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## A Introduction

The Agency for Communication Networks and Services of the Republic of Slovenia (hereinafter referred to as the Agency) manages the radio frequency spectrum of the Republic of Slovenia on the basis of a public authorisation, and in doing so adheres to the strategic guidelines of the relevant Ministry and the strategic guidelines of the Republic of Slovenia and the EU.

For this public tender the Agency defined three pillars of the radio-frequency spectrum management policy: (1) to ensure a technically effective assignment of the radio-frequency spectrum; (2) to preserve and promote effective competition between terrestrial system operators who provide wireless broadband electronic communication services, (3) to award the radio-frequency spectrum at market prices.

Based on these three pillars and in accordance with the 5G Action Plan<sup>1</sup> guidelines, this public tender shall also pursue the following objectives, compliant with Articles 195–197 of the Electronic Communications Act (Official Gazette of the Republic of Slovenia no. 09/12, 110/13, 40/14 – ZIN-B, 54/14 – Constitutional Court Decision, 81/15, 40/17, 30/19; hereinafter referred to as ZEKom-1) and the Digital Agenda for Europe<sup>2</sup>:

- enable the roll-out of advanced technologies by awarding sufficient amounts of spectrum in sufficiently large blocks in a timely manner;
- provide a stable environment for operators and other investors;
- ensure digital inclusion of the population on as wide territory of the Republic of Slovenia as possible;
- promote investments and development, and make the use of the radio frequency spectrum available primarily for services that contribute to achieving the highest possible level of social and economic progress;
- keep pace with the most developed countries in the world in introducing Industry 4.0 and intelligent connectivity with the objective of improving the social and economic well-being of the citizens of the Republic of Slovenia (especially new jobs in different industries in the 2025–2030 period);
- create the conditions for building radio systems for users in the Connected Autonomous Driving (CAD) field and other verticals.

Following the above objectives the Agency published in the Official Gazette of the RS no. 191 of 18. 12. 2020 the “Decision on Initiating a Public Tender with a Public Auction for Awarding Radio Frequencies for the Provision of Public Communication Services” no. 38144-5/2020 of 17. 12. 2020 amended by the decision amending the decision on the introduction of public tender no. 38144-5 / 2020/13 of 5 January 2021, as amended by the decision amending the decision on the introduction of the public tender (amendment No. 2) no. 38144-5 / 2020/49 of 3 February 2021 (hereinafter referred to as the Decision on Initiating a Public Tender), which it adopted based on Articles 38 and 44 of the Electronic Communications Act (Official Gazette of the RS no. 109/12, 110/13, 40/14 – ZIN-B, 54/14 – Constitutional Court Decision, 81/15 and 40/17); hereinafter referred to as ZEKom-1).

The Agency invites all interested providers to submit their applications, which must be prepared in accordance with the Decision on Initiating a Public Tender and tender documentation.

<sup>1</sup> COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS 5G for Europe: An Action Plan, COM/2016/0588 final, (<https://eur-lex.europa.eu/legal-content/si/TXT/?uri=CELEX%3A52016DC0588>)

<sup>2</sup> Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, A Digital Agenda for Europe, COM (2010) 245 final/2; replacing the document COM (2010) 245 final of 19 May 2010; Brussels, 26 August 2010

## A.1 Participating in the tender

All natural persons and legal entities financially, organizationally, and technically capable of planning, deploying, and operating public mobile communication networks and providing public communications services may participate in the public tender as applicants by submitting their applications.

Applicants shall be treated in accordance with Chapter A.5 (Conditions and requirements of the public tender) and C.2.4 (Information on applicant's ownership (no form)).

The application must be valid at least until 31. 7. 2021. Each applicant may submit only one application.

In accordance with provisions from paragraph 2 of Article 41 of ZEKom-1, the public tender is anonymous, therefore instead of the data on applicants' names, their codes shall be used in the public opening of applications. The Agency shall allocate codes to applications upon receiving them.

For the duration of the public tender with a public auction, all the subjects who submit an application for the public tender shall be deemed applicants. In the scope of these, applicants may, in accordance with conditions and requirements of the public tender, receive the status of a bidder during the public tender.

### A.1.1 Data and procedure confidentiality

The information that the applicant will rightly designate as confidential shall only be used for the purpose of the tender and shall not be accessible to anyone except for authorized persons of the Agency who are responsible for the implementation of the subject invitation to tender (tender management committee). Documents containing personal data may be classified as confidential by the provider, if they are not available in any public register or otherwise publicly available, and other business data in accordance with Trade Secret Law (Official Gazette RS, No. 22/2019, hereinafter referred to as *ZPosS*).

The applicant may not label as confidential the data that affect the selection. If data affecting the selection are labelled as confidential, the Agency shall not treat them as confidential.

The Agency shall treat all personal data in the tender documentation in accordance with the Personal Data Protection Act (Official Gazette RS, No. 94/07) and the General Data Protection Regulation (Regulation (EU) 2016/679))<sup>3</sup>.

The Agency shall treat as trade secrets only those parts of the tender documentation that shall have the text "TRADE SECRET" written in capital letters in the top right corner, with the signature of the person signing the application underneath this text. If only a certain piece of data in the document is deemed confidential, this confidential part must be clearly marked, with the capital letters "TRADE SECRET" written in the line along the right edge. If individual datum is designated as a trade secret, the applicant shall also provide a written trade secret document as defined in paragraph 2 of Article 2 of the *ZPosS*.

Notwithstanding the above, the Agency shall in accordance with the Paragraph 4 of Article 39 of ZEKom-1 protect the list of applicants and the submitted applications as a trade secret until the deadline for submitting applications expires.

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<sup>3</sup> Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (OJ L 119, 4.5.2016, p. 1–88)





The Agency is not responsible for the confidentiality of the data not marked as described above.

## A.2 Selecting the winning bid

The selection of winning bids only relies on selecting bids that provide the highest total bid amounts subject to the availability of lots, therefore the Agency shall, following a successful public tender and in accordance with paragraph 1 of Article 44 of ZEKom-1, conduct a public auction in compliance with auction rules F (Auction rules for Electronic Auction). Bids shall be evaluated in accordance with the rules described in this document F.2 (Auction rules). The bidders shall be allocated frequency blocks with specified frequency bandwidth in the 700 MHz, 1500 MHz, 2100 MHz, 2300 MHz, 3600 MHz and 26 GHz frequency bands for providing public mobile services.

The public auction shall only be held if at least two applicants qualify.

The chairperson of the commission from paragraph 2 of Article 37 of ZEKom-1 or deputy acts as auctioneer in the public auction (paragraph 1 of Article 45 of ZEKom-1).

The Agency shall issue a Decision for awarding radio frequencies (hereinafter referred to as DARF) to successful bidders.

Successful bidders shall have to pay the fee for efficient use of a limited natural resources in accordance with section F.1 (Reserve price and payment method) and an annual compensation for the efficient use of limited natural resources in accordance with applicable regulations.

## A.3 Description of the subject of the tender

As part of the invitation to the public tender with a public auction, the Agency shall offer fully available 700 MHz FDD<sup>4</sup>, 700 MHz SDL<sup>5</sup>, 1500 MHz, 2100 MHz frequency bands and portions of the 2300 MHz, 3600 MHz and 26 GHz bands. All frequency bands shall be designated for terrestrial systems capable of providing wireless broadband electronic communications services and shall be technologically neutral. As will be discussed in more detail in the next section, the following frequency spectrum will be the subject of an upcoming call for public tender:

- 703 – 733/758 – 788 MHz paired FDD band (hereinafter referred to as: *700 MHz FDD frequency band*),
- 738 – 753 MHz unpaired Supplementary Downlink SDL (hereinafter referred to as: *700 MHz SDL frequency band*),
- 1427 – 1517 MHz unpaired Supplementary Downlink (hereinafter referred to as: *1500 MHz frequency band*), which consists of the Lower Extension band (i.e. 1427-1452 MHz), the Core band (i.e. 1452 – 1492 MHz) and the Upper Extension band (i.e. 1492-1517 MHz),
- 1920 – 1980/2110 – 2170 MHz paired FDD band (hereinafter referred to as: *2100 MHz frequency band*),
- 2320 – 2390 MHz unpaired TDD<sup>6</sup> band (hereinafter referred to as: *2300 MHz frequency band*),
- 3420 – 3800 MHz unpaired TDD band (hereinafter referred to as: *3600 MHz frequency band*),
- 26.5 – 27.5 GHz unpaired TDD band (hereinafter referred to as: *26 GHz frequency band*).

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<sup>4</sup> FDD – Frequency Division Duplex

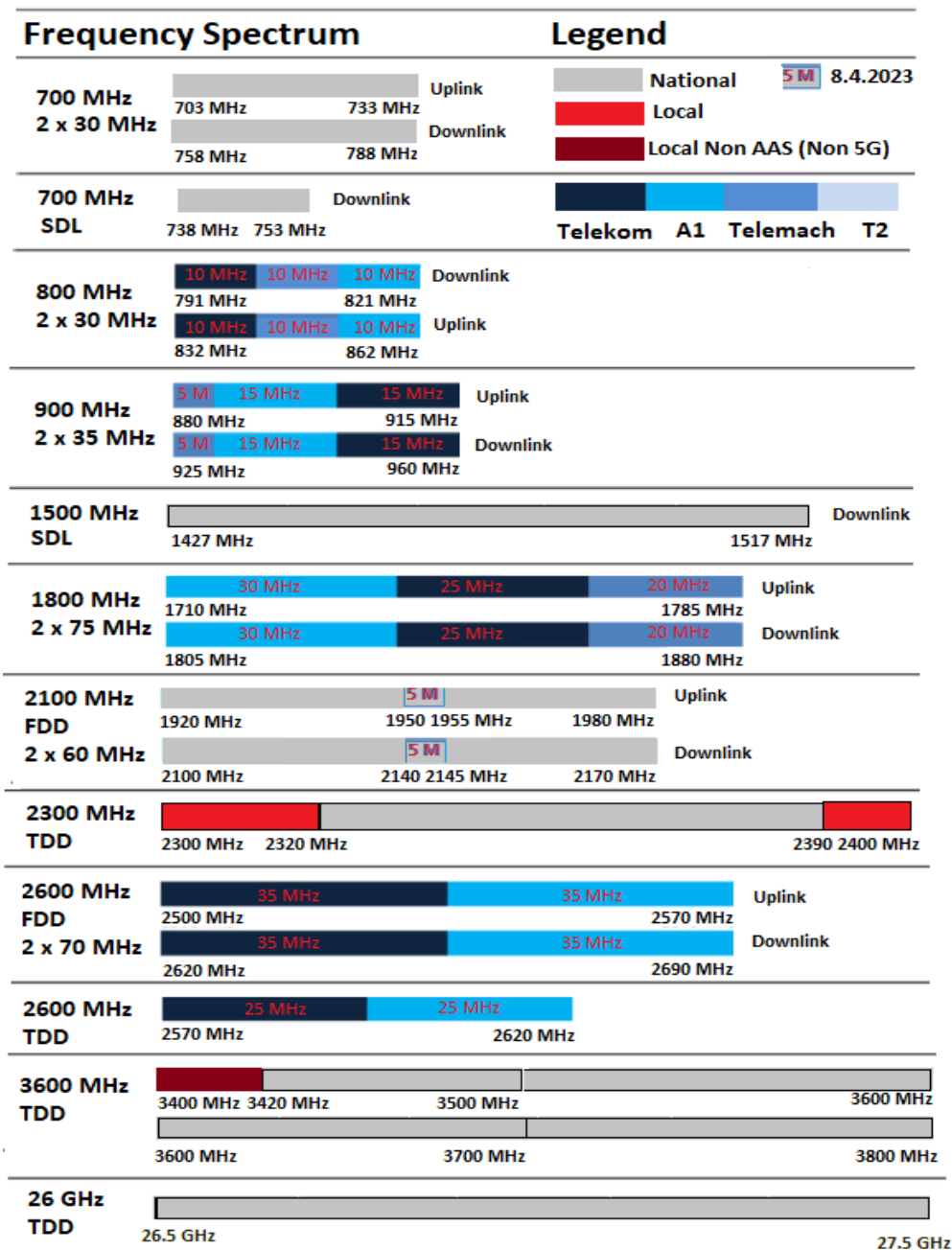
<sup>5</sup> SDL – Supplemental Downlink

<sup>6</sup> TDD – Time Division Duplex

The available spectrum of individual frequency bands subject to this tender is subdivided into blocks, which shall be for auctioning purposes categorized into lots in different categories, with lots within the same category having comparable technical and usable characteristics. Specific technical conditions and restrictions on the use of each frequency band are discussed in sections A.5 (Conditions and requirements of the public tender) and H (Technical requirements for providing services), where the terms and conditions for the use of Unmanned Aircraft Systems and sharing/coexistence with other services are also specified.

The frequency spectrum subject to this tender is shown in Figure A-1.

Figure A-1: frequency spectrum subject to this tender (grey).



Source: AKOS

Table A-1: Frequencies available in the tender procedure

Frequency band	Lower band (FDD) [MHz]	Upper band (FDD) [MHz]	Simplex band (TDD) [MHz]	Bandwidth to be awarded [MHz]	Available for use for
<b>700 MHz FDD<sup>7</sup></b>	703 – 733	758 – 788		2 x 30	15 years
<b>700 MHz SDL<sup>8</sup></b>		738 – 753		1 x 15	15 years
<b>1500 MHz SDL – Lower Extension band</b>		1427 – 1452		1 x 25	15 years
<b>1500 MHz SDL – Core band</b>		1452 – 1492		1 x 40	15 years
<b>1500 MHz SDL – Upper Extension band</b>		1492 – 1517		1 x 25	15 years
<b>2100 MHz FDD<sup>9</sup></b>	1920 – 1980	2110 – 2170		2 x 60	from 22. 9. 2021 till 22. 9. 2036
<b>2300 MHz TDD</b>			2320 – 2390	1 x 70	from 1. 1. 2022 till 1. 1. 2037
<b>3600 MHz<sup>10</sup> TDD</b>			3420 – 3800	1 x 380	15 years
<b>26 GHz TDD</b>			26500 – 27500	1 x 1000	15 years

Source: AKOS

All frequencies that are subject of this public tender will be assigned for 15 years in accordance with Article 53 of ZEKom-1. If the law governing electronic communications that will transpose the provisions of the Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code (L 321/36 of 17 December 2018); hereinafter EECC) into national law determine this, then the holders of the DARFs will get extension of their DARFs under the provisions of the new law. In the event of an extension of DARFs, the holders of the DARFs will also pay a certain amount for the efficient use of the limited natural resource.

### A.3.1 700 MHz frequency band

The subject of the public tender shall be the 700 MHz frequency band, which includes 2 x 30 MHz of paired frequency bands between 703 MHz and 788 MHz and 15 MHz of SDL.

<sup>7</sup> Plan of transition of DVB-T to other bands and releasing the 700 MHz in the neighbouring countries - H.1.4 (Restrictions on demand due to digital TV usage in neighbouring countries)

<sup>8</sup> Plan of transition of DVB-T to other bands and releasing the 700 MHz in the neighbouring countries - H.1.4 (Restrictions on demand due to digital TV usage in neighbouring countries)

<sup>9</sup> 2x5 MHz block (1950 – 1955/ 2140 – 2145) od 9. 4. 2023 do 22. 9. 2036

<sup>10</sup> Sub-band 3400 – 3410 MHz from 22. 9. 2012, sub-bands 3410 – 3430 and 3500 – 3530 MHz are partially used Figure H-5: Overview of spectrum 3600 MHz occupancy with existing rights

A more detailed situation in the 700 MHz frequency band is described in Figure A-2: A more detailed presentation of situations in the 700 MHz band.

Figure A-2: A more detailed presentation of situations in the 700 MHz band

Pasovi	694-698	698-703	703-733	733-736	736-738	738-743	743-748	748-753	753-758	758-788	788-791	791-821
PPDR 2x3 MHz												
PPDR 2x5 MHz		UL PPDR							DL PPDR			
M2M 2x3 MHz			UL MFCN	UL M2M						DL MFCN	DL M2M	DL MFCN
SDL 4x5 MHz						DL MFCN SDL						
PMSE	PMSE				PMSE							
Širina bloka [MHz]	4	5	30	3	2	5	5	5	5	30	3	30
			Javni razpis			Javni razpis				Javni razpis		

Source: ECC Report 242


### A.3.1.1 700 MHz FDD frequency band

The frequency band includes a total of 2 x 30 MHz of paired frequency bands between 703 MHz and 788 MHz (downlink: 703 – 733 MHz, uplink: 758 – 788MHz). Six 2 x 5 MHz blocks (from BA01 to BA06) capable of providing wireless broadband electronic communications services in accordance with the European Parliament and of the Council decision (EU) 2017/899<sup>11</sup> and Commission implementing decision (EU) 2016/687<sup>12</sup> and other documents as specified in chapter H will be available in the public tender for terrestrial systems in the territory of the Republic of Slovenia for 15 years from assignment of radio frequencies.

Overview of the 700 MHz FDD frequency band is presented in the Figure below:

Figure A-3: 700 MHz FDD frequency band

BA01	BA02	BA03	BA04	BA05	BA06
------	------	------	------	------	------

 Available assignment for 15 years

A detailed list of radio frequencies is provided in Table A-2.

<sup>11</sup> Decision (EU) 2017/899 of the European Parliament and of the Council of 17 May 2017 on the use of the 470-790 MHz frequency band in the Union (<https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX%3A32017D0899>)

<sup>12</sup> Commission Implementing Decision (EU) 2016/687 of 28 April 2016 on the harmonisation of the 694-790 MHz frequency band for terrestrial systems capable of providing wireless broadband electronic communication services and for flexible national use in the Union ([https://eur-lex.europa.eu/eli/dec\\_impl/2016/687/oj?locale=en](https://eur-lex.europa.eu/eli/dec_impl/2016/687/oj?locale=en))

Table A-2: Blocks available in the 700 MHz FDD band

Block name	Frequencies	Bandwidth
BA01	703 – 708 paired with 758 – 763 MHz	2 x 5 MHz
BA02	708 – 713 paired with 763 – 768 MHz	2 x 5 MHz
BA03	713 – 718 paired with 768 – 773 MHz	2 x 5 MHz
BA04	718 – 723 paired with 773 – 778 MHz	2 x 5 MHz
BA05	723 – 728 paired with 778 – 783 MHz	2 x 5 MHz
BA06	728 – 733 paired with 783 – 788 MHz	2 x 5 MHz

For the purpose of bidding in the public auction, this frequency spectrum will be awarded in one lot category.

A detailed list of lots in category is provided in the table below:

Table A-3: Lots by category in the 700 MHz FDD band

Category	No. of lots	Included lots	Type of lots	Spectrum amount per lot	Frequency range
A	6	A_01 to A_06	Generic	2 x 5 MHz	703 – 733/758 – 788 MHz

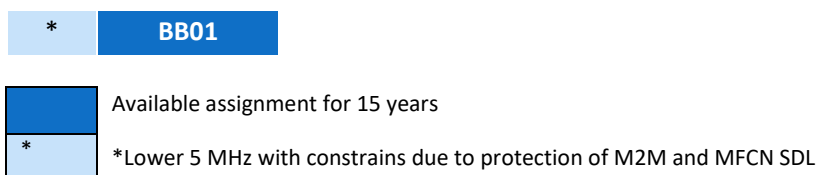
### A.3.1.2 700 MHz SDL Frequency band

The band includes a total of 15 MHz of unpaired frequency bands between 738 MHz and 753 MHz for Supplementary Downlink – SDL.

One 15 MHz block (BB01) capable of providing wireless broadband electronic communications services in accordance with the European Parliament and of the Council decision (EU) 2017/899, Commission implementing decision (EU) 2016/687, ECC Report 242<sup>13</sup> and other documents as specified in chapter H shall be available in the public tender for terrestrial systems in the territory of the Republic of Slovenia for 15 years from assignment of radio frequencies.

In order to ensure compatibility between M2M and Mobile/Fixed Communication Networks (MFCN) SDL, the BS equipment in the sub-band 738 – 743 MHz has to implement the SDL E.I.R.P.<sup>14</sup> limits or other mitigation techniques in order to protect the band 733 – 736 MHz in accordance with chapter H.1.3 (Base Station SDL E.I.R.P. limits).

Overview of the unpaired 700 MHz frequency band (SDL) is presented in the Figure below: Figure A-4: Frequency band 700 MHz SDL.



A detailed list of radio frequencies is provided in Table A-4.

<sup>13</sup> <https://docdb.cept.org/download/2a5c1708-a1a2/ECCREP242.PDF>

<sup>14</sup> Effective Isotropic Radiated Power

Table A-4: Block available in the 700 MHz SDL frequency band

Block name	Frequencies	Bandwidth
<b>BB01</b>	738 – 753 MHz	1 x 15 MHz

\*Block BB01 includes also lower 5 MHz (738 – 743 MHz) with constrains due to protection of M2M and MFCN SDL

For the purposes of bidding in the public auction, this frequency spectrum will be awarded in one lot category.

Table A-5: Lot / category in the 700 MHz SDL frequency band

Category	No. of lots	Included lot	Type of lot	Spectrum amount per lot	Frequency range
<b>B</b>	1	B_01	Specific	1 x 10 MHz	738 – 753MHz, spectrum in 738 – 743 is included free of charge with restrictions

### A.3.2 1500 MHz frequency band

The band includes a total of 90 MHz of unpaired frequency spectrum between 1427 MHz and 1517 MHz for Supplementary Downlink – SDL. 10 MHz blocks in the Core band (i.e. 1452-1492 MHz) and the Extension bands (1427-1452 MHz and 1492 - 1517 MHz) capable of providing wireless broadband electronic communications services in the accordance with the Commission implementing decision (EU) 2018/661<sup>15</sup> and Implementing Decision (EU) 2015/750<sup>16</sup> and other documents as specified in chapter H shall be available in the public tender for terrestrial systems in the territory of the Republic of Slovenia for 15 years from assignment of radio frequencies.

For MSS protection provisions of H.2.3 (Measures for providing compatibility with MSS shall apply.

Overview of the 1500 MHz frequency band is presented in the Figure below:

Figure A-5: Frequency band 1500 MHz

*	BC21	BC22	BC11	BC12	BC13	BC14	BC23	BC24	**
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*
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Available assignment for 15 years

\*Lower 5 MHz with constrains due to protection of the Radioastronomy

\*\*Upper 5 MHz with constrains due to protection of the MSS

<sup>15</sup> Commission Implementing Decision (EU) 2018/661 of 26 April 2018 amending Implementing Decision (EU) 2015/750 on the harmonisation of the 1452-1492 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union as regards its extension in the harmonised 1427-1452 MHz and 1492-1517 MHz frequency bands (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32018D0661>)

<sup>16</sup> Commission Implementing Decision (EU) 2015/750 of 8 May 2015 on the harmonisation of the 1452-1492 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Union (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32015D0750>)

Table A-6: Blocks available in the 1500 MHz SDL band

Block name	Frequencies	Bandwidth
<b>Lower Extension band</b>		
BC21	1427 – 1442 MHz	1 x 15 MHz*
BC22	1442 – 1452 MHz	1 x 10 MHz
<b>Core band</b>		
BC11	1452 – 1462 MHz	1 x 10 MHz
BC12	1462 – 1472 MHz	1 x 10 MHz
BC13	1472 – 1482 MHz	1 x 10 MHz
BC14	1482 – 1492 MHz	1 x 10 MHz
<b>Upper Extension band</b>		
BC23	1492 – 1502MHz	1 x 10 MHz
BC24	1502 – 1517 MHz	1 x 15 MHz**

\*Block BC21 includes also lower 5 MHz (1427-1432 MHz) with constrains due to protection of the Radioastronomy (RAS)

\*\*Block BC24 includes upper 5 MHz (1512-1527 MHz) with constrains due to protection of the Mobile Satellite Services (MSS) in 1518-1530 band

For the purposes of bidding in the public auction, this frequency spectrum will be awarded in two lot categories. Detailed list of lots by category is provided in the table below:

Table A-7: Lots available in the 1500 MHz SDL band

Category	No. of lots	Included lots	Type of lots	Spectrum amount per lot	Frequency range
C1	4	C_11 to C_14	Generic	1 x 10 MHz	1452 – 1492 MHz
C2	4	C_21 to C_24	Generic	1 x 10 MHz	1432 – 1452 MHz and 1492 - 1512 MHz, 1 x 5 MHz of spectrum is added to the lower and upper 5 MHz lot, the lower block has constrains due to protection of RAS, the upper due to protection of MSS in 1518 – 1530 MHz

### A.3.3 Frequency blocks in the 2100 MHz radio frequency band

The band includes a total of 2 x 60 MHz of paired frequency bands between 1920 MHz and 2170 MHz (downlink: 1920 – 1980 MHz, uplink: 2110 – 2170 MHz). Existing DARFs in 11 blocks expire on 21. 9. 2021, and one of the existing DARFs expires on 8. 4. 2023. In order to harmonize the expiry of the all DARFs, the validity of the DARFs under this tender shall expire 15 years after 22. 9. 2021.

Twelve 2 x 5 MHz blocks from BD01 to BD12 capable of providing wireless broadband electronic communications services in accordance with the Commission implementing decision EU(2020)667<sup>17</sup> and Commission implementing decision (EU) 2012/688/EU<sup>18</sup> and other documents as specified in chapter H shall

<sup>17</sup> Commission Implementing Decision (EU) 2020/667 of 6 May 2020 amending Decision 2012/688/EU as regards an update of relevant technical conditions applicable to the frequency bands 1 920-1 980 MHz and 2 110-2 170 MHz (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32020D0667>)

<sup>18</sup> Commission Implementing Decision 2012/688/EU of 5 November 2012 on the harmonisation of the frequency bands 1920 - 1980 MHz and 2110 - 2170 MHz for terrestrial systems capable of providing electronic communications services in the Union (<https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32012D0688>)

be available in the public tender for terrestrial systems in the territory of the Republic of Slovenia in period from 22. 9. 2021 or 9.4.2023 till 22.9.2036.

Overview of the 2100 MHz frequency band is shown in the figure below:

Figure A-6: Frequency band 2100 MHz

BD01	BD02	BD03	BD04	BD05	BD06	BD07	BD08	BD08	BD10	BD11	BD12
						Available from 22. September 2021 for 15 years					
						Available from 9. April 2023 till 22. September 2036					

A detailed list of radio frequencies is provided in the table below:

Table A-8: Blocks available in the 2100 MHz band

Block name	Frequencies	Bandwidth
BD01	1920 – 1925 paired with 2110 – 2115 MHz	2 x 5 MHz
BD02	1925 – 1930 paired with 2115 – 2120 MHz	2 x 5 MHz
BD03	1930 – 1935 paired with 2120 – 2125 MHz	2 x 5 MHz
BD04	1935 – 1940 paired with 2125 – 2130 MHz	2 x 5 MHz
BD05	1940 – 1945 paired with 2130 – 2135 MHz	2 x 5 MHz
BD06	1945 – 1950 paired with 2135 – 2140 MHz	2 x 5 MHz
BD07	1950 – 1955 paired with 2140 – 2145 MHz	2 x 5 MHz
BD08	1955 – 1960 paired with 2145 – 2150 MHz	2 x 5 MHz
BD09	1960 – 1965 paired with 2150 – 2155 MHz	2 x 5 MHz
BD10	1965 – 1970 paired with 2155 – 2160 MHz	2 x 5 MHz
BD11	1970 – 1975 paired with 2160 – 2165 MHz	2 x 5 MHz
BD12	1975 – 1980 paired with 2165 – 2170 MHz	2 x 5 MHz

For the purposes of bidding in the public auction, this frequency spectrum will be awarded in one lot category. Detailed list of lots by category is provided in the table below:

Table A-9: Lots by category in the 2100 MHz band

Category	No. of lots	Included lots	Type of lots	Spectrum amount per lot	Frequency range
D	12	D_01 to D_12	Generic	2 x 5 MHz	1920 – 1980/2110 – 2170 MHz

### A.3.4 2300 MHz frequency band

The 2300 MHz band includes a total of 70 MHz of unpaired frequency bands (TDD) between 2320 MHz and 2390 MHz. Seven 10 MHz blocks from BE01 to BE07 capable of providing wireless broadband electronic communications services in accordance with ECC Decision (14)02<sup>19</sup>, and other documents as specified in chapter H shall be available in the public tender for terrestrial systems in the territory of the Republic of Slovenia from 1. 1. 2022 to 1. 1. 2037.

Until 31. 12. 2025 synchronization is required in compliance with the default synchronization scheme – Frame B («DD DS UU DD DD») from ECC Recommendation (20)03<sup>20</sup> where LTE and new radio – NR have a

<sup>19</sup> ECC Decision (14)02: Harmonised technical and regulatory conditions for the use of the band 2300-2400 MHz for Mobile/Fixed Communications Networks (MFCN) (<https://docdb.cept.org/download/b02d6dab-2b58/ECCDEC1402.PDF>)

<sup>20</sup> [https://docdb.cept.org/download/c8cd4fc9-ff49/ECC%20Recommendation%20\(20\)03.pdf](https://docdb.cept.org/download/c8cd4fc9-ff49/ECC%20Recommendation%20(20)03.pdf)



harmonized frame start, with frame duration of 5 ms. In 2025, when the full 5G NR rollout is expected, the DARF holders in this band may propose another harmonized synchronisation scheme. If no agreement can be reached by 30. 9. 2025 by the DARFs holders in this band, the Agency shall ex officio define a new harmonised default synchronization scheme Frame A from ECC Recommendation (20)03 and DARFs shall be amended *ex officio* for this frequency band. License holders shall have to adjust their networks to the new synchronisation scheme or use guard bands inside of their assigned spectrum in this frequency band.

Default common reference phase clock is the GNSS satellite network as defined in the executive summary of ECC Report 216<sup>21</sup> and ECC Report 296<sup>22</sup>.

If the holders of DARFs agree differently, they may use the agreed common reference phase clock and the agreed synchronisation scheme different that the default. However, in the event of harmful interference, they must switch to the default scheme/default common reference phase clock.

Overview of the 2300 MHz frequency band is presented in the Figure below:

Figure A-7: Frequency band 2300 MHz

		BE01	BE02	BE03	BE04	BE05	BE06	BE07	
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Available from 1. 1. 2022 for 15 years
Not available

A detailed list of radio frequencies is provided in the table below:

Table A-10: Blocks available in the 2300 MHz band

Block name	Frequencies	Bandwidth
BE01	2320 – 2330 MHz	1 x 10 MHz
BE02	2330 – 2340 MHz	1 x 10 MHz
BE03	2340 – 2350 MHz	1 x 10 MHz
BE04	2350 – 2360 MHz	1 x 10 MHz
BE05	2360 – 2370 MHz	1 x 10 MHz
BE06	2370 – 2380 MHz	1 x 10 MHz
BE07	2380 – 2390 MHz	1 x 10 MHz

For the purposes of bidding in the public auction, this frequency spectrum will be available in a single lot category.

Detailed list of lots by category is provided in the table below:

Table A-11: Lots by category in the 2300 MHz band

Category	No. of lots	Included lots	Type of lots	Spectrum amount per lot	Frequency range
E	7	E_01 to E_07	Generic	1 x 10 MHz	2320 – 2390 MHz

<sup>21</sup> ECC Report 296: National synchronisation regulatory framework options in 3400-3800 MHz: a toolbox for coexistence of MFCNs in synchronised, unsynchronised and semi-synchronised operation in 3400-3800 MHz (<https://www.ecodocdb.dk/download/19d5a467-c234/ECC%20Report%20296.pdf>)

<sup>22</sup> ECC Report 216: Practical guidance for TDD networks synchronisation (<https://www.ecodocdb.dk/download/220ac21f-b44b/ECCREP216.PDF>)

### A.3.5 3600 MHz frequency band

The band includes a total of 380 MHz of unpaired frequency spectrum between 3420 MHz and 3800 MHz. Thirty-eight 10 MHz TDD blocks (from BF012 to BF38) capable of providing wireless broadband electronic communications services in accordance with the Commission implementing decisions (EU) 2019/235<sup>23</sup>, 2014/276/EU<sup>24</sup> and 2008/411/ES<sup>25</sup>, and other documents as specified in chapter H shall be available in the public tender for terrestrial systems in the territory of the Republic of Slovenia for 15 years from assignment of radio frequencies.

Until 31. 12. 2025 synchronization is required in compliance with the default synchronization scheme – Frame B («DD DS UU DD DD») from ECC Recommendation (20)03 where LTE and new radio – NR have a harmonized frame start, with frame duration of 5 ms. In 2025, when the full 5G NR implementation is expected, the holders of DARFs in this band may propose another harmonized synchronisation scheme. When defining a new synchronization scheme, the Agency shall take into account proposals of the licence holders who will hold a total of 80 MHz or more spectrum in this frequency band. If no agreement can be reached by 30. 9. 2025 by the DARFs holders in this band, the Agency shall ex officio define a new harmonised default synchronization scheme Frame A from ECC Recommendation (20)03 and DARFs shall be amended *ex officio* for this frequency band. License holders shall have to adjust their networks to the new synchronisation scheme or use guard bands inside of their assigned spectrum in this frequency band.

Default common reference phase clock is the GNSS satellite network as defined in the executive summary of ECC Report 216 and ECC Report 296.

If the holders of DARFs agree differently, they may use the agreed common reference phase clock and the agreed synchronisation scheme, different from the default. However, in the event of harmful interference, they must switch to the default scheme/default common reference phase clock.

Overview of the 3600 MHz frequency band is presented in the Figure below:

Figure A-8: Frequency band 3600 MHz

		BF01*	BF02*	BF03	BF04	BF05	BF06	BF07	BF08
BF09*	BF10*	BF11*	BF12*	BF13	BF14	BF15	BF16	BF17	BF18
BF19	BF20	BF21	BF22	BF23	BF24	BF25	BF26	BF27	BF28
BF29	BF30	BF31	BF32	BF33	BF34	BF35	BF36	BF37	BF38

Available from assignment for 15 years  
 Not available

\*See Table H-6: Overview of spectrum occupancy in the frequency band 3600 MHz with existing rights

<sup>23</sup> Commission Implementing Decision (EU) 2019/235 of 24 January 2019 on amending Decision 2008/411/EC as regards an update of relevant technical conditions applicable to the 3400-3800 MHz frequency band (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019D0235>)

<sup>24</sup> 2014/276/EU: Commission Implementing Decision of 2 May 2014 on amending Decision 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 ([https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L\\_.2014.139.01.0018.01.ENG](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2014.139.01.0018.01.ENG))

<sup>25</sup> 2008/411/EC: Commission Decision of 21 May 2008 on the harmonisation of the 3400 - 3800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community (<https://eur-lex.europa.eu/eli/dec/2008/411/oj/?locale=sl>)

A detailed list of radio frequencies is provided in the table below:

Table A-12: Blocks available in the 3600 MHz band

Block name	Frequencies	Bandwidth
BF01	3420 – 3430 MHz	1 x 10 MHz
BF02	3430 – 3440 MHz	1 x 10 MHz
BF03	3440 – 3450 MHz	1 x 10 MHz
BF04	3450 – 3460 MHz	1 x 10 MHz
BF05	3460 – 3470 MHz	1 x 10 MHz
BF06	3470 – 3480 MHz	1 x 10 MHz
BF07	3480 – 3490 MHz	1 x 10 MHz
BF08	3490 – 3500 MHz	1 x 10 MHz
BF09	3500 – 3510MHz	1 x 10 MHz
BF10	3510 – 3520MHz	1 x 10 MHz
BF11	3520 – 3530MHz	1 x 10 MHz
BF12	3530 – 3540MHz	1 x 10 MHz
BF13	3540 – 3550MHz	1 x 10 MHz
BF14	3550 – 3560MHz	1 x 10 MHz
BF15	3560 – 3570MHz	1 x 10 MHz
BF16	3570 – 3580MHz	1 x 10 MHz
BF17	3580 – 3590MHz	1 x 10 MHz
BF18	3590 – 3600MHz	1 x 10 MHz
BF19	3600 – 3610 MHz	1 x 10 MHz
BF20	3610 – 3620 MHz	1 x 10 MHz
BF21	3620 – 3630 MHz	1 x 10 MHz
BF22	3630 – 3640 MHz	1 x 10 MHz
BF23	3640 – 3650 MHz	1 x 10 MHz
BF24	3650 – 3660 MHz	1 x 10 MHz
BF25	3660 – 3670 MHz	1 x 10 MHz
BF26	3670 – 3680 MHz	1 x 10 MHz
BF27	3680 – 3690 MHz	1 x 10 MHz
BF28	3690 – 3700 MHz	1 x 10 MHz
BF29	3700 – 3710 MHz	1 x 10 MHz
BF30	3710 – 3720 MHz	1 x 10 MHz
BF31	3720 – 3730 MHz	1 x 10 MHz
BF32	3730 – 3740 MHz	1 x 10 MHz
BF33	3740 – 3750 MHz	1 x 10 MHz
BF34	3750 – 3760 MHz	1 x 10 MHz
BF35	3760 – 3770 MHz	1 x 10 MHz
BF36	3770 – 3780 MHz	1 x 10 MHz
BF37	3780 – 3790 MHz	1 x 10 MHz
BF38	3790 – 3800 MHz	1 x 10 MHz

For the purposes of bidding in the public auction, this frequency spectrum shall be awarded in one lot category.

Detailed list of lots by category is provided in the table below:

Table A-13: Lots by category in the 3600 MHz band

Category	No. of lots	Included lots	Type of lots	Spectrum amount per lot	Frequency range
F	38	F_01 do F_38	Generic	1 x 10 MHz	3420 – 3800 MHz

### A.3.6 26 GHz frequency band

The band includes a total of 1000 MHz of unpaired frequency spectrum between 26500 MHz and 27500 MHz. Five 200 MHz blocks (from BG01 to BG05) capable of providing wireless broadband electronic communications services in accordance with the Commission Implementing Decision (EU) 2020/590<sup>26</sup> and Decision (EU) 2019/784<sup>27</sup> and other documents as specified in chapter H will be available in the public tender for terrestrial systems in the territory of the Republic of Slovenia for 15 years from assignment of radio frequencies.

ECC Report 307, chapter 3.3 Frame structures, discusses that many conclusions for the 3400 – 3800 MHz frequency range also hold for 26 GHz, e.g. the frame structure lengths shall have the same impact on latency. One of the key differences between the 3400 – 3800 MHz frequency range and the 26 GHz band is that there are no LTE deployments in the 26 GHz band. Therefore, in the 26 GHz band the considerations relating to alignment of NR and LTE frame structures do not apply.

Until 31. 12. 2025 synchronization in accordance with the default synchronization scheme – Frame B («DD DS UU DD DD») from ECC Recommendation (20)03 is required for outdoor use and mass events, where LTE and new radio – NR have a harmonized frame start, with frame duration of 5 ms, or a different synchronization scheme agreed by all license holders in this frequency band. In 2025, when the full 5G NR implementation is expected, DARF holders in this band may propose a different harmonized synchronisation scheme. When defining a new synchronization scheme, the Agency shall take into account proposals of the bidders who will hold a total of 400 MHz of more spectrum in this frequency band after the public tender. If no agreement is reached by 30. 9. 2025 by the DARFs holders in this band, the Agency will ex officio define a new harmonised default synchronization scheme Frame A from ECC Recommendation (20)03 for outdoor use and mass events (stadiums, convention centres, concert halls, ...) and DARFs shall be amended *ex officio* for this frequency band. License holders will have to adjust their networks to the new synchronisation scheme or use guard bands inside of their assigned spectrum in this frequency band. For indoor use and outside mass events (stadiums, convention centres, concert halls, ...), synchronisation is not obligatory. Possible harmful interference may be mitigated using beamforming antennas on transmitter and receiver site.

Default common reference phase clock is the GNSS satellite network as defined in the executive summary of ECC Report 216 and ECC Report 296.

If DARF holders agree otherwise, they may use the agreed common reference phase clock and the agreed synchronisation scheme other than default. However, in the event of harmful interference, they must switch to the default scheme/default common reference phase clock.

If DARF holders use semi-synchronised or unsynchronised networks, they must follow the guidelines from the ECC Report 307, chapter 7 – Conclusions.

In the 26 GHz band, frequency pooling and active sharing is permitted, including dynamic spectrum sharing, with a pre-emptive right in favour of the DARF holder on its assigned sub-band and active sharing between all DARF holders as well as between DARF holders and those leasing capacity.

<sup>26</sup> Commission Implementing Decision (EU) 2020/590 of 24 April 2020 amending Decision (EU) 2019/784 as regards an update of relevant technical conditions applicable to the 24,25-27,5 GHz frequency band ([https://eur-lex.europa.eu/eli/dec\\_impl/2020/590/oj](https://eur-lex.europa.eu/eli/dec_impl/2020/590/oj))

<sup>27</sup> Commission Implementing Decision (EU) 2019/784 of 14 May 2019 on harmonisation of the 24,25-27,5 GHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services in the Union (<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019D0784>)

Overview of the 26 GHz frequency band is presented in the Figure below:

Figure A-9: Frequency band 26 GHz

BG01	BG02	BG03	BG04	BG05
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Available from assignment for 15 years

A detailed list of radio frequencies is provided in the table below:

Table A-14: Blocks available in the 26 GHz band

Block name	Frequencies	Bandwidth
<b>BG01</b>	26500 – 26700 MHz	1 x 200 MHz
<b>BG02</b>	26700 – 26900 MHz	1 x 200 MHz
<b>BG03</b>	26900 – 27100 MHz	1 x 200 MHz
<b>BG04</b>	27100 – 27300 MHz	1 x 200 MHz
<b>BG05</b>	27300 – 27500 MHz	1 x 200 MHz

For the purposes of bidding in the public auction, this frequency spectrum is included in one lot category.

A detailed list of lots by category is provided in the table below:

Table A-15: Lots by category in the 26 GHz band

Category	No. of lots	Included lots	Type of lots	Spectrum amount per lot	Frequency range
<b>G</b>	5	from G_01 to G_05	Generic	1 x 200 MHz	26500 – 27500 MHz

## A.4 Restrictions on the right of use

With the aim to ensure the effective competition, the Agency has set spectrum caps to ensure access to the radio frequency spectrum for a sufficient number of competitors, and to limit the high asymmetry of the shares in the allocated spectrum, as well as to prevent so-called spectrum hoarding. Spectrum caps shall also be taken into account when transferring or leasing usage rights.

### A.4.1 Spectrum caps

All bids in the public tender shall be subject to the following spectrum caps:

- 2 x 35 MHz in FDD bands: 700 MHz, 800 MHz and 900 MHz,
- 160 MHz in 3600 MHz TDD band,
- 800 MHz in 26 GHz band,
- 425 MHz together in new frequency bands 700 MHz FDD, 2100 MHz, 2300 MHz and 3600 MHz, including the existing spectrum holdings in frequency bands 800 MHz FDD, 900 MHz FDD, 1800 MHz FDD, 2600 MHz FDD and 2600 MHz TDD.

The total spectrum cap of 425 MHz for the FDD bands consists of both downlink and uplink spectrum (e.g. 2 x 10 MHz is a total 20 MHz of spectrum).

The restrictions regarding the number of assigned frequency rights in the form of spectrum caps shall be, in accordance with the provisions of Article 51 of ZEKom-1, also listed in the DARFs. The frequency caps listed shall be respected in the procedures determining the transfer or leasing of usage rights according to Article 55 of ZEKom-1, except in the event of changes in technology or competitive conditions, whereupon the Agency may, in line with the changes in circumstances, permit the transfer or leasing of usage rights for frequencies beyond the listed restrictions, in accordance with the provisions of Article 55 of ZEKom-1.

## A.4.2 Procedures determining the transfer or leasing of usage rights

When transferring or leasing of usage rights all provisions from A.4.1 (Spectrum caps) and all obligations in A.5 (Conditions and requirements of the public tender).

In the event of a merger of two operators, the coverage obligations shall be determined on the basis of the total spectrum of the operator after the merger in accordance with all provisions from A.5.4.2 (Coverage obligations).

## A.5 Conditions and requirements of the public tender

### A.5.1 Conditions of the public tender

To fulfil the conditions of the public tender, the applicant must:

- submit a complete and accurate application, which includes:
  - General information on the applicant (Form I.1.1 or I.1.2),
  - Applicant's statements (Form I.2),
  - Authorization for signing the application (Form I.3),
  - Information on the applicant's ownership structure (no form),
  - Financial, organizational, and technical plans for deployment and operation of a mobile communications network (business plan) (no form),
  - Appointment of persons who shall be authorized to submit bids for the applicant during the public auction (Form I.4),
  - Statement and confirmation of payment of the tender bond (Form I.5),
  - List of the frequency lots the applicant is interested in (initial bid) (Form I.6),
  - Statement on the submission of documents in accordance with the requirements of the tender documentation (Form I.7),
- Applicants must have settled all outstanding liabilities towards the Agency which are not the subject of legal dispute,
- Applicants must be solvent and must not have any compulsory settlement proceedings initiated against them, nor bankruptcy nor forced liquidation proceedings.

The solvency of the bidder is considered to be that none of the business accounts has been blocked for more than 5 days during the submission of the bid and for the entire duration of the public tender, until the DARF is issued.

A compulsory settlement procedure is considered to have been initiated if a proposal for the commencement of compulsory settlement proceedings has been filed against the subject and the court has decided on this proposal to start the procedure. Bankruptcy proceedings are considered to have been initiated if the entity is already in bankruptcy proceedings or a proposal for the commencement of bankruptcy proceedings has been submitted for it and the court has decided on this proposal to start the procedure.

A compulsory company liquidation proceeding shall be deemed to have been initiated if a proposal for the commencement of compulsory liquidation proceedings has been submitted for it and the court has not yet ruled on its proposal.

A description of the requirements for a complete and accurate application (from the first indent) is available in Chapter C.2 (Documents to be provided with the application).

## A.5.2 Conditions to qualify for the public auction

As the offered price is the only criterion for selecting the winning bid, the selection shall be made through a public auction (paragraph 1 of Article 44 of ZEKom-1).

In order to qualify for the public auction in the public tender, the applicant must, along with fulfilling other conditions in accordance with Article A.5.1 (Conditions of the public tender ), also fulfil the following two conditions:

- payment of a deposit for its initial bid, and
- payment of administrative costs.

### A.5.2.1 Payment of a deposit for an initial bid

In order to participate in the public auction, the bidder must pay its deposit to a special bank account of the Republic of Slovenia and deliver to the Agency the confirmation of payment at least one day before the beginning of the public auction. The amount of this deposit must be at least the sum of the reserve price for all the lots included in the bidder's initial bid, in accordance with form I.6 (Initial Bid). All details regarding the transfer of the deposit (bank account, reference number, etc.) shall be detailed in the Decision on the selection of bidders.

The deposits of the winning bidders shall go towards the payment of the fee for the efficient use of a limited natural resource. Unsuccessful bidders shall have their deposits returned after the end of the public auction, within the deadline determined in the written decision from paragraph 6 of Article 45 of ZEKom-1.

Bidders who are excluded during the public auction due to violation of the requirements from A.5.3.1 (Protection of confidential information), A.5.3.2 (Prohibition of collusive behaviour), A.5.3.3 (Retaining the bidder's ownership structure during the public tender procedure) and F.2.10 (Breach of auction rules), shall not have their deposits returned.

If the public tender is annulled, the deposits shall be returned to the bidders within the deadline of 30 days.

No interest shall be paid for the deposits.

Transfer commissions and all other costs or taxes incurred during the transfer of funds must be paid by the bidder.

Deposits shall be returned (transferred) to the bank accounts indicated by the applicants.

### A.5.2.2 Payment of administrative costs

In order to qualify for the public auction, the bidders must cover the administrative costs of holding a public auction (indent 2 of paragraph 2 of Article 44 of ZEKom-1). Before the beginning of the public auction each bidder must settle advance payment of administrative costs in the amount of 250.000,00 EUR. The Agency shall regard the tender bonds paid by the applicants who were selected as bidders by the Decision on the selection of bidders as advance payment of administrative costs in the same amount.

Administrative costs for holding a public auction represent all of the Agency's expenses in connection with preparing and holding a public auction, which shall not include the costs of the work of the Agency's full-time employees. Administrative costs are covered by all bidders in equal parts.

The advance amount paid by bidders for administrative costs shall be considered as advance payment of a share of the administrative costs.

Winning bidders must settle any additional payments in a lump sum within 15 days of the receiving written decisions from paragraph 6 of Article 45 of ZEKom-1.

Similarly, the Agency shall return the difference in the advance payment to bidders within 15 days of issuing the written decision from paragraph 6 of Article 45 of ZEKom-1, in the event that the amount of administrative costs shall be less than the advance amount paid by the bidders.

No interest shall be paid on the returned advance payment.

## A.5.3 Requirements of the public tender

The requirements of the present public tender are:

- protection of confidential information,
- prohibition of collusive behaviour,
- preservation of the applicant's ownership structure during the public tender,
- additional obligations the applicant assumes in the public tender:
  - a restriction on the transfer or lease of rights to use radio frequencies,
  - coverage obligations,
  - sharing conditions,
  - security requirements.

### A.5.3.1 Protection of confidential information

The applicant must handle all information it receives from the Agency within the course of this procedure as confidential. Bidders are especially forbidden from communicating content and data from the Decision on the selection of bidders or any other decision within the scope of the public tender procedure, as well as from communicating their intentions regarding demand for frequencies or the bids they intend to submit during the public tender or public auction. If an applicant or a bidder violates this request, it shall be excluded from the public tender or public auction.



The obligation of keeping confidential all information received from the Agency remains in force until written decision from paragraph 6 of Article 45 of ZEKom-1 is issued. The confidentiality obligations also apply to applicants that fail to be selected as bidders, as well as to bidders excluded during the course of the public auction. These must keep information confidential up until the moment when the winning bidders are issued the decision from paragraph 6 of Article 45 of ZEKom-1. In the event an applicant or bidder violates the confidentiality obligation, such an applicant forfeits their tender bond or the advance payment of administrative costs, as well as any deposits already paid.

### **A.5.3.2 Prohibition of collusive behaviour**

Throughout the procedure, applicants and bidders must not enter into agreements or engage in any other behaviour that could have the effect of compromising the integrity of the tender procedure in accordance with the tender documentation and the Decision on the initiation of the public tender.

Applicants are forbidden from establishing direct or indirect contact with each other and from exchanging information with the aim of influencing the outcome of the tender procedure.

In particular, during the tender procedure the following actions constitute collusive or prohibited behaviour:

- any coordination between applicants, especially with the intention of influencing the course or outcome of the tender procedure,
- disclosure of any information concerning participation in the public tender procedure,
- disclosure of bid amounts or bidding strategies, or other statements which could influence the participation or bidding behaviour of third parties,
- any announcements that might provide an indication of intended behaviour throughout the tender procedure,
- coordinating bidding in the public auction.

Applicants violating these rules may be excluded from further bidding. The obligations on collusive behaviour also apply to applicants that are not selected as bidders, as well as to bidders excluded during the course of the public auction. If an applicant or bidder violates the obligations on collusive behaviour, such an applicant forfeits the tender bond or the advance payment of administrative costs, as well as any already paid deposits.

Should such behaviour be discovered after the completion of the tender procedure or after issuing of the DARFs by any competent body, the Agency might launch a procedure to revoke such DARFs. In this event the fees paid for the efficient use of a limited natural resource as well as for administrative costs shall be forfeited.

### **A.5.3.3 Retaining the bidder's ownership structure during the public tender procedure**

A bidder may not be connected with another bidder through ownership of a share exceeding a controlling interest, which is considered to be a stake in a given company which exceeds 25%. All bidders must operate as independent subjects.

Bids may also be submitted by consortia, joint ventures, associations of companies or other types of partnerships. In such cases, the bidder must provide the information about the relationship between members and detailed information as specified in Section C.2.4 (Information on applicant's ownership (no form)).

Any type of partnership participating in the public tender shall be deemed as a single entity, which means that any such partnership may submit only one bid. The bid must also contain information on the ownership structure of all members of the partnership. A member of one partnership may not also participate as an independent bidder or a member of another partnership.

If a person holding an ownership stake in the bidder acts as a trustee or in a similar role for another bidder in this public tender, this must be stated in the bid, and information about actual ownership must be provided.

In the period between the submission of the bid and when the decision from Par. 6 Art. 45 of ZEKom-1 is issued, bidders must preserve the ownership structure as indicated in their application, and the ownership structure may not change in a way that would create a connection between a bidder and any other bidder(s) participating in the public tender, as defined in this Section. In this case the bidder's ownership structure does no longer match the structure indicated in its application and comply with the requirements from first two paragraphs of this Section, and such an application shall consequently be excluded from the procedure. These restrictions also apply to partnership members.

Details on submitting and handling joint tenders are defined in Section C.2.4 (Information on applicant's ownership (no form)). In the case that the group that submitted the joint bid succeeds in the public tender, the DARF shall be issued to the main contractor as defined in the act on joint participation attached to the bid. Consequently, the holder of the joint participation is also responsible for fulfilling all obligations imposed by the DARF.

The Agency may call on a bidder to report their ownership structure at any point of the procedure.

If the tender commission reviewing the bids determines that a connection as described above exists between two or more bidders that submitted the bids separately and not as a group, it shall notify all the affected bidders and set a deadline for them to clarify which of the bids should be accepted as valid. Should they fail to provide a clarification or select several different bids, all their submitted bids shall be excluded from the procedure.

If a connection between two or more bidders is established at a later date, after the bids have been examined<sup>28</sup>, and this was the result of unclear information about their ownership structure, all the involved bidders shall be excluded from the procedure. In this event, any amounts paid as bid guarantees, advance payments of administrative cost or deposits shall not be refunded to these bidders.

## A.5.4 Additional obligations

### A.5.4.1 Restrictions on the transfer or leasing of usage rights

All restrictions on the transfer or leasing of usage rights from Chapter A.4.2 (Procedures determining the transfer or leasing of usage rights) apply as requirements.

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<sup>28</sup> This may mean that if the tender commission did not detect such connection during the examination of applications because it was not visible or difficult to identify, but finds it later when it re-examines the ownership structure in the bidder due to unusual bidding, both/all related bidders will be excluded from the procedure.

## A.5.4.2 Coverage obligations

All requirements from this Chapter shall be included in the selected bidder's DARF as coverage obligations, in accordance with the awarded radio frequencies (Art. 51 of ZEKom-1).

Details on monitoring fulfilment of all coverage obligations are listed in Chapter G.1 (Monitoring the fulfilment of coverage obligations). If operators who receive the DARFs do not fulfil their listed obligations, the Agency could in an inspection procedure order to the rectify the established irregularity and impose a fine and/or confiscation against legal property gain in minor offence proceeding. Based on provisions of Article 58 of ZEKom-1 the Agency may also launch the procedure of annulment of a DARF. In such case the fee for the efficient use of a limited natural resource is non-refundable.

### A.5.4.2.1 General coverage obligations

The applicants who acquire the frequency spectrum in any of the radio frequency bands shall be required to offer commercially available wireless broadband terrestrial electronic communications services in each of the acquired radio frequency bands in such a way as to:

- start using these frequencies and offering services to end-users on these frequencies in at least one major city within one year after the availability of an individual radio frequency band (Table A-16),
- within five (5) years after the availability of an individual radio frequency band to use all frequencies in the entire acquired radio frequency band and offer services to end users on all these frequencies in at least every major city (Table A-16).

These time limits do not apply to the frequencies in the 700 MHz SDL, 1500 MHz SDL and 26 GHz bands, which should start being utilized to offer services to end-users on these frequencies in at least one major city (Table A-16) within five (5) years from availability.

The provision to offer commercially available wireless broadband terrestrial electronic communications services means that this service is provided through base stations covering at least 75% of the population of an individual settlement of the major city, and the start of the use of radio frequencies means that the services must be provided through at least one base station in an individual city settlement.

Fulfilment of this obligation depends on market availability of terminals and base stations. If terminals and base stations for an individual radio frequency band are not available, the operator shall provide appropriate evidence. The Agency shall postpone the deadline for compliance if provided relevant evidence.

### A.5.4.2.2 Additional coverage obligations for 700 MHz FDD band

The applicants who acquire paid radio frequency spectrum in 700 MHz band shall have to provide coverage in accordance with provisions of this Chapter by using any of the frequencies available to that applicant. Applicants who hold parts of the radio frequency spectrum below 1 GHz on the date the tender is launched will need to provide the following scope of coverage by 31. 12. 2025:

- 99% of motorways and highways and population of the Republic of Slovenia,
- at least 60% of main roads and regional roads I and II,
- at least 60% of the active railways with passenger traffic, in-train coverage is under responsibility of railways

Applicants who do not hold parts of the radio frequency spectrum below 1 GHz on the date of the launch of the tender, will need provide the above coverage by 31. 12. 2028.

The aim of providing coverage of roads and railways is to offer broadband mobile communications services with a user experience of throughput of at least 10 Mb/s from the base station to the mobile user's terminal (downlink) and 2 Mbit/s from user's terminal to base station (uplink) (outdoor) with a RSRP level of -108 dBm.

The user experience of throughput of at least 10 Mb/s downlink and 2 Mb/s uplink (outdoor) means that the result of the measurements of the throughput performed at the user's terminal through the Agency's approved application on the Agency's measuring server (e.g. AKOS TestNet), achieves at least 10 Mb/s in 90% of the measurements. In this case, measurements outside of the peak hour are taken into account. The main peak lasting up to 2 hours shall be determined by network operators, and they shall inform the Agency within 30 days after DARF is issued to them.

All these obligations are to be fulfilled completely, if there are no administrative constrains in obtaining new locations. In case such administrative constrains occur, the operator shall provide appropriate evidence. In such a case, the Agency shall evaluate the evidence and take these administrative constrains into account when monitoring the fulfilment of coverage obligations, and set a new deadline for meeting these obligations.

Providing population coverage by offering commercial wireless broadband terrestrial electronic communications services in the 700 MHz FDD band means:

- a) Applicants and bidders who will have as result of the public tender together with their existing spectrum a total of less than 2 x 25 MHz spectrum below 1 GHz shall offer broadband mobile communications services with a user experience of a throughput of at least 10 Mb/s downlink and 2 Mbit/s uplink (outdoor) with a RSRP level of -108 dBm.

The user experience of a throughput of at least 10 Mb/s downlink and 2 Mb/s uplink (outdoor) means that the result of the measurements of the throughput performed at the user terminal through the Agency's approved application on the Agency's measuring server (e.g. AKOS TestNet), achieves at least 10 Mb/s in 90% of the measurements. In this case, measurements outside of the peak hour are taken into account. The main peak lasting up to 2 hours shall be determined by network operators, and they shall inform the Agency within 30 days after DARF is issued to them.

- b) Applicants and bidders who will have as result of the public tender together with their existing spectrum a total of 2 x 25 MHz or more spectrum below 1 GHz or more shall offer broadband mobile communications services with a user experience of a throughput of at least 30 Mb/s downlink and 3 Mbit/s uplink (outdoor) with a RSRP level of -108 dBm.

The user experience of a throughput of at least 30 Mb/s downlink and 3 Mb/s uplink (outdoor) means that the result of the measurements of the throughput performed at the user terminal through the Agency's approved application on the Agency's measuring server (e.g. AKOS Test Net), achieves at least 30 Mb/s in 90% of the measurements. In this case, measurements outside of the peak hour are taken into account. The main peak lasting up to 2 hours shall be determined by network operators, and they shall inform the Agency within 30 days after DARF is issued to them.

#### **A.5.4.3 Coverage obligations in accordance with 5G Action Plan for Europe**

Fulfilment of coverage obligations in accordance with the 5G Action Plan for Europe is based on availability of required features in terminal devices, network software/firmware and standards.

Providing 5G technology means that the operator supports 3GPP Release 15 or a newer specification (ETSI EN 301 908-x standards).

5G coverage obligations mean that any applicant who wins a part of spectrum in 700 MHz FDD and 3600 MHz TDD frequency bands in the public tender and because of providing comparable services also in the 2100 MHz frequency band, will need to fulfil the following requirements:

- within 3 months after DARF is issued, start offering commercial 5G services on at least one frequency band in at least one major city (Table A-16),
- by 31. 12. 2025 provide commercial 5G services in all major cities. Any applicant who wins in the public tender at least 70 MHz of contiguous spectrum, also has to provide the functionality and support of enhanced mobile broadband access (eMBB) as well as support for massive IoT networks. If these required features are not available, the operator has to provide appropriate evidence. The Agency shall postpone the deadline for compliance on the basis of relevant evidence.

Providing services means that this 5G service is provided through base stations covering at least 75% of the population of an individual settlement of the individual major city, where for the beginning of the use of radio frequencies and start offering services is required that the 5G service is provided through at least one base station in at least one settlement of one major city.

Table A-16: List of major cities

Major cities <sup>29</sup>		
Ljubljana	Celje	Ptuj
Maribor	Novo mesto	Murska Sobota
Kranj	Velenje	Slovenj Gradec
Koper	Nova Gorica	

Source: AKOS, summarised from Article 3 of the Establishment of Municipalities and Municipal Boundaries Act<sup>30</sup>

## A.5.5 Network sharing conditions

In order to ensure efficient use of the radio spectrum, improve coverage and reduce impact on environment, the Agency shall promote the following sharing options:

- sharing of passive or active infrastructure or spectrum pooling,
- business agreement on national roaming,
- joint deployment of infrastructure for the provision of networks and services based on the use of radio frequency spectrum.

Active sharing and frequency pooling, including dynamic spectrum sharing, is permitted within a framework that does not limit infrastructural competition. For example, sharing of active equipment and frequency pooling are permitted when passive sharing is not sufficient, for example in challenging areas and for network densification (Chapter A.5.5.1).

<sup>29</sup> Borders of urban areas are defined by the borders of an individual settlement from the database of the Register of spatial units of the Surveying and Mapping Authority of the Republic of Slovenia (<https://www.e-prostor.gov.si/zbirke-prostorskih-podatkov/nepremicnine/register-prostorskih-enot/>)

<sup>30</sup> Official Gazette of the Republic of Slovenia, No. 108/06 – UPB, 9/11 and 31/18

Under dynamic spectrum sharing, it is meant the sharing of spectrum between ODRF holders or between the ODRF holder and the lessee, at a specific location, whereby the spectrum can be dynamically redistributed between them.

The Agency intends to monitor the development on the market and in technology and, in the event of a significant change on the DARF holders' initiative, to adjust the sharing conditions adequately by amending the DARF.

#### **A.5.5.1 Permission of frequency pooling and active sharing, including dynamic spectrum sharing**

In challenging areas of Slovenia, such as:

- Triglav National Park (Chapter J.2, Table J-3: Settlements in Triglav National Park (TNP and Settlements in other areas difficult to reach ),
- Settlements of 2nd priority (Chapter J.2, Table J-3: Settlements in Triglav National Park (TNP and Settlements in other challenging areas ),
- Road and railway tunnels,
- Critical road sections (Chapter J.1, Table J-1: Motorways, highways, main roads and regional roads category I and II and Chapter J.2, Table J-2: Regional roads category III touristic roads),
- regions of Slovenian border and Piran bay,
- regions exceeding 60% of active railways with passenger,
- regions exceeding 60% of main roads and regional roads category I and II,
- historical monuments and other buildings under protection of Cultural heritage,
- small cells if there is a restriction on space interventions/building restrictions,
- and indoor, frequency pooling and active sharing, including dynamic spectrum sharing are allowed.

In case network densification needs to secure very high capacity base stations offering Gigabit speeds:

- road and city infrastructure (e.g., lamp posts, traffic lights ...)
- railway and energy infrastructure
- in dense venues (convention centres, concert halls, stadiums, bus and train stations, shopping malls, factories, ports, airports ...)

as well frequency pooling and active sharing, including dynamic spectrum sharing are permitted.

Sharing as defined above is permitted in accordance with competition law principles. The existence of distortions of competition will be detected by the Agency or the body responsible for the protection of the competition within the scope of its jurisdiction.

For the 26 GHz band, frequency pooling and active sharing, including dynamic spectrum sharing, are permitted everywhere, with a pre-emptive right in favour of the DARF holder on its assigned sub-band, and active sharing between all holders of DARF including dynamic spectrum sharing, is permitted.

However, all sharing allowed in this chapter is allowed provided that the operators comply with all relevant legislation in the field of construction and placement of infrastructure in place, whereby the Agency may adjust the sharing conditions by amending the DARFs.

### A.5.5.2 Passive infrastructure sharing and local agreements on national roaming

In circumstances where market-driven deployment of infrastructure for the provision of networks or services that rely on the use of radio spectrum is subject to insurmountable economic or physical obstacles for operators, and therefore access to networks or services by end-users is not possible, the Agency shall impose on a DARF holder who has acquired radio spectrum in this public tender in such an area for the period of DARF's validity obligations related to sharing passive infrastructure or obligations to conclude localised roaming access agreements.

In circumstances where access to and sharing of passive infrastructure alone is not sufficient to resolve this issue, the Agency may impose obligations for sharing active infrastructure.

The Agency shall include the above-mentioned options as potential obligations in the DARF for the applicants that shall acquire radio spectrum in this public tender.

The objective of this measure is to avoid distortion of competition in areas where other operators have no option of obtaining access to locations commercially on existing network and building a new location is subject to insurmountable economic or physical obstacle.

## A.5.6 Security requirements

Bidders who are awarded any part of the radio frequency spectrum in this public tender shall have to establish, perform, maintain and constantly improve appropriate and proportionate organizational and technical measures for managing risks to the security and safety of information systems, networks, services and information.

The measures shall have to ensure a level of security proportionate to the risk, and reflect the current technology, recommended best practices (e.g. ENISA, NIST), industry security recommendations (e.g. GSMA), and comply with internationally recognized standards in information security and business continuity (e.g. ISO/IEC, 3GPP, IETF, ITU).

With the objective of managing security threats and ensuring a high level of availability, authenticity, integrity and confidentiality of the provider's networks and services, stored, transferred or processed data or related services available over its network, a holder of a DARF from this tender shall have to conduct and systematically perform risk analyses with an assessment of the acceptable risk level, and appropriately document this process before implementing any security-related measures.

The Agency may also ex officio initiate the procedure of revoking the DARF in case that the competent authority in the procedure of inspection over the implementation of legal and executive obligations in the field of network security finds violations and the DARF holder does not eliminate them in accordance with the findings of inspection and within the set deadline.

## B Explanations to the tender documentation

The bidder taking part in the public tender must submit a complete bid prepared in accordance with the decision on the launch of the public tender and the tender documentation. The tender documentation is published on the Agency's website <http://www.akos-rs.si/>.

If an interested party requires any explanations regarding the tender documentation, the procedure of the public tender, or the subject of the public tender, they must request so in writing and in Slovene language. They should address their written request to the Agency (Agencija za komunikacijska omrežja in storitve RS, Stegne 7, 1000 Ljubljana) with the caption **»POJASNILA V ZVEZI JAVNIM RAZPISOM Z JAVNO DRAŽBO ZA DODELITEV RADIJSKIH FREKVENC ZA ZAGOTAVLJANJE JAVNIH KOMUNIKACIJSKIH STORITEV KONČNIM UPORABNIKOM V RADIOFREKVENČNIH PASOVIH 700 MHz, 1500 MHz, 2100 MHz, 2300 MHz, 3600 MHz in 26 GHz«** (In English: *"EXPLANATIONS REGARDING THE PUBLIC TENDER WITH PUBLIC AUCTION FOR THE AWARD OF RADIO FREQUENCIES FOR PROVISION OF PUBLIC COMMUNICATIONS SERVICES IN THE 700 MHz, 1500 MHz, 2100 MHz, 2300 MHz, 3600 MHz AND 26 GHz RADIO FREQUENCY BANDS"*), or by email to: [drazba@akos-rs.si](mailto:drazba@akos-rs.si).

The Agency must receive questions in writing by 18. 1. 2021. The Agency shall not respond to questions received after this deadline.

For additional information regarding the method of requesting and providing explanation, please contact Janja Varšek (phone.: 01 583 63 00 and e-mail: [drazba@akos-rs.si](mailto:drazba@akos-rs.si)).

The Agency shall publish the received questions and answers to them on its website <http://www.akos-rs.si/> (under the heading: "Javna posvetovanja in razpisi") on 28. 1. 2021 at the latest, whereby it shall be considered that all the interested bidders have been informed of them. The questions received and the answers to them shall be published in such a way as to not reveal the identity of the interested party posing the question.

The questions and the answers to them do not present an integral part of the tender.



## C The preparation of the tender application

### C.1 The preparation and submission of the tender application

Interested natural persons and legal entities that are entitled to take part in the public tender must submit their tender applications to the Agency by 15. 2. 2021 at 11 AM in the Agency's local time at the latest. The tender applications must be prepared in accordance with the Decision on initiating a public tender and the tender documentation.

The application must be submitted in one (1) original and one (1) copy. If any differences between the two are found, the original prevails.

The original application must be printed or written in such a way that text cannot be deleted.

#### C.1.1 The language of the tender application

The application that the bidder prepares, as well as all correspondence and all the documents pertaining to the application, must be in the Slovene language or translated into Slovene language. The exception to this rule may only relate to the standard catalogues, reference lists, brochures and similar. Such documents may be in the English language.

It must be clear on all the translated documents that they were translated by a sworn interpreter.

If the Agency upon reviewing and assessing the applications finds that a part of an application which was not submitted in Slovene language should be translated into Slovene language, it may request the applicant to do so at its own cost, and set an appropriate deadline for this. If the applicant does not adhere to this request, the application shall be regarded as incomplete.

#### C.1.2 Binding

All the pages of the application must be bound with a tricolored ribbon or string, with both ends on the back or the front side sealed with sealing wax or tape, and the seal secured with a stamp or signature of the person undersigning the application. The type of binding described is a summary from Article 35 of Notary Act (Official Gazette of the RS, no. 2/2007 – UBP3, 33/2007-ZSReg-B, 45/2008, 91/2013). An overview of the application must be possible without damaging the seal wax or tape or the string. Binding with a tricolored ribbon or string is required only for the original.

#### C.1.3 Signature

The original copy of the application must be signed by the legal representative of the applicant or a person authorized by them. If the application is signed by an authorized person, the authorization must be made using the template in the appendix I.3 (Authorization for signing the application), which is an integral part of the application. The original copy must be signed on all the appendices, where signature is required, and also stamped, if the applicant is legal entity which, in accordance with its internal acts, operates with a stamp.

The legal representative of the applicant or a person authorized by them must initial each page of the application. The same holds if the applicant is a natural person.

### C.1.4 Amendments to the application

The application must not have any changes or amendments (corrections), except for those that the applicant made to correct the errors before submitting the application. In such a case the changes or amendments (corrections) must be initialled by the person who signed the application.

Original text that was altered by a change or amendment, must remain visible.

### C.1.5 Information accuracy and completeness

The applicant or the bidder can at any time be excluded from the public tender procedure if it is found that the application containing incorrect or untrue data. In the event of an exclusion for these reasons the applicant shall not receive the amounts already paid for the tender bond or the advance on administrative costs and already paid in deposits. It is also possible that upon a subsequent discovery that incorrect or untrue data was provided in the application, a DARF already issued may be revoked, in which case administrative costs and payments made for the efficient use of a natural resource by the bidder would not be reimbursed.

## C.2 Documents to be provided with the application

This segment lists all the documents that the applicant must attach to their application. If a special type of document (form) is required, it is indicated for that particular document. All forms and other documents must be signed, and also stamped, if the applicant is legal entity which, in accordance with its internal acts, operates with a stamp Every page of the applicants tender documentation must be initialled.

The applicant must attach the documents in the order listed below:

- General information on the applicant (Form I.1.1 or I.1.2),
- Applicant's statements (Form I.2),
- Authorization for signing the application (Form I.3),
- Information on the applicant's ownership structure (no form),
- Financial, organizational, and technical plans for deployment and operation of a mobile communications network (business plan) (no form),
- Nomination of persons who shall be authorized to submit bids for the applicant during the public auction (Form I.4),
- Statement and confirmation of payment of the tender bond (Form I.5),
- List of the frequency lots the applicant is interested in (Initial Bid) (Form I.6),
- Statement on the submission of documents in accordance with the requirements of the tender documentation (Form I.7).

In case an applicant does not fill out a certain field in the form, it must strike through such field, except in form I.6, for which a special requirement applies, namely in the form in the section intended to indicate the number of lots in each frequency band, where the applicant does not want to place a bid, the number zero (0) must be entered.

## C.2.1 General information on the applicant (Form I.1.1 or I.1.2)

The applicant must attach to the application a correctly and completely filled out Form I.1.1 or I.1.2, which should include the following information on the applicant:

- for legal entities: company name, business address, headquarters, company registration number and VAT ID number, contact information, name of the legal representative, and any other persons authorized for representing the company, their signatures, and bank account information (Form I.1.1). The form must be signed by the applicant's legal representative or authorized person,
- for natural persons: full name, permanent and temporary address, registration number and VAT ID number, contact information, signature, and bank account information (Form I.1.2).

The fax number is optional. The data on the authorized person are obligatory only if the applicant appointed an authorized person with the Form I.3 (Authorization for signing the application).

Applicants not registered in the Republic of Slovenia (hereinafter referred to as: "foreign applicants") shall list an address for receiving mail<sup>31</sup> in Slovenia to which any written correspondence, especially notifications, calls, and decisions related with the public tender procedure may be sent, and information on the person or persons who are authorized for receiving such documents, along with appropriate authorizations. Foreign applicants, which are legal entities, must also attach a copy of their instrument of incorporation.

## C.2.2 Applicant's statements (Form I.2)

The applicant must attach to the application a correctly and completely filled out Form I.2, which should include the following statements:

- the statement that it is familiar with the content of the tender documentation in Public tender for awarding radio frequencies for providing public communications services, and that it accepts its provisions,
- a statement that its application is valid until 31. 7. 2021,
- the statement that all the data in the application are true and accurate, and that it agrees that the Agency may annul the issued DARFs without returning the payment for the efficient use of a limited natural resource if it is established after the completion of the public tender procedure that the applicant provided false or untrue data in its application, or in the event that such facts come to light during the public tender procedure the Agency shall not return the already paid tender bonds or the advance for the administrative costs and the already paid deposits,
- the statement that the applicant is solvent, and there are no procedures of bankruptcy, compulsory settlement, forced liquidation, or removal from the court registry without liquidation launched against it, and that there is no valid reason that its current operations or any court or other procedures that the applicant is involved in could cause such procedures to be initiated,
- the statement that the applicant shall maintain its ownership structure, as stated in this application, until the issue of the decision from paragraph 6 of Article 45 of ZEKom-1, and that it shall not have changes in ownership in a way that would be in opposition to the requirements of the public tender,

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<sup>31</sup> In accordance of the provisions of paragraph one of Article 57 of the General Administrative Procedure Act (Official Gazette of the Republic of Slovenia no. 24/06 - uradno prečiščeno besedilo, 105/06 - ZUS-1, 126/07, 65/08, 8/10, 82/13, 36/20 - ZZUSUDJZ, 61/20 - ZZUSUDJZ-A, 175/20)

- the statement that it shall adhere to the provisions of the tender documentation regarding information confidentiality as regards the public tender, and regarding the prohibition of collusion, and that it shall not act in such a way that could threaten the integrity of the public tender procedure, and that it agrees that the Agency may annul the issued decisions on awarding radio frequencies, if it is found after the completion of the public tender procedure that the applicant acted in such a way, or in the event that such findings occur during the course of the public tender, the applicant shall not receive the returned payment for the tender bond, nor the advance of administrative costs, and the already paid deposits.

### C.2.3 Authorization for signing the application (Form I.3)

In the event the application is not signed by the applicant's legal representative, the application must have attached the authorization of the legal representative, with which it authorizes a certain natural person for signing the bid. The same holds if the applicant is a natural person.

In the event the applicant does not authorize anyone to sign the application, it must still attach this form to the application, with all the data input fields on the form struck through.

### C.2.4 Information on applicant's ownership (no form)

Each applicant who is a legal entity applying must attach information to the application on the value and structure of their equity, including the complete ownership structure of the applicant. This information must allow the Agency to establish who the owner of the applicant is, and in what scope different applicants might be connected through a common owner or interconnected through common shares.

In case of consortiums, joint ventures, associations of companies or other types of joint cooperation, the application must also include the information on the relationships between the members, and detailed data on:

- consortium agreements,
- joint venture agreements,
- shareholder agreements, and
- other acts governing joint cooperation.

All types of cooperation are treated as a legal entity and in the course of the public tender treated as "groups".

In the case of a joint application to the tender, the group must attach an appropriate act on joint participation in the public tender procedure, which must contain at least:

- list of all contractors in the group (name and address of the contractor, legal representative, registration number, tax number, transaction account number),
- authorization to the leading contractor of the group,
- unlimited joint and several liability of all parties in the group,
- method of payment through the leading contractor of the group,
- provisions in case of any of the parties leaving the group,
- settlement of disputes between members of the group,
- other possible rights and obligations between the members of the group,

— the period of validity of the legal act.

The application must contain information on the ownership structure of all members of the group.

## C.2.5 Financial, organizational and technical plan (no form)

The applicant must also submit a description of their financial, organizational and technical plans, and their visions regarding the execution, use of technology, mobile network and service management in 5,000 characters or less (business plan).

## C.2.6 The appointment of the authorized bidding persons (Form I.4)

The applicant must fill out the Form I.4, which is for the appointment of persons who shall be authorized to issue bids during the public auction.

## C.2.7 Statement of payment of the tender bond (Form I.5)

The applicant must include the receipt for the payment of the tender bond in the amount of 250.000,00 EUR. Details regarding the payment are listed in Form I.5.

If an applicant does not attach the required tender bond, as required in the tender documentation, their application shall be considered as incomplete.

The Agency shall recognize the amounts from tender bonds by the applicants that shall become bidders after receiving a decision, as payment of advances for administrative costs in the same amount (see chapter A.5.2.2 ( Payment of administrative costs)).

The Agency shall return the tender bonds to the applicants that were not selected as bidders within 15 days after the decisions from paragraph 6 of Article 45 of ZEKom-1 are issued to winning bidders, in the event that they fulfil the requirements from Chapters A.5.3.1 (Protection of confidential information), A.5.3.2 (Prohibition of collusive ) and A.5.3.3 (Retaining the bidder's ownership structure during the public tender procedure).

## C.2.8 Initial Bid (Form I.6)

The applicant must fill in Form I.6 stating the lots it wishes to acquire at reserve price and this is treated as initial bid. The amount of actual payment for radio frequencies will depend on auction results. The initial bid is binding and shall be made in accordance with spectrum caps as described in chapter A.4.1 (Spectrum caps).

The applicant must fill in the Form I.6 completely, even if it does not wish to submit a bid for individual lots in individual frequency bands. In this case it must write the number **zero (0) in the section of the form on the number of lots in the individual frequency band that they do not to submit a bid on**.. For the purposes of the Main Auction only, as part of its application, each applicant has the option to specify a Minimum Viable Quantity from a menu of available options in each of the Lot Categories A, C1, C2, D, E and F (auction rule

33). In lot Categories where the applicant cannot or does not want to select Minimum Viable Quantity, the Minimum Viable Quantity will be set at 1 lot.

The applicant's legal representative or the person authorized for signing the application must fill out and sign the initial bid, whereby they must not delete and/or add anything, except where the form format requires them to do so. The same holds if the applicant is a natural person. This application represents the bidder's initial bid at the start of the public auction (see chapter F (Auction rules).

In accordance with paragraph 1 of Article 43 of ZEKom-1 all the applicants whose applications do not meet these requirements shall be excluded from further procedure. In the case of the public tender, the indication of lots that are the subject of the public tender may not be the subject of a supplement (Form I.6). An application that does not include the required forms or where these forms are not correctly filled in shall be excluded from further procedure.

### C.3 Sealing and labelling the bid

The original and the copy of the application must be each enclosed in its own envelope marked "**Original**" or "**Copy**", respectively, with both envelopes enclosed in one envelope and marked: **»PONUDBA NA JAVNI RAZPIS Z JAVNO DRAŽBO ZA DODELITEV RADIJSKIH FREKVENC ZA ZAGOTAVLJANJE JAVNIH KOMUNIKACIJSKIH STORITEV KONČNIM UPORABNIKOM V RADIOFREKVENČNIH PASOVIH 700 MHz, 1500 MHz, 2100 MHz, 2300 MHz, 3600 MHz in 26 GHz – NE ODPIRAJ«** (In English: "*APPLICATION FOR THE PUBLIC TENDER WITH PUBLIC AUCTION FOR THE AWARD OF RADIO FREQUENCIES FOR PROVISION OF PUBLIC COMMUNICATIONS SERVICES IN THE 700 MHz, 1500 MHz, 2100 MHz, 2300 MHz, 3600 MHz AND 26 GHz RADIO FREQUENCY BANDS – DO NOT OPEN*"), and addressed to the Agency: Agencija za komunikacijska omrežja in storitve Republike Slovenije, Stegne 7, SI-1000 Ljubljana. The applicant must also write their full address to the enclosing envelope. The envelope must be sealed or closed in such a way that it is possible to make sure at the public opening of applications that it has not been opened until then.

In accordance with the provisions of paragraph 4 of Article 41 of ZEKom-1 any applications that shall not be labelled correctly shall not be opened at the public opening (see chapter E.1 (Procedure of publicly opening applications)).

### C.4 Deadline for submitting applications

The applications must be delivered to the Agency's address defined in Chapter C.3 by 15. 2. 2021 at 11 AM local time at the latest.

The applicants may submit their applications personally by prior announcement at the Agency's premises at the address Stegne 7, Ljubljana any workday between 8:30 AM and 2 PM, or until 11 AM on the deadline.

As this is an anonymous invitation to tender, the applicant will receive a code upon application submission, which they will confirm by signing. At the public opening of the applications each applicant will be treated under this code. The applications may be submitted in person by the legal representative of the applicant or by an authorised person of the legal representative of the applicant, who in this case must submit an authorisation and prove himself with an identity document. The same applies mutatis mutandis where the provider is a natural person.

The applicant must no later than 11. 2. 2021 by 12 AM announce their arrival by email at the address [drazba@akos-rs.si](mailto:drazba@akos-rs.si). In the email, they must indicate the telephone number to which the Official of the Agency shall call at its discretion and verify the identity of the provider. The Agency shall inform them at least 24 hours in advance of the time at which the applicant will be able to submit its application and other details regarding the submission of the application. Due to possible special circumstances related to the COVID-19 epidemic, the Agency cannot guarantee the acceptance of unannounced applications delivered outside the agreed time. Applicants must, however, take into account that the submission of all applications at the last minute before the deadline for the submission of applications is not feasible.

The applicant must take all measures to ensure that the Agency receives the offer by the specified deadline and shall be responsible for all risks associated with the transfer of the application, including the possibility of force majeure.

The official of the Agency responsible for accepting applications shall issue a confirmation of receipt of the application. The code must be treated as confidential by the applicant under the terms of this invitation to tender.

## C.5 Late application submission

The Agency shall not accept any applications, amends to applications, or replaced applications received at the Agency's address after the deadline for submission stated in the tender documentation has passed, and shall return them to sender unopened.

## C.6 Changes, amendments, replacements or withdrawal of the application

Until the deadline for submitting the applications the applicants may change, amend, replace or withdraw bids, if they notify the Agency of the change in writing and in the method detailed in Article C.4 (Deadline for submitting applications). The applicant must present the code they received upon submission of their application when changing, amending, replacing, or withdrawing their application.

The notification on the change or amendment must be clearly labelled on the envelope as follows: »PONUDBA NA JAVNI RAZPIS Z JAVNO DRAŽBO ZA DODELITEV RADIJSKIH FREKVENC ZA ZAGOTAVLJANJE JAVNIH KOMUNIKACIJSKIH STORITEV KONČNIM UPORABNIKOM V RADIOFREKVENČNIH PASOVIH 700 MHz, 1500 MHz, 2100 MHz, 2300 MHz, 3600 MHz in 26 GHz«– SPREMEMBA /DOPOLNITEV PONUDBE" (In English: "APPLICATION FOR THE PUBLIC TENDER WITH PUBLIC AUCTION FOR THE AWARD OF RADIO FREQUENCIES FOR PROVISION OF PUBLIC COMMUNICATIONS SERVICES IN THE 700 MHz, 1500 MHz, 2100 MHz, 2300 MHz, 3600 MHz AND 26 GHz RADIO FREQUENCY BANDS – CHANGE/AMENDMENT TO THE APPLICATION").

If the applicant replaces their application with a new application, they must at the same time withdraw their old application from the public tender. The withdrawal notice must be received by the Agency by the deadline for submissions, and it must be given in writing. The withdrawal notice must be clearly labelled on the envelope as follows: » **UMIK PONUDBE NA JAVNI RAZPIS Z JAVNO DRAŽBO ZA DODELITEV RADIJSKIH FREKVENC ZA ZAGOTAVLJANJE JAVNIH KOMUNIKACIJSKIH STORITEV KONČNIM UPORABNIKOM V RADIOFREKVENČNIH PASOVIH 700 MHz, 1500 MHz, 2100 MHz, 2300 MHz, 3600 MHz in 26 GHz**« (In English: "WITHDRAWAL OF THE APPLICATION FOR THE PUBLIC TENDER WITH PUBLIC AUCTION FOR THE AWARD OF

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*RADIO FREQUENCIES FOR PROVISION OF PUBLIC COMMUNICATIONS SERVICES IN THE 700 MHz, 1500 MHz, 2100 MHz, 2300 MHz, 3600 MHz AND 26 GHz RADIO FREQUENCY BANDS*”), and the applicant must deliver it to the Agency’s address in accordance with the provisions of Chapter C.4 Deadline for submitting applications.

The documentation that refers to the change, amendment, or replacement of the application must be prepared in accordance with chapter C.2 (Documents to be provided with the application), and addressed to the Agency.

The Agency shall return the withdrawn applications unopened to the applicants before the public bid opening.

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## D Additional information regarding the public tender

### D.1 Costs for preparing an application

The applicant covers all costs in connection with preparing and submitting an application. Under no circumstance shall the Agency be responsible for any potential damage which might arise as a result of this, regardless of how the public tender and public auction procedures are carried out or of the final applicant selection.

### D.2 Legal order

The legal order of the Republic of Slovenia shall be used in resolving potential legal questions related to the holding of the public tender and public auction.

### D.3 Notifications related to the public tender

If additional information which is not supplied in the tender documentation must be obtained for the preparation of a correct application, the applicant must obtain it at its own expense.

The Agency assumes no responsibility in connection with any information which might be spread by word of mouth, or in a way that is not in accordance with the requirements of the tender documentation.

### D.4 Changes or supplements to the decision on initiating a public tender and the tender documentation

The Agency may alter the Decision on initiating a public tender, and should it opt for that it must, in accordance with the extent of the changes, also extend the deadline for submitting applications. All interested applicants must be equally and transparently informed about any changes. The Agency shall publish a potential new decision in the Official Gazette of the Republic of Slovenia at least 7 days before the deadline set for submitting applications (paragraph 6 of Article 38 of ZEKom-1), as well as on the Agency's website <http://www.akos-rs.si/>.

The Agency reserves the right to change or supplement the tender documentation. If the tender documentation is altered or supplemented, any change or supplement shall be published on the Agency's website, by 5. 2. 2021 at the latest. In the event of a change or supplement to the tender documentation, the applicant must take such change or supplement into account in its entirety when preparing its application.

### D.5 Annulment of the public tender

The Agency reserves the right at any point up to the issue of a DARF on the basis of the public tender to annul the public tender. A decision on the annulment of the public tender is published in the Official Gazette of the Republic of Slovenia.

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## E Opening and reviewing applications

In accordance with paragraph 2 of Article 37 of ZEKom-1, the public invitation to tender shall be conducted by a special impartial commission (hereinafter: commission) appointed by the director of the Agency.

### E.1 Procedure of publicly opening applications

The Agency shall publicly open applications which were properly marked and submitted on time on 15. 2. 2021 at 14:00 in the time zone at the Agency's registered office in the Agency's conference room (Stegne 7, 1000 Ljubljana).

In accordance with provisions from paragraph 2 of Article 41 of ZEKom-1, the public tender is anonymous, so instead of the data on applicants' names, their codes shall be used in the public opening of applications. Bidders' codes shall be allocated by the Agency upon the submission of applications.

At the public opening of applications, all provisions from Chapter A.5.3.1 (Protection of confidential information) of the tender documentation shall apply. Those in attendance must enter their presence on the list of those in attendance.

At the opening of applications, the Agency shall, upon inspection, determine whether the applications meet the following criteria:

- it was submitted on time, in accordance with Chapter C.4 (Deadline for submitting applications of the tender documentation),
- it is sealed and marked in accordance with Chapter C.3 of the tender documentation, (Sealing and labelling the bid),
- it is properly bound in accordance with Chapter C.1.2 (Binding),
- it has been prepared in accordance with Chapter C.2 (Documents to be provided with the application)(Formal Completeness) of the tender documentation, which it does by verifying the presence of the following documents:
  - General information on the applicant (Form I.1.1 or I.1.2),
  - Applicant's statements (Form I.2),
  - Authorization for signing the application (Form I.3),
  - Information on the applicant's ownership structure (no form),
  - Financial, organizational, and technical plans for deployment and operation of a mobile communications network (business plan) (no form),
  - Nomination of persons who shall be authorized to submit bids for the applicant during the public auction (Form I.4),
  - Statement and confirmation of payment of the tender bond (Form I.5),
  - List of the frequency lots the applicant is interested in (initial bid) (Form I.6) and
  - Statement on the submission of documents in accordance with the requirements of the tender documentation (Form I.7),

and in accordance with Chapter C.1.3 (Signature), check the signatures in all required places as well as initials on each page of the Application.

If specific measures related to the COVID-19 pandemic (e.g. limited human gathering) apply on the day of the opening of the applications, the Agency will hold a public openings remotely via an online application. It shall

publish an invitation to report on its website no later than seven days before the public opening. The Agency shall at least one day before the public opening of applications provide to those who registered an online link to where they will be able to watch a live stream (e.g. via the Webex application) of the public opening of applications by the tender commission at the Agency's headquarters.

The public opening shall be recorded. The Agency shall keep minutes on the opening of applications according to the consecutive number of applications. Members of the tender commission in attendance all sign the minutes at the end of the public opening.

## E.2 Review of applications

In the next phase, the Agency verifies the completeness and accuracy of the applications' content.

A proper application is one whose documents (from I: Forms of the Tender Documentation) have been filled out in their entirety in all the required fields and whose content conforms to the requirements of the law and the tender documentation. Inconsequential typos do not affect the accuracy of an application. However, applications shall be considered improper inasmuch if they significantly alter an applicant's rights and obligations under the tender documentation.

### E.2.1 Supplements and clarifications to an application

The Agency shall within 5 days of the opening of applications invite applicants that submitted incomplete applications to supplement them. The deadline for supplementing shall thereupon be no less than 8 and no more than 15 days.

Incomplete applications, which are not supplemented by the applicant within the required deadline, shall be rejected.

In the case of this public tender, the indication of lots of the subject of the public tender may not be the subject of a supplement (Form I.6). An application which does not contain the indicated forms or which in relation thereto are improper shall be excluded from the procedure.

The Agency may request from individual applicants a clarification of their application, but in doing so may not request, allow, or suggest any change or supplement to the content of the application. Applicants must send clarifications within the deadline and use the method the Agency determines.

The tender commission shall draft a report in which it shall be indicated whether an individual applicant has met the conditions for participation in the public tender.

## E.3 Issue of the decision on the selection of bidders

Based on a report from the tender commission, the Agency shall issue each individual applicant that meets all the conditions of the public tender a decision on the selection of a bidder, indicating therein the time, place, and manner of holding the public auction.

Each individual applicant that does not meet one or more of the conditions for the public tender shall receive a decision that it was not selected as a bidder, with an explanation thereto. Applicants that are not selected

as bidders shall still be subject to the provisions of confidentiality, until the written decision from paragraph 6 of Article 45 of ZEKom-1 have been issued to successful bidders following the completion of the auction.

The Agency shall inform each applicant as to its decision on the fulfilment of conditions of the public tender individually, but shall not reveal to them the identity of other selected bidders or the identity of the applicants that were not selected as bidders, nor shall it reveal to the public the number or identity of applicants or bidders.

The Agency shall also publish the time and place for holding the public auction on its website and in the Official Gazette of the Republic of Slovenia.

## F Auction rules for Electronic Auction

### F.1 Reserve price and payment method

The Agency determined the lowest prices for lots in lot categories with the approval of the Government of the Republic of Slovenia, which was given in the resolution no. 38100-6/2020/6 of 16. 12. 2020, changed with resolution no. 38100-6/2020/8 of 24. 12. 2020. In this resolution and its change, the Government of the Republic of Slovenia approved the lowest fee for the efficient use of a limited natural resource, and the payment method. Based on this, the lowest fees for the efficient use of a limited natural resource (reserve prices) for lots in lot categories shall be as follows:

Table F-1: Reserve prices in EUR for each lot

Lot name	Reserve price for the lot
<b>A</b>	2,900,000 EUR
<b>B</b>	20,000 EUR
<b>C1</b>	20,000 EUR
<b>C2</b>	20,000 EUR
<b>D</b>	2,500,000 EUR
<b>E</b>	450,000 EUR
<b>F</b>	450,000 EUR
<b>G</b>	250,000 EUR

Source: AKOS

In accordance with the cited resolutions of the Government of the Republic of Slovenia, the bidders who shall be awarded radio-frequencies in this public tender with an DARF issued by the Agency, must pay the price for the efficient use of a limited natural resource as a lump sum. Successful bidders will have to pay any additional payments to cover the difference between the amount of payment for efficient use of the limited natural resource and the deposits they had to provide during the auction within 15 days of receiving the written decision from Par. 6 Art. 45 of ZEKom-1.

Winning bidders shall be issued written decisions with information about the frequency blocks awarded to them in the public auction, the location of these blocks within frequency bands, the fee for the efficient use of a limited natural resource, and any potential additional payments required to cover the difference between the fee for efficient use of a limited natural resource and the deposits that the bidders had to pay during the auction.

#### F.1.1 Reduction of annual fees for the use of radio frequencies

When preparing the General legal act on the method for calculating fees for radio frequency usage (Official Gazette of the RS, no. 30/13, 33/13 – corr., 40/13 – corr., 81/14, 21/16, 63/16 and 64/19), the Agency took into account the cost of building networks, and added Par. 8. Art. 12 to the act with the purpose of promoting investments, setting the factor 0.3 for the first year of using the assigned frequencies for providing public communications services to end user, factor 0.5 for the second year, and factor 0.7 for the third year.

Furthermore, due to the occupancy of the 700 MHz band in the neighbouring countries, Par. 7 of Art. 12 stipulates the factor of 0.3 to be multiplied with the number of points for the period between 1 July 2020 and 31 December 2021 for this band.

Use of factors from Par. 7 and 8 Art. 12 of this general act is mutually exclusive.

## F.2 Auction rules

### F.2.1 General

The subject of the public auction are individual lots (auction units for blocks). The definitions are presented in a glossary below:

Table F-2: Glossary

Term	Belongs to	Definition
<b>Activity</b>	Bidder, Round	A weighted measure to express demand across Lot Categories as a single number; the sum of Lot Ratings across Lot Categories multiplied by the quantity of lots demanded in that Lot Category
<b>Allocation Stage</b>		First Stage of the Auction, in which generic lots will be auctioned
<b>Allowable Change</b>	Bid	A number, which reflects the extent to which demand changes can be accepted
<b>Initial Bid</b>	Bidder	Part of the application to participate in the auction which specifies the number of lots in each Lot Category that a bidder is willing to buy at its Reserve Price
<b>Aggregate Demand</b>	Lot Category	The sum across all bidders of the number of lots associated with the bids in that Lot Category
<b>Assignment Stage</b>		Second and last stage of the auction, in which winners of generic lots can place additional bids to be assigned specific blocks, where necessary
<b>Assignment Prices</b>	Band, bidder	Additional price a bidder has to pay for receiving a specific assignment in a band
<b>Base Price</b>	Lot Category	The price that winning bidders will have to pay for their allocated lots (typically the Resulting Price of the final round)
<b>Bid</b>	Round, bidder, Lot Category	A bid consists of a price, a change in demand, and in some cases an election of either Exit or Switch
<b>Eligibility</b>	Round, bidder	A bidder's eligibility limits the demand a bidder can express in a round
<b>Excess Demand</b>	Round, Lot Category	The sum across all bidders of the number of lots associated with the bids in that Lot Category, minus the supply for the Lot Category
<b>Exit Bid</b>	Bid	A characteristic of a bid to reduce demand; an Exit Bid, when applied during bid processing, reduces the bidder's eligibility for the current round
<b>Final Price</b>	Bidder	Price which bidders must ultimately pay, i.e. the sum of the Base Prices for each lot allocated to the bidder in the Allocation Stage and the Assignment Prices
<b>Lot Category</b>		Categorisation of the generic lots
<b>Lot Rating</b>	Lot Category	Valuation of each Lot Category which matters for Activity and Eligibility
<b>Main Auction</b>		The auction in the Allocation Stage that is intended to establish each bidder's allocation of lots in each Lot Category
<b>Price Range Percentage</b>	Bid	Represents where in the range between the Start Price and the End Price a bid's price falls
<b>Remaining Change</b>	Bid	During bid processing, a change in demand requested by the bidder that has not yet been applied, which is a positive number for a bid to increase and a negative number for a bid to decrease
<b>Resale Auction</b>		Auction for some or all of the Lot Categories in which there are unsold lots after the conclusion of the Main Auction, and after possible elections

Term	Belongs to	Definition
		to decline allocations have been made; will be held at AKOS' discretion
<b>Resulting Price</b>	Round, Lot Category	The Price for a Lot Category determined during bid processing, which will become either the Start Price for the next round or the Base Price (if the auction has concluded)
<b>Resulting Quantity</b>	Round, bidder, Lot Category	During bid processing, the number of lots that a bidder is allocated in a Lot Category; after bid processing, the number of lots the bidder would win in the Lot Category if the auction ends
<b>Spectrum Caps</b>	A set of bands	A limitation on the amount of spectrum each bidder can hold after the Allocation Stage, set by AKOS
<b>Start Price &amp; End Price</b>	Round, Lot Category	Announced before each round for each Lot Category
<b>Start Quantity</b>	Round, bidder, Lot Category	The starting point for a bidder's demand for a Lot Category in a round; a bid specifies a bidder's change in demand relative to the Start Quantity
<b>Switch Bid</b>	Bid	During bid processing, a Switch Bid does not affect the Eligibility in the current round

## F.2.2 Available lots

### F.2.2.1 Lot Categories

- The auction process consists of two stages: 1) an Allocation Stage, in which generic lots will be auctioned that are organised into eight Lot Categories, (see Table F-3), and 2) an Assignment Stage in which winners of generic lots can place additional bids to be assigned specific blocks, where necessary.

Table F-3: Overview of Lot Categories

LOT CATEGORY	FREQUENCY BAND	RANGE	SUPPLY	SPECTRUM ENDOWMENT PER LOT	LOT RATING
<b>A</b>	700 MHz FDD	703-733 MHz & 758-788 MHz	6	2x5 MHz	6
<b>B</b>	700 MHz SDL	738-753 MHz	1	1x10 MHz + 1x5 MHz*	1
<b>C1</b>	1500 MHz	1452-1492 MHz (with option to convert to C2)	4	1x10 MHz	1
<b>C2</b>		1432-1512 MHz	4	1x10 MHz	1
<b>D</b>	2100 MHz	1920-1980 MHz & 2110-2170 MHz	12	2x5 MHz	4
<b>E</b>	2300 MHz	2320-2390 MHz	7	1x10 MHz	2
<b>F</b>	3600 MHz	3420-3800 MHz	38	1x10 MHz	2
<b>G</b>	26 GHz	26.5-27.5 GHz	5	1x200 MHz	(no switching)

Note:\* The single lot in Lot Category B is associated with 1x10 MHz in the range 743-753 MHz and 1x5 MHz in the range 738-743 MHz, which is associated with interference issues.

### F.2.2.2 Switching between Lot Categories with special provision for Lot Category G

2. During the Main Auction, in the Allocation Stage, bidders will be able to switch their demand between Lot Categories A-F subject to an Activity Rule, based on the specified Lot Ratings, as further described in Section F.2.6.1.
3. No switching will be permitted to or from Lot Category G; it therefore does not have a Lot Rating.

### F.2.2.3 Special provisions for the 1500 MHz band

4. The 1500 MHz band is divided into two parts, the “Core” (i.e. 1452-1492 MHz) and the “Extensions” (i.e. 1432-1452 MHz and 1492-1512 MHz).
5. For lots allocated to a bidder in C2, specific blocks may be assigned in either the Core or the Extensions. Lots allocated in C1 will be assigned in the Core part of the band, unless the bidder elects to have their allocation of C1 lots be treated as C2 lots, for the purposes of the Assignment Stage. Such an election does not affect the bidder’s Base Prices for the lots allocated in the Assignment Stage.
6. The 1x5 MHz blocks that are adjacent to the lower and upper end of the frequency range of the 1500 MHz band are subject to interference issues. These blocks will therefore not be offered as part of the Allocation Stage. Instead, following the conclusion of the Assignment Stage:
  - the 1427-1432 MHz block will be allocated to the winner of the 1432-1442 MHz lot, and
  - the 1512-1517 MHz block will be allocated to the winner of the 1502-1512 MHz lot.

### F.2.2.4 Spectrum Caps in the Allocation Stage

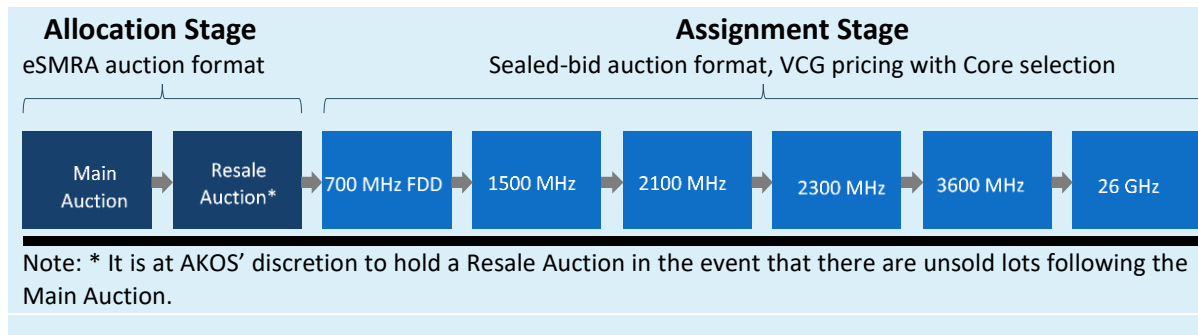
7. To ensure competition, AKOS imposes the following Spectrum Caps on the amount of spectrum each bidder can hold after the Allocation Stage:
  - A Spectrum Cap of 2x35 MHz on all FDD spectrum holdings below 1 GHz designated for mobile communications, covering the sum of:
    - Spectrum allocations in Lot Category A
    - Current 800 MHz holdings, as of the application date
    - Current 900 MHz holdings, as of the application date
  - A Spectrum Cap of 160 MHz on total spectrum allocations in Lot Category F.
  - A Spectrum Cap of 800 MHz on spectrum allocation in Lot Category G.
  - A Spectrum Cap of 425 MHz on “prime spectrum bands”, covering the sum of:
    - Spectrum allocations in Lot Category A, D, E and F
    - Current 800 MHz holdings, as of the application date
    - Current 900 MHz holdings, as of the application date
    - Current 1800 MHz holdings, as of the application date
    - Current 2600 MHz holdings (including both FDD and TDD holdings), as of the application date
8. The detailed auction rules below are designed to prevent outcomes where a bidder’s allocation exceeds one or more of the Spectrum Caps.



## F.2.3 Auction process

9. The auction process consists of two stages: 1) an Allocation Stage and 2) an Assignment Stage, see Figure F-1.

Figure F-1: Overview of the auction process



10. The Allocation Stage determines the number of lots awarded to each bidder in each Lot Category, and the Base Prices that winning bidders will have to pay for these lots.
11. The Allocation Stage consists of a Main Auction and, in case there are any unsold lots following the conclusion of the Main Auction, potentially a Resale Auction, at AKOS' discretion.
12. The Assignment Stage determines the specific frequency blocks that will be assigned to bidders who were allocated frequency-generic lots, and any additional payments each bidder has to pay to receive its assignment.
13. The Assignment Stage consists of one bidding round for each band, held in ascending frequency order, i.e. in the order from left to right as illustrated in Figure F-1. Assignment rounds for bands in which there is only one possible assignment, for example 700 MHz SDL, will not be held.

## F.2.4 General provisions

14. All auctions will be held using the auction system made available by AKOS. Each bidder will receive access credentials for the system and short instructions on how to use it.
15. Each bidder will also have the opportunity to take part in a workshop on the essentials of the auction design and to participate in a private mock auction.
16. In each of the two stages, the auctions will proceed in a series of rounds. A round consists of a bid submission phase followed by a results phase. During the bid submission phase of a round, bidders can enter and modify their bids as many times as they like. Bidders will be able to see the bids that they have in place in the auction system. The bids that were in place at the time the bid submission phase ends will be the binding bids for the round. Except where explicitly stated otherwise, bids are expressed as an integer number of EUR, and monetary amounts calculated by the auction software are rounded to the nearest integer.

### F.2.4.1 Final price

17. The final price which bidders must ultimately pay is the sum of:
  - a. the Base Prices for each lot allocated to the bidder in the Allocation Stage and
  - b. the Bidder's Assignment Prices in each round in the Assignment Stage

### F.2.4.2 Auction schedule

18. Allocation Stage auction rounds (both Main Auction and Resale Auction) are scheduled at AKOS' discretion. No minimum or maximum length for auction rounds is set in advance. However, AKOS does not anticipate running auction rounds shorter than 15 minutes or longer than 2 hours. The time between rounds is discretionary and may be varied by AKOS.
19. All rounds in the Allocation Stage will be scheduled between 8.30 and 18.00 hours on Slovenian business days.
20. There is no upper bound on the number of rounds per day. However, AKOS does not anticipate running more than 8 rounds in a single day.
21. Bidders will be notified of the start time for a round at least 15 minutes before the scheduled round start.
22. AKOS may, at its discretion, publish details of its anticipated round schedule for the following day in advance. However, such a round schedule is provisional and for information purposes only. AKOS shall not be bound by the provisional round schedule and will retain the right to schedule rounds at its discretion.
23. The start time and duration of the first assignment round will be announced by AKOS after the completion of the Allocation Stage. There will be at least one full business day between the end of the Allocation Stage and the start of the Assignment Stage.
24. AKOS has discretion over the time and duration of each of the assignment rounds in the Assignment Stage. However, AKOS anticipates that several assignment rounds may be completed, in sequence, on a single day.
25. All assignment rounds in the Assignment Stage will be scheduled between 8.30 and 18.00 hours on Slovenian business days.

## F.2.5 Before the auction

26. Details of the application process and necessary documentation are set out in Section C (The preparation of the tender application) and Form I.6 of the Tender Documentation.

### F.2.5.1 Initial Bid

27. As part of its application, each bidder submits an Initial Bid, according to Form I.6, which specifies the number of lots that the bidder would like to buy in each Lot Category at its Reserve Price. This is the

bidder's initial demand in Main Auction. The bidder's initial demand in a Lot Category may not exceed its supply, and the numbers may not result in a violation of any of the bidder's Spectrum Caps. The Aggregate Demand in each Lot Category is the sum of the initial demand across all bidders in each Lot Category.

28. If for none of the Lot Categories, Aggregate Demand exceeds supply, AKOS will notify bidders that the Main Auction will not need to be held.
29. If there is excess demand for at least one of the Lot Categories A-F, all Lot Categories A-F will be offered in the Main Auction. This is to allow for switching.
30. If Aggregate Demand does not exceed supply for Lot Category G, Lot Category G will not be offered in the Main Auction.
31. If Aggregate Demand exceeds supply for Lot Category G but for none of the other Lot Categories, then only Lot Category G will be offered in the Main Auction.
32. If due to insufficient Aggregate Demand, the Main Auction is not held, or if not all Lot Categories are offered in the Main Auction, then for each Lot Category not offered in the Main Auction, bidders will be allocated the number of lots they indicated in their Initial Bid at the Reserve Price.

### F.2.5.2 Minimum Viable Quantity for the Main Auction

33. For the purposes of the Main Auction only, as part of its application, each bidder has the option to specify a Minimum Viable Quantity from a menu of available options in each of the Lot Categories A, C1, C2, D, E and F, (see Table F-4). The Minimum Viable Quantity determines the level below which a bidder would not be interested in winning lots. In the Main Auction, a bidder who specified a Minimum Viable Quantity will be guaranteed to be allocated, in that Lot Category, either nothing or at least their Minimum Viable Quantity.
34. For Lot Categories in which a bidder cannot or does not wish to specify a Minimum Viable Quantity, the Minimum Viable Quantity for the Lot Categories will be presumed to be 1.

Table F-4: Possible specifications of Minimum Viable Quantity in each Lot Category

LOT CATEGORY	FREQUENCY BAND	SPECTRUM ENDOWMENT PER LOT	SUPPLY	MENU OF "MINIMUM VIABLE QUANTITY" OPTIONS
<b>A</b>	700 MHz FDD	2x5 MHz	6	1 or 2
<b>B</b>	700 MHz SDL	1x10 MHz + 1x5 MHz	1	(1)
<b>C1</b>	1500 MHz	1x10 MHz	4	1 or 2
<b>C2</b>		1x10 MHz	4	1 or 2
<b>D</b>	2100 MHz	2x5 MHz	12	1 or 2
<b>E</b>	2300 MHz	1x10 MHz	7	1, 2, or 3
<b>F</b>	3600 MHz	1x10 MHz	38	1, 2, 3, 4, 5, or 6
<b>G</b>	26 GHz	1x200 MHz	5	(1)

Note: Bidders can choose their Minimum Viable Quantity of lots per Lot Category from the menu specified in the last column of the table.

#### Box 1 Example for specification of Minimum Viable Quantity

For example, consider that a bidder is not interested in an assignment of just 2x5 MHz in Lot Category A but only deems an assignment of at least 2x10 MHz in this Lot Category to be useful. In that case, this bidder could decide to specify a Minimum Viable Quantity of 2 lots in its application.

Thereby, the bidder is guaranteed to be allocated, in the Main Auction, either at least 2 lots in this Lot Category, or none. In other words, it cannot occur that a requested demand reduction by this bidder from 2 to zero lots is only partially granted such that the bidder ends up with only 1 lot. Similarly, it cannot occur that a bid to increase demand from 0 to 2 is only partially granted.

## F.2.6 Allocation stage

35. The Main Auction and potential Resale Auction of the Allocation Stage will follow the eSMRA format, which consists of one or more rounds. The number of rounds will depend on the bids received in the auction.

### F.2.6.1 Activity Rule and Eligibility

36. During the course of the auction, prices for Lot Categories will generally increase, and will never decrease. Correspondingly, a bidders' general level of demand across Lot Categories may not increase from round to round, as explained in paragraphs 37 to 39.
37. A bidder's general level of demand is more precisely expressed as a single number which is referred to as the bidder's **Activity**. Each Lot Category is associated with a Lot Rating except for Lot Category G, as listed in Table F-3 in Section F.2.2.1. The Activity of a possible allocation of lots is measured in points, by multiplying the number of lots in each Lot Category by the Lot Rating in each Lot Category, and summing across Lot Categories A-F.
38. At the beginning of each round, the auction system informs each bidder of its **Eligibility** for the round, which is also expressed as a number. In each round, a bidder's Eligibility is equal to the higher of:
  - a. the Activity associated with the bidder's Start Quantities in that round and
  - b. the Activity associated with the bidder's requested demand in the previous round (i.e. the Activity associated with the Start Quantities that the bidder would have had in that round if all of the bidder's bids in the previous round had been fully applied).

In round 1 of the Main Auction, the initial Eligibility of a bidder is the Activity associated with the bidder's Initial Bid.

39. The Activity Rules for the auction are that:
  - a. A bidder's demand cannot, following any round, result in an Activity which exceeds the bidder's Eligibility entering that round.
  - b. In Lot Category G, bidders may not place a bid to increase

### F.2.6.2 Before round 1

40. Before the first auction round, each bidder will see, for each Lot Category, its initial demand and its Minimum Viable Quantity.
41. Bidders are required to report any discrepancies between the information displayed and the preferences they expressed in their application (Form I.6) no later than 30 minutes before the start of the first round to the auction manager.

### F.2.6.3 Bidding process in each round

42. Before each round, AKOS informs all bidders of the **Start Price** and **End Price** for each Lot Category. In Round 1 of the Main Auction, the Start Price in each Lot Category will be set equal to its Reserve Price, which is also the price at which bidders indicated their initial demand. In Round 1 of any Resale Auction, the start price will be set equal to the starting prices determined by AKOS .
43. Each bidder is also privately informed of its **Start Quantity** for each Lot Category and its Eligibility for the round.
44. In Round 1, a bidder's Start Quantity for a Lot Category is its initial demand for that Lot Category. In subsequent rounds, a bidder's Start Quantity is determined based on the results of the previous round, as described in Section F.2.6.4.
45. During the bid submission period, each bidder can choose for each Lot Category, whether it wishes to maintain its demand at the level of its Start Quantity for all prices in the round up to the End Price of the round or whether it wishes to place a bid to modify its demand.
46. A bid for a Lot Category includes a price and a number indicating the change in demand that the bidder would like to make at that price. The price must be no less than the Start Price and no more than the End Price for the round and Lot Category, and the demand after the change may not be negative and may not exceed the supply for the Lot Category.
47. For a bid in a Lot Category other than Lot Category G, the change in demand may be a positive number (to indicate an increase in demand) or a negative number (to indicate a decrease). In the case of a decrease, the bidder must also specify whether the bid is a **Switch Bid** or an **Exit Bid**.
48. A Switch Bid indicates that the bidder wants to use the Eligibility associated with a requested demand reduction to request a demand increase in another Lot Category. An Exit Bid indicates that the bidder wants to surrender all of the Eligibility associated with the demand reduction.
49. For a bid in Lot Category G, bids to increase demand are not permitted, and the change in demand must be a negative number. The distinction between Switch Bids and Exit Bids does not apply in Lot Category G and therefore bidders cannot specify whether a bid is a Switch Bid or an Exit Bid.
50. The procedure described in Section F.2.6.5 determines whether or not and to what extent the demand change requested in a bid is actually applied. The auction system may prevent a bidder from placing a bid if, at the time the bid is placed, it can already pre-determine that it will not be possible to apply the bid, for example because it would violate the Activity Rule or a Spectrum Cap.

51. If a bidder does not place a bid for a Lot Category, or explicitly chooses to maintain its demand at the Start Quantity, its demand at all prices between (and including) the Start Price and the End Price of the round is equal to its Start Quantity for the round.
52. If a bidder places a bid to change its demand for a Lot Category, its demand at prices less than the bid price is its Start Quantity, and at prices greater than its bid price, the sum of its Start Quantity and the requested change in demand.

#### Box 2 Demand implied by a bid

For example, suppose in an auction round, the Start Price for a Lot Category is EUR 15,000,000 and the End Price is EUR 17,000,000. Further suppose a bidder's Start Quantity in the Lot Category is 5, and that the bidder has decided that, if the price exceeds EUR 16,000,000, it is no longer willing to buy 5 lots, but would still be willing to buy 2 lots at prices up to and including EUR 17,000,000.

The bidder would place a bid to decrease its demand by 3 at a price of EUR 16,000,000. The change in demand is -3 (i.e. a negative number, because it is a decrease bid), and therefore the bidder's demand at prices greater than EUR 16,000,000 would be  $5 + (-3) = 2$ .

53. After each round in the auction, if the auction ends, each bidder will be allocated, the number of lots indicated by its demand at the Resulting Price determined in the auction pursuant to Section F.2.6.6. If the bidder placed a bid to change its demand at exactly this price, the bidder may be allocated the number of lots indicated by its demand at the Start Price, its demand at the End Price, or any number of lots in between that is at least its Minimum Viable Quantity.

#### Box 3 Demand implied by a bid

For example, suppose during the auction, that a bidder enters a bid to reduce demand at EUR 20,000,000 by 2 lots to 0 lot.

If the Resulting Price is exactly EUR 20,000,000, the bidder might be allocated any of the following:

- 2 lots (its Start Quantity)
- 0 lots (its demand at the end of the round, calculated as  $2 + (-2)$ )
- 1 lot (a number in between)

Suppose instead that the bidder had specified before the auction a Minimum Viable Quantity of 2 lots for this Lot Category, then the bidder would not be allocated 1 lot, since that would be less than its Minimum Viable Quantity. Then, the bidder might be allocated either 2 lots or 0 lots.

54. For the avoidance of doubt, in no case will a bidder be obligated to buy fewer lots in a Lot Category than its Minimum Viable Quantity. Further, in no case will a bidder be allocated more lots than its demand at the Resulting Price.

### F.2.6.4 Determination of Round Results

55. After the bid submission phase has concluded, the auction system will determine the result of the round. The result comprises for each Lot Category its **Resulting Price** and for each bidder its **Resulting Quantity** for each Lot Category.

56. If the auction ends after the round, each bidder is allocated its Resulting Quantity with a Base Price equal to the Resulting Price per lot. Otherwise, for the next round, the Start Price will be set to the Resulting Price, and each bidder's Start Quantity will be set to the Bidder's Resulting Quantity.
57. Excess Demand for a Lot Category is defined as the sum across all bidders of the number of lots associated with the bids in that Lot Category, minus the supply for the Lot Category.

### F.2.6.5 Bid processing Algorithm

58. To determine the Resulting Quantities for each Bidder and Lot Category, the auction system automatically runs the following bid processing algorithm:
59. For each bidder and Lot Category, the Resulting Quantity is initially set to the bidder's Start Quantity for the Lot Category.
60. For each bid, the auction system calculates the bid's Price Range Percentage, which indicates where in the range between the Start Price (0%) and the End Price (100%) for the bid's Lot Category the bid price falls. More precisely, the Price Range Percentage is calculated as follows:

$$\text{Price Range Percentage} = \frac{\text{Bid Price} - \text{Start Price}}{\text{End Price} - \text{Start Price}} * 100 \%$$

61. The auction system then creates one list of all bids submitted, in order of Price Range Percentage. The ordering of a set of bids with identical Price Range Percentage will be determined randomly by the auction system.
62. For each bid, the system will keep track of its **Remaining Change**, which is initially set to the change in demand requested by the bidder and therefore a positive number of a bid to increase and a negative number for a bid to decrease.
63. The bids in the list are then processed in order of increasing price range percentage, usually in multiple passes.
64. In general terms, a request to increase demand can be accepted if it does not result in a violation of the Activity Rule and does not cause the bidder to exceed any of its Spectrum Caps. A request to decrease demand will be accepted if it does not cause the aggregate demand for the Lot Category to fall below the supply. Additional rules apply, and the process is specified more precisely in paragraphs 65 to 73 below.
65. When processing a bid, the system first determines the **Allowable Change** for a bid.
66. For a bid to increase demand, the Allowable Change is the minimum of the absolute value of the Remaining Change and the absolute difference between:
  - a. the maximum demand which would not result in a violation of an Activity Rule and which does not cause the bidder to exceed any of its Spectrum Caps and which does not cause the bidder to demand a number of lots that is greater than supply in that Lot Category and
  - b. the bidder's current Resulting Quantity

67. For a bid to decrease demand, the Allowable Change is the minimum of (a) the absolute value of the Remaining Change and (b) the Excess Demand in the Lot Category, based on each bidder's Resulting Quantity
68. If the thus determined allowable change is zero, the bid is marked as **rejected**.
69. Otherwise, the bid is processed differently depending on whether it is a bid to increase demand or a bid to decrease demand.
70. For a bid to decrease demand, if the Allowable Change exceeds the difference between the bidder's current Resulting Quantity and its Minimum Viable Quantity, the bidder's Resulting Quantity is set to zero lots and the bid is removed from the list. Otherwise, the bidder's current Resulting Quantity is reduced by the Allowable Change, and bid's Remaining Change (a negative number) is increased by the Allowable Change. If the bid was an Exit Bid, the bidder's Eligibility is reduced by the Lot Ratings of the lots associated with the change of the Resulting Quantity that was applied.

#### Box 4 Allowable Change – an example

Suppose a bidder enters a bid to reduce demand at EUR 20,000,000 by 7 lots, to 0 lots.

The result of applying the auction rules is the following:

- if Excess Demand is 7 or greater, the bid can be applied in full; the Allowable Change is 7 and the bidder's Resulting Quantity will be 0.
- if Excess Demand is 6 or less, then the Allowable Change is equal to the Excess Demand; after applying this decrease, there is no more Excess Demand. The bidder's Resulting Quantity will be 7 minus the Excess Demand. The unapplied remainder of the bid stays in the list for the time being and might be applied later, if another bidder's bid to increase demand is applied.

In this example, the "Allowable Change" would be the largest number that is not greater than 7 (because the decrease in the bid was 7) and not greater than the Excess Demand.

Now suppose the bidder's Minimum Viable Quantity is 3 lots for this Lot Category.

Applying paragraph 70, the difference between the bidder's current Resulting Quantity (7) and its Minimum Viable Quantity (3) is equal to  $7-3=4$ . If the Excess Demand does not exceed this number, the result is the same as above. However, if the Excess Demand is 5 or greater, then "the bidder's Resulting Quantity is set to zero lots and the bid is removed from the list". This way, the bidder's Minimum Viable Quantity of 3 is respected; if the bidder could only receive  $7-5=2$  lots or  $7-6=1$  lot, the bidder should receive nothing.

71. For a bid to increase demand, if the bidder's current Resulting Quantity is zero and the Allowable Change is less than its Minimum Viable Quantity, the bid is marked as **rejected**. Otherwise, the bidder's Resulting Quantity is increased by the Allowable Change and the bid's Remaining Change is decreased by the Allowable Change.
72. After a bid was processed:
  - a. If the bid's Remaining Change is zero, it is removed from the list.
  - b. If the bid was marked as rejected, it stays in the list unchanged, and the system proceeds by processing the next bid in the list. If there is no such bid, i.e., all bids in the list were rejected, bid processing for this round has concluded.



73. If the bid was not marked as rejected, the system now restarts bid processing from the beginning of the list.

### F.2.6.6 Determining Resulting Prices for each Lot Category

74. After bid processing for a round has concluded, the Resulting Price for each Lot Category is determined as follows:
- If the sum of the Resulting Quantities for the Lot Category exceeds the Supply for the Lot Category, i.e. there is still Excess Demand, the Resulting Price is set to the End Price of the Lot Category.
  - Otherwise, the Resulting Price is set to the highest price at which there was a bid to reduce demand that resulted in a demand reduction for its bidder or, if there is no such price, the Start Price of the round.
75. If the sum of the Resulting Quantities does not exceed the Supply for any of the Lot Categories, i.e. there is no Excess Demand, the auction concludes.
76. Otherwise, the auction continues for another round.
77. The next round's Start Price for each Lot Category will be equal to the Resulting Price for that Lot Category, and the End Price will be set to a price that is between 1% and 25% higher, at AKOS' discretion. Under normal circumstances, AKOS does not anticipate setting the End Price more than 10% higher than the Start Price.

#### Box 5 Example for demand changes with one Lot Category

Consider as an example a Lot Category X which has the following conditions in an auction round.

LOT CATEGORY	LOT RATING	DEMAND	SUPPLY	START PRICE	END PRICE
X	1	8 lots	6 lots	1m	1.1m

Suppose two bidders A and B have placed the following bids in this Lot Category X.

LOT CATEGORY	MINIMUM VIABLE QUANTITY	CURRENT RESULTING QUANTITY	REQUESTED DEMAND CHANGE	TYPE OF BID	BID PRICE
BIDDER A					
X	1	4	-2	Exit Bid	1.075m
BIDDER B					
X	1	4	-1	Exit Bid	1.05m

Based on the bids, the auction system **lists the bids in ascending order of Price Range Percentage** in the following way:

1. B's bid to decrease by 1, at a price of 1.05m (Price Range Percentage 50%).
2. A's bid to decrease by 2, at a price of 1.075m (Price Range Percentage 75%)

Based on the list, Bidder B's bid is processed first.

The auction system **calculates the Allowable Change for B's bid**, which is 1, i.e. the minimum of the absolute value of the requested demand change (i.e. 1) and Excess Demand (i.e. 2). Since the Remaining

Change does not exceed the Allowable Change, Bidder B's demand reduction is **accepted in full**, which leaves demand at 7 lots, i.e.  $8+(-1)$ . The bid is removed from the list.

Because the bid was applied, the auction system now restarts processing at the beginning of the list. The first (and only) bid in the list is A's bid.

The system **calculates the Allowable Change for A's bid**, which is 1, i.e. the minimum of the absolute value of the requested demand change (i.e. 2) and Excess Demand (i.e. 1). Since the Remaining Change exceeds the Allowable Change, Bidder A's demand change is only **partially accepted**, i.e. a reduction by 1 lot is applied because this leaves supply equal to demand.

The resulting **price is 1.075m** (Bidder A's bid price) because this is the highest price at which a reduction was applied.

### Box 6 Example for demand changes with two lot categories

Consider two Lot Categories X and Y, which have the following conditions in an auction round.

LOT CATEGORY	LOT RATING	DEMAND	SUPPLY	START PRICE	END PRICE
X	1	8 lots	6 lots	1m	1.1m
Y	1	5 lots	4 lots	1.2m	1.3m

#### CASE A

Suppose two bidders A and B have placed the following bids in Lot Categories X and Y.

LOT CATEGORY	MINIMUM VIABLE QUANTITY	CURRENT RESULTING QUANTITY	REQUESTED DEMAND CHANGE	TYPE OF BID	BID PRICE
BIDDER A					
X	1	4	-2	Exit Bid	1.075m
Y	1	2	0	--	
BIDDER B					
X	<u>1</u>	<u>4</u>	-1	Switch Bid	1.05m
Y	1	3	1	--	1.22m

Based on the bids, the auction system **lists the bids** in the following way:

1. B's bid to increase by 1 in Y, at a price of 1.22m (20% Price Range Percentage)
2. B's bid to decrease by 1 in X, at a price of 1.05m (50% Price Range Percentage)
3. A's bid to decrease by 2 in X, at a price of 1.075m (75% Price Range Percentage)

Based on the list, **Bidder B's bid to increase in Y** is processed first. The auction system **rejects** Bidder B's requested demand increase because it breaches the Activity Rule.

Then, the auction system processes **Bidder B's bid to decrease in X**. The system calculates the Allowable Change, which is 1 and Bidder B's demand reduction is **accepted**. Since this bid is accepted, it is removed from the list.

Now, the auction system starts again at the beginning of the list and once again processes **Bidder B's bid to increase in Y**. This demand increase does not breach the Activity Rule anymore because B's accepted demand reduction in Lot Category X freed up eligibility for a demand increase in Y. Bidder B's demand increase is **accepted**. As this bid is accepted, it is removed from the list.

Again, the auction system starts at the beginning of the list, which now only contains **Bidder A's bid to decrease in X**. The system calculates the Allowable Change, which is 1 and Bidder A's demand reduction is only **partially accepted**, i.e. a reduction by 1 lot is applied.

To summarise, Bidder B **can switch 1 lot from X to Y** but Bidder A's bid to decrease is only accepted for 1 but not 2 lots.

### CASE B

Suppose two bidders A and B have placed the following bids in Lot Categories X and Y, which do not breach any Spectrum Caps. (Note, the bid prices in Lot Category X are reversed between Bidder A and B in this example compared to Case A.)

LOT CATEGORY	MINIMUM VIABLE QUANTITY	CURRENT RESULTING QUANTITY	REQUESTED DEMAND CHANGE	TYPE OF BID	BID PRICE
<b>BIDDER A</b>					
X	1	4	-2	Exit Bid	1.05m
Y	1	2	0	--	
<b>BIDDER B</b>					
X	1	4	-1	Switch Bid	1.075m
Y	1	3	1	--	1.22m

Based on the bids, the auction system **lists the bids** in the following way:

1. B's bid to increase by 1 in Y, at a price of 1.22m (20% Price Range Percentage)
2. A's bid to decrease by 2 in X, at a price of 1.05m (50% Price Range Percentage)
3. B's bid to decrease by 1 in X, at a price of 1.075m (75% Price Range Percentage)

Based on the list, **Bidder B's bid to increase in Y** is processed first and **rejected** because it breaches the Activity Rule.

Then, the auction system processes **Bidder A's bid to decrease in X**. The system calculates the Allowable Change, which is 2, i.e. the minimum of the absolute value of the requested demand change (i.e. 2) and Excess Demand (i.e. 2). Since the Remaining Change does not exceed the Allowable Change, Bidder A's demand reduction is **accepted in full**, which results in no Excess Demand in Lot Category X. Since this bid is accepted, it is removed from the list.

Now, the auction system starts again at the beginning of the list. Once again **Bidder B's bid to increase in Y** is processed and **rejected** because it breaches the Activity Rule.

Then, the auction system processes **Bidder B's bid to decrease in X**. The system calculates the Allowable Change, which is 0, i.e. the minimum of the absolute value of the requested demand change (i.e. 1) and the Excess Demand (i.e. 0). Since the Remaining Change exceeds the Allowable Change, Bidder B's demand reduction is **rejected**.

To summarise, **Bidder B cannot switch 1 lot from X to Y** but Bidder A's bid to decrease by 2 in X is accepted in full.

### Box 7 Example for demand changes with three lot categories

Consider three Lot Categories X, Y and Z, which have the following conditions in an auction round.

LOT CATEGORY	LOT RATING	DEMAND	SUPPLY	START PRICE	END PRICE
X	1	8 lots	6 lots	1m	1.1m
Y	1	5 lots	4 lots	1.2m	1.3m
Z	1	3 lots	2 lots	1.2m	1.3m

#### CASE A

Suppose two bidders A and B have placed the following bids in Lot Categories X, Y and Z, which do not breach any Spectrum Caps.

LOT CATEGORY	MINIMUM VIABLE QUANTITY	CURRENT RESULTING QUANTITY	REQUESTED DEMAND CHANGE	TYPE OF BID	BID PRICE
BIDDER A					
X	1	4	-2	Exit Bid	1.075m
Y	1	2	0	--	
Z	1	1	0	--	
BIDDER B					
X	<u>1</u>	<u>4</u>	-1	Switch Bid	1.05m
Y	<u>1</u>	<u>3</u>	1	--	1.22m
Z	1	2	-1	Exit Bid	1.23m

Based on the bids, the auction system **lists the bids** in the following way:

1. B's bid to increase by 1 in Y, at a price of 1.22m (20% Price Range Percentage)
2. B's bid to decrease by 1 in Z, at a price of 1.23m (30% Price Range Percentage)
3. B's bid to decrease by 1 in X, at a price of 1.05m (50% Price Range Percentage)
4. A's bid to decrease by 2 in X, at a price of 1.075m (75% Price Range Percentage)

Based on the list, **Bidder B's bid to increase in Y** is processed first and **rejected** because it breaches the Activity Rule. Then, the auction system processes **Bidder B's bid to decrease in Z**, which is **accepted**. Since this bid is accepted, it is removed from the list.

The auction system starts again at the beginning of the list. Once again **Bidder B's bid to increase in Y** is processed and **rejected** because it breaches the Activity Rule. Note the acceptance of the decrease in Z (set as Exit Bid) does not free up eligibility for Bidder B to increase demand in Y. Next, **Bidder B's bid to decrease in X** is processed and **accepted**. Since this bid is accepted, it is removed from the list.

The auction system starts again at the beginning of the list. Once again **Bidder B's bid to increase in Y** is processed and now **accepted** because the acceptance of the decrease in X (set as Switch Bid) frees up eligibility for Bidder B to increase demand in Y.

Since this bid is accepted, it is removed from the list.

The auction system starts at the beginning of the list, which now only contains A's bid to decrease by 2 in X, which is only **partially accepted**.

To summarise, Bidder B can reduce demand in Lot Category Z (set as Exit Bid), which does not allow B to increase its demand. However, **Bidder B can switch 1 lot from X to Y**, because B's demand reduction in X freed up eligibility. Bidder A's bid to decrease by 2 in X is only partially accepted.

#### CASE B

Suppose two bidders A and B have placed the following bids in Lot Categories X, Y and Z, which do not breach any Spectrum Caps. (Note, the bid prices in Lot Category X are reversed between Bidder A and B in this example compared to Case A.)

LOT CATEGORY	MINIMUM VIABLE QUANTITY	CURRENT RESULTING QUANTITY	REQUESTED DEMAND CHANGE	TYPE OF BID	BID PRICE
BIDDER A					
X	1	4	-2	Exit Bid	1.05m
Y	1	2	0	--	
Z	1	1	0	--	
BIDDER B					
X	<u>1</u>	<u>4</u>	-1	Switch Bid	1.075m
Y	<u>1</u>	<u>3</u>	1	--	1.22m
Z	1	2	-1	Exit Bid	1.23m

Based on the bids, the auction system **lists the bids** in the following way:

1. B's bid to increase by 1 in Y, at a price of 1.22m (20% Price Range Percentage)
2. B's bid to decrease by 1 in Z, at a price of 1.23m (30% Price Range Percentage)
3. A's bid to decrease by 2 in X, at a price of 1.05m (50% Price Range Percentage)
4. B's bid to decrease by 1 in X, at a price of 1.075m (75% Price Range Percentage)

Based on the list, **Bidder B's bid to increase in Y** is processed first and **rejected** because it breaches the Activity Rule. Then, the auction system processes **Bidder B's bid to decrease in Z**, which is **accepted**. Since this bid is accepted, it is removed from the list.

The auction system starts again at the beginning of the list. Once again **Bidder B's bid to increase in Y** is processed and **rejected** because it breaches the Activity Rule. Next, **Bidder A's bid to decrease in X** is processed and **accepted**. Since this bid is accepted, it is removed from the list.

The auction system starts again at the beginning of the list. Once again **Bidder B's bid to increase in Y** is processed and **rejected** because it breaches the Activity Rule. Next, **Bidder B's bid to decrease in X** is processed and **rejected**.

In this case, compared to Case A, **Bidder B cannot switch 1 lot from X to Y**, because Bidder A's requested demand decrease in X is accepted first such that Bidder B's requested demand decrease in X, which could have freed up eligibility for an increase in Y, is rejected. Nonetheless, Bidder B's demand reduction in Lot Category Z (set as Exit Bid) is accepted.

### F.2.6.7 Information policy

78. Prior to each auction round, including round 1, the auction system will provide each bidder privately with the following information:
- The bidder's Resulting Quantities from the previous round, in each Lot Category (prior to round 1, this will be the bidder's initial demand), The bidder's Eligibility for the round
  - The Start Price and End Price for the round, in each Lot Category
  - Information about the extent of Excess Demand in the previous round, in each Lot Category (see paragraph 79 and 80) (prior to round 1, this will be calculated on the basis of the bidders' initial demand)
79. For all Lot Categories, if there is no Excess Demand (i.e. if the sum of demand across all bidders does not exceed supply), the system will show that there is no Excess Demand.
80. For all Lot Categories, if there is Excess Demand (i.e. if the sum of demand across all bidders exceeds supply), the system will show information about the extent of Excess Demand in the round for a Lot Category in the following way:
- a) For Lot Categories A, C1, C2, D and G, the system will show Excess Demand in ranges of 1-2, 3-4, 5-6, 7-8, etc.
  - b) For Lot Category B, the system will show exact Excess Demand.
  - c) For Lot Category E, the system will show Excess Demand in ranges of 1-4, 5-8, 9-12, 13-16, etc.
  - d) For Lot Category F, the system will show:
    - i. To bidders with a Minimum Viable Quantity of 4 or less, Excess Demand in ranges of 1-4, 5-8, 9-12, 13-16, etc.
    - ii. To bidders with a Minimum Viable Quantity of 5 or 6,
      - Excess Demand equal or below 8 in a range of 1-8, and
      - Excess Demand of more than 8 in ranges of 9-12, 13-16, 17-20, 21-24, etc.

#### Box 8 Example for the information policy in Lot Category F

Consider two bidders A and B. Suppose Bidder A has specified a Minimum Viable Quantity of 2 lots in Lot Category F and Bidder B has specified a Minimum Viable Quantity of 5 lots in Lot Category F.

Assuming that Excess Demand in Lot Category F is 12 at the end of a round, the two bidders will receive the following information on Excess Demand after the round:

- The system will show Bidder A that Excess Demand is between 9 and 12.
- The system will show Bidder B that Excess Demand is between 9 and 12.

Assuming that Excess Demand in Lot Category F is 7 at the end of a round, the two bidders will receive the following information on Excess Demand after the round:

- The system will show Bidder A that Excess Demand is between 5 and 8.
- The system will show Bidder B that Excess Demand is between 1 and 8.

## F.2.6.8 Conclusion of Main Auction

81. After the conclusion of the Main Auction, each bidder is allocated, in each Lot Category, its Resulting Quantity. For each lot that a bidder is allocated, it must pay a Base Price equal to the Resulting Price in that Lot Category (or, if a Resale Auction is held, the Resulting Price for the Lot Category in the Resale Auction, if it is lower). Thus, each bidder must pay, in each Lot Category, its Resulting Quantity multiplied by the Base Price.

### F.2.6.8.1 Possibility to decline winning allocations

82. The value of spectrum assignments in certain Lot Categories may, for some bidders, be conditional on also being assigned spectrum in Lot Category A. To accommodate this, during the Main Auction, a bidder may request that, if certain conditions are met, the bidder will be allocated zero lots in certain Lot Categories regardless of its Resulting Quantities after the auction, if it also acquires zero lots in Lot Category A. This means that the bidder does not win the spectrum in those Lot Categories and does not have to pay the Base Price for these lots.

Specifically, there are two sets of Lot Categories for which a bidder may request to receive zero lots:

- a. Lot Categories C1 and C2 (see paragraph 83), and
  - b. all Lot Categories other than Lot Category A (see paragraph 84).
83. During a round in which a bidder submits a bid requesting to reduce demand to zero in Lot Category A, the bidder may request to be allocated zero lots in both of the Lot Categories C1 and C2 after the Main Auction has ended, regardless of the Resulting Quantities. The bidder may make this request only if both its initial demand and its Resulting Quantity in Lot Category A in all previous rounds were greater than 0. For the avoidance of doubt, this request must apply to both Lot Categories C1 and C2 and cannot apply to only one or the other. The bidder will make this request via the auction system during the auction round. The request will be granted for both Lot Categories if the request to reduce demand to zero in Lot Category A is accepted and if either a) the Main Auction ends after this round, or b), if at all prices in all subsequent rounds, the bidder's requested demand is zero in both Lot Categories. In other words, if the bidder's bid to reduce demand to zero in Lot Category A is accepted, the bidder must continue to submit bids to reduce demand in Lot Categories C1 and C2 to zero in all subsequent rounds (until these demand reductions are applied, or until the auction ends).

84. Bidders that did not hold any licenses in the 800 MHz or 900 MHz FDD bands prior to the auction may request that they are allocated zero in all Lot Categories if they do not win any lots in Lot Category A. Specifically, during a round in which a bidder submits a bid requesting to reduce demand to zero in Lot Category A, the bidder may request to be allocated zero lots in all other Lot Categories (i.e. Lot Categories B, C1, C2, D, E, F and G) after the Main Auction has ended, regardless of the Resulting Quantities. The bidder may make this request only if both its initial demand and its Resulting Quantity in Lot Category A in all previous rounds were greater than 0. For the avoidance of doubt, this request must apply to all of the other Lot Categories (i.e. Lot Categories B, C1, C2, D, E, F and G) and cannot apply to a subset of these Lot Categories. The bidder will make this request via the auction system during the auction round. The request will be granted for all Lot Categories if the request to reduce demand to zero is accepted and if either
- a. the Main Auction ends after this round, or
  - b. if at all prices in all subsequent rounds, the bidder's requested demand is zero in all Lot Categories.

In other words, if the bidder's bid to reduce demand to zero in Lot Category A is accepted, the bidder must continue to submit bids to reduce demand in all other Lot Categories to zero in all subsequent rounds (until these demand reductions are applied, or until the auction ends).

#### F.2.6.9 Potential Resale Auction

85. AKOS may initiate a Resale Auction for some or all of the Lot Categories in which there are unsold lots after the conclusion of the Main Auction, and after possible elections to decline allocations have been made.
86. The Resale Auction will follow the eSMRA format but without the possibility of switching between Lot Categories. Therefore, the Activity Rule in the Resale Auction is that a bidder may not place bids to increase demand, in any Lot Category.
87. In the Resale Auction, a bidder cannot bid for lots in those Lot Categories for which a re-quest to decline allocations for that bidder was accepted in the Main Auction.
88. The Minimum Viable Quantity specified by a bidder for a Lot Category applies in the Resale Auction as well, unless the bidder has already won its Minimum Viable Quantity in the Lot Category in the Main Auction, in which case its Minimum Viable Quantity will be set to 1 in this Lot Category in the Resale Auction.
89. Bidders will be asked to specify their initial demand at the starting prices in the Resale Auction for each Lot Category via the auction system during a time period specified by AKOS. The number of lots specified in a Lot Category may not exceed its supply, and the numbers may not result in a violation of any of the bidder's Spectrum Caps.
90. The starting prices in the Resale Auction will be set by AKOS. AKOS anticipates setting the starting prices no lower than what is expected to be sufficient to sell the remaining lots and no higher than the Resulting Prices from the final round of the Main Auction. The starting prices in the Resale Auction will, in any case, be no lower than the Reserve Prices in the Main Auction.



91. After the conclusion of the Resale Auction, each bidder is allocated, in each Lot Category, its Resulting Quantity. For each lot that a bidder is allocated, it must pay a Base Price equal to the Resulting Price in that Lot Category. Thus, each bidder must pay, in each Lot Category, its Resulting Quantity multiplied by the Resulting Price.

### **F.2.6.10 Allocations and prices determined in the Allocation Stage**

92. The outcome of the Allocation Stage will be the basis for the Assignment Stage.
93. Each bidder will be allocated, in each Lot Category:
  - a. the number of lots allocated in the Main Auction at a price equal to the lower of (i) the Base Price determined in the Main Auction, and (ii) the Base Price determined in the Resale Auction, and, in addition
  - b. if a Resale Auction was held, the number of lots allocated in the Resale Auction, at the Base Price determined in the Resale Auction

### **F.2.7 Assignment stage**

94. The Assignment Stage determines which specific frequency blocks are awarded to each bidder.
95. All bidders are guaranteed to win the amount of spectrum in each frequency band that they were allocated in the Allocation Stage. Bids will only affect which specific frequency blocks the bidder wins and the Assignment Prices to be paid.
96. To ensure an efficient and fair assignment of specific blocks to bidders, only certain “feasible” assignments will be considered, pursuant to the conditions described in Section F.2.7.1.
97. The Assignment Stage consists of a single bidding round for each band in which there is more than one feasible assignment, held in ascending frequency order. These rounds are referred to as “assignment rounds”.
98. For a band with only one feasible assignment, the specific blocks will be assigned directly to bidders. For example, the winner of the single lot in Lot Category B will be assigned the only available block.
99. In each round in the Assignment Stage, the auction system presents to each bidder the list of specific block assignment options the bidder could receive that are consistent with a feasible assignment, and the bidder can specify a bid amount for each option. If there is only one possible option for a bidder, the bidder’s bid amount for the sole option will be EUR 0 and the bidder cannot change it.
100. If a bidder does not specify a bid amount for an option, the bid amount will be taken as zero; the bidder might be assigned this option, and in that case the Assignment Price for the bidder would be zero in that band.
101. Assignment bid amounts must be specified in multiples of 100 EUR. The minimum bid for each frequency assignment option is zero, and the maximum is EUR 9,999,900.

102. After the bid submission phase of an assignment round has concluded, the auction system determines the winning assignments by finding which combination of options for each bidder maximises the sum of the associated bids.
103. Each bidder will have exactly one winning assignment bid in each frequency band in which it was allocated one or more lots in the Allocation Stage.
104. The following sections contain more detailed information regarding the feasible assignments in each assignment round, as well as the pricing rule, which determines how much the winning bidders will pay.

### F.2.7.1 Constraints on possible assignments

105. An assignment of specific blocks to bidders is feasible if each frequency block is assigned to at most one bidder and all of the band specific conditions applicable to the band listed below are true.

#### F.2.7.1.1 Lot Categories A, E and G (700 MHz FDD, 2300 MHz, 26 GHz)

106. For Lot Categories A, E, and G, for an assignment to be feasible, it is necessary that:
  - The number of blocks assigned to each bidder equals the number of lots that the bidder was allocated in the Allocation Stage in the Lot Category
  - All bidders which were allocated lots in the Allocation Stage win contiguous frequency blocks
  - Any unsold lots are contiguous starting from the bottom of the band.

#### F.2.7.1.2 Lot Categories C1 and C2 (1500 MHz)

107. In the 1500 MHz band, assignment of specific blocks will be based on the allocations in Lot Categories C1 and C2, after possible conversion of C1 allocations to C2 allocations.
108. In the 1500 MHz band, for an assignment to be feasible, it is necessary that:
  - The number of blocks assigned to each bidder in the Core of the band is no less than the number of lots that was allocated to the bidder in Lot Category C1
  - The number of blocks assigned to each bidder in the band equals the sum of the lots the bidder was allocated in C1 and C2.
109. Of these assignments, only those assignments which guarantee contiguity to the extent possible are feasible:
  - a. If there is at least one assignment of blocks to bidders in which all bidders receive contiguous blocks, then only such assignments are feasible
  - b. If assignment of contiguous blocks to all bidders is not possible, but it is possible to ensure that only one bidder is assigned non-contiguous blocks, then only those assignments are feasible in which only one bidder is assigned non-contiguous blocks. The identity of the bidder with a non-contiguous assignment may be determined via the winner determination procedure (Section F.2.7.2).

- c. Otherwise only those assignments are feasible in which only two bidders are assigned non-contiguous blocks. The identity of the bidders with a non-contiguous assignment may be determined via the winner determination procedure (Section F.2.7.2).

110. Note that in this band, unsold lots may or may not be assigned to contiguous blocks and may be at any position within the band.

#### F.2.7.1.3 Lot Category D (2100 MHz)

111. In the 2100 MHz band, a single block BD07 of 2x5 MHz, the “delayed block”, is available slightly later than the other blocks (in 2023 instead of 2021).

112. If at least one bidder was allocated at least 3 Lots in Lot Category D in the Allocation Stage, then an assignment is feasible only if:

- All bidders which were allocated lots in this band in the Allocation Stage win contiguous frequency blocks (including both delayed and not delayed blocks),
- The number of blocks assigned to each bidder equals the number of lots that the bidder was allocated in the Allocation Stage,
- No bidder that was assigned 2 Lots or fewer is assigned the delayed block,
- Any bidder which is assigned the delayed block is assigned at least 2x10 MHz of contiguous spectrum, which is not delayed. As a consequence, a bidder winning 3 lots cannot be assigned the sequence BD06, BD07, BD08

113. If applying paragraph 112 would result in no assignments being feasible, or if no bidders are allocated at least 3 Lots in Lot Category D in the Allocation Stage, an assignment is feasible only if:

- All bidders which were allocated lots in this band (i.e. Lot Category D) in the Allocation Stage win contiguous frequency blocks (including both delayed and not delayed blocks)
- The number of blocks assigned to each bidder equals the number of lots that the bidder was allocated in the Allocation Stage

114. The bidder that is assigned the delayed block will be granted a 20% discount on the Base Price of Lot Category D determined in the Main Auction (or the Resale Auction, if no lots were allocated in the Main Auction in this Lot Category) for the delayed block.

115. Note that in this band, unsold lots may or may not be assigned to contiguous blocks and may be at any position within the band.

#### F.2.7.1.4 Lot Category F (3600 MHz)

116. For the 3600 MHz band, an assignment is feasible only if:

- The number of blocks assigned to each bidder equals the number of lots that the bidder was allocated in the Allocation Stage in the Lot Category,
- All bidders which were allocated lots in the Allocation Stage win contiguous frequency blocks,
- Bidders who were allocated less than 80 MHz are assigned lower frequencies than bidders, who were allocated 80 MHz or more,
- Any unsold lots are contiguous starting from the bottom of the band, i.e. at 3420 MHz.

### F.2.7.2 Winner determination procedure

117. Following the close of the bidding phase of an assignment round, the auction system will determine exactly one winning assignment bid for each participating bidder in that band, in such a way that maximises the total value of these bids.
118. If more than one such combination of assignment bids has equal highest value, one of those combinations will be selected by the auction system at random.

### F.2.7.3 Price determination

119. Assignment Prices are determined in each assignment round as follows:
120. The opportunity cost for a subset of winners is determined by considering the hypothetical winning assignment provided all winners in the set submit zero bids for all of their options (i.e. the case in which the winners in the subset are assumed to be indifferent with respect to all assignment options). The surplus is the difference between the total of all winning assignment bids in the actual winning combination minus the total of all winning assignment bids in the hypothetical winning combination. Then, the opportunity cost for the set of winners is the sum of their winning assignment bids minus the surplus.
121. Assignment Prices are determined in each assignment round jointly for all winners in a single calculation. A unique set of Assignment Prices is found by applying the following conditions:
  - First condition: Assignment Prices are required to be positive or zero, and no greater than the amount of the winning bid.
  - Second condition: the set of Assignment Prices must be sufficiently high such that the sum of Assignment Prices to be paid by each possible subset of winners must be at least their joint opportunity cost. If there is only one set of Assignment Prices that satisfies the first two conditions, this determines the Assignment Prices for that frequency band.
  - Third condition: If there are multiple sets of Assignment Prices that fulfil the first and second condition, the set of Assignment Prices must minimise the sum of Assignment Prices across winning bidders. If there is only one set of Assignment Prices satisfying these three conditions, this determines the Assignment Prices for that frequency band.
  - Fourth condition: If there are multiple sets of Assignment Prices that satisfy the first three conditions, the set of Assignment Prices that minimises the sum of squares of differences, weighted by the number of blocks won, between the Assignment Prices for each winner and the individual opportunity cost for that frequency band for that winner is selected.
122. These conditions characterise a unique Assignment Price for each winning bidder in each assignment round that is no more than their winning assignment bid. If these Assignment Prices are not amounts in whole EUR, they are rounded up to the nearest whole EUR.

### F.2.7.4 End of the Assignment Stage

123. After each assignment round, once AKOS has determined the winning bids and the Assignment Prices, the following information will be released to each bidder individually and privately, and not released to other bidders:

- the specific frequency blocks assigned in the band,
- the Assignment Price that they will need to pay for that assignment round.

## F.2.8 Deposit requirements

124. Before the commencement of the auction, bidders will have to transfer their initial deposit to the value of 100% of their Initial Bid as set out in Section 3.2.1.; Deposit requirements from the Decision on Initiating a Public Tender with a Public Auction and Section A.5.2.1, and in accordance with form I.6 from Frequency allocation application (the initial bid).
125. If after the completion of any Main Auction round, the deposit provided by a bidder covers less than 50% of its bid, the bidder will have to increase its deposit so that it is no less than 70% of its bid. AKOS will notify bidders if they are required to increase their deposit. For the avoidance of doubt, bidders are free to increase their deposit above the required amount in order to reduce the need of further deposit increases as the auction progresses. Bidders are also free to increase their deposit at any point during the auction process – and in particular well in advance of any required increase - notifying AKOS of any deposit increase they have affected and providing appropriate proof of payment.
126. In case that AKOS decides to initiate a Resale Auction, before start of Resale Auction and after the completion of any round in the Resale Auction, the deposit provided by a bidder must cover at least the sum of
- a) 50% of the sum of its bid in the Resale Auction and
  - b) 50% of the Base Prices of the lots that it was allocated in the Main Auction.
- Otherwise, the bidder will have to increase its deposit so that it is no less than the sum of
- a) 70% of the sum of its bid in the Resale Auction and
  - b) 70% of the Base Prices of the lots that it was allocated in the Main Auction.
127. If AKOS requests an increase of a bidder's deposit it will notify the bidder of the deadline by which the additional amount corresponding to the increase of deposit has to be provided. Such notice will be provided no longer than 24 hours and no less than 6 hours prior to the expiry of the deadline. Bidding will be suspended until this deadline has expired.
128. If a bidder failed to increase its deposit as required, the bidder will not be able to enter bids in the next and all subsequent rounds and it will be deemed to have placed a bid to decrease its demand to zero for all Lot Categories, at the Start Price for the round and in all subsequent rounds. For the avoidance of doubt, these bids to decrease demand will be processed in accordance with the bid processing algorithm described in paragraphs 58 to 73. This means that the bidder may still be allocated a positive number of lots if not all decreases are fully accepted. The bidder will still be required to pay for any lots that it is allocated.

## F.2.9 Collusion

129. See Section 2.2.2: Prohibition of collusive behaviour from the Decision on Initiating a Public Tender with a Public Auction and A.5.3.2 of tender documentation. All bids of the bidders will be annulled. In

this event the fees paid for administrative costs as well as for the efficient use of a limited natural resource shall be forfeited.

## F.2.10 Breach of auction rules

130. AKOS may exclude a bidder who is in breach of the auction rules. A bidder excluded will forfeit its deposit and all bids made by the bidder will be cancelled.

## F.2.11 Communication with AKOS

131. The auction system allows the auctioneer to send announcements to all bidders, which will be the primary method for AKOS to send messages to bidders during the auction.
132. Bidders may contact AKOS through the two-way messaging facility included in the auction system, as the primary way of communication or by telephone or email ([drazba@akos-rs.si](mailto:drazba@akos-rs.si)) if two-way messaging system fails. Further information will be made available to bidders in advance of the auction. Telephone calls will be recorded.

## F.2.12 Exceptional circumstances

133. AKOS may, at its discretion:
- permit a bidder to submit a bid via telephone, if the auction manager is satisfied that the bidder is unable to submit a bid using the auction system (see further details regarding this procedure in paragraph 137),
  - permit a bidder to submit a bid for a round after the end time of the round (but not after information about the outcome of the round has been given to bidders), if the auction manager is satisfied that the bidder could not submit the bid during the round because of technical problems.
134. If a bidder is unable to submit a bid using the auction system, then that bidder must immediately call AKOS via telephone.
135. This is permitted only in exceptional circumstances, and in cases where the phone call is commenced before the end of the auction round.
136. All phone calls will be recorded. Bidders must identify themselves and accept that the conversation is recorded. If this is not accepted, the bidder will not be permitted to place a bid. Recordings will be stored for at least six months, or for longer in the event of legal disputes following the auction.
137. When identifying themselves, bidders must provide an Offline Validation Code to provide additional proof that they are authorised to bid. Bidders who are unable to provide a correct Offline Validation Code will not be permitted to place a bid over the telephone. Bidders will be able to access a list of Offline Validation Codes via the auction user interface. Bidders are advised to print their list of Offline Validation Codes as soon as they have access to the auction system so that they are prepared in case they need them later in the auction.

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138. Bidders should not rely on the availability of this back-up procedure and should ensure that they have available redundant systems that they can use in response to any technical issues that they may encounter.
139. In the case of exceptional circumstances during any stage of the auction, AKOS has the discretion to:
- postpone the end of a round in progress or the release of results of a round;
  - postpone the scheduling of further rounds;
  - cancel a round that is either underway or for which round results have not yet been released, and re-schedule the round;
  - void one or more rounds and the bids made therein, and resume the auction from an earlier round; and/or
  - void all bids received in the auction, and either suspend the auction or start the auction again.
140. AKOS determines whether a situation of exceptional circumstances has arisen. Exceptional circumstances could include, for example, widespread technical failure or concern about possible collusion amongst bidders.

### F.2.13 End of the auction

141. The auction ends with the completion of the Assignment Stage. At this point, the following information will be released to all bidders:
- the identity of the winning bidders;
  - the frequency ranges awarded to each winning bidder; and
  - the final price to be paid by each winning bidder, including a breakdown of the Base Prices and Assignment Prices.
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## G Monitoring

### G.1 Monitoring the fulfilment of coverage obligations

The Agency shall monitor the fulfilment of coverage obligations, namely:

- based on the calculation of coverage provided by the holder of the DARF and using the information about base stations submitted to the Agency by the holder of the DARF,
- based on field mobile measurements with monitoring vehicles for road and railway coverage, and
- based on random measurements of service quality at locations, which the Agency conducts at its own discretion at user's locations to verify the accuracy of information submitted by the holder of the DARF.

#### G.1.1 Calculation of coverage in case of coverage obligations monitoring

The holder of a DARF must within a month of expiry of a deadline for meeting coverage obligations as set in the DARF and at the Agency's request submit relevant documentation on network operation related to the fulfilment of coverage obligations comprising selected technical parameters and simulation of service levels provided by the network. The submitted information must comprise:

- the locations of the base stations in accordance with a specified geographical projection,
- heights above ground level in meters,
- For each sector:
  - azimuth – direction (degrees),
  - horizontal 3 dB beam width (degrees),
  - combined mechanical and electrical down tilt (degrees),
  - vertical 3 dB beam width (degrees),
  - the effective isotropic radiated power EIRP,
  - an indication of the frequency blocks used in each cell (sector),
- a map of Slovenia with base station locations and covered areas (GIS format, raster images (geotiff), defined by the Agency in cooperation with each holder of DARF), and
- a list of raster cells<sup>32</sup> covered and the coverage level calculated on that basis.

Based on the information about base stations submitted by the holders of DARFs and the tests made in the field based on the list of active base stations, the calculations shall be made to assess the fulfilment of the coverage obligations. The analysis shall be made based on technical parameters of base stations and by using the HTZ communications software (a software tool for planning and analysing telecommunications and broadcasting networks and radio frequency spectrum planning) from the French developer ATDI. The analysis shall be made on a model selected in accordance with the ITU-R P.1812 recommendation, with raster cells in the 100 x 100 m grid as population units (e.g. Geostatistical database of the Statistical Office of the Republic of Slovenia). Detailed information about the calculation procedure shall be made available when the

<sup>32</sup> For calculating population coverage in the Republic of Slovenia in percent, the raster cells in the 100 x 100m grid are to be used as population units. The actual population data are taken from the database of the Statistical Office of the Republic of Slovenia. A raster cell is considered to be covered if its geometrical centre is covered.



decisions on the assignment of radio frequencies are issued in collaboration with each holder of a decision on the assignment of radio frequencies.

Obligations will be met if information on compliance with the requirements of Chapter A.5.4.2 (Coverage obligations) is provided with subchapters and in accordance with the timetable and conditions of the same subchapters.

## G.1.2 Monitoring coverage obligations of roads and railways

Coverage of roads and railways with radio signal over commercial terrestrial mobile networks under listed conditions is checked as follows:

- Measurements at speed less than 100 km/h on Motorways AC, highways HC, and less than 80 km/h on other roads,
- Measurements at maximum driving speed on individual sections of the track,
- Measurement is the average of several readings at a distance of 100 m (outdoor).

All these obligations are fulfilled, if the measurement results are in accordance with requirements and timeline as defined in Chapter A.5.4.2.2 (Additional coverage obligations for 700 MHz FDD band).

## G.1.3 Verification measurements

The Agency shall at its own discretion, conduct tests on the DARF holder's network and measure the quality of service at times and places of its choice in order to verify that the submitted information regarding base stations and coverage is an accurate representation of the actual state of the DARF holder's network. These tests shall be intended to verify the base station parameters, level of field strength and quality of service at some end users locations to directly verify network coverage determined by the above calculation. For the purposes of verifying the provision of FWBA service, the Agency may verify capacity and network coverage.

## G.2 Monitoring of the use of sharing rules

With regards to the implementation of the sharing rules, the DARF holder must, together with the coverage data, also provide data for each base station separately for any:

- sharing of active equipment,
- Spectrum pooling, with the option of dynamic spectrum sharing, and
- an indication of the operators with which each type of sharing is used.

The DARF holder shall comply with the sharing restrictions as defined in Chapter A.5.5, which defines sharing in challenging areas and case network densification needs to secure very high capacity base stations offering Gigabit speeds.

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### G.3 Monitoring of compliance with security requirements

The Agency may also ex officio initiate the procedure of revoking the DARF in case that the competent authority in the procedure of inspection over the implementation of legal and executive obligations in the field of network security finds violations and the DARF holder does not eliminate them in accordance with the findings of inspection and within the set deadline.

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## H Technical requirements for providing services

The Agency shall issue a decision on DARF for terrestrial systems capable of providing wireless broadband electronic communications services (TRA-WBBECS) in accordance with the valid Frequency Allocation Table Regulation (Article 26 ZEKom-1), and the valid Frequency Usage Table Act (Paragraph 1 of Article 27 ZEKom-1) (NURF) and other CEPT<sup>33</sup> documents setting out the additional conditions of use defined below. Besides these Decisions, Recommendations and CEPT Reports, any amendments or new versions of these documents are also applicable, when finally adopted by EU or CEPT members and officially published.

CEPT documents are freely available on website <https://docdb.cept.org/>, while international agreements are available on Agency's website: <https://www.akos-rs.si/zakoni-in-priporocila/direktive-priporocila-in-mednarodni-sporazumi>. The ECC reports and the CEPT reports specify the conditions/scenarios for sharing and coexistence with other services within the band and in the adjacent bands and serve as additional guidance to the obligations and as such Agency recommends that should be followed where appropriate and complementary to EU decisions, ECC decisions and ECC recommendations. Commission Implementing Regulation (EU) 2020/1070<sup>34</sup> applies for the small-area wireless access points.

### H.1 Technical requirements of service provision in the 700 MHz Radio Frequency Band

The holder of the DARF must provide terrestrial wireless broadband electronic communications services in accordance with the European Parliament and of the Council (EU) 2017/899: and the Commission implementing decision (EU) 2016/687 and in accordance with the second paragraph of Article 24 of ZEKom-1 to operate in accordance with international legal acts in force in the Republic of Slovenia..

#### H.1.1 Other relevant documents and information

Below are listed all other relevant documents, which in addition to the conditions set in the previous section of this chapter define the method of using radio frequencies in the 700 MHz radio frequency band and DARF holder must comply with, according to the scenario of use of this radio frequency band. In case of harmful interference, the parameters must be adjusted to the requirements of the specified documents.

The following decisions, recommendations, and CEPT reports are valid for the 700 MHz radio frequency band:

- ECC/DEC/(15)01: Harmonised technical conditions for mobile/fixed communications networks (MFCN) in the band 694 – 790 MHz including a paired frequency arrangement (Frequency Division Duplex 2x30 MHz) and an optional unpaired frequency arrangement (Supplemental Downlink),
- ECC/REC/(15)01: Cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694 – 790 MHz, 1452 – 1492 MHz, 3400 – 3600 MHz and 3600 – 3800 MHz,
- ECC Report 231: Mobile coverage obligations,

<sup>33</sup> European Conference of Postal and Telecommunications Administration

<sup>34</sup> Commission Implementing Regulation (EU) 2020/1070 of 20 July 2020 on specifying the characteristics of small-area wireless access points pursuant to Article 57 paragraph 2 of Directive (EU) 2018/1972 of the European Parliament and the Council establishing the European Electronic Communications Code (<https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1595389467054&uri=CELEX:32020R1070>)

- CEPT Report 29: Report from CEPT to the European Commission in response to the Mandate on “Technical considerations regarding harmonisation options for the digital dividend in the European Union” “Guideline on cross border coordination issues between mobile services in one country and broadcasting services in another country,
- CEPT Report 53: Report A from CEPT to the European Commission in response to the Mandate “to develop harmonised technical conditions for the 694 – 790 MHz ('700 MHz') frequency band in the EU for the provision of wireless broadband and other uses in support of EU spectrum policy objectives”,
- CEPT Report 60: Report B from CEPT to the European Commission in response to the Mandate “to develop harmonised technical conditions for the 694 – 790 MHz ('700 MHz') frequency band in the EU for the provision of wireless broadband and other uses in support of EU spectrum policy objectives”.

Decisions, Recommendations and CEPT Reports listed in section H.1 (Technical requirements of service provision in the 700 MHz Radio Frequency Band) set out the conditions of use of the 700 MHz band.

Other regulation that have to be adhered to when using the 700 MHz radio frequency band are:

- frequencies also have to be used in accordance with the other technical requirements defined in valid NURF,
- in border regions, cross-border coordination must be conducted in accordance with relevant CEPT documents.

## H.1.2 The Block Edge Masks (BEM)

The block edge masks (BEM) other relevant technical requirements are defined in European Commission implementing decision (EU) 2016/687, Annex parameters referred to in Article 3.

## H.1.3 Base Station SDL E.I.R.P. limits

In accordance with ECC Report 242 in order to ensure compatibility between M2M and MFCN SDL, the BS equipment in sub-band 738 – 743 MHz has to implement the SDL E.I.R.P. limits from ECC/DEC/(15)01 in order to protect the band 733 – 736 MHz (-52 dBm/3 MHz, -55 dBm/1.4 MHz, -64 dBm/200 kHz).

Considering a separate SDL BS transmitting unit specifically designed to fulfil the LRTC requirements of the ECC/DEC/(15)01 in the band 738 – 758 MHz, it is possible to design an internal 10 pole filter providing sufficient rejection, i.e. -52 dBm/3 MHz, -64 dBm/200 kHz below 736 MHz, with 2 MHz frequency separation.

As M2M terminals are planned to be based on LTE standard Band 28 terminals, more than 2 MHz separation between M2M and SDL is usually needed to allow for collocation. Additional alternative to manage collocation may be to rely on different site solutions, e.g. by using appropriate antenna isolation.

Power limitations could be reduced, based on operators' Agreement between M2M and MFCN operator, which is notified by Agency.

## H.1.4 Restrictions on demand due to digital TV usage in neighbouring countries

As the 700 MHz spectrum is in accordance EC decision (EU) 2017/899 occupied with DVB-T until 30. 6. 2020, will frequencies be available from 1. 7. 2020 on inside the state of Slovenia, where the usage will be possible without harmful interference. The applicant will be able to use the frequencies in the whole territory of the Republic of Slovenia only after switch off of digital television, which was announced by neighbouring countries as follows:

- Hungary until 6. 9. 2020,
- Croatia until 26. 10. 2021 and
- Italy until 31. 12. 2021.

Hungary and Croatia have already switched off DTT, therefore the possibility of using the 700 MHz band in Slovenia for public mobile services is limited with:

- Occupancy of the 700 MHz band in Slovenia due to the influence of nearby DVB-T/T2 transmitters in neighbouring countries,
- Obligation to protect the broadcasting in neighbouring countries in transitional period.

Spectrum occupancy in Figure H-2 is calculated taking into account ITU report 2339 "Co-channel sharing and compatibility studies between digital terrestrial television broadcasting and international mobile telecommunication in the frequency band 694-790 MHz in the GE06 planning area<sup>35</sup> for three different approaches – three different electric field strengths values (Table H-1: Field strength values for different usage conditions).

Table H-1: Field strength values for different usage conditions

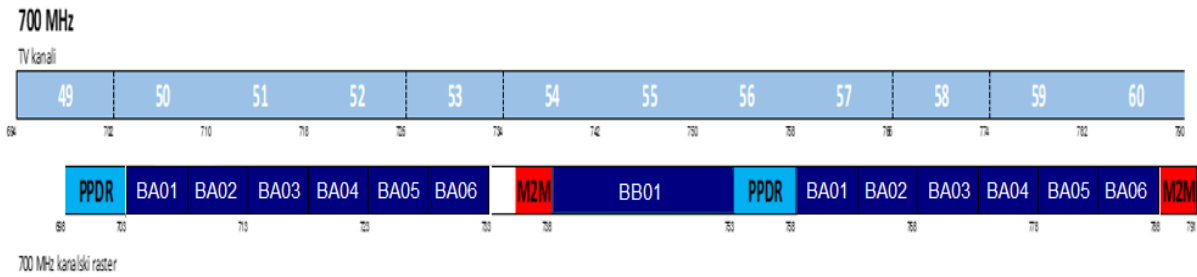
Threshold	Values [dB(μV/m)]	Rx Antenna height [m]	Comment
Threshold 1	19,3	30 m	I/N = -6 dB
Threshold 2	25,3	30 m	Relaxed I/N = -6 do 0 dB
Threshold 3	31,1	30 m	Cross polarisation and I/N of = -6 dB

Source: GE-06 Agreement

The calculation takes into account all GE06 transmitters in Italy (operating and non-functioning) that have an impact on the territory of Slovenia (Figure H-2: The influence of DVB-T/T2 T from neighbouring countries to Slovenian territory). The calculations are made using the propagation model ITU-R 1546 and the receiving antenna height of 10 m. The rights to use frequencies in the frequency domain derive from the GE06 international agreement and consist of allotments and assignments. Given that each allocation in the vicinity of Slovenia has at least one stronger transmitter, the analysis does not take into account the direct (theoretical) impact of the allocation through the reference network.

<sup>35</sup> <https://www.itu.int/pub/R-REP-BT.2339-2015>

Figure H-1: Comparison of mobile and broadcasting channel arrangements



Source: AKOS

Italy uses the following transmitters of higher power (ERP > 10 kW) to cover their areas (allocation):

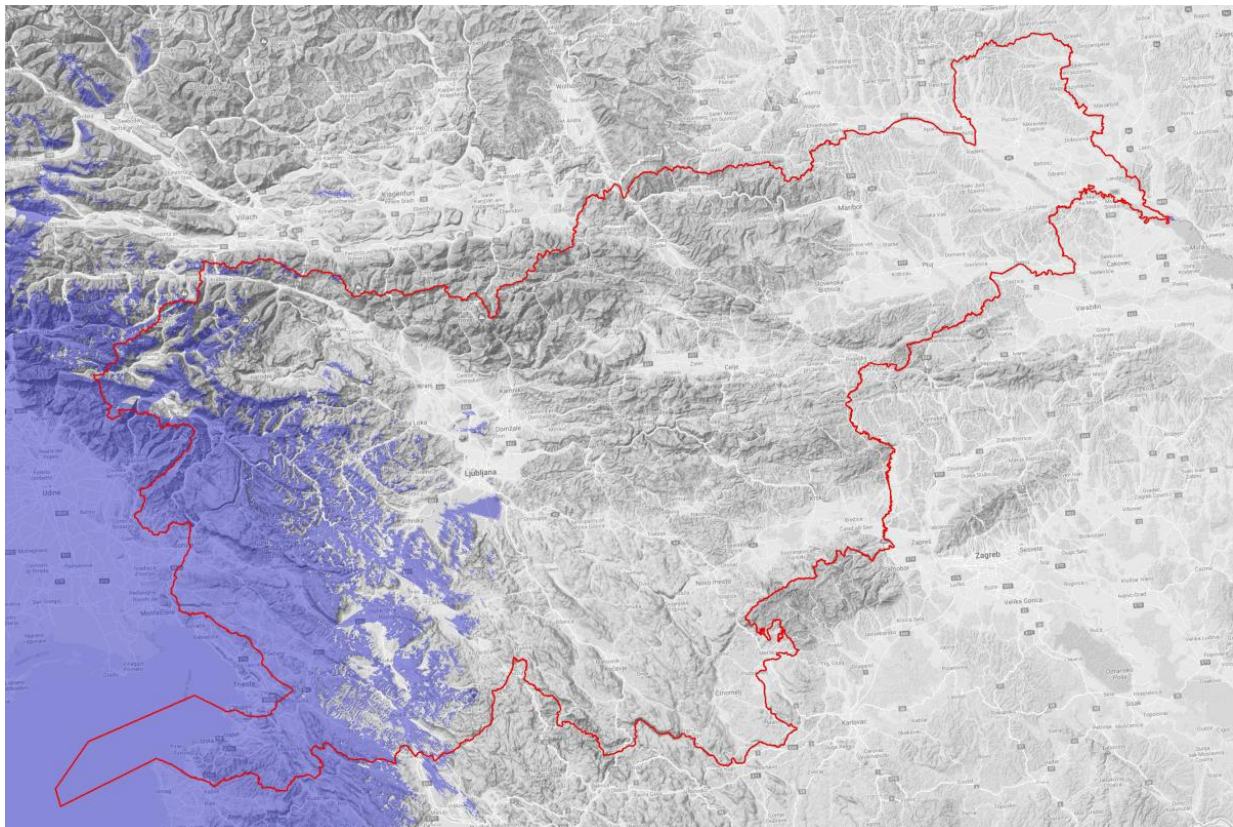
Table H-2: Bigger transmitters that have impact on the territory of Slovene Republic

Italy			
<b>CONCONELLO</b>	SAN MICHELE	PIANCAVALLO	MONTE MADONNA
<b>MUGGIA</b>	PEDROSA	COL VISENTIN	

Source: AKOS

In addition to these transmitters, other weaker transmitters also have an impact on Slovenia (Figure H-2: The influence of DVB-T/T2 T from neighbouring countries to Slovenian territory).

Figure H-2: The influence of DVB-T/T2 T from neighbouring countries to Slovenian territory



Source: AKOS

The protection of DTT till switch off in Italy on 31. 12.2020 is defined in GE06 international agreement determines the "trigger strength of the electric field" for base stations requiring international coordination with potentially affected countries (at an antenna height of 10 m at the border):

- 23 dB $\mu$ V/m between 582 MHz and 718 MHz
- 25 dB $\mu$ V/m above 718 MHz

In the case of one country using DVB-T/T2 and the other mobile services, base stations whose field strength exceeds certain limit values must be internationally coordinated.

The Technical arrangement between the national frequency authorities of Austria, Croatia, Hungary, Romania, the Slovak Republic and Slovenia on border coordination for terrestrial systems capable of providing electronic communications services and national options in the 700 MHz frequency band, Budapest, 15. 2. 2018 in Article 5 ensures the protection of broadcasting services until the DTT switch off in the neighbouring countries in the following way:

In the transition period MFCN could operate without previous cross border coordination in the field strength value is below trigger field strength for the protection of the television broadcasting service see table below. The calculation method for trigger field strength values is based on the GE-06 Agreement.

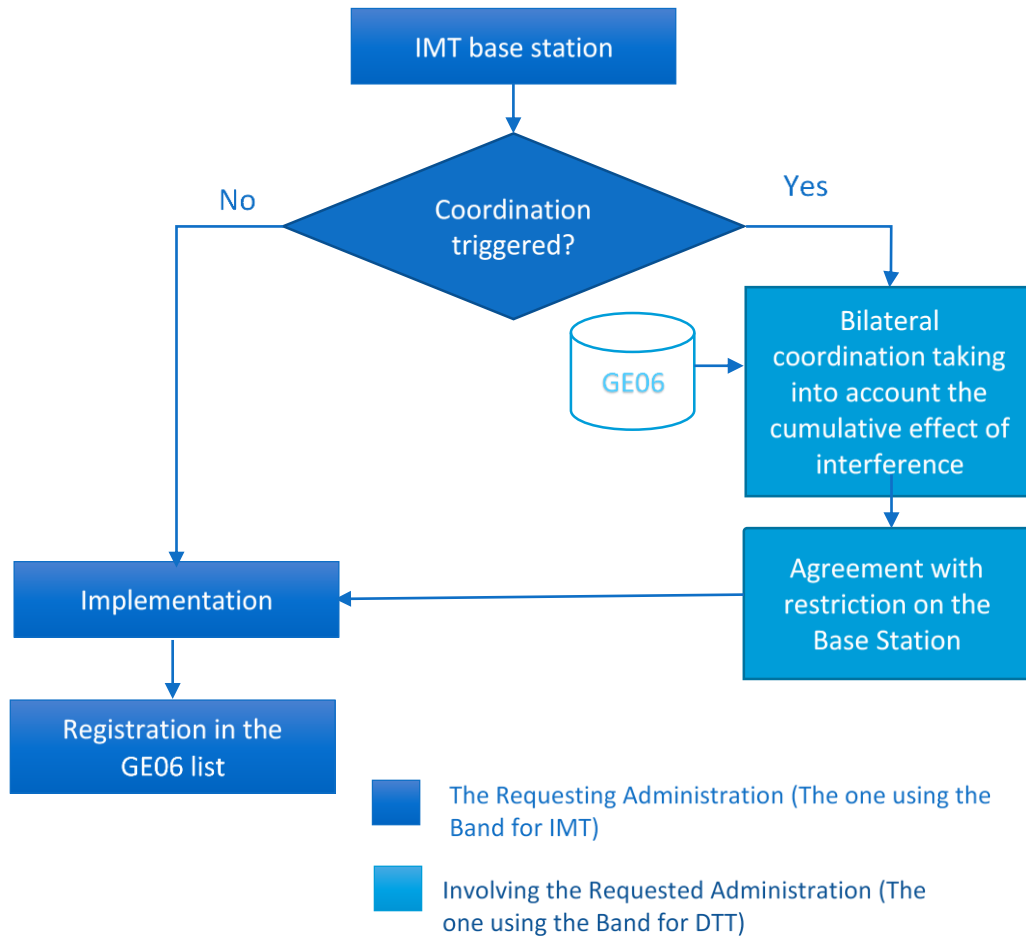
Table H-3: Cross border coordination on MFCN in the transition period (until the DTT switch off in the neighbouring countries)

Coordination trigger field strength for the protection of the television broadcasting service	
Protection of the digital TV	25 dB $\mu$ V/m/8 MHz at the border at a height of 10 m above ground
	14 dB $\mu$ V/m/8 MHz at the border at a height of 3 m above ground <sup>36</sup>

<sup>36</sup> Approximated value considering 11 dB receiving antenna height correction from 10 m to 3 m. For more accurate calculations the method described in the Article A2.1.9 of Annex-2 Chapter-2 to the GE-06 Agreement should be applied.

Source: GE06 Agreement

FigureH-3: International coordination process under Geneva 06



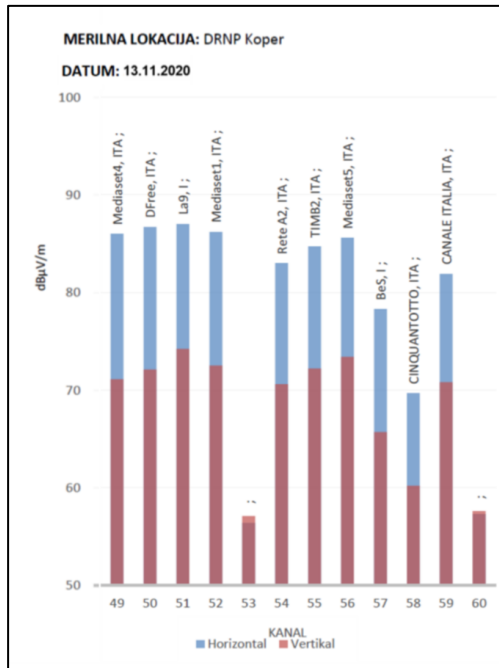
Source: AKOS, summarised after GE06 Agreement



### H.1.4.1 Spectrum occupancy measurements

In April 2020, the Agency carried out spectrum occupancy measurements. In November, after the shutdown of the Croatian DTT, it repeated them and actually found only the presence of Italian stations. Figure H-4 shows the occupancy of the spectrum with digital television in Koper in November 2020.

Figure H-4: Spectrum occupancy measurements in Koper – November 2020



Source: AKOS

## H.1.5 Compatibility between mobile and broadcast services

With the objective of ensuring uninterrupted operation of radio equipment in the radio frequency bands below 694 MHz in Slovenia and in neighbouring countries, the Agency may change the DARF *ex officio* if harmful interference cannot otherwise be avoided or radio frequency protection ratio is not achieved in any other way (indent 4 of paragraph 2 of Article 57 of ZEKom-1).

In the event of interference the following are among the measures that the DARF holder has at its disposal:

- installation of input filters to DVB-T receivers (suppression of channels > 48),
- reducing spurious emissions from base station transmitters (filter at the transmitter side),
- changing the orientation of the DVB-T receiving antenna,
- changing in the polarization of the transmitting antenna at the base station,
- reducing the base station transmission power.

The broadcast channels actually used are listed in the Register of Radio and TV Frequencies on Agency's website<sup>37</sup>.

<sup>37</sup> <https://www.akos-rs.si/registri/seznam-registrov/ra-in-tv-frekvence>

A holder of a DARF must cooperate in exercising measures for eliminating harmful interference and finding solutions for any individual user of DVB-T network services.

The Agency may instruct a holder of a DARF for the said frequency band to reimburse the costs of eliminating harmful interference for any individual user of DVB-T network services.

## H.1.6 Electromagnetic compatibility with other services in the 700 MHz Band

With the objective of adhering to item 3 of Article 52 of ZEKom-1, and preventing harmful interference between wireless mobile communications devices and other devices (such as e.g. cable TV networks and other home communication installations) these must adhere to the two equipment EMC standards SIST EN 50529-1 and SIST EN 50529-2. In the event that the systems are not in accordance with the above two standards, and interference is caused by mobile communications, this interference of other cable-linked applications must be accepted if unavoidable due to the state of the equipment. In the event that cable-connected equipment within the frequency range of 694 – 862 MHz corresponds to the above standards, the following measures may remedy the interference caused by wireless mobile communications devices:

- reducing the transmission power in the base station sector,
- increasing of the effective power by the cable TV operator,
- using of DVB-C receivers (set-top boxes, cable modems) with adequate electromagnetic immunity,
- avoiding the use of DVB-C receivers that pass the cable TV signal through a broadband amplifier,
- using coaxial cables with adequate electromagnetic resistance,
- information and recommendations to users regarding the mutual effects of wireless mobile communications in the 700 MHz frequency range and cable TV reception.

Mobile communications operators must cooperate with cable TV network operators in exercising measures for eliminating harmful interference and finding solutions for any cable TV network services user.

If it is proven that a cable TV network operator's equipment has fulfilled the above requirement the Agency may instruct a holder of a DARF for said frequency band to reimburse the costs for eliminating harmful interference for any individual user of the cable TV network operator.

## H.1.7 Conditions regarding the use of PPDR

If the DARF holder will offer services for the PPDR vertical, he must due to interference prevention comply with guidance regarding the use of PPDR are listed in documents provided in:

- ECC Report 218 WGFM: Harmonised conditions and spectrum bands for the implementation of future European public broadband PPDR systems,
- ECC Report 239: Compatibility and sharing studies for BB PPDR systems operating in the 700 MHz range.

## H.1.8 Conditions of use of M2M and M2M protection in adjacent sub-band

Conditions of use and protection of M2M are listed in documents:

- ECC Report 266: The suitability of the current ECC regulatory framework for the usage of Wideband and Narrowband M2M in the frequency bands 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2.1 GHz and 2.6 GHz.

## H.1.9 Conditions for use of UAS

If the DARF holder will offer UAS services via its network in this radio frequency band, he must comply with guidance regarding the use of UAS are listed in Executive summary of the ECC Report 309.

## H.2 Technical requirements of service provision in the 1500 MHz Radio Frequency Band

The holder of the DARF must provide terrestrial wireless broadband electronic communications services in accordance with the Commission implementing decision (EU) 2018/661 and Commission Implementing Decision (EU) 2015/750 and in accordance with the second paragraph of Article 24 of ZEKom-1 to operate in accordance with international legal acts in force in the Republic of Slovenia.

### H.2.1 Other relevant documents and information

Below are listed all other relevant documents, which in addition to the conditions set in the previous section of this chapter define the method of using radio frequencies in the 1500 MHz radio frequency band and DARF holder must comply with, according to the scenario of use of this radio frequency band. In case of harmful interference, the parameters must be adjusted to the requirements of the specified documents.

The following decisions, recommendations, and CEPT reports are valid for the 1500 MHz radio frequency band:

- ECC/DEC/(13)03: The harmonised use of the frequency band 1452 – 1492 MHz for Mobile/Fixed Communications Networks Supplemental Downlink (MFCN SDL),
- ECC/DEC/(17)06: ECC Decision of 17 November 2017 on the harmonised use of the frequency bands 1427 – 1452 MHz and 1492 – 1518 MHz for Mobile/Fixed Communications Networks Supplemental Downlink (MFCN SDL),
- ECC/REC/(15)01: Cross border coordination for mobile / fixed communications networks (MFCN) in the frequency bands: 694 – 790 MHz, 1452 – 1492 MHz, 3400 – 3600 MHz and 3600 – 3800 MHz,
- ECC Report 202: Out-of-Band emission limits for Mobile/Fixed Communication Networks (MFCN) Supplemental Downlink (SDL) operating in the 1452 – 1492 MHz band,

- ECC Report 227: Compatibility Studies for Mobile/Fixed Communication Networks (MFCN) Supplemental Downlink (SDL) operating in the 1452 – 1492 MHz band,
- ECC Report 269: Least restrictive technical conditions for Mobile/Fixed Communications Networks in 1427 – 1518 MHz,
- ECC Report 263: Adjacent band compatibility studies between IMT operating in the frequency band 1492-1518 MHz and the MSS operating in the frequency band 1518-1525 MHz,
- ECC Report 299 “Measures to address potential blocking of MES operating in bands adjacent to 1518 MHz (including 1525-1559 MHz) at sea ports and airports,
- CEPT Report 54: Report from CEPT to the European Commission in response to the Mandate “To develop harmonised technical conditions in the 1452 – 1492 MHz frequency band for wireless broadband electronic communications services in the EU,
- CEPT Report 65: Report from CEPT to the European Commission in response to the Mandate “to develop harmonised technical conditions in additional frequency bands in the 1.5 GHz range for their use for terrestrial wireless broadband electronic communications services in the Union”.

Decisions, Recommendations and CEPT Reports listed in section H.2 (Technical requirements of service provision in the 1500 MHz Radio Frequency Band set out the conditions of use of the 1500 MHz band.

Besides these Decisions, Recommendations and CEPT Reports, any amendments or new versions of these documents are also applicable, when finally adopted by EU or CEPT members and officially published.

Other regulation that have to be adhered to when using the 1500 MHz radio frequency band are:

- frequencies also have to be used in accordance with the other technical requirements defined in valid NURF,
- in border regions, cross-border coordination must be conducted in accordance with relevant CEPT documents.

## H.2.2 Conditions for the use of band

The DARF holder will have to comply to the block edge masks (BEM) and other relevant technical requirements which are defined in European Commission implementing decision (EU) 2018/661 Annex parameters referred to in Article 2(1) and 2(2) and European Commission implementing decision. (EU) 2015/750 Annex B, In-block requirements and Out-of-block requirements Table 1 Base station BEM out-of-block EIRP limits within the 1 452-1 492 MHz frequency band per antenna.

## H.2.3 Measures for providing compatibility with MSS

For the protection of Mobile Satellite Service (MSS) earth stations operating in the 1518 – 1559 MHz band the protection zones for all the ports and airports are defined as at the border of the property of relevant port/airport. The ports and airports that need protection are:

- ports of Koper, Izola, Piran and Lucia,
- airports of Ljubljana, Maribor, Portorož and the Cerklje ob Krki.

At the border of the protection zone, the external base stations operating in the band 1492 – 1517 MHz must not exceed the PFD limits as described in section A2.2 of ECC Report 299<sup>38</sup> Phase 1 PFD limits apply for the duration of the licence

Table H-4 – Table 12 of ECC Report 299: PFD limits on MFCN BS transmitting a single channel

Phase	Phase 1			Phase 2		
	PFD limit for BS emissions in the band 1492 – 1502 MHz (dBW/m <sup>2</sup> )	PFD limit for BS emissions in the band 1502 – 1512 MHz (dBW/m <sup>2</sup> )	PFD limit for BS emissions in the band 1512 – 1517 MHz (dBW/m <sup>2</sup> )	PFD limit for BS emissions in the band 1492 – 1502 MHz (dBW/m <sup>2</sup> )	PFD limit for BS emissions in the band 1502 – 1512 MHz (dBW/m <sup>2</sup> )	PFD limit for BS emissions in the band 1512 – 1517 MHz (dBW/m <sup>2</sup> )
<b>Ports and waterways</b>	-60.9	-75.9	-83.9	No limit required	-27.9	-37.9
<b>Airports</b>	-32.9	-42.9	-58.2	No limit required	-27.9	-37.9

Source: ECC Report 299

Table H-5 – Table 13 of ECC Report 299: PFD limits on MFCN BS transmitting multiple channels

Phase	Phase 1		Phase 2	
	PFD limit for BS emissions in the band 1492 – 1512 MHz (dBW/m <sup>2</sup> )	PFD limit for BS emissions in the band 1512 – 1517 MHz (dBW/m <sup>2</sup> )	PFD limit for BS emissions in the band 1492 – 1512 MHz (dBW/m <sup>2</sup> )	PFD limit for BS emissions in the band 1512 – 1517 MHz (dBW/m <sup>2</sup> )
<b>Ports and waterways</b>	-74.9	-85.9	-30.9	-40.9
<b>Airports</b>	-53.5	-63.4	-30.9	-40.9

Source: ECC Report 299

For further information see as well:

- ECC Report 263 – Adjacent band compatibility studies between IMT operating in the frequency band 1492 – 1518 MHz and the MSS operating in the frequency band 1518 – 1525 MHz,
- ECC Report 299: Measures to address potential blocking of MES operating in bands adjacent to 1518 MHz (including 1525 – 1559 MHz) at sea ports and airports.

<sup>38</sup> <https://www.ecodocdb.dk/download/8f411ee1-4d48/ECC%20Report%20299.pdf>

## H.3 Technical requirements of service provision in the 2100 MHz Radio Frequency Band)

The holder of a DARF for the FDD paired spectrum from 1920 to 1980 MHz (connection from the terminal to the base station) and from 2110 to 2170 MHz (connection from the base station to the terminal) must provide terrestrial wireless broadband electronic communications services in accordance with the EU Commission decision (EU) 2020/667 and 2012/688/EU and in accordance with the second paragraph of Article 24 of ZEKom-1 to operate in accordance with international legal acts in force in the Republic of Slovenia.

### H.3.1 Other relevant documents and information

Below are listed all other relevant documents, which in addition to the conditions set in the previous section of this chapter define the method of using radio frequencies in the 2100 MHz radio frequency band and DARF holder must comply with, according to the scenario of use of this radio frequency band. In case of harmful interference, the parameters must be adjusted to the requirements of the specified documents.

The following decisions, recommendations, and CEPT reports are valid for the 2100 MHz radio frequency band:

- ECC/DEC/(06)01: ECC Decision of 24 March 2006 on the harmonised utilisation of the bands 1920 – 1980 MHz and 2110 – 2170 MHz for mobile/fixed communications networks (MFCN) including terrestrial IMT, amended on 8 March 2019,
- ERC/REC/(01)01: ERC Recommendation of 2001 on cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 1920 – 1980 MHz and 2110 – 2170 MHz, latest amended on 5 February 2016,
- CEPT Report 72: Report from CEPT to the European Commission in response to the Mandate “to review the harmonised technical conditions for certain EU-harmonised frequency bands and to develop least restrictive harmonised technical conditions suitable for next-generation (5G) terrestrial wireless systems” – Report A: Review of technical conditions in the paired terrestrial 2 GHz and the 2.6 GHz frequency bands, and the usage feasibility of the 900 MHz and 1800 MHz frequency bands,
- CEPT Report 19: Report on the development of the least restrictive technical conditions for frequency bands addressed in the context of WAPECS,
- CEPT Report 39: Report on the development of the least restrictive technical conditions for 2 GHz bands,
- ERC Report 65: Adjacent band compatibility between UMTS and other services in the 2 GHz band,
- CEPT Report 62: Report from CEPT to the European Commission in response to the Mandate “Coexistence studies between seaborne UMTS and LTE with terrestrial electronic communications networks operating in the 1710 – 1785 / 1805 – 1880 MHz, 1920 – 1980 / 2110 – 2170 MHz and 2500 – 2570 / 2620 – 2690 MHz bands”. Technical conditions for the use of LTE and UMTS MCV.

Decisions, Recommendations and CEPT Reports listed in section H.3 (Technical requirements of service provision in the 2100 MHz Radio Frequency Band)) set out the conditions of use of the 2100 MHz band.

Besides these Decisions, Recommendations and CEPT Reports, any amendments or new versions of these documents are also applicable, when finally adopted by EU or CEPT members and officially published.

Other regulations that must be adhered to when using the 2100 MHz radio frequency band are:

- frequencies also have to be used accordance with the other technical requirements defined in valid NURF,
- In border regions, cross-border coordination must be conducted in accordance with relevant CEPT documents.

## H.3.2 Conditions for the use of band

Block edge masks and conditions of use for the 2100 MHz frequency band are detailed in Annex B (Technical conditions for FDD base stations) of (EU) 2020/667) and or older technologies in Annex B (Technical conditions for FDD base stations) 2012/688/EU.

## H.3.3 Coexistence with MSS in 2100 MHz

This section describes guidelines for compatibility with MSS in 1980 – 2010 MHz/ 2170 – 2200 MHz.

In the case of use of the 1920 – 1980 MHz FDD band paired with 2110 – 2170 MHz close to airports the interference prevention techniques listed in ECC Report 298 may need to be applied in order to prevent harmful interference to MSS services in the 1980 – 2010 MHz/ 2170 – 2200 MHz radio frequency bands.

DARF holders of the 2100 MHz band should try to avoid causing interference to Inmarsat's EAN operations at airports in Slovenia (Airports Ljubljana, Maribor, Portorož and the Cerklje ob Krki). The band 1980 – 1995 and 2170 – 2185 MHz is harmonised for mobile satellite systems providing Mobile Satellite Service in Europe, including the use of a complementary ground component (CGC). Inmarsat's European Aviation Network (EAN) is authorised in countries throughout Europe, including in Slovenia until 2027. Upon request of MSS operator, some additional interference mitigation measures may be required in the proximity of some airports to prevent blocking of the aircraft earth station, if the interference occurs while the MSS receiver in an aeroplane is on the ground (see as well ECC Report 298).

Mobile communications operators must cooperate with airports and the MSS operator in exercising measures for eliminating harmful interference.

More details regarding coexistence with the MSS can be found in documents:

- ECC/DEC/(06)09: ECC Decision of 1 December 2006 on the designation of the bands 1980 – 2010 MHz and 2170 – 2200 MHz for use by systems in the Mobile-Satellite Service including those supplemented by a Complementary Ground Component (CGC),
- ECC Report 298: Analysis of the suitability and update of the regulatory technical conditions for 5G MFCN and AAS operation in the 1920 – 1980 MHz and 2110 – 2170 MHz band
- ECC Report 233: Adjacent band compatibility studies for aeronautical CGC systems operating in the bands 1980 – 2010 MHz and 2170 – 2200 MHz,
- ECC Report 197: Compatibility studies – MSS terminals transmitting to a satellite in the band 1980 – 2010 MHz and adjacent channel UMTS services.

### H.3.4 Conditions of use of M2M

Conditions of use of M2M in 2100 MHz frequency band are described in ECC Report 266 – The suitability of the current ECC regulatory framework for the usage of Wideband and Narrowband M2M in the frequency bands 700 MHz, 800 MHz, 900 MHz, 1800 MHz, 2.1 GHz and 2.6 GHz.

### H.3.5 Conditions for use of UAS

If the DARF holder offers UAS services via its network in this radio frequency band, he will have to follow the provisions for UAS usage given in the executive summary of the ECC 309 report - approach 1, according to which the minimum separation distance between CGC base station of MSS operator and UE on unmanned aircraft operating below 1980 MHz is equal to 15 km (if the UE emits outside the band with OoB emission limit  $-7 \text{ dBm}/(4.5 \text{ MHz})$  (ACLR1)), or 2.5 km (if the UE emits outside the band with OoB emission limit  $-30 \text{ dBm}/1 \text{ MHz}$ ). When a separation distance of 2.5 km is used, interference is possible if the UE on the unmanned aircraft is less than 1 km above the ground. In case of harmful interference, the DARF holder must take immediate action and provide a greater separation distance or some other mitigation technique to prevent interference to MSS CGC.

## H.4 Technical requirements of service provision in the 2300 MHz Radio Frequency Band

The holder of the DARF must provide terrestrial wireless broadband electronic communications services in accordance with the ECC Decision (14)02 and in accordance with the second paragraph of Article 24 of ZEKom-1 to operate in accordance with international legal acts in force in the Republic of Slovenia.

### H.4.1 Other relevant documents and information

Below are listed all other relevant documents, which in addition to the conditions set in the previous section of this chapter define the method of using radio frequencies in the 2300 MHz radio frequency band and DARF holder must comply with, according to the scenario of use of this radio frequency band. In case of harmful interference, the parameters must be adjusted to the requirements of the specified documents.

The following decisions, recommendations, and CEPT reports are valid for the 2300 MHz radio frequency band:

- ECC Recommendation (14)04: Cross-border coordination for mobile/fixed communications networks (MFCN) and between MFCN and other systems in the frequency band 2300 – 2400 MHz,
- ECC Report 172: Broadband Wireless Systems Usage in 2300 – 2400 MHz,
- ECC Report 205: Licensed Shared Access (LSA),
- ECC Report 216: Practical guidance for TDD networks synchronisation,
- CEPT Report 55: Report A from CEPT to the European Commission in response to the Mandate on ‘Harmonised technical conditions for the 2300 – 2400 MHz (‘2.3 GHz’) frequency band in the EU for the provision of wireless broadband electronic communications services’,



- CEPT Report 56: Technological and regulatory options for sharing between WBB and the relevant incumbent services/applications in the 2.3 GHz band.

Decisions, Recommendations and CEPT Reports listed in section H.4 (Technical requirements of service provision in the 2300 MHz Radio Frequency Band ) set out the conditions of use of the 2300 MHz band.

Besides these Decisions, Recommendations and CEPT Reports, any amendments or new versions of these documents are also applicable, when finally adopted by EU or CEPT members and officially published.

Other regulation that have to be adhered to when using the 2300 MHz radio frequency band are:

- frequencies also have to be used accordance with the other technical requirements defined in valid NURF,
- in border regions, cross-border coordination must be conducted in accordance with relevant CEPT documents.

## H.4.2 Conditions for the use of band

The block edge masks (BEM) and other relevant technical requirements are defined in ECC/DEC/(14)02, Annex 2: Least restrictive technical conditions for MFCN in the 2300 – 2400 MHz band.

## H.4.3 Coexistence with PMSE

This section describes guidelines for compatibility with PMSE 2300 – 2320 MHz and compatibility in frequency band below 2300 MHz – see documents:

- ECC/REC/(15)04: Guidance for the implementation of a sharing framework between MFCN and PMSE within 2300 – 2400 MHz,
- CEPT Report 58: Technical sharing solutions for the shared use of the 2300 – 2400 MHz band for WBB and PMSE,
- ECC Report 219: Characteristics of PMSE digital video links to be used in compatibility and sharing studies.

## H.5 Technical requirements of service provision in the 3600 MHz Radio Frequency Band

The holder of the DARF must provide terrestrial wireless broadband electronic communications services in accordance with the Commission implementing decisions (EU) 2019/235, 2014/276/EU and 2008/411/EC: as well as in accordance with the second paragraph of Article 24 of ZEKom-1 to operate in accordance with international legal acts in force in the Republic of Slovenia.

### H.5.1 Other relevant documents and information

Below are listed all other relevant documents, which in addition to the conditions set in the previous section of this chapter define the method of using radio frequencies in the 3600 MHz radio frequency band and DARF

holder must comply with, according to the scenario of use of this radio frequency band. In case of harmful interference, the parameters must be adjusted to the requirements of the specified documents.

The following decisions, recommendations, and CEPT reports are valid for the 3600 MHz radio frequency band:

- ECC/DEC/(11)06: Harmonised frequency arrangements for mobile/fixed communications networks (MFCN) operating in the bands 3400 – 3600 MHz and 3600 – 3800 MHz,
- ECC/REC/(15)01: Cross border coordination for mobile / fixed communications networks (MFCN) in the frequency bands: 694 – 790 MHz, 1452 – 1492 MHz, 3400 – 3600 MHz and 3600 – 3800 MHz,
- ECC Report 203: Least Restrictive Technical Conditions suitable for Mobile/Fixed Communication Networks (MFCN), including IMT, in the frequency bands 3400 – 3600 MHz and 3600 – 3800 MHz,
- ECC Report 216: Practical guidance for TDD networks synchronisation,
- ECC Report 254: Operational guidelines for spectrum sharing to support the implementation of the current ECC framework in the 3600 – 3800 MHz range,
- ECC Report 281: Analysis of the suitability of the regulatory technical conditions for 5G MFCN operation in the 3400 – 3800 MHz band,
- CEPT Report 49: Technical conditions regarding spectrum harmonisation for terrestrial wireless systems in the 3400 – 3800 MHz frequency band”,
- CEPT Report 67: Report A from CEPT to the European Commission in response to the Mandate “to develop harmonised technical conditions for spectrum use in support of the introduction of next-generation (5G) terrestrial wireless systems in the Union” Review of the harmonised technical conditions applicable to the 3.4 – 3.8 GHz ('3.6 GHz') frequency band.

Decisions, Recommendations and CEPT Reports listed in section H.5 (Technical requirements of service provision in the 3600 MHz Radio Frequency Band ) set out the conditions of use of the 3600 MHz band.

Besides these Decisions, Recommendations and CEPT Reports, any amendments or new versions of these documents are also applicable, when finally adopted by EU or CEPT members and officially published.

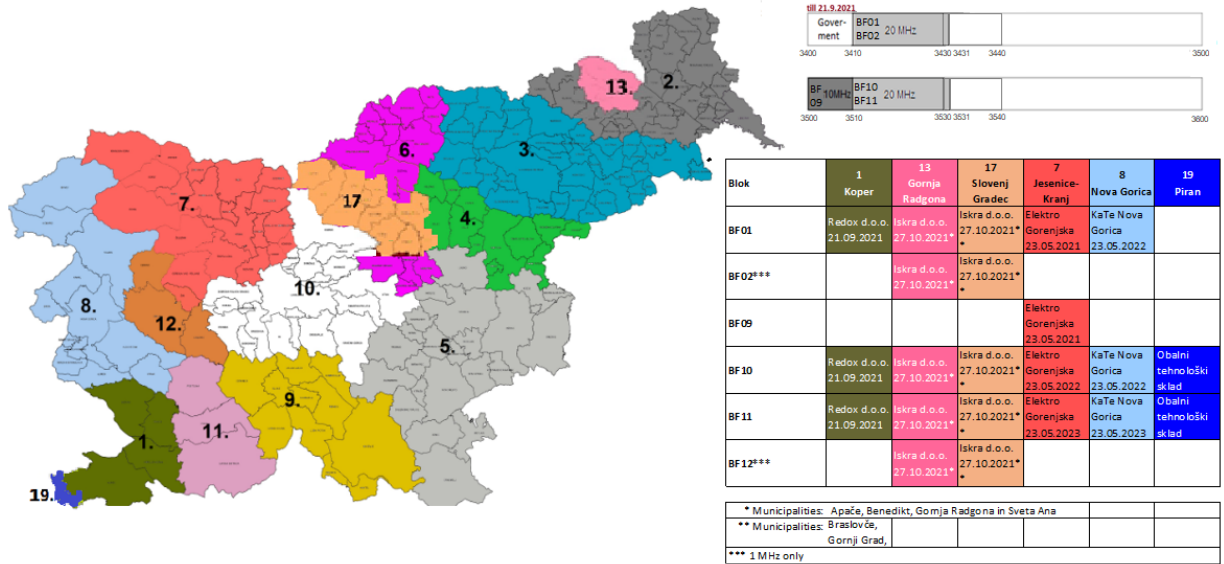
Other regulation that have to be adhered to when using the 3600 MHz radio frequency band are:

- frequencies also have to be used accordance with the other technical requirements defined in valid NURF,
- in border regions, cross-border coordination must be conducted in accordance with relevant CEPT documents <https://www.akos-rs.si/directives,-recommendations-and-international-agreements>.

## H.5.2 Constrains in 3600 MHz frequency band

Applicants obtaining the spectrum in frequency band 3420 – 3440 MHz in 3500 – 3540 MHz, in Geographic regions as defined in Figure H-5: Overview of spectrum 3600 MHz occupancy with existing rights and Table H-6: Overview of spectrum occupancy in the frequency band 3600 MHz with existing rights will not be able to use the whole spectrum in the whole national territory till 2021/2022 as presented in Table H-6.

Figure H-5: Overview of spectrum 3600 MHz occupancy with existing rights



Source: AKOS

Table H-6: Overview of spectrum occupancy in the frequency band 3600 MHz with existing rights

DARF owner	Expiry date	Frequency bane	Geographic area	Municipalities in the geographic area
<b>REDOX d.o.o.</b> <b>Portorož</b>	21. 9. 2021	3410-3430 MHz 3510-3530 MHz	OBMOČJE 1_KOPER	Ankaran, Divača, Hrpelje – Kozina, Izola, Koper, Piran, Sežana. Ankaran, Divača, Hrpelje – Kozina, Izola, Koper, Sežana.
<b>Elektro Gorenjska</b>	23. 5. 2021	3410-3430 MHz 3510-3530 MHz	OBMOČJE 7_JESENICE_KRANJ	Bled, Bohinj, Cerklje na Gorenjskem, Gorenja vas – Poljane, Gorje, Jesenice, Jezersko, Komenda, Kranj, Kranjska Gora, Medvode, Naklo, Preddvor, Radovljica, Šenčur, Škofja Loka, Tržič, Vodice, Železniki, Žirovnica.
<b>Elektro Gorenjska</b>	21. 9. 2021	3500-3510 MHz	OBMOČJE 7_JESENICE_KRANJ	Bled, Bohinj, Cerklje na Gorenjskem, Gorenja vas – Poljane, Gorje, Jesenice, Jezersko, Komenda, Kranj, Kranjska Gora, Medvode, Naklo, Preddvor, Radovljica, Šenčur, Škofja Loka, Tržič, Vodice, Železniki, Žirovnica.
<b>KaTe Nova Gorica</b>	23. 5. 2021	3410-3430 MHz 3510-3530 MHz	SEVERNA PRIMORSKA	Ajdovščina, Bovec, Brda, Kanal ob Soči, Kobarid, Komen, Miren – Kostanjevica, Nova Gorica, Renče – Vogrsko, Šempeter – Vrtojba, Tolmin, Vipava.
<b>ISKRA, d.o.o.</b>	27. 10. 2021	3410-3430 MHz 3510-3530 MHz	13_GORNJA_RADGONA_1C_VZHOD	Apače, Benedikt, Gornja Radgona in Sveta Ana.
<b>ISKRA, d.o.o.</b>	27. 10. 2021	3410-3431 MHz 3510-3531 MHz	17_MOZIRJE_1C_VZHOD	Braslovče, Gornji Grad, Ljubno, Luče, Mozirje, Nazarje, Polzela, Prebold, Rečica ob Savinji, Solčava, Tabor in Vransko.
<b>Obalni tehnološki sklad d.o.o.</b>	27. 11. 2022	3510-3530 MHz	PIRAN PODROČJE	Piran

Source: AKOS

### H.5.3 Conditions for the use of band

The block edge masks (BEM) and other relevant technical requirements are defined in European Commission implementing decision (EU) 2019/235, Annex parameters referred to in Article 2, in accordance with EC Decision 2998/411/EC for older equipment acquired before 2018.

### H.5.4 Conditions for use of UAS

If the DARF holder will offer UAS services via its network in this radio frequency band, he must comply with guidance regarding the use of UAS are listed in Executive summary of the ECC Report 309.

## H.6 Technical requirements of service provision in the 26 GHz Radio Frequency Band

The holder of the DARF must provide terrestrial wireless broadband electronic communications services in accordance with the Commission Implementing Decision (EU) 2020/590 and n (EU) 2019/784 and in accordance with the second paragraph of Article 24 of ZEKom-1 to operate in accordance with international legal acts in force in the Republic of Slovenia.

### H.6.1 Other relevant documents and information

Below are listed all other relevant documents, which in addition to the conditions set in the previous section of this chapter define the method of using radio frequencies in the 26 GHz radio frequency band and DARF holder must comply with, according to the scenario of use of this radio frequency band. In case of harmful interference, the parameters must be adjusted to the requirements of the specified documents.

The following decisions, recommendations, and CEPT reports are valid for the 26 GHz radio frequency band:

- ECC/DEC/(18)06: Harmonised technical conditions for Mobile/Fixed Communications Networks (MFCN) in the band 24.25-27.5 GHz
- ECC/REC/(19)01: ECC Recommendation of 8 March 2019 on technical toolkit to support the introduction of 5G while ensuring, in a proportionate way, the use of existing and planned EESS/SRS receiving earth stations in the 26 GHz band and the possibility for future deployment of these earth stations,
- ECC/REC/(20)01: ECC Recommendation of 6 March 2020 on guidelines to support the introduction of 5G while ensuring, in a proportionate way, the use of existing and planned FSS transmitting earth stations in the frequency band 24.65-25.25 GHz and the possibility for future deployment of these earth stations
- CEPT Report 68: Report B from CEPT to the European Commission in response to the Mandate “to develop harmonised technical conditions for spectrum use in support of the introduction of next-generation (5G) terrestrial wireless systems in the Union” Harmonised technical conditions for the 24.25 – 27.5 GHz ('26 GHz') frequency band,
- Draft ECC Report 296: Toolbox for the most appropriate synchronisation regulatory framework including coexistence of MFCN in 24.25 – 27.5 GHz in unsynchronised and semi-synchronised mode,
- ECC Report 303: Guidance to administrations for Coexistence between 5G and Fixed Links in the 26 GHz band ("Toolbox")
- ECC Report 216: Practical guidance for TDD networks synchronisation,
- ECC Report 317“Additional work on 26 GHz to address spectrum use under authorisation regimes other than individual rights of use: Technical toolkit to assist administrations “,

Decisions, Recommendations and CEPT Reports listed in section H.6 (Technical requirements of service provision in the 26 GHz Radio Frequency Band ) set out the conditions of use of the 26 GHz band.

Besides these Decisions, Recommendations and CEPT Reports, any amendments or new versions of these documents are also applicable, when finally adopted by EU or CEPT members and officially published.

Other regulation that have to be adhered to when using the 26 GHz radio frequency band are:

- frequencies also have to be used accordance with the other technical requirements defined in valid NURF,
- in border regions, cross-border coordination must be conducted in accordance with relevant CEPT documents.

## H.6.2 Conditions for the use of band

For the operation of its network, the DARF holder will have to comply with the Block Edge masks for in-band and Out-of-Band limits set out in Commission Implementing Decision (EU) 2020/590 for restrictions on unwanted emissions in the band 23.6-24.0 GHz in Table 4 and Table 6 of "ANNEX" and for other Block Edge masks (BEM) and other relevant technical requirements for In-Band and Out-of-Band emissions as defined in European Commission implementing decision (EU) 2019/784, Annex technical conditions relating to in Articles 2 and 3.

In accordance with resolves 2.2. of Resolution 242 of WRC-19 as far as practicable, sites for IMT base stations within the frequency band 24.45-27.5 GHz employing values of e.i.r.p. per beam exceeding 30 dBW/(200 MHz) should be selected so that the direction of maximum radiation of any antenna will be separated from the geostationary satellite orbit, within line-of-sight of the IMT base station, by  $\pm 7.5$  degrees in order to ensure coexistence with FSS described in ECC/REC/(20)01 and FSS Earth stations on mobile platforms (ESOMPs) described in ECC/DEC/(13)01<sup>39</sup>.

## H.6.3 Sharing with FS in the sub-band 24.5 – 26.5 GHz

Guidelines for possible sharing with FS in the sub-band 24.5 – 26.5 GHz are given in the ECC Report 303: Guidance to administrations for Coexistence between 5G and Fixed Links in the 26 GHz band ("Toolbox").

## H.6.4 Support for the introduction of 5G – protection of EESS/SRS

Guidance on the possible sharing of FSS in the 24.5 - 26.5 GHz band is given in Recommendation ECC (20) 01 - guidelines to support the introduction of 5G while ensuring, in a proportionate way, the use of existing and planned FSS transmitting earth stations in the frequency band 24.65-25.25 GHz and the possibility for future deployment of these earth stations.

Technical toolkit to support the introduction of 5G while ensuring, in a proportionate way, the use of existing and planned EESS/SRS receiving earth stations in the 26 GHz band and the possibility for future deployment of these earth stations is given in Recommendation ECC (19) 01.

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<sup>39</sup> ECC/DEC/(13)01 ECC Decision of 8 March 2013 on the use, free circulation, and exemption from individual licensing of Earth stations on mobile platforms (ESOMPs) in the frequency bands available for use by uncoordinated FSS Earth stations within the ranges 17.3-20.2 GHz and 27.5-30.0 GHz, amended 26 October 2018

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## H.6.5 Conditions for use of UAS

The holder of a UAS in this band shall not use it until additional studies have been performed on a national basis and / or measures have been taken to ensure the protection of the EESS/SRS and FSS in the adjacent 28 GHz band.

According to (EU) 2020/590 amending (EU) 2019/784 and ECC/DEC/(18)06 "MFCN in the 24.25 – 27.5 GHz band and ECC Report 309 only communications for connectivity from terminals on-board UAV to base stations is authorized

The connectivity from aerial UEs to BSs may have a significant impact, e.g. on separation distance from EESS/SRS earth stations, which requires further study.

The 26 GHz band could be suitable for various high bitrate 5G UAS applications, however, for the time being there has been no study performed for UAS communication this band in ECC Report. 309.

## H.7 Unwanted emissions

General unwanted emission conditions are specified in ERC Recommendation 74-01.

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## **I Forms - see Slovenian version**

### **I.1 General information about the provider**

#### **I.1.1 Legal entity**

#### **I.1.2 Natural person**

### **I.2 Applicants' statements**

### **I.3 Authorization for signing the application**

### **I.4 Appointment of persons who shall be authorized to submit bids for the applicant during the public auction**

### **I.5 Statement of payment of the tender bond**

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## I.6 Initial Bid

The Form comprise the applicants binding application, which must in its entirety conform to the spectral caps defined in Chapter A.4.1 of the tender documentation (Spectrum caps). The number of lots for which the bidder is bidding must comply with the requirements of the chapter C.2.8.

The applicant must fill this Form completely, even if it does not wish to submit a bid for individual lots in individual frequency bands. **In this case, it must write the number zero (0) in the section of the form on the number of lots in the individual frequency band that they do not to submit a bid on.**

For the purposes of the Main Auction only, as part of its application, each applicant has the option to specify a Minimum Viable Quantity from a menu of available options in each of the Lot Categories A, C1, C2, D, E and F (auction rule 33). In lot Categories where the applicant cannot or does not want to select Minimum Viable Quantity, the Minimum Viable Quantity will be set at 1 lot. In the case of the public tender, the indication of lots that are the subject of the public tender may not be the subject of a supplement of this form. An application that does not include the required forms or where these forms are not correctly filled in shall be excluded from further procedure.

The amount of the actual payment for frequencies depends on the outcome of the auction.

Company name / Full name of Applicant:

[ ]

A	Available lots:	6
	Lot size	2 x 5 MHz
	Reserve price per lot	2.900.000 EUR
	Lot value	6
	The number of lots the applicant is interested in:	[Izberite element.]
	Minimum Viable Quantity of lots	[Izberite element.]
B	Available lots:	1
	Lot size	1 x 10 MHz
	Reserve price per lot	20.000 EUR
	Lot value	1
	The number of lots the applicant is interested in:	[Izberite element.]

C1	Available lots:	4
	Lot size	1 x 10 MHz
	Reserve price per lot	20.000 EUR
	Lot value	1
	The number of lots the applicant is interested in:	[Izberite element.]
	Minimum Viable Quantity of lots	[Izberite element.]
C2	Available lots:	4
	Lot size	1 x 10 MHz
	Reserve price per lot	20.000 EUR
	Lot value	1
	The number of lots the applicant is interested in:	[Izberite element.]
	Minimum Viable Quantity of lots	[Izberite element.]
D	Available lots:	12
	Lot size	2 x 5 MHz
	Reserve price per lot	2.500.000 EUR
	Lot value	4
	The number of lots the applicant is interested in:	[Izberite element.]
	Minimum Viable Quantity of lots	[Izberite element.]
E	Available lots:	7
	Lot size	1 x 10 MHz
	Reserve price per lot	450.000 EUR
	Eligibility points per lot:	2
	The number of lots the applicant is interested in:	[Izberite element.]
	Minimum Viable Quantity of lots	[Izberite element.]

<b>F</b>	Available lots:	38
	Lot size	1 x 10 MHz
	Reserve price per lot	450.000 EUR
	Eligibility points per lot:	2
	The number of lots the applicant is interested in:	[Izberite element.]
	Minimum Viable Quantity of lots	[Izberite element.]
<b>G</b>	Available lots:	5
	Lot size	1 x 200 MHz
	Reserve price per lot	250.000 EUR
	Eligibility points per lot:	/
	The number of lots the applicant is interested in:	[Izberite element.]

Date:

Signature of the legal representative/authorized person <sup>40</sup>  
or the signature of a natural person/authorized person <sup>41</sup><sup>40</sup> if the applicant is a legal entity<sup>41</sup> if the applicant is a natural person



## **I.7 Statement on the submission of documents in accordance with the requirements of the Tender Documentation**



## J Annexes

This section provides a list of problematic areas (critical road sections and hard-to-reach areas) where at least one operator provides poor mobile coverage. In these areas, shared use is permitted in accordance with Section A.5.5.1 (Permission of frequency pooling and active sharing, including dynamic spectrum ).

These areas have been primarily determined based on mobile coverage analysis in 2018, from analysis of latest data on coverage (June 2020) the Agency notes that data in these areas have not improved significantly. It comprises areas that lacked the coverage of at least one of the three leading mobile operators in 2018, where rescue operations were required according to the data from Administration of the Republic of Slovenia for Civil Protection and Disaster Relief and the Ministry of the Interior.

### J.1 Road critical sections - motorways, highways, main roads and regional roads category I and II

Table J-1: Motorways, highways, main roads and regional roads category I and II

Road label*	Section	Critical section
1	Vič – Dravograd – Maribor – (Koroški most – Cesta proletarskih brigad – Tezno) – Miklavž	Meja R Avstrija – Dravograd
11	Koper (pristanišče) – Dragonja	Padna – meja R. Hrvaška
102	Robič – Kobarid – Peršeti – Tolmin – Idrija – Kalce – Logatec	Kobarid – Idrija
103	Peršeti – Nova Gorica – Šempeter	Volče – Nova Gorica
106	Ljubljana jug – Škofljica – Ribnica – Kočevje – Petrina in Škofljica – Šmarje – Sap	Ribnica – meja R. Hrvaška
108	Ljubljana (Črnuče) – Litija – Hrastnik – Zidani Most	Ljubljana (Črnuče) – Litija – Hrastnik – Zidani Most
203	Predel – Bovec – Kobarid	Meja R. Italija – Bovec
204	Godovič – Črni Vrh – Col – Ajdovščina	Godovič – Črni Vrh – Col
206	Kranjska Gora – Vršič – Trenta – Bovec	Kranjska Gora – Vršič – Trenta
207	Godovič – Črni Vrh – Col – Ajdovščina	Godovič – Črni Vrh – Col – Ajdovščina
208	Črni Kal – Aver – Gračišče – Sočerga in Rižana – Mostičje	Gračišče – meja R. Hrvaška
209	Lesce – Bled – Bohinjska Bistrica – Jezero	Bled – Bohinj
210	Zgornje Jezersko – Preddvor – Kranj – Škofja Loka – Gorenja vas – Cerklje – Želin in Škofja Loka – Jeprca	meja R. Avstrija – Preddvor
213	Bloška Polica – Pudob – Babno Polje	Pudob – Babno Polje
216	Ivančna Gorica – Žužemberk – Soteska – Črnomelj	Krka – Soteska
219	Slovenska Bistrica – Poljčane – Podplati in Mestinje – Bistrica ob Sotli – Čatež ob Savi	Bistrica ob Sotli – Čatež ob Savi
231	Gibina – Razkrižje – Ljutomer	Gibina – Razkrižje
401	Žaga – Učja	Žaga – Učja (meja R. Italija)
403	Bača – Petrovo Brdo – Podrošt – Češnjica – Škofja Loka	Bača – Petrovo Brdo – Podrošt – Češnjica
405	Divača – Famlje – Ribnica	Divača – Famlje – Ribnica
407	Gorenja vas – Ljubljana – Vrhnika	Gorenja vas – Ljubljana – Vrhnika
408	Logatec – Žiri – Trebija	Logatec – Žiri – Trebija
414	Kamnik – Ločica	Kamnik – Ločica

415	Želodnik – Drtija – Izlake	Kandrše – Izlake
417	Šmartno – Ljubež v Lazih – Moravče – Tihaboj – Mirna	Šmartno – Ljubež v Lazih – Moravče – Tihaboj – Mirna
418	Mokronog – Zbure – Škocjan – Dobruška vas – Šentjernej	Škocjan – Mokronog
424	Boštanj – Planina – Dežno – Črnlolica	Boštanj – Planina – Dežno – Črnlolica
430	Maribor (Ptujška) – Slivnica – Slovenska Bistrica – Slovenske Konjice – Celje	Slovenske Konjice – Vojnik
431	Gornji Dolič – Stranice	Gornji Dolič – Stranice
436	Počehova – Zgornja Kungota – Jurij ob Pesnici	Počehova – Zgornja Kungota – Jurij ob Pesnici

Source: AKOS, summarised after DECREE on road categorisation <sup>42</sup>

## J.2 Road critical sections - Regional roads category III touristic roads

Table J-2: Regional roads category III touristic roads

Road label*	Section	Critical section
604	Ročinj – Lig	Lig – Kambreško
605	Kambreško – Solarji – Livek	Kambreško – Livek
609	Ajdovščina – Predmeja – Lokve in Čepovan – Most na Soči	Ajdovščina – Predmeja – Lokve in Čepovan – Most na Soči
621	Kalce – Hrušica – Col	Kalce – Hrušica – Col
632	Ilirska Bistrica – Zabiče – Novokračine in Jelšane – Novokračine	Zabiče – Jelšane
641	Ljubljana – Brezovica	Polhov Gradec – Šentjošt nad Horjulom
643	Preserje – Rakitna – Cerknica	Beč – Kamnik pod Krimom
645	Ljubljana (Litijska) – Zadvor – Šmartno pri Litiji	Besnica – Šmartno pri Litiji
647	Perovo – Grosuplje – Mlačevo – Krka in Mlačevo – Rašica	Grosuplje – Krka in Grosuplje – Videm
653	Sodražica – Hrib – Trava – Podplanina	Sodražica – meja s Hrvaško
655	Dolenja vas – Gotenica – Kočevska Reka	Dolenja vas – Gotenica – Kočevska Reka
656	Kočevska Reka – Borovec – Dragarji – Osilnica	Kočevska Reka – Borovec – Dragarji – Osilnica
660	Črnomelj – Adlešiči – Žuniči	Dolenjci – Žuniči
679	Radeče – Breg – Sevnica – Brestanica	Radeče – Breg – Sevnica – Brestanica
687	Dole – Ponikva – Loče	Dole – Ponikva – Loče
701	Ruta – Pesek – Rogla – Zreče – Zeče	Ruta – Rogla
706	Ožbalt – Zgornja Kapla – Remšnik in Hajdičev mlin – Gradišče	Ožbalt – meja R Avstrija
724	Hodoš – Domanjševci – Kobilje	Hodoš – Prosenjakovci
726	Renkovci – Črenšovci – Razkrižje in Stročja vas – Pavlovci	Stročja vas – Pavlovci
RT 907	Krnica – Zgornja Radovna – Dovje	Krnica – Zgornja Radovna – Dovje
RT	Podzemelj – Adlešiči in Žuniči – Vinica – Stari trg	Vinica – Stari trg

<sup>42</sup> Official Gazette of the Republic of Slovenia, No. 102/12, 35/15, 38/15, 78/15, 21/16, 52/16, 64/16, 41/17, 63/17, 78/19 in 89/20

<b>919</b>		
<b>RT 923</b>	Stahovica – Kamniška Bistrica	Stahovica – Kamniška Bistrica
<b>RT 924</b>	Podlom – Kranjski Rak – Luče	Podlom – Kranjski Rak – Luče
<b>RT 929</b>	Hoče – Bellevue in Areh – Cojzerica – Šumik – Tinčeva bajta – Sveti Trije kralji – Osankarica – Lukanja	Areh – Cojzerica – Šumik – Tinčeva bajta – Sveti Trije kralji – Osankarica – Lukanja
<b>RT 930</b>	Pesek – Oplotnica	Pesek – Oplotnica
<b>720</b>	Sotina – meja R Avstrija	Zadnji km do meje

Source: AKOS, summarised after DECREE on road categorisation

### J.3 Challenging areas

Table J-3: Settlements in Triglav National Park (TNP and Settlements in other challenging areas)

Settlements in Triglav National Park (TNP):	Settlements in other areas difficult to reach::
<b>KRN</b>	<b>Slap Rinka</b>
<b>LEPENA</b>	<b>Žiri_SOVRA</b>
<b>LOG POD MANGARTOM</b>	<b>Dobrova – Polhov Gradec_PLANINA NAD HORJULOM</b>
<b>MOJSTRANA</b>	<b>Gorenja vas – Poljane_DOLENJA ŽETINA</b>
<b>TRENTA</b>	<b>Dobrova – Polhov Gradec_POLHOV GRADEC</b>
<b>ZADLAZ – ČADRG</b>	<b>Tolmin_RUT</b>
<b>ZADLAZ – ŽABČE</b>	<b>Tolmin_SELA NAD PODMELCEM</b>
<b>ZATOLMIN</b>	<b>Idrija_VOJSKO</b>
	<b>Cerkno_ZAKOJCA</b>
	<b>Tolmin_GRANT</b>
	<b>Tolmin_STRŽIŠČE</b>
	<b>Dobrova – Polhov Gradec_SREDNJI VRH</b>
	<b>Gorenja vas – Poljane_HOTOVLJA</b>
	<b>Tolmin_KNEŠKE RAVNE</b>
	<b>Ajdovščina_VODICE</b>
	<b>Idrija_MASORE</b>
	<b>Cerkno_OREHEK</b>
	<b>Dobrova – Polhov Gradec_ČRNI VRH</b>
	<b>Cerkno_PLUŽNJE</b>
	<b>Črna na Koroškem_KOPRIVNA</b>
	<b>Tržič_JELENDOL</b>

Source: AKOS

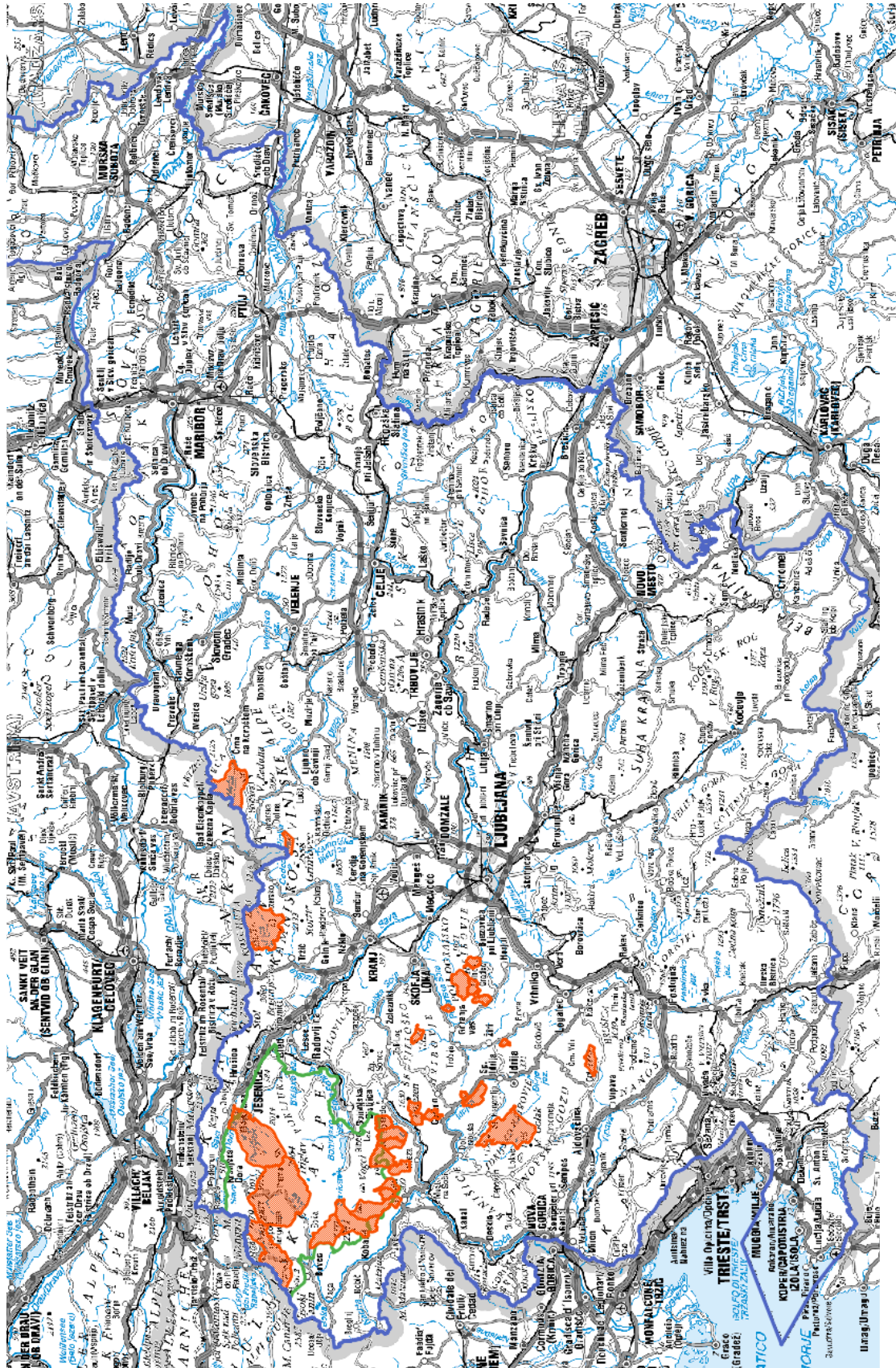


Figure J-1: Presentation of settlements in challenging areas

Source: AKOS, Geodetska uprava Republike Slovenije