



# Czech Telecommunication Office

with headquarters at Sokolovská 219, Prague 9  
P.O. Box 02, Prague 025, Postcode 225 02

Prague, 31 May 2017  
Ref.: ČTÚ-16 736/2017-613

On the basis of public consultation under Section 130 of the Act No. 127/2005 Coll., on electronic communications and on amendment to certain related acts (The Electronic Communications Act), as amended (hereinafter “the Act”) and under of the Act No. 500/2004 Coll., the Administrative Regulations, as amended, and on the basis of the decision of the Council of the Czech Telecommunications Office (hereinafter “the Office”) under Section 107(9)(b)(2) of the Act and in order to implement Sections 9 and 12 of the Act, the Office as the appropriate state administration body under Section 108(1)(b) of the Act hereby issues this Measure of General Nature

## **General Authorisation No. VO-R/1/05.2017-2 for the operation the users’ terminals of the radio networks of the electronic communications.**

### Article 1 **Introductory provisions**

The apparatus operating conditions <sup>1), 2)</sup> relating to the operation of transmitting radio equipment of the land mobile, fixed and satellite services constituting part of communication systems (hereinafter “terminal”) by natural and juristic persons in the electronic communications networks for which the operators received individual authorisations for the use of radio frequencies or authorised in satellite networks by operators of these networks and under the control of satellite system, are laid down in the Act and in this General Authorisation under Section 10(1) of the Act.

### Article 2 **Factual common conditions**

The factual conditions related to Section 10(1)(m) of the Act are as follows:

(1) The terminals may be operated without individual authorisation for the use of radio frequencies in the electronic communications networks of which operators are assigned the radio frequencies on the basis of the individual authorisation for the use of frequencies or which are authorised, in the case of satellite networks, by the operators of these networks and controlled by the satellite system.

(2) The terminals shall not be operated with additional high-frequency power amplifiers or as the converters of signal or in direct mode<sup>3)</sup>, they can communicate only with base stations of network operators indicated in paragraph 1, unless it is stated for the individual sub-bands furthermore.

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<sup>1)</sup> Sections 73 and 74 of the Act.

<sup>2)</sup> Summary of harmonised standards relating to the basic requirements determined by Directive No. 2014/53/EU and by Governmental Order No. 426/2016 Coll., on the assessment of conformity of radio equipment when delivered to the market, European Commission (EC) releases in its communications on website URL: <http://eur-lex.europa.eu>

<sup>3)</sup> DMO – Direct Mode Operation; it is the mode in which terminals communicate amongst themselves without involvement of base station.

(3) On condition that relevant individual authorisations for the use of radio frequencies were assigned for the geographic delineated areas of the Czech Republic only, the terminals may be operated exclusively in these delineated areas.

(4) The terminals shall not cause harmful interference to the stations which use the radio frequencies on the basis of the individual authorisation within a primary radiocommunication service.

(5) The terminals can be neither electrically nor mechanically modified.

(6) The terminals shall not be used for interconnection of the networks of electronic communications<sup>4)</sup>.

### Article 3

#### Factual conditions for broadband mobile and access networks terminals

(1) By means of the terminals, the radio frequencies may be used in these sub-bands of the radio spectrum:

Reference	Frequency sub-band – transmitting	Frequency sub-band – receiving	Comments
<i>a</i>	410–419.8 MHz	420–429.8 MHz	<sup>5)</sup>
<i>b</i>	450–460 MHz	460–470 MHz	<sup>5)</sup>
<i>c</i>	832–862 MHz	791–821 MHz	<sup>6)</sup> , <sup>7)</sup>
<i>d</i>	880–915 MHz	925–960 MHz	<sup>7)</sup> , <sup>8)</sup>
<i>e</i>	1710–1785 MHz	1805–1880 MHz	<sup>7)</sup> , <sup>8)</sup> , <sup>9)</sup> , <sup>10)</sup>
<i>f1</i>	1900–1920 MHz		<sup>7)</sup> , <sup>11)</sup>
<i>f2</i>	1920–1980 MHz	2110–2170 MHz	<sup>7)</sup> , <sup>9)</sup> , <sup>10)</sup> , <sup>11)</sup>

<sup>4)</sup> Section 78, paragraphs 2 and 3 of the Act.

<sup>5)</sup> For example the Decision CEPT/ECC/DEC/(04)06 of 19 March 2004 (amended on 9 December 2011) on availability of frequency bands for the introduction of Wide Band Digital Land Mobile PMR/PAMR in the 400 MHz and 800/900 MHz bands.

<sup>6)</sup> Commission Decision 2010/267/EU of 6 May 2010 on harmonised technical conditions of use in the 790–862 MHz frequency band for terrestrial systems capable of providing electronic communications services in the European Union.

<sup>7)</sup> Decision CEPT/ECC/DEC/(12)01 of 1 June 2012 (amended on 3 June 2015) on exemption from individual licensing and free circulation and use of terrestrial and satellite mobile terminals operating under the control of networks.

<sup>8)</sup> Decision of the European Parliament and of the Council 2009/214/EC of 16 September 2009 amending Council Directive 87/372/EES on the frequency bands to be reserved for the coordinated introduction of public pan-European cellular digital land-based mobile communications in the Community; Commission Implementing Decision 2011/251/EC of 18 April 2011 amending Decision 2009/766/EC on the harmonisation of the 900 MHz and 1800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communications services in the Community; Decision ERC/DEC/(97)02 on the extended frequency bands to be used for the GSM Digital Pan-European Communications System; Report CEPT No. 40 – Report CEPT to the European Commission on the 900/1800 MHz bands – “Compatibility study for LTE and Wi-Max operating within the bands 800–915/925–960 MHz and 1710–1785/1805–1880 MHz (the bands 900/1800 MHz)”.

<sup>9)</sup> The networks intended for the operation of mobile communication services in aircraft (MCA) operated in the aircraft of which base stations i.e. NCU (Network Control Unit) or BTS\_NodeB as a part of MCA equipment were registered (authorized) for operation in accordance with international requirements are also considered as the networks of GSM 1800 MHz, LTE 1800 MHz and UMTS 2100 MHz systems whose operators were granted individual authorisation for use of radio frequencies and in which terminals may be operated.

<sup>10)</sup> Commission Implementing Decision 2016/2317/EU 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; Decision CEPT/ECC/DEC/(06)07 of 1 December 2006, (amended 14 March 2014) on the harmonised use of airborne GSM systems in the frequency bands 1710–1785 MHz and 1805–1880 MHz.

<sup>11)</sup> Decision CEPT/ECC/DEC(06)01 of 24 March 2006, (amended 2 November 2012), on the harmonised utilisation of the bands 1920–1980 MHz and 2110–2170 MHz for mobile / fixed communications networks (MFCN) including terrestrial IMT systems.

<i>f3</i>	2010–2025 MHz		7), 11)
<i>g1</i>	2500–2570 MHz	2620–2690 MHz	7), 12)
<i>g2</i>	2570–2620 MHz		12)
<i>h1</i>	3410–3500 MHz	3510–3600 MHz	13), 14), 15)
<i>h2</i>	3580–3600 MHz	3480–3500 MHz	13), 14), 15)
<i>i</i>	3600–3800 MHz		14), 15)
<i>j1</i>	25.557–25.613 GHz	24.549–24.605 GHz	
<i>j2</i>	25.627–25.683 GHz	24.619–24.675 GHz	
<i>j3</i>	25.697–25.753 GHz	24.689–24.745 GHz	
<i>k</i>	27.8285–27.9405 GHz		16)
<i>l</i>	28.9485–29.2285 GHz	27.9405–28.2205 GHz	16)

(2) The terminals in the sub-bands *a* up to *g2* which use channel spacing > 200 kHz can be operated with maximum effective radiated power of 1 W (e.r.p.). This value shall be respected in any combination of the output power of the terminal and used antenna. The terminals in the sub-bands *a*, *b*, *d*, *e* which use channel spacing ≤ 200 kHz shall be operated with maximum effective radiated power of 2 W (e.r.p.).

(3) In the sub-band *h2*, the terminals IRT-2000<sup>17)</sup> shall be only operated.

(4) In the sub-bands *k* and *l*, the terminals put into operation after the date of 1 March 2011 shall use the automatic transmit power control.

(5) While maintaining condition stated in article 2, paragraph 6, the terminals may also be used as stationary terminals, in-built in different exchange offices, GSM gateways etc. or they may be connected to an external antenna.

(6) Annex 1, sets down other technical requirements for the operation of the terminals in MCA<sup>9)</sup> systems.

(7) Also considered as terminals under this article are also the terminals approved in CEPT member countries which acceded to ERC Decision No. ERC/DEC/(95)01 of 1 December 1995, amended on 18 March 2005 and 14 March 2008, on the free circulation and use of certain radio equipment in CEPT member countries and No. ECC/DEC/(12)01 of 1 June 2012, amended on 3 July 2015, on exemption from individual licensing and free circulation and use of terrestrial and satellite mobile terminals operating under the control of networks<sup>18)</sup>.

<sup>12)</sup> Commission Decision No. 2008/477/EC of 13 June 2008, on the harmonisation of the 2500–2690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community; Decision CEPT/ECC/DEC/(05)05 of 18 March 2005, amended 3 July 2015, on harmonised utilisation for Mobile/Fixed Communications Networks (MFCN) operating within the band 2500–2690 MHz.

<sup>13)</sup> Recommendation CEPT/ERC/REC 14–03 of 28 May 1997 – Harmonised radio frequency channel arrangements and block allocations for low and medium capacity systems operated in the band 3400–3600 MHz.

<sup>14)</sup> Commission Decision No. 2008/411/EC on the harmonisation of the 3400–3800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community.

<sup>15)</sup> Decision CEPT/ECC/DEC/(11)06 of 9 December 2011, amended 14 March 2014, on harmonised frequency arrangements for mobile / fixed communication networks (MFCN) operated in the bands 3400–3600 MHz and 3600–3800 MHz.

<sup>16)</sup> Decision CEPT/ECC/DEC/(05)01 of 18 March 2005, amended 8 March 2013, on the use of the band 27.5–29.5 GHz by the Fixed Service and uncoordinated Earth stations of the Fixed-Satellite Service (Earth-to-space).

<sup>17)</sup> Integrated Rural Telephony– radio access networks for connection of user to public telephone network.

<sup>18)</sup> The list of countries which accepted these decisions, including further information is available on website URL: [www.cept.org](http://www.cept.org)

Article 4  
**Factual conditions for terminals of the land mobile networks using narrowband technology**

(1) By means of the terminals, the radio frequencies can be used in these sub-bands of the radio spectrum:

Reference	Frequency sub-band – transmitting	Frequency sub-band – receiving	Type of network
<i>a</i>	410.0–419.8 MHz	420.0–429.8 MHz	TETRA <sup>19)</sup>
<i>b</i>	455.74–457.38 MHz	465.74–467.38 MHz	PMR/PAMR <sup>20)</sup>

(2) The terminals can be operated with maximum effective radiated power of 10 W (e.r.p.).

(3) The maximum effective antenna height of immobile terminals in the sub-band *b*, calculated using the method according to Recommendation ITU-R P.1546, shall not exceed 30 m.

Article 5  
**Factual conditions for terminals using for communication satellites**

(1) By means of the terminals, the radio frequencies can be used in these sub-bands of the radio spectrum:

Ref.	Frequency sub-band – transmitting (Earth-to-space)	Frequency sub-band – receiving (space-to-Earth)	Max. radiated power (RP)/ /max. spectral density (SD) (e.i.r.p.)	Comments
<i>a</i>	148.0–149.9 MHz	137–138 MHz	SD: 10 dBW/4 kHz	<sup>21)</sup>
<i>b1</i>	1613.8–1626.5 MHz	–	30 dBm e.i.r.p., duty cycle max. 1 %	<sup>7)</sup> , <sup>22)</sup>
<i>b2</i>	1610–1615.035 MHz	1613.8–1626.5 MHz; 1525–1559 MHz; 2483.5–2500 MHz	<i>determined by satellite operator</i>	<sup>7)</sup>
<i>b3</i>	1615.035–1621.185 MHz		SD: –4 dBW/1.23 MHz	<sup>7)</sup>
<i>b4</i>	1621.185–1626.5 MHz		RP: 10 dBW e.i.r.p.	<sup>7)</sup>
<i>b5</i>	1626.5–1660.5 MHz		<i>determined by satellite operator</i>	<sup>7)</sup>
<i>b6</i>	1670–1675 MHz		<i>determined by satellite operator</i>	<sup>7)</sup>
<i>c</i>	1980–2010 MHz		2170–2200 MHz	<i>determined by satellite operator</i>

<sup>19)</sup> Abbreviation TETRA stands for Terrestrial Trunked Radio network.

<sup>20)</sup> PMR – Private Mobile Radio, Private or company Mobile Radio networks and links; PAMR – Public Access Mobile Radio, PMR networks with the access point to the public networks.

<sup>21)</sup> Decision CEPT/ERC/DEC/(99)06 of 10 March 1999, amended on 27 July 2000, on the harmonised introduction of satellite personal communication systems operated in the bands below 1 GHz (S-PCS<1 GHz).

<sup>22)</sup> Decision CEPT/ECC/DEC/(09)04 of 30 October 2009 on exemption from individual licensing and the free circulation and use of transmit-only mobile satellite terminals operating in the Mobile-Satellite Service allocations in the 1613.8–1626.5 MHz band.

<i>d1</i>	14.00–14.25 GHz	10.70–12.75 GHz	RP: 60 dBW e.i.r.p.; in case of the operation with several carriers the overall RP shall not exceed this value	23)
<i>d2</i>	14.25–14.50 GHz		RP: 50 dBW e.i.r.p.; maximum power supplied to the antenna is 3 dBW	23)
<i>d3</i>	14–14.50 GHz		RP: 50 dBW e.i.r.p.	the aeronautical mobile-satellite service <sup>24)</sup>
<i>e1</i>	27.5–27.8285 GHz	17.3–19.7 GHz	RP: 60 dBW e.i.r.p.	25)
<i>e2</i>	28.4445–28.9485 GHz			
<i>e3</i>	29.4525–29.5 GHz			
<i>e4</i>	29.50–30.00 GHz	10.70–12.75 GHz; 19.70–20.20 GHz	RP: 60 dBW e.i.r.p.; in case of the operation with several carriers the overall RP shall not exceed this value	23), 25)

(2) The terminals can be operated in the direct mode operation (DMO – Direct Mode Operation, i.e. direct mutual communication between the land terminals) in the sub-band *c* only, where communication between the mobile earth station of the mobile-satellite service and one or more complementary ground stations at a specified fixed location, may be realised within the framework of the mobile-satellite service networks.

(3) The terminals operated in the sub-band *b1* shall not exceed levels of unwanted emissions stated in Recommendation ITU-R M.1343-1 in table 1 of annex 1.

(4) The terminals operated in the sub-bands *b2*, *b3* and *b4* shall not cause harmful interference to stations in the radioastronomy service.

(5) In the sub-band *b4*, the maximum unwanted level of emissions is –70 dBW/MHz.

(6) In the sub-band *b5*, the frequencies in the range 1645.5–1646.5 MHz/1544.0–1545.0 MHz can be used by terminals for distress and safety communications only.

(7) In the sub-band *b6*, the terminals should not cause harmful interferences to the earth stations in the meteorological-satellite service not even to restrict their development.

(8) In the sub-bands *d1*, *d2* and *e4*, the terminals that are the part of satellite networks of the fixed-satellite or land mobile-satellite services or the broadcasting-satellite service can be operated only.

(9) In the sub-band *d3*, the terminals that are the part of satellite networks of the aeronautical mobile-satellite service can be operated only.

<sup>23)</sup> Decision CEPT/ERC/DEC/(98)15 of 23 November 1998 on exemption from individual licensing of Omnitrac terminals for the Euteltracs system; Decision CEPT/ECC/DEC/(03)04 of 17 October 2003 on exemption from individual licensing of Very Small Aperture Terminals (VSAT) operating in the frequency bands 14.25–14.50 GHz (Earth-to-space) and 10.70–11.70 GHz (space-to-Earth); Decision CEPT/ECC/DEC/(06)02 of 24 March 2006 on exemption from individual licensing of low e.i.r.p. satellite terminals (LEST) operating within the frequency bands 10.70–12.75 GHz or 19.70–20.20 GHz (space-to-Earth) and 14.00–14.25 GHz or 29.50–30.00 GHz (Earth-to-space); Decision CEPT/ECC/DEC/(06)03 of 24 March 2006 on exemption from individual licensing of high e.i.r.p. satellite terminals (HEST) operating within the frequency bands 10.70–12.75 GHz or 19.70–20.20 GHz (space-to-Earth) and 14.00–14.25 GHz or 29.50–30.00 GHz (Earth-to-space).

<sup>24)</sup> Decision CEPT/ECC/DEC/(05)11 of 28 June 2005 on the free circulation and use of Aircraft Earth Stations (AES) in the frequency bands 14.00–14.50 GHz (Earth-to-space), 10.70–11.70 GHz (space-to-Earth) and 12.5–12.75 GHz (space-to-Earth).

<sup>25)</sup> Decision CEPT/ECC/DEC/(13)01 of 8 March 2013 on the harmonised use, free circulation and exemption from individual licensing of Earth Stations On Mobile Platforms (ESOMPs) within the frequency bands 17.3–20.2 GHz and 27.5–30.0 GHz.

(10) The terminals operated in the sub-bands *d1*, *d2* and *e4* may be operated in the vicinity of airports depending on their radiated power beyond these minimum distances from the boundary fences of these airports:

Min. distance	Max. e.i.r.p.
500 m	50 dBW
1800 m	55.3 dBW
2300 m	57 dBW
3500 m	60 dBW

(11) The terminals operated in the sub-band *d2* and from range of 14.25–14.50 GHz of the sub-band *d3* shall not cause harmful interference to the fixed service stations; in range 14.47–14.50 GHz of the sub-band *d1*, the terminals in addition shall not cause harmful interference to stations of the radio astronomy service<sup>26)</sup>.

(12) The terminals operated in the sub-bands *d1*, *d2* and *d3* that use for reception the radio frequencies from range 10.7–11.7 GHz shall not claim protection from harmful interference from stations of the fixed service or the radio astronomy service.

(13) The terminals in the sub-bands *e1* up to *e3* that use for reception the radio frequencies from range 17.3–18.1 GHz shall not claim protection from harmful interference from feeder links operated in the broadcasting-satellite service and in range 17.7–19.7 GHz, the terminals shall not claim protection from stations operated in the fixed service.

(14) The satellite network operator is authorized to set down additional requirements on technical parameters of terminals i. e. radiated power, channel separation, type of modulation, capacity of transmission etc.

## Article 6

### Factual conditions for terminals in the networks of the specific use

(1) By means of the terminals, the radio frequencies can be used in these sub-bands of the radio spectrum:

Ref.	Frequency sub-band – transmitting <sup>27)</sup>	Frequency sub-band – receiving <sup>26)</sup>	Max. radiated power of terminal	Purpose	Comments
<i>a</i>	148.200–149.050 MHz	152.800–153.650 MHz	10 W e.r.p.	railway transport	
<i>a1</i>	148.200–149.050 MHz				
<i>c1</i>	152.800–153.650 MHz				
<i>e</i>	380.000–384.9875 MHz	390.000–394.9875 MHz	10 W e.r.p.	integrated rescue system	TETRAPOL technology <sup>28), 29)</sup>
<i>f</i>	457.400–458.450 MHz	467.400–468.450 MHz	6 W e.r.p.	railway transport	

<sup>26)</sup> The use of radio frequencies in these sub-bands is on a secondary basis – see chapter 5, items 5.23 up to 5.33 of the Annex to the Decree No. 105/2010 Coll., The Frequency Band Allocation Plan (National Table of Frequency Allocation).

<sup>27)</sup> The centre frequencies of radio channels are stated.

<sup>28)</sup> The cellular trunked radio network for transmission of voice and data.

<sup>29)</sup> Decision CEPT/ECC/DEC/(08)05 of 27 June 2008 on the harmonisation of frequency bands for the implementation of digital Public Protection and Disaster Relief (PPDR) narrow band and wide band radio applications in bands within the 380–470 MHz range.

<i>g1</i>	876.0125 MHz, 876.025 MHz, 876.0375 MHz, 876.05 MHz, 876.0625 MHz			railway transport	GSM- R – DMO technology
<i>g2</i>	876.100–880.100 MHz	921.100–925.100 MHz			GSM-R technology

(2) The terminals in the sub-bands *a, a1, c1, d, f, g1, g2* shall be only operated by natural or legal person who is holder of the valid authorisation for the operation of the railway transportation<sup>30)</sup> or natural person or legal person who carries out activities which are connected with support of the operation of the railways and the railway transport. The terminals in the sub-band *e* shall be only operated by staff member of the integrated rescue system.

(3) The terminals may be operated in direct mode (DMO – Direct Mode Operation) only in the frequency range 380.0–380.3/390.0–390.3 MHz of the sub-band *e* and in the sub-band *g1*.

(4) The terminals operated in the sub-bands *a, a1, c1, f* have to use the call signals which are assigned to the particular terminals by the network operator from the set of the call signals granted to him by the Office.

(5) The terminals operated in the sub-bands *g1 and g2* may be also used as a stationary terminals, in-built in different exchange offices, GSM gateways etc. or they may be connected to an external antenna.

#### Article 7 **Transitional provision**

Also considered as a terminal complying with the Government Order No. 426/2016 Coll., on the assessment of conformity of radio equipment when delivered to the market is any terminal for which the Office decided to approve the radio equipment in accordance with Section 10 of the Act No. 151/2000 Coll., on Telecommunications and on Amendment to other Acts, as amended, provided that such a terminal was released to the market before 1 April 2003.

#### Article 8 **Repealing provision**

The General Authorisation No. VO-R/1/6.2006-8 for the operation of the users' terminals of the radio networks of the electronic communications of 14 June 2016 published in the Telecommunication Journal 11/2016 is cancelled.

#### Article 9 **Effect**

This General Authorisation comes into effect on 19 June 2017.

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<sup>30)</sup> Section 24 and subsequently the Act No. 266/1994 Coll., on railways, as amended.

## Explanatory memorandum

To implement Sections 9 and 12 of the Act, the Office issues General Authorisation No. VO-R/1/05.2017-2 for the operation users' terminals of radio networks of electronic communications hereinafter "the General Authorisation".

The General Authorisation is based on principles set down in the Act and also on the frequency plans and harmonisation objectives of the European Union. The General Authorisation replaces General Authorisation No. VO-R/1/6.2016-8, repealed by article 8 of this General Authorisation.

In Article 2, the factual conditions of the operation of terminals are presented which are specified in articles 3 up to 6 for particular types of the terminals and particular types of the networks where the terminals are operated. These conditions are based on CEPT decisions and Directive 1999/5/EC of the European Parliament and of the Council, on radio equipment and telecommunications terminal equipment and on mutual recognition of their conformity (hereinafter "the RTEE Directive"), as well as from requirements which result from the exercise of the radio spectrum management.

In sense of the article 7 these regulations do not prevent the operation of the equipment which was placed on market before the General Authorisation entered into force. Articles 8 and 9 repeal existing General Authorisation No. VO-R/1/6.2016-8 and set down the effect of the General Authorisation according to Section 124(2) of the Act. Annex 1 sets down other technical requirements for the operation of the terminals in MCA systems.

After the issue of the General Authorisation No. VO-R/1/6.2016-8, the Office amended some parts of the radio spectrum utilisation plan. Also certain decisions and recommendations of CEPT and European Commission were amended. In order to implement these measures of general nature, decisions and recommendations and by reason of the exercise of the radio spectrum management, the Office carried out in comparison with existing General Authorisation No. VO-R/1/6.2016-8 presented in sense of Section 12 of the Act in this General Authorisation, following changes:

1. In article 2(1), the footnote<sup>5</sup>) was added to the sub-bands *a*, *b* in order to stress, in accordance with technological neutrality principle, the operation of terminals in these sub-bands is not connected with specific technologies.
2. In accordance with update of EC decision, the footnote<sup>10</sup>) and annex 1 was updated.
3. In article 6, the existing sub-bands *b*, *c*, *d* were deleted due to the termination of operation as of 31 December 2016.
4. The partial formal modifications were carried out.

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On the basis of Section 130 of the Act and according to the Czech Telecommunication Office Rules for conducting consultations at the discussion site, the Office published on 11 April 2017, the draft of the Measure of General nature laying down the General Authorisation No. VO-R/1/xx.2017-y for the operation of the users' terminals of the radio networks of the electronic communications, and the call for comments at the discussion site. The Office did not receive any comment during 1 month public consultation.

On behalf of the Council of the Czech  
Telecommunication Office

Jiří Peterka  
Member of the Council  
of the Czech Telecommunication Office  
<signed>



**Technical requirements for the operation of the terminals in MCA systems<sup>10)</sup>**

1. The terminals shall be operated in the frequency bands 1710–1785/1805–1880 MHz for GSM 1800 and LTE 1800 (FDD) systems and 1920–1980/2110–2170 MHz for UMTS 2100 (FDD) systems.
2. The minimum height above ground for the terminals in operation shall be 3000 meters.
3. The output power of the terminals is limited by means of the aircraft base station (BTS) at all stages of communications, including initial access:
  - a) for GSM mobile terminals at nominal level 0 dBm/200 kHz by means of the aircraft base station (BTS);
  - b) for LTE mobile terminals in the band 1800 MHz at nominal level 5 dBm/5 MHz by means of the board Ac-NodeB<sup>31)</sup>;
  - c) for UMTS mobile terminals in the band 2100 MHz at nominal level –6 dBm/3.84 MHz by means of the board Ac-NodeB<sup>31)</sup> provided that the maximal number of users shall not exceed 20.
4. The terminals are placed on the board of the aircraft registered in the Czech Republic.
5. The equivalent isotropic radiated power (e.i.r.p.) outside of the aircraft, coming from the terminal on the board of aircraft shall not exceed these values:

Height above ground [m]	Maximum e.i.r.p. outside of the aircraft, coming from the mobile terminal:		
	GSM [dBm/200 kHz]	LTE [dBm/5 MHz]	UMTS [dBm/3.84 MHz]
3000	–3.3	1.7	3.1
4000	–1.1	3.9	5.6
5000	0.5	5	7
6000	1.8	5	7
7000	2.9	5	7
8000	3.8	5	7

6. The terminals shall not interfere with the operating radio devices of other radio spectrum users and they cannot claim protection from harmful interference caused by transmitting radio devices of other users.
7. The terminals may be only connected to the network which for purpose to provide the MCA services fulfils following requirements:
  - a) the Network Control Unit (NCU) shall ensure that during the time when operation of MCA services in aircraft is allowed, the receiving mobile terminals in the frequency bands listed in the table have not been able to attempt to do registration with these land mobile networks:

Frequency band [MHz]	Land systems
925–960	GSM, UMTS, LTE
2110–2170	UMTS, LTE

- b) The operators of MCA services may also decide that NCU preventing the registration is implemented in following frequency bands:

Frequency band [MHz]	Land systems

<sup>31)</sup> Aircraft NodeB – radio interface at board of the aircraft.

460–470	LTE
791–821	LTE
1 805–1 880	GSM, LTE
2 570–2 620	LTE
2 620–2 690	LTE

- c) the total equivalent isotropic radiated power (e.i.r.p.) outside of the aircraft coming from on boards' NCU, on-board BTS or from on-board Ac-Node B shall not exceed prescribed limits:

Height above ground [m]	Maximum e.i.r.p. of the system outside of aircraft [dBm/channel]		
	NCU	on-board BTS / on-board Ac-NodeB	on-board BTS / on-board Ac-NodeB / NCU
	band 900 MHz	band 1800 MHz	band 2100 MHz
	Channel bandwidth = 3.84 MHz	Channel bandwidth = 200 kHz	Channel bandwidth = 3.84 MHz
3000	-6.2	-13.0	1.0
4000	-3.7	-10.5	3.5
5000	-1.7	-8.5	5.4
6000	-0.1	-6.9	7.0
7000	1.2	-5.6	8.3
8000	2.3	-4.4	9.5

8. The requirements resulting from legal flight regulations are not affected by this General Authorisation.