p. 23.

⁽³⁾ OJ L 202, 6.9.1971, p. 21.

⁽⁴⁾ OJ L 252, 27.8.1982, p. 5.

INITIAL PROPOSAL

- 71/319/EEC of 26 July 1971 on the approximation of the laws of the Member States relating to meters for liquids other than water ⁽¹⁾;
- 71/348/EEC of 12 October 1971 on the approximation of the laws of the Member States relating to ancillary equipment for meters for liquids other than water ⁽²⁾, as last amended by the Act of Accession of Austria, Finland and Sweden;
- 73/362/EEC of 19 November 1973 on the approximation of the laws of the Member States relating to material measures of length ⁽³⁾, as last amended by Commission Directive 85/146/EEC ⁽⁴⁾;
- 75/33/EEC of 17 December 1974 on the approximation of the laws of the Member States relating to cold water meters ⁽⁵⁾;
- 75/410/EEC of 24 June 1975 on the approximation of the laws of the Member States relating to continuous totalizing weighing machines ⁽⁶⁾;
- 76/891/EEC of 4 November 1976 on the approximation of the laws of the Member States relating to electrical energy meters ⁽⁷⁾;
- 77/95/EEC of 21 December 1976 on the approximation of the laws of the Member States relating to taximeters ⁽⁸⁾;
- 77/313/EEC of 5 April 1977 on the approximation of the laws of the Member States relating to measuring systems for liquids other than water ⁽⁹⁾ as amended by Commission Directive 82/625/EEC ⁽¹⁰⁾;
- 78/1031/EEC of 5 December 1978 on the approximation of the laws of the Member States relating to automatic checkweighing and weight grading machines ⁽¹¹⁾;

AMENDED PROPOSAL

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- 71/348/EEC of 12 October 1971 on the approximation of the laws of the Member States relating to ancillary equipment for meters for liquids other than water ⁽²⁾, as last amended by the Act of Accession of Austria, Finland and Sweden;
- 73/362/EEC of 19 November 1973 on the approximation of the laws of the Member States relating to material measures of length ⁽³⁾, as last amended by Commission Directive 85/146/EEC ⁽⁴⁾;
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- 77/313/EEC of 5 April 1977 on the approximation of the laws of the Member States relating to measuring systems for liquids other than water ⁽⁹⁾ as amended by Commission Directive 82/625/EEC ⁽¹⁰⁾;
- 78/1031/EEC of 5 December 1978 on the approximation of the laws of the Member States relating to automatic checkweighing and weight grading machines ⁽¹¹⁾;

⁽¹⁾ OJ L 202, 6.9.1971, p. 32.

⁽²⁾ OJ L 239, 25.10.1971, p. 9.

⁽³⁾ OJ L 335, 5.12.1973, p. 56.

⁽⁴⁾ OJ L 54, 23.2.1985, p. 29.

⁽⁵⁾ OJ L 14, 20.1.1975, p. 1.

⁽⁶⁾ OJ L 183, 14.7.1975, p. 25.

⁽⁷⁾ OJ L 336, 4.12.1976, p. 30.

⁽⁸⁾ OJ L 26, 31.1.1977, p. 59.

⁽⁹⁾ OJ L 105, 28.4.1977, p. 18.

⁽¹⁰⁾ OJ L 252, 27.8.1982, p. 10.

⁽¹¹⁾ OJ L 364, 27.12.1978, p. 1.

⁽¹⁾ OJ L 202, 6.9.1971, p. 32.

⁽²⁾ OJ L 239, 25.10.1971, p. 9.

⁽³⁾ OJ L 335, 5.12.1973, p. 56.

⁽⁴⁾ OJ L 54, 23.2.1985, p. 29.

⁽⁵⁾ OJ L 14, 20.1.1975, p. 1.

⁽⁶⁾ OJ L 183, 14.7.1975, p. 25.

⁽⁷⁾ OJ L 336, 4.12.1976, p. 30.

⁽⁸⁾ OJ L 26, 31.1.1977, p. 59.

⁽⁹⁾ OJ L 105, 28.4.1977, p. 18.

⁽¹⁰⁾ OJ L 252, 27.8.1982, p. 10.

⁽¹¹⁾ OJ L 364, 27.12.1978, p. 1.

INITIAL PROPOSAL

AMENDED PROPOSAL

— 79/830/EEC of 11 September 1979 on the approximation of the laws of the Member States relating to hot-water meters ⁽¹⁾.

— 79/830/EEC of 11 September 1979 on the approximation of the laws of the Member States relating to hot-water meters ⁽¹⁾.

(16) Manufacturers should be offered the possibility to exercise the rights obtained before the entry into force of this Directive, during a reasonable period. Transitional arrangements are therefore necessary,

(18) Manufacturers should be offered the possibility to exercise the rights obtained before the entry into force of this Directive, during a reasonable period. Transitional arrangements are therefore necessary,

HAVE ADOPTED THIS DIRECTIVE:

Unchanged

Article 1

Scope

This Directive applies to the devices and systems with a measuring function defined in the instrument specific annexes. MI-001 to MI-011

This Directive applies to the devices and systems with a measuring function defined in the instrument specific annexes concerning water meters (MI-001), gas meters (MI-002), active electrical energy meters and measurement transformers (MI-003), heat meters (MI-004), measuring systems for the continuous and dynamic measurement of quantities of liquids other than water (MI-005), automatic weighing instruments (MI-006), taximeters (MI-007), material measures (MI-008), dimensional measuring instruments (MI-009), evidential breath analysers (MI-010) and exhaust gas analysers (MI-011).

Article 2

Subject matter

This Directive establishes the essential requirements that the devices and systems referred to in Article 1 have to satisfy if they are subject to legal metrological control in a Member State, and the conformity assessment that they have to undergo in those circumstances, with a view to their placing on the market and putting into use.

Unchanged

This Directive establishes the essential requirements that the devices and systems referred to in Article 1 have to satisfy and the conformity assessment that they have to undergo in those circumstances, with a view to their placing on the market and putting into use, for those tasks for which a Member State prescribes legal metrological control for reasons of public interest, such as public health, safety and order, protection of the environment and the consumer, levying taxes and duties and fair trading.

It is a specific Directive in respect of requirements for electromagnetic immunity in the sense of Article 2(2) of Directive 89/336/EEC.

Unchanged

Article 3

Definitions

For the purposes of this Directive:

(a) 'measuring instrument' means any device or system with a measurement function that is covered by the scope and object of this Directive, as laid down in Articles 1 and 2;

⁽¹⁾ OJ L 259, 15.10.1979, p. 1.

⁽¹⁾ OJ L 259, 15.10.1979, p. 1.

INITIAL PROPOSAL

AMENDED PROPOSAL

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| <p>(b) 'sub-assembly' means a hardware device that functions independently and together with other sub-assemblies, with which it is compatible, makes up a measuring instrument,</p> <p>(c) 'legal metrological control' means the control of the measurement tasks of a measuring instrument, prescribed by the Member States for reasons of public health, public safety, public order, protection of the environment, levying of taxes and duties, protection of the consumers and fair trading;</p> <p>(d) 'manufacturer' means the physical or legal person who</p> <p>— carries out the technical design of a measuring instrument, or has it carried out on his behalf, and</p> <p>— manufactures the measuring instrument, or has it manufactured on his behalf, and</p> <p>— places it lawfully on the market under his own name,</p> <p>or,</p> <p>the physical or legal person who</p> <p>— takes responsibility for the conformity of the measuring instrument to the appropriate requirements of this Directive, and</p> <p>— has taken all necessary measures to bear those responsibilities, and</p> <p>— places the measuring instrument lawfully on the market under his own name;</p> <p>(e) 'placing on the market' means the first passing of the product from the stage of manufacture to the stage of distribution and/or use on the Community market</p> <p>(f) 'putting into use' means the first use of a product for the purposes for which it was intended;</p> <p>(g) 'authorised representative' means the physical or legal person authorised by manufacturer, in writing, to act on his behalf for specified tasks. An authorised representative must be established within the Community if he is to act under this Directive;</p> <p>(h) 'harmonised standard' means a technical specification adopted by the European Committee for Standardisation (CEN) or the European Committee for Electrotechnical Standardization (Cenelec) or jointly by both, at the request of the Commission pursuant to Directive 98/34/EC, and prepared in accordance with the General Guidelines agreed between the Commission and the European standards organisations;</p> | <p>(b) 'sub-assembly' means a hardware device that functions independently and together with other sub-assemblies and/or measuring instruments, with which it is compatible, makes up a measuring instrument,</p> <p>Unchanged</p> <p>(d) 'manufacturer' means the physical or legal person who has responsibility for the conformity of the measuring instrument to the appropriate requirements of this Directive, and who</p> <p>Unchanged</p> <p>— places it on the market,</p> <p>Unchanged</p> <p>— places the measuring instrument on the market;</p> <p>(e) 'placing on the market' making available for the first time in the Community an instrument intended for an end user, whether for reward or free of charge;</p> <p>Unchanged</p> <p>(g) 'authorised representative' means the physical or legal person who is established within the Community and is authorised by the manufacturer, in writing, to act on his behalf for specified tasks within the meaning and provisions of this Directive.</p> <p>Unchanged</p> |
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INITIAL PROPOSAL

- (i) 'normative document' means a document containing normative elements drawn up by the Organisation Internationale de Métrologie Légale.

Article 4

Essential requirements and assessment of conformity

1. A measuring instrument shall meet the essential requirements laid down in Annex I and the relevant instrument specific Annex.
2. The conformity of a measuring instrument with the essential requirements shall be assessed in accordance with the provisions of Article 7.
3. Where a measuring instrument consists of a number of sub-assemblies and where specific annexes exist laying down the essential requirements for all of these sub-assemblies that together make up the measuring instrument, the provisions of this Directive shall apply *mutatis mutandis* to each of these sub-assemblies.

Article 5

Conformity marking

1. The conformity of a measuring instrument with all the obligations contained in this Directive shall be indicated by the presence on it of the CE marking and the supplementary metrology marking as specified in Article 13.
2. The CE marking and supplementary metrology marking shall be affixed by, or under the responsibility of the manufacturer.
3. The affixing of markings on a measuring instrument that are likely to deceive third parties as to the meaning and form of the CE marking or the supplementary metrology marking shall be prohibited. Any other marking may be affixed to a measuring instrument, provided that the visibility and legibility of the CE marking and the supplementary metrology marking is not thereby reduced.

Article 6

Placing on the market and putting into use

1. A Member States shall not impede for reasons covered by this Directive the placing on the market and putting into use of any measuring instrument that carries the CE conformity marking and supplementary metrology marking in accordance with Article 5.

AMENDED PROPOSAL

2. The CE marking and supplementary metrology marking shall be affixed by, or under the responsibility of the manufacturer. The CE marking may be affixed on the instrument during the fabrication process. The supplementary metrology marking shall be affixed after the assessment of conformity specified in Article 7.

3. The affixing of markings on a measuring instrument that are likely to deceive third parties as to the meaning and/or form of the CE marking or the supplementary metrology marking shall be prohibited. Any other marking may be affixed to a measuring instrument, provided that the visibility and legibility of the CE marking and the supplementary metrology marking is not thereby reduced.

Unchanged

1. A Member States shall not impede for reasons covered by this Directive the placing on the market and putting into use of any measuring instrument that carries the CE marking and supplementary metrology marking in accordance with Article 5.

INITIAL PROPOSAL

2. Member States shall ensure that the use of any measuring instrument that carries the CE conformity marking and supplementary metrology marking in accordance with Article 5 shall not be impeded by rules or conditions in respect of aspects covered by this Directive which are imposed by contracting entities in pursuit of the relevant activities, as referred to in Article 2 of Council Directive 93/38/EEC ⁽¹⁾.

*Article 7***Assessment of conformity**

Assessment of conformity of a measuring instrument with its essential requirements shall be carried out by the application, at the choice of the manufacturer, of one of the conformity assessment procedures listed in the specific annex concerning that instrument.

The conformity assessment modules making up the procedures are described in Annexes A to H1.

*Article 8***Notification**

1. Member States shall notify to the other Member States and the Commission the bodies which they have designated to carry out the tasks pertaining to the conformity assessment modules referred to in Article 7, together with the identification numbers given by the Commission according to paragraph 4, the kind(s) of measuring instrument for which each body has been designated and in addition, where relevant, the instrument classes, the measuring range, the measurement technology, and any other instrument characteristic limiting the scope of the notification.

AMENDED PROPOSAL

2. Member States shall take all appropriate measures to ensure that measuring instruments that carry the CE conformity marking and supplementary metrology marking according to Article 5 may be placed on the market and put into use only if they satisfy the requirements of this directive.

3. A Member State requiring legal metrological control as referred to in Article 2 may require a measuring instrument to satisfy provisions for its putting into use, which are duly justified by local climatic conditions and/or by requirements in relation to the measuring characteristics. These provisions are specified in the relevant instrument specific annexes referred to in Article 1.

4. Member States shall ensure that rules or conditions by public bodies or private bodies acting as a public undertaking or acting as a public body on the basis of a monopoly position, do not impede the putting into use of measuring instruments referred to in paragraph 1 which satisfy the provisions referred to in paragraph 3.

Unchanged

The manufacturer shall provide technical documentation as set out in Annex IV.

Unchanged

⁽¹⁾ OJ L 199, 9.8.1993, p. 84.

INITIAL PROPOSAL

2. Member States shall apply the criteria set out in Annex III for the designation of such bodies.

3. A Member State that has notified a body shall withdraw such notification if it finds that the body no longer meets the criteria referred to in paragraph 2. It shall forthwith inform the other Member States and the Commission of any such withdrawal of a notification.

4. Each of the bodies to be notified shall be given an identification number by the Commission. The Commission shall publish the list of bodies notified, together with the information in respect of the scope of the notification referred to in paragraph 1, in the C series of the *Official Journal of the European Communities* and shall ensure that the list is kept up to date.

Article 9

Harmonised standards and normative documents

1. Member States shall presume conformity with the essential requirements referred to in Article 4 in respect of a measuring instrument that complies with the elements of the national standards implementing the European harmonised standard for that measuring instrument that correspond to those elements of this European harmonised standard whose references have been published in the C series of the *Official Journal of the European Communities*.

Where a measuring instrument complies only in part with the elements of the national standards referred to in the first subparagraph, Member States shall presume conformity with the essential requirements corresponding to the elements of the standards with which the instrument complies.

Member States shall publish the references of the national standards referred to in the first subparagraph.

2. Member States shall presume conformity with the essential requirements referred to in Article 4 in respect of a measuring instrument that complies with the normative document referred to in Article 11(2)(c), whose references have been published in the C series of the *Official Journal of the European Communities*.

Where a measuring instrument complies only in part with the normative document referred to in the first subparagraph, Member States shall presume conformity with the essential requirements corresponding to the normative elements with which the instrument complies.

Member States shall publish the references of the normative document referred to in the first subparagraph.

AMENDED PROPOSAL

2. Member States shall apply the criteria set out in Annex III for the designation of such bodies. Bodies that meet the criteria laid down in the national standards which transpose the relevant harmonised standards shall be presumed to meet the corresponding criteria. If a Member State does not prescribe legal metrological control, as referred to in Article 2, which would require the use of an instrument defined in Article 1, it may legislate to enable the designation of a body competent for such an instrument.

Unchanged

2. Member States shall presume conformity with the essential requirements referred to in Article 4 in respect of a measuring instrument that complies with the normative document referred to in Article 12(1)(a), whose references have been published in the C series of the *Official Journal of the European Communities*.

Unchanged

INITIAL PROPOSAL

AMENDED PROPOSAL

*Article 10***Committee on standards and technical regulations**

Where a Member State or the Commission considers that a European harmonised standard as referred to in Article 9(1) does not fully meet the essential requirements referred to in Article 4, the Member State or the Commission shall bring the matter before the Standing Committee set up under Directive 98/34/EC, giving its reasons for doing so. The Committee shall deliver an opinion without delay.

In the light of the Committee's opinion, the Commission shall inform the Member States whether or not it is necessary to withdraw the references of the national standards from the publication referred to in the third subparagraph of Article 9(1).

*Article 11***Measuring Instruments Committee**

1. The Commission shall be assisted by a Standing Committee, the Measuring Instruments Committee, composed of representatives of the Member States and chaired by the representative of the Commission.

2. Where reference is made to this paragraph, the advisory procedure laid down in Article 3 of Decision 1999/468/EC shall apply, in compliance with Article 7(3) and Article 8 thereof.

3. Where reference is made to this paragraph, the regulatory procedure laid down in Article 5 of Decision 1999/468/EC shall apply, in compliance with Article 7(3) and Article 8 thereof.

Article 12

Unchanged

Functions of the Measuring Instruments Committee

1. On request by a Member State or on its own initiative, the Commission, acting in accordance with the procedure referred to in Article 11(2), may take any appropriate measure to:

(a) amend instrument specific annexes in respect of:

Deleted

— the maximum permissible errors and accuracy classes,

— the rated operating conditions,

— the critical change values,

— the list of conformity assessment procedures [referred to in Article 7] — reference is unnecessary here;

(b) amend the test programmes laid down in Annex II;

INITIAL PROPOSAL

- (c) request the Organisation Internationale de Métrologie Légale to draw up a normative document containing normative elements conformity with which provides presumption of conformity with the corresponding essential requirements of this Directive;
- (d) publish the references of the normative document referred to in point (c) in the C series of the *Official Journal of the European Communities*.

Where a Member State or the Commission considers that a normative document whose references have been published in the C series of the *Official Journal of the European Communities* in accordance with paragraph 2(d), does not fully meet the essential requirements referred to in Article 4, that Member State or the Commission shall bring the matter before the Measuring Instruments Committee, giving its reasons for doing so.

The Commission, acting in accordance with the procedure referred to in Article 11(2), shall inform the Member States whether or not it is necessary to withdraw the references of the normative document concerned from the publication referred to in the third subparagraph of Article 9(2).

Article 13

Markings

1. The CE conformity marking referred to in Article 5 consists of the letters CE according to the design laid down in paragraph I.B(d) of the Annex to Decision 93/465/EEC. The CE marking shall be at least 5 mm high.

AMENDED PROPOSAL

- (a) identify normative documents drawn up by the Organisation Internationale de Métrologie Légale or indicate parts thereof conformity with which provides presumption of conformity with the corresponding essential requirements of this Directive;
- (b) publish the references of the normative document referred to in point (a) in the C series of the *Official Journal of the European Communities*.

2. On request by a Member State or on its own initiative, the Commission, acting in accordance with the procedure referred to in Article 11(3), may take any appropriate measure to take into account international developments and to:

- (a) amend instrument specific annexes in respect of:
- the maximum permissible errors and accuracy classes,
 - the rated operating conditions,
 - the critical change values,
 - the list of conformity assessment procedures;

(b) amend the test programmes laid down in Annex II;

3. Where a Member State or the Commission considers that a normative document whose references have been published in the C series of the *Official Journal of the European Communities* in accordance with paragraph 1(b), does not fully meet the essential requirements referred to in Article 4, that Member State or the Commission shall bring the matter before the Measuring Instruments Committee, giving its reasons for doing so.

Unchanged

1. The CE marking referred to in Article 5 consists of the letters CE according to the design laid down in paragraph I.B(d) of the Annex to Decision 93/465/EEC. The CE marking shall be at least 5 mm high.

INITIAL PROPOSAL

2. The supplementary metrology marking referred to in Article 5 consists of the capital letter M and the year of its affixing, surrounded by a rectangle. The height of the rectangle shall be equal to the height of the CE marking. The supplementary metrology marking shall immediately follow the CE marking.

3. The identification number of the notified body concerned referred to in Article 8, if prescribed by the conformity assessment procedure, shall follow the CE conformity marking and supplementary metrology marking. The measuring instrument shall carry no identification number of a notified body where that is not prescribed by the conformity assessment procedure. The measuring instrument shall carry no identification number of a notified body where that is not prescribed by the conformity assessment procedure.

4. When a measuring instrument consists of a set of devices operating together, the markings shall be present on the instrument's main device.

When a measuring instrument is too small or too sensitive to carry the markings referred to in paragraph 1, the markings shall be carried by the packing in which the instrument is offered for sale or, if applicable, the container in which the instrument is supplied.

5. The CE conformity marking and supplementary metrology marking shall be indelible. The identification number of the notified body concerned shall be indelible or self destructive upon removal. All markings shall be clearly visible or easily accessible.

AMENDED PROPOSAL

Unchanged

3. The identification number of the notified body concerned referred to in Article 8, if prescribed by the conformity assessment procedure, shall follow the CE marking and supplementary metrology marking. The measuring instrument shall carry no identification number of a notified body where that is not prescribed by the conformity assessment procedure.

4. When a measuring instrument consists of a set of devices and/or sub-assemblies operating together, the markings shall be present on the instrument's main device.

When a measuring instrument is too small or too sensitive to carry the markings referred to in paragraph 1-3, the markings shall be indicated on the technical documentation.

5. The CE marking and supplementary metrology marking shall be indelible. The identification number of the notified body concerned shall be indelible or self destructive upon removal. All markings shall be clearly visible or easily accessible.

*Article 14***Unduly affixed marking**

1. Where a Member State establishes that the CE marking and/or supplementary metrology marking has been affixed unduly, the manufacturer or his authorised representative established within the Community shall be obliged to make the instrument conform as regards the provisions concerning the CE marking and/or supplementary metrology marking and to end the infringement under the conditions imposed by the Member State.

2. The Member State must take all appropriate measures to restrict or prohibit the placing on the market of the instrument in question or to ensure that it is withdrawn from the market in accordance with the procedures laid down in Article 16.

INITIAL PROPOSAL

AMENDED PROPOSAL

*Article 14**Article 15***Market surveillance**

Unchanged

1. Member States shall take all appropriate measures to ensure that measuring instruments that carry the CE conformity marking and supplementary metrology marking according to Article 5 shall be placed on the market and put into use only if, when correctly installed and used in accordance with the manufacturer's instructions, they satisfy the essential requirements referred to in Article 4, and they have undergone conformity assessment in accordance with Article 7.

Deleted

2. The competent authorities of the Member States shall assist each other in the fulfilment of their obligations to carry out market surveillance.

The competent authorities of the Member States shall assist each other in the fulfilment of their obligations to carry out market surveillance.

In particular, the competent authorities shall exchange information concerning the extent to which instruments they examine comply with the obligations of this Directive, and the results of such examinations.

Unchanged

Each Member State shall inform the other Member States and the Commission which competent authorities it has designated for such exchange of information.

Information exchanged shall be kept confidential.

Deleted

3. If a Member State establishes that all or part of the measuring instruments of a particular model, that bear the CE conformity marking and the supplementary metrology marking, do not satisfy the conditions set out in paragraph 1 it shall take all appropriate measures to withdraw those instruments from the market, prohibit or restrict their further being placed on the market, or prohibit or restrict their further being used.

When deciding on the measures, the Member State shall take account of the systematic or incidental nature of the non-compliance. Where the Member State has established that the non-compliance is of a systematic nature, it shall immediately inform the Commission of the measures taken, indicating the reasons for its decision.

4. The Commission shall enter into consultation with the parties concerned as soon as possible.

*Article 16***Safeguard clause**

1. If a Member State establishes that all or part of the measuring instruments of a particular model, that bear the CE marking and the supplementary metrology marking, do not satisfy the metrological characteristics set out in this directive, when correctly installed and used in accordance with the manufacturer's instructions, it shall take all appropriate measures to withdraw those instruments from the market, prohibit or restrict their further being placed on the market, or prohibit or restrict their further being used.

Unchanged

2. The Commission shall enter into consultation with the parties concerned as soon as possible.

INITIAL PROPOSAL

Should the Commission find that the measures taken by the Member State concerned are justified, it shall immediately inform the Member State that took the action thereof, as well as the other Member States.

The competent Member State shall take appropriate action against whomsoever has affixed the markings and shall inform the Commission and the other Member States thereof.

Should the Commission find that the measures taken by the Member State concerned are not justified, it shall immediately inform the Member State that took the action thereof, as well as the manufacturer concerned or his authorised representative.

If the non-compliance is attributed to shortcomings in the standards or normative documents, the Commission shall, after having consulted the parties concerned, bring the matter as soon as possible before the appropriate Committee referred to in Article 10.

The Commission shall ensure that the Member States are kept informed of the progress and outcome of the procedure.

*Article 15***Decisions entailing refusal or restriction**

Any decision taken by a Member State pursuant to this Directive which requires the withdrawal from the market of a measuring instrument, or prohibits or restricts the placing on the market or putting into use of an instrument, shall state the exact grounds on which it is based. Such a decision shall be notified forthwith to the party concerned, who shall at the same time be informed of the legal remedies available to him under the laws in force in the Member State concerned and of the time limits to which such remedies are subject.

*Article 16***Repeals**

The following Directives are repealed as from [1 July 2002] without prejudice to Article 17:

- Directive 71/318/EEC;
- Directive 71/319/EEC;
- Directive 71/348/EEC;
- Directive 73/362/EEC;
- Directive 75/33/EEC;

AMENDED PROPOSAL

(a) Should the Commission find that the measures taken by the Member State concerned are justified, it shall immediately inform the Member State that took the action thereof, as well as the other Member States.

Unchanged

If the non-compliance is attributed to shortcomings in the standards or normative documents, the Commission shall, after having consulted the parties concerned, bring the matter as soon as possible before the appropriate Committee referred to in Article 10 or Article 11.

(b) Should the Commission find that the measures taken by the Member State concerned are not justified, it shall immediately inform the Member State that took the action thereof, as well as the manufacturer concerned or his authorised representative.

Deleted

Unchanged

Article 17

Unchanged

Article 18

Unchanged

The following Directives are repealed as from [1 July 2002] without prejudice to Article 19:

Unchanged

INITIAL PROPOSAL

AMENDED PROPOSAL

- Directive 75/410/EEC;
- Directive 76/891/EEC;
- Directive 77/95/EEC;
- Directive 77/313/EEC;
- Directive 78/1031/EEC;
- Directive 79/830/EEC.

*Article 17**Article 19***Transitional provisions**

Unchanged

By way of derogation from Article, Member States shall permit, for measurement tasks for which they have prescribed the use of a legally controlled measuring instrument, the placing on the market and putting into use of measuring instruments that satisfy the rules applicable before [1 July 2002] until the expiration of the validity of the type approval of those measuring instruments or, in case of a type approval of indefinite validity, for a period of ten years from [1 July 2002].

By way of derogation from Article 6.2, Member States shall permit, for measurement tasks for which they have prescribed the use of a legally controlled measuring instrument, the placing on the market and putting into use of measuring instruments that satisfy the rules applicable before [two years after 1 July 2002] until the expiration of the validity of the type approval of those measuring instruments or, in case of a type approval of indefinite validity, for a period of five years from [1 July 2002].

*Article 18**Article 20***Transposition**

Unchanged

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this Directive by [1 July 2002] at the latest. They shall forthwith inform the Commission thereof.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

*Article 19**Article 21***Entry into force**

Unchanged

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Communities*.

*Article 20**Article 22***Addressees**

Unchanged

This Directive is addressed to the Member States.

INITIAL PROPOSAL

AMENDED PROPOSAL

ANNEX I

ESSENTIAL REQUIREMENTS

No change from the proposal in COM(2000) 566 other than in the following paragraphs:

Unchanged

5. Durability

A measuring instrument shall be designed to maintain an adequate stability of its metrological characteristics over reasonable period of time, maintained and used according to the manufacturer's instruction when in the environmental conditions for which it is intended.

A measuring instrument shall be designed to maintain an adequate stability of its metrological characteristics over the period of time specified by the manufacturer, taking into account normal conditions of use when the device is properly installed, maintained and used according to the manufacturer's instruction in the environmental conditions for which it is intended.

6. Reliability

Unchanged

A measuring instrument shall be designed to reduce as far as possible the effect of a defect that would lead to an inaccurate measurement result, unless the presence of such a defect is obvious or can be easily and simply checked using devices apart from the instrument itself.

A measuring instrument shall be designed to reduce as far as possible the effect of a defect that would lead to an inaccurate measurement result, unless the presence of such a defect is obvious.

7. Suitability

Unchanged

7.2. A measuring instrument shall be suitable for its intended use taking account of the practical working conditions and bearing in mind the intended user shall not require unreasonable demands of the user in order to obtain a correct measurement result.

7.2. A measuring instrument shall be suitable for its intended use taking account of the practical working conditions and shall not require unreasonable demands of the user in order to obtain a correct measurement result.

8. Protection against corruption

Unchanged

8.1. The metrological characteristics of a measuring instrument shall not be inadmissibly influenced by the connection to it of another device, by any feature of the connected device itself or by any remote device that communicates with the measuring instrument.

8.1. The metrological characteristics of a measuring instrument shall not be influenced in an inadmissible way by the connection to it of another device, by any feature of the connected device itself or by any remote device that communicates with the measuring instrument.

10. Indication of result

Unchanged

10.2. The indication of any result shall be clear and unambiguous and accompanied by such marks and inscriptions necessary to inform the user of the significance of the result. Easy reading of the presented result shall be permitted under normal conditions of use. Additional indications may be shown provided they cannot be confused.

10.2. The indication of any result shall be clear and unambiguous and accompanied by such marks and inscriptions necessary to inform the user of the significance of the result. Easy reading of the presented result shall be permitted under normal conditions of use. Additional indications may be shown provided they cannot be confused with the primary indication.

10.5. A measuring instrument intended for domestic utility measurement purposes from which the measurement data can read either by a mobile data capture unit or remotely via a transmission link shall be fitted with a display accessible to the consumer. The reading of this display is the measurement result that serves as the basis for the price to pay.

10.5. A measuring instrument intended for domestic utility measurement purposes from which the measurement data can remotely read shall also be fitted with a display accessible to the consumer. The reading of this display is the measurement result that serves as the basis for the price to pay.

INITIAL PROPOSAL

AMENDED PROPOSAL

ANNEX MI-001

WATER METERS

No change from the proposal in COM(2000) 566 other than to add the following paragraphs.

Unchanged

Add after point 10:

Putting into use

- (a) Where a Member State imposes measurement of residential use, it shall allow such measurement to be performed by means of any Class 1 meter.
- (b) Where a Member State imposes measurement of commercial and/or light industrial use, it shall allow such measurement to be performed by any Class 1 meter. The Member State shall ensure that the flowrate range be determined by the distributor or the person legally designated for installing the meter, so that the meter is appropriate for the accurate measurement of consumption that is foreseen or reasonably foreseeable.
- (c) As regards the requirements under 2, 3, 4 and 5 above a Member State may define the conditions for putting into use of instruments on the grounds given in Article 6.3.

Add after Conformity Assessment Paragraph:

The maximum permissible error shall be verified in the conformity assessment procedure on the basis of the class and flowrate range declared by the manufacturer.

ANNEX MI-002

GAS METERS

No change from the proposal in COM(2000) 566 other than to add the following paragraphs.

Unchanged

Add after point 10:

Putting into use

- (a) Where a Member State imposes measurement of residential use, it shall allow such measurement to be performed by means of any Class 1.5 meter.
- (b) Where a Member State imposes measurement of commercial and/or light industrial use, it shall allow such measurement to be performed by any Class 1 and/or Class 1.5 meter. The Member State shall ensure that the flowrate range be determined by the distributor or the person legally designated for installing the meter, so that the meter is appropriate for the accurate measurement of consumption that is foreseen or reasonably foreseeable.
- (c) As regards the requirements under 2, 3, 4 and 5 above a Member State may define the conditions for putting into use of instruments on the grounds given in Article 6.3.

INITIAL PROPOSAL

AMENDED PROPOSAL

Add after Conformity Assessment Paragraph:

The maximum permissible error shall be verified in the conformity assessment procedure on the basis of the class and flowrate range declared by the manufacturer.

ANNEX MI-003

ELECTRICITY METERS

No change from the proposal in COM(2000) 566 other than to add the following paragraphs.

Unchanged

Add after point 10:

Putting into use

- (a) Where a Member State imposes measurement of residential use, it shall allow such measurement to be performed by means of any Class 2 meter.
- (b) Where a Member State imposes measurement of commercial and/or light industrial use, it shall allow such measurement to be performed by any Class 1 and/or Class 2 meter. The Member State shall ensure that the flowrate range be determined by the distributor or the person legally designated for installing the meter, so that the meter is appropriate for the accurate measurement of consumption that is foreseen or reasonably foreseeable.
- (c) As regards the requirement under 4 above a Member State may define the conditions for putting into use of instruments on the grounds given in Article 6.3.

Add after Conformity Assessment Paragraph:

The maximum permissible error shall be verified in the conformity assessment procedure on the basis of the class and flowrate range declared by the manufacturer.

ANNEX MI-004

HEAT METERS

No change from the proposal in COM(2000) 566 other than to add the following paragraphs.

Unchanged

Add after point 10:

Putting into use

- (a) Where a Member State imposes measurement of residential use, it shall allow such measurement to be performed by means of any Class 3 meter.

INITIAL PROPOSAL

AMENDED PROPOSAL

(b) Where a Member State imposes measurement of commercial and/or light industrial use, it shall allow such measurement to be performed by any Class 2 and/or Class 3 meter. The Member State shall ensure that the flowrate range be determined by the distributor or the person legally designated for installing the meter, so that the meter is appropriate for the accurate measurement of consumption that is foreseen or reasonably foreseeable.

(c) As regards the requirements under 1 above a Member State may define the conditions for putting into use of instruments on the grounds given in Article 6.3.

Add after Conformity Assessment Paragraph:

The maximum permissible error shall be verified in the conformity assessment procedure on the basis of the class and flowrate range declared by the manufacturer.

ANNEX MI-008

MATERIAL MEASURES

No change from the proposal in COM(2000) 566 other than to add the following paragraphs.

Unchanged

Add in Chapter I to the introduction:

However, the requirement for the supply of a copy of the declaration of conformity may be interpreted as applying to the batch or consignment rather than each individual instrument.

Add in Chapter II to the introduction:

However, the requirement for the supply of a copy of the declaration of conformity may be interpreted as applying to the batch or consignment rather than each individual instrument. Also the requirement for the instrument to bear an accuracy class shall not apply.

Proposal for a Council Regulation extending the provisions of Regulation (EEC) No 1408/71 to nationals of third countries who are not already covered by these provisions solely on the ground of their nationality

(2002/C 126 E/15)

COM(2002) 59 final — 2002/0039(CNS)

(Submitted by the Commission on 6 February 2002)

THE COUNCIL OF THE EUROPEAN UNION,

the Charter of Fundamental Rights of the European Union.

Having regard to the Treaty establishing the European Community and in particular Article 63(4) thereof,

(6) The promotion of a high level of social protection and the raising of the standard of living and quality of life in the Member States are objectives of the Community.

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

(7) As regards the conditions of social protection of third-country nationals, and in particular the social security scheme applicable to them, the Employment and Social Policy Council argued in its conclusions of 3 December 2001 that the coordination applicable to third-country nationals should grant them a set of uniform rights as near as possible to those enjoyed by EU citizens.

Whereas:

(1) As its special meeting in Tampere on 15 and 16 October 1999, the European Council proclaimed that the European Union should ensure fair treatment of third-country nationals who reside legally on the territory of its Member States, grant them rights and obligations comparable to those of EU citizens, enhance non-discrimination in economic, social and cultural life and approximate their legal status to that of Member States' nationals.

(8) Currently, Regulation (EEC) No 1408/71 of the Council of 14 June 1971 on the application of social security schemes to employed persons and their families moving within the Community, which is the basis for the coordination of the social security schemes of the different Member States, applies only to certain third country nationals⁽³⁾. The number and diversity of legal instruments governing problems encountered by nationals of third countries in connection with the coordination of the Member States' social security schemes give rise to legal and administrative complexities. They create major difficulties both for the individuals concerned, their employers, and the competent national social security bodies.

(2) In its resolution of 27 October 1999, the European Parliament called for prompt action on promises of fair treatment for third-country nationals legally resident in the Member States and on the definition of their legal status, including uniform rights as close as possible to those enjoyed by the citizens of the European Union⁽¹⁾.

(9) Hence, it is necessary to provide for the application of the coordination rules of Regulation (EEC) No 1408/71 to third-country nationals legally resident in the Community who are not currently covered by the provisions of this Regulation on grounds of their nationality and who satisfy the other conditions provided for in this Regulation.

(3) The Economic and Social Committee has also appealed for equal treatment of Community nationals and third-country nationals in the social field, notably in its opinion of 26 September 1991 on the status of migrant workers from third countries⁽²⁾.

(4) Article 6(2) of the Treaty on European Union provides that the Union shall respect fundamental rights, as guaranteed by the European Convention on the Protection of Human Rights and Fundamental Freedoms signed in Rome on 4 November 1950 and as they result from the constitutional traditions common to the Member States, as general principles of Community law.

(10) The application of Regulation (EEC) No 1408/71 to these persons must not give them any entitlement to enter, to stay or to reside in a Member State or to have access to its labour market.

(5) This Regulation respects the fundamental rights and observes the principles which are notably enshrined in

⁽³⁾ Regulation (EEC) No 1408/71 of the Council of 14 June 1971 on the application of social security schemes to employed persons and their families moving within the Community, OJ L 149, 5.7.1971, p. 2. Regulation updated by Regulation (EC) No 118/97 (OJ L 28, 30.1.1997, p. 1) and last amended by Regulation (EC) No 1386/2001 of the European Parliament and of the Council of 5 June 2001 (OJ L 187, 10.7.2001, p. 1).

⁽¹⁾ OJ C 154, 5.6.2000, p. 63.

⁽²⁾ OJ C 339, 31.12.1991, p. 82.

- (11) Transitional provisions should be adopted to protect the persons covered by this Regulation and to ensure that they do not lose rights as a result of its entry into force.
- (12) To achieve these objectives it is necessary and appropriate to extend the scope of the rules coordinating the national social security schemes by adopting a Community legal instrument which is binding and directly applicable in every Member State which adopts this Regulation.
- (13) Since the objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale or effects of the proposed action, be better achieved at Community level, the Community may take measures in accordance with the principles of subsidiarity enshrined in Article 5 of the Treaty. In compliance with the principle of proportionality as set out in said article, this Regulation does not go beyond what is necessary to achieve these objectives,

HAS ADOPTED THIS REGULATION:

Article 1

The provisions of Regulation (EEC) No 1408/71 shall apply to nationals of third countries who are not already covered by its provisions solely on the ground of their nationality, provided they are legally resident on the territory of a Member State and move legally within the Community.

Article 2

Transitional rules

1. This Regulation shall not create any rights in respect of the period before ...⁽¹⁾.

2. Any period of insurance and, where appropriate, any period of employment, self-employment or residence completed under the legislation of a Member State before ... shall be taken into account for the determination of rights acquired in accordance with the provisions of this Regulation.

3. Subject to the provisions of paragraph 1, a right shall be acquired under this Regulation even if it relates to a contingency arising prior to ...

4. Any benefit that has not been awarded or that has been suspended on account of the nationality or the residence of the person concerned shall, at the latter's request, be awarded or resumed from ..., provided that the rights for which benefits were previously awarded did not give rise to a lump-sum payment.

5. The rights of persons who prior to ..., obtained the award of a pension may be reviewed at their request, account being taken of the provisions of this Regulation.

6. If the request referred to in paragraph 4 or paragraph 5 is lodged within two years from ..., rights deriving from this Regulation shall be acquired from that date and the provisions of the legislation of any Member State on the forfeiture or lapse of rights may not be applied to the persons concerned.

7. If the request referred to in paragraph 4 or paragraph 5 is lodged after expiry of the deadline referred to in paragraph 6, rights not forfeited or lapsed shall be acquired from the date of such request, subject to any more favourable provisions of the legislation of any Member State.

Article 3

This Regulation shall enter into force on the first day of the month following its publication in the *Official Journal of the European Communities*.

This Regulation shall be binding in its entirety and directly applicable in all Member States.

⁽¹⁾ Date of entry into force of the Regulation based on this proposal.

Proposal for a Council Directive amending Directive 77/388/EEC as regards the special scheme for travel agents

(2002/C 126 E/16)

COM(2002) 64 final — 2002/0041(CNS)

(Submitted by the Commission on 8 February 2002)

THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 93 thereof,

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

Having regard to the opinion of the Economic and Social Committee,

Whereas:

(1) According to the Commission's Communication to the Council and the European Parliament 'A Strategy to improve the functioning of the Internal Market' ⁽¹⁾, a more uniform application of the community provisions by Member States is one of the four objectives for improving the functioning of the Internal Market in the short term.

(2) Member States currently apply different interpretations of the special scheme for travel agents, as set out in Article 26 of the sixth Council Directive 77/388/EEC of 17 May 1977 on the harmonisation of the laws of the Member States relating to turnover taxes — Common system of value added tax: uniform basis of assessment ⁽²⁾, as last amended by Directive 2001/41/EC ⁽³⁾, resulting in different application of that scheme in the different Member States and leading to distortion of competition for certain operators.

(3) Extending its scope to include all supplies of travel packages under the conditions of Article 26 of Directive 77/388/EEC would eliminate the different interpretations given by Member States to the supplies covered by this special scheme and ensure that the original objective of taxation in the Member State of consumption is better met.

(4) A similar scheme whereby the profit margin is taxed is set out in Article 26a of Directive 77/388/EEC for second-hand goods, works of art, collectors' items and antiques. That Article contains detailed definitions, which could be used to clarify the definitions in Article 26 and simplify the application of the special scheme for travel agents.

(5) Due to the special nature of the services supplied by travel agents, which purchase different services from third parties, combine them into a travel package and then sell these packages, it is often very difficult for travel agents to determine their profit margin for each separate supply. A system allowing them to calculate a global profit margin over a certain period of time would simplify the system and could solve many of their problems in this field.

(6) For similar reasons travel agents should be allowed to opt for the normal VAT arrangements in order to ensure the principle of neutrality of the VAT.

(7) Existing derogations under Article 28(3) and Annexes E and F should be abolished in order to ensure a more uniform application of the special scheme for travel agents. Similarly Article 28(3)(g) and Article 15(14) should be deleted as they also allow Member States to apply divergent rules for taxing the services of travel agents.

(8) Council Decision upon request of the Kingdom of Belgium of 13 September 1978, granting to the Kingdom of Belgium a derogation under Article 27(1) should be repealed in order to ensure a more harmonised application of the special scheme of travel agents.

(9) Directive 77/388/EEC should therefore be amended accordingly,

HAS ADOPTED THIS DIRECTIVE:

Article 1

Directive 77/388/EEC is amended as follows:

1. Article 26 is replaced by the following:

'Article 26

Special scheme for travel agents

1. Member States shall apply a special value added tax scheme to the operations of travel agents in accordance with the provisions of this Article, where the travel agents deal with customers in their own name and use the supplies of goods and services of other taxable persons in the provision of travel facilities.

⁽¹⁾ Communication from the Commission to the Council and the European Parliament — A Strategy to improve the operation of the VAT system within the context of the Internal Market (COM(2000) 348 final of 7.6.2000).

⁽²⁾ OJ L 145, 13.6.1977, p. 1.

⁽³⁾ OJ L 22, 24.1.2001, p. 17 and corrigendum OJ L 26, 27.1.2001, p. 40.

That scheme shall not apply to travel agents, who are acting only as intermediaries and accounting for tax in accordance with Article 11(A)(3)(c).

For the purposes of this Article, tour operators and any other taxable person who supplies travel services in the same way shall be considered as travel agents.

2. All transactions performed by the travel agent in respect of a journey under the conditions set out in paragraph 1 shall be treated as a single service supplied by the travel agent. That single service shall be taxable in the Member State in which the travel agent has established his business or has a fixed establishment from which the travel agent has provided the services.

When the travel agent is not established in the Community or has a fixed establishment outside the Community from where the service is supplied and he supplies a travel service the effective use and enjoyment of which takes place within the Community, the single service shall be taxable at the place where the customer has established his business or has a fixed establishment to which the service is supplied or in the absence of such a place, the place where he has his permanent address or usually resides.

3. The taxable amount of the single service supplied by the travel agent shall be the profit margin made by the travel agent, less the amount of value added tax included in the profit margin. That profit margin shall be equal to the difference between the selling price charged by the travel agent for a travel package and the actual cost to the travel agent of this travel package. For the purposes of this paragraph, the following definitions shall apply:

- (a) selling price means everything which constitutes the consideration, which has been, or is to be, obtained by the travel agent from his customer or a third party, including subsidies directly linked to that transaction, taxes, duties, levies and charges and incidental expenses such as commission and insurance costs charged by the travel agent to the customer but excluding the amounts referred to in Article 11(A)(3),
- (b) actual cost of the travel package means everything which constitutes the consideration, defined in the first indent, including VAT, obtained or to be obtained from the travel agent by his taxable suppliers, for the supplies and services provided to him, where these transactions are for the direct benefit of the customer excluding overhead costs used to compose the travel package.

4. In order to simplify the procedure for charging the tax and subject to the consultation of the VAT Committee, Member States may provide that the taxable amount of supplies of all travel services subject to the special arrangements for taxing the margin shall be determined globally for each tax period during which the travel agent

must submit the return referred to in Article 22(4), as replaced by Article 28 (h).

In that event, the taxable amount for the supplies of travel services shall be the total margin made by the travel agent less the amount of value added tax included in that margin.

The total margin shall be equal to the difference between:

- (a) the total amount of supplies of travel services subject to the special arrangements for taxing the margin effected by the travel agent during the period; that amount shall be equal to the total selling prices determined in accordance with paragraph 3, and
- (b) the total amount of purchases of goods and services as referred to in paragraph 1, effected during that period, by the travel agent; that amount shall be equal to the total actual costs determined in accordance with paragraph 3.

5. If transactions entrusted by the travel agent to other taxable persons are performed by such persons outside the Community, the travel agent's service shall be treated as an exempted intermediary activity under Article 15(14).

Where those transactions are performed both inside and outside the Community, only that part of the travel agent's service relating to transactions outside the Community may be exempted.

6. Tax charged to the travel agent by another taxable person on the transactions described in paragraph 2, which are for the direct benefit of the travel agent's customer, shall not be eligible for deduction or refund in any Member State.

7. The travel agent may apply the normal value added tax arrangements to any supply covered by the special arrangements for taxing the margin.

8. Where the travel agent applies the normal value added tax arrangements to the supply of a travel service, he shall be entitled to deduct from his tax liability the value added tax due or paid for the services supplied to him by his suppliers, where these transactions are for the direct benefit of his customer.

The right to deduct shall arise at the time when the tax due for the supply in respect of which the travel agent opts for application of the normal value added tax arrangements become chargeable.

9. Where the travel agent is led to apply both the normal arrangements for value added tax and the special arrangements for taxing the margin, the travel agent must follow separately in his accounts the transactions falling under each of these arrangements, according to rules laid down by the Member States.'

2. In Article 15(14) the second subparagraph is deleted;
3. In Article 28(3) point (g) is deleted;
4. In Annex E point 15 is deleted;
5. In Annex F point 27 is deleted.

Article 2

Council decision upon request of the Kingdom of Belgium of 13 September 1978, granting to the Kingdom of Belgium a derogation under Article 27(1) of Directive 77/388/EEC is repealed.

Article 3

Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this

Directive by 1 January 2003 at the latest. They shall forthwith inform the Commission thereof.

When Member States adopt those provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

Article 4

This Directive shall enter into force on the twentieth day following that of its publication in the *Official Journal of the European Communities*.

Article 5

This Directive is addressed to the Member States.

Proposal for a Council Directive on the short-term residence permit issued to victims of action to facilitate illegal immigration or trafficking in human beings who cooperate with the competent authorities

(2002/C 126 E/17)

COM(2002) 71 *final* — 2002/0043(CNS)

(Submitted by the Commission on 11 February 2002)

THE COUNCIL OF THE EUROPEAN UNION,

facilitating illegal immigration and trafficking in human beings ⁽¹⁾.

Having regard to the Treaty establishing the European Community, and in particular Article 63(3) thereof,

(5) This Directive introduces a residence permit intended for the victims of these offences, which offers a sufficient incentive to them to cooperate with the competent authorities while including certain conditions to safeguard against abuse.

Having regard to the proposal from the Commission,

Having regard to the opinion of the European Parliament,

(6) To this end, it is necessary to define the short-term residence permit, to lay down the criteria for issuing it, the conditions of residence and the grounds for non-renewal and withdrawal.

Having regard to the opinion of the Economic and Social Committee,

Having regard to the opinion of the Committee of the Regions,

(7) Victims must be informed of the possibility of obtaining this residence permit and be given a period in which to reflect on their position. This should help put them in a position to reach a well-informed decision as to whether or not to cooperate with the police and judicial authorities (in view of the risks this may entail), so that they cooperate freely and hence more effectively. Given the extreme vulnerability of victims' situation they must have access to the assistance and care they require.

Whereas:

(1) The framing of a common immigration policy, including the definition of the conditions of entry and residence for foreigners and measures to combat illegal immigration, is a constituent element of the European Union's objective of creating an area of freedom, security and justice.

(8) Confronted with a victim who clearly intends to cooperate and whose presence the judicial authority regards as useful to the proceedings, the competent administrative authority will issue a short-term residence permit for six months, renewable for six-month periods.

(2) At its special meeting in Tampere on 15 and 16 October 1999, the European Council expressed its determination to tackle illegal immigration at source, for example by targeting those who engage in trafficking of human beings and the economic exploitation of migrants. It called on the Member States to concentrate their efforts on detecting and dismantling criminal networks while protecting the rights of victims.

(9) To enable victims to gain their independence and not return to the criminal network, the residence permit shall allow the holder to have access to the labour market and pursue vocational training and education. For the same reasons, the Member States may make the issue of the permit conditional on victims' participation in programmes aimed at integrating them or preparing them for assisted return.

(3) An indication of the growing concern about this phenomenon at international level was the adoption by the United Nations General Assembly of a Convention against Transnational Organised Crime, supplemented by a Protocol to Prevent, Suppress and Punish Trafficking in Persons, especially Women and Children, and a Protocol Against the Smuggling of Migrants by Land, Sea and Air. These were signed by the Community and the fifteen Member States in December 2000.

(10) This Directive is without prejudice to other provisions on the protection of victims, witnesses or persons who are particularly vulnerable. Nor does it detract from the prerogatives of the Member States as regards the right of residence granted on humanitarian or other grounds.

(4) At European Community level, several instruments are in the process of being adopted to define the offences of

⁽¹⁾ Council Directive ... [on defining the facilitation of unauthorised entry, transit and stay], OJ L ... [JHA(2000)22]; Council Framework Decision of [...] [on combating trafficking in human beings], OJ L ... [COM(2000) 854, 22 January 2000].

- (11) This Directive respects fundamental rights and complies with the principles recognised for example by the Charter of Fundamental Rights of the European Union.
- (12) The objective of introducing a short-term residence permit for victims who lodge a complaint or cooperate in the fight against traffickers or smugglers cannot be achieved adequately by Member States. Indeed, the criminal organisations operate by definition on an international scale. In order to fight against this phenomenon, an increasing number of Member States have introduced residence permits for those cooperating with the judicial authorities, with positive results. It would, however, be wrong if disparities between measures in different States were to lead to a shift in the activities of international networks to those Member States where they faced fewer difficulties and risks. As the objectives pursued, in view of the extent of the action, can be better achieved at the Community level, the Community can take measures in accordance with the subsidiarity principle as laid down in Article 5 of the Treaty. In accordance with the proportionality principle, as laid down in the same Article, the Directive does not go beyond what is necessary to achieve these goals,
- (c) 'trafficking in human beings' means the offences defined in Articles 1, 2 and 3 of the Council Framework Decision of [...] [on combating trafficking in human beings];
- (d) 'measure to enforce an expulsion order' means any measure taken by a Member State to enforce the decision of an administrative authority ordering the expulsion of a third-country national;
- (e) 'short-term residence permit' means any permit or authorisation issued by a Member State in accordance with its legislation, allowing a victim to reside in its territory in order to cooperate with the competent authorities.

Article 3

Scope

1. This Directive shall apply to victims, as referred to in Article 1, having reached the age of majority.

2. Member States may decide to apply the provisions of this Directive to minors who fulfil certain conditions laid down in their national law.

HAS ADOPTED THIS DIRECTIVE:

CHAPTER I

GENERAL PROVISIONS

Article 1

Purpose

The purpose of this Directive is to introduce a short-term residence permit for third-country nationals who are victims of offences constituted by the action to facilitate illegal immigration or by trafficking in human beings (hereafter referred to as 'victims') who cooperate in the fight against the perpetrators of these offences.

Article 2

Definitions

For the purposes of this Directive:

- (a) 'third-country national' means any person who is not a citizen of the Union within the meaning of Article 17(1) of the Treaty, including stateless persons;
- (b) 'action to facilitate illegal immigration' means the offences defined in Articles 1 and 2 of the Council Directive . . . [on defining the facilitation of unauthorised entry, transit and stay];

Article 4

Safeguard

This Directive shall be without prejudice to the protection extended to refugees, to beneficiaries of subsidiary protection and persons seeking international protection under international refugee law and without prejudice to other human rights instruments.

Article 5

Non-discrimination

Member States shall apply this Directive without discrimination on the grounds of sex, race, colour, ethnic or social origin, genetic characteristics, language, religion or belief, political or other opinion, membership of a national minority, wealth, birth, disability, age or sexual orientation.

Article 6

More favourable provisions

The provisions of this Directive shall not affect any laws, regulations or administrative provisions laid down by a Member State which would be more favourable to the persons covered by this Directive.

CHAPTER II

Article 10

PROCEDURE FOR ISSUING THE SHORT-TERM RESIDENCE PERMIT*Article 7***Information given to the victims**

Persons who are identified by the competent authorities as victims within the meaning of Article 1 shall immediately be informed of the possibility of obtaining the short-term residence permit provided for by this Directive.

The information shall be provided by the authorities responsible for the investigation or prosecution, an association or a non-governmental organisation.

*Article 8***Reflection period**

1. Victims shall be granted a reflection period of 30 days to take the decision to cooperate with the competent authorities. This period starts from the moment they sever relations with those suspected of committing the offences referred to in Article 2(b) and (c).

2. During this period and while awaiting the decision of the authority responsible for the investigation or prosecution in accordance with Article 10(1), they shall have access to the assistance and care referred to in Article 9 and it shall not be possible to enforce any expulsion order against them.

3. The reflection period shall not create any entitlement to residence under this Directive.

4. The State may at any time terminate the reflection period if the person has renewed contact with the authors of the offences referred to in Article 2 points (b) and (c) or for reasons relating to the protection of public order and national security.

*Article 9***Assistance and care**

1. Without prejudice to the application of measures relating to the protection of victims and witnesses, Member States shall ensure that victims have access to suitable accommodation, emergency medical and psychological treatment and medical care that cannot be postponed, and to the necessary support in the form of social welfare and means of subsistence if they do not have sufficient resources. They shall attend to the special needs of the most vulnerable.

2. Member States shall provide victims with free legal aid and translation and interpreting services.

Issue and renewal of the residence permit

1. The authority responsible for the investigation or prosecution shall decide on the following matters, at the latest ten days after the expiry of the 30-day reflection period:

- (a) whether the presence of the victim is useful;
- (b) whether the victim has shown a clear intention to cooperate substantiated, for example, by an initial, material declaration to the authorities responsible for the investigation or prosecution, or the lodging of a complaint, or any other act provided for by the Member State's legislation;
- (c) whether the victim has severed all relations with those suspected of acts that might be included among the offences referred to in Article 2.

2. The short-term residence permit shall be issued if:

- (a) the authority responsible for the investigation or prosecution rules favourably on the criteria listed in paragraph 1;
- (b) there are no objections on the grounds of the protection of public order and national security.

3. The short-term residence permit shall be valid for six months. It shall be renewed for periods of six months if the conditions set out in paragraph 2 continue to be satisfied.

4. When Member States grant a short-term permit to a person identified as a victim of one of the offences referred to under article 2(b) and (c) with members of his/her family or persons treated as members of his/her family, they shall take this element into account when examining the possibility of granting them a residence permit on humanitarian grounds.

*Article 11***Format of the residence permit**

The short-term residence permit may be issued in the form of a sticker or a separate document. It shall be issued according to the rules and standard format laid down in Council Regulation No ... [laying down a uniform format for residence permits for third-country nationals] ⁽¹⁾. Under the heading 'Type of permit' Member States shall enter the words 'Short-term residence permit'.

CHAPTER III

CONDITIONS OF RESIDENCE*Article 12***Work, training and education**

The Member States shall authorise the holders of a short-term residence permit to have access to the labour market, vocational training and education.

⁽¹⁾ OJ L ... [COM(2001) 157].

*Article 13***Medical and psychological care**

1. Member States shall ensure that holders of a short-term residence permit have access to primary medical care, in addition to the assistance and care referred to in Article 9.
2. Member States shall meet the special needs of victims, such as pregnant women, the disabled or victims of rape or other forms of sexual violence and, if Member States take advantage of the option provided in Article 3(2), minors.

*Article 14***Victims who are minors**

If Member States take advantage of the option provided in Article 3(2), the following provisions shall apply:

- (a) Member States shall take due account of the best interests of the child when applying the provisions of this Directive. They shall ensure that the procedure is appropriate to the age and maturity of the child. In particular, if they consider that it is in the best interest of the child, they may extend the reflection period.
- (b) Member States shall ensure that minors have access to the educational system under the same conditions as nationals. Member States may stipulate that such access must be limited to the public education system.
- (c) Besides, in the case of victims who are unaccompanied minors, Member States shall take the necessary steps to establish their identity and the fact that they are unaccompanied. They shall make every effort to locate their families as quickly as possible and take the necessary steps immediately to ensure legal representation, including representation in criminal proceedings, if necessary.

*Article 15***Rehabilitation programmes for victims**

Member States may make the issue of short-term residence permits conditional upon the victims' participation in a programme aimed either at their integration in the host country and, where appropriate, vocational training, or their assisted return to the country of origin or another country willing to accept them.

CHAPTER IV

NON-RENEWAL AND WITHDRAWAL*Article 16***Non-renewal**

1. The short-term residence permit shall not be renewed if the conditions of Article 10(2) cease to be satisfied, if a judicial

decision has terminated the proceedings or, if relevant, the beneficiary does not take part in the rehabilitation programme referred to in Article 15.

2. When the short-term residence permit expires ordinary aliens law shall apply. If victims submit an application for another type of residence permit, Member States shall take account of their cooperation when considering their applications.

*Article 17***Withdrawal**

The short-term residence permit may be withdrawn at any time:

- (a) if the holder has renewed contacts with those suspected of committing the offences in question, or
- (b) if the judicial authority considering the case believes that the victim's cooperation or complaint is fraudulent or wrongful, or
- (c) for reasons relating to the protection of public order and national security.

CHAPTER V

FINAL PROVISIONS*Article 18***Penalties**

Member States shall determine the system of penalties applying to violations of the national provisions enacted pursuant to this Directive and shall take all necessary measures to ensure the implementation of these provisions. The penalties envisaged must be effective, proportionate and deterrent. Member States shall communicate these provisions to the Commission at the latest by the date specified in Article 21. Any later amendment affecting these provisions shall be communicated without delay.

*Article 19***Exchange of information**

Every year the Member States shall communicate up-to-date information to the Commission on the following:

- (a) the number of short-term residence permits issued, the proceedings initiated and their outcome;
- (b) the rehabilitation programmes referred to in Article 15, together with an assessment of their effectiveness in rehabilitating victims.

*Article 20***Report**

1. No later than 30 June 2007, the Commission shall report to the European Parliament and the Council on the application of this Directive in the Member States and propose any amendments that are necessary. The Member States shall send the Commission any information relevant to the preparation of this report.

2. After presenting the report referred to in paragraph 1, the Commission shall report to the European Parliament and the Council at least every three years on the application of this Directive in the Member States.

*Article 21***Transposal**

The Member States shall bring into force the laws, regulations and administrative provisions necessary to comply with this

Directive no later than 30 June 2003. They shall immediately inform the Commission accordingly.

When the Member States adopt these measures, they shall contain a reference to this Directive or shall be accompanied by such a reference when they are officially published. The precise nature of such a reference shall be decided by the Member States.

*Article 22***Entry into force**

This Directive shall enter into force on the twentieth day following its publication in the *Official Journal of the European Communities*.

*Article 23***Addressees**

This Directive is addressed to the Member States.

Proposal for a Directive of the European Parliament and of the Council amending, for the twenty-fifth time, Council Directive 76/769/EEC on the approximation of the laws, regulations and administrative provisions of the Member States relating to restrictions on the marketing and use of certain dangerous substances and preparations (substances classified as carcinogens, mutagens or substances toxic to reproduction — c/m/r)

(2002/C 126 E/18)

(Text with EEA relevance)

COM(2002) 70 final — 2002/0040(COD)

(Submitted by the Commission on 12 February 2002)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF
THE EUROPEAN UNION,

reproduction and preparations containing them should not
be placed on the market for use by the general public.

Having regard to the Treaty establishing the European
Community, and in particular Article 95 thereof,

(4) Directive 94/60/EC of the European Parliament and of the
Council of 20 December 1994 amending for the fourteenth
time Directive 76/769/EEC ⁽⁴⁾ establishes, in the form of an
Appendix concerning points 29, 30 and 31 of Annex I to
Directive 76/769/EEC, a list containing substances classified
as carcinogenic, mutagenic or toxic to reproduction of
category 1 or 2. Such substances and preparations should
not be placed on the market for use by the general public.

Having regard to the proposal from the Commission,

Having regard to the opinion of the Economic and Social
Committee,

(5) Directive 94/60/EC envisaged that the said list would be
extended shortly after publication of an adaptation to
technical progress of Annex I to Council Directive
67/548/EEC of 27 June 1967 relating to the classification,
packaging and labelling of dangerous substances, which
contains substances classified as carcinogenic, mutagenic
or toxic to reproduction of category 1 or 2 ⁽⁵⁾.

Acting in accordance with the procedure laid down in Article
251 of the Treaty ⁽¹⁾,

Whereas:

(1) Council Directive 76/769/EEC ⁽²⁾ lays down restrictions on
the marketing and use of certain dangerous substances and
preparations.

(6) Commission Directive 2001/59/EC, which was adopted on
6 August 2001 and adapted to technical progress for the
twenty-eighth time Directive 67/548/EEC, and more
particularly Annex I thereto, contains two substances
newly classified as carcinogenic category 1, nineteen
substances newly classified as carcinogenic category 2,
five substances newly classified as mutagenic category 2,
one substance newly classified as toxic to reproduction
category 1 and sixteen substances newly classified as
toxic to reproduction category 2.

(2) The measures provided for in this Directive fall within the
framework of the action plan in Decision No 646/96/EC of
the European Parliament and of the Council of 29 March
1996 adopting an action plan to combat cancer within the
framework for action in the field of public health (1996 to
2000) ⁽³⁾, which has been extended until the end of 2002
by Decision No 521/2001/EC.

(7) Those substances should be added to the list in the
appendix to Annex I to Directive 76/769/EEC.

(3) In order to improve health protection and consumer safety,
substances classified as carcinogenic, mutagenic or toxic to

(8) The risks and advantages of the substances newly classified,
by Commission Directive 2001/59/EC, as carcinogenic,
mutagenic and toxic to reproduction of category 1 or 2
have been taken into account.

⁽¹⁾ Opinion of the European Parliament of 14 November 2000 (not yet
published in the Official Journal), Council Common Position of
12 March 2001 (OJ C 142, 15.5.2001, p. 1) and European
Parliament Decision of 16 May 2001.

⁽²⁾ OJ L 262, 27.9.1976, p. 201. Directive as last amended by
Commission Directive 2001/91/EC (OJ L 286, 29.10.2001, p. 27).

⁽³⁾ OJ L 95, 16.4.1996, p. 9. Decision as amended by Decision
No 521/2001/EC (OJ L 79, 17.3.2001, p. 1).

⁽⁴⁾ OJ L 365, 31.12.1994, p. 1.

⁽⁵⁾ OJ L 196, 16.8.1967, p. 1. Directive as last amended by
Commission Directive 2001/59/EC (OJ L 225, 21.8.2001, p. 1).

(9) This Directive applies without prejudice to Community legislation laying down minimum requirements for the protection of workers contained in Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work ⁽¹⁾, and individual directives based thereon, in particular Council Directive 90/394/EEC of the 28 June 1990 on the protection of workers from the risks related to exposure to carcinogens at work (Sixth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC) ⁽²⁾,

HAVE ADOPTED THIS DIRECTIVE:

Article 1

The substances listed in the Annex to this Directive shall be added to those substances listed in the appendix concerning points 29, 30 and 31 of Annex I to Directive 76/769/EEC. The substances listed in the Annex to this Directive in point 1(c) shall be deleted from list 2 of point 29 of Annex I to Directive 76/769/EEC.

⁽¹⁾ OJ L 183, 29.6.1989, p. 1.

⁽²⁾ OJ L 196, 26.7.1990, p. 1. Directive as last amended by Council Directive 1999/38/EC (OJ L 138, 1.6.1999, p. 66).

Article 2

1. Member States shall adopt and publish the laws, regulations and administrative provisions necessary to comply with this Directive no later than 31 December 2002 [nine months after the date of its entry into force]. They shall forthwith inform the Commission thereof.

They shall apply those provisions from 31 March 2003 [twelve months after the date of the entry into force of this Directive].

2. When Member States adopt these provisions, they shall contain a reference to this Directive or be accompanied by such a reference on the occasion of their official publication. Member States shall determine how such reference is to be made.

Article 3

This Directive shall enter into force on the third day following that of its publication in the *Official Journal of the European Communities*.

Article 4

This Directive is addressed to the Member States.

ANNEX

The Appendix to Annex I to Directive 76/769/EEC is amended as follows:

1. The lists under the heading 'Point 29 — Carcinogens' are amended as follows:

(a) In the list for category 1, the following are added:

Substances	Index number	EC number	CAS number	Notes
Butane [containing $\geq 0,1$ % Butadiene (203-450-8)] [1]	601-004-01-8	203-448-7 [1]	106-97-8 [1]	C, S
Isobutane [containing $\geq 0,1$ % Butadiene (203-450-8)] [2]		200-857-2 [2]	75-28-5 [2]	
1,3-Butadiene; Buta-1,3-diene	601-013-00-X	203-450-8	106-99-0	D

(b) In the list for category 2, the following are added:

Substances	Index number	EC number	CAS number	Notes
Beryllium oxide	004-003-00-8	215-133-1	1304-56-9	E
Sodium chromate	024-018-00-3	231-889-5	7775-11-3	E
Trichloroethylene; Trichloroethene	602-027-00-9	201-167-4	79-01-6	
α -Chlorotoluene; Benzyl chloride	602-037-00-3	202-853-6	100-44-7	E

Substances	Index number	EC number	CAS number	Notes
2,3-Dibromopropan-1-ol; 2,3-Dibromo-1-propanol	602-088-00-1	202-480-9	96-13-9	E
Propylene oxide; 1,2-Epoxypropane; Methyloxirane	603-055-00-4	200-879-2	75-56-9	E
Phenyl glycidyl ether; 2,3-Epoxypropyl phenyl ether; 1,2-Epoxy-3-phenoxypropane	603-067-00-X	204-557-2	122-60-1	E
Furan	603-105-00-5	203-727-3	110-00-9	E
R-2,3-Epoxy-1-propanol	603-143-00-2	404-660-4	57044-25-4	E
(R)-1-Chloro-2,3-epoxypropane	603-166-00-8	424-280-2	51594-55-9	
2,3-Dinitrotoluene	609-050-00-3	210-013-5	602-01-7	E
3,4-Dinitrotoluene	609-051-00-9	210-222-1	610-39-9	E
3,5-Dinitrotoluene	609-052-00-4	210-566-2	618-85-9	E
2,5-Dinitrotoluene	609-055-00-0	210-581-4	619-15-8	E
6-Hydroxy-1-(3-isopropoxypropyl)-4-methyl-2-oxo-5-[4-(phenylazo)phenylazo]-1,2-dihydro-3-pyridinecarbonitrile	611-057-00-1	400-340-3	85136-74-9	
(6-(4-Hydroxy-3-(2-methoxyphenylazo)-2-sulfonato-7-naphthylamino)-1,3,5-triazin-2,4-diyl)bis[(amino-1-methylethyl)-ammonium] formate	611-058-00-7	402-060-7	108225-03-2	
Trisodium-[4'-(8-acetylamino-3,6-disulfonato-2-naphthylazo)-4''-(6-benzoylamino-3-sulfonato-2-naphthylazo)biphenyl-1,3',3'',1'''-tetraolato-O, O', O'', O''']copper(II)	611-063-00-4	413-590-3	—	
Phenylhydrazine [1] Phenylhydrazinium chloride [2] Phenylhydrazine hydrochloride [3] Phenylhydrazinium sulphate (2:1) [4]	612-023-00-9	202-873-5 [1] 200-444-7 [2] 248-259-0 [3] 257-622-2 [4]	100-63-0 [1] 59-88-1 [2] 27140-08-5 [3] 52033-74-6 [4]	E
A mixture of: N-[3-hydroxy-2-(2-methylacryloylamino-methoxy)propoxymethyl]-2-methylacrylamide; N-[2,3-Bis-(2-methylacryloylamino-methoxy)propoxymethyl]-2-methylacrylamide; Methacrylamide; 2-Methyl-N-(2-methyl-acryloylaminomethoxymethyl)-acrylamide; N-(2,3-Dihydroxypropoxymethyl)-2-methylacrylamide	616-057-00-5	412-790-8	—	

(c) In the list for category 2, the following are deleted:

Substances	Index number	EC number	CAS number	Notes
Butane [containing $\geq 0,1$ % Butadiene (203-450-8)] [1]	601-004-01-8	203-448-7 [1]	106-97-8 [1]	C, S
Isobutane [containing $\geq 0,1$ % Butadiene (203-450-8)] [2]		200-857-2 [2]	75-28-5 [2]	
1,3-Butadiene; Buta-1,3-diene	601-013-00-X	203-450-8	106-99-0	D

2. Under the heading 'Point 30 — Mutagens' in the list for category 2, the following are added:

Substances	Index number	EC number	CAS number	Notes
Sodium chromate	024-018-00-3	231-889-5	7775-11-3	E
Butane [containing $\geq 0,1$ % Butadiene (203-450-8)] [1]	601-004-01-8	203-448-7 [1]	106-97-8 [1]	C, S
Isobutane [containing $\geq 0,1$ % Butadiene (203-450-8)] [2]		200-857-2 [2]	75-28-5 [2]	
1,3-Butadiene Buta-1,3-diene	601-013-00-X	203-450-8	106-99-0	D
Propylene oxide; 1,2-Epoxypropane; Methyloxirane	603-055-00-4	200-879-2	75-56-9	E
1,3,5-Tris-[(2S and 2R)-2,3-epoxypropyl]- 1,3,5-triazine-2,4,6-(1H,3H,5H)-trione	616-091-00-0	423-400-0	59653-74-6	E

3. The lists under the heading 'Point 31 — Toxic to reproduction' are amended as follows:

(a) In the list for category 1, the following is added:

Substances	Index number	EC number	CAS number	Notes
2-Bromopropane	602-085-00-5	200-855-1	75-26-3	E

(b) In the list for category 2, the following are added:

Substances	Index number	EC number	CAS number	Notes
Flusilazole (ISO); Bis(4-fluorophenyl)-(methyl)-(1H-1,2,4-triazol- 1-ylmethyl)-silane	014-017-00-6	—	85509-19-9	E
A mixture of: 4-[[Bis-(4-fluorophenyl)- methylsilyl]methyl]-4H-1,2,4-triazole; 1-[[Bis-(4-fluorophenyl)methyl-silyl] methyl]-1H-1,2,4-triazole	014-019-00-7	403-250-2	—	E
Bis(2-methoxyethyl) ether	603-139-00-0	203-924-4	111-96-6	
R-2,3-Epoxy-1-propanol	603-143-00-2	404-660-4	57044-25-4	E
Fluazifop-butyl (ISO); Butyl (RS)-2-[4-(5-trifluoromethyl- 2-pyridyloxy)phenoxy]propionate	607-304-00-8	274-125-6	69806-50-4	
Vinclozolin (ISO); N-3,5-Dichlorophenyl-5-methyl-5-vinyl- 1,3-oxazolidine-2,4-dione	607-307-00-4	256-599-6	50471-44-8	
Methoxyacetic acid	607-312-00-1	210-894-6	625-45-6	E
Bis(2-ethylhexyl) phthalate; Di-(2-ethylhexyl) phthalate; DEHP	607-317-00-9	204-211-0	117-81-7	
Dibutyl phthalate; DBP	607-318-00-4	201-557-4	84-74-2	
(±) Tetrahydrofurfuryl (R)-2-[4-(6-chloroquin- oxalin-2-yloxy)phenyloxy]propionate	607-373-00-4	414-200-4	119738-06-6	E

Substances	Index number	EC number	CAS number	Notes
Flumioxazin (ISO); N-(7-Fluoro-3,4-dihydro-3-oxo-4-prop-2-ynyl- 2H-1,4-benzoxazin-6-yl)cyclohex- 1-ene-1,2-dicarboxamide	613-166-00-X	—	103361-09-7	
(2RS,3RS)-3-(2-Chlorophenyl)-2-(4-fluorophe- nyl)-[(1H-1,2,4-triazol-1-yl)-methyl]oxirane	613-175-00-9	406-850-2	106325-08-0	
N, N-Dimethylacetamide	616-011-00-4	204-826-4	127-19-5	E
Formamide	616-052-00-8	200-842-0	75-12-7	
N-Methylacetamide	616-053-00-3	201-182-6	79-16-3	
N-Methylformamide	616-056-00-X	204-624-6	123-39-7	E

Proposal for a Decision of the European Parliament and of the Council amending Decision 96/411/EC on improving Community agricultural statistics

(2002/C 126 E/19)

COM(2002) 80 final — 2002/0044(COD)

(Submitted by the Commission on 13 February 2002)

THE EUROPEAN PARLIAMENT AND THE COUNCIL OF THE EUROPEAN UNION,

Having regard to the Treaty establishing the European Community, and in particular Article 285(1) thereof,

Having regard to the proposal from the Commission,

Acting in accordance with the procedure laid down in Article 251 of the Treaty,

Whereas:

- (1) Council Decision 96/411/EC of 25 June 1996 on improving Community agricultural statistics is designed to allow Community agricultural statistics⁽¹⁾ to respond more satisfactorily to the information needs arising from the common agricultural policy.
- (2) The report by the Commission to the European Parliament and the Council on progress in implementing Decision 96/411/EC makes a positive assessment of the application of that Decision.
- (3) The process of adapting national statistical systems to the needs arising from changes in the common agricultural policy has not yet been completed.
- (4) Both the internal development of the common agricultural policy and the external context of enlargement to the east, and the opening of the new round of multilateral trade negotiations, call for improved identification of statistical needs and, where appropriate, for measures to complete the current regulatory framework laying down the scope of the statistical information on the common agricultural policy which Member States are obliged to make available to the Commission.
- (5) Decision No ... of the European Parliament and of the Council of ... [on the Community statistical programme 2003-2007] recommends continuing the actions to improve existing agricultural statistics and to plan future developments with a view to responding satisfactorily to the needs of the common agricultural policy.

- (6) The tool introduced by Decision 96/411/EC has helped to further the process of adapting the system of Community agricultural statistics to changes in the statistical information needs of the common agricultural policy. However, this process has not yet been completed. Decision 96/411/EC should therefore be amended in order to extend this process,

HAVE ADOPTED THIS DECISION:

Article 1

Decision 96/411/EC is amended as follows:

1. In Article 3, the words 'during the period 2000 to 2002' are replaced by the words 'during the period 2003 to 2007';
2. In Article 6, paragraph 4 is replaced by the following:

'4. The financial framework for the implementation of this programme for the period 2003 to 2007 is hereby set at EUR 5 million.

The annual appropriations shall be authorised by the budgetary authority within the limits of the financial perspective.'
3. In Article 11, the figure '2002' is replaced by the figure '2007'.
4. In Article 11, the phrase 'having consulted the Standing Committee on Agricultural Statistics' is deleted.

Article 2

This Decision shall enter into force on the third day following its publication in the *Official Journal of the European Communities*.

Article 3

This Decision is addressed to the Member States.

⁽¹⁾ OJ L 162, 1.7.1996, p. 14. Decision as last amended by Decision No 2298/2000/EC of the European Parliament and of the Council (OJ L 263, 28.10.2000, p. 1).