

COMMISSION IMPLEMENTING DECISION (EU) 2016/2317**of 16 December 2016****amending Decision 2008/294/EC and Implementing Decision 2013/654/EU, in order to simplify the operation of mobile communications on board aircraft (MCA services) in the Union***(notified under document C(2016) 8413)***(Text with EEA relevance)**

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 technical and operational conditions necessary to allow the use of GSM, UMTS and LTE on board aircraft (MCA services) in the European Union.
- (2) Current legislation requires the presence of a Network Control Unit (NCU) as part of MCA equipment on board airplanes to prevent mobile terminals on board aircraft from attempting to register with terrestrial mobile communications networks.
- (3) The Commission gave a mandate on 7 October 2015 to the European Conference of Postal and Telecommunications Administrations ('the CEPT'), pursuant to Article 4(2) of Decision No 676/2002/EC, to undertake technical studies regarding the need to keep the usage of the NCU mandatory on-board MCA enabled aircraft.
- (4) Following that mandate, the CEPT adopted on 17 November 2016 its Report 63 which concluded that it is possible to make the use of an NCU optional for GSM and LTE systems considering that MCA operations without NCU guarantee a reasonable protection against interference for terrestrial networks.
- (5) In accordance with the conclusions of the CEPT Report, it is no longer necessary to actively prevent through an NCU the connection of mobile terminals to terrestrial mobile networks operating in the band 2 570-2 690 MHz. Article 2 of Commission Implementing Decision 2013/654/EU ⁽³⁾ therefore becomes obsolete and should be deleted.
- (6) However, with regard to UMTS systems, the CEPT concluded that an NCU remains necessary to prevent connections between terrestrial UMTS networks and user equipment on board aircraft. Studies showed that such connections could cause a partial and temporary reduction in capacity for the connecting and neighbouring cells on the ground. The other solution to attenuate signals entering and leaving the cabin and to prevent unwanted connections is to add sufficient shielding to the aircraft fuselage.
- (7) MCA technical specifications should remain under review in order to ensure that they always match technological progress.
- (8) The measures provided for in this Decision are in accordance with the opinion of the Radio Spectrum Committee,

⁽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⁾ Commission Implementing Decision 2013/654/EU 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) (OJ L 303, 14.11.2013, p. 48).

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

Article 2 of Implementing Decision 2013/654/EU is deleted.

Article 3

This Decision is addressed to the Member States.

Done at Brussels, 16 December 2016.

For the Commission
Günther H. OETTINGER
Member of the Commission

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 EN 301 908-1, 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 EN 301 908-1, EN 301 908-13, EN 301 908-14, and EN 301 908-15, or equivalent specifications.

2. Prevention of connection of mobile terminals to ground networks

Mobile terminals receiving within the frequency bands listed in Table 2 must be prevented from attempting to register with UMTS mobile networks on the ground:

- by the inclusion, in the MCA system, of a Network Control Unit (NCU), which raises the noise floor inside the cabin in mobile receive bands, and/or
- by aircraft fuselage shielding to further attenuate the signal entering and leaving the fuselage.

Table 2

Frequency bands (MHz)	Systems on the ground
925-960 MHz	UMTS (and GSM, LTE)
2 110-2 170 MHz	UMTS (and LTE)

MCA operators may also decide to implement an NCU in the other frequency bands listed in Table 3.

Table 3

Frequency bands (MHz)	Systems on the ground
460-470 MHz	LTE ⁽¹⁾
791-821 MHz	LTE
1 805-1 880 MHz	LTE and GSM
2 620-2 690 MHz	LTE
2 570-2 620 MHz	LTE

⁽¹⁾ On a national level, administrations could use LTE technology for different applications such as BB-PPDR, BB-PMR or Mobile Networks.

3. Technical parameters

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

Table 4

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. of the System outside the aircraft in dBm/channel		
	NCU	Aircraft BTS/Aircraft Node B	Aircraft BTS/Aircraft Node B and NCU
	Band: 900 MHz	Band: 1 800 MHz	Band: 2 100 MHz
	Channel Bandwidth = 3,84 MHz	Channel Bandwidth = 200 kHz	Channel Bandwidth = 3,84 MHz
3 000	- 6,2	- 13,0	1,0
4 000	- 3,7	- 10,5	3,5
5 000	- 1,7	- 8,5	5,4
6 000	- 0,1	- 6,9	7,0
7 000	1,2	- 5,6	8,3
8 000	2,3	- 4,4	9,5

(b) Equivalent isotropic radiated power (e.i.r.p.), outside the aircraft, from the on-board terminal

Table 5

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

When MCA operators decide to implement an NCU in the frequency bands listed in Table 3, the maximum values indicated in Table 6 apply for the total e.i.r.p. outside the aircraft, from the NCU/aircraft BTS/aircraft Node B, in conjunction with the values mentioned in Table 4.

Table 6

Height above ground (m)	Maximum e.i.r.p. outside the aircraft, from the NCU/aircraft BTS/aircraft Node B			
	460-470 MHz	791-821 MHz	1 805-1 880 MHz	2 570-2 690 MHz
	dBm/1,25 MHz	dBm/10 MHz	dBm/200 kHz	dBm/4,75 MHz
3 000	- 17,0	- 0,87	- 13,0	1,9
4 000	- 14,5	1,63	- 10,5	4,4
5 000	- 12,6	3,57	- 8,5	6,3
6 000	- 11,0	5,15	- 6,9	7,9
7 000	- 9,6	6,49	- 5,6	9,3
8 000	- 8,5	7,65	- 4,4	10,4

(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.