



**Czech Telecommunication Office**  
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Ref.: ČTÚ-8933/2019-613

On the basis of public consultations 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 Procedure Code, as amended, and on the basis of the decision of the Council of the Czech Telecommunication Office (hereinafter “the Office”) under Section 107(9)(b)(2) of the Act, and in order to implement Section 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 Authorization No. VO-R/24/05.2019-4  
for the operation of equipment of infrastructure for transmitting radio signals  
inside tunnels, premises of buildings and trains**

**Article 1  
Introductory provisions**

The apparatus operating conditions<sup>1)</sup> relating to the operation of the transmitting radio equipment – repeaters which are a part of the equipment infrastructure for local additional coverage of objects, i.e., tunnels, internal spaces of buildings and internal spaces of passenger coaches of trains by a signal transmitted outside these objects (hereinafter “the stations”) by natural or legal persons (hereinafter as “user”) by the means of electronic communication networks of the operators who have been granted individual authorization for the use of radio frequencies, are laid down in the Act and in this General Authorization pursuant to Section 10(1) of the Act.

**Article 2  
Factual common conditions**

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

1. stations may be operated without individual authorization for the use of radio frequencies;
2. stations only amplify the signals transmitted by networks of the operators who have been granted an individual authorization for use of radio frequencies;
3. in a case where in the framework of an individual authorization for use of radio frequencies the geographic territory has been defined, it is possible to use radio frequencies and operate stations only on these territories;
4. stations shall not cause the harmful interference to the stations which use the radio frequencies in the framework of primary radiocommunication service on the basis of individual authorization and they have no protection against harmful interference from these stations as well.
5. stations can be neither electrically nor mechanically modified.

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

### **Article 3**

#### **Specific conditions for stations intended for additional coverage of buildings and other constructions with signal of broadcasting service**

- (1) The stations serve for the additional coverage of road and railway tunnels and the internal spaces of buildings by signals of the one-way broadcasting service.
- (2) The stations are operated with transmitting antennas located inside a construction consisting of one or more radiating cables or one or more individual antennas.
- (3) In road and railway tunnels it is also possible to ensure the additional coverage by analogue and digital broadcasting service signal. In other constructions it is possible to ensure additional coverage only of the digital terrestrial broadcasting service signal (so-called DVB and DAB repeaters).
- (4) The stations only amplify the signal available around the construction. A change of signal (content of transmission) is possible only in road and rail tunnels in the case of announcement of warnings, instructions or information necessary for safety or protection of users of these tunnels according to the valid regulations for technological equipment of tunnels<sup>2)</sup>.
- (5) The stations shall not interfere with the receipt of radio or television signals outside of the construction, including the area around tunnel entrances.

### **Article 4**

#### **Specific conditions for stations intended for additional coverage of buildings and other constructions by signal of terrestrial mobile service networks**

- (1) The stations serve for the additional coverage of internal spaces of buildings and road or railway tunnels by signals of the terrestrial mobile service networks (for example, public mobile network, TETRA, trunk networks etc.).
- (2) For communication with user's terminals the stations are operated with antennas located inside a building or tunnel consisting of one or more radiating cables or one or more individual antennas.
- (3) The stations can be operated only on the basis of the written consent of the operators of the networks, the signal of which the stations provide additional coverage. The written consent is not necessary for the dissemination of the signals of transmitting networks serving exclusively for the ensuring of the fire protection, public order and security of inhabitants.
- (4) The stations shall not interfere with the operation of any networks of electronic communications outside the buildings or tunnels, including the area around their entrances.
- (5) ČSN EN 303 609<sup>3)</sup>, ČSN EN 301 908-11<sup>4)</sup> and ČSN EN 301 908-15<sup>5)</sup> are the harmonized standards for the stations.

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<sup>2)</sup> ČSN 73 7507 – Design of road tunnels; ČSN 73 7508 – Rail tunnels.

<sup>3)</sup> ČSN EN 303 609 – Global System for Mobile communications (GSM) – GSM Repeaters – Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU.

<sup>4)</sup> ČSN EN 301 908-11 – IMT cellular networks – Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU – Part 11: CDMA Direct Spread (UTRA FDD) Repeaters.

<sup>5)</sup> ČSN EN 301 908-15 – IMT cellular networks – Harmonised Standard covering the essential requirements of article 3.2 of the Directive 2014/53/EU – Part 15: Evolved Universal Terrestrial Radio Access (E-UTRA FDD) Repeaters.

## **Article 5**

### **Specific conditions for stations intended for additional coverage of coaches of trains by broadband mobile networks**

(1) The stations serve for the additional coverage of interior of passenger coaches of trains by signal of broadband mobile networks.

(2) Technical parameters of the stations are:

Frequency band	Technology	max. e.i.r.p. <sup>6)</sup> in the uplink <sup>7)</sup>	max. e.i.r.p. <sup>6)</sup> in the downlink <sup>7)</sup>	max. allowed gain of the station (in the uplink and the downlink <sup>7)</sup> )
800 MHz, 900 MHz	LTE	24 dBm	17 dBm; spectral density shall not exceed level 10 dBm / 5 MHz	15 dB
900 MHz	GSM, GPRS	33 dBm	10 dBm	15 dB
1800 MHz	GSM, GPRS	30 dBm	10 dBm	21 dB
1800 MHz, 2100 MHz	LTE, UMTS	24 dBm	17 dBm; spectral density shall not exceed level 10 dBm / 5 MHz	21 dB

(3) The stations shall not interfere the operation of any kind of networks of electronic communications outside of the train.

(4) In case no user's terminal is actively connected to the station for the period of five minutes, the station shall turn to the mode in which the power of signal will not exceed in uplink direction, on the connector for connection the outdoor antenna, the level of -70 dBm/MHz.

(5) ČSN ETSI EN 303 609<sup>3)</sup>, ČSN ETSI EN 301 908-11<sup>4)</sup> and ČSN ETSI EN 301 908-15<sup>5)</sup> are the harmonized standards for the stations.

## **Article 6**

### **Final provisions**

As a station complying with the Government Order No. 426/2016 Coll., on the assessment of conformity of radio devices when delivered to the market, shall be considered any station 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 station was placed to the market before 1 April 2003.

## **Article 7**

### **Repealing Provisions**

This is to repeal General Authorisation No. VO-R/24/11.2008-16 for the operation of equipment of infrastructure for transmitting radio signals inside tunnels and internal spaces of buildings of 18 November 2008 published in Issue 19/2008 of the Telecommunications Bulletin.

<sup>6)</sup> The abbreviation e.i.r.p. stands for equivalent isotropic radiated power.

<sup>7)</sup> The term "uplink direction" – (uplink) stands for transmission from terminals to base stations; the term "downlink direction" – (downlink) stands for transmission from base stations to the terminals.

## **Article 8 Effect**

This General Authorisation comes into effect on 15 June 2019.

### **Explanatory Memorandum**

To implement Section 9 and 12 of the Act, the Office issues General Authorization No. VO-R/24/05.2019-4 for the operation of equipment of infrastructure for transmitting radio signals inside tunnels, buildings and trains (hereinafter “the General Authorization”).

This General Authorization is based on the principles set out in the Act, the frequency plans and harmonisation objectives of the European Union, and it replaces General Authorisation No. VO-R/24/11.2008-16, repealed by Article 7 of the General Authorisation.

The purpose of the General Authorisation is to enable the reception of radio and communication by means of the networks of land mobile service in the railway and the road tunnels and inside of buildings as well as to enable communication inside the couches of trains. These requirements result from legal measures which regulate requirements on the construction and facilities of tunnels and from the initiatives of the Fire brigade, keepers and users of constructions and producers/importers of devices.

The Article 2 contains the specific conditions of operation of equipment of infrastructure for the dissemination of radio signals inside constructions which are set out in articles 3 up to 5 for the individual types of devices. These conditions are based on the Directive 2014/53/EU of the European Parliament and of the Council, on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC as well as from requirements that result from the administration of radio spectrum management. Within the meaning of Article 6, the provisions of these regulations do not hinder the operation of the equipment placed to the market before the effective date hereof. Articles 7 and 8 repeal existing General Authorisation No. VO-R/24/11.2008-16 and set the date of entry into effect of the General Authorization pursuant to Section 124(2) of the Act.

After the General Authorisation No. VO-R/24/11.2008-16 was published, there was development in the field of mobile networks. The Office also observed interest in the improvement of coverage inside train couches by means of repeaters. There was also development and update of the harmonised standards on repeaters of signals. The Office took also the measures in other EU countries into consideration. For these reasons in the framework of the administration of radio spectrum management, the Office in comparison with the previous General Authorisation No. VO-R/24/11.2008-16, in sense of Section 12 of the Act, in this General Authorisation carried out following changes:

1. Article 5 was added which relates to the extended coverage for the signal of mobile broadband networks inside the train couches. In the Article, the conditions based on the accomplished measurements and the findings from radio spectrum monitoring and the exercise of inspection by the Offices' bodies. The conditions defined in other EU countries were taken into consideration. In connection with the additional Article, the name of the General Authorisation was modified.
2. There were carried out following modifications which did not change the method of operation of equipment in buildings and tunnels:
  - a) The condition about interference by stations and interference of the stations in the Article 2(4) was put into conformity with wording of other nowadays issued general authorisations;
  - b) The reading of the Article 4, paragraph 1 up to 3, was specified on the basis of knowledge of interpretation these paragraphs in practice;

- c) In the Article 4(5) and the Article 5(5), the harmonised standards for stations were set down in accordance with wording of other general authorisations;
- d) Minor formal changes were carried out.

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On the basis of Section 130 of the Act and according to the Czech Telecommunication Office's Rules for Conducting Consultations at the Discussion Site, the Office published on 15 March 2019 the draft Measure of General Nature laying down the General Authorisation No. VO-R/24/xx.2019-y for the operation of equipment of infrastructure for transmitting radio signals inside tunnels, buildings and trains, and a call for comments at the Discussion Site. In the framework of the public consultation, the Office received two comments. The comments address the requirement of montage of equipment by specialized montage company and cancelling new implemented Article 5. The reading of these comments and their settlement is introduced in the table of settlement of comments at the Discussion Site.

On behalf of the Council of the Czech  
Telecommunication Office

Jaromír Novák  
Chairman of the Council  
of the Czech Telecommunication Office  
<signed>