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Czech Telecommunication Office (hereinafter “the Office”) under Section 108(1)(b) of the Act 127/2005 Coll., on electronic communications and on amendment to certain related acts (the Electronic Communications Act), as amended (hereinafter “the Act”), in compliance with the Act No. 500/2004 Coll., Administrative Procedure Code, as amended, on the basis of results of public consultations under Section 130 and on the basis of the Office Council’s decision under Section 107(9)(b) and in order to implement Sections 9 and 12 of the Act, the Office hereby issues this Measure of General Nature

General Authorisation No. VO-R/12/12.2019-10 for the use of radio frequencies and for the operation of equipment for broadband data transmission in the 2.4 GHz – 71 GHz band.

Article 1

Introductory Provisions

The apparatus operating conditions^{1),2)}, relating to natural persons’ or legal entities’ (hereinafter “operator”) use of radio frequencies and to the operation of radio transmitting equipment for broadband data transmission in frequency band 2.4 – 71 GHz including fixed digital radio links used to data signals transmission in frequency band 57 – 66 GHz (hereinafter “the stations”) are set out in the Act and in this General Authorisation under Section 10(1) of the Act³⁾.

Article 2

Actual Conditions

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

- a) The operator can use radio frequencies and operate the station without individual authorisation for the use of radio frequencies;

¹ Sections 73 to 74 of the Act.

² European harmonized standards, as stated in this Measure of general Nature, applied under Act 90/2019 Coll. on conformity assessment of products when made available on the market, and Government Order 426/2016 Coll. on conformity assessment of the radio equipment when making them available on the market.

³ This General Authorisation proceeds from the Recommendation of the Electronic Communications Committee (ECC) of the European Conference of Postal and Telecommunications Administrations (“CEPT”) No. CEPT/ERC/REC 70-03, Annex 3 (Wideband data transmission systems) relating to the use of Short Range Devices (SRD) in the version dated June 7, 2019, Decision of the ECC No. ECC/DEC/(04)08 dated 9 July 2004 as amended on 30 October 2009 according to Decisions of the Commission 2005/513/EC and 2007/90/EC on the harmonised use of radio spectrum in the 5 GHz frequency band for the implementation of Wireless Access Systems including Radio Local Area Networks (WAS/RLANs) and according to Commission Implementing Decision (EU) 2019/1345 of 2 August 2019, amending Decision 2006/771/EC, updating harmonised technical conditions in the area of radio spectrum use for Short Range Devices. Note: The conditions for use of radio frequencies and for providing broadcasting radio equipment according to other annexes of the CEPT/ERC/REC 70-03 Recommendation are a subject of General Authorisation No. VO-R/10/01.2019-1 for the use of radio frequencies and for the operation of Short Range Devices in currently valid version.

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b) The technical parameters of the station are:

Ref.	Frequency band	Maximal radiated power	Maximum e.i.r.p. density	Other conditions	Harmonized standard (ČSN ETSI EN) ²⁾
a	2400.0-2483.5 MHz	100mV e.i.r.p.	10 mV/1 MHz	systems using DSSS ⁴⁾ or OFDM ⁵⁾ techniques	300 328 ⁶⁾
			100 mW/ 100 kHz	systems using FHSS ⁷⁾ techniques	
b1	5150-5250 MHz	200 mW e.i.r.p. ⁸⁾	10 mW/MHz	only indoor use ⁹⁾	301 893 ¹⁰⁾
b2	5250-5350 MHz				
b3	5470-5725 MHz	1 W e.i.r.p. ⁸⁾	50 mW/MHz	---	
c	17.1-17.3 GHz	100 mW e.i.r.p. ⁸⁾	---	---	not defined ¹¹⁾
d1	57-66 GHz	40 dBm e.i.r.p. ⁸⁾	13 dBm/MHz	fixed outdoor installations ¹²⁾ are not allowed	302 567 ¹³⁾
d2	57-71 GHz	40 dBm e.i.r.p. ⁸⁾	23 dBm/MHz	fixed outdoor installations ¹²⁾ are not allowed	not defined ¹¹⁾
d3	57-71 GHz	40 dBm e.i.r.p. ⁸⁾	23 dBm/MHz power supplied to antenna is max. 27 dBm	including fixed outdoor installations ¹²⁾	
d4	57-71 GHz	55 dBm e.i.r.p. ⁸⁾	38 dBm/MHz antenna gain is min. 30 dBi	fixed outdoor installations ¹²⁾ only	
d5	57-64 GHz	55 dBm e.i.r.p.	power supplied to antenna is max. 10 dBm antenna gain is min. 30 dBi	fixed highspeed links of point-to-point type; mutual combination of TDD and FDD is possible	302 217-3 ¹⁴⁾
d6	64-66 GHz				

⁴ DSSS - Direct Sequence Spread Spectrum.

⁵ OFDM - Orthogonal Frequency Division Multiplex.

⁶ ČSN ETSI EN 300 328 – Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques; Harmonized EN covering the essential requirement of article 3.2 of the R&TTE Directives.

⁷ FHSS – Frequency Hopping Spread Spectrum.

⁸ If power regulation is applied, here stated values refer to mean equivalent isotropic radiated power (e.i.r.p.), i.e. the power during the transmission burst which corresponds to the highest power, more precisely to the mean spectral density, i.e. mean e.i.r.p. on 1 MHz.

⁹ "Indoor use" means use inside one building as well as similar

¹⁰ ČSN ETSI EN 301 893 – 5 GHz WLAN; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.

¹¹ In case the European harmonized standard was not established, the equipment must be assessed according to module B+C or module H under Government Order 426/2016 Coll. on conformity assessment of the radio equipment when making them available on the market (i.e. conformity assessed by the Notified Body, marking the equipment with CE label + 4-digit number).

¹² In case of mutual interconnection of two and more stations, the installation, where at least part of the link between these stations is led outside buildings, is also considered to be an outside installation.

¹³ ČSN ETSI EN 302 567 – Multiple-Gigabit/s radio equipment operating in the 60 GHz band; Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU.

¹⁴ ČSN ETSI EN 302 217-3 – Fixed Radio Systems; Characteristics and requirements for point-to-point equipment and antennas; Part 3: Equipment operating in frequency bands where both frequency coordinated or uncoordinated deployment might be applied; Harmonized EN covering the essential requirements of article 3.2 of the R&TTE Directive.

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- c) The maximum e.i.r.p. radiated power and the maximum mean spectral density of the station set in Art. 2(1)(b) must be kept for any combination of the transmitter output power and the antenna used;
- d) The stations may not be operated with additional high-frequency power amplifiers nor with converters;
- e) Stations in the bands *b2* and *b3* shall employ automatic transmitter power control, which provides on average the interference mitigation factor at least 3 dB on the maximum permitted output power of the systems, if automatic power control is not employed, the maximum permitted mean e.i.r.p. and the corresponding limit of the mean e.i.r.p. density for bands *b2* and *b3* must be reduced by 3 dB;
- f) In the bands *b2*, *b3* and *d1-d4* shall be used the mitigation techniques that give at least the same protection level as the techniques described in the harmonised standards⁹)., In bands *b2* and *b3* the mitigation techniques have to equalise the probability of selecting a specific channel from all available channels in order to ensure, on average, a near-uniform spread of spectrum loading and in order to ensure compatible operation with the radio determination systems;
- g) The stations in bands *d5* and *d6* are allowed only as parts of fixed highspeed link of the point-to-point type (hereinafter “link”);
- h) The station is operated on shared frequencies;
- i) In case of harmful interference among stations, the operators settle such interferences in principle by mutual agreement. In case the agreement fails, the procedure based on Section 100 of the Act shall be applied, i.e. the operator who put the interfering station in the operation later will provide protective measures;
- j) The stations must not cause harmful interference to stations of preferred radiocommunication services that are using radio frequencies based on individual authorisation and are not entitled to be protected from harmful interference caused by these stations. The operator of an access point (in “Master” mode) is responsible for harmful interference caused by an associated client station (in “Slave” mode).
- k) The station may be neither electrically nor mechanically modified.

(2) The specific conditions related to Section 10(1)(p) of the Act are:

- a) In the sub-band 57–66 GHz of frequency bands *d3* to *d6*, the operator of fixed outdoor installations¹²,¹⁵) shall notify the following information prior to the use of the radio frequencies, but no sooner than 5 business days, through the portal at <https://60GHz.ctu.cz> (hereinafter “60 GHz Portal”):
 - 1. geographic coordinates of the station, accurate to one-tenth of a second, provided in the WGS-84 geodetic system;
 - 2. for systems in frequency bands *d3* and *d4*, the following station parameters:
 - a. gain of the antenna used,

¹⁵⁾ The notification pursuant to Article 2(2)(a) shall mean also notification of the client station corresponding to a fixed outdoor installation¹²).

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- b. mean power¹⁷⁾ or, as the case may be, e.i.r.p.⁸⁾, if the mean power value is not known,
 - c. main direction of radiation,
 - d. occupied bandwidth;
 - e. MAC Wireless address¹⁶⁾ or serial number if MAC address was not assigned by the manufacturer.
3. for systems in frequency bands *d5* and *d6*, the following station parameters:
 - a. gain of the antenna used,
 - b. mean power¹⁷⁾,
 - c. occupied bandwidth,
 - d. the required signal-to-noise ratio,
 - e. transmission radio frequency
 - f. MAC Wireless address¹⁶⁾ or serial number if MAC address was not assigned by the manufacturer.
- b) The notification according to Point a) on the 60 GHz Portal can only be made by a registered operator after signing in to the Portal;
- c) The following information shall be considered the operator's registration information for the purpose of Point b):
 - a. for a natural person, name, surname and address of residence of the operator including the operator's contact e-mail address;
 - b. for a natural person carrying out business activities, name, surname or, if applicable, commercial name, address of residence, address of business and identification No. (IČ) including the operator's contact e-mail address;
 - c. for a legal entity, commercial name or name, identification No. (IČ), address of the operator's registered office including the contact e-mail address of the operator's representative;
- d) In the case of a fixed-installed client station, the operator of the associated access point is required to notify the station;
- e) For the purpose of Paragraph 1(j), the moment of commencement of the use of radio frequencies shall be the date of the notification via 60 GHz Portal;
- f) Always no later than eighteen months after the notification pursuant to Paragraph 2(a), or after the confirmation pursuant to this Point, the station operator shall confirm by means of the 60 GHz Portal the correctness and time relevance of the station data. If the operator fails to confirm the correctness and time relevance of the station data within the time limit specified in the first sentence, such station shall be deemed not to have been notified. Confirmation of time relevance and correctness of the data shall not be considered a change in data pursuant to Paragraph 2(g);
- g) The termination of the use of radio frequencies and the change in the notified data shall be projected by the operator without undue delay in the already notified data in the 60 GHz Portal. A change to the technical data notified pursuant to Paragraph 2(a) which, by its nature, leads to an increased risk of harmful interference, shall be considered a re-start of

¹⁶⁾ "MAC (Media Access Control) Wireless address" shall mean a unique identifier of the wireless network device, or station in the case of this General Authorisation.

¹⁷⁾ For the purpose of this General Authorisation, "mean power" shall mean the average power delivered by the station to the antenna feeder under normal operating conditions for a sufficiently long time compared to the lowest modulation frequency.

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the use of the radio frequencies, and for the purpose of Paragraph 1(j), the new moment of commencement of the use of radio frequencies shall be the date of notification of the change;

- h) The technical data of the stations according to Paragraph 2(a), items 1 to 3, shall be published by the Office on the 60 GHz Portal.

Article 3 **Final Provisions**

Also considered as a station complying with the Government Order No. 426/2016 Coll., on conformity assessment of the radio equipment when making them available on the market is any station for which the Office decided on approval or recognition of the type of the radio equipment in accordance with Section 10 of Act No. 151/2000 Coll., on Electronic Communications and on Amendment to Other Acts, as amended, provided that such a station was launched before 1 April 2003.

Article 4 **Repealing Provisions**

This is to repeal General Authorisation No. VO-R/09.2010-12 for the use of radio frequencies and for the operation of equipment for broadband data transmission in the 2.4 GHz – 66 GHz band, dated 8 October 2010, published in Issue 18/2010 of Telecommunications Bulletin.

Article 5 **Effect**

This General Authorisation shall come into effect on 15 January 2020.

Explanatory Memorandum

To implement Sections 9 and 12 of the Act, the Office issues General Authorisation No. VO-R/12/12.2019-10 for the use of radio frequencies and for the operation of equipment for broadband data transmission in the 2.4 GHz – 71 GHz band including fixed digital radio links in frequency band 57 – 66 GHz.

This General Authorisation is based on the principles set out in the Act and in the frequency plans and harmonisation objectives of the European Communities, and it replaces the General Authorisation No. VO-R/12/09.2010-12 which is repealed by Article 4 of the General Authorisation.

The purpose of the General Authorisation is newly to allow the use of the radio frequencies by broadband transmission stations in frequency bands over the 66 GHz bounds, namely 66 – 71 GHz, to set down less restrictive conditions for the use of the 57 – 66 GHz band and also to allow its use by stations of fixed high-speed links of the point-to-point type in 57 – 66 GHz band. Together with this revision a duty is introduced to notify the use of the radio frequencies in band 57 – 66 GHz for fixed outside installations.

In the table in Article 2(1)(b), the individual rows represent the range of radio frequencies which can be used under this General Authorisation. For each row, there is a certain number of columns which specify in more detail specific technical parameters of the station (e.g., mean power value; e.i.r.p.; reference to the harmonized standard, if defined,

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etc.). In footnote No.11, the Office provides information on the method of assessment of the equipment where a harmonized standard has not yet been established for the category in question – for more information see the settlement of comments on point iii) below.

Article 2(1)(c) to (g) specifies the additional technical parameters of the stations which cannot be listed in a table in an appropriate manner.

Article 2(1)(h) to (j) regulates mutual regulatory relationship of individual stations. With respect to the fact that frequency coordination is not carried out by the Office in the frequency bands in question, but is left to the operator, the nature of the use of the radio frequencies, which corresponds to shared use, is specified. In addition, the procedures for operators in case of harmful interference between stations are specified. If they fail to reach an agreement according to Article 2(1)(j), any dispute between them shall be settled by the Office pursuant to Section 127 of the Act.

Article 2(2) obliges the operator to notify the commencement of the use of radio frequencies. The 60 GHz Portal, through which the operator of fixed outdoor installations¹²⁾, ¹⁵⁾ shall notify, pursuant to Article 2(2)(a), the required technical parameters of the station, is created for that purpose. The purpose of this registration (notification process) is to support mutual coexistence of stations in the 57 to 66 GHz frequency band, in particular with respect to the fixed digital radio links which conform to the requirements according to the harmonized standard ČSN ETSI EN 302 217-3 and which do not have additional mitigation techniques to prevent harmful interference to a certain extent. To help reduce the likelihood of mutual interference, the 60 GHz Portal is equipped with some functionalities that allow operators to optimize mutual sharing. These functionalities, however, do not create any legal claim against the Office and are merely indicative.

One such functionality is the so-called "coordination calculator", which, however, has only the role of an indicative tool for the operator in finding suitable conditions of mutual compatibility and thus does not create any legal entitlement to ensuring undisturbed operation. This is because, in order to determine exactly whether unwanted interference could occur, a more complex model of radio wave propagation would have to be applied, taking into account terrain, obstacles, polarization discrimination, aggregated effect of interfering transmitters, unwanted reflections, accurate radiation diagrams, etc. However, the Office believes that most cases of potential interference can be eliminated in advance by means of this coordination calculator.

With respect to this coordination calculator, as opposed to the notification obligation laid down in General Authorisation No. VO-R/23/08.2017-6 to use radio frequencies and to operate fixed service equipment in 71–76 GHz and 81–86 GHz frequency bands, the notification obligation is given prior to the actual use of the radio frequencies. This difference results from the need to perform a calculation using the coordination calculator within the notification process, which only makes sense if such action is taken before the actual use of the radio frequencies.

In terms of the amount of the information required within the notification process, the Office has carefully considered this in order to require from the operators only the necessary amount of information for performing the calculation by the coordination calculator as well as to allow, in the event of sharing two otherwise incompatible technologies, efficient, quick and proper control of electronic communications to the benefit of the operators and, as the case may be, consumers of the electronic communications services provided by the operators.

At the same time, in Article 2(2)(f), the Office set the condition and deadline for periodic confirmation and updates of the data notified on the 60 GHz Portal. The reason is the need to ensure most up-to-date information on the operated stations for the possibility to indicatively verify mutual compatibility for coordination purposes. In the absence of periodic confirmation of the reported data of a station within the specified eighteen-month period, such station

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shall be deemed not to have been notified. Before the expiry of this period, the operator will be informed in a non-binding manner, at the specified registration e-mail address.

At the same time, formal adjustments have been made to make this General Authorisation clearer, in particular by moving the references to the relevant harmonized standards from footnotes to the table in Article 2(1)(b), similarly to the adjustments made in other General Authorisations.

Article 3 sets down a possibility to operate equipment launched before 1 April 2003.

Article 4 repeals the General Authorisation No. VO-R/12/09.2010-12.

Article 5 sets down the effect of the General Authorisation.

On the basis of Section 130 of the Act and in accordance with the Rules of the CTU for consultation at the discussion site (hereinafter "Rules"), the Office published on 23 October 2019 its draft General Authorisation No. VO-R/12/XX.2019-Y for the use of radio frequencies and for the operation of equipment for broadband data transmission in 2.4 GHz – 66 GHz band and a call for comments at the discussion site.

Within the public consultation, the Office received a total of 16 comments from five entities within 1 month, raised in accordance with Article 6(2) of the Rules. The Office settled these comments in accordance with the law and their settlement is described in the settlement table and published on the Office's website. Below is a brief summary of the main comments and the framework position of the Office.

The submissions received can be divided into several areas (points) – i) submissions regarding the specified notification obligation (Article 2(2)) and the rejection thereof, ii) specification of the radiocommunication services including moving selected frequency bands to General Authorisation No. VO-R/10, iii) proposals related to the conditions for the use of bands *d3* and *d4* in relation to the harmonized standard which has not been defined, iv) proposed modifications or deletion of the obligation to report the station's MAC address or serial number, v) other comments with a request for explanation/clarification of the text of the General Authorisation.

The Office did not accept point i) in the settlement of comments concerning the proposal to cancel the notification obligation because it disagreed with the commenting body and did not find the notification obligation inconsistent with the EU harmonization intention and, at the same time, pointed out the possibility of imposing such an obligation in accordance with the law and, inter alia, in accordance with the valid part of the Radio Spectrum Utilization Plan. The Office found the need to introduce the notification obligation necessary and supported by the applicable legislation and introduced it only in those parts of the spectrum (57–66 GHz) where it is necessary.

The Office did not accept point ii) in the settlement of comments concerning the move of the bands *d2* to *d3* to General Authorisation No. VO-R/10 because it did not find a reason for such a step, and on the contrary, the move would be considerably confusing with regard to the notification obligation imposed. In addition, European harmonization documents concerning Short Range Devices are implemented in the Czech Republic in multiple General Authorisations. In terms of specification of the radiocommunication services, the Office refers in this respect to the conclusions and settlement of the proposed parts of the Radio Spectrum Utilization Plans No. PV-P/3/XX.2019-Y and No. PV-P/23/XX.2019-Y which the Office published on its website. In this regard, and for the sake of consistency with the valid parts of the Radio Spectrum Utilization Plan, the Office, however, partly satisfied the commenting party and adjusted the nomenclature to be treated as fixed digital radio links in this General Authorisation.

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Regarding point iii), the Office states that according to the legislation in force, if the harmonized standard has not yet been defined, the equipment (station) must be assessed according to module B + C or module H of Government Order No. 426/2016 Coll., on conformity assessment of the radio equipment when making them available on the market (hereinafter referred to as "Government Order 426") (i.e., conformity assessment by the Notified Body, marking the equipment with CE label + 4-digit number). The Office only provides this information indicatively because for bands *d2* to *d4*, ETSI EN 302 567 is not harmonized (inconsistency of the subject and technical parameters). Section 11(4) of Government Order 426 (implements Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014) implies that in such case, only equipment assessed by the Notified Body (NB) can be placed on the market. The Office has no authority to change this fact in any way and can only draw attention to it. The Office therefore complied with the comments only in part in the sense that it described the situation of the absence of a harmonized standard in more detail above. The Office also states that it cannot accept the proposed conditions for the use of bands *d3* and *d4* such that only the manufacturer's declaration of compliance with the conditions set out in the General Authorisation would be sufficient or, as the case may be, that manufacturers could check the product (station) themselves according to the requirements set and based on their own measurements. The Office could not accept such a proposal because it does not have such power by law.

Regarding point iv), the Office could accept the request for eliminating the registration of MAC addresses or serial numbers of the stations because it considers such registration to be necessary for the proper, efficient and timely performance of control of electronic communications. The Office consistently considered the proposals related to the use of labels for identification of stations (instead of MAC addresses or serial numbers), nevertheless it concluded that such use is impractical to fulfil the purposes of control of electronic communications, plus it would have to set relatively stringent label requirements, which could ultimately place a greater burden on the operators. One proposal of a commenting body, which was related to the introduction of two-tier registration of MAC addresses or, as the case may be, serial number, was not properly justified by the commenting body, and since the Office did not consider it practical it did not accept it.

Point v) can contain more general comments, including comments requiring further clarification of certain provisions of the General Authorisation. Comments not accepted by the Office include the requirement to report the specific radio frequency/channel used in bands *d3* and *d4*. This is not possible, according to the Office, because mitigation techniques envisage dynamic, not static channel/frequency allocation. At the same time, the Office partially accepted the comment concerning the terms specified in Article 2(2)(a) and (f) and clarified the text of the General Authorisation, including the justification.

In addition to these comments, the Office received four other (out of which two with duplicate content) which do not constitute a comment in accordance with the Rules and the Office therefore did not deal with them. However, the Office took into account one factual notice and in the table in Article 2(1)(b) in bands *d1* and *d2* it provided maximum values instead of mean values. At the same time, for the sake of clarity, without changing the contents, the Office made the table more transparent, including adjustment of footnote No.8.

On behalf of the Council
of the Czech Telecommunication Office

Jaromír Novák

Chairman of the Council
of the Czech Telecommunication Office