COMMISSION IMPLEMENTING DECISION (EU) 2017/224

of 8 February 2017

setting out the technical and operational specifications allowing the commercial service offered by the system established under the Galileo programme to fulfil the function referred to in Article 2(4)(c) of Regulation (EU) No 1285/2013 of the European Parliament and of the Council

THE EUROPEAN COMMISSION,

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

Having regard to Regulation (EU) No 1285/2013 of the European Parliament and of the Council of 11 December 2013 on the implementation and exploitation of European satellite navigation systems and repealing Council Regulation (EC) No 876/2002 and Regulation (EC) No 683/2008 of the European Parliament and of the Council [1], and in particular Article 12(3)(d) thereof,

Whereas:

(1) Article 2 of Regulation (EU) No 1285/2013 provides that the commercial service offered by the system established under the Galileo programme must allow for the development of applications for professional or commercial use by means of improved performance and data with greater added value than those obtained through the open service.

(2) The commercial service is one of the essential elements of the system established under the Galileo programme insofar as, on the one hand, the other Global Navigation Satellite Systems (GNSS) do not include such a service and, on the other hand, it should generate income in accordance with Article 10 of Regulation (EU) No 1285/2013. Access to this service should be subject to a fee. The pricing policy of the commercial service is not covered by this decision and should be defined at a later date.

(3) The commercial service should be supplied in accordance with contracts, to be concluded with one or more service providers.

(4) The technical and operational specifications of the commercial service should be established now, since once the specifications have been adopted, it will take several years for the service to become operational. The development of specifications has been the subject of a number of studies, experiments and consultations with stakeholders in recent years. It is also the result of a compromise between, on the one hand, the need to provide real value added for the benefit of users and the wish to minimise the modifications to be made to the system, as modifications involve risks, and respect the time schedule specified in Regulation (EU) No 1285/2013 on the other hand.

(5) Consequently, in order to allow for the development of applications for professional or commercial purposes, it is essential, and technically feasible, for the commercial service to make two major improvements to the open service, namely greater precision in terms of geolocation and reinforced authentication capacity. Furthermore, in order to better meet the various needs of the different communities of users of the commercial service, it is vital for these two improvements to be offered to them independently of each other.

(6) High precision in terms of geolocation should extend the scope of the applications of satellite navigation technology. It is therefore important to enhance the quality of the data provided by the system under the Galileo programme so that the positioning error is reduced to less than a decimetre, in nominal conditions of use. It should be noted that the signals issued by other global navigation satellite systems, such as the global positioning system (GPS) of the United States, could also contribute to meeting this objective.

(7) The authentication capacity should increase the degree of safety and prevent risks of falsification and fraud in particular. Additional features must therefore be incorporated into satellite signals in order to assure users that the information which they receive does come from the system under the Galileo programme and not from an unrecognised source. For instance, the authentication capacity of the commercial service would on the one hand integrate the capacity to authenticate data linked to geolocation, which will be contained in the signals of the

[1] OJ L 347, 20.12.2013, p. 1.

open service, offered free of charge, and would on the other hand, with a view to improved protection, also comprise unique identification of the signals thanks to the reading of encrypted codes also contained in the signals, access to which would be subject to a fee.

(8) Before embarking on the operational development of the commercial service, an exhaustive risk analysis should be carried out. This analysis should take place before the 'GNSS Service Centre Delta Critical Design Review', scheduled for 1 June 2017, is given the green light.

(9) The commercial service should provide value added compared to the open service, in order to allow for the development of applications for commercial or professional purposes, and should thus be accessible to as many users as possible and include commercial encryption. With this in mind, use of EU classified information (EUCI) by the Commercial Service Provider or the end user is not planned for either the open service or the commercial service. However, if such use were required, it should be decided upon in accordance with the security rules set out in Article 17(a) of Regulation (EU) No 1285/2013, on the basis in particular of a security risk analysis, taking full account of the opinions of the experts of the Member States. This decision should also take into account a cost-benefit analysis.

(10) The specifications subject to this decision are in line with the radionavigation rules set at international level, and in particular with the standards set by the International Telecommunications Union and the provisions of the agreement concluded on 26 June 2004 between the European Union and its Member States, on the one hand, and the United States on the other, on the promotion, provision and use of GALILEO and GPS satellite-based navigation systems and related applications.

(11) Consequently, technical and operational specifications should be established to allow the commercial service offered by the system under the Galileo programme to fulfil the function referred to in Article 2(4)(c) of Regulation (EU) No 1285/2013, bearing in mind that Council Decision 2014/496/CFSP [1] is also still fully applicable.

(12) The measures provided for in this Decision are in line with the opinion of the committee established pursuant to Article 36(1) of Regulation (EU) No 1285/2013,

HAS ADOPTED THIS DECISION:

Article 1

The technical and operational specifications allowing the commercial service offered by the system under the Galileo programme to fulfil the function referred to in Article 2(4)(c) of Regulation (EU) No 1285/2013 are set out in the Annex.

Article 2

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

Done at Brussels, 8 February 2017.

For the Commission
The President
Jean-Claude JUNCKER

[1] Council Decision 2014/496/CFSP of 22 July 2014 on aspects of the deployment, operation and use of the European Global Navigation Satellite System affecting the security of the European Union and repealing Joint Action 2004/552/CFSP (OJ L 219, 25.7.2014, p. 53).

ANNEX

Technical and operational specifications allowing the commercial service offered by the system established under the Galileo programme to fulfil the function referred to in Article 2(4)(c) of Regulation (EU) No 1285/2013

The commercial service (hereinafter 'CS') offers two major improvements compared to the open service (hereinafter 'OS'), namely higher precision in terms of geolocation (hereinafter 'CS high precision') and reinforced authentication capacity (hereinafter 'CS authentication'), which can be offered to users independently of each other. The corresponding technical and operational specifications are set out in the table below:

	CS high precision	CS authentication	
		Specifications common to the OS and the CS: authentication of geolocation information	Specifications specific to the CS: authentication using encrypted codes
General specifications	Supply of high precision data in order to obtain a positioning error of less than one decimetre in nominal conditions of use	Supply of authentication data for geolocation information from the OS, contained in the signals	Authentication of the signals through access to encrypted codes contained in the signals
Components of the signals used	E6, E6-B component for the supply of high precision data	E1, E1-B component for authentication data from the geolocation information	E6, E6-B component for the access data for encrypted codes and E6-C component (pilot)
Specifications of the user segment	High precision positioning obtained using precise positioning algorithms integrated into the receiver and using the data transmitted in the signals	Verification of the authenticity of the data using an asymmetrical cryptography protocol transmitted in the signals and a public cryptographic key	Verification of the authenticity of the signals by decrypting the codes of the encrypted signals using a private cryptographic key
Geographical coverage	Global	Global	Global
System architecture	High-precision data provided by one or more service providers, transmitted to users via the GNSS Service Centre (GSC), the ground segment and the satellites connected to the ground segment	Authentication data inserted into the available capacity of the EDBS field of the E1-B signal component, and disseminated by the satellites connected to the ground segment	Encryption of the E6 signal codes by the Galileo satellites, transmission of the private keys generated by the ground segment to one or more service providers via the GNSS Service Centre (GSC), and transmission of the OTAR information in the E6-B signal component
Provision of the service	High precision data provided by one or more service providers	Authentication data provided by the system established under the Galileo programme	Encrypted signals supplied by the system operating manager

	CS high precision	CS authentication	
		Specifications common to the OS and the CS: authentication of geolocation information	Specifications specific to the CS: authentication using encrypted codes
Access to the service	— Fee-paying access depending on the pricing policy in force — Inspected by one or more service providers	— Fee-paying access to the encryption codes depending on the pricing policy in force — Access to the encryption codes monitored by one or more service providers with the assistance of the system operating manager	
Deployment of the service	— Testing and validation phase to be concluded in 2018 — Initial commercial operating phase between 2018 and 2020 — Full commercial operating phase from 2020	— Testing and validation phase to be concluded in 2018 — Initial signals supply phase between 2018 and 2020 — Full service supply phase from 2020	— Testing and validation phase to be concluded in 2020 at the latest — Commercial operating phase to begin after that.
Use of EU classified information	— No use of EUCI by the Commercial Service Provider or the end user. However, if such authorisation is required it is decided in accordance with the rules on security set out in Article 17(a) of Regulation (EU) No 1285/2013.	— No use of EUCI by the Commercial Service Provider or the end user. However, if such authorisation is required it is decided in accordance with the rules on security set out in Article 17(a) of Regulation (EU) No 1285/2013.	— No use of EUCI by the Commercial Service Provider or the end user. However, if such authorisation is required it is decided in accordance with the rules on security set out in Article 17(a) of Regulation (EU) No 1285/2013.
Further specifications	— High-precision data provided for the Galileo satellites and possibly for the satellites of other constellations	— The transmission of authentication data must not lead to any deterioration in the open service — The authentication data must be provided for the Galileo satellites and possibly for the satellites of other constellations — The users of the OS accept the risks linked to the use of authentication data	n/a

Acronyms

E1-B Data channel for the signal in frequency E1 of the Galileo system, on 1 575,45 MHz

E6 Frequency E6 of the Galileo system, on 1 278,75 MHz

E6-B Component of the E6 signal, corresponding to the data channel

E6-C Component of the E6 signal, corresponding to the pilot channel

EDBS External Data Broadcast Service

GNSS Global Navigation Satellite System

n/a Not applicable.

OTAR Over-The-Air Rekeying