

COMMISSION IMPLEMENTING DECISION

of 12 November 2013

amending Decision 2008/294/EC to include additional access technologies and frequency bands for mobile communications services on aircraft (MCA services)

(notified under document C(2013) 7491)

(Text with EEA relevance)

(2013/654/EU)

THE EUROPEAN COMMISSION,

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

Having regard to Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision)⁽¹⁾, and in particular Article 4(3) thereof,

Whereas:

- (1) Commission Decision 2008/294/EC⁽²⁾ sets in its Annex technical and operational conditions necessary to allow the use of GSM on board aircraft.
- (2) The development of enhanced means of communications supported by technical progress would improve the capacity for all citizens to be connected everywhere and at all time. It would also contribute to fulfilling the objectives of the Digital Agenda for Europe⁽³⁾ and of the Europe 2020 strategy.
- (3) In order to prepare for the use of the latest available technologies and frequencies for the provision of MCA services, the Commission gave a mandate on 5 October 2011 to the European Conference of Postal and Telecommunications Administrations ('the CEPT') pursuant to Article 4(2) of Decision No 676/2002/EC to assess technical compatibility between the operation of airborne UMTS systems and other feasible airborne technologies such as LTE or WiMax in frequency bands such as the 2 GHz and the 2,6 GHz band, and potentially affected radio services.
- (4) Pursuant to that mandate, the CEPT provided its report on 8 March 2013. The CEPT Report 48 concluded that it would be possible to introduce, subject to the relevant

technical conditions, UMTS and LTE technologies in the 2 100 MHz and 1 800 MHz bands, respectively. Therefore, the Annex to Decision 2008/294/EC should be amended, based on the results of the CEPT Report 48, to include these technologies and allow their use on board aircraft.

- (5) This Decision should apply as soon as possible considering the increasing use of LTE and UMTS technologies in the Union.
- (6) An appropriate protection by limiting the transmission power of the MCA services should be provided to existing potentially affected radio services. However, since the use of the upgraded network control unit (NCU) for the 2,6 GHz band would be delayed until the technical constraints are agreed by the competent aeronautical certification authorities to allow the start of the production of the NCUs and until airworthiness certification has been completed for each type of aircraft, the application of the NCU parameters for the 2,6 GHz band could be postponed until 1 January 2017.
- (7) MCA technical specifications should continue to match technological progress.
- (8) Decision 2008/294/EC should therefore be amended accordingly.
- (9) The measures provided for in this Decision are in accordance with the opinion of the Radio Spectrum Committee,

HAS ADOPTED THIS DECISION:

Article 1

The Annex to Decision 2008/294/EC is replaced by the text in the Annex to this Decision.

Article 2

The values for the band 2 570-2 690 MHz set in Table 3 of the Annex to this Decision shall apply from 1 January 2017.

⁽¹⁾ OJ L 108, 24.4.2002, p. 1.

⁽²⁾ Commission Decision 2008/294/EC of 7 April 2008 on harmonised conditions of spectrum use for the operation of mobile communication services on aircraft (MCA services) in the Community (OJ L 98, 10.4.2008, p. 19).

⁽³⁾ COM(2010) 245 final.

Article 3

As early as possible, and no later than six months following the entry into force of this Decision, the Member States shall make the frequency bands listed in Table 1 in the Annex available for MCA services on a non-interference and non-protected basis, provided such services meet the conditions set out in the Annex.

Article 4

The Member States shall set the minimum height above ground for any transmission from an MCA system in operation in accordance with Section 3 of the Annex.

Member States may impose greater minimum heights of MCA operation where justified by national topographical and ground network deployment conditions. This information, supported by

appropriate justification, shall be notified to the Commission within four months of adoption of this Decision and shall be published in the *Official Journal of the European Union*.

Article 5

This Decision is addressed to the Member States.

Done at Brussels, 12 November 2013.

For the Commission

Neelie KROES

Vice-President

ANNEX

1. FREQUENCY BANDS AND SYSTEMS ALLOWED FOR MCA SERVICES

Table 1

Type	Frequency	System
GSM 1 800	1 710-1 785 MHz (uplink) 1 805-1 880 MHz (downlink)	GSM complying with the GSM Standards as published by ETSI, in particular EN 301 502, EN 301 511 and EN 302 480, or equivalent specifications.
UMTS 2 100 (FDD)	1 920-1 980 MHz (uplink) 2 110-2 170 MHz (downlink)	UMTS complying with the UMTS Standards as published by ETSI, in particular EN301 908-1, EN 301 908-2, EN 301 908-3 and EN 301 908-11, or equivalent specifications.
LTE 1 800 (FDD)	1 710-1 785 MHz (uplink) 1 805-1 880 MHz (downlink)	LTE complying with LTE Standards, as published by ETSI, in particular EN301 908-1, EN301 908-13, EN301 908-14 and EN301 908-15, or equivalent specifications.

2. PREVENTION OF CONNECTION OF MOBILE TERMINALS TO GROUND NETWORKS

During the period when operation of MCA services is authorised on an aircraft, mobile terminals receiving within the frequency bands listed in Table 2 must be prevented from attempting to register with mobile networks on the ground.

Table 2

Frequency band (MHz)	Systems on the ground
460-470	CDMA2000, FLASH OFDM
791-821	LTE
921-960	GSM, UMTS, LTE, WiMAX
1 805-1 880	GSM, UMTS, LTE, WiMAX
2 110-2 170	UMTS, LTE
2 570-2 620	UMTS, LTE, WiMAX
2 620-2 690	UMTS, LTE

3. TECHNICAL PARAMETERS

(a) Equivalent isotropic radiated power (e.i.r.p.), outside the aircraft, from the NCU/aircraft BTS

Table 3

The total e.i.r.p., outside the aircraft, from the NCU/aircraft BTS/aircraft Node B must not exceed:

Height above ground (m)	Maximum e.i.r.p. density produced by NCU/aircraft BTS/aircraft Node B outside the aircraft					
	460-470 MHz	791-821 MHz	921-960 MHz	1 805-1 880 MHz	2 110-2 170 MHz	2 570-2 690 MHz
	dBm/1,25 MHz	dBm/10 MHz	dBm/200 kHz	dBm/200 kHz	dBm/3,84 MHz	dBm/4,75 MHz
3 000	- 17,0	- 0,87	- 19,0	- 13,0	1,0	1,9
4 000	- 14,5	1,63	- 16,5	- 10,5	3,5	4,4

Height above ground (m)	Maximum e.i.r.p. density produced by NCU/aircraft BTS/aircraft Node B outside the aircraft					
	460-470 MHz	791-821 MHz	921-960 MHz	1 805-1 880 MHz	2 110-2 170 MHz	2 570-2 690 MHz
	dBm/1,25 MHz	dBm/10 MHz	dBm/200 kHz	dBm/200 kHz	dBm/3,84 MHz	dBm/4,75 MHz
5 000	- 12,6	3,57	- 14,5	- 8,5	5,4	6,3
6 000	- 11,0	5,15	- 12,9	- 6,9	7,0	7,9
7 000	- 9,6	6,49	- 11,6	- 5,6	8,3	9,3
8 000	- 8,5	7,65	- 10,5	- 4,4	9,5	10,4

(b) **Equivalent isotropic radiated power (e.i.r.p.), outside the aircraft, from the onboard terminal**

Table 4

The e.i.r.p., outside the aircraft, from the mobile terminal must not exceed:

Height above ground (m)	Maximum e.i.r.p., outside the aircraft, from the GSM mobile terminal in dBm/200 kHz	Maximum e.i.r.p., outside the aircraft, from the LTE mobile terminal in dBm/5 MHz	Maximum e.i.r.p., outside the aircraft, from the UMTS mobile terminal in dBm/3,84 MHz
	GSM 1 800 MHz	LTE 1 800 MHz	UMTS 2 100 MHz
3 000	- 3,3	1,7	3,1
4 000	- 1,1	3,9	5,6
5 000	0,5	5	7
6 000	1,8	5	7
7 000	2,9	5	7
8 000	3,8	5	7

(c) **Operational requirements**

- I. The minimum height above ground for any transmission from an MCA system in operation must be 3 000 metres.
- II. The aircraft BTS, while in operation, must limit the transmit power of all GSM mobile terminals transmitting in the 1 800 MHz band to a nominal value of 0 dBm/200 kHz at all stages of communication, including initial access.
- III. The aircraft Node B, while in operation, must limit the transmit power of all LTE mobile terminals transmitting in the 1 800 MHz band to a nominal value of 5 dBm/5 MHz at all stages of communication.
- IV. The aircraft Node B, while in operation, must limit the transmit power of all UMTS mobile terminals transmitting in the 2 100 MHz band to a nominal value of - 6 dBm/3,84 MHz at all stages of communication and the maximum number of users should not exceed 20.