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Contents

[1] Text with EEA relevance

EN

Acts whose titles are printed in light type are those relating to day-to-day management of agricultural matters, and are generally valid for a limited period.

The titles of all other acts are printed in bold type and preceded by an asterisk.

Corrigenda

II

(Non-legislative acts)

REGULATIONS

COMMISSION REGULATION (EU) 2016/646

of 20 April 2016

amending Regulation (EC) No 692/2008 as regards emissions from light passenger and commercial vehicles (Euro 6)

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EC) No 715/2007 of the European Parliament and of the Council of 20 June 2007 on type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information ([1]), and in particular Article 5(3) thereof,

Whereas:

(1) Regulation (EC) No 715/2007 is one of the separate regulatory acts under the type-approval procedure laid down by Directive 2007/46/EC of the European Parliament and of the Council ([2]).

(2) Regulation (EC) No 715/2007 requires new light-duty vehicles to comply with certain emission limits and lays down additional requirements on access to information. The specific technical provisions necessary to implement that Regulation were adopted by Commission Regulation (EC) No 692/2008 ([3]).

(3) The Commission has performed a detailed analysis of the procedures, tests and requirements for type-approval that are set out in Regulation (EC) No 692/2008 on the basis of own research and external information and found that emissions generated by real driving of Euro 5/6 vehicles on the road substantially exceed the emissions measured on the regulatory new European driving cycle (NEDC), in particular with respect to NO_x emissions of diesel vehicles.

(4) The type-approval emission requirements for motor vehicles have been gradually and significantly tightened through the introduction and subsequent revision of Euro standards. While vehicles in general have delivered substantial emission reductions across the range of regulated pollutants, this was not the case for NO_x emissions from diesel engines, in particular light-duty vehicles. Actions for correcting this situation are therefore needed.

(5) 'Defeat devices' as defined in Article 3(10) of Regulation (EC) No 715/2007 reducing the level of emission control are prohibited. Recent events have highlighted the need to strengthen the enforcement in this respect.

([1]) OJ L 171, 29.6.2007, p. 1.

([2]) Directive 2007/46/EC of the European Parliament and of the Council of 5 September 2007 establishing a framework for the approval of motor vehicles and their trailers, and of systems, components and separate technical units intended for such vehicles (Framework Directive) (OJ L 263, 9.10.2007, p. 1).

([3]) Commission Regulation (EC) No 692/2008 of 18 July 2008 implementing and amending Regulation (EC) No 715/2007 of the European Parliament and of the Council on type-approval of motor vehicles with respect to emissions from light passenger and commercial vehicles (Euro 5 and Euro 6) and on access to vehicle repair and maintenance information (OJ L 199, 28.7.2008, p. 1).

Therefore it is appropriate to require a better supervision of the emission control strategy applied by the manufacturer at type-approval, following the principles already applied to heavy-duty vehicles by Euro VI Regulation (EC) No 595/2009 and its implementing measures.

(6) Addressing the problem of NO_x emissions from diesel vehicles should contribute to decreasing the current sustained high levels of NO_2 concentrations in ambient air, which are a major concern regarding human health.

(7) The Commission has established in January 2011 a working group involving all interested stakeholders for developing a real driving emission (RDE) test procedure better reflecting emissions measured on the road. For this purpose, and after thorough technical discussions, the option suggested in Regulation (EC) No 715/2007, i.e. the use of portable emission measurement systems (PEMS) and not-to-exceed (NTE) limits, has been followed.

(8) As agreed with stakeholders in the CARS 2020 process ([1]), the RDE test procedures should be introduced in two phases: during a first transitional period the test procedures should only be applied for monitoring purposes, while afterwards they should be applied together with binding quantitative RDE requirements to all new type-approvals and new vehicles.

(9) The RDE test procedures were introduced by Commission Regulation (EU) 2016/427 ([2]). It is now necessary to establish the quantitative RDE requirements in order to limit tailpipe emissions under all normal conditions of use pursuant to the emission limits set out in Regulation (EC) No 715/2007. For that purpose, statistical and technical uncertainties of the measurement procedures should be taken into account.

(10) In order to allow manufacturers to gradually adapt to the RDE rules, the final quantitative RDE requirements should be introduced in two subsequent steps. In the first step, which should start applying 4 years after the dates of mandatory application of the Euro 6 standards, a conformity factor of 2,1 should apply. The second step should follow 1 year and 4 months after the first step and should require full compliance with the emission limit value for NO_x of 80 mg/km set out in Regulation (EC) No 715/2007 plus a margin taking into account the additional measurement uncertainties related to the application of portable emission measurement systems (PEMS).

(11) While it is important that all possible driving situations are potentially covered by RDE testing, it should be avoided that the tested vehicles are driven in a biased manner, i.e. with the intention to generate a passed or failed test not by virtue of the technical performance of the vehicle but due to extreme driving patterns. Therefore, complementary boundary conditions for RDE testing are introduced in order to address such situations.

(12) Due to their very nature, driving conditions encountered during individual PEMS trips may not fully correspond to 'normal conditions of use of a vehicle'. The severity of emission control during such trips may therefore vary. As a consequence, and in order to take into account the statistical and technical uncertainties of the measurement procedures, it may be considered in the future to reflect in the NTE emission limits applicable to individual PEMS trips the characteristics of those trips, described by certain measurable parameters, e.g. related to the driving dynamics or workload. If that principle is applied, it should not lead to the weakening of the environmental effect and the effectiveness of the RDE test procedures, which should be demonstrated by a peer-reviewed scientific study. In addition, for the assessment of the severity of emission control during a PEMS trip, only parameters that can be justified by objective scientific reasons and not just by reasons of calibration of the engine or the pollutant control devices or the emission control systems should be taken into account.

(13) Finally, recognising the need to control NO_x emissions in urban conditions, urgent consideration shall be given to changing the relative weighting of the urban, rural and motorway elements of the RDE test to ensure a low conformity factor can be achieved in practice, creating a further boundary condition relating to driving dynamics in the third regulatory RDE package above which the extended conditions shall be applicable from the step 1 introduction dates.

([1]) Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions CARS 2020: Action Plan for a competitive and sustainable automotive industry in Europe (COM(2012) 636 final).

([2]) Commission Regulation (EU) 2016/427 of 10 March 2016 amending Regulation (EC) No 692/2008 as regards emissions from light passenger and commercial vehicles (Euro 6) (OJ L 82, 31.3.2016, p. 1).

(14) The Commission shall keep under review the provisions of the RDE test procedure and adapt those provisions to accommodate new vehicle technologies and to ensure their effectiveness. Similarly, the Commission shall keep under annual review the appropriate level of the final conformity factor in light of technical progress. It shall in particular review the two alternative methods for evaluating PEMS emission data set out in Appendices 5 and 6 to Annex IIIA to Regulation (EC) No 692/2008 with a view to developing a single method.

(15) It is therefore appropriate to amend Regulation (EC) No 692/2008 accordingly.

(16) The measures provided for in this Regulation are in accordance with the opinion of the Technical Committee — Motor Vehicles,

HAS ADOPTED THIS REGULATION:

Article 1

Regulation (EC) No 692/2008 is amended as follows:

(1) In Article 2, the following points 43 and 44 are added:

'43. 'base emission strategy' (hereinafter 'BES') means an emission strategy that is active throughout the speed and load operating range of the vehicle unless an auxiliary emission strategy is activated;

44. 'auxiliary emission strategy' (hereinafter 'AES') means an emission strategy that becomes active and replaces or modifies a BES for a specific purpose and in response to a specific set of ambient or operating conditions and only remains operational as long as those conditions exist.'.

(2) In Article 3(10) the third paragraph shall be replaced by the following text:

'Until three years after the dates specified in Article 10(4) and four years after the dates specified in Article 10(5) of Regulation (EC) No 715/2007 the following provisions shall apply:'.

(3) Article 3(10)(a) shall be replaced by the following text:

'The requirements of point 2.1 of Annex IIIA shall not apply.'.

(4) In Article 5, the following paragraphs 11 and 12 are inserted:

'11. The manufacturer shall also provide an extended documentation package with the following information:

(a) information on the operation of all AES and BES, including a description of the parameters that are modified by any AES and the boundary conditions under which the AES operate, and indication of the AES or BES which are likely to be active under the conditions of the test procedures set out in this Regulation;

(b) a description of the fuel system control logic, timing strategies and switch points during all modes of operation.

12. The extended documentation package referred to in paragraph 11 shall remain strictly confidential. It may be kept by the approval authority, or, at the discretion of the approval authority, may be retained by the manufacturer. In the case the manufacturer retains the documentation package, that package shall be identified and dated by the approval authority once reviewed and approved. It shall be made available for inspection by the approval authority at the time of approval or at any time during the validity of the approval.'.

(5) Appendix 6 to Annex I is amended as set out in Annex I to this Regulation.

(6) Annex IIIA is amended as set out in Annex II to this Regulation.

Article 2

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

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

Done at Brussels, 20 April 2016.

For the Commission

The President

Jean-Claude JUNCKER

ANNEX I

In Appendix 6 to Annex I to Regulation (EC) No 692/2008, Table 1 is amended as follows:

(1) rows ZD, ZE, ZF are replaced by the following:

'ZD	Euro 6c	Euro 6-2	M, N1 class I	PI, CI		1.9.2018	31.8.2019
ZE	Euro 6c	Euro 6-2	N1 class II	PI, CI		1.9.2019	31.8.2020
ZF	Euro 6c	Euro 6-2	N1 class III, N2	PI, CI		1.9.2019	31.8.2020'

(2) the following rows are inserted after row ZF:

'ZG	Euro 6d-TEMP	Euro 6-2	M, N1 class I	PI, CI	1.9.2017	1.9.2019	31.12.2020
ZH	Euro 6d-TEMP	Euro 6-2	N1 class II	PI, CI	1.9.2018	1.9.2020	31.12.2021
ZI	Euro 6d-TEMP	Euro 6-2	N1 class III, N2	PI, CI	1.9.2018	1.9.2020	31.12.2021
ZJ	Euro 6d	Euro 6-2	M, N1 class I	PI, CI	1.1.2020	1.1.2021	
ZK	Euro 6d	Euro 6-2	N1 class II	PI, CI	1.1.2021	1.1.2022	
PLN	Euro 6d	Euro 6-2	N1 class III, N2	PI, CI	1.1.2021	1.1.2022'	

(3) in the key to the table, the following paragraphs are inserted after the paragraph concerning the 'Euro 6b' emissions standard:

"'Euro 6c" emissions standard = Full Euro 6 emission requirements but without quantitative RDE requirements, i.e. Euro 6b emission standard, final particle number standards for PI vehicles, use of E10 and B7 reference fuel (where applicable) assessed on regulatory lab test cycle and RDE testing for monitoring only (no NTE emission limits applied);

"Euro 6d-TEMP" emissions standard = Full Euro 6 emission requirements, i.e. Euro 6b emission standard, final particle number standards for PI vehicles, use of E10 and B7 reference fuel (where applicable) assessed on regulatory lab test cycle and RDE testing against temporary conformity factors;';

(4) in the key to the table, the paragraph concerning the 'Euro 6c' emissions standard is replaced by the following:

"'Euro 6d" emissions standard = Full Euro 6 emission requirements, i.e. Euro 6b emission standard, final particle number standards for PI vehicles, use of E10 and B7 reference fuel (where applicable) assessed on regulatory lab test cycle and RDE testing against final conformity factors;'.

ANNEX II

Annex IIIA to Regulation (EC) No 692/2008 is amended as follows:

(1) point 2.1 is replaced by the following:

'2.1 Not-to-exceed emission limits

Throughout the normal life of a vehicle type approved according to Regulation (EC) No 715/2007, its emissions determined in accordance with the requirements of this Annex and emitted at any possible RDE test performed in accordance with the requirements of this Annex, shall not be higher than the following not-to-exceed (NTE) values:

$$NTE_{pollutant} = CF_{pollutant} \times TF(p_1,\ldots, p_n) \times \text{EURO-6}$$

where EURO-6 is the applicable Euro 6 emission limit laid down in Table 2 of Annex I to Regulation (EC) No 715/2007.';

(2) the following points 2.1.1, 2.1.2 and 2.1.3 are inserted:

'2.1.1 Final conformity factors

The conformity factor $CF_{pollutant}$ for the respective pollutant is specified as follows:

Pollutant	Mass of oxides of nitrogen (NO_x)	Number of particles (PN)	Mass of carbon monoxide (CO) [1]	Mass of total hydrocarbons (THC)	Combined mass of total hydrocarbons and oxides of nitrogen (THC + NO_x)
$CF_{pollutant}$	1 + *margin* with *margin* = 0,5	to be determined	—	—	—

[1] CO emissions shall be measured and recorded at RDE tests.

"*margin*" is a parameter taking into account the additional measurement uncertainties introduced by the PEMS equipment, which are subject to an annual review and shall be revised as a result of the improved quality of the PEMS procedure or technical progress.

2.1.2 Temporary conformity factors

By way of exception to the provisions of point 2.1.1, during a period of 5 years and 4 months following the dates specified in Article 10(4) and (5) of Regulation (EC) No 715/2007 and upon request of the manufacturer, the following temporary conformity factors may apply:

Pollutant	Mass of oxides of nitrogen (NO_x)	Number of particles (PN)	Mass of carbon monoxide (CO) [1]	Mass of total hydrocarbons (THC)	Combined mass of total hydrocarbons and oxides of nitrogen (THC + NO_x)
$CF_{pollutant}$	2,1	to be determined	—	—	—

[1] CO emissions shall be measured and recorded at RDE tests.

The application of temporary conformity factors shall be recorded in the certificate of conformity of the vehicle.

2.1.3 Transfer functions

The transfer function $TF(p1,\ldots, p_n)$ referred to in point 2.1 is set to 1 for the entire range of parameters p_i $(i = 1,\ldots,n)$.

If the transfer function $TF(p_1,\ldots, p_n)$ is amended, this shall be done in a manner which is not detrimental to the environmental impact and the effectiveness of the RDE test procedures. In particular the following condition shall hold:

$$\int TF\ (p1,\ldots, pn) * Q\ (p1,\ldots, pn)\ dp = \int Q\ (p1,\ldots, pn)\ dp$$

Where:

— dp represents the integral over the entire space of the parameters p_i $(i = 1,\ldots,n)$

— $Q(p_1,\ldots, p_n)$, is the probability density of an event corresponding to the parameters p_i $(i = 1,\ldots,n)$ in real driving.';

(3) the following point 3.1.0 is inserted:

'3.1.0 The requirements of point 2.1 shall be fulfilled for the urban part and the complete PEMS trip. Upon the choice of the manufacturer the conditions of at least one of the two points below shall be fulfilled:

3.1.0.1 $M_{gas,d,t} \leq NTE_{pollutant}$ and $M_{gas,d,u} \leq NTE_{pollutant}$ with the definitions of point 2.1 of this Annex and points 6.1 and 6.3 of Appendix 5 and the setting *gas = pollutant*.

3.1.0.2 $M_{w,gas,d} \leq NTE_{pollutant}$ and $M_{w,gas,d,U} \leq NTE_{pollutant}$ with the definitions of point 2.1 of this Annex and point 3.9 of Appendix 6 and the setting *gas = pollutant*.';

(4) point 5.3 is deleted;

(5) point 5.4 is replaced by the following:

'5.4. Dynamic conditions

The dynamic conditions encompass the effect of road grade, head wind and driving dynamics (accelerations, decelerations) and auxiliary systems upon energy consumption and emissions of the test vehicle. The verification of the normality of dynamic conditions shall be done after the test is completed, using the recorded PEMS data. This verification shall be conducted in two steps:

5.4.1 The overall excess or insufficiency of driving dynamics during the trip shall be checked using the methods described in Appendix 7a to this Annex.

5.4.2 If the trip results as valid following the verifications according to point 5.4.1, the methods for verifying the normality of the dynamic conditions and laid down in Appendices 5 and 6 to this Annex must be applied. Each method includes a reference for dynamic conditions, ranges around the reference and the minimum coverage requirements to achieve a valid test.';

(6) point 6.8 is replaced by the following:

'6.8 The average speed (including stops) of the urban driving part of the trip should be between 15 and 40 km/h. Stop periods, defined as vehicle speed of less than 1 km/h, shall account for 6-30 % of the time duration of urban operation. Urban operation shall contain several stop periods of 10 s or longer. If a stop period lasts more than 180 s, the emission events during the 180 s following such an excessively long stop period shall be excluded from the evaluation.';

(7) in point 6.11, the following sentence is added:

'In addition, the proportional cumulative positive altitude gain shall be less than 1 200 m/100km) and be determined according to Appendix 7b.';

(8) point 9.5 is replaced by the following:

'9.5. If during a particular time interval the ambient conditions are extended in accordance with point 5.2, the emissions during this particular time interval, calculated according to Appendix 4, shall be divided by a value of 1,6 before being evaluated for compliance with the requirements of this Annex.';

(9) Appendix 1 is amended as follows:

(a) in point 3.4.6, the following sentence is added:

'It is permitted to power any safety-related illumination of fixtures and installations of PEMS components outside of the vehicle's cabin by the vehicle's battery.';

(b) in point 4.5, the following sentence is added:

'To minimise analyser drift, one should conduct the zero and span calibration of analysers at an ambient temperature that resembles, as closely as possible, the temperature experienced by the test equipment during the RDE trip.';

(10) in Appendix 2, footnote 2 to Table 4 in point 8 is replaced by the following:

'(2) This general requirement applies to the speed sensor only; if vehicle speed is used to determine parameters like acceleration, the product of speed and positive acceleration, or RPA, the speed signal shall have an accuracy of 0,1 % above 3 km/h and a sampling frequency of 1 Hz. This accuracy requirement can be met by using the signal of a wheel rotational speed sensor.';

(11) in Appendix 6 point 2 the following definition is deleted:

'a_i Actual acceleration in time step i, if not other defined in an equation:

$$a_i = \frac{(v_{i+1} - v_i)}{3{,}6 \times (t_{i+1} - t_i)}, \ [m/s^2]';$$

(12) in Appendix 6 point 2 the following definitions are inserted:

'$\overline{m}_{gas,U}$ Weighted emission value of an exhaust gas component 'gas' for the subsample of all seconds i with $v_i < 60$ km/h, g/s

$M_{w,gas,d,U}$ Weighted distance-specific emissions for the exhaust gas component 'gas' for the subsample of all seconds i with $v_i < 60$ km/h, g/km

$\overline{v}_U$ Weighted vehicle speed in the wheel power class j, km/h';

(13) in Appendix 6 point 3.1 the first paragraph is replaced by the following text:

'The actual wheel power $P_{r,i}$ shall be the total power to overcome air resistance, rolling resistance, road gradients, longitudinal inertia of the vehicle and rotational inertia of the wheels.';

(14) in Appendix 6 point 3.2 is replaced by the following text:

'3.2 **Classification of the moving averages to urban, rural and motorway**

The standard power frequencies are defined for urban driving and for the total trip (see paragraph 3.4) and a separate evaluation of the emissions shall be made for the total trip and for the urban part. The three second moving averages calculated according to paragraph 3.3 shall therefore be allocated later to urban and extra-urban driving conditions according to the velocity signal (v_i) from the actual second i as outlined in Table 1-1.

Table 1-1

Speed ranges for the allocation of test data to urban, rural and motorway conditions in the power binning method

	Urban	Rural	Motorway
v_i [km/h]	0 to ≤ 60	> 60 to ≤ 90	> 90'

(15) in Appendix 6 point 3.9 is replaced by the following text:

'3.9. **Calculation of the weighted distance-specific emission value**

The time-based weighted averages of the emissions in the test shall be converted into distance-based emissions once for the urban data set and once for the total data set as follows:

For the total trip: $M_{w,gas,d} = 1\,000 \cdot \frac{\overline{m}_{gas} \times 3\,600}{\overline{v}}$

For the urban part of the trip: $M_{w,gas,d,U} = 1\,000 \cdot \frac{\overline{m}_{gas,U} \times 3\,600}{\overline{v}_U}$

Using these formulas, weighted averages shall be calculated for the following pollutants for the total trip and for the urban part of the trip:

$M_{w,NOx,d}$ weighted NO_x test result in [mg/km]

$M_{w,NOx,d,U}$ weighted NO_x test result in [mg/km]

$M_{w,CO,d}$ weighted CO test result in [mg/km]

$M_{w,CO,d,U}$ weighted CO test result in [mg/km]';

(16) the following Appendices 7a and 7b are inserted:

'Appendix 7a

Verification of overall trip dynamics

1. INTRODUCTION

This Appendix describes the calculation procedures to verify the overall trip dynamics, to determine the overall excess or absence of dynamics during urban, rural and motorway driving.

2. SYMBOLS

RPA	relative positive acceleration
'acceleration resolution a_{res}'	minimum acceleration > 0 measured in m/s²
T4253H	compound data smoother
'positive acceleration a_{pos}'	acceleration [m/s²] greater than 0,1 m/s²

Index (i) refers to the time step

Index (j) refers to the time step of positive acceleration datasets

Index (k) refers to the category (t = total, u = urban, r = rural, m = motorway)

Δ	— difference
$>$	— larger
$\geq$	— larger or equal
%	— per cent
$<$	— smaller
$\leq$	— smaller or equal
a	— acceleration [m/s²]
a_i	— acceleration in time step i [m/s²]
a_{pos}	— positive acceleration greater than 0,1 m/s² [m/s²]
$a_{pos,i,k}$	— positive acceleration greater than 0,1 m/s² in time step i considering the urban, rural and motorway shares [m/s²]
a_{res}	— acceleration resolution [m/s²]
d_i	— distance covered in time step i [m]
$d_{i,k}$	— distance covered in time step i considering the urban, rural and motorway shares [m]
M_k	— number of samples for urban, rural and motorway shares with positive acceleration greater than 0,1 m/s²
N_k	— total number of samples for the urban, rural and motorway shares and the complete trip
RPA_k	— relative positive acceleration for urban, rural and motorway shares [m/s² or kWs/(kg × km)]
t_k	— duration of the urban, rural and motorway shares and the complete trip [s]
v	— vehicle speed [km/h]
v_i	— actual vehicle speed in time step i [km/h]
$v_{i,k}$	— actual vehicle speed in time step i considering the urban, rural and motorway shares [km/h]
$(v \cdot a)_i$	— actual vehicle speed per acceleration in time step i [m²/s³ or W/kg]
$(v \cdot a_{pos})_{j,k}$	— actual vehicle speed per positive acceleration greater than 0,1 m/s² in time step j considering the urban, rural and motorway shares [m²/s³ or W/kg].
$(v \cdot a_{pos})_k\_[95]$	— 95th percentile of the product of vehicle speed per positive acceleration greater than 0,1 m/s² for urban, rural and motorway shares [m²/s³ or W/kg]
$\bar{v}_k$	— average vehicle speed for urban, rural and motorway shares [km/h]

3. TRIP INDICATORS

3.1. **Calculations**

3.1.1. *Data pre-processing*

Dynamic parameters like acceleration, $v \cdot a_{pos}$ or RPA shall be determined with a speed signal of an accuracy of 0,1 % above 3 km/h and a sampling frequency of 1 Hz. This accuracy requirement is generally fulfilled by wheel (rotational) speed signals.

The speed trace shall be checked for faulty or implausible sections. The vehicle speed trace of such sections is characterised by steps, jumps, terraced speed traces or missing values. Short faulty sections shall be corrected, for example by data interpolation or benchmarking against a secondary speed signal. Alternatively, short trips containing faulty sections could be excluded from the subsequent data analysis. In a second step the acceleration values shall be ranked in ascending order, in order to determine the acceleration resolution a_{res} = (minimum acceleration value > 0).

If $a_{res} \leq 0{,}01\ m/s^2$, the vehicle speed measurement is accurate enough.

If $0{,}01 < a_{res} \leq r_{max}$ m/s², smoothing by using a T4253 Hanning filter.

If $a_{res} > r_{max}$ m/s², the trip is invalid.

The T4253 Hanning filter performs the following calculations: The smoother starts with a running median of 4, which is centred by a running median of 2. It then re-smoothes these values by applying a running median of 5, a running median of 3, and Hanning (running weighted averages). Residuals are computed by subtracting the smoothed series from the original series. This whole process is then repeated on the computed residuals. Finally, the smoothed residuals are computed by subtracting the smoothed values obtained the first time through the process.

The correct speed trace builds the basis for further calculations and binning as described in paragraph 3.1.2.

3.1.2. *Calculation of distance, acceleration and v · a*

The following calculations shall be performed over the whole time-based speed trace (1 Hz resolution) from second 1 to second t_t (last second).

The distance increment per data sample shall be calculated as follows:

$$d_i = v_i/3{,}6,\ i = 1\ to\ N_t$$

Where:

d_i is the distance covered in time step i [m]

v_i is the actual vehicle speed in time step i [km/h]

N_t is the total number of samples

The acceleration shall be calculated as follows:

$$a_i = (v_{i+1} - v_{i-1})/(2 \cdot 3{,}6),\ i = 1\ to\ N_t$$

Where:

a_i is the acceleration in time step i [m/s²]. For $i = 1$: $v_{i-1} = 0$, for $i = N_t$: $v_{i+1} = 0$.

The product of vehicle speed per acceleration shall be calculated as follows:

$$(v \cdot a)_i = v_i \cdot a_i/3{,}6,\ i = 1\ to\ N_t$$

Where:

$(v \cdot a)_i$ is the product of the actual vehicle speed per acceleration in time step i [m²/s³ or W/kg].

3.1.3. *Binning of the results*

After the calculation of a_i and $(v \cdot a)_i$, the values v_i, d_i, a_i and $(v \cdot a)_i$ shall be ranked in ascending order of the vehicle speed.

All datasets with $v_i \leq 60\ km/h$ belong to the 'urban' speed bin, all datasets with $60\ km/h < v_i \leq 90\ km/h$ belong to the 'rural' speed bin and all datasets with $v_i > 90\ km/h$ belong to the 'motorway' speed bin.

The number of datasets with acceleration values $a_i > 0{,}1$ m/s² shall be bigger or equal to 150 in each speed bin.

For each speed bin the average vehicle speed $\overline{v}_k$ shall be calculated as follows:

$$\overline{v}_k = \left(\sum\nolimits_i v_{i,k}\right)/N_k,\ i = 1\ to\ N_k, k = u,r,m$$

Where:

N_k is the total number of samples of the urban, rural, and motorway shares.

3.1.4. *Calculation of $v \cdot a_{pos}$_[95] per speed bin*

The 95th percentile of the $v \cdot a_{pos}$ values shall be calculated as follows:

The $(v \cdot a)_{i,k}$ values in each speed bin shall be ranked in ascending order for all datasets with $a_{i,k} \geq 0{,}1\ m/s^2$ and the total number of these samples M_k shall be determined.

Percentile values are then assigned to the $(v \cdot a_{pos})_{j,k}$ values with $a_{i,k} \geq 0{,}1\ m/s^2$ as follows:

The lowest $v \cdot a_{pos}$ value gets the percentile $1/M_k$, the second lowest $2/M_k$, the third lowest $3/M_k$ and the highest value M_k/M_k =100 %.

$(v \cdot a_{pos})_k$_[95] is the $(v \cdot a_{pos})_{j,k}$ value, with j/M_k = 95 %. If j/M_k = 95 % cannot be met, $(v \cdot a_{pos})_k$_[95] shall be calculated by linear interpolation between consecutive samples j and j + 1 with j/M_k < 95 % and $(j + 1)/M_k$ > 95 %.

The relative positive acceleration per speed bin shall be calculated as follows:

$$RPA_k = \Sigma_j(\Delta t \cdot (v \cdot a_{pos})_{j,k})/\Sigma_i d_{i,k},\ j = 1\ to\ M_k, i = 1\ to\ N_k, k = u,r,m$$

Where:

RPA_k is the relative positive acceleration for urban, rural and motorway shares in [m/s² or kWs/(kg*km)]

Δt time difference equal to 1 second

M_k the sample number for urban, rural and motorway shares with positive acceleration

N_k the total sample number for urban, rural and motorway shares.

4. VERIFICATION OF TRIP VALIDITY

4.1.1. *Verification of v*$a_{pos\_[95]}$ per speed bin (with v in [km/h])*

If $\overline{v}_k \leq 74{,}6\ km/h$

and

$(v \cdot a_{pos})_k$_[95] $> (0{,}136 \cdot \overline{v}_k + 14{,}44)$

is fulfilled, the trip is invalid.

If $\overline{v}_k > 74{,}6\ km/h$ and $(v \cdot a_{pos})_k$_[95] $> (0{,}0742 \cdot \overline{v}_k + 18{,}966)$ is fulfilled, the trip is invalid.

4.1.2. *Verification of RPA per speed bin*

If $\overline{v}_k \leq 94{,}05\ km/h$ and $RPA_k < (-0{,}0016 \cdot \overline{v}_k + 0{,}1755)$ is fulfilled, the trip is invalid.

If $\overline{v}_k > 94{,}05\ km/h$ and $RPA_k < 0{,}025$ is fulfilled, the trip is invalid.

Appendix 7b

Procedure to determine the cumulative positive elevation gain of a trip

1. INTRODUCTION

This Appendix describes the procedure to determine the cumulative elevation gain of an RDE trip.

2. SYMBOLS

$d(0)$	— distance at the start of a trip [m]
d	— cumulative distance travelled at the discrete way point under consideration [m]
d_0	— cumulative distance travelled until the measurement directly before the respective way point d [m]
d_1	— cumulative distance travelled until the measurement directly after the respective way point d [m]
d_a	— reference way point at $d(0)$ [m]
d_e	— cumulative distance travelled until the last discrete way point [m]
d_i	— instantaneous distance [m]
d_{tot}	— total test distance [m]
$h(0)$	— vehicle altitude after the screening and principle verification of data quality at the start of a trip [m above sea level]
$h(t)$	— vehicle altitude after the screening and principle verification of data quality at point t [m above sea level]
$h(d)$	— vehicle altitude at the way point d [m above sea level]
$h(t-1)$	— vehicle altitude after the screening and principle verification of data quality at point t-1 [m above sea level]
$h_{corr}(0)$	— corrected altitude directly before the respective way point d [m above sea level]
$h_{corr}(1)$	— corrected altitude directly after the respective way point d [m above sea level]
$h_{corr}(t)$	— corrected instantaneous vehicle altitude at data point t [m above sea level]
$h_{corr}(t-1)$	— corrected instantaneous vehicle altitude at data point t-1 [m above sea level]
$h_{GPS,i}$	— instantaneous vehicle altitude measured with GPS [m above sea level]
$h_{GPS}(t)$	— vehicle altitude measured with GPS at data point t [m above sea level]
$h_{int}(d)$	— interpolated altitude at the discrete way point under consideration d [m above sea level]
$h_{int,sm,1}(d)$	— smoothed interpolated altitude, after the first smoothing run at the discrete way point under consideration d [m above sea level]
$h_{map}(t)$	— vehicle altitude based on topographic map at data point t [m above sea level]
Hz	— hertz
km/h	— kilometre per hour
m	— metre

$road_{grade,1}(d)$ — smoothed road grade at the discrete way point under consideration d after the first smoothing run [m/m]

$road_{grade,2}(d)$ — smoothed road grade at the discrete way point under consideration d after the second smoothing run [m/m]

sin — trigonometric sine function

t — time passed since test start [s]

t_0 — time passed at the measurement directly located before the respective way point d [s]

v_i — instantaneous vehicle speed [km/h]

$v(t)$ — vehicle speed of data point t [km/h].

3. GENERAL REQUIREMENTS

The cumulative positive elevation gain of an RDE trip shall be determined based on three parameters: the instantaneous vehicle altitude $h_{GPS,i}$ [m above sea level] as measured with the GPS, the instantaneous vehicle speed v_i [km/h] recorded at a frequency of 1 Hz and the corresponding time t [s] that has passed since test start.

4. CALCULATION OF CUMULATIVE POSITIVE ELEVATION GAIN

4.1. **General**

The cumulative positive elevation gain of an RDE trip shall be calculated as a three-step procedure, consisting of: (i) the screening and principle verification of data quality; (ii) the correction of instantaneous vehicle altitude data; and (iii) the calculation of the cumulative positive elevation gain.

4.2. **Screening and principle verification of data quality**

The instantaneous vehicle speed data shall be checked for completeness. Correcting for missing data is permitted if gaps remain within the requirements specified in Point 7 of Appendix 4; else, the test results shall be voided. The instantaneous altitude data shall be checked for completeness. Data gaps shall be completed by data interpolation. The correctness of interpolated data shall be verified by a topographic map. It is recommended to correct interpolated data if the following condition applies:

$$|h_{GPS}(t) - h_{map}(t)| > 40\ m$$

The altitude correction shall be applied so that:

$$h(t) = h_{map}(t)$$

where:

$h(t)$ — vehicle altitude after the screening and principle verification of data quality at data point t [m above sea level]

$h_{GPS}(t)$ — vehicle altitude measured with GPS at data point t [m above sea level]

$h_{map}(t)$ — vehicle altitude based on topographic map at data point t [m above sea level].

4.3. **Correction of instantaneous vehicle altitude data**

The altitude $h(0)$ at the start of a trip at $d(0)$ shall be obtained by GPS and verified for correctness with information from a topographic map. The deviation shall not be larger than 40 m. Any instantaneous altitude data $h(t)$ shall be corrected if the following condition applies:

$$|h(t) - h(t-1)| > (v(t)/3{,}6 * sin45°)$$

The altitude correction shall be applied so that:

$$h_{corr}(t) = h_{corr}(t\text{-}1)$$

where:

$h(t)$ — vehicle altitude after the screening and principle verification of data quality at data point t [m above sea level]

$h(t\text{-}1)$ — vehicle altitude after the screening and principle verification of data quality at data point t-1 [m above sea level]

$v(t)$ — vehicle speed of data point t [km/h]

$h_{corr}(t)$ — corrected instantaneous vehicle altitude at data point t [m above sea level]

$h_{corr}(t\text{-}1)$ — corrected instantaneous vehicle altitude at data point t-1 [m above sea level].

Upon the completion of the correction procedure, a valid set of altitude data is established. This data set shall be used for the final calculation of the cumulative positive elevation gain as described in point 4.4.

4.4. **Final calculation of the cumulative positive elevation gain**

4.4.1. *Establishment of a uniform spatial resolution*

The total distance d_{tot} [m] covered by a trip shall be determined as sum of the instantaneous distances d_i. The instantaneous distance d_i shall be determined as:

$$d_i = \frac{v_i}{3{,}6}$$

Where:

d_i — instantaneous distance [m]

v_i — instantaneous vehicle speed [km/h]

The cumulative elevation gain shall be calculated from data of a constant spatial resolution of 1 m starting with the first measurement at the start of a trip $d(0)$. The discrete data points at a resolution of 1 m are referred to as way points, characterised by a specific distance value d (e.g., 0, 1, 2, 3 m…) and their corresponding altitude $h(d)$ [m above sea level].

The altitude of each discrete way point d shall be calculated through interpolation of the instantaneous altitude $h_{corr}(t)$ as:

$$h_{int}(d) = h_{corr}(0) + \frac{h_{corr}(1) - h_{corr}(0)}{d_1 - d_0} \cdot (d - d_0)$$

Where:

$h_{int}(d)$ — interpolated altitude at the discrete way point under consideration d [m above sea level]

$h_{corr}(0)$ — corrected altitude directly before the respective way point d [m above sea level]

$hcorr(1)$ — corrected altitude directly after the respective way point d [m above sea level]

d — cumulative distance travelled until the discrete way point under consideration d [m]

d_0 — cumulative distance travelled until the measurement located directly before the respective way point d [m]

d_1 — cumulative distance travelled until the measurement located directly after the respective way point d [m].

4.4.2. *Additional data smoothing*

The altitude data obtained for each discrete way point shall be smoothed by applying a two-step procedure; d_a and d_e denote the first and last data point respectively (Figure 1). The first smoothing run shall be applied as follows:

$$road_{grade,1}(d) = \frac{h_{int}(d + 200\ m) - h_{int}(d_a)}{(d + 200\ m)}\ for\ d \leq 200\ m$$

$$road_{grade,1}(d) = \frac{h_{int}(d + 200\ m) - h_{int}(d - 200\ m)}{(d + 200\ m) - (d - 200\ m)}\ for\ 200\ m < d < (d_e - 200\ m)$$

$$road_{grade,1}(d) = \frac{h_{int}(d_e) - h_{int}(d - 200\ m)}{d_e - (d - 200\ m)}\ for\ d \geq (d_e - 200\ m)$$

$$h_{int,sm,1}(d) = h_{int,sm,1}(d - 1\ m) + road_{grade,1}(d),\ d = d_a + 1\ to\ d_e$$

$$h_{int,sm,1}(d_a) = h_{int}(d_a) + road_{grade,1}(d_a)$$

Where:

$road_{grade,1}(d)$ — smoothed road grade at the discrete way point under consideration after the first smoothing run [m/m]

$h_{int}(d)$ — interpolated altitude at the discrete way point under consideration d [m above sea level]

$h_{int,sm,1}(d)$ — smoothed interpolated altitude, after the first smoothing run at the discrete way point under consideration d [m above sea level]

d — cumulative distance travelled at the discrete way point under consideration [m]

d_a — reference way point at a distance of zero metres [m]

d_e — cumulative distance travelled until the last discrete way point [m].

The second smoothing run shall be applied as follows:

$$road_{grade,2}(d) = \frac{h_{int,sm,1}(d + 200\ m) - h_{int,sm,1}(d_a)}{(d + 200\ m)}\ for\ d \leq 200\ m$$

$$road_{grade,2}(d) = \frac{h_{int,sm,1}(d + 200\ m) - h_{int,sm,1}(d - 200\ m)}{(d + 200\ m) - (d - 200\ m)}\ for\ 200\ m < d < (d_e - 200\ m)$$

$$road_{grade,2}(d) = \frac{h_{int,sm,1}(d_e) - h_{int,sm,1}(d - 200\ m)}{d_e - (d - 200\ m)}\ for\ d \geq (d_e - 200\ m)$$

Where:

$road_{grade,2}(d)$ — smoothed road grade at the discrete way point under consideration after the second smoothing run [m/m]

$h_{int,sm,1}(d)$ — smoothed interpolated altitude, after the first smoothing run at the discrete way point under consideration d [m above sea level]

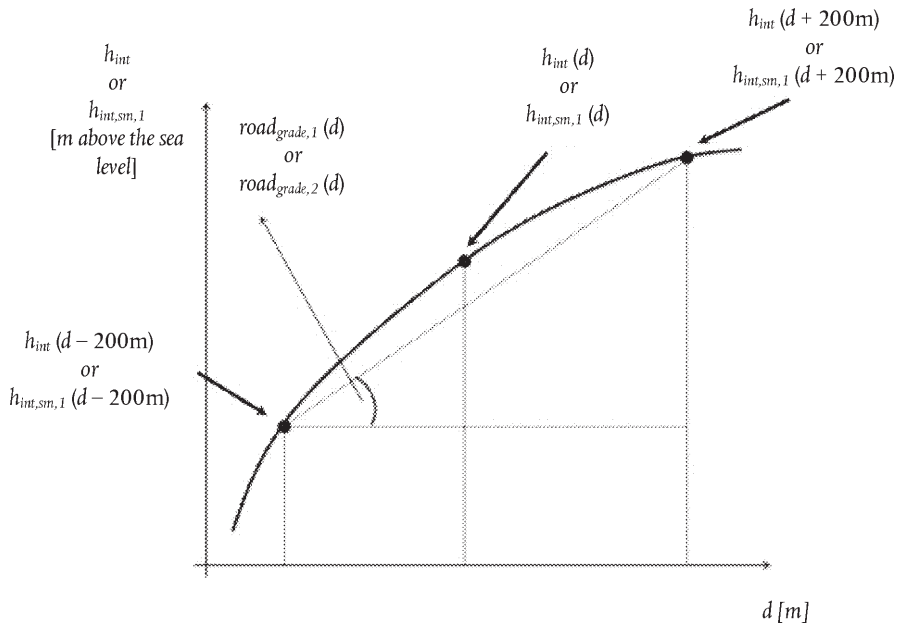
d — cumulative distance travelled at the discrete way point under consideration [m]

d_a — reference way point at a distance of zero metres [m]

d_e — cumulative distance travelled until the last discrete way point [m].

Figure 1

Illustration of the procedure to smooth the interpolated altitude signals



4.4.3. *Calculation of the final result*

The positive cumulative elevation gain of a trip shall be calculated by integrating all positive interpolated and smoothed road grades, i.e. $road_{grade,2}(d)$. The result should be normalised by the total test distance d_{tot} and expressed in meters of cumulative elevation gain per 100 kilometres of distance.

5. NUMERICAL EXAMPLE

Tables 1 and 2 show the steps performed in order to calculate the positive elevation gain on the basis of data recorded during an on-road test performed with PEMS. For the sake of brevity an extract of 800 m and 160 s is presented here.

5.1. **Screening and principle verification of data quality**

The screening and principle verification of data quality consists of two steps. First, the completeness of vehicle speed data is checked. No data gaps related to vehicle speed are detected in the present data sample (see Table 1). Second, the altitude data are checked for completeness; in the data sample, altitude data related to seconds 2 and 3 are missing. The gaps are filled by interpolating the GPS signal. In addition, the GPS altitude is verified by a topographic map; this verification includes the altitude $h(0)$ at the start of the trip. Altitude data related to seconds 112-114 are corrected on the basis of the topographic map to satisfy the following condition:

$$h_{GPS}(t) - h_{map}(t) < -40\ m$$

As result of the applied data verification, the data in the fifth column $h(t)$ are obtained.

5.2. **Correction of instantaneous vehicle altitude data**

As a next step, the altitude data $h(t)$ of seconds 1 to 4, 111 to 112 and 159 to 160 are corrected assuming the altitude values of seconds 0, 110 and 158 respectively since the following condition applies:

$$|h(t) - h(t-1)| > (v(t)/3{,}6 * sin45°)$$

As result of the applied data correction, the data in the sixth column $h_{corr}(t)$ are obtained. The effect of the applied verification and correction steps on the altitude data is depicted in Figure 2.

5.3. **Calculation of the cumulative positive elevation gain**

5.3.1. *Establishment of a uniform spatial resolution*

The instantaneous distance d_i is calculated by dividing the instantaneous vehicle speed measured in km/h by 3,6 (Column 7 in Table 1). Recalculating the altitude data to obtain a uniform spatial resolution of 1 m yields the discrete way points d (Column 1 in Table 2) and their corresponding altitude values $h_{int}(d)$ (Column 7 in Table 2). The altitude of each discrete way point d is calculated through interpolation of the measured instantaneous altitude h_{corr} as:

$$h_{int}(0) = 120{,}3 + \frac{120{,}3 - 120{,}3}{0{,}1 - 0{,}0} \cdot (0 - 0) = 120{,}3000$$

$$h_{int}(520) = 132{,}5 + \frac{132{,}6 - 132{,}5}{523{,}6 - 519{,}9} \cdot (520 - 519{,}9) = 132{,}5027$$

5.3.2. *Additional data smoothing*

In Table 2, the first and last discrete way points are: d_a = 0 m and d_e = 799 m, respectively. The altitude data of each discrete way point is smoothed by applying a two-step procedure. The first smoothing run consists of:

$$road_{grade,1}(0) = \frac{h_{int}(200\,m) - h_{int}(0)}{(0 + 200\,m)} = \frac{120{,}9682 - 120{,}3000}{200} = 0{,}0033$$

chosen to demonstrate the smoothing for $d \leq 200\ m$

$$road_{grade,1}(320) = \frac{h_{int}(520) - h_{int}(120)}{(520) - (120)} = \frac{132{,}5027 - 121{,}9808}{400} = 0{,}0288$$

chosen to demonstrate the smoothing for $200\ m < d < (599\ m)$

$$road_{grade,1}(720) = \frac{h_{int}(799) - h_{int}(520)}{799 - (520)} = \frac{121{,}2000 - 132{,}5027}{279} = -0{,}0405$$

chosen to demonstrate the smoothing for $d \geq (599\ m)$

The smoothed and interpolated altitude is calculated as:

$$h_{int,sm,1}(0) = h_{int}(0) + road_{grade,1}(0) = 120{,}3 + 0{,}0033 \approx 120{,}3033\ m$$

$$h_{int,sm,1}(799) = h_{int,sm,1}(798) + road_{grade,1}(799) = 121{,}2550 - 0{,}0220 = 121{,}2330\ m$$

Second smoothing run:

$$road_{grade,2}(0) = \frac{h_{int,sm,1}(200) - h_{int,sm,1}(0)}{(200)} = \frac{119{,}9618 - 120{,}3033}{(200)} = -0{,}0017$$

chosen to demonstrate the smoothing for $d \leq 200\ m$

$$road_{grade,2}(320) = \frac{h_{int,sm,1}(520) - h_{int,sm,1}(120)}{(520) - (120)} = \frac{123{,}6809 - 120{,}1843}{400} = 0{,}0087$$

chosen to demonstrate the smoothing for 200 *m* < *d* < (599 *m*)

$$road_{grade,2}(720) = \frac{h_{int,sm,1}(799) - h_{int,sm,1}(520)}{799 - (520)} = \frac{121{,}2330 - 123{,}6809}{279} = -0{,}0088$$

chosen to demonstrate the smoothing for d ≥ (599 *m*)

5.3.3. *Calculation of the final result*

The positive cumulative elevation gain of a trip is calculated by integrating all positive interpolated and smoothed road grades, i.e. $road_{grade,2}(d)$. For the presented example the total covered distance was d_{tot} = 139,7 km and all positive interpolated and smoothed road grades were of 516 m. Therefore a positive cumulative elevation gain of 516 × 100/139,7 = 370 m/100 km was achieved.

Table 1

Correction of instantaneous vehicle altitude data

Time t [s]	$v(t)$ [km/h]	$h_{GPS}(t)$ [m]	$h_{map}(t)$ [m]	$h(t)$ [m]	$h_{corr}(t)$ [m]	d_i [m]	Cum. d [m]
0	0,00	122,7	129,0	122,7	122,7	0,0	0,0
1	0,00	122,8	129,0	122,8	122,7	0,0	0,0
2	0,00	-	129,1	123,6	122,7	0,0	0,0
3	0,00	-	129,2	124,3	122,7	0,0	0,0
4	0,00	125,1	129,0	125,1	122,7	0,0	0,0
…	…	…	…	…	…	…	…
18	0,00	120,2	129,4	120,2	120,2	0,0	0,0
19	0,32	120,2	129,4	120,2	120,2	0,1	0,1
…	…	…	…	…	…	…	…
37	24,31	120,9	132,7	120,9	120,9	6,8	117,9
38	28,18	121,2	133,0	121,2	121,2	7,8	125,7
…	…	…	…	…	…	…	…
46	13,52	121,4	131,9	121,4	121,4	3,8	193,4
47	38,48	120,7	131,5	120,7	120,7	10,7	204,1
…	…	…	…	…	…	…	…
56	42,67	119,8	125,2	119,8	119,8	11,9	308,4
57	41,70	119,7	124,8	119,7	119,7	11,6	320,0
…	…	…	…	…	…	…	…
110	10,95	125,2	132,2	125,2	125,2	3,0	509,0
111	11,75	100,8	132,3	100,8	125,2	3,3	512,2

Time t [s]	$v(t)$ [km/h]	$h_{GPS}(t)$ [m]	$h_{map}(t)$ [m]	$h(t)$ [m]	$h_{corr}(t)$ [m]	d_i [m]	Cum. d [m]
112	13,52	0,0	132,4	132,4	125,2	3,8	516,0
113	14,01	0,0	132,5	132,5	132,5	3,9	519,9
114	13,36	24,30	132,6	132,6	132,6	3,7	523,6
…	…	…	…	…	…	…	
149	39,93	123,6	129,6	123,6	123,6	11,1	719,2
150	39,61	123,4	129,5	123,4	123,4	11,0	730,2
…	…	…	…	…	…	…	
157	14,81	121,3	126,1	121,3	121,3	4,1	792,1
158	14,19	121,2	126,2	121,2	121,2	3,9	796,1
159	10,00	128,5	126,1	128,5	121,2	2,8	798,8
160	4,10	130,6	126,0	130,6	121,2	1,2	800,0

- denotes data gaps

Table 2

Calculation of road grade

d [m]	t_0 [s]	d_0 [m]	d_1 [m]	h_0 [m]	h_1 [m]	$h_{int}(d)$ [m]	$road_{grade,1}(d)$ [m/m]	$h_{int,sm,1}(d)$ [m]	$road_{grade,2}(d)$ [m/m]
0	18	0,0	0,1	120,3	120,4	120,3	0,0035	120,3	– 0,0015
…	…	…	…	…	…	…	…	…	…
120	37	117,9	125,7	120,9	121,2	121,0	– 0,0019	120,2	0,0035
…	…	…	…	…	…	…	…	…	…
200	46	193,4	204,1	121,4	120,7	121,0	– 0,0040	120,0	0,0051
…	…	…	…	…	…	…	…	…	…
320	56	308,4	320,0	119,8	119,7	119,7	0,0288	121,4	0,0088
…	…	…	…	…	…	…	…	…	…
520	113	519,9	523,6	132,5	132,6	132,5	0,0097	123,7	0,0037
…	…	…	…	…	…	…	…	…	…
720	149	719,2	730,2	123,6	123,4	123,6	– 0,0405	122,9	– 0,0086
…	…	…	…	…	…	…	…	…	…
798	158	796,1	798,8	121,2	121,2	121,2	– 0,0219	121,3	– 0,0151
799	159	798,8	800,0	121,2	121,2	121,2	– 0,0220	121,3	– 0,0152

Figure 2

The effect of data verification and correction — The altitude profile measured by GPS $h_{GPS}(t)$, the altitude profile provided by the topographic map $h_{map}(t)$, the altitude profile obtained after the screening and principle verification of data quality $h(t)$ and the correction $hcorr(t)$ of data listed in Table 1

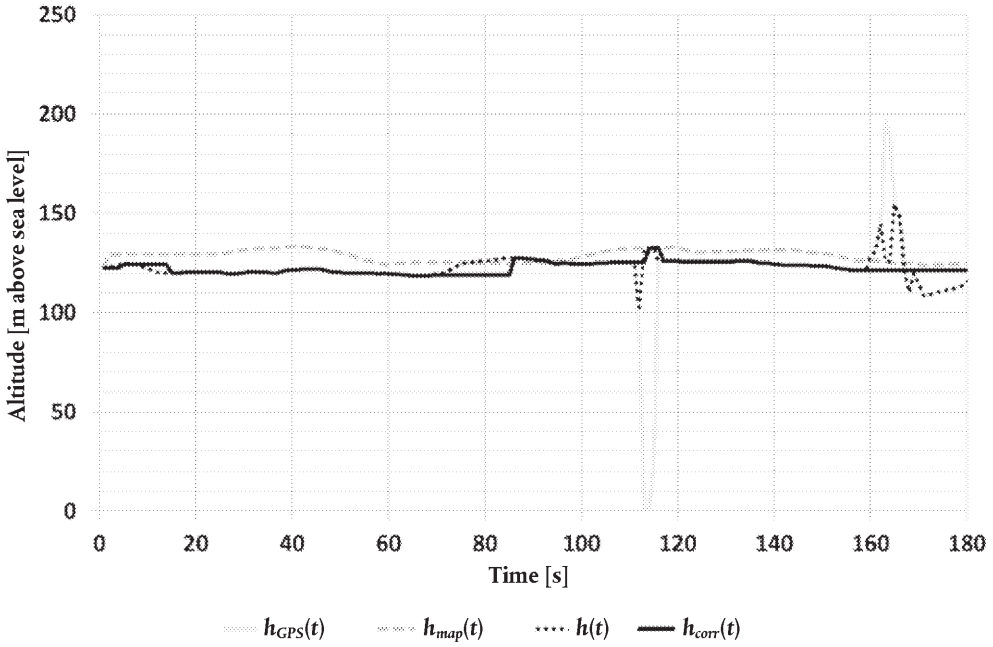


Figure 3

Comparison between the corrected altitude profile $h_{corr}(t)$ and the smoothed and interpolated altitude $h_{int,sm,1}$

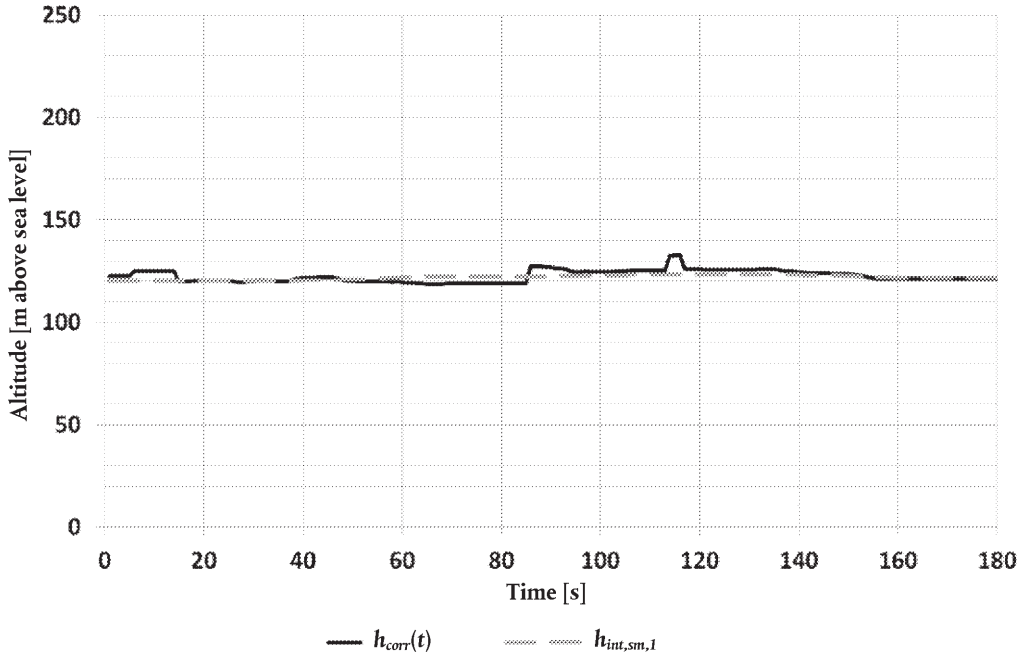


Table 2

Calculation of the positive elevation gain

d [m]	t_0 [s]	d_0 [m]	d_1 [m]	h_0 [m]	h_1 [m]	$h_{int}(d)$ [m]	$road_{grade,1}(d)$ [m/m]	$h_{int,sm,1}(d)$ [m]	$road_{grade,2}(d)$ [m/m]
0	18	0,0	0,1	120,3	120,4	120,3	0,0035	120,3	– 0,0015
…	…	…	…	…	…	…	…	…	…
120	37	117,9	125,7	120,9	121,2	121,0	– 0,0019	120,2	0,0035
…	…	…	…	…	…	…	…	…	…
200	46	193,4	204,1	121,4	120,7	121,0	– 0,0040	120,0	0,0051
…	…	…	…	…	…	…	…	…	…
320	56	308,4	320,0	119,8	119,7	119,7	0,0288	121,4	0,0088
…	…	…	…	…	…	…	…	…	…
520	113	519,9	523,6	132,5	132,6	132,5	0,0097	123,7	0,0037
…	…	…	…	…	…	…	…	…	…
720	149	719,2	730,2	123,6	123,4	123,6	– 0,0405	122,9	– 0,0086
…	…	…	…	…	…	…	…	…	…
798	158	796,1	798,8	121,2	121,2	121,2	– 0,0219	121,3	– 0,0151
799	159	798,8	800,0	121,2	121,2	121,2	– 0,0220	121,3	– 0,0152’

COMMISSION IMPLEMENTING REGULATION (EU) 2016/647

of 25 April 2016

amending for the 245th time Council Regulation (EC) No 881/2002 imposing certain specific restrictive measures directed against certain persons and entities associated with the ISIL (Da'esh) and Al-Qaida organisations

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Council Regulation (EC) No 881/2002 of 27 May 2002 imposing certain specific restrictive measures directed against certain persons and entities associated with the ISIL (Da'esh) and Al-Qaida organisations ([1]), and in particular Article 7(1)(a) and Article 7a(1) thereof,

Whereas:

(1) Annex I to Regulation (EC) No 881/2002 lists the persons, groups and entities covered by the freezing of funds and economic resources under that Regulation.

(2) On 20 April 2016, the Sanctions Committee of the United Nations Security Council (UNSC) decided to add five natural persons to the list of persons, groups and entities to whom the freezing of funds and economic resources should apply. Annex I to Regulation (EC) No 881/2002 should therefore be updated accordingly.

(3) In order to ensure that the measures provided for in this Regulation are effective, this Regulation should enter into force immediately,

HAS ADOPTED THIS REGULATION:

Article 1

Annex I to Regulation (EC) No 881/2002 is amended in accordance with the Annex to this Regulation.

Article 2

This Regulation shall enter into force on the day of its publication in the *Official Journal of the European Union*.

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

Done at Brussels, 25 April 2016.

For the Commission,
On behalf of the President,
Head of the Service for Foreign Policy Instruments

([1]) OJ L 139 29.5.2002, p. 9.

ANNEX

In Annex I to Regulation (EC) No 881/2002 the following entries shall be added under the heading 'Natural persons':

(a) 'Turki Mubarak Abdullah Ahmad Al-Binali (alias (a) Turki Mubarak Abdullah Al Binali, (b) Turki Mubarak al-Binali (c) Turki al-Benali, (d) Turki al-Binali, (e) Abu Human Bakr ibn Abd al-Aziz al-Athari, (f) Abu Bakr al-Athari, (g) Abu Hazm al-Salafi (h) Abu Hudhayfa al-Bahrayni, (i) Abu Khuzayma al-Mudari, (j) Abu Sufyan al-Sulami, (k) Abu Dergham, (l) Abu Human al-Athari). Date of birth: 3.9.1984. Place of birth: Al Muharraq, Bahrain. Nationality: Bahrain (citizenship revoked in January 2015). Passport No: (a) 2231616 Bahraini Passport number issued on 2.1.2013 expires on 2.1.2023, (b) 1272611 Bahraini Passport number previous, issued on 1.4.2003, (c) 840901356 National identification No. Date of designation referred to in Article 7d(2)(i): 20.4.2016.';

(b) 'Faysal Ahmad Bin Ali Al-Zahrani (alias (a) Faisal Ahmed Ali Alzahrani, (b) Abu Sarah al-Saudi (c) Abu Sara Zahrani). Date of birth: 19.1.1986. Nationality: Saudi Arabia. Address: Syrian Arab Republic. Passport number: (a) K142736 (Saudi Arabian passport number issued 14.7.2011 in Al-Khafji, Saudi Arabia), (b) G579315 (Saudi Arabian passport number). Date of designation referred to in Article 7d(2)(i): 20.4.2016.';

(c) 'Tuah Febriwansyah (alias (a) Tuah Febriwansyah bin Arif Hasrudin, (b) Tuwah Febriwansah (c) Muhammad Fachri (d) Muhammad Fachria (e) Muhammad Fachry). Date of birth: 18.2.1968. Place of birth: Jakarta, Indonesia. Nationality: Indonesia. Address: Jalan Baru LUK, No 1, RT 05/07, Kelurahan Bhakti Jaya, Setu Sub-district, Pamulang District, Tangerang Selatan, Banten Province, Indonesia. Indonesian National Identity Card number 09.5004.180268.0074. Date of designation referred to in Article 7d(2)(i): 20.4.2016.';

(d) 'Husayn Juaythini (alias (a) Hussein Mohammed Hussein Aljeithni, (b) Husayn Muhammad al-Juaythini (c) Husayn Muhammad Husayn al-Juaythini d) Husayn Muhamad Husayn al-Juaythini (e) Husayn Muhammad Husayn Juaythini (f) Abu Muath al-Juaitni). Date of birth: 3.5.1977. Place of birth: Nuseirat Refugee Camp, Gaza Strip, Palestinian Territories. Nationality: Palestinian. Address: Gaza Strip, Palestinian Territories. Passport No: 0363464 (issued by Palestinian Authority). Date of designation referred to in Article 7d(2)(i): 20.4.2016.';

(e) 'Muhammad Sholeh Ibrahim (alias (a) Mohammad Sholeh Ibrahim, (b) Muhammad Sholeh Ibrohim (c) Muhammad Soleh Ibrahim (d) Sholeh Ibrahim (e) Muh Sholeh Ibrahim). Date of birth: September 1958. Place of birth: Demak, Indonesia. Nationality: Indonesia. Date of designation referred to in Article 7d(2)(i): 20.4.2016.'.

COMMISSION IMPLEMENTING REGULATION (EU) 2016/648

of 25 April 2016

establishing the standard import values for determining the entry price of certain fruit and vegetables

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) No 1308/2013 of the European Parliament and of the Council of 17 December 2013 establishing a common organisation of the markets in agricultural products and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) No 1234/2007 ([1]),

Having regard to Commission Implementing Regulation (EU) No 543/2011 of 7 June 2011 laying down detailed rules for the application of Council Regulation (EC) No 1234/2007 in respect of the fruit and vegetables and processed fruit and vegetables sectors ([2]), and in particular Article 136(1) thereof,

Whereas:

(1) Implementing Regulation (EU) No 543/2011 lays down, pursuant to the outcome of the Uruguay Round multilateral trade negotiations, the criteria whereby the Commission fixes the standard values for imports from third countries, in respect of the products and periods stipulated in Annex XVI, Part A thereto.

(2) The standard import value is calculated each working day, in accordance with Article 136(1) of Implementing Regulation (EU) No 543/2011, taking into account variable daily data. Therefore this Regulation should enter into force on the day of its publication in the *Official Journal of the European Union*,

HAS ADOPTED THIS REGULATION:

Article 1

The standard import values referred to in Article 136 of Implementing Regulation (EU) No 543/2011 are fixed in the Annex to this Regulation.

Article 2

This Regulation shall enter into force on the day of its publication in the *Official Journal of the European Union*.

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

Done at Brussels, 25 April 2016.

For the Commission,
On behalf of the President,
Jerzy PLEWA
Director-General for Agriculture and Rural Development

([1]) OJ L 347, 20.12.2013, p. 671.
([2]) OJ L 157, 15.6.2011, p. 1.

ANNEX

Standard import values for determining the entry price of certain fruit and vegetables

(EUR/100 kg)

CN code	Third country code (1)	Standard import value
0702 00 00	IL	267,4
	MA	81,7
	ZZ	174,6
0707 00 05	MA	81,5
	TR	118,9
	ZZ	100,2
0709 93 10	MA	99,6
	TR	132,6
	ZZ	116,1
0805 10 20	AR	115,8
	EG	46,4
	IL	79,9
	MA	51,7
	TR	40,9
	ZZ	66,9
0805 50 10	MA	132,7
	ZZ	132,7
0808 10 80	AR	88,6
	BR	100,6
	CL	101,7
	CN	90,8
	NZ	151,9
	US	177,1
	ZA	102,3
	ZZ	116,1
0808 30 90	AR	104,9
	CL	132,0
	CN	76,7
	ZA	112,2
	ZZ	106,5

(1) Nomenclature of countries laid down by Commission Regulation (EU) No 1106/2012 of 27 November 2012 implementing Regulation (EC) No 471/2009 of the European Parliament and of the Council on Community statistics relating to external trade with non-member countries, as regards the update of the nomenclature of countries and territories (OJ L 328, 28.11.2012, p. 7). Code 'ZZ' stands for 'of other origin'.

DECISIONS

COMMISSION DECISION (EU) 2016/649

of 15 January 2016

on the measure SA.24123 (12/C) (ex 11/NN) implemented by the Netherlands — Alleged sale of land below market price by the Municipality of Leidschendam-Voorburg

(notified under document C(2016) 85)

(Only the Dutch text is authentic)

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union, and in particular the first subparagraph of Article 108(2) thereof,

Having regard to the Agreement on the European Economic Area, and in particular Article 62(1)(a) thereof,

Having called on interested parties to submit their comments pursuant to the provisions cited above [1] and having regard to their comments,

Whereas:

1. PROCEDURE

(1) By letter of 10 September 2007, the Stichting Behoud Damplein Leidschendam (hereinafter 'the Stichting'), a foundation set up in 2006 to defend the interests of residents located in the vicinity of the Damplein in Leidschendam (Municipality of Leidschendam-Voorburg, the Netherlands), submitted a complaint to the Commission concerning the alleged grant of State aid in the context of a real estate project initiated by the Municipality of Leidschendam-Voorburg in cooperation with a number of private parties.

(2) By letter of 12 October 2007, the Commission forwarded the complaint to the Dutch authorities for their consideration, along with a request to reply to a number of questions. The Dutch authorities submitted their reply by letter of 7 December 2007. The Commission sent further requests for information to the Dutch authorities by letters of 25 April 2008, 12 September 2008, 14 August 2009, 12 February 2010 and 2 August 2011. The Dutch authorities replied to these requests by letters of 30 May 2008, 7 November 2008, 30 October 2009, 12 April 2010, 29 September 2011 and 3 October 2011, respectively. On 12 March 2010, a meeting took place between the Commission departments and the Dutch authorities and, as a result, additional information was submitted to the Commission by letter of 30 August 2010.

(3) By letter of 26 January 2012, the Commission informed the Netherlands that it had decided to initiate the procedure laid down in Article 108(2) of the Treaty on the Functioning of the European Union (hereinafter: 'TFEU') in respect of a specific measure taken in the context of the real estate project. The Commission's decision to initiate the procedure (hereinafter 'the opening decision') was published in the *Official Journal of the European Union* [2]. By way of this opening decision, the Commission invited interested parties to submit comments on its preliminary assessment of the measure.

(4) By letter of 18 April 2012, the Dutch authorities submitted their observations on the opening decision, after having received two extensions of the deadline to comment and after a meeting with the Commission departments on 12 March 2012 in the presence of the beneficiary of the measure.

[1] OJ C 86, 23.3.2012, p. 12.
[2] See footnote 1.

(5) By letter of 16 April 2012, the Stichting submitted its comments to the Commission on the opening decision. The non-confidential version of these comments was forwarded to the Dutch authorities by letter of 16 May 2012. By letter of 14 June 2012, the Dutch authorities submitted their reaction to the Stichting's comments.

(6) On 23 January 2013 the Commission adopted a final decision, concluding that the contested real estate project contained aid within the meaning of Article 107(1) TFEU.

(7) The decision of 23 January 2013 was appealed against by the Netherlands, the Municipality of Leidschendam-Voorburg and the beneficiary Schouten & de Jong Projectontwikkeling BV. In its judgment of 30 June 2015 the General Court annulled the decision ([3]). Consequently, the Commission had to re-examine the measure and take a new decision on the contested real estate project.

2. **DESCRIPTION OF THE MEASURES**

2.1. THE PARTIES INVOLVED

(8) The Municipality of Leidschendam-Voorburg (hereinafter: 'the Municipality') is located in the province of South Holland, close to The Hague, in the Netherlands.

(9) Schouten-de Jong Bouwfonds (hereinafter 'SJB') is a partnership set up by Schouten & De Jong Projectontwikkeling BV (hereinafter 'Schouten de Jong') and Bouwfonds Ontwikkeling BV (hereinafter 'Bouwfonds') for the purposes of the contested real estate project and does not have legal personality under Dutch law ([4]).

(10) Schouten de Jong, established in Voorburg, the Netherlands, is active in real estate project development in the Netherlands, in particular in the Leidschendam area. Its turnover amounted to EUR 60 million in 2011.

(11) Bouwfonds, established in Delft, the Netherlands, and a subsidiary of Rabo Vastgoed, is the largest real estate developer in the Netherlands and among the top three largest players on the European real estate market. Bouwfonds is active, in particular, in the Netherlands, Germany and France. It had a turnover of EUR 1,6 billion in 2011.

(12) A public-private partnership in the form of a *vennootschap onder firma* (hereinafter: 'the PPP') was set-up by the Municipality and SJB to undertake the ground exploitation phase of the contested real estate project. Each party to the PPP was to bear 50 % of the costs and the risks associated with the ground exploitation phase of the project. The decision-making of the PPP was to be by unanimity. According to the information provided by the Dutch authorities, Schouten de Jong and Bouwfonds are each jointly and severally liable (*hoofdelijk aansprakelijk*) for the fulfilment by SJB of its obligations under the PPP agreement ([5]).

2.2. THE REAL ESTATE PROJECT

(13) On 6 April 2004, the Council of the Municipality adopted a Concept Ground Exploitation Masterplan Damcentrum and a Concept Masterplan Damcentrum laying down a framework agreement aimed at revitalising Leidschendam's city centre (hereinafter: 'the Leidschendam Centrum Project') ([6]). The Leidschendam Centrum

([3]) Judgment of the Court of 30 June 2015 in Joined Cases T-186/13, T-190/13 and T-193/13, *The Nederlands* (T-186/13), *Municipality Leidschendam-Voorburg* (T-190/13) and *Bouwfonds Ontwikkeling BV en Schouten & De Jong Projectontwikkeling BV* (T-193/13) v *Commission*, ECLI:EU:T:2015:447.

([4]) References to SJB throughout the remainder of this Decision should therefore also be considered as constituting references to both Schouten de Jong and Bouwfonds.

([5]) Article 4.1. of the Ground exploitation/PPP agreement of 22 November 2004 provides the following: 'Gemeente en SJB vormen met ingang van de datum van ondertekening van deze overeenkomst een VOF. Als zodanig dragen zij met ingang van die datum gezamenlijk op basis van separaat te sluiten project-gronduitgifteovereenkomsten, in goed overleg, zorg voor de uitvoering van de grondexploitatie. De daaraan verbonden kosten en risico's komen voor 50 % voor rekening van SJB en voor 50 % van de Gemeente. Schouten en Bouwfonds zijn ieder hoofdelijk aansprakelijk voor de nakoming door SJB van haar verplichtingen ingevolge deze Overeenkomst (de Sok en de projectovereenkomst).'

([6]) The project was initially called Dam centrum project but was renamed Leidschendam Centrum Project in 2005. In this Decision 'Leidschendam Centrum Project' is used to describe the real estate project.

Project concerns an area of approximately 20,7 hectares and consists of demolishing approximately 280 mainly social housing units, renewing public spaces and utilities (sewerage, paving, lighting, etc.) and constructing approximately 600 new housing units — both social housing and free sector housing — as well as approximately 3 000 square metres of commercial (shopping) space, a two-level underground parking garage, and the relocation and rebuilding of a school. The Leidschendam Centrum Project was divided into various sub-projects, one of which is the real estate project concerning the Damplein (hereinafter: 'the Damplein Project').

2.2.1. **The construction phase**

(14) On the basis of the Leidschendam Centrum Project, the Municipality concluded a cooperation agreement with a number of private project developers, including with SJB, on 9 September 2004 (hereinafter: 'the 2004 Cooperation Agreement'). The 2004 Cooperation Agreement stipulates that the private project developers would, for each of the specific sub-parts of the Leidschendam Centrum Project assigned to them, construct and sell, at their own risk and expense, the envisaged real estate.

(15) According to the 2004 Cooperation Agreement, the construction works would begin once the land had been made ready for construction (see recital 23 below) and the necessary building permits had been obtained. However, as regards the construction of the free sector housing units, the private developers were allowed to postpone construction until 70 % of these units, whether or not in combination with social housing units, in the sub-project area concerned had been pre-sold (Article 7.5 of the 2004 Cooperation Agreement, hereinafter: 'the 70 % clause'). This 70 % clause is commonly found in construction contracts in the Netherlands and seeks to limit the risks for project developers of constructing real estate which might not be sold. The agreement did not, however, provide for any possibility to postpone construction as regards the commercial premises and the underground parking garage.

(16) According to both the 2004 Cooperation Agreement and a further project agreement concluded on 22 November 2004 (hereinafter: the 'SJB Project Agreement'), SJB would build a total of 242 housing units, of which 74 were initially planned to be built on the Damplein ([7]). SJB would also build approximately 2 400 square metres of commercial space on the Damplein and construct the underground parking garage, which apart from a private section (75 parking spaces) also included a public section (225 parking spaces). The commercial premises and the housing units would be built on top of the underground parking garage.

(17) The Municipality, as also explicitly emphasised by the Dutch authorities in their submissions, was not involved in the construction phase of the project and bore no risks in relation to the sale of the housing units and commercial premises. Profits from these sales, if any, would accrue directly to the private developers. The construction phase of the project should be distinguished from the so-called ground exploitation phase of the project, where the Municipality was involved through the PPP with SJB and bore 50 % of the risks (see recital 19 below).

2.2.2. **The ground exploitation phase**

(18) Before construction works in each part of the real estate project could commence, the land had to be acquired, the public infrastructure had to be re-arranged and the land had to be made ready for construction. Since this 'ground exploitation phase' of the project was expected to entail high costs (estimated at the time at approximately EUR 30 million) and significant risks, the Municipality decided to set up a PPP with SJB to carry out these works ([8]). To this end, the Municipality and SJB signed a ground exploitation/PPP agreement on 22 November 2004 (hereinafter: 'the GREX').

(19) In return for its participation in the ground exploitation phase of the project, SJB would obtain a share of the revenues of the PPP and receive the development rights on plots of land previously allocated to the Municipality ([9]). According to the GREX, both the Municipality and SJB would make a direct financial

([7]) The final plans for the Damplein only foresaw the construction of 67 housing units by SJB.
([8]) No public procurement procedure was carried out in this regard. This Decision is without prejudice to any analysis the Commission could make concerning public procurement aspects related to the project.
([9]) Point 5.1.2 of the Ground Exploitation Masterplan Damcentrum of 10 February 2004.

contribution to the PPP to carry out the ground exploitation works ([10]). The GREX further provides that the Municipality and SJB would each bear 50 % of the costs and the risks of the ground exploitation phase (Article 4.1. of the GREX) and that the final revenues/losses of the ground exploitation would be divided according to the rules laid down in the 2004 Cooperation Agreement (Article 14.3). This stipulated that at the end of the ground exploitation phase a negative or positive result of up to EUR 1 million would be equally divided between the Municipality and SJB, whereas the portion of a positive result exceeding EUR 1 million would be divided between the Municipality, SJB and the other private parties taking part in the construction phase of the real estate project (Article 10.9 of the 2004 Cooperation Agreement).

(20) Besides making the land ready for construction, the ground exploitation phase also covered the construction, temporary exploitation and reselling of the public part of the underground parking garage and the building of the school (Article 4 of the GREX). To this end, the PPP agreed with SJB that SJB would construct the underground public garage, which was considered to be intrinsically linked to the private section of the parking garage (Article 9 of the GREX), for which SJB would receive a maximum amount of approximately EUR 4,6 million (value on 1 January 2003) from the PPP (Article 6 of the SJB Project Agreement). The construction of the private section of the parking garage would be financed by SJB itself. The PPP intended to sell the entire parking garage to a third party and the revenues from that sale were to flow to the PPP, which would share them between the Municipality and SJB.

(21) Finally, the PPP would also contribute 50 % of the costs for the construction of a school in another plan area of the Leidschendam Centrum Project. The remaining 50 % would be financed directly by the Municipality (Article 8 of the GREX).

(22) As follows from recitals 18 to 21 above, the costs of the ground exploitation phase of the project consisted essentially in the costs of the acquisition of the land in so far as it was not already owned by the Municipality, the costs of making the land ready for construction, the costs for the public section of the underground parking garage and 50 % of the construction costs for the school.

(23) The PPP would generate revenues from the ground exploitation phase, first and foremost, through the sale of the land to private project developers, including SJB, after the PPP had made the land ready for construction. Each project developer was to purchase the part of the land assigned to it to construct housing units and commercial premises. The prices for the land were laid down in Article 10 and Annex 3a to the 2004 Cooperation Agreement. The 2004 Cooperation Agreement explicitly stated that these prices were minimum prices, which could be increased if more than the planned floor space was constructed. These prices were based on an independent expert valuation report, dated 11 March 2003, which considered the prices to be market-compliant. Payment of the land price was due at the moment the private developer concerned obtained the necessary building permits and would take place, at the latest, at the moment of the legal transfer of the land (Article 10.5 of the 2004 Cooperation Agreement).

(24) The price of the land sold by the PPP to SJB for the overall Leidschendam Centrum Project was determined at minimum EUR 18,5 million (value on 1 January 2003). The land in the Damplein area sold by the PPP to SJB was determined at minimum EUR 7,2 million (value on 1 January 2003), yearly indexed at 2,5 % until payment.

(25) Second, the PPP was to collect additional revenues by charging each private project developer a ground exploitation fee and a quality fee pursuant to Article 10.3 of the 2004 Cooperation Agreement ([11]). These fees were calculated on the basis of the number of housing units to be built by the private project developer and could be increased or decreased depending on the number of units actually constructed. These fees were due on 1 July 2004 at the latest and needed to be paid in a single instalment for all housing units constructed in the Leidschendam Centrum Project by the private developer concerned.

(26) As regards SJB, the total ground exploitation fee was determined at approximately EUR 1,1 million and the quality fee at approximately EUR 0,9 million (value on 1 January 2003), indexed yearly at 2,5 % until payment, for all the housing units it planned to build in the Leidschendam centrum area. The final ground exploitation fee and quality fee due would depend on the number of housing units actually built.

([10]) According to the Ground Exploitation Masterplan Damcentrum of 10 February 2004, the Municipality would contribute EUR 7,3 million while SJB would contribute EUR 2,6 million.

([11]) According to the 'Exploitatieverordening Gemeente Leidschendam-Voorburg 2009', the Municipality may ask private parties to contribute to the costs of infrastructure works. To this end, the 2004 Cooperation Agreement stipulates that the private parties will pay a ground exploitation fee and, as the Municipality decided to use high quality products to develop the public area, a quality fee to the PPP, on top of the price for the land.

(27) The 2004 Cooperation Agreement in its Article 6.6 ([12]) provides that, if the building permits are not delivered on schedule, the parties will renegotiate the agreement, including the calculation of the land prices and the data on which these need to be paid, staying as close as possible to the conditions of this agreement and of the bilateral agreements.

(28) Furthermore, Article 16 of the 2004 Cooperation Agreement stipulates that this agreement or the bilateral agreements can only be annulled totally or partly in the specifically listed situations. One of these situations is 'unforeseen circumstances as referred to in Article 6:258 of the Civil Code': if one of the parties is then of the opinion that the other parties cannot require from him an unchanged execution of the agreement, they have to enter into negotiations in order to arrive at mutually agreed modified terms.

(29) Article 18 of the 2004 Cooperation Agreement stipulates that, if disputes arise over this agreement or the bilateral agreements, these will be resolved as much as possible in good and faithful cooperation amongst the parties. If this is not possible the dispute has to be submitted to arbitration in accordance with the rules of the Dutch Arbitration Institute in Rotterdam. The place of arbitration is Den Haag.

2.3. THE RETROACTIVE PRICE DECREASE AND WAIVED FEES

(30) According to the timeline which was set up in March 2004, construction works on the Damplein were initially planned to start in November 2005. However, owing to several national court proceedings, the building permits SJB needed to commence construction were delayed and eventually only obtained in November 2008.

(31) SJB started with the pre-sale of housing units in February 2007, but experienced difficulties selling these and eventually managed to pre-sell only 20 of the 67 planned units. Because of the delays encountered in obtaining the necessary building permits, these pre-sale contracts were annulled in September 2008 so that, when SJB finally obtained the permits to start construction works in November of that year, none of the housing units SJB was required to build on the Damplein had been pre-sold. In the meantime, the financial crisis had started and affected the Dutch real-estate market in particular.

(32) In this context, SJB informed the Municipality that it would not start any of the construction works, relying on the clause in the 2004 Cooperation Agreement that allowed it to postpone construction of the housing units if less than 70 % of these units had been sold.

(33) In this regard SJB referred to the contractual provisions in the 2004 Cooperation agreement, in particular Article 6.6 of the 2004 Cooperation agreement which provides for the possibility of renegotiating the price and the delivery dates if the building permits were not delivered in time. According to SJB, since these permits were only delivered 3 years after the planned date, SJB could not be held to execute the Cooperation agreement unchanged. As a result the parties decided to renegotiate the initial arrangements.

(34) In the Autumn of 2008, SJB made a proposal to the PPP to pay EUR 4 million for the land on the Damplein, instead of the EUR 7,2 million (value on 1 January 2003) originally agreed, whereby SJB would start the construction works in April 2009 regardless of whether the housing units had been pre-sold. In return for this decrease in price, SJB was therefore willing to waive its right to invoke the 70 % clause contained in the 2004 Cooperation Agreement and the damage suffered as a result of the delay of 3 years in delivering the building permits. SJB further proposed to contact an investor who would guarantee to buy the unsold housing units. According to the Dutch authorities this resulted in a price lower than that expected from a direct sale to private persons.

(35) On 18 December 2008, the PPP and SJB agreed in principle to the price decrease, but before seeking approval from the Municipality's Council, the Municipality contacted an independent expert to determine whether the price calculated by SJB was a market-compliant price. In its report of 11 February 2009, the expert concluded that EUR 4 million (value on 1 January 2010) could, on the basis of the residual value method, be considered a market-compliant price for the land on the Damplein in 2010, taking into account the fact that SJB committed

([12]) Article 6.6 of the 2004 Cooperation Agreement of 2004 provides that: 'Indien de vereiste bouwvergunningen als gevolg van niet aan de aanvragende partij toe te rekenen planologische belemmeringen niet binnen de terzake in het ATS voorziene termijn verkregen worden, zullen Partijen dienaangaande — daaronder begrepen aangaande grondprijsberekening en grondprijsbetaaldata — nadere afspraken met elkaar maken die zo dicht mogelijk blijven bij de inhoud van deze SOK, respectievelijk de Bilaterale overeenkomsten.'

to sell the unsold housing units to an investor and had agreed to lower its initially planned profit and risk margin from 5 % to 2 %. The report did not take into account the lowering of the ground exploitation fee and quality fee.

(36) On the basis of this report and because, according to the Dutch authorities, the Municipality feared further delays and considered it of general interest that the construction phase was started as soon as possible, the Municipality's Council, at its meeting of 10 March 2009, decided that the PPP would agree to lower the price and fees originally agreed in 2004 with SJB for the land located on the Damplein. A proposal of 18 February 2009 from the Municipality, which was sent to the members of its Council, refers to a decrease in price for the land and a decrease in the ground exploitation and quality fees. The proposal further states that this decrease would turn the ground exploitation phase, which was budgeted to be break-even, into a loss-making project. The proposal also requested the Municipality to make the necessary provision for 50 % of the losses. The proposal further mentions that owing to the financial crisis SJB was not able to obtain the necessary financing for the development of the Damplein.

(37) The price decrease was formalised in an agreement concluded on 1 March 2010 (hereinafter: the 'Supplementary Agreement') between the Municipality, the PPP and SJB. This agreement amended the 2004 Cooperation Agreement, the SJB Project Agreement and the GREX-agreement. Article 2.1.2, first paragraph, sub (i), of the Supplementary Agreement provides that, contrary to what was agreed to in the 2004 Cooperation agreement, the price of the land on the Damplein to be sold to SJB would be EUR 4 million. Article 2.1.2, first paragraph, sub (ii), of the Supplementary Agreement provides that the previously agreed ground exploitation fee and quality fee were no longer due. No reference is made in that second paragraph to the land on the Damplein in particular ([13]).

(38) The Supplementary Agreement also states that SJB started the construction works on the Damplein on 7 July 2009 and that it had to undertake those works without interruption. The works had to be finished by December 2011. In case of late delivery, SJB was to reimburse part of the decreased price. Delivery of the land would take place at the latest in mid-March 2010 and payment would take place at the latest on the day of delivery.

(39) Furthermore, on 13 July 2009, the PPP and SJB concluded a new agreement concerning the underground public parking garage ([14]). According to this agreement, SJB would start the construction works on the public parking garage during the second quarter of 2009 and would complete these within a fixed period of time. The PPP would pay SJB EUR 5,4 million (value on 1 April 2009) for the construction of the public parking garage ([15]); this amount would be fixed until delivery and would not be indexed.

(40) On 15 January 2010, SJB and Wooninvest Projecten BV, a company related to one of the project developers who signed the 2004 Cooperation Agreement, signed a purchase/construction agreement (*koop/aannemingsovereenkomst*) for the purchase of 43 housing units, which would be rented out to private persons by Wooninvest. In the event that SJB found a private purchaser for some of these housing units before 29 January 2010, the parties agreed that these units would not be sold to Wooninvest. The agreement also provides for a period between 29 January 2010 until the delivery of the units to Wooninvest during which SJB can repurchase the units sold to Wooninvest under the same conditions as they were sold to Wooninvest, plus compensation of the costs borne by Wooninvest and an interest of 6 % per year for the period between payment by Wooninvest to SJB and the redelivery of the units from Wooninvest to SJB (Article 24).

3. **THE OPENING DECISION**

(41) By way of the opening decision, the Commission initiated the formal investigation procedure laid down in Article 108(2) TFEU in respect of the retroactive price decrease of the land and the waiver of the ground exploitation and quality fees by the PPP in favour of SJB (hereafter: the 'contested measures') on the grounds that these measures could entail State aid within the meaning of Article 107(1) TFEU and the Commission had doubts as to their compatibility with the internal market.

([13]) Article 2.1.2 point 1 of the Supplementary Agreement provides as follows: 'In afwijking van het bepaalde in een of meer van de in de considerans genoemde overeenkomsten (i) wordt de koopsom van het Verkochte, welke koper bij levering verschuldigd is aan Verkoper, onder de in deze overeenkomst opgenomen voorwaarden nader bepaald op € 4 000 000,- (zegge: vier miljoen euro) exclusief btw kosten Koper Vermeerderd met 5 % rente vanaf 1 januari 2010. (ii) zijn de oorspronkelijk overeengekomen grex en kwaliteitsbijdragen niet verschuldigd, (iii) wordt de grond bouwrijp geleverd. De koopsom is gebaseerd op prijspeil 1 januari 2010 en is niet verrekenbaar.'

([14]) This new agreement refers to 208 parking spaces i.e. fewer than the 225 initially planned.

([15]) This corresponds to the earlier agreed EUR 4,6 million (value on 1 January 2003) indexed at 2,5 % up to 1 January 2010.

(42) In particular, the Commission considered it unlikely that a hypothetical private vendor in a situation similar to that of the Municipality would have agreed to the same price reduction and waiver of fees as required by the market economy investor test (hereinafter: 'MEIT'). By retroactively decreasing the sales price of the land it sold to SJB, the PPP and, therefore, the Municipality decided to carry the risk of a declining housing market. This behaviour is contrary to the Dutch authorities' own assertion that the construction phase of the project was to be entirely at the risk and the expense of the private project developers, including SJB. Since the PPP, as the seller of the land, had no financial involvement in this phase of the project, there was no reason to believe that a hypothetical private seller in a similar situation as the Municipality would agree to retroactively lower an agreed sales price for a plot of land because the intended buyer had problems selling housing units it planned to build on that land. Nor did the waivers granted for the ground exploitation and quality fees seem to conform with the MEIT, as it was unlikely that a private investor would retroactively waive an agreed contribution to its costs without any consideration in return.

(43) Finally, the Commission expressed its doubts as to whether the contested measures could fall within the scope of any of the exceptions laid down in Article 107 TFEU.

4. **COMMENTS FROM THE NETHERLANDS**

(44) By letter dated 18 April 2012, the Dutch authorities submitted their comments on the Commission's opening decision.

4.1. COMMENTS REGARDING THE FACTS

(45) The Dutch authorities specified that, contrary to what was suggested by the wording of Article 2.1.2. of the Supplementary Agreement, the Municipality had not waived the full amounts of the initially agreed ground exploitation fee and quality fee under the 2004 Cooperation Agreement, but rather only those fees that were due by SJB for the housing units to be built on the Damplein. According to the Dutch authorities, those fees amounted together to EUR 511 544 (value on 1 January 2003, which would represent a total value of EUR 719 400 on 1 January 2010). To substantiate their position, the Dutch authorities referred to a proposal concerning the price decrease sent by the Municipality to its Council on 18 February 2009 and to a building programme annexed to the 2004 Cooperation Agreement which allocates a ground exploitation and quality fee of EUR 511 544 to the Damplein.

(46) Furthermore, the Dutch authorities informed the Commission that price decreases with regard to SJB were discussed within the PPP already in 2006 and 2008. In 2006, the PPP apparently decided to lower the land sales price for the commercial premises owing to the fact that less commercial space could be constructed than initially planned, whereas in 2008 the PPP apparently decided to grant SJB compensation for the delay in the delivery of the building permit. These decreases would be granted under the condition that SJB would receive a valid building permit by 1 October 2008. As this was not the case, the parties decided to re-negotiate the decrease again. According to the Dutch authorities, the decrease in price for the land on the Damplein as well as the waived fees should be calculated as set out in Table 1 below.

Table 1

Calculation of the decrease in price and waived fees proposed by the Dutch authorities

Decrease Damplein	value 1.1.2010
Value land	8 622 480
Ground exploitation fee and quality fee	719 400

Decrease Damplein	value 1.1.2010
Total land and fees	9 341 880
Decreases agreed in 2006 and 2008	– 1 734 245
Reduced value	7 607 635
Value supplementary agreement March 2010	– 4 000 000
Total decrease	**3 607 635**

4.2. COMMENTS REGARDING THE EXISTENCE OF STATE AID

(47) The Dutch authorities disagree that the contested measures qualify as State aid within the meaning of Article 107(1) TFEU. In essence, the Dutch authorities hold the view that the contested measures did not confer an advantage on SJB that it would not have obtained under normal market conditions.

(48) Instead, the Dutch authorities are of the opinion that the Municipality acted in accordance with the MEIT, as the non-realisation of the Damplein Project would have had an effect on the entire Leidschendam Centrum Project and would have caused direct and indirect damage to the Municipality.

(49) First, to calculate the direct damage, the Municipality assumed that it would have taken SJB at least 2 years to sell 70 % of the housing units during the crisis period and start the construction works in the absence of the Supplementary Agreement. The Municipality budgeted the direct damage of a further 2-year delay at EUR 2,85 million for the PPP of which 50 % would be borne by the Municipality. Furthermore, it estimated an extra direct cost of EUR 50 000 for the Municipality alone to maintain the deteriorated area (see Table 2).

Table 2

Direct damage calculated by the Dutch authorities

Direct damages during 2 years	PPP	municipality (50 %)
Interest cost over a credit facility (5 % during 2 years outstanding amount on 1.1.2009 EUR 17 million)	1 800 000	900 000
Temporary provision of fences, road signs and maintenance	60 000	30 000
Provisions cost increase (indexation of 2,5 %)	385 000	192 500
Extra planning costs i.e. costs related to the project office such as financial administration, insurance, etc.	600 000	300 000
Maintenance deteriorated area		50 000
Total	**2 845 000**	**1 472 500**

(50) In addition, the Dutch authorities claim that the Municipality would have suffered indirect damage from such a delay consisting in the further deterioration of the public space, loss of confidence in the area by its inhabitants and future purchasers of real estate, costs for the re-destination of shops, damage claims from enterprises, maintenance costs, and changes of plans for the other sub-projects. Such delay could also mean the end of shopping facilities in the development area whose presence contributes to the habitability of the entire area. Already before the start of the project, around 23 % of the shops were vacant and, by 2010, 27 % were out of business. Without the necessary revitalisation, the entire area would further deteriorate.

(51) The Dutch authorities are therefore of the opinion that the Municipality acted as a market economy private investor would, by taking into account the financial forecasts and trying to limit, in its own interest, the direct and indirect damage resulting from a further delay in the project. At the same time, it obtained a guarantee that construction works on the Damplein would be undertaken.

(52) Second, the Dutch authorities submitted that the Municipality had acted as a private investor would by granting the contested measures in return for a commitment from SJB that it would waive its right to invoke the 70 % clause. The fact that SJB could no longer invoke the 70 % clause had an implication on the assumptions made in the initial valuation of the land in 2003 and the price agreed in the 2004 Cooperation Agreement. According to the Dutch authorities, the decrease in the sales price for the land and the waiver of the fees was the consideration which the Municipality had to pay so that SJB would agree to waive its right to invoke the 70 % clause. Without the Supplementary Agreement, SJB would not have started construction on the Damplein.

4.3. COMMENTS REGARDING THE COMPATIBILITY OF THE STATE AID

(53) Should the Commission conclude that the contested measures qualify as State aid, the Dutch authorities contend that this aid would be compatible with the internal market, in accordance with Article 107(3)(c) TFEU.

4.3.1. **General interest**

(54) The Dutch authorities claim that the Municipality had a public interest in the realisation of this project. As a large part of the land on the Damplein lay fallow and the area was deteriorating, the Municipality considered starting the constructions works on the Damplein as crucial not only for the development of the Damplein, but for the entire Leidschendam city centre. In particular, delaying the construction of the underground parking garage could jeopardise the realisation of the other sub-projects.

4.3.2. **Objective of common interest**

(55) According to the Dutch authorities, the revitalisation of Leidschendam city centre contributes to the objective of economic and social cohesion, as laid down in Articles 3 and 174 TFEU. The revitalisation of the city centre makes efficient use of the scarce space available for new housing units, commercial facilities and underground parking in Leidschendam, while the amelioration of the public infrastructure contributes to the cohesion of the entire city centre.

4.3.3. **Appropriateness of the Supplementary Agreement**

(56) The Dutch authorities contend that SJB could not be forced to start construction works on the Damplein owing to the 70 % clause in the 2004 Cooperation Agreement. By the time SJB received a valid building permit, the credit crisis had had its effect on the Dutch real estate market, which made it even more unlikely that SJB would swiftly pre-sell 70 % of the free sector housing units. The 2004 Cooperation Agreement was therefore re-negotiated, since the Municipality considered it of the utmost importance to start the construction works on the Damplein. The Supplementary Agreement was therefore appropriate and necessary for the Municipality to achieve its goal of revitalising the Damplein.

4.3.4. **Proportionality**

(57) In order for the Municipality to obtain an immediate start of the construction works, SJB had to give up its right to invoke the 70 % clause and had to start the construction works with the risk that the housing units might not be sold. Therefore, the previously agreed price was recalculated by SJB. Subsequently, this calculation was verified by an independent expert who declared the agreed price as market-compliant.

(58) According to the Dutch authorities, the fact that the price is declared market-compliant by an independent expert indicates that the price decrease is proportionate. This would also imply that no overcompensation of SJB has taken place. The decrease in the price was the consideration which the Municipality had to pay so that SJB would agree to waive its right to invoke the 70 % clause. Without the Supplementary Agreement, SJB would not have started construction on the Damplein.

(59) Furthermore, through its participation in the PPP, SJB will itself bear 50 % of the risks and the costs of the ground exploitation, thereby participating in the agreed decrease of the sales price. In order to arrive at break-even for the ground exploitation, it was decided that SJB should contribute EUR 2,6 million to the PPP (point 5.2.1 Ground Exploitation Masterplan Damcentrum) and, as the PPP bore 50 % of the costs of the school, 25 % of those costs is at the expense of SJB (EUR 0,7 million).

4.3.5. **Distortion of competition**

(60) Finally, the Dutch authorities claim that the retroactive price decrease concerns the building of 67 housing units and 14 commercial premises which will be sold at market-compliant prices valued by an independent expert. Therefore, the distortion of competition would be of a very local nature and would not outweigh the positive effects of the completion of the project.

5. COMMENTS FROM THIRD PARTIES

(61) Only the Stichting provided comments in response to the opening decision. The Stichting welcomes the opening decision, but is of the opinion that the contested measures described in this decision are part of a much wider aid operation and refers to its complaint and additional submissions. In particular, the Stichting refers to the alleged free transfer of land by the Municipality to the PPP.

(62) The Stichting is of the opinion that the delay in the project was not due to the national court proceedings initiated by them, nor that the financial crisis delayed the sales of the housing units on the Damplein. According to the Stichting, there has been no market demand for the kind of housing units proposed for the Damplein ever since the beginning of the project in 2004.

(63) According to the Stichting, the land was not valued by an independent expert, neither in 2003, nor in 2009.

6. COMMENTS FROM THE DUTCH AUTHORITIES ON THIRD PARTY COMMENTS

(64) The Dutch authorities stated that the set-up of the project by the Municipality has been transparent and described in the 'Concept Masterplan Damcentrum', approved on 6 April 2004. Only financially sensitive agreements or parts thereof were kept confidential.

(65) Concerning the free transfer of land by the Municipality to the PPP, the Municipality explained that this is not part of the opening decision and referred to its submissions to the Commission in 2009, in which it explained that that transfer was not free of charge since the PPP provided services in return for it. In its earlier submissions, the Municipality stressed that the works carried out by the PPP should normally have been borne by the Municipality.

(66) According to the Dutch authorities, both the different legal procedures initiated by the Stichting, which generated a lot of negative publicity for the project, and the credit crisis had a negative effect on the sales of housing units on the Damplein. However, when initial sales started in 2007, almost a third of the housing units were sold. These sales agreements were later cancelled owing to the late delivery of the necessary building permits. It can therefore be concluded that there was a demand for these units at the beginning of the project.

(67) The Dutch authorities further note that the independent experts were selected by the Municipality, which had no interest in obtaining a low value for the land.

7. **ASSESSMENT OF THE CONTESTED MEASURES**

7.1. THE EXISTENCE OF STATE AID WITHIN THE MEANING OF ARTICLE 107(1) TFEU

(68) Article 107(1) TFEU provides that: 'any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods shall, in so far as it affects trade between Member States, be incompatible with the internal market'.

(69) First, it has not been challenged that SJB as well as Schouten de Jong and Bouwfonds, the members of the partnership, qualify as undertakings for the purpose of this provision, since they pursue economic activities offering goods and services on the market, as indicated in the opening decision.

(70) Second, the contested measures were granted by the PPP, which means with the necessary agreement of the Municipality, which holds a 50 % stake in the PPP. Since the decision-making of the PPP is by unanimity and these measures could not have been agreed to without the express approval of the Municipality's Council, the decision to grant the contested measures by the PPP are imputable to the State. Furthermore, had the Municipality not agreed to grant the contested measures, the extent of its financial exposure resulting from the PPP would have been proportionally lower. Therefore, the price decrease and waived fees agreed to by the PPP imply a loss of State resources ([16]).

(71) Third, since the measures benefit only SJB and, ultimately, Schouten de Jong and Bouwfonds, the members of the partnership, they must be considered selective in nature.

(72) However, the Dutch authorities have challenged the contention that the Municipality, by agreeing to a reduction in the initially agreed sales price for the land sold to SJB and a waiver of fees, conferred an economic advantage on SJB which it would not have otherwise obtained under normal market conditions.

(73) For the reasons set out in recitals 74 to 83 below, the Commission can agree with the Dutch authorities on this point, given the specific circumstances of the case and the particular context of the contested measures, including in particular the specific legal position of the Municipality on the basis of the 2004 Cooperation agreement and several bilateral agreements with SJB.

7.1.1. **The existence of an advantage**

(74) It is settled case law that economic transactions carried out by a public body or a public undertaking do not confer an advantage on its counterpart, and therefore do not constitute aid, if they are carried out in line with normal market conditions ([17]). In order to determine whether an economic transaction is carried out under normal market conditions, the behaviour of public authorities or undertakings should be compared with that of similar private economic operators under normal market conditions to determine whether the economic transactions carried out by such authorities or undertakings grant an advantage to their counterparts. This is known as the 'market economy operator principle' (MEOP).

([16]) As confirmed by the General Court in its judgment of 30 June 2015, see footnote 3, paragraphs 62-72.
([17]) Case C-39/94 *SFEI and Others* EU:C:1996:285,paragraphs 60-61.

(75) Therefore, to determine whether the Municipality, by agreeing to a reduction in the initially agreed sales price for the land sold to SJB and the waiver of fees, conferred an economic advantage on SJB, it needs to be examined whether the Municipality respected the MEOP. That is, whether a hypothetical private vendor in the same situation as the Municipality would have agreed to the same price reduction and fee waivers, so as to preclude the existence of an advantage as a result of the contested measures.

(76) In this connection all relevant aspects of the contested measures and their context should be taken into account ([18]), in particular the legal position of the Municipality and SJB in view of the 2004 Cooperation agreement and the different bilateral agreements, as well as the complexity of the project, which was part of a wider real estate project.

(77) The Dutch authorities submit that the Municipality acted in accordance with the MEOP, as the non-realisation of the Damplein Project would have had an effect on the entire Leidschendam Centrum Project and would have caused damage to the Municipality. In this regard the Dutch authorities submitted in essence the following. First, according to the Dutch authorities, the Municipality had an important financial and social interest in starting the construction works on the Damplein as soon as possible, since further delays would lead to direct and indirect damage for the Municipality and this damage would be higher than the cost to the Municipality of agreeing to the contested measures. Because of this financial interest the Municipality decided to review the agreements that were made with SJB. Second, the Dutch authorities contend that the Municipality behaved as a private investor by accepting a commitment from SJB to waive its right to invoke the 70 % clause of the 2004 Cooperation Agreement in return for the contested measures.

(78) The Commission notes in this regard the following. In the case at hand it is not contested, as stated in recital 30 above, that the construction works on the Damplein, which were initially planned to start in November 2005, were delayed since owing to several national court proceedings the necessary building permits could only be obtained in November 2008. In these circumstances SJB was no longer willing to implement the 2004 Cooperation agreement as initially agreed and, on the basis of contractual provisions, it requested the Municipality to renegotiate the initial arrangements.

(79) Indeed it follows from the contractual provisions of the 2004 Cooperation agreement that the delay in the building permits required the parties to re-negotiate the arrangements agreed in 2004. In particular, Article 6.6 of the Cooperation agreement provides that the parties in case of a delay of the building permit should re-negotiate the initially agreed price for the land and the payment dates. Furthermore, Article 16 of the same agreement stipulated that the agreement can only be annulled totally or partly in the specifically listed situations. One of the situations listed is 'unforeseen circumstance as referred to in Article 6:258 of the Civil Code': if one of the parties is then of the opinion that the other parties cannot require from him an unchanged execution of the agreement, they have to enter into negotiations in order to arrive at mutually agreed modified terms. Finally, Article 18 of the Cooperation agreement stipulates that disputes are to be resolved by mutual agreement or be the subject of arbitration.

(80) It follows from these contractual provisions that it was the intention of the parties to maintain their cooperation and limit a possible annulment of the cooperation to situations where no agreement could be reached or the parties failed to fulfil their obligations in such a way that re-negotiations would no longer be possible. In this light it should also be taken into account that the project was complex, consisted of several sub-projects that were linked to each other and that the wider real estate project involved several parties that were connected to the 2004 Cooperation agreement.

(81) Furthermore, although the Municipality was only involved in the ground exploitation phase of the real estate project, while the construction phase of the project was at the risk and expense of the private developers concerned, including SJB, it is established that in 2008, when SJB communicated to the Municipality that it was not willing to start with the construction works, the project was still at the ground exploitation phase. In this phase the municipality was financially involved in the project, since it bore 50 % of the costs and risks. The costs of the ground exploitation phase of the project included the costs of making the land ready for construction, the costs for the public section of the underground parking garage and 50 % of the construction costs of the school. Therefore it was in the financial interest of the Municipality that the ground exploitation works were carried out promptly so that the land could be delivered and the sales price of the land was paid, pursuant to Article 10.5 of the 2004 Cooperation agreement. In these particular circumstances, the Commission accepts that, while the public authority considerations of the Municipality in the realisation of the project are not relevant for the MEOP, a hypothetical private operator, who would have been in a similar contractual and financial position, would have sought to renegotiate the price rather than immediately annulling the agreement and putting out a call for tender,

([18]) Case T-244/08 *Konsum Nord* v *Commission* EU:T:2011:732, paragraph 57 and the case-law cited.

especially as the contract for the construction of the parking garage had already been awarded to SJB. The Commission also notes in this regard that, at the time of the re-negotiations, the financial crisis had started and affected the Dutch real-estate market in particular.

(82) The renegotiations between the parties resulted in the Autumn of 2008 in a proposal by SJB to the PPP to pay EUR 4 million for the land, whereby SJB would start the construction works in April 2009 regardless of whether the housing units had been pre-sold. In addition, SJB was willing to waive its right to invoke the 70 % clause contained in the 2004 Cooperation agreement. Furthermore, half of the reduced costs of the sales price would be borne by SJB itself, through its participation in the PPP.

(83) An independent expert, Fakton, commissioned by the Municipality concluded in its report of 11 February 2009 that the EUR 4 million (value on 1 January 2010) agreed as the new price for the land could be considered as a market-compliant price for the land concerned, taking into account also the further commitments by SJB.

(84) Under these circumstances, the Commission has no reason to believe that the behaviour of the Municipality, in agreeing to a price of EUR 4 million in the particular circumstances, is not in line with normal market conditions.

(85) In the light of the above, the Commission considers that the decrease of the sales price of land and the waiver of the ground exploitation fee and quality fee agreed in the Supplementary Agreement between the Municipality, the PPP and SJB does not contain State aid within the meaning of Article 107(1) TFEU,

HAS ADOPTED THIS DECISION:

Article 1

The decrease of the sales price of land and a waiver of the ground exploitation fee and quality fee agreed on 1 March 2010 by the Municipality of Leidschendam-Voorburg in favour of Schouten-de Jong Bouwfonds, a partnership consisting of Schouten & De Jong Projectontwikkeling BV and Bouwfonds Ontwikkeling BV, does not constitute State aid within the meaning of Article 107(1) of the Treaty on the Functioning of the European Union.

Article 2

This Decision is addressed to the Kingdom of the Netherlands.

Done at Brussels, 15 January 2016.

For the Commission

Margrethe VESTAGER

Member of the Commission

COMMISSION IMPLEMENTING DECISION (EU) 2016/650

of 25 April 2016

laying down standards for the security assessment of qualified signature and seal creation devices pursuant to Articles 30(3) and 39(2) of Regulation (EU) No 910/2014 of the European Parliament and of the Council on electronic identification and trust services for electronic transactions in the internal market

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union,

Having regard to Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC ([1]), and in particular Articles 30(3) and 39(2) thereof,

Whereas:

(1) Annex II to Regulation (EU) No 910/2014 sets out the requirements for qualified electronic signature creation devices and qualified electronic seal creation devices.

(2) The task of drawing up the technical specifications needed for the production and placing on the market of products, taking into account the current stage of technology, is carried out by organisations competent in the standardisation area.

(3) ISO/IEC (International Organisation for Standardization/International Electrotechnical Commission) establishes the general concepts and principles of IT security and specifies the general model of assessment to be used as the basis for evaluation of security properties of IT products.

(4) The European Committee for Standardisation (CEN) has developed, under the standardisation mandate M/460 given by the Commission, standards for qualified electronic signature and seals creation devices, where the electronic signature creation data or electronic seal creation data is held in an entirely but not necessarily exclusively user-managed environment. These standards are considered suitable for the assessment of conformity of such devices with the relevant requirements set out in Annex II to Regulation (EU) No 910/2014.

(5) Annex II to Regulation (EU) No 910/2014 sets that only a qualified trust service provider can manage electronic signature creation data on behalf of a signatory. Security requirements and their respective certification specifications are different when the signatory physically possesses a product and when a qualified trust service provider operates on behalf of the signatory. To address both situations as well as to favour the development over time of products and assessment standards suitable to particular needs, the Annex to this Decision should list standards covering both situations.

(6) At the time this Commission Decision has been adopted, several trust service providers already offer solutions managing electronic signature creation data on behalf of their customers. Certifications of products are currently limited to the hardware security modules certified against different standards but are not yet certified specifically against the requirements for qualified signature and seal creation devices. Nevertheless, published standards, such as EN 419 211 (applicable to electronic signature created in an entirely but not necessarily exclusively user-managed environment) do not yet exist for an equally important market of certified remote products. Since standards that might be appropriate for such purposes are currently under development, when such standards are available and assessed as compliant with the requirements set out in Annex II to Regulation (EU) No 910/2014, the Commission will complement this Decision. Until the moment where the list of such standards is established, an alternative process can be used for the assessment of the conformity of such products under the conditions provided for under point (b) of Article 30(3) of Regulation (EU) No 910/2014.

(7) The Annex lists EN 419 211 which consists of different parts (1 to 6) covering different situations. EN 419 211 Part 5 and 419 211 Part 6 give extensions related to the qualified signature creation device environment, such as

([1]) OJ L 257, 28.8.2014, p. 73.

communication with trusted signature creation applications. Product manufacturers are free to apply such extensions. According to recital 56 of Regulation (EU) No 910/2014, the scope of certification under Articles 30 and 39 of that Regulation is limited to protecting the signature creation data and signature creation applications are excluded from the scope of the certification.

(8) To ensure that the electronic signatures or seals generated by a qualified signature or seal creation device are reliably protected against forgery, as required by Annex II to Regulation (EU) No 910/2014, suitable cryptographic algorithms, key lengths and hash functions are the prerequisite for the security of the certified product. Since this matter has not been harmonised at European level, Member States should cooperate to agree on cryptographic algorithms, key lengths and hash functions to be used in the field of electronic signatures and seals.

(9) The adoption of the present Decision renders Commission Decision 2003/511/EC [1] obsolete. It should therefore be repealed.

(10) The measures provided for in this Decision are in accordance with the opinion of the Committee referred to in Article 48 of Regulation (EU) No 910/2014,

HAS ADOPTED THIS DECISION:

Article 1

1. The standards for the security assessment of information technology products that apply to the certification of qualified electronic signature creation devices or qualified electronic seal creation devices according to point (a) of Article 30(3) or 39(2) of Regulation (EU) No 910/2014, where the electronic signature creation data or electronic seal creation data is held in an entirely but not necessarily exclusively user-managed environment are listed in the Annex to this Decision.

2. Until the establishment by the Commission of a list of standards for the security assessment of information technology products that apply to the certification of qualified electronic signature creation devices or qualified electronic seal creation devices, where a qualified trust service provider manages the electronic signature creation data or electronic seal creation data on behalf of a signatory or of a creator of a seal, the certification of such products shall be based on a process that, pursuant to Article 30(3)(b), uses security levels comparable to those required by Article 30(3)(a) and that is notified to the Commission by the public or private body referred to in paragraph 1 of Article 30 of Regulation (EU) No 910/2014.

Article 2

Decision 2003/511/EC is hereby repealed.

Article 3

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

Done at Brussels, 25 April 2016.

For the Commission
The President
Jean-Claude JUNCKER

[1] Commission Decision 2003/511/EC of 14 July 2003 on the publication of reference numbers of generally recognised standards for electronic signature products in accordance with Directive 1999/93/EC of the European Parliament and of the Council (OJ L 175, 15.7.2003, p. 45).

ANNEX

LIST OF STANDARDS REFERRED TO IN ARTICLE 1(1)

— ISO/IEC 15408 — Information technology — Security techniques — Evaluation criteria for IT security, Parts 1 to 3 as listed below:

  — ISO/IEC 15408-1:2009 — Information technology — Security techniques — Evaluation criteria for IT security — Part 1. ISO, 2009.

  — ISO/IEC 15408-2:2008 — Information technology — Security techniques — Evaluation criteria for IT security — Part 2. ISO, 2008.

  — ISO/IEC 15408-3:2008 — Information technology — Security techniques — Evaluation criteria for IT security — Part 3. ISO, 2008,

  and

— ISO/IEC 18045:2008: Information technology — Security techniques — Methodology for IT security evaluation,

  and

— EN 419 211 — Protection profiles for secure signature creation device, Parts 1 to 6 — as appropriate — as listed below:

  — EN 419211-1:2014 — Protection profiles for secure signature creation device — Part 1: Overview

  — EN 419211-2:2013 — Protection profiles for secure signature creation device — Part 2: Device with key generation

  — EN 419211-3:2013 — Protection profiles for secure signature creation device — Part 3: Device with key import

  — EN 419211-4:2013 — Protection profiles for secure signature creation device — Part 4: Extension for device with key generation and trusted channel to certificate generation application

  — EN 419211-5:2013 — Protection profiles for secure signature creation device — Part 5: Extension for device with key generation and trusted channel to signature creation application

  — EN 419211-6:2014 — Protection profiles for secure signature creation device — Part 6: Extension for device with key import and trusted channel to signature creation application

CORRIGENDA

Corrigendum to Commission Regulation (EU) 2016/71 of 26 January 2016 amending Annexes II, III and V to Regulation (EC) No 396/2005 of the European Parliament and of the Council as regards maximum residue levels for 1-methylcyclopropene, flonicamid, flutriafol, indolylacetic acid, indolylbutyric acid, pethoxamid, pirimicarb, prothioconazole and teflubenzuron in or on certain products

(Official Journal of the European Union L 20 of 27 January 2016)

On page 17, Annex, point (1)(b), the text in the table is replaced by the following text:

'Pesticide residues and maximum residue levels (mg/kg)

Code number	Groups and examples of individual products to which the MRLs apply [a]	Flonicamid: sum of flonicamid, TFNA and TFNG expressed as flonicamid (R)	Flutriafol	Pirimicarb (R)	Prothioconazole: prothioconazole-desthio (sum of isomers) (F)	Teflubenzuron (F)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
0100000	**FRUITS, FRESH or FROZEN; TREE NUTS**					
0110000	**Citrus fruits**	**0,15 (+)**	**0,01** (*)	3	**0,01** (*)	**0,01** (*)
0110010	Grapefruits					
0110020	Oranges					
0110030	Lemons					
0110040	Limes					
0110050	Mandarins					
0110990	Others					
0120000	**Tree nuts**	**0,06** (*)	**0,02** (*)	**0,02** (*)	0,02 (*)	**0,02** (*)
0120010	Almonds					
0120020	Brazil nuts					
0120030	Cashew nuts					
0120040	Chestnuts					
0120050	Coconuts					
0120060	Hazelnuts/cobnuts					
0120070	Macadamias					
0120080	Pecans					
0120090	Pine nut kernels					

(1)	(2)	(3)	(4)	(5)	(6)	(7)
0120100	Pistachios					
0120110	Walnuts					
0120990	Others					
0130000	**Pome fruits**	**0,3**	**0,4 (+)**		**0,01** (*)	**1**
0130010	Apples			**0,5 (+)**		**(+)**
0130020	Pears			**0,5 (+)**		
0130030	Quinces			**1,5 (+)**		
0130040	Medlars			**1**		
0130050	Loquats/Japanese medlars			**1**		
0130990	Others			**0,01** (*)		
0140000	**Stone fruits**				**0,01** (*)	
0140010	Apricots	**0,03** (*)	**0,01** (*)	**3**		**0,01** (*)
0140020	Cherries (sweet)	**0,4 (+)**	**1**	**5 (+)**		**0,01** (*)
0140030	Peaches	**0,4**	0,6	**1,5 (+)**		**0,01** (*)
0140040	Plums	**0,3 (+)**	0,4	**3**		**0,1** (*)
0140990	Others	**0,03** (*)	**0,01** (*)	**0,01** (*)		**0,01** (*)
0150000	**Berries and small fruits**	**0,03** (*)				**0,01** (*)
0151000	(a) *grapes*			**0,01** (*)	**0,01** (*)	
0151010	Table grapes		0,8			
0151020	Wine grapes		**1,5 (+)**			
0152000	(b) *strawberries*		**0,5 (+)**	**1,5**	**0,01** (*)	
0153000	(c) *cane fruits*		**0,01** (*)	**4 (+)**	**0,01** (*)	
0153010	Blackberries					
0153020	Dewberries					
0153030	Raspberries (red and yellow)					
0153990	Others					
0154000	(d) *other small fruits and berries*		**0,01** (*)	**1**		
0154010	Blueberries				**0,01** (*)	
0154020	Cranberries				**0,15**	
0154030	Currants (black, red and white)				**0,01** (*)	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
0154040	Gooseberries (green, red and yellow)				**0,01** (*)	
0154050	Rose hips				**0,01** (*)	
0154060	Mulberries (black and white)				**0,01** (*)	
0154070	Azaroles/Mediterranean medlars				**0,01** (*)	
0154080	Elderberries				**0,01** (*)	
0154990	Others				**0,01** (*)	
0160000	**Miscellaneous fruits with**	**0,03** (*)		**0,01** (*)	**0,01** (*)	**0,01** (*)
0161000	(a) *edible peel*		**0,01** (*)			
0161010	Dates					
0161020	Figs					
0161030	Table olives					
0161040	Kumquats					
0161050	Carambolas					
0161060	Kaki/Japanese persimmons					
0161070	Jambuls/jambolans					
0161990	Others					
0162000	(b) *inedible peel, small*		**0,01** (*)			
0162010	Kiwi fruits (green, red, yellow)					
0162020	Litchis/lychees					
0162030	Passionfruits/maracujas					
0162040	Prickly pears/cactus fruits					
0162050	Star apples/cainitos					
0162060	American persimmons/Virginia kaki					
0162990	Others					
0163000	(c) *inedible peel, large*					
0163010	Avocados		**0,01** (*)			
0163020	Bananas		0,3			
0163030	Mangoes		**0,01** (*)			
0163040	Papayas		**0,01** (*)			
0163050	Granate apples/pomegranates		**0,01** (*)			
0163060	Cherimoyas		**0,01** (*)			
0163070	Guavas		**0,01** (*)			
0163080	Pineapples		**0,01** (*)			

(1)	(2)	(3)	(4)	(5)	(6)	(7)
0163090	Breadfruits		**0,01** (*)			
0163100	Durians		**0,01** (*)			
0163110	Soursops/guanabanas		**0,01** (*)			
0163990	Others		**0,01** (*)			
0200000	**VEGETABLES, FRESH or FROZEN**					
0210000	**Root and tuber vegetables**			**0,05**		
0211000	(a) *potatoes*	**0,09**	**0,01** (*)		0,02 (*)	**0,05**
0212000	(b) *tropical root and tuber vegetables*	**0,03** (*)	**0,01** (*)		**0,01** (*)	**0,01** (*)
0212010	Cassava roots/manioc					
0212020	Sweet potatoes					
0212030	Yams					
0212040	Arrowroots					
0212990	Others					
0213000	(c) *other root and tuber vegetables except sugar beets*	**0,03** (*)				**0,01** (*)
0213010	Beetroots		**0,06** (+)		**0,1** (+)	
0213020	Carrots		**0,01** (*)		**0,1** (+)	
0213030	Celeriacs/turnip rooted celeries		**0,01** (*)		**0,01** (*)	
0213040	Horseradishes		**0,01** (*)		**0,1** (+)	
0213050	Jerusalem artichokes		**0,01** (*)		**0,01** (*)	
0213060	Parsnips		**0,01** (*)		**0,1** (+)	
0213070	Parsley roots/Hamburg roots parsley		**0,01** (*)		**0,1** (+)	
0213080	Radishes		**0,01** (*)		**0,01** (*)	
0213090	Salsifies		**0,01** (*)		**0,1** (+)	
0213100	Swedes/rutabagas		**0,01** (*)		**0,1** (+)	
0213110	Turnips		**0,01** (*)		**0,1** (+)	
0213990	Others		**0,01** (*)		**0,01** (*)	
0220000	**Bulb vegetables**	**0,03** (*)	**0,01** (*)			**0,01** (*)
0220010	Garlic			**0,1**	**0,01** (*)	
0220020	Onions			**0,1**	**0,05** (+)	
0220030	Shallots			**0,01** (*)	**0,05** (+)	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
0220040	Spring onions/green onions and Welsh onions			**0,01** (*)	**0,01** (*)	
0220990	Others			**0,01** (*)	**0,01** (*)	
0230000	**Fruiting vegetables**					
0231000	(a) *solanacea*			**0,5**	**0,01** (*)	**1,5**
0231010	Tomatoes	**0,5** (+)	**0,6** (+)			(+)
0231020	Sweet peppers/bell peppers	**0,3**	1			
0231030	Aubergines/eggplants	**0,5** (+)	**0,01** (*)			
0231040	Okra/lady's fingers	**0,03** (*)	**0,01** (*)			
0231990	Others	**0,03** (*)	**0,01** (*)			
0232000	(b) *cucurbits with edible peel*	**0,5**	**0,01** (*)	1	**0,01** (*)	
0232010	Cucumbers					**0,5**
0232020	Gherkins					**1,5**
0232030	Courgettes	(+)				**0,5**
0232990	Others					**0,5**
0233000	(c) *cucurbits with inedible peel*	**0,4** (+)			**0,01** (*)	**0,01** (*)
0233010	Melons		**0,2** (+)	**0,4** (+)		
0233020	Pumpkins		**0,01** (*)	1		
0233030	Watermelons		**0,2** (+)	**0,5** (+)		
0233990	Others		**0,01** (*)	**0,01** (*)		
0234000	(d) *sweet corn*	**0,03** (*)	**0,01** (*)	**0,05**	**0,02**	**0,01** (*)
0239000	(e) *other fruiting vegetables*	**0,03** (*)	**0,01** (*)	**0,01** (*)	**0,01** (*)	**0,01** (*)
0240000	**Brassica vegetables (excluding brassica roots and brassica baby leaf crops)**		**0,01** (*)			
0241000	(a) *flowering brassica*	**0,03** (*)		**0,5**	**0,05** (+)	**0,01** (*)
0241010	Broccoli					
0241020	Cauliflowers					
0241990	Others					
0242000	(b) *head brassica*					
0242010	Brussels sprouts	**0,6**		**0,6** (+)	**0,1** (+)	**0,5** (+)
0242020	Head cabbages	**0,03** (*)		**0,5**	**0,09** (+)	**0,2** (+)
0242990	Others	**0,03** (*)		**0,01** (*)	**0,01** (*)	**0,01** (*)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
0243000	(c) *leafy brassica*	**0,03** (*)			**0,01** (*)	**0,01** (*)
0243010	Chinese cabbages/pe-tsai			**0,5**		
0243020	Kales			**0,3** (+)		
0243990	Others			**0,01** (*)		
0244000	(d) *kohlrabies*	**0,03** (*)		0,5	**0,01** (*)	**0,01** (*)
0250000	**Leaf vegetables, herbs and edible flowers**					
0251000	(a) *lettuces and salad plants*	**0,03** (*)	**0,01** (*)		**0,01** (*)	**0,01** (*)
0251010	Lamb's lettuces/corn salads			**15**		
0251020	Lettuces			**1,5**		
0251030	Escaroles/broad-leaved endives			**1** (+)		
0251040	Cresses and other sprouts and shoots			**15**		
0251050	Land cresses			**15**		
0251060	Roman rocket/rucola			**15**		
0251070	Red mustards			**15**		
0251080	Baby leaf crops (including brassica species)			**15**		
0251990	Others			**0,01** (*)		
0252000	(b) *spinaches and similar leaves*	**0,03** (*)	**0,01** (*)	**0,06**	**0,01** (*)	**0,01** (*)
0252010	Spinaches					
0252020	Purslanes			(+)		
0252030	Chards/beet leaves			(+)		
0252990	Others					
0253000	(c) *grape leaves and similar species*	**0,03** (*)	**0,01** (*)	**0,01** (*)	**0,01** (*)	**0,01** (*)
0254000	(d) *watercresses*	**0,03** (*)	**0,01** (*)	**0,01** (*)	**0,01** (*)	**0,01** (*)
0255000	(e) *witloofs/Belgian endives*	**0,03** (*)	**0,01** (*)	**0,05** (+)	**0,01** (*)	**0,01** (*)
0256000	(f) *herbs and edible flowers*	**0,06** (*)	**0,02** (*)		0,02 (*)	**0,02** (*)
0256010	Chervil			**0,8**		
0256020	Chives			**0,8**		
0256030	Celery leaves			**3**		
0256040	Parsley			**3**		
0256050	Sage			**0,8**		

(1)	(2)	(3)	(4)	(5)	(6)	(7)
0256060	Rosemary			**0,8**		
0256070	Thyme			**0,8**		
0256080	Basil and edible flowers			**0,8**		
0256090	Laurel/bay leave			**0,8**		
0256100	Tarragon			**0,8**		
0256990	Others			**0,02** (*)		
0260000	**Legume vegetables**		**0,01** (*)		**0,01** (*)	**0,01** (*)
0260010	Beans (with pods)	**0,03** (*)		**1,5 (+)**		
0260020	Beans (without pods)	**0,03** (*)		**0,7**		
0260030	Peas (with pods)	**0,03** (*)		**1,5 (+)**		
0260040	Peas (without pods)	**0,7**		**0,7**		
0260050	Lentils	**0,03** (*)		0,7		
0260990	Others	**0,03** (*)		**0,01** (*)		
0270000	**Stem vegetables**	**0,03** (*)	**0,01** (*)			**0,01** (*)
0270010	Asparagus			**0,01** (*)	**0,01** (*)	
0270020	Cardoons			**0,2 (+)**	**0,01** (*)	
0270030	Celeries			**0,15 (+)**	**0,01** (*)	
0270040	Florence fennels			**2**	**0,01** (*)	
0270050	Globe artichokes			5	**0,01** (*)	
0270060	Leeks			**0,01** (*)	**0,06 (+)**	
0270070	Rhubarbs			**2**	**0,01** (*)	
0270080	Bamboo shoots			**0,01** (*)	**0,01** (*)	
0270090	Palm hearts			**0,01** (*)	**0,01** (*)	
0270990	Others			**0,01** (*)	**0,01** (*)	
0280000	**Fungi, mosses and lichens**	**0,03** (*)	**0,01** (*)	**0,01** (*)	**0,01** (*)	**0,01** (*)
0280010	Cultivated fungi					
0280020	Wild fungi					
0280990	Mosses and lichens					
0290000	**Algae and prokaryotes organisms**	**0,03** (*)	**0,01** (*)	**0,01** (*)	**0,01** (*)	**0,01** (*)
0300000	**PULSES**	**0,03** (*)	**0,01** (*)	**0,2**		**0,01** (*)
0300010	Beans				**0,05 (+)**	
0300020	Lentils				**1 (+)**	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
0300030	Peas				**1 (+)**	
0300040	Lupins/lupini beans				**1 (+)**	
0300990	Others				**0,01** (*)	
0400000	**OILSEEDS AND OIL FRUITS**					**0,02** (*)
0401000	**Oilseeds**					
0401010	Linseeds	**0,06** (*)	**0,02** (*)	**0,05 (+)**	**0,09 (+)**	
0401020	Peanuts/groundnuts	**0,06** (*)	**0,15**	**0,02** (*)	**0,02** (*) **(+)**	
0401030	Poppy seeds	**0,06** (*)	**0,02** (*)	**0,05**	**0,09 (+)**	
0401040	Sesame seeds	**0,06** (*)	**0,02** (*)	**0,02** (*)	**0,02** (*)	
0401050	Sunflower seeds	**0,06** (*)	**0,02** (*)	**0,1**	**0,02** (*)	
0401060	Rapeseeds/canola seeds	**0,06** (*)	**0,5**	**0,05 (+)**	**0,15 (+)**	
0401070	Soyabeans	**0,06** (*)	0,4	**0,02** (*)	**0,2**	
0401080	Mustard seeds	**0,06** (*)	**0,5**	**0,05 (+)**	**0,09 (+)**	
0401090	Cotton seeds	**0,2**	**0,02** (*)	**0,02** (*)	**0,02** (*)	
0401100	Pumpkin seeds	**0,06** (*)	**0,02** (*)	**0,02** (*)	**0,02** (*)	
0401110	Safflower seeds	**0,06** (*)	**0,02** (*)	**0,02** (*)	**0,02** (*)	
0401120	Borage seeds	**0,06** (*)	**0,02** (*)	**0,1 (+)**	**0,02** (*)	
0401130	Gold of pleasure seeds	**0,06** (*)	**0,5**	**0,05**	**0,04 (+)**	
0401140	Hemp seeds	**0,06** (*)	**0,02** (*)	**0,02** (*)	**0,02** (*)	
0401150	Castor beans	**0,06** (*)	**0,02** (*)	**0,02** (*)	**0,02** (*)	
0401990	Others	**0,06** (*)	**0,02** (*)	**0,02** (*)	**0,02** (*)	
0402000	**Oil fruits**	**0,06** (*)	**0,02** (*)	**0,02** (*)	0,02 (*)	
0402010	Olives for oil production					
0402020	Oil palms kernels					
0402030	Oil palms fruits					
0402040	Kapok					
0402990	Others					
0500000	**CEREALS**			**0,05**		**0,01** (*)
0500010	Barley	**0,4**	**0,15**		**0,2 (+)**	
0500020	Buckwheat and other pseudo-cereals	**0,03** (*)	**0,01** (*)		**0,01** (*)	
0500030	Maize/corn	**0,03** (*)	**0,01** (*)		**0,1**	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
0500040	Common millet/proso millet	**0,03** (*)	**0,01** (*)		**0,01** (*)	
0500050	Oat	**0,4**	**0,01** (*)		**0,05** (+)	
0500060	Rice	**0,03** (*)	**1,5** (+)		**0,01** (*)	
0500070	Rye	**2** (+)	**0,15**		**0,05** (+)	
0500080	Sorghum	**0,03** (*)	**0,01** (*)		**0,01** (*)	
0500090	Wheat	**2** (+)	**0,15**		**0,1** (+)	
0500990	Others	**0,03** (*)	**0,01** (*)		**0,01** (*)	
0600000	**TEAS, COFFEE, HERBAL INFUSIONS, COCOA AND CAROBS**	**0,1** (*)			**0,05** (*)	**0,05** (*)
0610000	**Teas**		0,05 (*)	0,05 (*)		
0620000	**Coffee beans**		0,15	0,05 (*)		
0630000	**Herbal infusions from**		0,05 (*)			
0631000	(a) *flowers*			**10** (+)		
0631010	Chamomile					
0631020	Hibiscus/roselle					
0631030	Rose					
0631040	Jasmine					
0631050	Lime/linden					
0631990	Others					
0632000	(b) *leaves and herbs*			**10** (+)		
0632010	Strawberry					
0632020	Rooibos					
0632030	Mate/maté					
0632990	Others					
0633000	(c) *roots*			**0,05** (*)		
0633010	Valerian					
0633020	Ginseng					
0633990	Others					
0639000	(d) *any other parts of the plant*			**0,05** (*)		
0640000	**Cocoa beans**		0,05 (*)	0,05 (*)		

(1)	(2)	(3)	(4)	(5)	(6)	(7)
0650000	**Carobs/Saint John's breads**		0,05 (*)	0,05 (*)		
0700000	**HOPS**	**3 (+)**	0,05 (*)	**0,05** (*)	**0,05** (*)	**0,05** (*)
0800000	**SPICES**					
0810000	**Seed spices**	**0,1** (*)	0,05 (*)	5	**0,05** (*)	**0,05** (*)
0810010	Anise/aniseed					
0810020	Black caraway/black cumin					
0810030	Celery					
0810040	Coriander					
0810050	Cumin					
0810060	Dill					
0810070	Fennel					
0810080	Fenugreek					
0810090	Nutmeg					
0810990	Others					
0820000	**Fruit spices**	**0,1** (*)	0,05 (*)	0,05 (*)	**0,05** (*)	**0,05** (*)
0820010	Allspice/pimento					
0820020	Sichuan pepper					
0820030	Caraway					
0820040	Cardamom					
0820050	Juniper berry					
0820060	Peppercorn (black, green and white)					
0820070	Vanilla					
0820080	Tamarind					
0820990	Others					
0830000	**Bark spices**	**0,1** (*)	0,05 (*)	0,05 (*)	**0,05** (*)	**0,05** (*)
0830010	Cinnamon					
0830990	Others					
0840000	**Root and rhizome spices**					
0840010	Liquorice	**0,1** (*)	0,05 (*)	0,05 (*)	**0,05** (*)	**0,05** (*)
0840020	Ginger	**0,1** (*)	0,05 (*)	0,05 (*)	**0,05** (*)	**0,05** (*)

(1)	(2)	(3)	(4)	(5)	(6)	(7)
0840030	Turmeric/curcuma	**0,1** (*)	0,05 (*)	0,05 (*)	**0,05** (*)	**0,05** (*)
0840040	Horseradish	**(+)**	(+)	**(+)**	**(+)**	(+)
0840990	Others	**0,1** (*)	0,05 (*)	0,05 (*)	**0,05** (*)	**0,05** (*)
0850000	**Bud spices**	**0,1** (*)	0,05 (*)	0,05 (*)	**0,05** (*)	**0,05** (*)
0850010	Cloves					
0850020	Capers					
0850990	Others					
0860000	**Flower pistil spices**	**0,1** (*)	0,05 (*)	0,05 (*)	**0,05** (*)	**0,05** (*)
0860010	Saffron					
0860990	Others					
0870000	**Aril spices**	**0,1** (*)	0,05 (*)	0,05 (*)	**0,05** (*)	**0,05** (*)
0870010	Mace					
0870990	Others					
0900000	**SUGAR PLANTS**	**0,03** (*)		**0,01** (*)	**0,01** (*)	**0,01** (*)
0900010	Sugar beet roots		**0,06**			
0900020	Sugar canes		**0,01** (*)			
0900030	Chicory roots		**0,01** (*)			
0900990	Others		**0,01** (*)			
1000000	**PRODUCTS OF ANIMAL ORIGIN -TERRESTRIAL ANIMALS**					(+)
1010000	**Tissues from**					**0,05**
1011000	(a) *swine*			**0,05 (+)**		
1011010	Muscle	**0,02** (*)	0,01 (*)		**0,01** (*)	
1011020	Fat tissue	0,02 (*)	0,01 (*)		**0,01** (*)	
1011030	Liver	0,03	**0,1 (+)**		**0,5 (+)**	
1011040	Kidney	0,03	0,01 (*)		**0,5 (+)**	
1011050	Edible offals (other than liver and kidney)	0,03	0,01 (*)		**0,5 (+)**	
1011990	Others	**0,03**	0,01 (*)		**0,5 (+)**	
1012000	(b) *bovine*			**0,05 (+)**		
1012010	Muscle	0,03	0,01 (*)		**0,01** (*)	

(1)	(2)	(3)	(4)	(5)	(6)	(7)
1012020	Fat tissue	0,02 (*)	0,01 (*)		**0,01** (*)	
1012030	Liver	**0,04**	**0,3** (+)		**0,5** (+)	
1012040	Kidney	**0,04**	0,01 (*)		**0,5** (+)	
1012050	Edible offals (other than liver and kidney)	**0,04**	0,01 (*)		**0,5** (+)	
1012990	Others	**0,04**	0,01 (*)		**0,5** (+)	
1013000	(c) *sheep*			**0,05** (+)		
1013010	Muscle	0,03	0,01 (*)		**0,01** (*)	
1013020	Fat tissue	0,02 (*)	0,01 (*)		**0,01** (*)	
1013030	Liver	**0,04**	**0,3** (+)		**0,5** (+)	
1013040	Kidney	**0,04**	0,01 (*)		**0,5** (+)	
1013050	Edible offals (other than liver and kidney)	**0,04**	0,01 (*)		**0,5** (+)	
1013990	Others	**0,04**	0,01 (*)		**0,5** (+)	
1014000	(d) *goat*			**0,05** (+)		
1014010	Muscle	0,03	0,01 (*)		**0,01** (*)	
1014020	Fat tissue	0,02 (*)	0,01 (*)		**0,01** (*)	
1014030	Liver	**0,04**	**0,3** (+)		**0,5** (+)	
1014040	Kidney	**0,04**	0,01 (*)		**0,5** (+)	
1014050	Edible offals (other than liver and kidney)	**0,04**	0,01 (*)		**0,5** (+)	
1014990	Others	**0,04**	0,01 (*)		**0,5** (+)	
1015000	(e) *equine*			**0,05** (+)		
1015010	Muscle	0,03	0,01 (*)		**0,01** (*)	
1015020	Fat tissue	0,02 (*)	0,01 (*)		**0,01** (*)	
1015030	Liver	**0,04**	**0,3** (+)		**0,5** (+)	
1015040	Kidney	**0,04**	0,01 (*)		**0,5** (+)	
1015050	Edible offals (other than liver and kidney)	**0,04**	0,01 (*)		**0,5** (+)	
1015990	Others	**0,04**	0,01 (*)		**0,5** (+)	
1016000	(f) *poultry*		0,01 (*)	**0,01** (*)	**0,01** (*)	
1016010	Muscle	0,03				
1016020	Fat tissue	**0,03**				
1016030	Liver	0,03				
1016040	Kidney	**0,02** (*)				

(1)	(2)	(3)	(4)	(5)	(6)	(7)
1016050	Edible offals (other than liver and kidney)	0,03				
1016990	Others	**0,03**				
1017000	(g) *other farmed terrestrial animals*			**0,05 (+)**		
1017010	Muscle	0,03	0,01 (*)		**0,01** (*)	
1017020	Fat tissue	0,02 (*)	0,01 (*)		**0,01** (*)	
1017030	Liver	**0,04**	**0,3 (+)**		**0,5 (+)**	
1017040	Kidney	**0,04**	0,01 (*)		**0,5 (+)**	
1017050	Edible offals (other than liver and kidney)	**0,04**	0,01 (*)		**0,5 (+)**	
1017990	Others	**0,04**	0,01 (*)		**0,5 (+)**	
1020000	**Milk**	0,02 (*)	0,01 (*)	**0,05 (+)**	**0,01** (*) **(+)**	**0,05**
1020010	Cattle					
1020020	Sheep					
1020030	Goat					
1020040	Horse					
1020990	Others					
1030000	**Birds eggs**	**0,04**	0,01 (*)	**0,01** (*)	**0,01** (*)	**0,05**
1030010	Chicken					
1030020	Duck					
1030030	Geese					
1030040	Quail					
1030990	Others					
1040000	**Honey and other apiculture products**	**0,05** (*)	0,05 (*)	0,05 (*)	0,05 (*)	**0,05** (*)
1050000	**Amphibians and Reptiles**	**0,02** (*)	0,01 (*)	**0,05**	0,01 (*)	**0,05**
1060000	**Terrestrial invertebrate animals**	**0,02** (*)	0,01 (*)	**0,05**	0,01 (*)	**0,05**
1070000	**Wild terrestrial vertebrate animals**	**0,02** (*)	0,01 (*)	**0,05**	0,01 (*)	**0,05**’

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