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TERMS OF REFERENCE

for the organisation of the competitive selection procedure
for awarding certain frequency usage rights in the
700 MHz, 1500 MHz, 2600 MHz and
3400-3800 MHz bands

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CONTENTS

Chapter 1 – INTRODUCTION.....	1
1.1. Legal framework applicable in the selection procedure.....	1
1.2. Definitions and terminology clarifications	2
Chapter 2 – FREQUENCY BANDS IN THE SELECTION PROCEDURE	4
2.1. Overview	4
2.2. The 700 MHz band	5
2.2.1. International regulations	5
2.2.2. National regulations.....	6
2.2.3. Status of frequency usage rights in the 700 MHz band.....	8
2.3. The 1500 MHz band	13
2.3.1. International regulations	13
2.3.2. National regulations	16
2.3.3. Status of frequency usage rights in the 1452-1492 MHz band	17
2.4. The 2600 MHz band	18
2.4.1. International regulations	18
2.4.2. National regulations	19
2.4.3. Status of frequency usage licencing in the 2600 MHz band.....	22
2.5. The 3400-3800 MHz band	24
2.5.1. International regulations	24
2.5.2. National regulations	25
2.5.3. Status of frequency usage in the band	27
2.5.4. Future developments of the frequency usage status in the band	30
2.6. Other provisions regarding the frequency bands in the selection procedure	34
Chapter 3 – LEGAL REGIME OF THE LICENCES	34
3.1. Licence duration	34
3.2. Rights conferred by licences.....	35
3.3. Obligations.....	36
3.3.1. Coverage obligations	36
3.3.2. Obligations regarding service quality.....	36
3.3.3.Obligations of compliance with certain technical and operational requirements	46
3.3.4.Requirements concerning the provision of emergency communications	46
3.4. Transfer of usage rights.....	73
3.5. Shared use of the spectrum resources allotted by the frequency usage licence	73
3.6. Amounts to be paid by the licence holders	73
3.7. Monitoring and verifying of compliance with the obligations	73
3.7.1. Coverage definition.....	75
3.7.2. Measurement-based calculation of the signal coverage percentage in a settlement.....	76
3.7.3. Methods used in verifying data service coverage of the settlements specified in Annex 1	77
3.7.4. Methods used in verifying coverage specified in sections A2 and B2 of indent 3.3.1.1	77
3.7.5. Methods used in verifying highway and railway data service coverage	78
3.7.6. Methods used in verifying data service coverage of international airports.....	79
3.8. Licence amendment and revoking	79
Chapter 4 – THE SELECTION PROCEDURE	80
4.1. Available blocks and applicable restrictions	80
4.1.1. Description of the blocks offered during the procedure	80
4.1.2. Reserve price per block (minimum licence fee) and eligibility points.....	82
4.1.3. Spectrum caps	83
4.2. Overview of the procedure.....	84
4.2.1. Launching of the procedure.....	84
4.2.2. Stages of the procedure.....	84

4.2.3. Calendar of the selection procedure	84
4.3. Rules concerning the participation in the selection procedure	86
4.3.1. Rules on the participants' independence	86
4.3.2. Rules relating to agreements between the participants	87
4.3.3. Rules relating to the confidentiality of information	88
4.3.4. Rules relating to the participants' conduct	88
4.3.5. Rules relating to the submission of information to the Commission	89
4.3.6. Applicable sanctions.....	89
4.4. Bonds	90
4.4.1. Format of the bond.....	90
4.4.2. Value of the bond	90
4.4.3. Validity of the bond	90
4.4.4. Cases of bond withhold	91
4.4.5. Return of the bond	91
4.5. Application submission stage.....	93
4.5.1. Application file.....	93
4.5.2. Documents on the candidate's standing	93
4.5.3. The application form (the initial bid)	94
4.5.4. Letter of bank guarantee.....	95
4.5.5. Preparation and submission of the application file	95
4.6. The qualification stage.....	97
4.6.1. Qualification criteria	97
4.6.2. Evaluation of the application files.....	98
4.6.3. Announcing the results of evaluation of the application files and presenting the qualified candidates	98
4.6.4. Establishing and announcing the procedure continuation	98
4.6.5. Disputes.....	99
4.7. Auction stage (main stage)	100
4.7.1. Primary rounds.....	100
4.7.2. Additional primary round.....	101
4.7.3. Assignment round.....	101
4.7.4. Determining the winner and establishing the licence fees.....	102
4.8. Licence awarding stage.....	103
4.8.1. Presentation of the procedure results.....	103
4.8.2. Payment of the licence fees.....	103
4.8.3. Granting the licences	103
Chapter 5 – AUCTION RULES	104
5.1. General rules for the auction stage	104
5.1.1. Auction premises	104
5.1.2. Informing the bidders	104
5.1.3. Bid submission	104
5.1.4. Extension rights.....	105
5.1.5. Exceptional circumstances.....	105
5.2. Other rules for the auction stage	107
5.2.1. Security measures	107
5.2.2. Rules on the bidders' communication with the Commission	107
5.2.3. Rules on the Commission's communication with the bidders	108
5.2.4. Language used.....	108
5.3. Rules for the primary bid rounds	109
5.3.1. Scheduling of the primary rounds	109
5.3.2. Informing the bidders prior to the primary rounds	109
5.3.3. Bid prices.....	109
5.3.4. Bidding rules	110
5.3.5. Activity rules	110

5.3.6. Determining the winning bidders	111
5.3.7. Determining the basic price	111
5.3.8. Completion of the primary rounds.....	111
5.4. Rules for the additional primary round	112
5.4.1. Scheduling the additional primary round	112
5.4.2. Informing the bidders before the additional round	112
5.4.3. Bid prices	112
5.4.4. Bidding rules	112
5.4.5. Determining the winning bidders	113
5.4.6. Determining the basic price	113
5.4.7. Closing of the additional round	113
5.5. Rules for the assignment round.....	114
5.5.1. Scheduling the assignment round	114
5.5.2. Informing the bidders prior to the assignment round	114
5.5.3. Bid prices.....	114
5.5.4. Bidding rules	114
5.5.5. Determining the winning bids	116
5.5.6. Positioning the unawarded frequencies	116
5.5.7. Determining the additional price	117
5.5.8. Completion of the assignment round.....	117
5.6. Completion of the auction stage.....	119
Chapter 6 – MISCELLANEOUS	119
6.1. Advertising the selection procedure	119
6.2. Suspension of the selection procedure	119
6.3. Cancellation of the selection procedure	119
Annexes	120
Annex 1.....	121
Annex 3.....	124
Annex 4.....	126
Annex 4.....	131
Annex 5.....	132
Annex 6.....	133

Chapter 1 – INTRODUCTION

1.1. Legal framework applicable in the selection procedure

The national legislation applicable in awarding the frequency usage rights licences, hereinafter referred to as *licences*, consists of:

- Government Emergency Ordinance no.22/2009 on the establishment of the National Authority for Management and Regulation in Communications, approved by Law no. 113/2010, with the subsequent amendments and completions;
- Government Emergency Ordinance no.111/2011 on electronic communications, approved with amendments and completions by Law no.140/2012, with the subsequent amendments and completions;
- Government Emergency Ordinance no. 18/2008 establishing certain measures for reforming the use of the radio spectrum in the 3600-3800 MHz frequency band, approved, with amendments, by Law no. 259/2008, with the subsequent amendments;
- Law no. 163/2021 on adopting certain measures regarding ICT infrastructures of national interest and the conditions for 5G networks implementation;
- Law 198/2022 on amending and supplementing certain regulatory acts in the electronic communications sector and establishing certain measures to facilitate the deployment of electronic communications networks;
- Government Decision ___/2022 on setting the amount of the minimum licence fee for awarding certain frequency usage rights for the frequencies available in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands, and the licence fee payment conditions;
- ANCOM President's Decision no. ___/2022 on the selection procedure for awarding certain frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands;
- ANCOM President's Decision no. 551/2012 on setting the spectrum usage tariff, with the subsequent amendments and completions;
- ANCOM President's Decision no. 390/2015 on the approval of the Strategy and of the action plan for the implementation and development of broadband communications systems in the 3400-3800 MHz band, on a national level, for the period 2015-2025 (hereinafter referred to as *The 3400-3800 MHz Strategy*);
- ANCOM President's Decision no. 353/2015 on the procedure for awarding frequency usage rights, with the subsequent amendments and completions.

The main legal provisions on awarding frequency usage rights are laid down in Government Emergency Ordinance no. 111/2011 on electronic communications¹ (hereinafter referred to as *the Framework Ordinance*).

In accordance with the provisions of Art. 26(1) of the Framework Ordinance, licences are awarded by means of an open, objective, transparent, non-discriminatory and proportionate procedure.

According to Article 25 (1), where the number of licences to be granted in a frequency band is limited, the National Authority for Management and Regulation in Communications (hereinafter referred to as *ANCOM* or the *Authority*) lays down the measures regarding the rights' (licence) award, provided that certain requirements are fulfilled. Under these conditions, in the frequency bands or sub-bands available in the procedure, one must promote the coverage of national territory with electronic communications services, ensure certain service quality, promote the efficient use of radio spectrum frequencies, and avoid the occurrence of harmful interference.

In the case of licences that are limited in number, ANCOM awards usage rights through a procedure that must fulfil – as well – a series of conditions, set out in Article 26(2) of the Framework Ordinance. Thus:

- a) the procedure type must be competitive or comparative selection;

¹ Published in the Romanian Official Journal, Part I, no. 925/27.12.2011.

b) the procedure must be objective, transparent, non-discriminatory and proportionate;
c) the procedure must not result into restricting, preventing or distorting competition;
d) the granting usage rights must normally take place within eight months from the receipt of a request therefor, a term which may be amended if necessary to comply with an international agreement on the use of the radio spectrum or of the orbital positions in which Romania is a party.

According to Art. 26(4) of the Framework-Ordinance, - within a procedure for awarding the licence for the use of radio frequencies - ANCOM may decide to preclude the participation of certain persons in the selection procedure, for reasons related to promoting competition in the electronic communications field, with the prior consultation of the Competition Council and after undergoing the consultation procedure described in Article 135 of the Framework-Ordinance.

Paragraph (3¹) of Art. 28 of the Framework-Ordinance defines the competitive selection procedure as a "[...] procedure of awarding the licence for the use of radio frequencies whereby the usage right is granted to the winner/winners of an auction, that – having fulfilled certain pre-qualification criteria of a technical, administrative or financial nature, as applicable – offer the highest amount as a licence fee, starting from the minimum licence fee amount set by Government decision according to paragraph (1)".

According to Art. 28(4) of the Framework-ordinance, the frequency band/bands/sub-bands in the selection procedure , the procedure type and the general rules applicable in the procedure are adopted by ANCOM President's decision². According to Article 28 (1⁵) of the Framework-ordinance, the conditions associated with the usage rights, the objectives pursued, and the specific rules applicable in the selection procedure are laid down in these Terms of Reference.

1.2. Definitions and terminology clarifications

For the purposes of this document:

- *the Commission* is the auction commission designated by decision of the ANCOM president;
- *a participant* is a candidate or bidder in the selection procedure;
- *national roaming* means the possibility offered to a subscriber to use a handset or another device to make and receive calls on Romania's territory when the respective subscriber is outside the coverage area of the network to which he/she is a subscriber, based on certain agreements concluded between the operator of the network to which he/she is a subscriber and the other mobile network operators in Romania;
- *a national roaming agreement* is an access agreement which regulates the making available to a third party - holder of a licence for the use of radio frequencies with a view to providing public electronic communications networks and mobile electronic communications services - of facilities or services which are necessary for the provision of electronic communications services at mobile points in geographic areas outside the coverage of the respective party's network;
- the phrasing "*to acquire/obtain/buy/win/be awarded frequency blocks/frequencies*" may be used exclusively for the sake of easier wording, to express the acquiring of frequency usage rights consisting of the frequency blocks submitted to the selection procedure, together with the technical and operational usage conditions associated to the respective blocks (included in the Terms of Reference and in the applicable technical regulations), and are just a language convention, without implying other legal operations related to the respective radio frequencies;
- *the 700 MHz band* is the 694-790 MHz band;
- *the 800 MHz band* is the 790-862 MHz band;
- *the 900 MHz band* is the 880-915 MHz/925-960 MHz bands;
- *the 1500 MHz band* is the 1427-1517 MHz band;
- *the 2600 MHz band* is the 2500-2690 MHz band;

² ANCOM President's Decision no. ___/2019 on the selection procedure for awarding frequency usage rights has been published in the Romanian Official Journal no. ___ of __ June ____.

- *UMTS system* is a system complying with UMTS standards, as published by ETSI, in particular EN 301 908-1, EN 301 908-2, EN 301 908-3 and EN 301 908-11;
- *LTE system* is a system complying with LTE standards, as published by ETSI, in particular EN 301 908-1, EN 301 908-13, EN 301 908-14 and EN 301 908-11;
- *5G NR system* is a system in the IMT-2020 (5G) family of technologies complying with the ETSI relevant standards (adoption pending);
- *frequency sub-band/sub-bands allotted in a certain frequency band* means the total amount of frequency spectrum won by a participant in the respective band, specified in the licence issued to the winner of the selection procedure;
- *MFCN* is the acronym for Mobile/Fixed Communications Networks as defined by the Electronic Communications Committee (ECC) of the European Conference of Postal and Telecommunications Administrations (CEPT), which includes IMT (International Mobile Telecommunications)³ networks, as well as other communications networks in the fixed and mobile services;
- *MFCN network in the 3400-3800 MHz band* is an electronic communications network complying with the sections relevant for the 3400-3800 MHz band of the standard EN 301 908, as published by ETSI, as well as with subsequent ETSI standards that are relevant for the use of the 3400-3800 MHz band;
- *RR-ITU* is the 2020 release of the Radio Regulations of the International Telecommunication Union (ITU);
- *ECA* is the acronym for the European Common Table of Frequency Band Allocations, included in ERC Report 25 (release of October 2021, rectified on 7 April 2022) of the Electronic Communications Committee of the European Conference of Postal and Telecommunications Administrations;
- *NTFA* is the acronym for the National Table of Frequency Band Allocations, the Table currently in force being approved by Government Decision no. 376/2020;
- *WRC* is the generic acronym for ITU's world radiocommunication conferences (e.g., WRC-15 stands for the World Radiocommunication Conference organised in 2015).

³ IMT – according to RR-ITU, it includes IMT-2000, IMT-Advanced, IMT-2020 (5G New Radio – 5G NR) systems.

Chapter 2 – FREQUENCY BANDS IN THE SELECTION PROCEDURE

2.1. Overview

The Authority awards usage rights for the frequencies available in the following bands:

- a) 694-790 MHz (the 700 MHz band);
- b) 1427-1517 MHz (the 1500 MHz band);
- c) 2500-2690 MHz (the 2600 MHz band);
- d) 3400-3800 MHz.

The frequency sub-bands available for awarding usage rights by this selection procedure are the following:

- a) 703-733 MHz/758-788 MHz;
- b) 738-753 MHz;
- c) 1452-1492 MHz;
- d) 2550-2570 MHz/2670-2690 MHz;
- e) 3400-3800 MHz.

The frequency spectrum available in the selection procedure is briefly presented in the table below:

Table 2.1 – Frequency resources available in the selection procedure

Frequency band	Available frequencies	Bandwidth	Validity of usage rights*
700 MHz	703-733 MHz/758-788 MHz • 2 x 30 MHz FDD 738-753 MHz • 1x15 MHz SDL	60 MHz FDD 15 MHz SDL	01.01.2023 – 31.12.2042 01.01.2023 - 31.12.2042
1500 MHz	1452-1492 MHz • 1x40 MHz SDL	40 MHz SDL	01.01.2023 – 31.12.2042
2600 MHz	2550-2570 MHz/2670-2690 MHz • 2 x 20 MHz FDD	40 MHz FDD	01.01.2023 – 05.04. 2029
3400-3800 MHz	• 3400-3800 MHz TDD	400 MHz TDD	01.01.2026 – 31.12.2045

*Note: The frequency usage rights awarded, according to the provisions of these Terms of Reference, for a validity period of 20 years, are not extended or renewed as provided in Article 31 (2), respectively in Article 31³ of the Framework-ordinance.

The frequencies available in the above-mentioned bands will be awarded exclusively for national usage, for providing MFCN public electronic communications networks and broadband wireless electronic communications services.

The frequency spectrum included in the selection procedure is organized by categories of frequency blocks (blocks). The table below indicates the block width and the number of blocks available in each category.

Table 2.2. – Frequency organisation by categories and blocks

Category	Frequency band	Block width	Number of blocks
A	700 MHz FDD	2 x 5 MHz	6
B	700 MHz SDL	1 x 5 MHz	3
C	1500 MHz SDL	1 x 5 MHz	8
D	2600 MHz FDD	2 x 5 MHz	4
E	3400-3800 MHz TDD	10 MHz	40

The designation of frequency blocks within each category is detailed in section 4.1.1.

2.2. The 700 MHz band

2.2.1. International regulations

2.2.1.1. Regulations of the International Telecommunication Union

In accordance with the provisions of Art. 5 of the Radio Regulations of the International Telecommunication Union - release 2020 (RR-ITU), in Region 1 of the ITU (which includes Romania) the 694-790 MHz band is allocated on a primary basis to the broadcasting service and to the mobile service, except aeronautical mobile.

In accordance with No. 5.312 of Art. 5 in the RR-ITU, in certain countries – among which Ukraine and Bulgaria – the frequency band 694-790 MHz or portions of it are also allocated to the aeronautical radionavigation service on a primary basis

5.312 - *Additional allocation: in Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, Kazakhstan, Uzbekistan, Kyrgyzstan, Tajikistan, Turkmenistan and Ukraine, the frequency band 645-862 MHz, in Bulgaria the frequency bands 646-686 MHz, 726-758 MHz, 766-814 MHz and 822-862 MHz, and in Poland the frequency band 860-862 MHz until 31 December 2017, are also allocated to the aeronautical radionavigation service on a primary basis. (WRC-15)*

The usage of the 694-790 MHz band for broadcasting has been regulated by the Agreement and the corresponding frequency plan approved in Geneva, in 2006 (GE064). In addition to the Plan on the use of frequencies for broadcasting, GE06 also provides the procedures to be followed in international coordination with services other than broadcasting.

At the World Radiocommunication Conference of 2015 (WRC-15), the 694-790 MHz band was identified for use by IMT⁵ systems.

The usage of the band for the mobile service (except aeronautical mobile) and, respectively, for IMT systems, is regulated by the provisions of No. 5.312A and No. 5.317A:

5.312A - *In Region 1, the use of the frequency band 694-790 MHz by the mobile, except aeronautical mobile, service is subject to the provisions of Resolution **760 (WRC-15)**⁶. See also Resolution **224 (Rev.WRC-15)**⁷. (WRC-15)*

5.317A – *The parts of the frequency band 698-960 MHz in Region 2 and the frequency bands 694-790 MHz in Region 1 and 790-960 MHz in Regions 1 and 3 which are allocated to the mobile service on a primary basis are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) – see Resolutions **224 (Rev.WRC-15)**, **760 (WRC-15)** and **749 (Rev.WRC-15)**, where applicable. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-15)*

⁴ GE06 – Final Acts of the Regional Radiocommunication Conference for planning of the digital terrestrial broadcasting service in parts of Regions 1 and 3, in the frequency bands 174-230 MHz and 470-862 MHz (RR-06), Geneva, 2006.

⁵ IMT – International Mobile Telecommunications, according to RR-ITU.

⁶ RESOLUTION 760 (WRC-15) Provisions relating to the use of the frequency band 694-790 MHz in Region 1 by the mobile, except aeronautical mobile, service and by other services

⁷ RESOLUTION 224 (REV. WRC-15) Frequency bands for the terrestrial component of International Mobile Telecommunications below 1 GHz.

2.2.1.2. Regarding the protection of the broadcasting service, WRC-15 decided that no additional regulations are needed, the GE06 Agreement providing all the necessary procedures for international coordination between IMT and the broadcasting service.

2.2.1.2. European Union regulations

Decision (EU) 2017/899 of the European Parliament and of the Council on the use of the 470-790 MHz frequency band in the Union⁸, published on 17 May 2017, regulates making available the 694-790 MHz band for use by terrestrial systems capable of providing wireless broadband electronic communications services, and lays down a series of obligations thereon for the EU Member States, as follows:

1. By 30 June 2020, Member States shall allow the use of the 700 MHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services under the harmonised technical conditions established by the Commission pursuant to Article 4 of Decision No 676/2002/EC on a regulatory framework for radio spectrum policy in the European Community⁹ (hereafter referred to as the *Radio Spectrum Decision*). Member States may, however, extend the above-mentioned term for up to two years, based on duly justified reasons set out in the Annex to the Decision of the European Parliament and of the Council (EU) 2017/899. The justified reasons for such a delay are limited to:
 - unresolved cross-border coordination issues resulting in harmful interferences;
 - the need to ensure, and the complexity of ensuring, the technical migration of a large amount of the population to advanced broadcasting standards;
 - the financial costs of transition exceeding the expected revenue generated by award procedures;
 - *force majeure*.
2. To allow the use of the 700 MHz frequency band, Member States shall conclude all the necessary cross-border frequency-coordination agreements within the Union.
3. Member States will conduct cross-border coordination activities with third countries (non-EU countries) on the use of frequencies in the 470-790 MHz band both for terrestrial broadcasting services and for wireless broadband electronic communications services.
4. When authorising the use of the 700 MHz band, Member States shall take due account of the need to achieve the target speed (at least 30 Mbp/s both indoors and outdoors) and the quality objectives set out in Article 6(1) of Decision No. 243/2012/EU of the European Parliament and of the Council establishing a multiannual radio spectrum policy programme¹⁰, including coverage in predetermined national priority areas, such as along major land transportation corridors.

Decision (EU) 2017/899 of the European Parliament and of the Council also set out the EU Member States' obligation to adopt and make public, no later than 30 June 2018, their national plan and schedule (*national roadmap*), including detailed steps for fulfilling their obligations on allowing the use and making available the frequency spectrum in the 470-790 MHz band in accordance with the Decision provisions, after consulting all relevant stakeholders.

On EU level, the applicable regulatory framework includes Commission Implementing Decision **(EU) 2016/687** on the harmonisation of the 694-790 MHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services and for flexible national use in the Union, adopted, pursuant to the Radio Spectrum Decision, on 28 April 2016.

Decision (EU) 2016/687 harmonises the technical conditions for the availability and efficient use of the 694-790 MHz frequency band in the Union for terrestrial systems capable of providing wireless broadband electronic communications services.

⁸ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017D0899>

⁹ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32002D0676>

¹⁰ <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32012D0243>

Thus, Decision (EU) 2016/687 designates the frequency bands 703-733 MHz and 758-788 MHz (2x30 MHz) for harmonised usage for terrestrial systems capable of providing wireless broadband electronic communications services in the Union, on a non-exclusive basis. The decision also provides that such designation should be without prejudice to the right of Member States to organise and use their spectrum for public safety and public security purposes and for defence. The frequency bands 703-733 MHz and 758-788 MHz, or a subset thereof, may also be used for PPDR¹¹ radio communications. If PPDR radio communications are implemented in the above-mentioned bands, the relevant technical conditions for wireless broadband electronic communications services in the annex to the Decision will be used.

For the other parts of the 700 MHz band, the Commission Implementing Decision (EU) 2016/687 lays down several options for use which the Member States may choose based on their national needs:

- the 738-758 MHz frequency band (up to 20 MHz of spectrum) may be allotted in full or in part for use by terrestrial systems capable of providing wireless broadband electronic communications services, as a supplementary downlink band (limited to base station emission);
- the paired frequency bands 698-703 MHz and 753-758 MHz (2x5 MHz) and the paired frequency bands 733-736 MHz and 788-791 MHz (2x3 MHz) may be allotted for use in full or in part for PPDR radio communications;
- the paired frequency bands 733-736 MHz and 788-791 MHz (2x3 MHz) may be allotted for use for M2M radio communications, as well;
- the paired frequency bands 694-703 MHz and 733-758 MHz may be allotted for use in full or in part for wireless audio PMSE equipment (such as radio microphones).

Figure 2.1. - Harmonised plan of the 700 MHz band according to Decision (EU) 2016/687

Bands	694-698	698-703	703-733	733-736	736-738	738-743	743-748	748-753	753-758	758-788	788-791	
PPDR 2x3 MHz			UL MFCN	UL PPDR						DL MFCN	DL PPDR	
PPDR 2x5 MHz		UL PPDR							DL PPDR			
M2M 2x3 MHz				UL M2M								DL M2M
SDL 4x5 MHz						DL MFCN SDL						
PMSE	PMSE			PMSE								
Bandwidth (MHz)	4	5	30	3	2	5	5	5	5	30	3	

2.2.1.3. Regulations of the European Conference of Postal and Telecommunications Administrations (CEPT)

On the level of the European Conference of Postal and Telecommunications Administrations (CEPT), the usage of the 700 MHz band is regulated by the following CEPT/ECC¹² Decisions, Recommendations and Reports:

- Decision ECC/DEC/(15)01: Harmonized technical conditions for mobile/fixed communications networks (MFCN) in the band 694-790 MHz including a paired channelling arrangement (2x30 MHz FDD) and an unpaired channelling arrangement (supplementary downlink), approved on 6 March 2015
- Report CEPT 53: Report A from CEPT to the European Commission in response the EC Mandate "to develop harmonised technical conditions for the 694-790 MHz ('700 MHz') frequency band in

¹¹ PPDR – communications for Public Protection and Disaster Relief.

¹² Electronic Communications Committee of The European Conference of Postal and Telecommunications Administrations (CEPT)

the Union for the provision of wireless broadband and other uses in support of EU spectrum policy objectives”, approved on 28 November 2014 by ECC;

- Report CEPT 60: Report B from CEPT to the European Commission in response the EC Mandate “to develop harmonised technical conditions for the 694-790 MHz ('700 MHz') frequency band in the Union for the provision of wireless broadband and other uses in support of EU spectrum policy objectives”, approved on 1 March 2016 by ECC;
- Report CEPT 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” (Adoption of methodology) (Final report of 26 June 2009);
- Recommendation ECC (15)01: Cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1427-1518 MHz, and 3400-3800 MHz (approved on 13 February 2015, amended on 5 February 2016, 14 February 2020, and 10 June 2022) (ECC/REC/(15)01).

The harmonised frequency arrangement and the harmonised technical conditions for the usage of frequencies in the 700 MHz band for MFCN networks are laid down in Decision ECC/DEC/(15)01.

2.2.2. National regulations

According to the NTFA provisions in force, the 694-790 MHz frequency band is allocated to the broadcasting service on a primary basis, the 703-733 MHz and 758-788 MHz bands being designated for operation in FDD mode¹³, by terrestrial systems capable of providing wireless broadband electronic communications services (IMT - International Mobile Telecommunications), and the 738-753 MHz band being designated for usage in SDL¹⁴ mode, by IMT systems.

In accordance with the provisions of Decision (EU)2017/899 of the European Parliament and of the Council, ANCOM a developed and adopted “*The National Roadmap for The Allotment and Future Use of The 470-790 MHz Frequency Band*”¹⁵, a document containing detailed measures planned for the management of the radio spectrum with a view to allotting the 470-790 MHz band, and especially the 694-790 MHz band, as well as the associated regulatory measures.

In this document, ANCOM established that 2 x 30 MHz (6 blocks of 2 x 5 MHz) in the 700 MHz band, i.e. the paired frequency bands 703-733 MHz and 758-788 MHz will be made available for the provision of MFCN networks in FDD operation mode, and that 15 MHz (3 blocks of 5 MHz), i.e. the 738-753 MHz sub-band, will be made available for SDL MFCN, through a competitive selection procedure for awarding the frequency usage rights in these bands, to provide the possibility of using these frequency bands by technologically neutral MFCN networks starting from 30 June 2020.

Furthermore, in the above-mentioned document, ANCOM set out allotting the paired sub-bands 698-703 MHz and 753-758 MHz (2x5 MHz) and the paired sub-bands 733-736 MHz and 788-791 MHz (2x3 MHz), for the deployment of a dedicated BB-PPDR communication network, in addition to the 2x30 MHz available for MFCN networks in the 700 MHz range, which can be partially used to provide BB-PPDR services through the public electronic communications network infrastructure.

Since the process of bilateral coordination with Ukraine with a view to releasing the 700 MHz band from DTT has not been completed yet, the deadline for making available the frequency bands designated for MFCN networks will be extended, so that the frequency usage rights for MFCN networks in the 700 MHz band will enter into force starting from 1 January 2023.

¹³ FDD: Frequency Division Duplex

¹⁴ SDL: Supplemental downlink

¹⁵ http://www.ancom.org.ro/en/uploads/links_files/Foiaia_de_parcuru_pentru_banda_UHF_470-790_MHz_en.pdf

The harmonised frequency arrangement for MFCN networks in the 694-790 MHz band, in accordance with the harmonised arrangement set out in Commission Implementing Decision (EU) 2016/687 is flexible and includes:

- a) a paired frequency arrangement (2x30 MHz FDD):
 - the 703-733 MHz and 758-788 MHz sub-bands will be used in frequency division duplex mode (FDD);
 - the 703-733 MHz sub-band will be used for terminal station emission (uplink);
 - the 758-788 MHz sub-band will be used for base station emission (downlink);
 - the duplex spacing is 55 MHz;
 - the assigned block sizes shall be multiples of 5 MHz;
 - the lower frequency limit of an assigned block shall be aligned with the lower band edge of the sub-band or spaced by multiples of 5 MHz from this edge - i.e., 703 MHz.
- b) an unpaired frequency arrangement (supplemental downlink – SDL), on optional basis:
 - the 738-753 MHz sub-band will be additionally used for downlink only (base station emission);
 - the assigned block sizes shall be in multiples of 5 MHz;
 - the upper frequency limit of an assigned block shall be aligned with the upper band edge of the sub-band or spaced by multiples of 5 MHz from this edge – i.e., 753 MHz.

The 753-758 MHz sub-band will be reserved for the base station emission of the PPDR systems operating in the FDD 698-703 MHz/753-758 MHz sub-bands.

Moreover, the provisions of Decision ECC/DEC/(15)01, on harmonised technical conditions for mobile/fixed communications networks (MFCN) in the band 694-790 MHz, are also applicable.

The frequency arrangement layout for the 700 MHz band harmonized at European level is set out in Annex 1 to Decision ECC/DEC/(15)01 on the harmonised technical conditions for mobile/fixed communications networks (MFCN) in the 694-790 MHz band and is represented below.

All the six 2x5 MHz (FDD) blocks and the three 5 MHz (SDL) blocks in the 738-753 sub-band will be available for assignment for MFCN networks.

Figure 2.2. - Harmonised frequency arrangement in the 694 – 790 MHz band, by 5 MHz blocks

694-703	703-708	708-713	713-718	718-723	723-728	728-733	733-738	738-743	743-748	748-753	753-758	758-763	763-768	768-773	773-778	778-783	783-788	788-791
Guard band	5 MHz (1)	5 MHz (2)	5 MHz (3)	5 MHz (4)	5 MHz (5)	5 MHz (6)		5 MHz (1)	5 MHz (2)	5 MHz (3)		5 MHz (1)	5 MHz (2)	5 MHz (3)	5 MHz (4)	5 MHz (5)	5 MHz (6)	Guard band
9 MHz	Uplink 30 MHz (6 blocks of 5 MHz) FDD						5 MHz	SDL 15 MHz			5 MHz	Downlink 30 MHz (6 blocks of 5 MHz) FDD						3 MHz

The block-edge masks (BEM) to be observed for a 5 MHz block in the 694-790 MHz band have been defined in sections B and C of the Annex to Commission Implementing Decision (EU) 2016/687.

The harmonised frequency arrangement for MFCN in the 700 MHz is detailed in the table below.

Table 2.3. – Harmonised frequency arrangement for MFCN in the 700 MHz band

Frequencies (MHz)	Destination	Operation mode
694 – 703	Guard band + PPDR UL	Guard band
703 – 708	Uplink (block 1) – 5 MHz	(30 MHz) MFCN FDD uplink
708 – 713	Uplink (block 2) – 5 MHz	
713 – 718	Uplink (block 3) – 5 MHz	
718 – 723	Uplink (block 4) – 5 MHz	
723 – 728	Uplink (block 5) – 5 MHz	
728 – 733	Uplink (block 6) – 5 MHz	
733 – 738	PPDR UL + Guard band	Guard band
738 - 743	SDL link (block 1)	(15 MHz) MFCN SDL
743 - 748	SDL link (block 2)	
748 - 753	SDL link (block 3)	
753 - 758	PPDR DL	(5 MHz) PPDR FDD downlink
758 – 763	Downlink (block 1) – 5 MHz	(30 MHz) MFCN FDD downlink
763 – 768	Downlink (block 2) – 5 MHz	
768 – 773	Downlink (block 3) – 5 MHz	
773 – 778	Downlink (block 4) – 5 MHz	
778 – 783	Downlink (block 5) – 5 MHz	
783 – 788	Downlink (block 6) – 5 MHz	
788 - 791	PPDR DL	Guard band

Other relevant technical regulations on the use of frequencies in the 700 MHz for MFCN networks are mentioned in section 3.3.3.2 of Chapter 3, regarding the technical conditions on the use of frequencies for which usage rights will be awarded in this band.

2.2.3. Status of frequency usage rights in the 700 MHz band

The 700 MHz band is already available in Romania, but its use by MFCN networks on the whole national territory without major restrictions depends also on the actual usage of broadcasting services in the neighbouring countries and of other radiocommunications services to which the band is allocated in these countries (both EU Member States and non-EU countries).

The EU Member States had the obligation to release the 694-790 MHz band and to make it available for the provision of wireless broadband electronic communications services by 30 June 2020, with the possibility of extending the deadline by up to two years - for duly justified reasons set out in the Annex to the Decision (EU) 2017/899 of the European Parliament and of the Council. However, 70% of the Romanian border is with non-EU countries, which are not bound by this obligation.

According to the Geneva Agreement of 2006, after 17 June 2015, analogue terrestrial television assignments no longer benefit from protection and cannot claim protection from radiocommunication services allocated on a primary basis in the band planned for digital terrestrial television (DTT), including the 694-790 MHz band.

Therefore, although EU Member States have the obligation to make available the 700 MHz band for MFCN, in non-EU member countries this band may be used by the broadcasting service on a primary basis, but only for DTT (analogue terrestrial television can no longer benefit from protection).

2.2.3.1. Agreements concluded and usage in neighbouring countries

The goal of releasing the 700 MHz band from digital terrestrial television has been approached in several regional groups set up at European level, of which Romania participated in SEDDIF (South

European Digital Dividend International Forum) and BSDDIF (Black Sea Digital Dividend International Forum). These groups have aimed at replanning the digital terrestrial television service in a narrower band than that provided in the Geneva Agreement of 2006, i.e. the 470-694 MHz band. In addition to the criteria of efficiency and fair access to spectrum usage and considering the different degrees of usage of the 700 MHz band in their member countries, these groups have also aimed at ensuring transition to the new plan and releasing the 700 MHz band within a shorter term than that stipulated by Decision (EU) 2017/899 of the European Parliament and of the Council.

This objective has been achieved by the signing of bilateral agreements, alongside the Multilateral Framework Agreement, signed by all the participating countries. In 2017, Romania signed the SEDDIF Multilateral Framework Agreement on the re-planning of digital terrestrial television in the 470-694 MHz band, together with the other 13 member countries, among which Bulgaria, Hungary, Serbia, Turkey and Ukraine. We have also signed bilateral agreements with Bulgaria, Hungary and Serbia (countries with DTT services in the 700 MHz band, at the time). Bulgaria and Serbia undertook to release the 700 MHz band before 30 June 2020, and Hungary – by 6 September 2020. Turkey was using the band for analogue television and was to implement the new DTT plan in the 470-694 MHz band, therefore a bilateral agreement was not necessary.

With Ukraine, negotiations continued in the BSDDIF, since – despite having signed the SEDDIF Multilateral Framework Agreement – this administration could not provide a certain deadline for the release of the 700 MHz band. On the other hand, Ukraine committed itself to observing a timetable regarding the 700 MHz band, by Decision No 1/2021 of the EU-Ukraine Association Committee in Trade Configuration of 22 November 2021¹⁶.

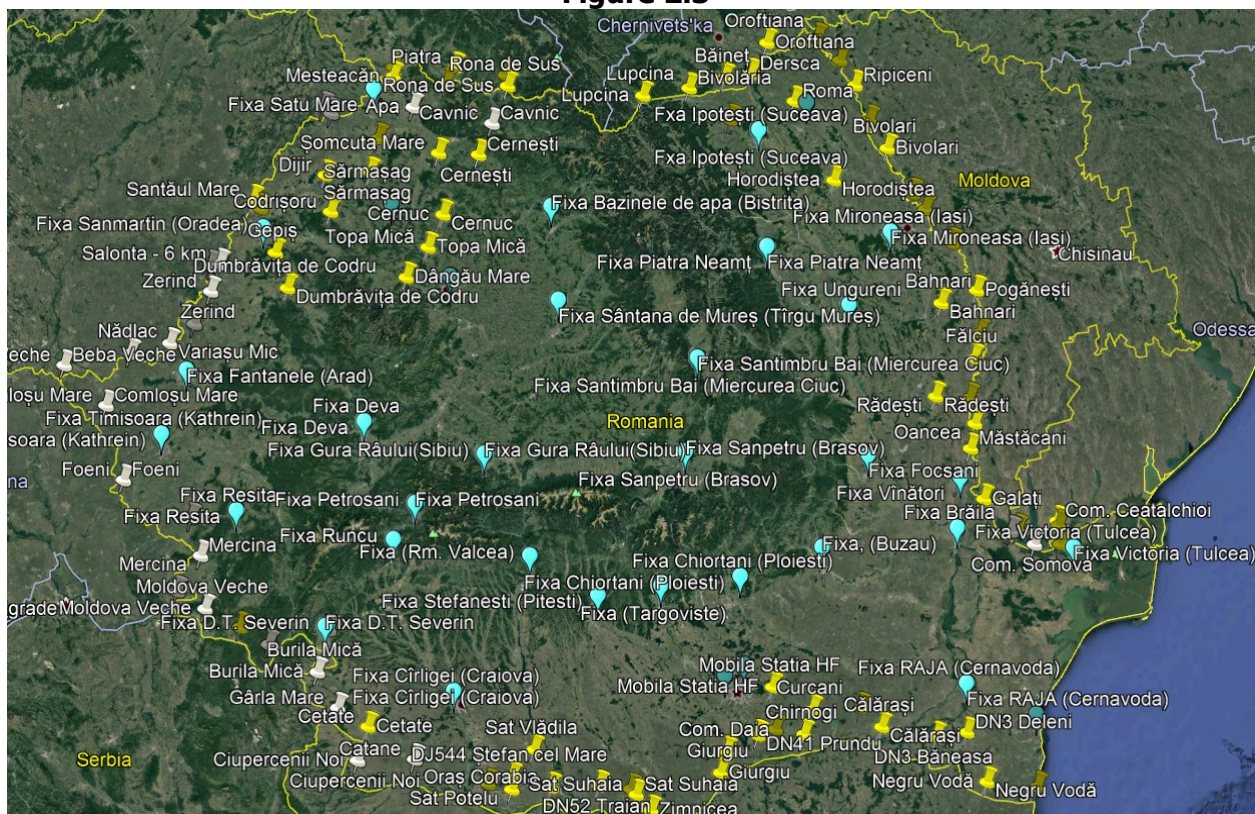
Regarding the situation in the Republic of Moldova, during a bilateral meeting in 2018, the Moldavian representatives stated that the 700 MHz band was used for analogue television at the time, mainly until 1 March 2020, only a few channels being used for digital terrestrial television, on a temporary basis. According to the "Programme for the digital switch-over", the 700 MHz band will be used for the land mobile service.

2.2.3.2. Monitoring the 700 MHz band

During 12 February - 15 April 2019, ANCOM organised a national campaign for monitoring the radio spectrum envisaged in the licencing process for MFCN, including the 700 MHz band. The measurements were performed using both fixed and transportable stations, and mobile monitoring stations, at the locations marked in the figure below.

¹⁶ <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:22021D2219&from=EN>

Figure 2.3



ANCOM identified analogue terrestrial television broadcast emissions coming from Turkey, Bulgaria, the Republic of Moldova and Ukraine, but - as specified in paragraph 4 of section 2.2.3 – these stations do not benefit from protection where harmful interference complaints arise, therefore they have to stop transmission. Concerning the DTT emissions in the 700 MHz band received from the Republic of Moldova, Hungary, Serbia and Bulgaria, they ceased to be protected from September 2020, in accordance with the agreements concluded (see paragraph 2 of section 2.2.3.1.).

We have also identified weak DTT emissions coming from Turkey, with the fixed monitoring station in Constanta only, at a 55 m height of reception antenna, and with insignificant values in terms of their harmful interference effect.

Slovakia, as an EU member country, committed itself - through its national roadmap – to releasing the 700 MHz band by 30.06.2020, and has recently awarded the frequency spectrum in the 700 MHz band for MFCN.

In view of the above, the most difficult situation remains that of DTT emissions originating from Ukraine. At the latest bilateral meeting, held in Riga in December 2018, ANCOM asked Ukraine for a presentation of the actual use of the 700 MHz band by the digital TV transmitters in the areas near the border with Romania. The corroboration of the received data with the status of the stations' notification in BRIFIC¹⁷, and with the data resulting from ANCOM's measurements shows that the DTT transmitters in Ukraine that can affect the operation of the land mobile service in the 700 MHz band are the ones presented in Table 2.4.

Table 2.4. – Relevant DTT transmitters in Ukraine

BR ID	Country	Channel	Frequency	Location	Geographical coordinates	E.R.P.max (dBW)	Hant (m)
112138651	UKR	49	698 MHz	CHERNIVTSI	25°50'39"E - 48°17'47"N	34.7	108
112138670	UKR	51	714 MHz	KULCHYIVTSI 1	26°45'32"E - 48°40'30"N	33	250
115101905	UKR	51	714 MHz	MYKOLAIVKA	30°20'45"E - 46°19'07"N	29.3	75
115101907	UKR	51	714 MHz	SARATA-0	29°39'19"E - 46°00'26"N	28.4	105

¹⁷ <https://www.itu.int/en/ITU-R/terrestrial/brific/Pages/default.aspx>.

BR ID	Country	Channel	Frequency	Location	Geographical coordinates	E.R.P.max (dBW)	Hant (m)
115101908	UKR	51	714 MHz	TARUTYNE	29°09'45"E - 46°11'26"N	17.8	100
112183578	UKR	53	730 MHz	KHUST	23°14'33"E - 48°13'24"N	20	185
112138691	UKR	53	730 MHz	MUKACHEVO	22°45'41"E - 48°25'34"N	26.6	30
112138690	UKR	53	730 MHz	SVALIAVA	22°56'27"E - 48°30'58"N	26.2	48
112138689	UKR	53	730 MHz	UZHGOROD 01	22°17'42"E - 48°39'08"N	29.6	27
112138645	UKR	55	746 MHz	KAMIANske 0	29°17'23"E - 45°49'19"N	30.4	180
112107571	UKR	55	746 MHz	MUKACHEVO	22°45'41"E - 48°25'34"N	26.6	30
112138664	UKR	55	746 MHz	MYKOLAIVKA	30°20'45"E - 46°19'07"N	31	75
112107572	UKR	55	746 MHz	RAKHIV	24°12'30"E - 48°06'32"N	23	99
112138665	UKR	55	746 MHz	SARATA	29°39'11"E - 46°02'00"N	34	100
112183579	UKR	56	754 MHz	KHUST	23°14'33"E - 48°13'24"N	34.3	185
112138692	UKR	56	754 MHz	MUKACHEVO	22°45'41"E - 48°25'34"N	26.6	30
112138693	UKR	56	754 MHz	UZHGOROD 01	22°17'42"E - 48°39'08"N	29.6	27
113028829	UKR	59	778 MHz	CHERNIVTSI-0	25°50'32"E - 48°17'44"N	35	108
108119212	UKR	59	778 MHz	BOLGRAD	28°37'50"E - 45°41'33"N	21.6	100
108119213	UKR	59	778 MHz	VILKOVE	29°33'04"E - 45°25'05"N	10	75
108119214	UKR	59	778 MHz	KILIA	29°17'28"E - 45°25'51"N	10	50
108119215	UKR	59	778 MHz	RENI-0	28°17'18"E - 45°28'17"N	22.4	100
108119216	UKR	59	778 MHz	HORODNE	28°50'27"E - 45°52'44"N	13.3	50
112107575	UKR	60	786 MHz	RAKHIV	24°12'30"E - 48°06'32"N	22.8	99

The monitoring measurements performed by ANCOM confirmed the existence of the DTT transmitters in Table 2.4, with the measured field strength values as produced by these stations in the frequency blocks for MFCN presented in the Monitoring Report on the usage degree of the frequency spectrum in the bands subject to the selection procedure (a document registered within ANCOM under no. DEMC/2418/24.04.2019), published on the ANCOM website along with these Terms of Reference.

The on-site status of emissions in the 700 MHz band received from Ukraine will be updated with the latest measurements available and will be uploaded on the Authority's website, no later than 15 September 2022.

2.3. The 1500 MHz band

2.3.1. International regulations

2.3.1.1. Regulations of the International Telecommunication Union

In accordance with Art. 5 of the RR-ITU in force, in Region 1 of the ITU the 1452-1492 MHz band is allocated on a primary basis to the fixed service, to the mobile service, except aeronautical mobile, to the broadcasting service and to the broadcasting-satellite service.

According to No. 5.342, in certain countries of Region 1 – Ukraine included –, the frequency band 1429-1535 MHz is allocated also to the aeronautical mobile service on a primary basis, exclusively for aeronautical telemetry purposes on the national territory. After 1 April 2007, the use of the frequency band 1452-1492 MHz for aeronautical telemetry is subject to agreement between the administrations involved.

Note 5.342 - Additional allocation: in Armenia, Azerbaijan, Belarus, the Russian Federation, Uzbekistan, Kyrgyzstan and Ukraine, the frequency band 1 429-1 535 MHz is also allocated to the aeronautical mobile service on a primary basis, exclusively for the purposes of aeronautical telemetry within the national territory. As of 1 April 2007, the use of the frequency band 1 452-1 492 MHz is subject to agreement between the administrations concerned. (WRC-12)

The WRC-15 Agenda included the global identification of the 1427-1518 MHz band, and respectively of the 1452-1492 MHz sub-band, for IMT systems in the mobile service.

WRC-15 identified the frequency bands 1427-1452 MHz and 1492-1518 for IMT systems on a global level. In ITU Region 1, including the European Union, bands these frequency bands are allocated, on a primary basis, to the mobile service - except aeronautical mobile - and to the fixed service, as well as to the Earth exploration service (Earth-to-space) (in the band 1427-1429 MHz).

In accordance with the provisions of No. 5.341A of Art. 5 in the RR-ITU, in Region 1, the frequency bands 1 427-1 452 MHz and 1 492-1 518 MHz are identified for use by IMT. This identification does not preclude the use of these frequency bands by any other application of the services to which it is allocated and does not establish priority in the RR-ITU.

The use of IMT stations is subject to agreement obtained under No. 9.21 of RR-ITU with respect to the aeronautical mobile service used for aeronautical telemetry in accordance with No. 5.342 of Art. 5 in the RR-ITU.

The 1452-1492 MHz band was not identified at WRC-15 for IMT systems in the CEPT countries because of opposition from the countries of the Regional Commonwealth in the field of Communications (RCC), which laid down certain conditions for the usage of this band by IMT, for reasons related to the protection of the aeronautical mobile service used for aeronautical telemetry in these countries (in accordance with No. 5.342 of Art. 5 of RR-ITU, providing an additional allocation for the aeronautical mobile service in these countries). Consequently, the identification of the 1452-1492 MHz band for IMT in Region 1 of the ITU is limited to some countries in Africa and the Middle East (according to No 5.346 of Art. 5 of the RR-ITU).

Report ITU-R M.2324¹⁸ contains the results of the sharing studies between potential International Mobile Telecommunication systems and aeronautical mobile telemetry systems in the frequency band 1429-1535 MHz.

The usage of the band 1452-1492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting (DAB), in accordance to the provisions of No. 5.345 of RR-ITU.

Note 5.345 *Use of the band 1 452-1 492 MHz by the broadcasting-satellite service, and by the broadcasting service, is limited to digital audio broadcasting and is subject to the provisions of Resolution 528 (WRC-19)¹⁹.*

2.3.1.2. European Union Regulations

At European level, the usage of the 1500 band is harmonised in accordance with the provisions of Commission 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, amended by Commission Implementing Decision **(EU) 2018/661**, of 26 April 2018²⁰.

Commission Implementing Decision (EU) 2018/661, of 26 April 2018 amends Commission Implementing Decision (EU) 2015/750 by extending the harmonisation of the 1452-1492 MHz band in the 1427-1452 MHz and 1492-1517 MHz frequency bands. It also sets out harmonised conditions for making available and efficiently using the whole 1427-1517 MHz band for terrestrial systems capable of providing electronic communications services in the Union.

¹⁸ Report ITU-R M.2324: Sharing studies between potential International Mobile Telecommunication systems and aeronautical mobile telemetry systems in the frequency band 1 429-1 535 MHz.

¹⁹ This Resolution was revised by WRC-19.

²⁰ The Commission implementing decisions are adopted based on Decision No 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community.

According to the above-mentioned Decision, Member States designate and make available the 1427-1517 MHz band for terrestrial systems capable of providing electronic communications services, on a non-exclusive basis, in accordance with the technical parameters laid down in the Annex to the Decision.

The harmonised frequency arrangement in the 1427-1517 MHz band is presented below:

- the usage the 1427-1517 MHz band is limited to base station emission (downlink only);
- the allotted block sizes in the 1427-1517 MHz band will be multiple of 5 MHz.

The base station emission must comply with the harmonized technical conditions on block edge masks provided in Section B of the Annex to the Commission Implementing Decision 2015/750/EU amended by Commission Implementing Decision (EU) 2018/661.

2.3.1.3. Regulations of the European Conference of Postal and Telecommunications Administrations

According to CEPT regulations, the sub-band 1452-1492 MHz in the 1500 MHz band may be used for the supplemental downlink (SDL) of MFCN networks, whereas terrestrial digital audio broadcasting (T-DAB) and DAB-compatible terrestrial multimedia systems may also operate in the 1452-1479.5 MHz sub-band, on grounds of the Special Arrangement of Maastricht, signed in 2002 and reviewed in 2007. This arrangement also sets out the procedures necessary in the cross-border coordination between T-DAB and wireless broadband electronic communications systems.

The 1452-1479.5 MHz band has been made available for T-DAB in most European countries, in accordance with the CEPT regulations, but T-DAB uptake is poor, and the band is not used in many of these countries.

Therefore, at EU level, the 1452-1492 MHz band was decided to be brought in line with the objective stated in Decision 243/2012/EU of the European Parliament and of the Council, by making available the band for wireless broadband communications services. Nevertheless, the existing terrestrial digital audio broadcasting systems must be protected in the long run, including after the renewal of the licences awarded therefor.

In response to the European Commission Mandate of 19 March 2014, CEPT issued Report CEPT 54 of 28 November 2014, recommending the harmonisation of the 1452-1492 MHz band for ensuring the supplemental downlink for MFCN, and enabling the Member States to use parts of the band according to their domestic specificities (e.g. 1452-1479.5 MHz for terrestrial digital audio broadcasting).

The Report CEPT 54 lays down the fundamental technical conditions and principles necessary in cross-border coordination – including the European Union borders – between wireless broadband electronic communications systems and T-DAB, and aeronautical telemetry services in the 1452-1492 MHz band.

Taking into account the fact that the restrictions that should be imposed on IMT systems to ensure coexistence with aeronautical telemetry systems in the 1429-1535 MHz band, based on ITU-R Report M.2324, seriously limit the development of IMT systems on the territory of countries neighbouring those in which aeronautical telemetry systems operate, on 8 March 2019, CEPT/ECC developed and adopted the ECC Report 295 on the technical criteria for the cross-border coordination of the use of the 1427-1518 MHz band by the IMT systems in the land mobile service and the aeronautical telemetry systems in the aeronautical mobile service installed on the territory of the countries under Note 5.342 of Art. 5 of the RR-ITU. The purpose of the technical report is to provide guidance to administrations with a view to concluding bilateral technical agreements between the countries involved.

At CEPT level, the following CEPT/ECC Decisions, Recommendations and Reports apply as regards the usage of the 1452-1492 MHz band:

- Decision ECC (13)03 on the harmonised use of the frequency band 1452-1492 MHz for Mobile/Fixed Communications Networks Supplemental Downlink (MFCN – SDL), approved on 8 November 2013, amended on 3 July 2015 and 2 March 2018 (ECC/DEC/(13)03);
- ECC Report 202: Out-of-Band emission limits for Mobile/Fixed Communication Networks (MFCN) Supplemental Downlink (SDL) operating in the 1452-1492 MHz band (September 2013);
- ECC Report 227: Compatibility Studies for Mobile/Fixed Communication Networks (MFCN) Supplemental Downlink (SDL) operating in the 1452-1492 MHz band (approved in January 2015);
- ECC Report 269: Least restrictive technical conditions for Mobile/Fixed Communications Networks in 1427-1518 MHz (approved on 17 November 2017, corrected on 2 March 2018);
- 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” (approved on 28 November 2014 by the ECC);
- ECC Report 295 – Guidance on Cross-border coordination between MFCN and Aeronautical Telemetry Systems in the 1429-1518 MHz band, approved on 8 March 2019;
- ECC Recommendation (15)01 of 13 February 2015 on cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1427-1518 MHz, and 3400-3800 MHz (adopted on 13 February 2015, amended on 5 February 2016, 14 February 2020, and 10 June 2022) (ECC/REC/(15)01).

The harmonised frequency arrangement and the harmonised technical conditions for the usage of radio frequencies in the 1500 MHz band for MFCN networks, respectively block edge masks (BEM) and maximum effective isotropic radiated power (EIRP) are provided in Annex 2 of Decision ECC/DEC/(13)03.

2.3.2. National regulations

In accordance with the NTFA provisions, the band 1452-1492 MHz is allocated to the mobile, except aeronautical mobile, service, on a primary basis, and is designated for terrestrial systems capable of providing electronic communications services in accordance with the provisions of the Commission 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, amended by Commission Implementing Decision no. (EU) 2018/661.

The provisions of Decision ECC/DEC/(13)03 on the harmonised use of the frequency band 1452-1492 MHz for Mobile/Fixed Communications Networks Supplemental Downlink (MFCN – SDL) will also be applicable.

The frequency arrangement in the 1452-1492 MHz band for MFCN networks is set in accordance with the arrangement harmonized by the Commission Implementing Decision (EU) 2015/750, amended by European Commission Decision no. (EU) 2018/661.

The base station emission must comply with the harmonized technical conditions on BEM provided in Section B of the Annex to the Commission Implementing Decision 2015/750/EU amended by Commission Implementing Decision (EU) 2018/661.

The layout of the 1452-1492 MHz frequency band arrangement corresponding to the one harmonized at European level - set out in Annex 1 to ECC/DEC/(13)03 - is presented below.

Figure 2.4. - Harmonised frequency arrangement in the 1452-1492 MHz band for SDL, by 5 MHz blocks

1452-1457	1457-1462	1462-1467	1467-1472	1472-1477	1477-1482	1482-1487	1487-1492
5	5	5	5	5	5	5	5
MHz	MHz	MHz	MHz	MHz	MHz	MHz	MHz
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
SDL (base station emission)							
40 MHz (8 blocks of 5 MHz)							

The harmonised frequency arrangement for MFCN in the 1452-1492 MHz band is also detailed in the table below.

Table 2.5. – Harmonised frequency arrangement for MFCN in the 1500 MHz band

Frequencies (MHz)	Destination	Operation mode
1452 - 1457	Downlink (block 1) – 5 MHz	(40 MHz) MFCN SDL
1457 - 1462	Downlink (block 2) – 5 MHz	
1462 - 1467	Downlink (block 3) – 5 MHz	
1467 - 1472	Downlink (block 4) – 5 MHz	
1472 - 1477	Downlink (block 5) – 5 MHz	
1477 - 1482	Downlink (block 6) – 5 MHz	
1482 - 1487	Downlink (block 7) – 5 MHz	
1487 - 1492	Downlink (block 8) – 5 MHz	

Other relevant technical regulations are mentioned in section 3.3.3.3.

2.3.3. Status of frequency usage in the 1452-1492 MHz band

In Romania, the 1452-1492 MHz band is not used by the broadcasting service, nor by the broadcasting-satellite service, being available for use by the IMT systems.

The spectrum resources available for which usage rights are to be awarded in the 1452-1492 MHz band consist of 8 unpaired blocks of 5 MHz each, SDL operation mode.

However, in accordance with No. 5.342 of Art. 5 of the RR-ITU, aeronautical telemetry systems operate in the 1429-1535 MHz band on the territory of Ukraine, for the protection of which cross-border coordination is required with the IMT systems to be operated on the territory of Romania.

Based on the ECC Report 295 mentioned in section 2.3.1.3, the frequency spectrum management authority of Ukraine (UCRF) has prepared and submitted to ANCOM a proposal for a bilateral Technical Arrangement on the use of the 1427-1518 MHz band by terrestrial systems in the border areas of Romania and Ukraine.

According to the Technical Arrangement proposal, the aggregated field strength generated by the MFCN base stations operating in the 1452-1492 MHz band would be limited to 30 dBµV/m/5 MHz, at the border line, 10 m above ground level.

The ANCOM decision on the opportunity to conclude a Technical Arrangement under the conditions

proposed by the Ukrainian side has not been taken yet, but such a bilateral arrangement could be concluded after the selection procedure.

The draft Technical Arrangement submitted by the Ukrainian side will be published on the ANCOM website, along with these Terms of Reference.

2.4. The 2600 MHz band

2.4.1. International regulations

2.4.1.1. Regulations of the International Telecommunication Union

In accordance with the provisions of Art. 5 of the RR-ITU in force, the 2500-2690 MHz band is allocated in Region 1 of the ITU on a primary basis to the fixed service, to the mobile, except aeronautical mobile, service and to the broadcasting-satellite service (the 2520-2690 MHz band).

The 2655-2670 MHz and 2670-2690 MHz sub-bands are also allocated to the Earth exploration-satellite (passive), radio astronomy and Space research (passive) services, on a secondary basis.

The use of the 2500-2690 MHz band for the mobile, except aeronautical mobile, service and respectively for IMT systems is regulated by the provisions of No. 5.384A:

5.384A - *The frequency bands 1 710-1 885 MHz, 2 300-2 400 MHz and 2 500-2 690 MHz, or portions thereof, are identified for use by administrations wishing to implement International Mobile Telecommunications (IMT) in accordance with Resolution **223 (Rev.WRC-15)**. This identification does not preclude the use of these frequency bands by any application of the services to which they are allocated and does not establish priority in the Radio Regulations. (WRC-15)*

2.4.1.2. European Union Regulations

At EU level, the provisions of Commission Implementing Decision **(EU) 2020/636** of 8 May 2020 amending Decision **2008/477/EC** as regards an update of relevant technical conditions applicable to the 2500-2690 MHz frequency band²¹, are applicable.

According to the above-mentioned decision, Member States designate and make available, on a non-exclusive basis, the 2500-2690 MHz band for terrestrial systems capable of providing electronic communications services, with due regard to the parameters set out in the Annex to the respective decision.

The frequency arrangement in the 2500-2690 MHz band, in accordance with Commission Implementing Decision (EU) 2020/636, is the following:

- the duplex spacing for FDD operation shall be 120 MHz, as follows:
 - (i) the frequencies used for terminal station transmission (uplink) are situated in the lower part of the band, from 2500 MHz up to 2570 MHz;
 - (ii) the frequencies used for base station transmission (downlink) are situated in the higher part of the band, from 2620 MHz up to 2690 MHz.
- the 2570-2620 MHz sub-band may be used in TDD mode or in SDL mode (supplemental downlink), only for base station transmission.
- the assigned block sizes shall be multiples of 5 MHz.

BEM emission masks for a 5 MHz block are defined in Annex C of Commission Implementing Decision (EU) 2020/636.

²¹ The Commission Decision was adopted on grounds of the Decision no. 676/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community (Radio Spectrum Decision).

2.4.1.3. Regulations of the European Conference of Postal and Telecommunications Administrations (CEPT)

At CEPT level, in the utilization of the 2600 MHz band, the provisions of the following CEPT/ECC decisions, recommendations and reports are applicable:

- Decision ECC/DEC/(05)05: Harmonised utilization of spectrum for Mobile/Fixed Communications Networks (MFCN) operating in the 2500-2690 MHz band (approved on 18 March 2005, amended on 3 July 2015 and on 5 July 2019, rectified on 4 March 2022);
- ECC Report 045: Sharing and adjacent band compatibility between UMTS/IMT-2000 in the band 2500-2690 MHz and other services (February 2004);
- ECC Report 119: Coexistence between mobile systems in the 2.6 GHz frequency band at the FDD/TDD boundary (June 2008);
- 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 (approved on 5 July 2019);
- ECC Report 308: Analysis of the suitability and update of the regulatory technical conditions for 5G MFCN and AAS operation in the 2500-2690 MHz band (approved on 6 March 2020);
- Recommendation ECC (11)05 on cross-border coordination for Mobile/Fixed Communications Networks (MFCN) in the frequency band 2500-2690 MHz (approved on 26 May 2011, amended on 3 February 2017).

The harmonized frequency arrangement and the harmonised technical conditions on the usage of the 2600 MHz band for MFCN networks, respectively the BEM masks per 5 MHz block are set out in Annexes 1 and 2 of Decision ECC/DEC/(05)05.

2.4.2. National regulations

According to the provisions of the NTFA in force, the frequency band 2500-2690 MHz has a non-governmental usage status and is allocated to the mobile, except aeronautical mobile, service on a primary basis.

Concerning the applications allowed in the 2500-2690 MHz band and the harmonized technical conditions for the use of this band, the provisions of the Commission Implementing Decision (EU) 2020/636 of 8 May 2020 amending Decision 2008/477/EC as regards an update of relevant technical conditions applicable to the 2500-2690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community shall apply.

The electronic communications systems that may use the 2500-2690 MHz band are terrestrial systems that comply with the block edge masks (BEM) set out in the Annex to Decision Commission Implementing Decision (EU) 2020/636. Any available technology that complies with the harmonized technical conditions established by the above-mentioned Decision may be used.

The frequency arrangement in the 2500-2690 MHz band for MFCN networks, in accordance with the frequency arrangement harmonized by Commission Implementing Decision (EU) 2020/636, is the following:

- the 2500-2570 MHz/2620-2690 MHz sub-bands are designated for Frequency Division Duplex (FDD) operation mode;
- the 2500-2570 MHz sub-band is used for terminal station transmission and base station reception (uplink);
- the 2620-2690 MHz sub-band is used for base station transmission and terminal station reception (downlink);

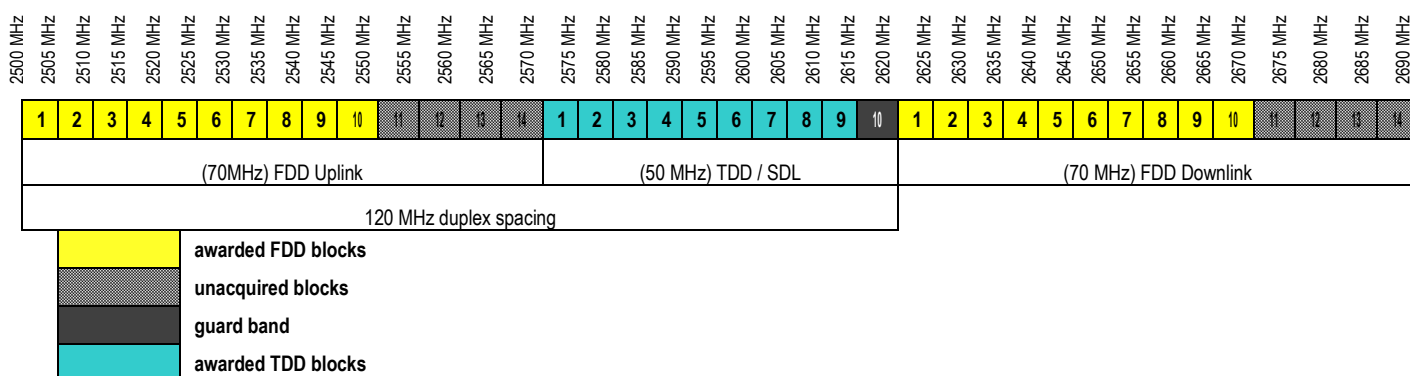
- the duplex spacing is 120 MHz;
- the 2570-2620 MHz sub-band is designated for Time Division Duplex (TDD) operation mode or for supplemental downlink (SDL);
- the assigned blocks sizes shall be in multiples of 5 MHz.

Moreover, the provisions of Decision ECC/DEC/(05)05 on the harmonised utilization of spectrum for Mobile/Fixed Communications Networks (MFCN) operating in the 2500-2690 MHz band, approved on 18 March 2005 and amended on 5 July 2019 are applicable for this band.

The layout for the European harmonized frequency arrangement in the 2600 MHz band is set out in Decision ECC/DEC/(05)05 on the harmonised utilization of spectrum for Mobile/Fixed Communications Networks (MFCN) operating in the 2500-2690 MHz band and is represented in the diagram below.

The diagram also highlights the 5 MHz blocks awarded and the blocks remaining unacquired in the 2012 and 2021 auctions.

Figure 2.5. - Harmonised frequency arrangement in the 2500 – 2690 MHz band, by 5 MHz blocks



The harmonised frequency arrangement for MFCN in the 2600 MHz band, detailed by the awarded and respectively the still available blocks, on national level, is presented in the table below:

Table 2.6. – Frequency arrangement harmonised for MFCN in the 2600 MHz band

Frequencies (MHz)	Destination	Operation mode
2500 – 2505	Uplink (block 1) – 5 MHz (awarded)	(70 MHz) FDD uplink
2505 – 2510	Uplink (block 2) – 5 MHz (awarded)	
2510 – 2515	Uplink (block 3) – 5 MHz (awarded)	
2515 – 2520	Uplink (block 4) – 5 MHz (awarded)	
2520 – 2525	Uplink (block 5) – 5 MHz (awarded)	
2525 – 2530	Uplink (block 6) – 5 MHz	

Frequencies (MHz)	Destination	Operation mode
	(awarded)	
2530 – 2535	Uplink (block 7) – 5 MHz (awarded)	
2535 – 2540	Uplink (block 8) – 5 MHz (awarded)	
2540 – 2545	Uplink (block 9) – 5 MHz (awarded)	
2545 – 2550	Uplink (block 10) – 5 MHz (awarded)	
2550 – 2555	Uplink (block 11) – 5 MHz (available)	
2555 – 2560	Uplink (block 12) – 5 MHz (available)	
2560 – 2565	Uplink (block 13) – 5 MHz (available)	
2565 – 2570	Uplink (block 14) – 5 MHz (available)	
2570 – 2585	Block 1 TDD – 15 MHz (awarded)	(45 MHz) TDD
2585 – 2600	Block 2 TDD – 15 MHz (awarded)	
2600 – 2615	Block 3 TDD – 15 MHz (awarded)	
2615 – 2620	Guard band – 5 MHz	Guard band
2620 – 2625	Downlink (block 1) – 5 MHz (awarded)	(70 MHz) FDD downlink
2625 – 2630	Downlink (block 2) – 5 MHz (awarded)	
2630 – 2635	Downlink (block 3) – 5 MHz (awarded)	
2635 – 2640	Downlink (block 4) – 5 MHz (awarded)	
2640 – 2645	Downlink (block 5) – 5 MHz (awarded)	
2645 – 2650	Downlink (block 6) – 5 MHz (awarded)	
2650 – 2655	Downlink (block 7) – 5 MHz (awarded)	
2655 – 2660	Downlink (block 8) – 5 MHz (awarded)	
2660 – 2665	Downlink (block 9) – 5 MHz (awarded)	
2665 – 2670	Downlink (block 10) – 5 MHz (awarded)	
2670 – 2675	Downlink (block 11) – 5 MHz (available)	
2675 – 2680	Downlink (block 12) – 5 MHz (available)	
2680 – 2685	Downlink (block 13) – 5 MHz (available)	
2685 – 2690	Downlink (block 14) – 5 MHz (available)	

Other relevant technical regulations are mentioned in section 3.3.3.4.

2.4.3. Status of frequency usage licencing in the 2600 MHz band

In the 2600 MHz band, the frequency usage rights' status is presented below:

- a) in the **2500-2570 MHz/2620-2690 MHz (FDD)** sub-bands:
 - Telekom Mobile holds usage rights for 2 frequency blocks of 2 x 5 MHz each - i.e., 2 x 10 MHz bandwidth;
 - Orange holds usage rights for 4 frequency blocks of 2 x 5 MHz each - i.e., 2 x 20 MHz bandwidth;
 - RCS&RDS holds frequency usage rights for 4 frequency blocks of 2 x 5 MHz each - i.e., 2 x 20 MHz bandwidth.
- b) in the 2570-2615 MHz (TDD) sub-band:
 - RCS&RDS holds frequency usage rights for 3 frequency blocks of 15 MHz each - i.e., 45 MHz bandwidth.

The above-mentioned usage rights were acquired following the competitive selection procedure for awarding frequency usage rights organised by ANCOM in 2012 and in 2021.

The validity period of the licences awarded to the three operators in this band ends on 05 April 2029.

The spectrum portfolios currently held by the mobile network operators in the 2600 MHz band are presented in the table below.

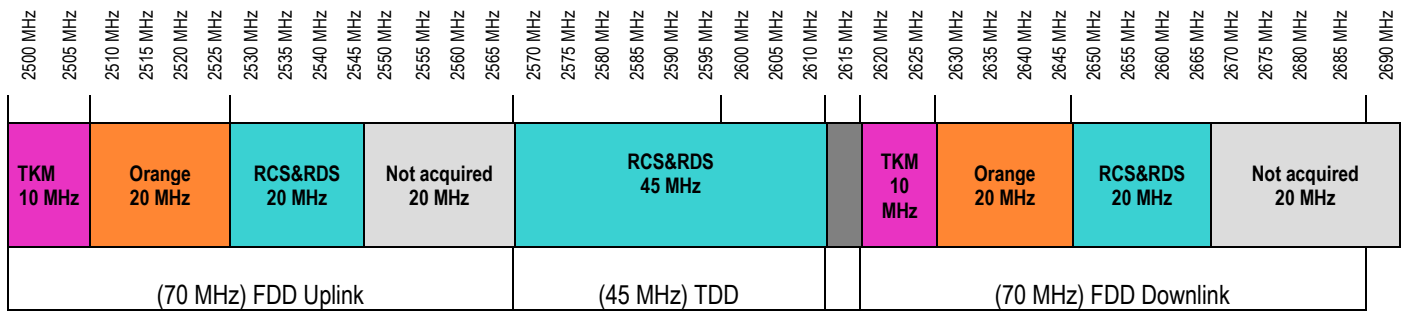
Table 2.7. – Current status of the licenced frequency spectrum in the 2600 MHz band

Licence holder	Amount of spectrum awarded by licence	Frequency sub-bands awarded	Validity period
TELEKOM MOBILE	2 x 10 MHz	2500-2510 MHz/2620-2630 MHz	06.04.2014 – 05.04.2029
ORANGE	2 x 20 MHz	2510-2530 MHz/2630-2650 MHz	06.04.2014 – 05.04.2029
RCS&RDS	1 x 30 MHz	2570-2600 MHz	06.04.2014 – 05.04.2029
RCS&RDS	2 x 20 MHz	2530-2550 MHz/2650-2670 MHz	01.01.2022 – 05.04.2029
RCS&RDS	1x15 MHz	2600 – 2615 MHz	01.01.2022 – 05.04.2029

Therefore, in the 2600 MHz band, ANCOM awarded 10 blocks of 2 x 5 MHz out of the 14 blocks available, **4 blocks of 2 x 5 MHz** remaining unacquired. The paired frequency sub-bands corresponding to the remaining 4 blocks of 2 x 5 MHz in the 2600 MHz FDD band are: **2550-2570 MHz/2670-2690 MHz**.

The status of the frequency usage rights in the 2600 MHz band, highlighting the positions of licence holders allotments within the band, is presented below:

**Figure 2.6. – Current status of the frequency usage rights in the 2600 MHz band
- as valid from 09.06.2021 to 05.04.2029 -**



*TKM – Telekom Mobile

In Romania, the frequency spectrum available for which usage rights are awarded in the 2600 MHz band consists of two contiguous blocks of 20 MHz (2 x 20 MHz) in the paired frequency sub-bands **2550-2570 MHz/2670-2690 MHz**, i.e. **4 duplex channels (FDD)** of **2 x 5 MHz** each.

The operation mode will be exclusively FDD in the paired 2550-2570 MHz/2670-2690 MHz sub-bands. The duplex spacing is 120 MHz.

The paired FDD sub-bands will be used according to the harmonised arrangement:

- the 2550-2570 MHz sub-band for base station reception;
- the 2670-2690 MHz sub-band for base station transmission.

2.5. The 3400-3800 MHz band

2.5.1. International regulations

2.5.1.1. Regulations of the International Telecommunication Union

For the frequency band 3400-3600 MHz, in Region 1 (where Romania is included), Art. 5 of RR-ITU provides several allocations, as follows:

- allocations on a primary basis for the radiocommunication services: fixed, fixed-satellite (space-to-Earth) and mobile (except aeronautical mobile);
- allocations on a secondary basis for the radiolocation service.

Footnote No. 5.430A (WRC-15) - relevant for the above-mentioned mobile service - provides that the allocation of this frequency band to the mobile, except aeronautical mobile, service is subject to prior cross-border coordination on the use of frequencies with the potentially affected administrations. Within the same footnote, the 3400-3600 MHz frequency band is identified for systems in the International Mobile Telecommunications (IMT) family.

The footnote also includes a set of restrictive technical conditions for base stations and mobile stations (operating in the mobile service) emissions, conditions which are relevant in the process of coordination with Earth stations of other potentially affected administrations, aimed at protecting Earth stations reception in the fixed-satellite service. In addition, stations operating in the mobile service in this band benefit from limited protection from emissions of the space stations of the fixed-satellite service.

For the 3600-4200 MHz frequency band (which includes the 3600-3800 MHz band, relevant for this document), in Region 1 (where Romania is included), Art. 5 of RR-ITU provides several allocations, as follows:

- allocations on a primary basis for the radiocommunication services: fixed, fixed-satellite (space-to-Earth);
- allocation on a secondary basis for the mobile service.

2.5.1.2. European Union Regulations

The European Commission issued Decision 2008/411/EC 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, which was implemented in Romania's NTFA.

Commission Implementing Decision 2014/276/EU of 2 May 2014 amends Decision 2008/411/EC, updating its Annex (containing technical provisions on the usage of the above-mentioned band). Based on Commission Implementing Decision 2014/276/EU, ANCOM carried out the selection procedure for the 3400-3800 MHz band in 2015 and awarded the usage rights currently in force in this frequency band.

In 2019, Commission Implementing Decision (EU) 2019/235 amending Decision 2008/411/EC with an update of relevant technical conditions applicable to the 3400-3800 MHz frequency band has been adopted. This new decision amends, once again, the annex to the initial decision. The most important amendment provides the mandatory character of the TDD arrangement in the 3400-3600 MHz, as well, thus removing the possibility of choosing among two channel arrangements (FDD and TDD) for this frequency band, which had been previously allowed (by Decision no. 2008/411/EC, amended by Commission Implementing Decision 2014/276/EU).

Moreover, Directive (EU) 2018/1972 of the European Parliament and of the Council of 11 December 2018 establishing the European Electronic Communications Code sets out the deadline of 31 December 2020 for implementing the new technical provisions on the use of the 3400-3800 MHz frequency band, as laid down in Annex to Commission Implementing Decision (EU) 2019/235.

Commission Implementing Decision (EU) 2019/235 has been implemented in Romania by refarming the 3400-3600 MHz band in 2019 (converting the FDD channel arrangement to a TDD channel arrangement) and by amending the existing licences in the 3400-3800 MHz band, in 2019 and 2020.

2.5.1.3. Regulations of the European Conference of Postal and Telecommunications Administrations

According to ECA, the allocations harmonized at CEPT level for the 3400-3600 MHz band are as follows:

- primary allocations for the following radiocommunications services: fixed, fixed-satellite (space-to-Earth), mobile (except aeronautical mobile),
- allocations on a secondary basis for the amateur and radiolocation services.

The ECA stipulates that the allocations for the two services with secondary status are limited, at the upper edge, to 3410 MHz. Thus, in the 3400-3410 MHz sub-band, the ECA accepts, on a secondary basis, civilian and military radiolocation applications (as an extension of the primary allocation for the radiolocation service in the 3300-3400 MHz band) and amateur applications.

The fact that the 3400-3410 MHz band has a secondary allocation, by the ECA, for civil or military radiocommunications applications does not imply that the respective (civilian or military) radiolocation equipment is actually in operation in the above-mentioned sub-band, the carrier frequencies for such applications being situated below 3400 MHz.

For the entire 3400-3600 MHz band, the ECA recommends that the following harmonised applications can be implemented, according to the options of the CEPT member countries and taking into account their national context:

- MFCN (mobile/fixed communications networks) applications, based on the decision ECC/DEC/(11)06 (amended on 14 March 2014 and 26 October 2018), and on the recommendations ECC/REC/(15)01 (amended on 5 February 2016, 14 February 2020, and 10 June 2022) and ECC/REC/(20)03 and ECC/REC/(21)02; the ECA also recognizes the use of this band for IMT applications, based on the RR-ITU (see the above-mentioned footnote);
- fixed-satellite applications (Earth stations);
- generic UWB applications, based on the following CEPT regulations: ECC/DEC/(06)04, ECC/REC/(11)09, ECC/REC/(11)10;
- PMSE applications; these applications consist of occasional transmissions for the production of audio-visual materials for radio and TV outside studios) and include ENG-OB applications (consisting of temporary, occasional transmissions to studios, of reportages, news, shows, cultural/sports events and other audio-visual materials produced outside studios).

According to ECA, the allocations harmonized at CEPT level for the 3600-3800 MHz frequency band are as follows:

- allocations on a primary basis for radiocommunication services: fixed, fixed-satellite (space-to-Earth), mobile;
- there are no secondary allocations in this frequency band.

For the 3600-3800 MHz band, the ECA recommends that the following harmonized applications can be implemented, according to the options of CEPT member countries and their national context:

- MFCN (mobile/fixed communications networks) applications, based on Decision no. ECC/DEC/(11)06 (amended on 14 March 2014 and 26 October 2018) and on the recommendations ECC/REC/(15)01 (amended on 5 February 2016, 14 February 2020 and 10 June 2022), ECC/REC/(20)03 and ECC/REC/(21)02;
- medium/high capacity point-to-point fixed links (based on Recommendation ERC/REC 12-08), within the 3600-4200 MHz band;
- fixed satellite applications (Earth stations), with priority for civil networks, within the 3600-4200 MHz band;
- Earth Stations on Vessels (ESV) (based on Decision No. ECC/DEC/(05)09) within the 3700-4200 MHz band;

- generic UWB applications based on the following CEPT regulations: ECC/DEC/(06)04, ECC/REC/(11)09, ECC/REC/(11)10.

Therefore, for MFCN networks in the 3400-3800 MHz band the following CEPT technical regulations apply:

- Decision ECC/DEC/(11)06 on Harmonised frequency arrangements and least restrictive technical conditions (LRTC) for mobile/fixed communications networks (MFCN) operating in the band 3400-3800 MHz, as adopted on 09 December 2011 and modified on 14 March 2014 and 26 October 2018;
- Recommendation ECC/REC/(19)01 on cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1427-1518 MHz and 3400-3800 MHz, adopted on 13 February 2015 and amended on 5 February 2016, 14 February 2020 and 10 June 2022;
- Recommendation ECC/REC/(20)03 on frame structures to facilitate cross-border coordination of TDD MFCN in the frequency band 3400-3800 MHz, adopted on 23 October 2020;
- Recommendation ECC/REC/(21)02 on Guidance on the application of the least restrictive technical conditions (LRTC) in ECC Decision (11)06 (release of October 2018) to ensure protection of the military radiolocation systems operating below 3400 MHz from indoor non-AAS small cells operating in the band 3400-3800 MHz, adopted on 5 November 2021.

2.5.2. National regulations

In the NTFA currently in force, the primary allocations for the 3400-3600 MHz and 3600-3800 bands coincide with those in the ECA Table, excepting the fixed-satellite service (Earth-to-space), which may be used on a secondary basis in Romania, in the 3400-3800 MHz band. No other uses on a secondary basis are provided in this band.

Regarding the ECA recommendations on the possible applications in the 3400-3600 MHz band, in Romania, the applications that can be implemented coincide with those in the ECA Table, except for PMSE applications or applications in the amateur service, which cannot be implemented according to the NTFA in force.

Regarding the ECA recommendations on the possible applications in the 3600-3800 MHz band, in Romania, the applications that can be implemented coincide with those in the ECA Table, except for medium-/high-capacity point-to-point fixed links, which cannot be implemented below 3800 MHz, according to the NTFA in force.

Under the current NTFA, the entire 3400-3600 MHz band has a non-governmental usage status (NG status).

The NTFA stipulation of the upper limit for aeronautical radars at 3410 MHz does not imply that the respective (civilian or military) radiolocation equipment is actually in operation in the above-mentioned sub-band, the carrier frequencies for such applications being situated below 3400 MHz.

In accordance with the NTFA in force, the 3600-3800 MHz band is allocated as follows:

- the 3600-3645 MHz sub-band for non-governmental (NG) use;
- the 3645-3655 MHz sub-band for shared G(A)/NG use;
- the 3655-3700 MHz sub-band for shared G/NG use;
- the 3700-3800 MHz sub-band for non-governmental (NG) use.

The allocations of the different frequency sub-bands in the 3600-3800 MHz band (specified above) are valid until 31 December 2025. After that date, the entire 3600-3800 MHz band will be allocated for NG use.

2.5.3. Status of frequency usage in the band

Until 2019, frequency usage in the 3400-3800 MHz band in Romania had been regulated by the CEPT Decision ECC/DEC/(11)06 on harmonised frequency arrangements and least restrictive technical conditions (LRTC) for mobile/fixed communications networks (MFCN) operating in the bands 3400-3600 MHz and 3600-3800 MHz, as adopted on 09 December 2011 and modified on 14 March 2014.

Decision 2014/276/EU, 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, allowed both channel arrangement options (based on FDD, respectively on TDD technology) in the 3400-3600 MHz band and only a TDD arrangement in the 3600-3800 MHz band.

In the 3400-3800 MHz band, only usage rights for the provision of national public electronic communications networks are in force.

At present, in Romania, there are no licences containing frequency assignments for radiocommunication stations in the fixed-satellite service in the frequency band 3400-3800 MHz.

All licences were granted for the provision of public MFCN networks and electronic communications services at national level. The licences were issued with the observance of the principles of technological neutrality as regards both the services provided and the technology used for MFCN applications.

Upon the adoption of 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, the TDD arrangement became mandatory in the 3400-3600 MHz band, as well.

In this context, during 2019, ANCOM carried out and completed the process of refarming frequency usage in this band, thus taking the necessary preliminary measures to ensure a smooth, efficient and timely transition from one channel arrangement to another, while ensuring the uninterrupted provision service provision for the end-users within the networks operated in the 3400-3600 MHz band by the licence holders concerned.

Thus, a transition period was set - until end-2019, and subsequently extended until the end of 2020 -, during which the holders of licences in force in the band 3400-3600 MHz could use - under the restrictive conditions specified in the licenses amended by ANCOM as part of the above-mentioned process - the allotted frequency sub-bands in both channel arrangements. After the transition period, the allotted frequency sub-bands, as resulted from the frequency spectrum refarming, are used exclusively in TDD arrangement.

A snapshot of the usage status of the 3400-3800 MHz band, based on the results of the 2015 selection procedure, the subsequent transferring of usage rights, and also following the 2021 selection procedure and the above-mentioned regulations is presented in the table below:

Table 2.8 – Status of frequency usage licences in the entire 3400-3800 MHz band

HOLDER	APPLICATIONS	Spectrum amount under licence	Frequency band	Validity term	Total spectrum held
INVITE SYSTEMS	MFCN	5 MHz	3.4-3.6 GHz	31 December 2025	5 MHz
VODAFONE	MFCN	40 MHz	3.4-3.6 GHz	31 December 2025	40 MHz
ORANGE	MFCN	70 MHz	3.4-3.6 GHz	31 December 2025	70 MHz
ORANGE	MFCN	45 MHz	3.6-3.8 GHz	31 December 2025	45 MHz
RCS&RDS	MFCN	50 MHz	3.6-3.8 GHz	31 December 2025	50 MHz
SN Radiocomunicații	MFCN	50 MHz	3.6-3.8 GHz	31 December 2025	50 MHz
government networks	MFCN	---	3.6-3.8 GHz	31 December 2025	55 MHz

The actual position of the frequency sub-bands currently allotted in the 3400-3600 MHz band, as resulted from the spectrum refarming of the frequency band, following the switch from the FDD arrangement to the TDD arrangement, and the 2021 selection procedure, is presented in the table below.

Table 2.9. – Actual position of the allotted frequency channels included in the licences currently in force in the 3400-3600 MHz band

Channel limits (MHz)	Licence holder or usage
3400-3405	available at national level
3405-3410	available at national level
3410-3415	available at national level
3415-3420	available at national level
3420-3425	available at national level
3425-3430	available at national level
3430-3435	available at national level
3435-3440	available at national level
3440-3445	available at national level
3445-3450	available at national level
3450-3455	available at national level
3455-3460	available at national level
3460-3465	available at national level
3465-3470	available at national level
3470-3475	available at national level
3475-3480	available at national level
3480-3485	available at national level
3485-3490	INVITE SYSTEMS
3490-3495	VODAFONE
3495-3500	VODAFONE
3500-3505	VODAFONE
3505-3510	VODAFONE
3510-3515	VODAFONE
3515-3520	VODAFONE
3520-3525	VODAFONE
3525-3530	VODAFONE
3530-3535	ORANGE
3535-3540	ORANGE
3540-3545	ORANGE
3545-3550	ORANGE
3550-3555	ORANGE
3555-3560	ORANGE
3560-3565	ORANGE
3565-3570	ORANGE
3570-3575	ORANGE
3575-3580	ORANGE
3580-3585	ORANGE
3585-3590	ORANGE
3590-3595	ORANGE
3595-3600	ORANGE

The spectrum amount unoccupied in the 3400-3600 MHz band is **85 MHz (TDD)**, in the **3400-3485 MHz** sub-band.

The actual position of the frequency sub-bands that are currently allotted to licence holders in the 3600-3800 MHz band, including the spectrum amounts held by government users, is presented in the following table:

Table 2.10. – Actual position of the allotted frequency channels included in the licences currently in force in the 3600-3800 MHz band

Channel limits (MHz)	Licence holder or usage
3600-3605	ORANGE
3605-3610	ORANGE
3610-3615	ORANGE
3615-3620	ORANGE
3620-3625	ORANGE
3625-3630	ORANGE
3630-3635	ORANGE
3635-3640	ORANGE
3640-3645	ORANGE
3645-3650	government networks
3650-3655	government networks
3655-3660	government networks
3660-3665	government networks
3665-3670	government networks
3670-3675	government networks
3675-3680	government networks
3680-3685	government networks
3685-3690	government networks
3690-3695	government networks
3695-3700	government networks
3700-3705	RCS&RDS
3705-3710	RCS&RDS
3710-3715	RCS&RDS
3715-3720	RCS&RDS
3720-3725	RCS&RDS
3725-3730	RCS&RDS
3730-3735	RCS&RDS
3735-3740	RCS&RDS
3740-3745	RCS&RDS
3745-3750	RCS&RDS
3750-3755	SN Radiocomunicații
3755-3760	SN Radiocomunicații
3760-3765	SN Radiocomunicații
3765-3770	SN Radiocomunicații
3770-3775	SN Radiocomunicații
3775-3780	SN Radiocomunicații
3780-3785	SN Radiocomunicații
3785-3790	SN Radiocomunicații
3790-3795	SN Radiocomunicații
3795-3800	SN Radiocomunicații

2.5.4. Future frequency usage in the band

The future usage of the frequencies in this band – starting from 1 January 2026, as valid from 1 January 2020 – is presented below.

In the competitive selection procedure for awarding frequency usage rights in multiple bands for the provision of broadband electronic communications networks and services, the usage rights in the 3400-3800 MHz band will be awarded for a twenty-year period, including for sub-bands that could be allotted anywhere in the 3400-3800 MHz band, starting from 01 January 2026 to 31 December 2045.

In accordance with the provisions of the 3400-3800 MHz Strategy and of the *Position Paper on awarding rights of use for the spectrum resources available in the frequency bands 694-790 MHz, 790-862 MHz, 1427-1517 MHz, 2500-2690 MHz, 3400-3800 MHz and 24.25- 27.5 GHz*, in the 3400-

3800 MHz band, frequency usage rights will be awarded for the provision of public electronic communications networks at a national level. Therefore, the frequency sub-bands acquired by the participants in the selection procedure will be allotted at a national level only.

Licence holders will take due account of the fact that ANCOM will award the frequency sub-bands by adjacency, without providing for dedicated guard bands, these being included in the sub-bands to be awarded to licence holders. Consequently, all licence holders must ensure radioelectric compatibility with the networks operating in sub-bands that are adjacent to those included in their licence.

Therefore, ANCOM highlights for those who intend to participate in the selection procedure that due account shall be taken of the mentions stated above, when deciding the amount of spectrum that they intend to acquire in the 3400-3800 MHz frequency band.

The frequency usage licences to be awarded in the 3400-3800 MHz band following the selection procedure will contain provisions regarding:

- a) the inclusion of guard bands - as to the networks operating in adjacent sub-bands - within the sub-bands in the licence;
- b) flexibility in the holders' management of the frequency sub-bands under their licence - i.e., with a view to setting central frequencies for channels of various bandwidths within such a sub-band, licence holders may derogate from the specifications regarding the channel arrangement mentioned in their licences, on the condition that they observe the limits of the sub-bands allotted by licence;
- c) technological neutrality, the only limitation referring to the application type allowed for implementation, i.e. MFCN networks for the provision of wireless broadband electronic communications services (WBB ECS).

Regarding MFCN networks considered in this selection procedure, for the entire 3400-3800 MHz band, the previously-mentioned Decision ECC/DEC/(11)06 is currently applicable at CEPT level, for the entire 3400-3800 MHz band.

At EU level, on 08 February 2019 *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* was published.

This new decision amends, once again, the annex to the initial decision, containing technical provisions on the usage of the above-mentioned band.

Starting from 1 January 2020, the harmonised technical conditions on the usage of the 3400-3800 MHz band are those adopted by the above-mentioned Commission Implementing Decision (EU) 2019/235.

In accordance with the provisions of the Position Paper, the type of channel arrangement used in Romania in the 3400-3800 MHz band, from 1 January 2020, is exclusively TDD arrangement.

Starting 2020, the electronic communications systems that can operate in the 3400-3800 MHz band will be those systems that comply with the following:

- the provisions of the Position Paper regarding the channel arrangement for the respective band,
- the block edge masks (BEM) as to the respective block, set out in the Annex to the Commission Decision 2008/411/EC amended by Commission Implementing Decision 2014/276/EU and by Commission Implementing Decision (EU) 2019/235.

Any available technology in compliance with the Position Paper and with the technical conditions stipulated in the above-mentioned decisions may be used.

The TDD arrangement in the 3400-3800 MHz band consists of 5 MHz channels. Larger radio channels can also be used by joining adjacent 5 MHz channels.

The entire 3400-3800 MHz band will be available for use, the useful bandwidth of the band being up to 400 MHz (80 unpaired 5 MHz channels), since - within this frequency band - the TDD

arrangement does not require a duplex gap and side guard bands as to the adjacent (lower and upper) bands, according to CEPT Decision ECC/DEC/(11)06 (2018 release) and to Commission Implementing Decision (EU) 2019/235.

The channel arrangement in the 3400-3800 MHz band, currently in force at European level, and valid in Romania also from 1 January 2020, is available in Annex 1 to ECC/DEC/(11)06 (2018 release).

The channel arrangement in force in the 3400-3800 MHz band, starting from 1 January 2020, is presented in the table below:

Table 2.11. – Channel arrangement for the 3400-3800 MHz band, valid from 1 January 2020

Channel limits (MHz)	Destination
3400-3405	TDD channel (channel 1) – 5 MHz
3405-3410	TDD channel (channel 2) – 5 MHz
3410-3415	TDD channel (channel 3) – 5 MHz
3415-3420	TDD channel (channel 4) – 5 MHz
3420-3425	TDD channel (channel 5) – 5 MHz
3425-3430	TDD channel (channel 6) – 5 MHz
3430-3435	TDD channel (channel 7) – 5 MHz
3435-3440	TDD channel (channel 8) – 5 MHz
3440-3445	TDD channel (channel 9) – 5 MHz
3445-3450	TDD channel (channel 10) – 5 MHz
3450-3455	TDD channel (channel 11) – 5 MHz
3455-3460	TDD channel (channel 12) – 5 MHz
3460-3465	TDD channel (channel 13) – 5 MHz
3465-3470	TDD channel (channel 14) – 5 MHz
3470-3475	TDD channel (channel 15) – 5 MHz
3475-3480	TDD channel (channel 16) – 5 MHz
3480-3485	TDD channel (channel 17) – 5 MHz
3485-3490	TDD channel (channel 18) – 5 MHz
3490-3495	TDD channel (channel 19) – 5 MHz
3495-3500	TDD channel (channel 20) – 5 MHz
3500-3505	TDD channel (channel 21) – 5 MHz
3505-3510	TDD channel (channel 22) – 5 MHz
3510-3515	TDD channel (channel 23) – 5 MHz
3515-3520	TDD channel (channel 24) – 5 MHz
3520-3525	TDD channel (channel 25) – 5 MHz
3525-3530	TDD channel (channel 26) – 5 MHz
3530-3535	TDD channel (channel 27) – 5 MHz
3535-3540	TDD channel (channel 28) – 5 MHz
3540-3545	TDD channel (channel 29) – 5 MHz
3545-3550	TDD channel (channel 30) – 5 MHz
3550-3555	TDD channel (channel 31) – 5 MHz
3555-3560	TDD channel (channel 32) – 5 MHz
3560-3565	TDD channel (channel 33) – 5 MHz
3565-3570	TDD channel (channel 34) – 5 MHz
3570-3575	TDD channel (channel 35) – 5 MHz
3575-3580	TDD channel (channel 36) – 5 MHz
3580-3585	TDD channel (channel 37) – 5 MHz
3585-3590	TDD channel (channel 38) – 5 MHz
3590-3595	TDD channel (channel 39) – 5 MHz
3595-3600	TDD channel (channel 40) – 5 MHz
3600-3605	TDD channel (channel 41) – 5 MHz
3605-3610	TDD channel (channel 42) – 5 MHz
3610-3615	TDD channel (channel 43) – 5 MHz
3615-3620	TDD channel (channel 44) – 5 MHz
3620-3625	TDD channel (channel 45) – 5 MHz
3625-3630	TDD channel (channel 46) – 5 MHz
3630-3635	TDD channel (channel 47) – 5 MHz

3635-3640	TDD channel (channel 48) – 5 MHz
3640-3645	TDD channel (channel 49) – 5 MHz
3645-3650	TDD channel (channel 50) – 5 MHz
3650-3655	TDD channel (channel 51) – 5 MHz
3655-3660	TDD channel (channel 52) – 5 MHz
3660-3665	TDD channel (channel 53) – 5 MHz
3665-3670	TDD channel (channel 54) – 5 MHz
3670-3675	TDD channel (channel 55) – 5 MHz
3675-3680	TDD channel (channel 56) – 5 MHz
3680-3685	TDD channel (channel 57) – 5 MHz
3685-3690	TDD channel (channel 58) – 5 MHz
3690-3695	TDD channel (channel 59) – 5 MHz
3695-3700	TDD channel (channel 60) – 5 MHz
3700-3705	TDD channel (channel 61) – 5 MHz
3705-3710	TDD channel (channel 62) – 5 MHz
3710-3715	TDD channel (channel 63) – 5 MHz
3715-3720	TDD channel (channel 64) – 5 MHz
3720-3725	TDD channel (channel 65) – 5 MHz
3725-3730	TDD channel (channel 66) – 5 MHz
3730-3735	TDD channel (channel 67) – 5 MHz
3735-3740	TDD channel (channel 68) – 5 MHz
3740-3745	TDD channel (channel 69) – 5 MHz
3745-3750	TDD channel (channel 70) – 5 MHz
3750-3755	TDD channel (channel 71) – 5 MHz
3755-3760	TDD channel (channel 72) – 5 MHz
3760-3765	TDD channel (channel 73) – 5 MHz
3765-3770	TDD channel (channel 74) – 5 MHz
3770-3775	TDD channel (channel 75) – 5 MHz
3775-3780	TDD channel (channel 76) – 5 MHz
3780-3785	TDD channel (channel 77) – 5 MHz
3785-3790	TDD channel (channel 78) – 5 MHz
3790-3795	TDD channel (channel 79) – 5 MHz
3795-3800	TDD channel (channel 80) – 5 MHz

2.6. Other provisions regarding the frequency bands in the selection procedure

There is an exclusion geographical area on the national territory, with a special protection regime, as per the provisions of Law no. 73/2013 on special measures for the protection of military objectives within the National System of Defence Against Ballistic Missiles.

The limits of the exclusion geographic area are established in accordance with the provisions of the *Order of the Ministry of National Defence no. M.49 of 20 May 2013*²², whereas the maximum height regime allowed for constructions is established in accordance with the *Order of the Minister of National Defence no. M50 of 20 May 2013*²³ on the administrative-territorial units on the territory of which restrictions are applied for raising constructions, as well as the exact parameters of the maximum height regime allowed for constructions in each of the administrative-territorial units.

The winners of the selection procedure under these Terms of Reference will operate the public electronic communications networks, for which they are to receive licences, in compliance with the provisions of the normative act and of the subsequent regulations mentioned above.

With a view to ensuring the coexistence of the electronic communications networks in the 3400-3800 MHz band concerned by these Terms of Reference with the special objectives provided by Law 73/2013, for protecting the operation of the above-mentioned networks, the following measures are recommended:

²² Published in the Official Gazette of Romania, Part I, no. 327 of 5 June 2013.

²³ Published in the Official Gazette of Romania, Part I, no. 404 of 4 July 2013.

- a) the base stations should be installed, if possible, at over 5 km away from the reference point with the geographic coordinates (in WGS84 system): 44°04'35.853"N/24°25'06.1674"E;
- b) the subscriber terminal antennas should not be oriented, if possible, towards the reference point indicated under letter a), if terminals are situated at less than 35 km from the respective reference point;
- c) base station sector antennas should not be oriented, if possible, towards the reference point under letter a), if these base stations are situated at less than 35 km from the respective reference point; the respective base station antennas are recommended to have an elevation below or equal to -5° ;
- d) the base stations situated in the special protection area, defined in the above-mentioned law, should be placed, if possible, in areas without direct visibility towards the reference point indicated under letter a);
- e) receiver notch filters should be used for out-of-band emissions, with an attenuation of at least 50 dB, for preventing possible receiver saturation, caused by the emissions performed in the reference point under letter a) on the base stations situated in the special protection area defined in the above-mentioned law.

Chapter 3 – LEGAL REGIME OF THE LICENCES

3.1. Licence duration

In accordance with the provisions of Article 31(1) of the Framework-Ordinance, the usage rights granted by means of selection procedures are awarded for a 15-year period, with the possibility for a 5-year extension. By way of exception, under the conditions set out in Article 31(2) of the Framework-ordinance, these rights may be granted for a period of 20 to 25 years, without an extension possibility. Moreover, in accordance with the provisions of Article 31¹(1) of the Framework-ordinance, frequency usage rights may be granted for shorter periods, as well, with a view to ensuring the simultaneous expiry of the validity of usage rights for one or several frequency bands.

Therefore, ANCOM awards the usage rights under these Terms of Reference for the validity periods presented below:

Table 3.1. – Frequency spectrum available and validity period of the frequency usage rights

Frequency band	Available spectrum	Bandwidth	Validity period*
700 MHz	703-733 MHz / 758-788 MHz • 2 x 30 MHz FDD	60 MHz FDD	01.01.2023 – 31.12.2042
	738-753 MHz • 1 x 15 MHz SDL	15 MHz SDL	01.01.2023 – 31.12.2042
1500 MHz	1452-1492 MHz • 1 x 40 MHz SDL	40 MHz SDL	01.01.2023 – 31.12.2042
2600 MHz	2550-2570 MHz / 2670-2690 MHz • 2 x 20 MHz FDD	40 MHz FDD	01.01.2023 – 05.04.2029 ²⁴
3400-3800 MHz	• 3400-3800 MHz TDD	400 MHz TDD	01.01.2026 – 31.12.2045

Frequency usage rights awarded - according to these Terms of Reference - for a 20-year period will not be extended or renewed according to the provisions of Article 31(2) or Article 31³ of the Framework-ordinance.

²⁴ Usage rights in this band, awarded by the selection procedures organised in 2012 and in 2021, expire on 05.04.2029.

3.2. Rights conferred by licences

The holders of the licences to be awarded through the selection procedure will have the right to use the radio frequencies for providing wireless broadband publicly available electronic communications services.

Licence holders will have the right to use any available technology, only in compliance with the normative acts in force, and only if such usage does not breach the obligations regarding the observance of certain technical and operational conditions set out under Section 3.3.3 herein.

The holders will have the obligation to exercise their rights arising from the licence under such conditions as to ensure the effective, rational, and efficient use of the radio frequencies and to avoid harmful interferences.

3.3. Obligations

3.3.1. Coverage obligations

3.3.1.1. Obligations attached to the frequency usage rights in the 700 MHz band

Winners of frequency usage rights in the 700 MHz FDD band, following this selection procedure, will have obligations to ensure coverage with mobile communications services, as follows:

A. For established market players (operators already providing public mobile electronic communications networks and services in frequency bands below 1 GHz):

A1. coverage of 95% of the population in the settlements specified in Annex 1 (list of settlements identified as uncovered or poorly covered, to be distributed between the winners of frequency usage rights in the 700 MHz FDD band, according to Note 1 below) with mobile broadband communications services with a downlink speed at user level of at least **2 Mbit/s**, with a 95% probability of indoor reception, by means of their own wireless access network (except for the one provided in section 3.3.1.3, indent 9). Each FDD block in the 700 MHz band to be allotted following the selection procedure is associated with the obligation to cover **100** settlements of the ones listed in **Annex 1**. These will be covered in two stages, as follows:

a) **75** settlements within **three years** from the date of rights' granting, until the end of the licence validity period;

b) the remaining **25** settlements within **five years** from the date of rights' granting, until the end of the licence validity period (see Note 2).

A2. coverage with broadband mobile communications services, with a radio signal at an average reference field strength level (RSRP, SS-RSRP), measured outdoors, at 1.5 m height above ground, by reference to an antenna with a gain of 0 dBi, of at least **- 85 dBm** by means of the operator's own wireless access network (except for the situation provided in section 3.3.1.3., indent 9), in areas inhabited by at least **70%** of the population, within for **four years** from the date of rights' granting, until the end of the licence validity period.

A3. coverage with mobile broadband communications services, along the highways: A1 (sectors Bucharest - Pitești Nord, Sibiu Est - Holdea, Margina - Nădlac; A2 Bucharest - West Constanța; A3 sectors Bucharest - Ploiești Beltway, Câmpia Turzii - Nădășelu, Chețani - Ungheni; A4 Ovidiu – Agigea Harbour; A6 Node A1 - Lugoj Nord and A10 Aiud - Turda²⁵, as well as the modernized railway sections: Bucharest - Constanța, Bucharest - Predeal and Arad - Nădlac, according to MPGT²⁶ and TEN-T²⁷ in force, with a radio signal at an average reference field strength level (RSRP, SS-RSRP), measured outdoors, at 1.5 m height above ground, by reference to an antenna with a gain of 0 dBi, of at least **- 92 dBm**, in two stages, as follows:

a) 85% of the sector/section length within **three years** from the date of granting the rights, until the end of the licence validity period;

b) the remaining 10% of the sector/section length within **five years** from the date of granting the rights, until the end of the licence validity period. (see **Note 3**).

Coverage with mobile broadband communications service of **95%** of the length of any highway sector, respectively of any modernized railway section, put into use after the start of this selection procedure, under the same conditions and terms as above, considered from the put-into-use date.

B. For a new entrant (a winner of this selection procedure who acquires frequency usage rights in the 700 MHz band without having previously held such usage rights in bands below 1 GHz):

²⁵ See <http://mtransporturi.maps.arcgis.com/apps/webappviewer/index.html?id=4e84b8ff37de48c6a001c0bae9974693>

²⁶ Romania's Transport General Master Plan, <http://mt.gov.ro/web14/strategia-in-transporturi/master-plan-general-transport/documente-master-plan1/1379-master-planul-general-de-transport>

²⁷ Trans European Transport Networks (TEN-T), according to [Regulation \(EU\) no. 1315 din 2013](#) of the European Parliament and of the Council of 11 December 2013 on Union guidelines for the development of the trans-European transport network and repealing Decision No 661/2010/EU

B1. coverage of 95% of the population of the settlements listed in Annex 1 (list of settlements identified as uncovered or poorly covered, to be distributed between the winners of frequency usage rights in the 700 MHz FDD band, according to Note 1 below) with mobile broadband communications services with a downlink speed at user level of at least **2 Mbit/s**, with a 95% probability of indoor reception, by means of their own wireless access network (except for the one provided in section 3.3.1.3, indent 9). Each FDD block in the 700 MHz band to be allotted following the selection procedure is associated with the obligation to cover **100** settlements of the ones listed in **Annex 1**. These will be covered in two stages, as follows:

a) **75** settlements within **five years** from the date of rights' granting, until the end of the licence validity period;

b) the remaining **25** settlements within **seven years** from the date of rights' granting, until the end of the licence validity period (see Note 2).

When assessing the fulfilment of the coverage obligation, the coverage achieved using the frequencies for which the licence holder has previously been awarded usage rights will be also taken into account.

B2. coverage with broadband mobile communications services, with a radio signal at an average reference field strength level (RSRP, SS-RSRP), measured outdoors, at 1.5 m height above ground, by reference to an antenna with a gain of 0 dBi, of at least **- 85 dBm** by means of the operator's own wireless access network (except for the situation provided in section 3.3.1.3., indent 9), in areas inhabited by at least **50%** of the population, within for **six years** from the date of rights' granting, until the end of the licence validity period.

Note 1: *After completing the auction stage of the selection procedure, before granting the licences for the use of radio frequencies, ANCOM will set the lists of settlements to be covered by each winner of frequency usage rights in the 700 MHz FDD band. The lists will be laid down as follows:*

1) the winners of frequency blocks in the 700 MHz FDD band will have a 30-day deadline, from the date of the Commission's announcement regarding the conclusion of the auction stage of the selection procedure, to submit to ANCOM a list of Annex 1 settlements that they intend to cover;

2) the total number of settlements to be proposed by each winner, in accordance with indent 1), will be calculated multiplying the number of blocks won by the number of settlements associated with each block (according to paragraph A1 or, as the case may be, B1 within this section);

3) for each 5 MHz block in the 700 MHz FDD band the winner will choose a set of 100 settlements;

4) settlements found to have been listed by only one winner will be assigned to it;

5) settlements falling within the scope of several lists will be assigned by drawing lots, only between the winners having listed them;

6) subsequently, the settlements that have not been listed by any winners will be assigned by a new draw, after the draw mentioned at indent 5), if applicable; this time all the winners will participate in the draw, excepting those who have already reached the number of settlements provided at indent 2);

7) each participant in the draw referred to in point 6) will be assigned an appropriate number of settlements so that it finally reaches the number of 1 settlements provided for at indent 2).

Note 2: *At least one year before the deadline for fulfilling the coverage obligation set out in section A1 (b) and section B1 (b), licence holders can provide objective evidence that they cannot cover some of the settlements for reasons of access difficulties (including unreasonable economic conditions, other administrative or technical reasons, etc.). Based on the information received, ANCOM will carry out its own investigations on a case-by-case basis and, where finding that the reasons provided are grounded, it will establish new deadlines for fulfilling the respective coverage obligations, as the case may be.*

Note 3: *At least one year before the deadline for fulfilling the coverage obligation set out in section A3 (b), holders may provide objective evidence that they cannot cover the required percentage for reasons of difficulties in access to transport infrastructure (including unreasonable*

economic conditions, other administrative or technical reasons, etc.). Based on the information received, ANCOM will carry out its own investigations on a case-by-case basis and, where finding that the reasons provided are grounded, it will establish new deadlines for fulfilling the respective coverage obligations, as the case may be.

3.3.1.2. Obligations attached to the frequency usage rights in the 3400-3800 MHz band

3.3.1.2.1. Coverage obligations

Bidders who acquire frequency usage rights in the 3400-3800 MHz band, following this selection procedure, The winners of frequency usage rights in the 3400-3800 MHz band will have the obligation to ensure coverage with mobile communications services, with a downlink data transfer speed of at least **100 Mbit/s** and 85% probability of indoor reception, of the international airports Arad, Baia Mare, Bacau, Bucharest, Cluj-Napoca, Constanta, Craiova, Iasi, Oradea, Satu Mare, Sibiu, Suceava and Timisoara, within **two years** from the entry into force of the licence, until the end of the licence validity period (see the Note below). These operators will have the obligation to ensure, upon request, machine-type communications, as well.

The above-mentioned conditions must also be met in the case of other airports which may be assigned as *international airports* at a date subsequent to the start of the selection procedure corresponding to these Terms of Reference, within **two years** from their assignment in the international category.

Note: *At least one year before the expiry of the above-mentioned coverage obligation, holders may provide objective evidence that they cannot cover some of the international airports for reasons of difficulties in access to airport premises (including unreasonable economic conditions, other administrative or technical reasons, etc.). Based on the information received, ANCOM will carry out its own investigations on a case-by-case basis and, where finding that the reasons are grounded, it will establish new deadlines for fulfilling the respective coverage obligations, as the case may be.*

The winners of the selection procedure who acquire usage rights in the 3400-3800 MHz band only for the minimum possible spectrum amount that can be purchased in this band (provided in section 4.1.3. letter c) of these Terms of Reference) fall outside the scope of the obligations set out in this subsection.

3.3.1.2.2. Deployment obligations

The winners of the selection procedure who acquire usage rights in the 3400-3800 MHz band, following this selection procedure, have deployment obligations, as specified below.

A. For the above-mentioned winners already holding usage rights in the band (acquired prior to this selection procedure), the licences to be issued following this selection procedure will include the obligation to install and maintain in operation (until the end of the licence validity period) a number of **2200** base stations capable of ensuring a speed of at least **100 Mbit/s/20 MHz**, installed on the national territory as follows:

- a)** **200** base stations in operation in the **city of Bucharest**, within **two years** from the entry into force of the licence,
- b)** **500** base stations in operation anywhere on the national territory (excluding Bucharest), of which at least **30** base stations in each of the settlements mentioned in Table 3.2, within **two years** from the entry into force of the licence,
- c)** **1200** base stations in operation anywhere on the national territory (excluding Bucharest), of which at least **15** base stations in each of the settlements mentioned in Table 3.3, within **four years** from the entry into force of the licence,
- d)** **1700** base stations in operation anywhere on the national territory (excluding Bucharest), of which at least **5** base stations in each of the settlements mentioned in Table 3.4, within **six years** from the entry into force of the licence,

- e) **2000** base stations in operation anywhere on the national territory (excluding Bucharest), of which at least **one** base station in each of the settlements mentioned in Table 3.5, within **eight years** from the entry into force of the licence.

B. For the above-mentioned winners who have not held usage rights in the band prior to this selection procedure, the licences to be issued following this selection procedure will include the obligation to install and maintain in operation (until the end of the licence validity period) a number of **1400** base stations capable of ensuring a speed of at least **100 Mbit/s/20 MHz**, installed on the national territory as follows:

- a) **200** base stations in operation in the city of Bucharest, within **five years** from the entry into force of the licence;
- b) **500** base stations in operation anywhere on the national territory (excluding Bucharest), of which at least **30** base stations in each of the settlements mentioned in Table 3.2, within **five years** from the entry into force of the licence;
- c) **1200** base stations in operation anywhere on the national territory (excluding Bucharest), of which at least **15** base stations in each of the settlements mentioned in Table 3.3, within **eight years** from the entry into force of the licence.

C. For the above-mentioned winners who acquire usage rights in the 3400-3800 MHz band only for the minimum possible spectrum amount that can be purchased (provided in section 4.1.3. letter c) of these Terms of Reference), irrespective of whether they held usage rights in the band prior to this selection procedure, the licenses to be issued following the selection procedure will include the obligation to install and maintain in operation (until the end of the licence validity period) a number of **1000** base stations, installed anywhere on the national territory and capable of ensuring a speed of at least **100 Mbit/s/20 MHz**, within **ten years** from the entry into force of the licence.

Table 3.2. – Settlements mentioned in Section A letter b) and Section B letter b)

No.	Category	Name	County (code)
1.	city	Oradea	BH
2.	city	Brăila	BR
3.	city	Braşov	BV
4.	city	Cluj-Napoca	CJ
5.	city	Constanţa	CT
6.	city	Craiova	DJ
7.	city	Galaţi	GL
8.	city	Iaşi	IS
9.	city	Ploieşti	PH
10.	city	Timișoara	TM

Table 3.3. - Settlements mentioned in Section A letter c) and Section B letter c)

No.	Category	Name	County (code)
1	city	Alba Iulia	AB
2	city	Pitești	AG
3	city	Arad	AR
4	city	Bacău	BC
5	city	Bistrița	BN
6	city	Botoșani	BT

No.	Category	Name	County (code)
7	city	Buzău	BZ
8	city	Turda	CJ
9	city	Călărași	CL
10	city	Reșița	CS
11	city	Sfântu Gheorghe	CV
12	city	Târgoviște	DB
13	city	Târgu Jiu	GJ
14	city	Giurgiu	GR
15	city	Hunedoara	HD
16	city	Deva	HD
17	city	Slobozia	IL
18	city	Drobeta-Turnu Severin	MH
19	city	Baia Mare	MM
20	city	Târgu Mureș	MS
21	city	Piatra-Neamț	NT
22	city	Roman	NT
23	city	Slatina	OT
24	city	Mediaș	SB
25	city	Sibiu	SB
26	city	Zalău	SJ
27	city	Satu Mare	SM
28	city	Suceava	SV
29	city	Tulcea	TL
30	city	Râmnicu Vâlcea	VL
31	city	Focșani	VN
32	city	Vaslui	VS
33	city	Bârlad	VS

Table 3.4.- Settlements mentioned in Section A letter d)

No.	Category	Name	County (code)
1	city	Aiud	AB
2	city	Blaj	AB
3	city	Sebeș	AB
4	town	Cugir	AB
5	city	Câmpulung	AG
6	city	Curtea de Argeș	AG
7	town	Mioveni	AG
8	city	Onești	BC
9	city	Moinești	BC
10	town	Comănești	BC
11	city	Dorohoi	BT
12	city	Făgăraș	BV
13	city	Săcele	BV
14	city	Codlea	BV
15	town	Zărnești	BV
16	city	Râmnicu Sărat	BZ

No.	Category	Name	County (code)
17	city	Dej	CJ
18	city	Câmpia Turzii	CJ
19	city	Gherla	CJ
20	city	Oltenița	CL
21	city	Caransebeș	CS
22	town	Bocșa	CS
23	city	Medgidia	CT
24	city	Mangalia	CT
25	town	Năvodari	CT
26	city	Târgu Secuiesc	CV
27	city	Moreni	DB
28	city	Motru	GJ
29	city	Tecuci	GL
30	city	Petroșani	HD
31	city	Lupeni	HD
32	city	Vulcan	HD
33	city	Orăștie	HD
34	town	Petrila	HD
35	city	Miercurea-Ciuc	HR
36	city	Odorheiu Secuiesc	HR
37	town	Voluntari	IF
38	town	Buftea	IF
39	city	Fetești	IL
40	city	Urziceni	IL
41	city	Pașcani	IS
42	city	Sighetu Marmăției	MM
43	town	Borșa	MM
44	city	Reghin	MS
45	city	Sighișoara	MS
46	city	Târnăveni	MS
47	town	Târgu-Neamț	NT
48	city	Caracal	OT
49	town	Balș	OT
50	town	Corabia	OT
51	city	Câmpina	PH
52	city	Carei	SM
53	city	Rădăuți	SV
54	town	Fălticeni	SV
55	city	Lugoj	TM
56	city	Alexandria	TR
57	city	Turnu Măgurele	TR
58	city	Roșiorii de Vede	TR
59	city	Drăgășani	VL
60	town	Huși	VS

Table 3.5. - Settlements mentioned in Section A letter e)

No.	Category	Name	County (code)
1	town	Costești	AG
2	town	Ștefănești	AG
3	town	Topoloveni	AG
4	town	Ineu	AR
5	town	Lipova	AR
6	town	Pecica	AR
7	town	Sântana	AR
8	town	Buhuși	BC
9	town	Dărmănești	BC
10	town	Târgu Ocna	BC
11	town	Aleșd	BH
12	town	Beiuș	BH
13	city	Marghita	BH
14	city	Salonta	BH
15	town	Valea lui Mihai	BH
16	town	Beclean	BN
17	town	Năsăud	BN
18	town	Ianca	BR
19	town	Darabani	BT
20	town	Râșnov	BV
21	town	Victoria	BV
22	town	Nehoiu	BZ
23	town	Moldova Nouă	CS
24	town	Oravița	CS
25	town	Oțelu Roșu	CS
26	town	Cernavodă	CT
27	town	Hârșova	CT
28	town	Murfatlar	CT
29	town	Ovidiu	CT
30	town	Covasna	CV
31	town	Găești	DB
32	town	Pucioasa	DB
33	town	Titu	DB
34	city	Băilești	DJ
35	city	Calafat	DJ
36	town	Dăbuleni	DJ
37	town	Filiași	DJ
38	town	Bumbești-Jiu	GJ
39	town	Rovinari	GJ
40	town	Bolintin-Vale	GR
41	city	Brad	HD
42	town	Călan	HD
43	town	Hațeg	HD
44	town	Simeria	HD
45	city	Gheorgheni	HR
46	city	Toplița	HR

No.	Category	Name	County (code)
47	town	Chitila	IF
48	town	Otopeni	IF
49	town	Pantelimon	IF
50	town	Popești-Leordeni	IF
51	town	Țândărei	IL
52	town	Hârlău	IS
53	town	Târgu Frumos	IS
54	town	Orșova	MH
55	town	Strehaia	MH
56	town	Baia Sprie	MM
57	town	Seini	MM
58	town	Vișeu de Sus	MM
59	town	Luduș	MS
60	town	Ocna Mureș	MS
61	town	Sovata	MS
62	town	Drăgănești-Olt	OT
63	town	Scornicești	OT
64	town	Băicoi	PH
65	town	Boldești-Scăeni	PH
66	town	Breaza	PH
67	town	Comarnic	PH
68	town	Mizil	PH
69	town	Sinaia	PH
70	town	Urlați	PH
71	town	Vălenii de Munte	PH
72	town	Agnita	SB
73	town	Avrig	SB
74	town	Cisnădie	SB
75	town	Jibou	SJ
76	town	Șimleu Silvaniei	SJ
77	town	Negrești-Oaș	SM
78	city	Câmpulung Moldovenesc	SV
79	town	Dolhasca	SV
80	town	Gura Humorului	SV
81	city	Vatra Dornei	SV
82	town	Vicovu de Sus	SV
83	town	Babadag	TL
84	town	Măcin	TL
85	town	Jimbolia	TM
86	town	Sânnicolau Mare	TM
87	town	Videle	TR
88	town	Zimnicea	TR
89	city	Adjud	VN
90	town	Negrești	VS

3.3.1.3. Provisions associated with the obligations

- 1) The coverage obligations may be fulfilled by using both the frequencies in the bands for which the holder has acquired usage rights following this selection procedure and the frequencies for which the holder has had previous usage rights.
- 2) The obligations under sections A2, A3 and B2 of paragraph 3.3.1.1 will be performed only through stations that have the capacity to ensure a downlink data transfer speed to the user of at least 30 Mbit/s.
- 3) In assessing the fulfilment of the coverage obligations, ANCOM will use the RSRP values for LTE, as an indicator for determining the signal level necessary to ensure the required data speed. Although new technologies are to be implemented, it is expected that operators will continue to use the LTE technology in the next period, to provide data services to users.
- 4) Deployment obligations are minimum obligations, incumbent on any holder of usage rights in the 3400-3800 MHz band throughout the licence validity period, regardless of the size of the frequency sub-band allocated by the licence granted in that frequency band. In choosing the amount of radio spectrum they will purchase in this band, the winners of the selection procedure must take due account of their obligations in accordance with the provisions of section 3.3.1.2.2.
- 5) For the purposes of section 3.3.1.2.2, a base station is considered to consist of all the antennas and radio equipment installed in a given location and operating in the 3400-3800 MHz band, under the technical and operational conditions established by the licence in force granted following the selection procedure, irrespective of the number of sectors installed on the base station and of the base station's sector antenna configuration – may they be installed on the same mast (or a similar physical infrastructure element) or at a certain distance from each other (e.g. on the same building, including if at different heights above the ground). In the situation provided as an example, any two sectoral antennas belong to the same base station if the distance between their installation points (where they are situated on the same horizontal level) or between the ground projections of these points (where they are situated at different heights above the ground, based on the on-site installation configuration) is maximum 50 meters (for base stations with distributed cells, the distance condition no longer applies).
- 6) Concerning the base stations to be considered in order to evaluate the deployment obligations, they need to be installed outdoors, anywhere in the administrative perimeter of the settlements (territorial administrative units) considered (urban or extra-urban).
- 7) The base stations that will be considered in the evaluation of the fulfilment of the deployment obligations will be those that have the maximum isotropic radiated power (total radiated power in the case of base stations with active antennas) greater than or equal to **40 dBm**.
- 8) Where two or more operators share radio spectrum allocations in the 3400-3800 MHz band on the same base station, in assessing the fulfilment of deployment obligations for each of them, the station in question will be considered as being used by each of the respective operators, and each of them will have to ensure the capacity of 100 Mbit/s/20MHz in accordance with 3.3.1.2.2., independently of the rest of the operators.
- 9) Where an operator (lessor) leases the spectrum to another person (lessee), in the evaluation of the fulfilment of the coverage and/or deployment obligations, the coverage/base stations owned/operated by the lessee in the leased radio spectrum will also be considered, if the users of the lessor's network have free access to the lessee's network.
- 10) Annex 1 has been laid down based on the measurements performed in 2020 and 2021 and will be updated as a result of the measurements performed by ANCOM in 2022.

3.3.2. Obligations regarding service quality

Minimum network availability standard

"*Network availability*" shall be defined as the average number of minutes per terminal per 6-month period for which the services provided over the network are unavailable due to harmful interference or network malfunction for reasons attributable to the operator, as well as scheduled unavailability. The calculation of network availability will not take into account the time intervals related to major maintenance works or works generated by exceptional situations notified by the operator at least 3 working days before the works, as well as by exceptional situations beyond the operator's control (extreme weather, physical damage of networks and equipment through the intervention of third parties such as fiber-cut outages, damage of power lines to nodes or base stations, damage of electricity distribution networks, etc.).

The availability of the network will be expressed in terms of unavailability of services provided through the network ("network unavailability").

The licence holder will ensure that the network unavailability is less than 35 minutes (based on the weighting factors specified in Table 3.6. below) for any period of 6 consecutive months.

Unavailability is calculated according to the formula:

Unavailability = (duration of the incident in minutes x number of affected connections) / (total number of SIMs reported at the end of the previous semester x weighting factor for network unavailability throughout the unavailability period).

For the calculation of the number of affected connections, the estimation method provided in Annex no. 3 of ANCOM Decision no. 512/2013 will be applied.

Table 3.6. - Weighting factors for network unavailability throughout all the periods of network unavailability

SERVICE UNAVAILABILITY, WEIGHTING FACTORS (THE DURATION OF EACH INCIDENT IS DIVIDED BY THE WEIGHTING FACTOR)			
	Monday to Friday	Saturday	Sunday
Time intervals between 07.00 and 24.00	1	2	4
Time intervals between 00.00 and 07.00	4	8	16

A licence holder has the obligation to keep the relevant network logs in such a way as to be able to prove to the Authority that it has complied with the network availability obligation provided in the licence.

The network logs, or parts thereof, as the case may be, will be made available to the Authority upon request.

A licence holder has the obligation to calculate, upon ANCOM's request (which may occur at any time), the network unavailability based on the information recorded in the network logs and to provide the results of the calculations within the timeframe specified by ANCOM.

3.3.3. Obligations of compliance with certain technical and operational requirements

3.3.3.1. General requirements

The holders of frequency usage licences have the obligation to observe, during the entire validity of the usage rights, the requirements of the regulations in force on limiting the effects of the electromagnetic fields generated by electronic communications networks, according to the law²⁸. When installing their own equipment, the holders of frequency usage licences will consider compliance with the limits established according to the regulations in force, as well as the reference to a value of the cumulated electromagnetic field determined according to the recommendations of the Electronic Communications Committee of the European Conference of Postal and Telecommunications Administrations.

For the commissioning and use of any radio equipment, the holders will also comply with the Government Decision no. 740/2016 on the making available on the market of radio equipment, with subsequent amendments and completions.

The holders of frequency usage licenses have the obligation to ensure compliance with the security requirements of the networks and services, throughout the duration of the usage rights.

Regarding the usage of certain technologies, equipment and software programs within their own networks, these holders of licences for the use of radio frequencies will mind compliance with the provisions of Law no. 163/2021 on adopting certain measures regarding ICT infrastructures of national interest and the conditions for 5G networks implementation.

3.3.3.2. Technical conditions for frequency usage in the 700 MHz band

- a) Concerning the frequencies in the 700 MHz band, the provisions of the following EC decisions, and CEPT/ECC decisions, recommendations and reports will apply:
- Commission Implementing Decision 2016/687/EU on the harmonisation of the 694-790 MHz frequency band for terrestrial systems capable of providing wireless broadband electronic communications services and for flexible national use in the Union;
 - Decision ECC/DEC/(15)01: Harmonized technical conditions for mobile/fixed communications networks (MFCN) in the band 694-790 MHz including a paired channelling arrangement (2x30 MHz FDD) and an unpaired channelling arrangement (supplemental downlink), approved on 6 March 2015;
 - Report CEPT 53: Report A from CEPT to the European Commission in response to the EC Mandate "to develop harmonised technical conditions for the 694-790 MHz ('700 MHz') frequency band in the Union for the provision of wireless broadband and other uses in support of EU spectrum policy objectives", approved on 28 November 2014 by ECC;
 - Report CEPT 60: Report B from CEPT to the European Commission in response to the EC Mandate "to develop harmonised technical conditions for the 694-790 MHz ('700 MHz') frequency band in the Union for the provision of wireless broadband and other uses in support of EU spectrum policy objectives", approved on 1 March 2016 by ECC;
 - Report CEPT 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" (Adoption of methodology) (Final report of 26 June 2009).

²⁸ On the date of laying down these Terms of Reference the applicable limits are those set by the Order of the Health Ministry of public Health no. 1193/2006 for the improvement of the Norms for limiting exposure of the general public to electromagnetic fields from 0 Hz, up to 300 GHz, which may be subsequently amended and completed.

- Recommendation ECC(15)01: Cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1427-1518 MHz, and 3400-3800 MHz (approved on 13 February 2015, amended on 5 February 2016, 14 February 2020 and 10 June 2022).

The above-mentioned documents may be further amended or reviewed. Moreover, similar regulations may be adopted to influence the technical usage conditions.

- b) The operation mode in the 703-733 MHz/758-788 MHz sub-bands in the 700 MHz band will be Frequency Division Duplex (FDD). The 758-788 MHz sub-band will be used for base station emission (downlink), while the 703-733 MHz sub-band will be used for terminal station emission (uplink);
 - c) the duplex spacing in the 700 MHz band is 55 MHz;
 - d) The operation mode in the 738-753 MHz sub-band will be exclusively SDL (for base station downlink only);
 - e) Terrestrial systems allowed to use the 703-733 MHz/758-788 MHz band and respectively the 738-753 MHz band are systems that comply with Commission Implementing Decision (EU) 2016/687;
 - f) The main systems and applications that could use the 700 MHz band at the moment of this selection procedure are the following: LTE and NR²⁹ with non-active antenna systems, LTE-MTC³⁰ and LTE-eMTC³¹ in this band, IB-NB-IoT³² and GB-NB-IoT³³;
 - g) Channel bandwidth:
 - for LTE systems: 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz;
 - for LTE-MTC, NB-IoT³⁴ systems: 180 kHz;
 - for LTE-eMTC systems: minimum 180 kHz, maximum 1080 kHz;
 - for NR systems: 5 MHz, 10 MHz, 15 MHz, 20 MHz.
- Operation mode of IoT systems:
- LTE-MTC, LTE-eMTC: in-band;
 - NB-IoT: in-band, within guard band³⁵.
- h) Block edge masks (BEM) for base stations and respectively for terminal stations are defined in Annexes B and C of Commission Implementing Decision (EU) 2016/687;
 - i) The maximum value of the mean equivalent isotropic radiated power (EIRP) for a base station within the 5 MHz block awarded to a licence holder cannot exceed 64 dBm/5 MHz/antenna, where EIRP is the total radiated power in all directions, at one point, irrespective of the base station configuration;
 - j) The out-of-block requirements for a base station to be observed by a licence holder are defined by out-of-block BEM specified in tables 3.7 – 3.11:

Table 3.7. – Baseline requirements – Limits of the mean EIRP for a base station (base station out-of-block BEM)

Frequency range of out-of-block emissions	Protected block bandwidth	Maximum mean out-of-block EIRP	Measurement bandwidth
Frequencies below 694 MHz	8 MHz	-23 dBm per cell ⁽¹⁾	8 MHz

²⁹ NR – New Radio

³⁰ LTE-MTC - LTE Machine Type Communications

³¹ LTE-eMTC - LTE evolved Machine Type Communications

³² IB-NB-IoT - In-band NB-IoT

³³ GB-NB-IoT - Guard-band NB-IoT

³⁴ NB-IoT - Narrowband IoT

³⁵ "Guard band" – shall not be read as an actual guard band, but is applicable in the case of NB-IoT used in frequencies at the edge of a wideband carrier (LTE channel), where the block edge mask complies with the out-of-band requirements.

698-736 MHz (uplink frequencies in the 698-736 MHz range)	≥5 MHz	-50 dBm per cell ⁽¹⁾	5 MHz
	3 MHz	-52 dBm per cell ⁽¹⁾	3 MHz
	≤3 MHz	-64 dBm per cell ⁽¹⁾	200 kHz
738-791 MHz (downlink frequencies in the 738-791 MHz range)	≥5 MHz	16 dBm per antenna	5 MHz
	3 MHz	14 dBm per antenna	3 MHz
	<3 MHz	2 dBm per antenna	200 kHz
791-821 MHz (downlink FDD frequencies defined in Decision 2010/267/EU)	≥5 MHz	16 dBm per antenna	5 MHz
832-862 MHz (uplink FDD frequencies defined in Decision 2010/267/EU)	≥5 MHz	-49 dBm per cell ⁽¹⁾	5 MHz

⁽¹⁾ in a multi-sector site, the per-"cell" value will be the value for one sector.

Table 3.8. – Transition requirements – base station BEM out-of-block EIRP limits in the 733-788 MHz range (BS BEM out-of-block, in the 733-788 MHz band)

Frequency range of out-of-block emissions	Maximum mean out-of-block EIRP	Measurement bandwidth
-10 to -5 MHz from lower block edge	18 dBm per antenna	5 MHz
-5 MHz to 0 MHz from lower block edge	22 dBm per antenna	5 MHz
0 to +5 MHz from upper block edge	22 dBm per antenna	5 MHz
+5 to +10 MHz from upper block edge	18 dBm per antenna	5 MHz

Table 3.9. – Transition requirements – base station BEM out-of-block EIRP limits above 788 MHz (out-of-band BEM for a base station above 788 MHz)

Frequency range of out-of-block emissions	Maximum mean out-of-block EIRP	Measurement bandwidth
788-791 MHz for a block with the upper edge at 788 MHz	21 dBm per antenna	3 MHz
788-791 MHz for a block with the upper edge at 783 MHz	16 dBm per antenna	3 MHz
788-791 MHz for a block with the upper edge at 788 MHz, for protecting systems with a bandwidth <3 MHz	11 dBm per antenna	200 kHz

788-791 MHz for a block with the upper edge at 783 MHz, for protecting systems with a bandwidth <3 MHz	4 dBm per antenna	200 kHz
791-796 MHz for a block with the upper edge at 788 MHz	19 dBm per antenna	5 MHz
791-796 MHz for a block with the upper edge at 783 MHz	17 dBm per antenna	5 MHz
796-801 MHz for a block with the upper edge at 788 MHz	17 dBm per antenna	5 MHz

Transition requirements are defined for the transition portion of the frequency spectrum, respectively frequencies between 0 and 10 MHz below the lower limit of the block awarded to an operator and frequencies between 0 and 10 MHz above the upper limit of the block awarded to an operator. Where the transition spectrum and the frequencies used for FDD uplink, PPDR uplink or M2M uplink overlap, the EIRP limits defined by the transition requirements will not apply.

Table 3.10. - Requirements concerning base station BEM out-of-block EIRP limits, in portions of the duplex gap that are not used for SDL, PPDR or M2M

Frequency range of out-of-block emissions	Maximum mean out-of-block EIRP	Measurement bandwidth
-10 to -5 MHz from the lower edge of the downlink FDD band or from the lower edge of the SDL block that is situated lowest in the respective frequency range, yet above the upper edge of the uplink FDD band	16 dBm per antenna	5 MHz
over 10 MHz from the lower edge of the downlink FDD band or as to the lower edge of the SDL block that is situated lowest in the respective frequency range, yet above the upper edge of the uplink FDD band	-4 dBm per antenna	5 MHz

Where the transition spectrum and the frequencies not used for SDL, PPDR or M2M uplink overlap, the EIRP limits defined by the transition requirements will apply.

Table 3.11. - Requirements concerning base station BEM out-of-block EIRP limits, in portions of the guard bands not used for PPDR or M2M

Frequency range of out-of-block emissions	Maximum mean out-of-block EIRP	Measurement bandwidth
Frequencies between the lower edge of the 700 MHz band and the lower edge of the uplink FDD band (i.e., 694-703 MHz)	-32 dBm per cell ⁽¹⁾	1 MHz
Frequencies between the lower edge of the downlink FDD band and the lower edge of the downlink FDD band as defined in Decision 2010/267/EU (i.e., 788-791 MHz)	14 dBm per cell	3 MHz

Where the transition portion of the spectrum and a guard band overlap, the EIRP limits defined in the transition requirements will apply. Where the spectrum is used for PPDR or M2M radiocommunications, the EIRP limits defined in the basic requirements or in the transition requirements will apply.

Frequency usage rights holders may also use BEM technical parameters that are less restrictive than those specified in Tables 3.7 – 3.11, if an agreement thereon has been concluded between the operators or administrations involved, where these parameters comply with the applicable technical conditions for the protection of other services or applications, including those in the adjacent bands or those which are subject to cross-border obligations.

- k) Requirements concerning terminal stations BEM are presented in tables 3.12 – 3.15. Power limits are set as EIRP for terminal stations designed to be mounted or installed and as total radiated power (TRP)³⁶ for terminal stations designed to be mobile or nomadic.

Table 3.12. - Terminal station BEM in-block emission requirements – TS BEM in-block emission limit

Maximum mean in-block power	23 dBm ⁽²⁾
⁽²⁾ This value has a maximum tolerance of up to + 2 dB, to take into account operation in extreme weather conditions and manufacturing standard deviation.	

Table 3.13. - Terminal station BEM out-of-block emission requirements – TS BEM EIRP out-of-block emission limits, for the guard band 694-703 MHz

Frequency range of out-of-block emissions	Maximum mean out-of-block EIRP	Measurement bandwidth
694-698 MHz	- 7 dBm	4 MHz
698-703 MHz	2 dBm	5 MHz

Table 3.14. - Terminal station BEM out-of-block emission requirements – TS BEM EIRP out-of-block emission limits, for the duplex gap

Frequency range of out-of-block emissions	Maximum mean out-of-block EIRP	Measurement bandwidth
733-738 MHz	2 dBm	5 MHz
738-753 MHz	- 6 dBm	5 MHz
753-758 MHz	- 18 dBm	5 MHz

Table 3.15 - Terminal station BEM out-of-block emission requirements – TS BEM EIRP out-of-block emission limits, for the frequencies below 694 MHz used for terrestrial broadcasting (unwanted emissions)

Frequency range of out-of-block emissions	Maximum mean out-of-block EIRP	Measurement bandwidth
470-694 MHz	- 42 dBm	8 MHz

- l) Separation between the channel limits situated at the edge of adjacent blocks in the 703-733 MHz/758-788 MHz bands:

³⁶ TRP – Total Radiated Power is a measure of how much power is actually radiated by an antenna. TRP is defined as the sum of all power radiated by an antenna over all possible angles.

- Separation between the channel limits situated at the edge of adjacent blocks used by two networks ("A" and "B") operated by different licence holders – depending on the technologies used – will be ensured according to the rules specified below, unless otherwise agreed by the licence holders involved:
 - (i) Separation between block edge channel limits:

	A	B	C
1	Network "B"	Network "A"	
2		LTE, NR without active antenna systems	GB-NB-IoT
3	LTE, NR without active antenna systems	0 kHz	200 kHz
4	GB-NB-IoT	200 kHz	200 kHz

- (ii) When the GB-NB-IoT technology is used, the obligation to ensure a 200 kHz bandwidth for separation between the limits of frequency channels situated at the edge of adjacent blocks belonging to different licence holders is incumbent on the holder using the GB-NB-IoT system.
 - (iii) Where two different holders using adjacent frequency blocks implement GB-NB-IoT systems, each of the two frequency usage rights holders will ensure the 200 kHz bandwidth for separation between the limits of frequency channels situated at the edge of adjacent blocks, unless otherwise agreed by the rights holders involved.
 - (iv) Where any of the rights holders using adjacent frequency blocks implements systems with AAS, the holder using AAS has the obligation to coordinate with the holder of the adjacent block and to ensure separation between the limits of frequency channels situated at the edge of adjacent blocks, unless otherwise agreed by the frequency usage rights holders involved.
 - (v) In defining the frequency band necessary for separating the channels at the edge of adjacent blocks, the values of the frequency separation between adjacent channels used for the systems specified under item g) shall be considered, unless otherwise agreed by the frequency usage rights holders involved.
 - (vi) Where harmful interference occurs, the network configuration will be coordinated by the operators involved and/or harmful interference avoidance and mitigation techniques will be applied.
 - (vii) For mitigating or avoiding harmful interference, in addition to the provisions of item l) of this section, the frequency usage rights holders involved have the obligation to coordinate and mutually agree on amending the technical characteristics of the stations concerned, irrespective of which one was the first to install a station.
- m) Based on bilateral or multilateral agreements concluded between the frequency usage rights holders in the 700 MHz frequency band, and upon the agreement of all the parties involved, the rights holders may diverge from the technical requirements provided in this section, excepting those under item n), and may also use other applications than those mentioned under items f) and g) in this section (such as NR and LTE with AAS). In such cases, frequency usage rights holders will have to comply with the requirements for the protection of other services, applications and networks, to observe the technical conditions resulting from cross-border coordination and to tolerate any interference that may occur in the modified usage conditions.
- n) A frequency block usage rights holder cannot diverge from the following frequency usage conditions:
- the operation mode defined under items b) and d) within this section;

- the frequency band usage mode for the uplink and for the downlink defined under items b) and d) within this section;
- the duplex spacing defined under item c) within this section.

3.3.3.3. Technical conditions on the usage of the 1452-1492 MHz band

- a) The provisions of the following EC decisions, CEPT/ECC decisions, recommendations and reports apply with regard to the use of frequencies in the 1452-1492 MHz band:
- Commission 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, amended by Commission Implementing Decision (EU) 2018/661;
 - Decision ECC (13)03 on the harmonised use of the frequency band 1452-1492 MHz for Mobile/Fixed Communications Networks Supplemental Downlink (MFCN – SDL), approved on 8 November 2013, amended on 2 March 2018 (ECC/DEC/(13)03);
 - ECC Report 202: Out-of-Band emission limits for Mobile/Fixed Communication Networks (MFCN) Supplemental Downlink (SDL) operating in the 1452-1492 MHz band (September 2013);
 - ECC Report 227: Compatibility Studies for Mobile/Fixed Communication Networks (MFCN) Supplemental Downlink (SDL) operating in the 1452-1492 MHz band (approved in January 2015);
 - ECC Report 269: Least restrictive technical conditions for Mobile/Fixed Communications Networks in 1427-1518 MHz (approved on 17 November 2017, corrected on 2 March 2018);
 - 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” (approved on 28 November 2014 by the ECC);
 - ECC Report 295 – Guidance on Cross-border coordination between MFCN and Aeronautical Telemetry Systems in the 1429-1518 MHz band, approved on 8 March 2019;
 - ECC Recommendation (15)01 on 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 (adopted on 13 February 2015, amended on 5 February 2016, on 14 February 2020 and 10 June 2022) (ECC/REC/(15)01).

The aforementioned documents may be subject to amendments or new versions. As well, further similar documents may be adopted and influence the technical usage conditions.

- b) The operation mode of the 1452-1492 MHz band is exclusively SDL (limited to base station emission);
- c) the terrestrial systems which may be deployed in the 1452-1492 MHz band are those compliant with Commission Implementing Decision (EU) 2015/750, amended by Commission Implementing Decision (EU) 2018/661;
- d) the channel bandwidth will be:
- 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz, for LTE systems;
 - 5 MHz, 10 MHz, 15 MHz, 20 MHz, for NR systems.
- e) The block edge mask (BEM) for a base station is defined in the annex of Commission Implementing Decision (EU) 2018/661 amending decision (UE) 2015/750; The base station emission must comply with the harmonized technical conditions on block edge masks contained in Section B of the Annex to the Commission Implementing Decision 2015/750/EU amended by Commission Implementing Decision (EU) 2018/661

- f) The maximum average EIRP value for a base station within a 5 MHz block awarded to a licence holder will not exceed 68 dBm/5 MHz; this limit may be higher in special cases, e.g. the aggregated use of frequencies in this band and frequencies in lower bands;
- g) Out-of-band emission requirements for a base station, a holder must comply with, are defined by the out-of-block block edge masks (out-of-block BEM) specified in Tables 3.16 and and 3.17.

Table 3.16 – Base station BEM out-of-block EIRP limits, per antenna, in the 1452-1492 MHz band

Frequency range of out-of-block emissions	Maximum mean out-of-block EIRP	Measurement bandwidth
-10 to -5 MHz from lower block edge	11 dBm	5 MHz
-5 MHz to 0 MHz from lower block edge	16.3 dBm	5 MHz
0 to +5 MHz from upper block edge	16.3 dBm	5 MHz
+5 to +10 MHz from upper block edge	11 dBm	5 MHz
Frequencies in the 1452-1492 MHz band situated at a spacing wider than 10 MHz as to the lower or upper block edge	9 dBm	5 MHz

Table 3.17 – Base station BEM out-of-block EIRP limits, per cell, below 1452 MHz and above 1492 MHz, for base stations operating in the 1452-1492 MHz band

Frequency range of out-of-block emissions	Maximum mean out-of-block EIRP	Measurement bandwidth
below 1449 MHz	-20 dBm	1 MHz
1449 - 1452 MHz	14 dBm	3 MHz
1492 - 1495 MHz	14 dBm	3 MHz
above 1495 MHz	-20 dBm	1 MHz

- h) Holders of frequency usage rights in the 1452-1492 MHz band may use technical parameters that are less restrictive than those under item g) within this section, where the operators or the administrations involved have agreed thereon, on the condition that the respective parameters comply with the technical requirements for the protection of services or applications in the adjacent bands or subject to cross-border obligations.

3.3.3.4. Technical conditions on the usage of the 2600 MHz band

- a) The provisions of the following EC decisions, CEPT/ECC decisions, recommendations and reports apply regarding the use of the 2600 MHz band:
- Commission Implementing Decision (EU) 2020/636 amending Decision 2008/477/EC as regards an update of relevant technical conditions applicable to the 2500-2690 MHz frequency band;
 - Decision ECC/DEC/(05)05: Harmonised utilization of spectrum for Mobile/Fixed Communications Networks (MFCN) operating in the 2500-2690 MHz band (approved on 18 March 2005, amended on 5 July 2019);
 - 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 (approved on 5 July 2019);
 - ECC Report 308: Analysis of the suitability and update of the regulatory technical conditions for 5G MFCN and AAS operation in the 2500-2690 MHz band (approved on 6 March 2020);
 - ECC Report 119: Coexistence between mobile systems in the 2.6 GHz frequency band at the FDD/TDD boundary (June 2008);
 - Recommendation ECC (11)05 on cross-border coordination for Mobile/Fixed Communications Networks (MFCN) in the frequency band 2500-2690 MHz (approved on 26 May 2011, amended on 3 February 2017) (ECC/REC/(11)05).

The aforementioned documents may be subject to amendments or reviews. Moreover, further similar documents may be adopted and influence the technical usage conditions.

- b) The operation mode in the 2600 MHz will be:
- Frequency division duplex (FDD) in the paired 2500-2570/2620-2690 MHz bands. The 2620-2690 MHz sub-band will be used for base station emission (downlink), while the 2500-2570 MHz sub-band will be used for terminal station emission (uplink);
 - Time division duplex (TDD) in the 2570-2620 MHz.
- c) The duplex spacing for the FDD mode: 120 MHz;
- d) The main systems and applications that are representative for the usage of the 2600 MHz band at the moment of organising this selection procedure are the following: UMTS, LTE, LTE-MTC, LTE-eMTC, NB-IoT, NR.
- e) the channel bandwidth will be:
- 5 MHz, for UMTS systems;
 - 1,4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz, for LTE systems;
 - 180 kHz, for LTE-MTC, NB-IoT systems;
 - minimum 180 kHz, maximum 1080 kHz, for LTE-eMTC systems;
 - 5 MHz, 10 MHz, 15 MHz, 20 MHz, 25 MHz, 30 MHz, 40 MHz, 50 MHz, for NR systems;

The operation mode for IoT systems:

- LTE-MTC, LTE-eMTC: in-band (channel);
- NB-IoT: in-band (channel), within guard band³⁷;

³⁷ “Guard band” – shall not be read as an actual guard band; the term is applicable in the case of NB-IoT used in frequencies at the edge of a wideband carrier frequency (LTE channel), where the block edge mask complies with the out-of-block requirements.

- f) Terrestrial systems to be used in the 2550-2570 MHz/2670-2690 MHz sub-bands must comply with the Commission Implementing Decision (EU) 2020/636 of 8 May 2020 amending Decision 2008/477/EC as regards an update of relevant technical conditions applicable to the 2500-2690 MHz frequency band;
- g) Terrestrial systems to be used in the 2600 MHz band must comply with the relevant BEM requirements in the Annex to Commission Implementing Decision (EU) 2020/636, in the absence of bilateral or multilateral agreements between the licence holders in adjacent blocks. Less restrictive technical parameters may be used where an agreement has been concluded thereon by the licence holders in the respective blocks;
- h) Holders of frequency usage rights in the 2550-2570 MHz/2670-2690 MHz sub-bands may use technical parameters that are less restrictive than those under paragraph 3.3.3.4.1, where the operators or the administrations involved have agreed thereon, on the condition that the respective parameters comply with the technical requirements for the protection of services or applications in the adjacent bands or subject to cross-border obligations.
- i) Equipment operating in the 2600 MHz band may use, as well, different power limits than those set within paragraphs 3.3.3.4.1 and 3.3.3.4.2, on the condition of applying adequate mitigation techniques, that observe Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC³⁸ and that ensure a protection level equivalent to that provided by the basic requirements in the directive.
- j) Where harmful interference occurs, in addition to the provisions of items e), f), g) of paragraph 3.3.3.4.1, the licence holders involved have the obligation to coordinate and to apply mutually agreed mitigation techniques by amending the technical characteristics of the stations concerned, irrespective of which one was the first to install a station.
- k) Based on the agreements concluded between the frequency usage right holders in the 2600 MHz frequency band, and upon the agreement of all the parties involved, the frequency usage right holders may also use other applications than those provided under items d) and e) of this section and may diverge from the technical requirements in section 3.3.3.4 and its paragraphs, excepting the operation mode defined under items b) and c). In such cases, frequency usage right holders will have to comply with the requirements for the protection of other services, applications and networks, to observe the technical conditions resulting from cross-border coordination and to tolerate any interference that may occur in the modified usage conditions.

For the purposes of this section, the following definitions apply:

- *non-active antenna system (AAS)* - means a base station and an antenna system that provides one or more antenna connectors, which are connected to one or more separately designed passive antenna elements to radiate radio waves. The amplitude and phase of the signals to the antenna elements is not continually adjusted in response to short term changes in the radio environment.
- *active antenna system (AAS)* - means a base station and an antenna system where the amplitude and/or phase between antenna elements is continually adjusted resulting in an antenna pattern that varies in response to short term changes in the radio environment. This excludes long-term beam shaping such as fixed electrical down tilt. In AAS base stations the antenna system is integrated as part of the base station system or product.

³⁸ Directive 2014/53/EU of the European Parliament and of the Council of 16 April 2014 on the harmonisation of the laws of the Member States relating to the making available on the market of radio equipment and repealing Directive 1999/5/EC, transposed into national legislation by Government Decision no. 740/2016 on making available on the market of radio equipment.

- *synchronised operation* - the operation of two or more different time division duplex (TDD) networks, where simultaneous uplink (UL - from the end-user terminal equipment to the base station of the network), and downlink (DL - from the base station of the network to the terminal equipment of the end user) transmissions do not occur. That is, at any given moment in time either all networks transmit in downlink or all networks transmit in uplink. This requires the alignment of all DL and UL transmissions for all TDD networks involved as well as synchronising the beginning of the frame across all networks.
- *unsynchronised operation* - operation of two or more different TDD networks, where at any given moment in time at least one network transmits in downlink (DL - from the base station of the network to the terminal equipment of the end user), while at least one network transmits in uplink (UL - from the end-user terminal equipment to the base station of the network).
This might happen if the TDD networks either do not align all DL and UL transmissions or do not synchronise at the beginning of the frame.
- *semi-synchronised operation* - operation of two or more different TDD networks in a mixed mode, where part of the frame is consistent with synchronised operation, while the remaining portion of the frame is consistent with unsynchronised operation.
This requires the adoption of a frame structure for all TDD networks involved, including slots where the UL/DL direction is not specified, as well as synchronising the beginning of the frame across all networks.
- *equivalent isotropically radiated power (EIRP)* – is the product of transmitter power and the antenna gain in a given direction relative to an isotropic antenna of a radio transmitter (absolute gain or isotropic gain).
- *total radiated power (TRP)* - is a measure of how much power a composite antenna (including AAS) radiates. It equals the total conducted power input into the antenna array system less any losses in the antenna array system.

TRP means the integral of the power transmitted in different directions over the entire radiation sphere as shown in the formula:

$$TRP \stackrel{\text{def}}{=} \frac{1}{4\pi} \int_0^{2\pi} \int_0^{\pi} P(\theta, \varphi) \sin(\theta) d\theta d\varphi$$

where

- $P(\theta, \varphi)$ is the power radiated by an antenna array system in direction (θ, φ) given by the formula:

$$P(\theta, \varphi) = P_{Tx} g(\theta, \varphi)$$

where

- P_{Tx} denotes the conducted power (measured in Watts), which is input to the array system, and
- $g(\theta, \varphi)$ denotes the array systems directional gain along the (θ, φ) direction.

3.3.3.4.1. Technical conditions for base stations operating in the 2500-2690 MHz band

This section defines the block edge mask (BEM) by establishing the technical parameters for base stations, which – adequately aggregated – result in the respective mask.

BEM are an essential component of conditions necessary to ensure coexistence between networks exploited by different licence holders using adjacent frequency blocks, in the absence of bilateral or multilateral agreements between the operators of such neighbouring networks.

The BEM for a certain frequency block consists of several elements indicated in Table no. 3.18. The BEM is made up of an in-block element (for which a power limit is defined within the block) and the

out-of-block elements – i.e. unwanted emissions such as out-of-band radiation - for which corresponding power limits are defined as follows:

- the baseline power limit, designed to protect the spectrum of other operators within the 2600 MHz band,
- the transitional region power limit, enabling filter roll-off from the in-block to the baseline power limit,
- the additional baseline power limit, applicable out-of-block for FDD AAS base stations, in the 2690 MHz-2700 MHz frequency range, to reduce the area of coordination with the radioastronomy service, where the administration deems necessary.

Power limits are provided separately for non-AAS and AAS. For non-AAS, the power limits apply to the mean EIRP. For AAS, the power limits apply to the mean TRP. Both the EIRP and the TRP are equivalent to the radiated power for isotropic antennas.

The mean EIRP or mean TRP are measured by averaging over a time interval and over a measurement frequency bandwidth.

In the time domain, the mean EIRP or mean TRP is averaged over the active portions of signal bursts and corresponds to a single power control setting.

In the frequency domain, the mean EIRP or mean TRP is determined over the measurement frequency bandwidth as given in Tables 3.19 - 3.25 below.

In general, and unless stated otherwise, the BEM power limits correspond to the aggregate power radiated by the relevant device including all transmit antennas, except in the case of baseline and transition requirements for non-AAS base stations, which are specified per antenna.

Table 3.18 – Definition of BEM elements

BEM element	Definition
In-block	Refers to a block for which the BEM is derived
Baseline	Spectrum within the 2500-2690 MHz frequency band used for wireless broadband electronic communications services (WBB ECS), excepting the block for which BEM is set, assigned to the operator, and the corresponding transitional regions
Transitional region	Spectrum in the frequency range within 0 to 5 MHz below and 0 to 5 MHz above the block assigned to the operator. The transitional regions do not apply to TDD blocks assigned to other operators, unless networks involved are synchronised. The transitional regions do not apply below 2500 MHz or above 2690 MHz.
Additional baseline	Spectrum between 2690 and 2700 MHz.

Explanatory note:

The coexistence of geographically adjacent networks that also use adjacent frequency blocks in the 2600 MHz band may require specific measures to mitigate radio interference. Typically, a frequency separation of at least 5 MHz should be applied in the case of two adjacent unsynchronized TDD networks or a TDD network adjacent to an FDD network. Such a separation should be implemented by either leaving a 5 MHz block unused as a guard block, or through usage of such a 5 MHz block under more restrictive BEM parameters (restricted frequency block). Any usage of a 5 MHz guard block would be subject to an increased risk of interference.

- a) The BEM for a specific block, other than a restricted one, is obtained by combining the power limit conditions in Tables 3.19, 3.20 and 3.21 in such a way that the limit for each frequency is given by the higher value out of the power limit values corresponding to the baseline requirements and those to the block specific requirements.
- b) The BEM for a restricted frequency block is obtained by combining the power limit conditions in Tables 3.20 and 3.22 in such a way that the limit for each frequency is given by the higher value

out of the power limit values corresponding to the baseline requirements and those to the block specific requirements.

- c) In using the FDD 2650-2690 MHz sub-band (downlink), all FDD blocks (D1 – D4) will be applied the conditions for unrestricted blocks;
- e) The base station requirements to be met by a holder of usage rights in the FDD 2670-2690 MHz sub-band, for unrestricted spectrum blocks, are defined by BEM whose elements are specified in Tables 3.19, 3.20 and 3.21:

Table 3.19 – In-block power limit for non-AAS and AAS base stations

BEM element	Non-AAS EIRP limit	AAS TRP limit
In-block	61 dBm/5 MHz per antenna The EIRP limit may be increased to 68 dBm/5MHz for certain use cases, e.g. in sparsely populated areas, provided this does not considerably raise the risk of blocking the terminal station receiver.	53 dBm/5 MHz per cell(*) The TRP limit may be increased to 60 dBm/5 MHz for certain use cases, e.g. in sparsely populated areas, provided this does not considerably raise the risk of blocking the terminal station receiver.
(*) In a multi-sector base station, the in-block radiated power limit applies to each one of the individual sectors (cells) of the base station.		

Table 3.20 – Baseline out-of-block BEM power limits for non-AAS and AAS base stations

BEM element	Frequency range	Non-AAS maximum mean EIRP limit per antenna	AAS maximum mean TRP limit per cell (*)
Baseline	Frequencies in the downlink FDD sub-band (FDD DL) below 5 MHz from the lower block edge (for which the BEM is defined) and above 5 MHz from the upper block edge; Frequencies in TDD blocks synchronised with the TDD block under consideration; Frequencies in the blocks of the 2570-2615 MHz band used for supplemental downlink only (SDL) (**); The range 2615-2620 MHz	+4 dBm/MHz (***)	+5 dBm/MHz (***)
	Frequencies in the 2500-2690 MHz band that are not covered by the definition in the row above	-45 dBm/MHz	-52 dBm/MHz

(*) In a multi-sector base station, the radiated power limit applies to each one of the individual sectors (cells) of the base station.

(**) The introduction of the AAS FDD does not impact the usage conditions in the SDL mode for non-AAS/AAS base stations.

(***) When applied for the protection of the spectrum used for DL transmissions, this baseline limit is based on the assumption that the emissions come from a macro base station. It should be noted that small-area wireless access points (small cells) may be deployed at lower heights and thus closer to terminal stations, which can result in higher levels of interference if the above power limits are used.

Explanatory note to Table 3.20:

- 1) Both limits – EIRP and TRP – are determined within a bandwidth of 1 MHz.
- 2) The small cells referred to in this section are various cell types including in-building cells (that may typically operate at up to 20 dBm EIRP in the case of residential use scenarios and up to 24 dBm EIRP in the case of enterprise use scenario) and outdoor cells that may typically operate at up to 40 dBm EIRP.

Table 3.21 – Transitional region BEM power limit for non-AAS and AAS base stations

BEM element	Frequency range	Non-AAS mean EIRP limit per antenna	AAS maximum mean TRP per cell (*)
Transitional region	-5 to 0 MHz from lower block edge or 0 to +5 MHz from upper block edge	+16 dBm/5 MHz (**)	+16 dBm/5 MHz (**)

(*) In a multi-sector base station, the radiated power limit applies to each one of the individual sectors (cells) of the base station.
(**) This limit is based on the assumption that the transmissions come from a macro base station. It should be noted that small-area wireless access points (small cells) may be deployed at lower heights and thus closer to terminal stations, which can result in higher levels of interference if the above power limits are used. In such cases, the Member States may set a more restrictive (lower) limit on a national level.

Explanatory note to Table 3.21:

The small base station cells referred to in this section are various cell types including indoor cells (that may typically operate at up to 20 dBm EIRP in the case of residential use scenarios and up to 24 dBm EIRP in the case of enterprise use scenario) and outdoor cells that may typically operate at up to 40 dBm EIRP.

- f) The transmission requirements for restricted frequency blocks are defined by block edge masks (BEM) whose elements are specified in tables 3.20 and 3.22:

Table 3.22 - In-block power limits for non-AAS and AAS base stations, for restricted blocks

BEM element	Frequency range	Non-AAS EIRP limit per antenna	AAS TRP limit per cell (*)
In-block	Restricted block spectrum	+25 dBm/5 MHz (**)	+ 22 dBm/5 MHz (**)

(*) In a multi-sector base station, the radiated power limit applies to each one of the individual sectors (cells) of the base station.
(**) It is noted that in some deployment scenarios this limit may not guarantee interference-free UL operation in adjacent channels, although this would typically be mitigated by building penetration loss and/or the difference in antenna height. Other mitigation methods may be also be applied on a national level.

- g) In the case of base stations with restrictions on antenna placement, i.e. where base station antennas are placed indoors or where the antenna height is below a certain height, alternative BEM power limits may be used. In these cases, the BEM for a restricted spectrum block for non-AAS may be in line with the power limits in Table 3.23, provided that the relevant power limits in Table 3.20 apply to the geographical borders with other EU Member States, while BEM according to table 3.22 remains valid at national level. For AAS stations with restrictions on

antenna placement, alternative national measures to those specified in Table 3.20 or Table 3.22 may be required, on a case-by-case basis.

Table 3.23 – Power limits for restricted block for non-AAS base stations with additional restrictions on antenna placement

BEM element	Frequency range	Maximum mean EIRP limit
Baseline	Lower band edge of 2500 MHz to -5 MHz from lower block edge, or +5 MHz from upper block edge to upper band edge of 2690 MHz	- 22 dBm/MHz
Transitional region	- 5 MHz to 0 MHz from lower block edge or 0 to 5 MHz from upper block edge	- 6 dBm/5 MHz

Table 3.24 – Additional baseline power limit for FDD AAS base stations, with regard to Radio Astronomy Service (RAS)

BEM element	Frequency range	Case	TRP power limit per cell
Additional baseline	2690-2700 MHz	A	+ 3 dBm/10 MHz
		B	Not applicable
Case A: This limit yields a reduced coordination zone with respect to RAS stations. Case B: Where additional baseline is not considered necessary by the concerned Member State (e.g. where there is no nearby RAS station or where no coordination zone is required).			

Explanatory note to Table 3.24:

The power limits in Table 3.24 may be applied to reduce the size of the coordination zone with RAS in specific geographical areas. Depending on the size of the necessary coordination zone required to protect RAS station(s), cross-border coordination may also be necessary. Additional measures may be needed on a national basis to protect RAS stations.

3.3.3.4.2. Technical conditions for terminal stations operating in the 2500-2690 MHz band

BEM requirements for terminal stations are specified in Table 3.25.

Table 3.25 – In-block power limits for terminal stations

BEM element	Maximum mean EIRP limit (including Automatic Transmitter Power Control range)	Maximum mean TRP limit (including the Automatic Transmitter Power Control range)
In-block	+ 35 dBm/5 MHz	+ 31 dBm/5 MHz

Note: EIRP should be used for fixed or installed terminal stations and the TRP should be used for the mobile or nomadic terminal stations.

3.3.3.5. Technical conditions on the usage of the 3400-3800 MHz band

The provisions of the following EC decisions and CEPT/ECC decisions, recommendations and reports apply with regard to the usage of the 3400-3800 MHz band:

- Decision 2008/411/EC 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, amended by Commission Implementing Decision 2014/276/EU and by Commission Implementing Decision (EU) 2019/235;
- Decision ECC/DEC/(11)06 on harmonised frequency arrangements for mobile/fixed communications networks (MFCN) operating in the band 3400-3600 MHz and 3600-3800 MHz bands, adopted on 09 December 2011 and modified on 14 March 2014 and 26 October 2018;
- CEPT Recommendation ECC/REC/(15)01 on cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1427-1518 MHz, and 3400-3800 MHz, approved on 13 February 2015, amended on 5 February 2016 and on 14 February 2020 and 10 June 2022;
- CEPT Recommendation ECC/REC/(20)03 on frame structures to facilitate cross-border coordination of TDD MFCN in the frequency band 3400-3800 MHz, adopted on 23 October 2020;
- CEPT Report 67 containing the CEPT response to the EC *Mandate to develop harmonised technical conditions for spectrum use in support of the introduction of next-generation (5G) terrestrial wireless systems in the Union*, the section on the examination of harmonized technical conditions for the 3400-3800 MHz band;
- ECC Report 296, aimed at providing options for the national regulatory framework on synchronizing in the 3400-3800 MHz band (a toolbox for administrations regarding the coexistence of MFCNs in synchronised, unsynchronised and semi-synchronised operation in 3400-3800 MHz band);
- ECC Report 331 on Efficient usage of the spectrum at the border of CEPT countries between TDD MFCN in the frequency band 3400-3800 MHz;
- ECC Report 281 on Analysis of the suitability of the regulatory technical conditions for 5G MFCN operation in the 3400-3800 MHz band;
- ECC Report 296 on 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;
- ECC Report 281 on Analysis of the suitability of the regulatory technical conditions for 5G MFCN operation in the 3400-3800 MHz band;
- ECC Report 278 on specific UWB applications in the bands 3.4-4.8 GHz and 6.0-8.5 GHz.
- ECC Report 203 on 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 100 on compatibility studies in the 3400-3800 MHz between broadband wireless systems and other radiocommunications services.

The aforementioned regulations may be subject to amendments or reviews. As well, further documents with a similar status may be adopted and influence the technical usage conditions in the 3400-3800 MHz band. Moreover, some of the above-mentioned regulations are not relevant as a whole for the scope of these Terms of Reference.

Within this section, the technical provisions regarding the channel arrangement available in the 3400-3800 MHz band will apply, as mentioned in section 2.5.4. of these Terms of Reference.

Both in the frequency sub-bands for which a licence has been issued, and outside these sub-bands (i.e. beyond the limits of the frequency blocks at the two ends of the assigned sub-bands), the licence holder must observe, for the base station transmission and for the subscriber's terminal station, in the 3400-3800 MHz band, the block edge mask (BEM) described in subsections 3.3.3.5.1 and 3.3.3.5.2.

Holders of frequency usage rights may use technical parameters that are less restrictive than those under subsection 3.3.3.5.1, where they have concluded bilateral or multilateral arrangements thereon, including in the case of adjacent frequency blocks awarded to different holders. The conclusion of such bilateral or multilateral arrangements and the content of the respective arrangements will be notified to the Authority.

For the purposes of this section, the following definitions apply:

a) active antenna system (AAS) - a base station and an antenna system where the amplitude and/or phase between antenna elements is continually adjusted resulting in an antenna pattern that varies in response to short term changes in the radio environment.

This excludes long-term beam shaping such as fixed electrical down tilt (possible in the case of a negative elevation angle) of the main radiation lobe of an antenna, which is obtained by electrical means (not by mechanical means i.e. by physically tilting the antenna).

In AAS base stations the antenna system is integrated as part of the base station system or product.

b) *synchronised* operation - the operation of two or more different time division duplex (TDD) networks, where simultaneous uplink (UL - from the end-user terminal equipment to the base station of the network), and downlink (DL - from the base station of the network to the terminal equipment of the end user) transmissions do not occur. That is, at any given moment in time either all networks transmit in downlink or all networks transmit in uplink.

This requires the alignment of all DL and UL transmissions for all TDD networks involved as well as synchronising the beginning of the frame across all networks.

c) *unsynchronised* operation - operation of two or more different TDD networks, where at any given moment in time at least one network transmits in downlink (DL - from the base station of the network to the terminal equipment of the end user), while at least one network transmits in uplink (UL - from the end-user terminal equipment to the base station of the network).

This might happen if the TDD networks either do not align all DL and UL transmissions or do not synchronise at the beginning of the frame.

d) *semi-synchronised* operation - operation of two or more different TDD networks in a mixed mode, where part of the frame is consistent with synchronised operation, while the remaining portion of the frame is consistent with unsynchronised operation.

This requires the adoption of a frame structure for all TDD networks involved, including slots where the UL/DL direction is not specified, as well as synchronising the beginning of the frame across all networks.

e) *total radiated power* (TRP) - is a measure of how much power a composite antenna (AAS included) radiates.

By definition, TRP means the integral of the power transmitted in different directions over the entire radiation sphere as shown in the formula:

$$TRP \stackrel{\text{def}}{=} \frac{1}{4\pi} \int_0^{2\pi} \int_0^{\pi} P(\theta, \varphi) \sin(\theta) d\theta d\varphi$$

where

- TRP equals the total conducted power input into the antenna array system less any losses in the antenna array system,
- $P(\theta, \varphi)$ is the power radiated by an antenna array system in direction (θ, φ) . This is given by the formula:

$$P(\theta, \varphi) = P_{Tx}g(\theta, \varphi)$$

where

- P_{Tx} denotes the conducted power (measured in Watts), which is input to the array system, and
- $g(\theta, \varphi)$ denotes the array systems directional gain along the (θ, φ) direction.

3.3.3.5.1. Technical conditions on the usage of the 3400-3800 MHz band by base stations

This section defines the block edge mask (BEM) by establishing the technical parameters for base stations, which – adequately aggregated – result in the respective mask.

BEM is an essential component of conditions necessary to ensure coexistence between networks exploited by different licence holders using adjacent frequency blocks, in the absence of bilateral or multilateral agreements between the operators of such neighbouring networks.

The BEM for a certain frequency block consists of several elements indicated in Table no. 3.26. The BEM is made up of an in-block element (for which a power limit is defined within the block assigned to an operator) and of out-of-block elements – i.e. unwanted emissions such as out-of-band emission - for which corresponding power limits are defined as follows:

- the baseline power limit, designed to protect the spectrum resources of other operators,
- the transitional region power limits, enabling filter roll-off from the in-block to the baseline power limit,
- the additional baseline power limit is applicable only where necessary for the protection of radiocommunications equipment working in the frequency band below 3.4 GHz or above 3.8 GHz,
- the restricted baseline power limit, which applies only for protecting frequency blocks of other networks, in cases of unsynchronised or semi-synchronised operation (for which BEM is defined).

Table 3.26 – Definition of BEM elements

BEM element	Definition
in-block	Block for which the BEM is derived.
baseline	includes the whole frequency spectrum in the 3.4-3.8 GHz band used in TDD mode by MFCN networks (i.e. networks providing wireless broadband electronic communications services – WBB ECS), except for the concerned block (assigned to the operator and for which the BEM is derived) and the corresponding transitional regions.
transitional region	The transitional region applies to the 0 - 10 MHz below and above the block assigned to the operator. Note 1: Transitional regions do not apply to adjacent TDD blocks assigned to other operators, unless networks are synchronised. In such a situation, the baseline starts directly at the edge of the concerned block. Note 2: Transitional regions do not apply below 3400 MHz or above 3800 MHz.
additional baseline	below 3400 MHz and above 3800
restricted baseline	spectrum used for WBB ECS by networks unsynchronised or semi-synchronised with the block assigned to the operator

Explanatory note to Table 3.26:

The BEM elements are applicable to base stations with different power levels (typically referred to as macro, micro, pico, and femto³⁹ base stations).

To obtain the BEM for a specific block, the BEM elements defined in Table no. 3.26 are combined as follows:

1. The in-block power limit will be used for the specific block assigned to an operator, for which the BEM mask is derived;
2. Transitional regions are determined, and corresponding power limits are used.
3. For the rest of the spectrum actually designated for use by the MFCN networks providing WBB ECS, except for the concerned block (assigned to the operator and for which the BEM is derived) and the corresponding transitional regions, baseline power limits will be used;
4. Restricted baseline power limits corresponding to the restricted baseline will be used for frequency blocks of other MFCN networks providing WBB ECS and operating in unsynchronised or semi-synchronised mode with the respective operator's network;
5. For the spectrum situated below the 3400 MHz limit, the additional baseline power limit corresponding to the additional baseline will be used;
6. For the spectrum situated above the 3800 MHz limit, the additional baseline power limit corresponding to the additional baseline will be used.

Tables 3.27-3.31 contain the power limits corresponding to the various BEM elements.

In Tables 3.28 and 3.29, parameter P_{Max} is the maximum carrier power (dBm) for the concerned base station, defined and measured differently, based on the radiating system type - as described below:

P_{Max} is defined and measured as EIRP (effective isotropic radiated power, e.i.r.p) per carrier per antenna, for base stations with a radiating system with non-active antenna system (non-AAS).

P_{Max} is defined as maximum average power per carrier of a base station and is measured as TRP per carrier in a certain cell, for base stations with a radiating system with active antennas (AAS).

In tables 3.28, 3.29 and 3.32 the power limits are considered as the strictest (lowest) among two comparing requirements (limits): a limit obtained by a relative attenuation as to the maximum power per carrier, and a fixed upper limit.

Table 3.27 - In-block power limit

BEM element	frequency range	Non-AAS and AAS base stations
in-block	block assigned to the operator	62 dBm/5 MHz per antenna

Explanatory note to Table 3.27:

The value in the table above is a recommended one. The value of the respective parameter will be chosen on a case-by-case basis, with a view to avoiding the occurrence of harmful interference and with due regard to the relevant provisions in section 2.5. and to all the provisions of subsection 3.3.3.5.1 of the Terms of Reference, to the provisions of the 3400-3800 MHz Strategy and to the regulations in force regarding the limitation of population exposure to electromagnetic fields, as well as to the obligations regarding the radio frequency usage in border areas.

For femto base stations, the use of power control is mandatory in order to minimise interference to adjacent channels. The requirement regarding power control for the femto base stations is triggered

³⁹ These terms are not uniquely defined and refer to cellular base stations with different power levels, which decrease in the following order: macro, micro, pico, femto. In particular, femto cells are small base stations with the lowest power levels, which are typically used indoors.

by the necessity to reduce interference to the equipment the consumers may use and which, therefore, may be uncoordinated with the neighbouring networks.

Table 3.28 – Baseline power limits for synchronised MFCN networks

BEM element	Frequency range	Power limit
baseline	In the 3400-3800 MHz band, below -10 MHz from lower block edge In the 3400-3800 MHz band, above 10 MHz from upper block edge	EIRP (for non-AAS): min ($P_{Max}-43, 13$) dBm / 5 MHz per antenna TRP (for AAS): min ($P_{Max}-43, 1$) dBm / 5 MHz per cell *
* In a multi-sector base station, the radiated power limit applies to each one of the individual sectors.		

Explanatory note to table 3.28:

Fixed comparison level – i.e. 13 dBm/5 MHz for non-AAS or 1 dBm/5 MHz for AAS – ensure an upper limit for harmful interference generated by a base station. When two TDD blocks are synchronised, no interference will occur between base stations.

Table 3.29 - Transitional power limits, for synchronised MFCN networks

BEM element	Frequency range	Power limit
transitional region	-5 to 0 MHz from lower block edge 0 to 5 MHz from upper block edge	EIRP (for non-AAS): min ($P_{Max}-40, 21$) dBm / 5 MHz per antenna TRP (for AAS): min ($P_{Max}-40, 16$) dBm / 5 MHz per cell *
transitional region	-10 to -5 MHz from lower block edge 10 to 5 MHz from upper block edge	EIRP (for non-AAS): min ($P_{Max}-43, 15$) dBm / 5 MHz per antenna TRP (for AAS): min ($P_{Max}-43, 12$) dBm / 5 MHz per cell *
* In a multi-sector base station, the radiated power limit applies to each one of the individual sectors.		

Table 3.30 – Restricted baseline power limits, for unsynchronised and semi-synchronised MFCN networks

BEM element	Frequency band	Power limit
restricted baseline	For the 3400-3800 MHz band, unsynchronised or semi-synchronised blocks below the lower block edge For the 3400-3800 MHz, unsynchronised or semi-synchronised blocks above the upper block edge	EIRP (for non-AAS)*: -34 dBm / 5 MHz per cell ** TRP (for AAS): -43 dBm / 5 MHz per cell **

* Where there is no risk of harmful interference to macro base stations, operators of femto base stations in adjacent channels may negotiate an exception for this value of the baseline power limit. In such cases, the value -25 dBm / 5 MHz (EIRP per cell) may be used.

** In a multi-sector base station, the radiated power limit applies to each one of the individual sectors.

Explanatory note to Table 3.30:

These restricted baseline power limits are used for operation in unsynchronised or semi-synchronised mode of base stations in different networks, where geographical separation is not possible.

Table 3.31 - Additional baseline power limits (for protecting radiocommunications systems below 3400 MHz)

BEM element	Frequency range	Power limit
additional baseline	below 3380 MHz	EIRP (for non-AAS): -50 dBm/MHz per antenna TRP (for AAS): -52 dBm / MHz per cell *
* In a multi-sector base station, the radiated power limit applies to each one of the individual sectors.		

Explanatory note to Table no. 3.31

The additional baseline power limits indicated in the table above will apply only to outdoor cells.

Table 3.32 – Additional baseline power limit (for protecting radiocommunications systems above 3800 MHz)

BEM element	Frequency range	Power limit
additional baseline	3800 – 3805 MHz	EIRP (for non-AAS): min ($P_{Max}-40$, 21) dBm / 5 MHz per antenna TRP (for AAS): min ($P_{Max}-40$, 16) dBm / 5 MHz per cell *
additional baseline	3805 – 3810 MHz	EIRP (for non-AAS): min ($P_{Max}-43$, 15) dBm / 5 MHz per antenna TRP (for AAS): min ($P_{Max}-43$, 12) dBm / 5 MHz per cell*
additional baseline	3810 – 3840 MHz	EIRP (for non-AAS): min ($P_{Max}-43$, 13) dBm / 5 MHz per antenna TRP (for AAS): min ($P_{Max}-43$, 1) dBm / 5 MHz per cell *
additional baseline	above 3840 MHz	EIRP (for non-AAS):

		-2 dBm / 5 MHz per antenna TRP (for AAS): -14 dBm / 5 MHz per cell *
* In a multi-sector base station, the radiated power limit applies to each one of the individual sectors.		

Explanatory note to Table 3.32:

The additional reference power limits in the table above are indicated for information purposes only and will apply only upon the Authority's request, if the case arises.

3.3.3.5.2. Technical conditions for the use of the 3400 – 3800 MHz band by terminal stations

This section defines the in-block power limit for the terminal station, according to Table 3.33.

Table 3.33 – In-block power limit

BEM element	Frequency range	Power limit
in-block	block assigned to the operator	maximum 25 dBm *
* This power limit is specified as EIRP for terminal stations designed to be fixed or installed and as TRP for terminal stations designed to be mobile or nomadic. EIRP and TRP are equivalent for isotropic antennas. This value includes a tolerance (of up to 2 dB), defined in the harmonised standards, to take into account operation under extreme weather conditions and production spread.		

Explanatory note to table no. 3.33:

The value in the table is recommended only. This value will be adjusted accordingly, on a case-by case basis, if harmful interference occurs or to ensure compliance with the relevant provisions of sections 2.5., and with all the provisions of section 3.3.3.5.2. of the Terms of Reference, of the 3400-3800 MHz Strategy, and of the Position Paper, with the regulations in force on limiting human exposure to electromagnetic fields, as well as with the obligations regarding frequency usage in border areas.

3.3.3.6. Technical conditions on frequency usage in border areas

In border areas, licence holder will use the allotted frequency blocks upon coordination with the communications administrations of the neighbouring countries, with due regard to the requirements arising from the application of international agreements in which Romania is a party or from the applicable international regulations regarding frequency coordination.

Future agreements or subsequent amendments of the existing agreements may complete or replace some of the provisions under section 3.3.3.6 and of its subsections.

Where technical arrangements have been concluded between the operators and approved by the authorities of the neighbouring countries involved, the frequencies may be used under different conditions than those specified in the following subsections. An arrangement concluded between operators may preclude the usage of frequencies in shared bands, on both sides of the border, in accordance with the provisions stipulated in the agreements concluded between Authorities.

The Authority will make available to the bidders the bilateral or multilateral agreements that are relevant for the frequency spectrum being auctioned off, in English, respectively in Romanian – for bilateral agreements concluded with the Republic of Moldova – as PDF files.

3.3.3.6.1. Technical conditions on the usage of the 700 MHz band in border areas

a) Coexistence between MFCN networks in border areas

- For the coexistence of MFCN networks to be operated on the territory of Romania and the MFCN networks to be operated on the territory of Hungary in the 700 MHz band, in border areas, the provisions of the following multilateral technical agreement are applicable:
 - *"Technical Agreement between the national authorities for the management of frequencies 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, concluded in Budapest, on 15 February 2018".*
- For the coexistence of MFCN networks to be operated on the territory of Romania and the MFCN networks to be operated on the territory of the Republic of Moldova in the 700 MHz band, in border areas, the provisions of the following multilateral technical agreement are applicable:
 - *"Technical Arrangement between the National Authority for Management and Regulation in Communications of Romania and the Public Institution "National Radio Frequency Management Service" (NSRFM) of the Republic of Moldova on border coordination for terrestrial systems capable of providing electronic communications services in the 694-790 MHz frequency band", concluded in 2021.*
- Where no bilateral agreements were concluded with the neighbouring countries, the provisions of No. 5.312A and 5.317A of Art. 5 of RR-ITU and the relevant provisions of Recommendation ECC/REC/(15)01 on Cross-border coordination for mobile/fixed communications networks (MFCN) in the frequency bands: 694-790 MHz, 1427-1518 MHz and 3400-3800 MHz (approved on 13 February 2015, amended on 5 February 2016, 14 February 2020 and 10 June 2022) will apply.

b) Protection of aeronautical radionavigation systems:

As previously shown in section 2.2.1.1, in accordance with Note 5.312 of Art. 5 of RR-ITU, in Ukraine, the frequency band 694-790 MHz is allocated to the aeronautical radionavigation service on a primary basis.

In accordance with the provisions of 5.312A and 5.317A of Art. 5 of the RR-ITU, the mobile service - except aeronautical mobile - and IMT systems can use the 694-790 MHz band in Romania, on a primary basis, subject to the agreement achieved based on 9.21 of RR-ITU as regards the protection of systems in the aeronautical radionavigation service in the countries mentioned in Note 5.312, which may be affected. The criteria for identifying the affected administration according to 9.21, for the mobile service as to the aeronautical radionavigation service in the 694-790 MHz band, are set in the Annex to Resolution 760 of RR-ITU. [See Resolution 760 (WRC-15) of the above-mentioned regulation].

For the implementation of the above-mentioned regulations, on grounds of Art. 6 of RR-ITU, the telecommunications administrations of Romania and Ukraine have concluded the following bilateral technical arrangement:

- *"Technical arrangement on the use of the 694-790 MHz frequency band for terrestrial systems in the border areas of Romania and Ukraine, concluded in Bucharest, in October 2015";*

To ensure protection from harmful interference of the systems in Ukraine's aeronautical radionavigation service, the base stations in the land mobile service installed on the territory of Romania may operate under the conditions set by the above-mentioned agreement.

c) Compatibility with the analogue and digital television stations in the neighbouring countries

At present, all the neighbouring countries, except for Ukraine, use this band for the land mobile service.

According to the latest assessment, the DTT transmitters operating in the 700 MHz band in Ukraine and the associated technical parameters are presented in Table 2.4. of section 2.2.3.2.

- In the absence of bilateral agreements with the neighbouring countries, in relationship with the countries using the 700 MHz band for DTT, the applicable provisions are those of No. 5.312A and 5.317A of Art. 5 of RR-ITU and the technical criteria in the CEPT Report 29 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" (of 26 June 2009).

3.3.3.6.2. Technical conditions on the usage of the 1500 MHz band in border areas

a) Coexistence between MFCN networks in border areas:

- Concerning the coexistence between MFCN networks to be operated on the territory of Romania with the MFCN networks to be operated on the territory of Hungary in the 1452-1492 MHz band in border areas, the provisions of the following bilateral technical agreement are applicable:
 - *"Technical Agreement between the national authorities for the management of frequencies of Austria, Croatia, Hungary, Romania, The Slovak Republic and Slovenia on border coordination for terrestrial systems capable of providing electronic communications services in the 1452-1492 MHz frequency band, concluded in Budapest, on 14 February 2018".*
- For the coexistence of MFCN networks to be operated on the territory of Romania and the MFCN networks to be operated on the territory of the Republic of Moldova in the 1452-1492 MHz band, in border areas, the provisions of the following multilateral technical agreement are applicable:
 - *"Technical Arrangement between the National Authority for Management and Regulation in Communications of Romania and the Public Institution "National Radio Frequency Management Service" (NSRFM) of the Republic of Moldova on border coordination for terrestrial systems capable of providing electronic communications services in the 1452-1492 MHz frequency band", concluded in 2021.*
- In the absence of bilateral agreements with the neighbouring countries, the relevant provisions of Article 5 of the RR-ITU (see section 2.3.1.1) and – where frequency usage is harmonised for MFCN on both sides of the border – the relevant provisions of Recommendation ECC/REC/(15)01 on 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 (approved on 13 February 2015, amended on 5 February 2016) shall apply.

3.3.3.6.3. Technical conditions on the usage of the 2600 MHz band in border areas

a) Coexistence between MFCN networks in border areas:

- Concerning the coexistence between MFCN networks to be operated on the territory of Romania with the MFCN networks to be operated on the territory of Hungary in the 2550-2570 MHz/2670-2690 MHz sub-bands, in border areas, the provisions of the following bilateral technical arrangement are applicable:

- *“Technical arrangement between the national authorities for the management of frequencies of Hungary and Romania concerning the coordination in border areas for terrestrial systems capable of providing electronic communications services in the 2500-2690 MHz band, concluded in 2013”.*

The above-mentioned arrangement is to be reviewed with a view to applying updated Recommendation ECC (11)05 on cross-border coordination for Mobile/Fixed Communications Networks (MFCN) in the frequency band 2500-2690 MHz (approved on 26 May 2011, amended on 3 February 2017).

- For the coexistence of MFCN to be implemented on the territory of Romania and the MFCN networks to be deployed on the territory of the Republic of Moldova in the 2550-2570 MHz/2670-2690 MHz sub-bands, in border areas, the provisions of the following bilateral agreement will apply:
 - *“Technical Arrangement between the National Authority for Management and Regulation in Communications of Romania and the Public Institution “National Radio Frequency Management Service” (NSRFM) of the Republic of Moldova on border coordination for terrestrial systems capable of providing electronic communications services in the 2500-2690 MHz frequency band, concluded in 2021.*
- In the absence of bilateral or multilateral agreements with the neighbouring countries, the provisions of No. 5.384A of Article 5 of the ITU Radio Regulations and – where frequency usage is harmonised for MFCN on both sides of the border – the relevant provisions of Recommendation ECC/REC/(11)05 on cross-border coordination for Mobile/Fixed Communications Networks (MFCN) in the frequency band 2500-2690 MHz (approved on 26 May 2011, amended on 3 February 2017) shall apply.

3.3.3.6.4. Technical conditions on the usage of the 3400-3800 MHz band in border areas

Currently there are no technical agreements regarding the preferential channels arrangements in the 3400-3800 MHz band to be used by the operators in Romania and in the neighbouring countries – in the respective bilateral and trilateral border areas – that take into account the provisions of Decisions 2014/276/EU or (EU) 2019/235.

Two of the countries neighbouring Romania are EU member states and therefore are the only neighbours subject to the obligation to implement the provisions of Decision (EU) 2019/235.

The Republic of Moldova, Serbia and Ukraine are not bound to implement the provisions of the EU Decision, however they are members of the European Conference of Postal and Telecommunications Administrations (CEPT), therefore they must take into account Decision ECC/DEC/(11)06, as amended in October 2018. Nevertheless, within CEPT, the decisions adopted by the bodies of this international organisation have a different status than those adopted at EU level.

Therefore, the three countries mentioned above have no constraints on choosing a certain channelling arrangement or on the deadline for deploying broadband MFCN systems in the 3400-3800 MHz band.

In this context, the conclusion of bilateral/multilateral agreements with the neighbouring countries on the usage of the respective frequencies in border areas proves to be a complex proceeding, with technical and operational difficulties.

The steps taken by ANCOM in this regard are ongoing, such draft agreements being under analysis and negotiation only with the authorities of Hungary and the Republic of Moldova, for the time being. Romania is considering the possibility of joining a multilateral technical agreement in the 3400-3800 MHz band already signed by several European states (including Hungary and Serbia).

ANCOM takes due diligence for the conclusion of bilateral or - as the case may be - multilateral agreements in the 3400-3800 MHz band with the communications administrations of all the neighbouring countries.

ANCOM will take into account the interests of the Romanian operators in the process of elaborating the above-mentioned technical agreements and of negotiating with the countries involved. Moreover, before finalizing and concluding the aforementioned international agreements, ANCOM will invite the involved operators' views thereon.

In border areas, licence holders will use the allotted frequency sub-bands in compliance with the requirements resulting from the international agreements in which Romania is a part or from the international regulations on frequency usage coordination that are relevant for the respective sub-bands.

Thus, where no bilateral or multilateral agreements have been concluded with the neighbouring countries on the operation of MFCN networks, in the 3400-3600 MHz band, in border areas, the provisions of No. 5.430A of Art. 5 of RR-ITU apply.

In the above-mentioned case - if the neighbouring countries reach consensus thereon - the relevant provisions of CEPT Recommendation ECC/REC/(15)01 which are applicable to the 3400-3800 MHz, as well, will also apply.

However, concerning Romania's bilateral or trilateral border areas for which no relevant bilateral/multilateral technical agreements (on the use of the 3400-3800 MHz band in the respective border areas) have been concluded with the parties involved - while the respective countries have not otherwise negotiated the implementation of Recommendation ECC/REC/(15)01 -, the allotted frequency sub-bands will be used in compliance with those technical conditions for which cross-border frequency coordination is not necessary, in accordance with the relevant specifications in Recommendation ECC/REC/(15)01.

Upon the conclusion of the above-mentioned bilateral/multilateral agreements, the licence holders will do the planning for and use the allotted frequency sub-bands, in the border areas of Romania within the scope of the respective agreements, only in compliance with these technical agreements, which shall prevail upon all other provisions mentioned in this section.

If technical arrangements are concluded between operators and approved by the relevant administrations of the neighbouring countries involved, the frequencies may be used under different conditions than those specified in the above-mentioned bilateral/multilateral technical agreements. Thus, under such an arrangement concluded between the operators on both sides of the border, frequency usage conditions may diverge from the requirements stipulated in the technical agreements concluded between the communications administrations of the countries responsible for the networks of the respective operators.

3.3.4. Requirements concerning the provision of emergency communications

The holders of licences awarded following this selection procedure will ensure that calls are routed to the single number for emergency calls 112 in accordance with Article 70 paragraphs (4)-(5) of Government Emergency Ordinance no. 111/2011 on electronic communications, approved, with amendments and completions, by Law no. 140/2012, with the subsequent amendments and completions and with Government Emergency Ordinance no. 34/2008 regarding the organization and functioning of the single national system for emergency calls, approved, with amendments and completions, by Law no. 160/2008.

Considering the Government Emergency Ordinance no. 46/2019 regarding the operation of the system for warning the population in emergency situations "RO-ALERT", the holders of frequency usage licences have the obligation to connect their mobile public networks with the RO-ALERT System.

Failure to comply with the obligations referred to in the preceding paragraphs is subject to the rules established in the above-mentioned normative acts.

Where PPDR⁴⁰ radio communications are provided on a contractual basis - a relationship established between the provider/providers and the beneficiary/beneficiaries of the services - a series of specific technical requirements that lead to ensuring an adequate quality of the service provided become applicable. Thus, when PPDR services are provided by public providers of electronic communications networks and services, on a contractual basis (the parties have agreed on their objectives), a set of specific technical obligations apply, in order to ensure the adequate quality of the service provided.

Therefore, with a view to providing PPDR services, when a contractual basis has been established, the holder/holders of frequency usage rights acquired following this procedure will also pursue the fulfilment of the following requirements in relationship with the designated integrator of PPDR communications and services:

- a) implementation within the network of the possibility to provide service classes and network access for the national PPDR communications integrator;
- b) the possibility to ensure, and granting priority to, the services destined for the beneficiary of the national PPDR communications integrator. Priority is understood as the service feature that enables the prioritization of a user, application, traffic flow, or individual packet over the rest of the operator's customers, in setting up a data session and processing the respective session;
- c) possibility of ensuring pre-emption in the provision of PPDR services. Pre-emption is understood as the service feature that enables priority allocation of communication resources to the respective service beneficiaries, even if - during periods of network congestion - this allocation of resources is may be also performed by closing active sessions for other operator's customers.

A more detailed technical description is provided in the 3GPP Technical Specifications (TS):

- TS 22.280 Mission Critical Services Common Requirements;
 - TS 23.379 Mission Critical Push To Talk call control; Protocol Specifications;
 - TS 23.281 Functional architecture and information flows to support Mission Critical Video (MCVideo);
 - TS 23.282 Functional architecture and information flows to support Mission Critical Data (MCDData).
- d) the possibility of providing services for PPDR communications beneficiaries, under national roaming conditions, upon the negotiation in good faith and following the conclusion of national roaming agreements with other holders of frequency usage licenses for the provision of mobile public electronic communications networks.

⁴⁰ PPDR – public protection and disaster relief communications (according to Recommendation 2003/558/EC (notified by C(2003)2657).

3.4. Transfer of usage rights

The frequency usage rights to be awarded may be transferred or leased in accordance with Article 35 of the Framework-Ordinance.

Any agreement – irrespective of the form of concluding it – by which the frequency usage rights are alienated/transferred/rented is forbidden.

At any transfer or leasing of rights, the Authority will watch the observance of the objectives considered when those rights were initially awarded or compliance with certain requirements and/or formalities, on the part of the new recipient of the rights.

The principles that will be considered by the Authority in this case, are enumerated (without limitation) below:

- the usage rights may be transferred to a third party, fully or partially, only upon ANCOM's prior agreement, along with the commitment to fulfilling all the accompanying obligations;
- the conditions and objectives set or envisaged in awarding the usage right/rights will be considered;
- the transfer of the usage rights must not result in competition constraints, hindering or distortion; especially, the transfer of the usage rights must not be a way for eluding the limitations regarding the gaining of the usage rights or the rules regarding the participants' independence established during the selection procedure;
- where the use of radio frequencies is harmonised at the European level, the transfer of the usage rights must not lead to changing the usage destination of the licenced frequencies in such a way as to breach this harmonised usage.

3.5. Shared use of the spectrum resources allotted by the frequency usage licence

The shared use of the radio spectrum is possible under the conditions of Article 22² of the Framework Ordinance.

ANCOM may allow, the shared use of the frequency spectrum within the radio frequency bands included in this selection procedure, by the holders of frequency usage rights in bands harmonized at European level for the provision of public electronic communications networks and services, acquired following this selection procedure or other similar previous selection procedures, - under the conditions of facilitating the efficient use of the frequency spectrum, competition and innovation - only in the situation where there is no more radio spectrum available in the respective band at the time of filing the request for the shared use of the frequency spectrum by the holders mentioned above.

ANCOM's decision establishes the request procedure and conditions for the shared use of the radio frequency spectrum.

3.6. Amounts to be paid by the licence holders

The persons participating in the selection procedure organised with a view to awarding the usage rights for the radio frequencies will take into consideration the following:

- the payment of the licence fee established during the competitive selection procedure under the conditions stipulated in Article 28 paragraph (3¹) of the Framework-Ordinance and in Government Decision no./2022 on setting the amount of the minimum licence fee for awarding certain frequency usage rights for the frequencies available in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands;
- the payment of the spectrum usage tariff collected annually in accordance with Article 30 of the Framework-Ordinance and with Decision of the National Authority for Management and Regulation in Communications no. 551/2012 establishing the spectrum usage tariff, with the subsequent amendments and completions.

3.7. Monitoring and control of compliance with the obligations

3.7.1. Coverage definition

A bin⁴¹ will be considered covered with mobile communications services if the following criteria are cumulatively met:

a) the average reference field strength level, measured outdoors, at 1.5 m height above ground, by reference to an antenna with a gain of 0 dBi, is at least equal to the level derived from the receiver sensitivity according to the relevant standards/studies (by frequency band, bandwidth used and data transfer rate), to which a margin of 10 dB and a correction factor related to indoor propagation attenuation is added (for indoor coverage obligations);

The correction factor related to indoor propagation attenuation has the following values:

- 6 dB for the 700 MHz, 800 MHz and 900 MHz bands, respectively 8 dB for the 1500 MHz, 2600 MHz and 3600 MHz bands for coverage in rural areas and for coverage on roads and highways;
- 12 dB for the 700 MHz, 800 MHz and 900 MHz bands, respectively 16 dB for the 1500 MHz, 2600 MHz and 3600 MHz bands for coverage in urban areas.

Urban areas mean the settlements in Romania that have been declared towns or cities, plus the included settlements (except villages).

Rural areas consist of communes, villages, including villages that belong to towns or cities (according to Articles 99 and 100 of Emergency Ordinance no. 57/2019 on the Administrative Code, with the subsequent amendments and completions).

Signals received from stations more than 35 km away will not be taken into account for the coverage calculation.

b) the following parameters related to the quality of the IMT signal are observed (the parameters defined especially for the purpose of checking coverage by measurements):

- for LTE/5G: $SINR \geq -5\text{dB}$;
- for any other technology, the parameter and its threshold value will be defined by ANCOM after this new technology is available considering a $BLER \leq 10\%$.

c) the conditions specified in section 3.3.1, regarding the minimum downlink speed, are observed.

The same definition is applicable for coverage achieved by using frequencies for which the holder holds previously awarded usage rights.

The reference levels can be adjusted based on justified proposals by the operators, according to the technologies and frequency bands used at the measurement time.

In principle, coverage will be measured as follows:

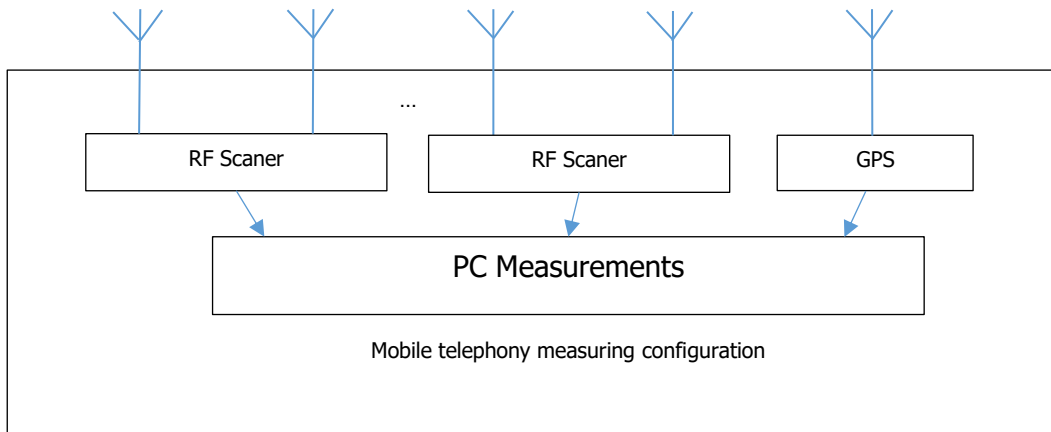
- Measurements to verify the coverage with data services at a downlink speed of at least 2 Mbit/s of the settlements specified in Annex 1.
- Prediction and/or measurements for verifying the coverage obligation provided for in sections A2 and B2 of indent 3.3.1.1.
- Measurements for verification of coverage obligations under section A3 of indent 3.3.1.1 and under indent 3.3.1.2.1.

⁴¹ A virtual square of side 50 m

3.7.2. Measurement-based calculation of the signal coverage percentage in a settlement

For verifying the signal coverage, a configuration of one or more universal network analysers (scanners) controlled by a computer running a dedicated software, receiving antennas mounted outside the vehicle, GPS, etc. is used. The universal network analyser/analysers used to perform measurements must ensure the possibility of performing coverage measurements for all frequencies and technologies used by the operator in the verified settlement.

Configuration example:



The signal measurements will be carried out in a moving vehicle (e.g. drive-test sessions), covering all accessible roads in the respective settlement, without exceeding the speed of 50 km/h. The measurement results will be grouped on a virtual grid consisting of 50m bins and arithmetically averaged in linear units (mW) per each cell identified in the respective square.

The polygons provided by the National Agency for Cadastre and Real Estate Publicity (ANCPI) will be used for identifying the limits of a settlement. Should these not be available, road signs will be used.

Concerning the signal coverage, all bins for which the following conditions are cumulatively met will be considered covered:

- the average reference field strength level for the cell with the highest level per band/technology/operator in the respective square \geq the established threshold level or result according to letter a) from section 3.7.1.
- the value of the better quality parameter (lower or higher, as applicable) than the value of the parameter specified in letter b) from section 3.7.1.

The length of the route measured inside a settlement will be at least 1 km for every 3,500 inhabitants for the settlements in Tables 3.2 and 3.3 and the City of Bucharest and at least 1 km for every 1,000 inhabitants for the other settlements. Cities and towns will be measured so that the boulevards and main streets, as well as secondary streets, are covered - so that the settlement is as homogeneously measured as possible. In the case of villages and communes, measurements will be performed on all accessible roads. Where measurements are performed twice in a settlement, the same roads will be covered as in the first measurement session.

The signal coverage percentage for a settlement will be calculated as the ratio of the number of covered bins to the total number of measured bins. It will be calculated based on the measurements made in *intra muros* zoning areas.

3.7.3. Methods used to verify the data service coverage of the settlements specified in Annex 1

The fulfillment of the obligation to cover a settlement from the list in Annex 1, the methodology described in section 3.7.2 will be used. A settlement will be considered covered if the signal coverage percentage is greater than or equal to 95%. The threshold level used as a reference for declaring a point or bin covered in terms of radio signal level is – 104 dBm, for the 700 MHz band. For the other bands, the threshold level used as a reference is calculated by applying section 3.7.1.

ANCOM can carry out measurements to verify the downlink data transfer speed in any settlement from Annex 1. Such measurements can also be carried out in the event of petitions relating to the lack of coverage or the poor quality of the services offered in that settlement.

This parameter will be measured using a telephone/modem and a GPS receiver connected to a workstation running a dedicated application or only telephones running a dedicated application, or the Netograf platform.

The terminal (modem or telephone) used to make the measurements must be compatible with all frequency bands used by the operator in the respective area and will be installed at 1.5 m height above ground or will be connected to an antenna with a gain of 0 dBi installed at 1.5 m height above ground. The terminal will also be able to use the aggregation of frequency bands that the operator declares to use. The measurements to check the transfer speed will be carried out statically, in a minimum number of 20 measurement points, evenly distributed over the radius of the town, in areas where the radio coverage has been validated by the radio signal measurements described in section 3.7.2.

A minimum of 3 measurements will be conducted in each location, respectively a minimum of 60 in a settlement, at a distance of at least 50 m within the area covered by the radio signal.

In the selected points, FTP transfer sessions will be carried out, with a server provided by the operator - to eliminate any delays introduced by the Internet connection -, or by means of the Netograf platform. The operator will provide test SIMs, with the operator having the freedom to prioritize traffic during the measurements. The measured speed will be that for downlink transfer, which is the average speed for the entire duration of a data transfer. Out of the 3 measurement sessions performed at a point, the measurement for which the highest transfer speed has been obtained will be taken into account.

The coverage percentage for a settlement will be obtained by multiplying the percentage of signal coverage by the percentage of service coverage, a settlement being considered covered if this percentage is greater than or equal to 95%.

3.7.4. Methods used to verify the coverage specified in sections A2 and B2 of indent 3.3.1.1

With a view to verifying the fulfilment of the coverage obligations, the holder shall submit, within a maximum of 10 working days from the expiry of the term established according to section 3.3.1.1 - or, subsequently, upon ANCOM's request,- a documentation regarding the network coverage. The documentation must contain at least the following information:

- Notifications in the established format, containing information about the location and the values of the technical parameters for all the base stations through which the coverage obligation is ensured;
- Coverage maps, with the signal level specified for each individual technology, taking into account the notified stations, as well as aggregated, considering all the technologies used to fulfil the obligation;
- Coverage percentages for each settlement and the total coverage percentage, highlighting the calculation method and the technical parameters taken into account for achieving the coverage;

- Data related to the maps used in predictions, the propagation model, the settings of the propagation model, the technologies used, the applications used and other variables that could influence the results provided.

In drawing up the supporting documentation, the provision under item 2) of section 3.3.1.3 will be taken into account.

a) Checking radio signal coverage. Simulation of coverage in the territory and in the population.

The simulation of the coverage in the territory and in the population will be carried out using the data contained in the operators' notifications and the data found in the field. The coverage simulation will be carried out using the propagation model described in the ITU-R P.1546 recommendation (under the conditions of probabilities of 50% time and 95% space), for the propagation conditions that are specific to our country, or a propagation model calibrated by the Authority. The operators are responsible for the accuracy of the notifications.

The coverage maps provided by the operator will be overlaid with the coverage maps obtained by the Authority. Settlements for which at least 95% of the covered area, according to the maps provided by the operator, falls within the covered area according to ANCOM's predictions, are declared covered with a percentage equal to that declared by the operator.

If there is a difference greater than 5% between the coverage declared by the operator and the one recalculated by ANCOM based on the declaration and ANCOM's predictions, the final decision will be made following field measurements.

b) Checking radio signal coverage. Measurements.

ANCOM will carry out measurements in all settlements where there is a difference greater than 5% between the coverage declared by the operator and that recalculated by ANCOM based on the declaration and on ANCOM's predictions, or - in justified cases (e.g. a significant number of petitions in the declared areas covered by operators, updating information platforms, etc.) - in other settlements, or in all settlements.

The methodology used to determine the percentage of radio signal coverage is the one described in section 3.7.2.

Before starting the measurements, ANCOM will notify the operator at least 3 days in advance, indicating the reasons behind the decision to perform measurements in several or all settlements.

The covered population of a settlement will be obtained, considering the population uniformly distributed within the respective settlement, through multiplying the coverage percentage resulting from the measurements by the population of the respective settlement according to the census in force on the measurement date. For those settlements where no measurements have been made, the coverage declared by the operator will be taken into account.

The coverage percentage at the national level will be obtained as a ratio of the total population covered in all settlements to the total population of Romania according to the last census in force.

ANCOM can carry out punctual field measurements to ensure that the stations through which the coverage obligation is fulfilled have the ability to ensure a downlink speed to the user in the of at least 30 Mbit/s.

3.7.5. Methods used to verify highway and rail data service coverage

With a view to verifying the coverage of highways and railways, ANCOM will perform measurements using the methodology described in section 3.7.2, accordingly. A segment or section will be

considered covered with radio signal in a percentage equal to the ratio of the number of covered bins/segments to the total number of measured bins/segments.

In the case of railways, the antennas will be positioned inside the train car, at the window, at a height that ensures the avoidance of clogging of the propagation channel.

3.7.6. Methods used to verify the data service coverage of international airports

ANCOM will carry out measurements to check the service availability, respectively to check the data transfer speed at the user's level, inside the international airports provided in the licence. These measures will be taken especially in the case of petitions regarding the lack of coverage, or the poor quality of the services offered.

To check this parameter, a telephone/modem and a GPS receiver connected to a workstation running a dedicated application or only phones running a dedicated application are used, or the Netograf platform will be used.

The modems or telephones used to make the measurements must be compatible with all frequency bands and technologies used by the operator in the respective area and will be used at an approximate height of 1.5 m above ground.

The measurements will be carried out statically, in the check-in area(s) and in the departure waiting area(s). For example, at the Henri Coandă airport in Bucharest, 4 points will be selected in the check-in areas as close as possible to the centre of the room and 2 points per level in the waiting areas.

In the selected points, FTP transfer sessions will be carried out, with a server provided by the operator - to eliminate any delays introduced by the Internet connection -, or by means of the Netograf platform. The operator will provide test SIMs, with the operator having the freedom to prioritize traffic during the measurements. The measured speed will be that for downlink transfer, which is the average speed for the entire duration of a data transfer.

A minimum of 3 measurements will be performed at one point, and the measurement with the highest speed will be taken into account.

The coverage obligation will be considered fulfilled if the minimum data transfer speed is reached at all measurement points in each area of the airport.

The verification of the data transfer speed in an airport will be carried out by notifying the operator at least 3 working days before the tests. The operator's representatives can participate in the tests, if they deem it necessary.

3.8. Licence amendment and revoking

The licences for the use of radio frequencies awarded through the selection procedure may be amended, upon ANCOM's initiative, in accordance with the provisions under Article 24(3) of the Framework-Ordinance, in the following situations:

- to meet the requirements regarding the effective, rational and efficient use of the radio frequencies;
- to avoid harmful interferences;
- to implement the European harmonisation and international cooperation objectives regarding the use of radio spectrum;
- to observe the international agreements regarding the use of radio spectrum, to which Romania is a party;
- with a view to settling the situations of limited availability of the spectrum resources, in certain geographic areas and under specified technical conditions, in the radio frequency bands designated for the type of application destined to the provision of the network subject to the licence;
- for implementing the strategy on the development of electronic communications and management of the radio frequency spectrum;
- the NTFA has been amended.

Where one of the situations above occurs, ANCOM will notify the holder of the usage rights regarding the amendments to be made and will grant a term for the implementation of these amendments, a term that is proportionate to the qualitative or quantitative nature of the necessary amendments.

Moreover, ANCOM will also amend the licences for the use of the radio frequencies due to the occurrence of any of the circumstances below:

- transfer or leasing of the rights;
- partial waiver of the rights
- partial withdrawal of the rights, as the case may be, under the provisions of Article 27, Article 147 letter b) corroborated with Article 141 (1), or of Article 148 (1) of the Framework-Ordinance.

ANCOM may revoke the licences awarded through the selection procedure in the following cases:

- the total withdrawal of the frequency usage rights, in accordance with Article 27, Article 147 indent b), corroborated with Article 141(1), or of Article 148 of the Framework-Ordinance;
- revoking of the right to use radio spectrum, in accordance with Article 6(6) of the Framework-Ordinance.

Chapter 4 – THE SELECTION PROCEDURE

4.1. Available blocks and applicable restrictions

4.1.1. Description of the blocks offered during the procedure

The awarded amount of radio spectrum and its corresponding position within the band, which will be included in each licence to be granted (or amended) to a winner of the selection procedure are not set in advance, being the result of a two-phase competitive awarding mechanism:

- a first phase in which the participants compete for obtaining abstract frequency blocks, in one or in several bands, following which the amount of radio spectrum to be awarded to each participant will be determined (the primary rounds and, if applicable, an additional primary round of the auction stage, see Sections 4.7.1 and 4.7.2); and
- a second phase, at the end of which specific frequency blocks are assigned to individual bidders, by specifying the position within the band of the abstract blocks obtained in the previous phase (the assignment round of the auction stage, see Section 4.7.3).

The frequency blocks to be auctioned are described in greater detail below.

A total of 61 abstract (generic) frequency blocks will be auctioned off, sub-divided into 5 categories (A-D). A description of these categories, the corresponding frequency sub-bands and the block sizes are given in the table below.

Table 4.1. – Description of the abstract frequency blocks available in the selection procedure

Category	Sub-band	Block size	Number of blocks	Usage period*
A	703-733/758-788 MHz FDD	2 x 5 MHz	6	01.01.2023 - 31.12.2042
B	738-753 MHz SDL	1 x 5 MHz	3	01.01.2023 - 31.12.2042
C	1452-1492 MHz SDL	1 x 5 MHz	8	01.01.2023 - 31.12.2042
D	2550-2570/2670-2690 MHz FDD	2 x 5 MHz	4	01.01.2023 - 05.04.2029
E	3400-3800 MHz TDD	1 x 10 MHz	40	01.01.2026 - 31.12.2045

* Note: The frequency usage rights awarded, according to the provisions of these Terms of Reference, for a validity period of 20 years, will not be extended or renewed under the provisions of Article 31 (2), respectively Article 31³ of the Framework-ordinance.

The actual bandwidths and the limits of the frequency sub-band to be assigned to the winning bidders, corresponding to the abstract blocks acquired in the categories A to E will be determined in the assignment round. The specific frequency blocks acquired at an abstract level, in the primary rounds and/or additional primary round, will be assigned to each successful bidder in this assignment round.

The detailed description of the frequency blocks available in the selection procedure is presented in the five tables below.

Table 4.2. - 700 MHz FDD

Frequency band	Category	Frequency block code	Bandwidth	Frequency range (uplink / downlink)	Usage period
703-733/758-788 MHz (FDD)	A	A1	2 x 5 MHz	703,0 – 708,0 MHz/ 758,0 – 763,0 MHz	01.01.2023 - 31.12.2042
		A2	2 x 5 MHz	708,0 – 713,0 MHz/ 763,0 – 768,0 MHz	01.01.2023 - 31.12.2042
		A3	2 x 5 MHz	713,0 – 718,0 MHz/ 768,0 – 773,0 MHz	01.01.2023 - 31.12.2042
		A4	2 x 5 MHz	718,0 – 723,0 MHz/ 773,0 – 778,0 MHz	01.01.2023 - 31.12.2042
		A5	2 x 5 MHz	723,0 – 728,0 MHz/ 778,0 – 783,0 MHz	01.01.2023 - 31.12.2042
		A6	2 x 5 MHz	728,0 – 733,0 MHz/ 783,0 – 788,0 MHz	01.01.2023 - 31.12.2042

Table 4.3. - 700 MHz SDL

Frequency band	Category	Frequency block code	Bandwidth	Frequency range (uplink / downlink)	Usage period
738-753 MHz (SDL)	B	B1	1 x 5 MHz	738,0 – 743,0 MHz	01.01.2023 - 31.12.2042
		B2	1 x 5 MHz	743,0 – 748,0 MHz	01.01.2023 - 31.12.2042
		B3	1 x 5 MHz	748,0 – 753,0 MHz	01.01.2023 - 31.12.2042

Table 4.4. - 1500 MHz SDL

Frequency band	Category	Frequency block code	Bandwidth	Frequency range (uplink / downlink)	Usage period
1452-1492 MHz (SDL)	C	C1	1 x 5 MHz	1452 – 1457 MHz	01.01.2023 - 31.12.2042
		C2	1 x 5 MHz	1457 – 1462 MHz	01.01.2023 - 31.12.2042
		C3	1 x 5 MHz	1462 – 1467 MHz	01.01.2023 - 31.12.2042
		C4	1 x 5 MHz	1467 – 1472 MHz	01.01.2023 - 31.12.2042
		C5	1 x 5 MHz	1472 – 1477 MHz	01.01.2023 - 31.12.2042
		C6	1 x 5 MHz	1477 – 1482 MHz	01.01.2023 - 31.12.2042
		C7	1 x 5 MHz	1482 – 1487 MHz	01.01.2023 - 31.12.2042
		C8	1 x 5 MHz	1487 – 1492 MHz	01.01.2023 - 31.12.2042

Table 4.5. - 2600 MHz FDD

Frequency band	Category	Frequency block code	Bandwidth	Frequency range (uplink / downlink)	Usage period
2500 – 2570 / 2620 – 2690 MHz (FDD)	D	D1	2 x 5 MHz	2550,0 – 2555,0 MHz/ 2670,0 – 2675,0 MHz	01.01.2023 - 05.04.2029
		D2	2 x 5 MHz	2555,0 – 2560,0 MHz/ 2675,0 – 2680,0 MHz	01.01.2023 - 05.04.2029
		D3	2 x 5 MHz	2560,0 – 2565,0 MHz/ 2680,0 – 2685,0 MHz	01.01.2023 - 05.04.2029
		D4	2 x 5 MHz	2565,0 – 2570,0 MHz/ 2685,0 – 2690,0 MHz	01.01.2023 - 05.04.2029

Table 4.6. - 3400-3800 MHz TDD

Frequency band	Category	Frequency block code	Bandwidth	Frequency range (uplink / downlink)	Usage period
3400-3800 MHz (TDD)	E	E01	10 MHz	3400 – 3410 MHz	01.01.2026 – 31.12.2045
		E02	10 MHz	3410 – 3420 MHz	01.01.2026 – 31.12.2045
		E03	10 MHz	3420 – 3430 MHz	01.01.2026 – 31.12.2045
		E04	10 MHz	3430 – 3440 MHz	01.01.2026 – 31.12.2045
		E05	10 MHz	3440 – 3450 MHz	01.01.2026 – 31.12.2045

Frequency band	Category	Frequency block code	Bandwidth h	Frequency range (uplink / downlink)	Usage period
		E06	10 MHz	3450 – 3460 MHz	01.01.2026 – 31.12.2045
		E07	10 MHz	3460 – 3470 MHz	01.01.2026 – 31.12.2045
		E08	10 MHz	3470 – 3480 MHz	01.01.2026 – 31.12.2045
		E09	10 MHz	3480 – 3490 MHz	01.01.2026 – 31.12.2045
		E10	10 MHz	3490 – 3500 MHz	01.01.2026 – 31.12.2045
		E11	10 MHz	3500 – 3510 MHz	01.01.2026 – 31.12.2045
		E12	10 MHz	3510 – 3520 MHz	01.01.2026 – 31.12.2045
		E13	10 MHz	3520 – 3530 MHz	01.01.2026 – 31.12.2045
		E14	10 MHz	3530 – 3540 MHz	01.01.2026 – 31.12.2045
		E15	10 MHz	3540 – 3550 MHz	01.01.2026 – 31.12.2045
		E16	10 MHz	3550 – 3560 MHz	01.01.2026 – 31.12.2045
		E17	10 MHz	3560 – 3570 MHz	01.01.2026 – 31.12.2045
		E18	10 MHz	3570 – 3580 MHz	01.01.2026 – 31.12.2045
		E19	10 MHz	3580 – 3590 MHz	01.01.2026 – 31.12.2045
		E20	10 MHz	3590 – 3600 MHz	01.01.2026 – 31.12.2045
		E21	10 MHz	3600 – 3610 MHz	01.01.2026 – 31.12.2045
		E22	10 MHz	3610 – 3620 MHz	01.01.2026 – 31.12.2045
		E23	10 MHz	3620 – 3630 MHz	01.01.2026 – 31.12.2045
		E24	10 MHz	3630 – 3640 MHz	01.01.2026 – 31.12.2045
		E25	10 MHz	3640 – 3650 MHz	01.01.2026 – 31.12.2045
		E26	10 MHz	3650 – 3660 MHz	01.01.2026 – 31.12.2045
		E27	10 MHz	3660 – 3670 MHz	01.01.2026 – 31.12.2045
		E28	10 MHz	3670 – 3680 MHz	01.01.2026 – 31.12.2045
		E29	10 MHz	3680 – 3690 MHz	01.01.2026 – 31.12.2045
		E30	10 MHz	3690 – 3700 MHz	01.01.2026 – 31.12.2045
		E31	10 MHz	3700 – 3710 MHz	01.01.2026 – 31.12.2045
		E32	10 MHz	3710 – 3720 MHz	01.01.2026 – 31.12.2045
		E33	10 MHz	3720 – 3730 MHz	01.01.2026 – 31.12.2045
		E34	10 MHz	3730 – 3740 MHz	01.01.2026 – 31.12.2045
		E35	10 MHz	3740 – 3750 MHz	01.01.2026 – 31.12.2045
		E36	10 MHz	3750 – 3760 MHz	01.01.2026 – 31.12.2045
		E37	10 MHz	3760 – 3770 MHz	01.01.2026 – 31.12.2045
		E38	10 MHz	3770 – 3780 MHz	01.01.2026 – 31.12.2045
		E39	10 MHz	3780 – 3790 MHz	01.01.2026 – 31.12.2045
		E40	10 MHz	3790 – 3800 MHz	01.01.2026 – 31.12.2045

4.1.2. Reserve price per block (minimum licence fee) and eligibility points

There is a reserve price attached to each block, as well as a number of eligibility points.

The reserve price is equal to the minimum licence fee for each block.

The eligibility points are quotations of the frequency blocks auctioned off in the procedure, fulfilling the role of “bargaining chip” for gaining the usage rights for the respective blocks. Once with the submission of the initial bid form and of the participation bond, the bidders “acquire” a certain score of eligibility points, which corresponds to a maximum amount of abstract (non-individualised) frequency blocks, in any band, for which a bidder may submit a bid during the auction. Eligibility is therefore a vocation for gaining usage rights over an amount of spectrum and may change during the auction, according to the activity rules (Section 4.7.1). A bidder’s eligibility in a certain round means the number of eligibility points the bidder holds in that round, defining that bidder’s vocation for gaining the amount of abstract frequency blocks corresponding to that number of points, should the auction stage end with the respective round.

The table below summarizes the reserve prices and the eligibility points for the A to E categories.

Table 4.7 – Reserve prices and eligibility points for the frequency blocks available in the selection procedure

Category	Frequency band and operation mode	Block size	Validity	Reserve price/block (minimum licence fee) -euro ⁴² -	Eligibility points/block
A	700 MHz FDD	2 x 5 MHz	01.01.2023 - 31.12.2042	-	8
B	700 MHz SDL	5 MHz	01.01.2023 - 31.12.2042	-	4
C	1500 MHz SDL	5 MHz	01.01.2023 - 31.12.2042	-	2
D	2600 MHz FDD	2 x 5 MHz	01.01.2023 - 05.04.2029	-	2
E	3400-3800 MHz TDD	1 x 10 MHz	01.01.2026 - 31.12.2045	-	1

4.1.3. Spectrum caps

The frequency usage rights that bidders will be able to gain in the selection procedure are limited as regards the spectrum quantity they may acquire, as follows:

- a) The total maximum amount of frequency spectrum in the FDD bands below 1 GHz (cumulated, i.e. including the spectrum already held in the 800 MHz and 900 MHz bands) for which a bidder may hold usage rights following the selection procedure, in Romania, is 2x30 MHz;
- b) The maximum amount of frequency spectrum in the 3400-3800 MHz band for which a bidder may hold usage rights (following the selection procedure) for the period 01.01.2026 – 31.12.2045, is 120 MHz;
- c) The minimum amount of frequency spectrum in the 3400-3800 MHz band for which a bidder will have to hold usage rights (following the selection procedure) for the period 01.01.2026 – 31.12.2045, is 20 MHz.

In the calculation of the maximum radio spectrum amounts mentioned at letter a) above, the spectrum amounts for which the bidders have valid usage rights on the date of submitting their initial offers (in the application stage of the selection procedure), regardless of how these rights were obtained (previous licensing procedures or licence transfer), are included.

To verify the observance of the limitations imposed by the provisions of this Section, the usage rights held by persons from the same group with the bidder are also taken into consideration, "group" having the meaning provided in Section 4.3.1.

If the additional round is carried out, due to existence of unassigned frequency blocks following the primary rounds, the rules cited above on the limitation of the maximum amount of spectrum that an operator can hold shall no longer apply.

⁴² The provisions of Government Decision no./2022 on setting the amount of the minimum licence fee for awarding certain frequency usage rights for the frequencies available in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands, and of the licence fee payment conditions

4.2. Overview of the procedure

4.2.1. Launching of the procedure

The selection procedure will be launched upon the publication of an auction notice on the ANCOM website (www.ancom.ro). The form and content of the notice are established by ANCOM.

4.2.2. Stages of the procedure

The competitive selection procedure is structured in four stages:

- application stage;
- qualification stage;
- auction stage;
- licence issuing stage.

4.2.3. Calendar of the selection procedure

A guiding calendar of the selection procedure is provided for in Table 4.8 below.

Table 4.8 – Guiding calendar of the selection procedure

The terms included in this table may be extended by ANCOM depending on the needs or may be outrun in case the term reserved for an activity of ANCOM may be reduced. The time intervals corresponding to bidders' activities may not be reduced.

Activity	Date
Publication on the website of the auction notice and of the Terms of Reference (final version)	X
Deadline for the submission of clarification requests concerning the selection procedure	X+1 week
Publication of the answers to the clarification requests	7 days from each request
Deadline for receiving the applications (including the participation bond)	X+5 weeks
Presentation of the qualified/not-qualified applications	X+6 weeks
Lodging of complaints	2 days from the qualification notice
Settlement of complaints	3 days from the lodging of complaints
Announcement concerning the need to hold the auction stage, as well as the starting dates of the primary rounds <u>or</u> Announcement of the fact that the primary rounds of the auction stage are not required, as well as announcement of the successful bidders of the abstract blocks and of the starting dates of the additional round <u>or</u>	X+7 weeks

Activity	Date
Announcement of the fact that the primary and/or additional rounds of the auction stage are not required, as well as announcement of the successful bidders of the abstract blocks and of the date of the assignment round	
Auction stage	X+7 weeks + 3 days
Closing of the primary rounds and/or of the additional primary round	Y
Assignment round	Y+3 days*
Presentation of the outcomes of the procedure	Y+5 days*

**The term can suffer changes depending on the date on which the primary rounds and/or the additional round close.*

4.3. Rules concerning the participation in the selection procedure

Only the persons who purchased the present Terms of Reference may participate in the selection procedure. The price of the Terms of Reference is 5,000 lei. The Terms of Reference may be obtained from the ANCOM headquarters in 2 Delea Noua Street, Sector 3, Bucharest or, upon buyer's request, may be sent to that buyer in physical or electronic format, upon presentation by the interested person of:

- the document certifying the payment of the non-reimbursable amount of 5,000 lei, representing the countervalue for the Terms of Reference, either at the ANCOM pay desk in 2 Delea Noua Street, Sector 3, Bucharest or in the ANCOM account no. RO60TREZ70020F365000XXX opened with the Activity of Treasury and Public Accountancy of Bucharest, whereas the payment order must specify ANCOM as the **Beneficiary** and that the payment represents the countervalue for the Terms of Reference;
- the mandate, in original, of the person delegated to collect the Terms of Reference.

Should the payment for the Terms of Reference be made from abroad, the interested person can pay the amount mentioned above, in euro, at the exchange rate communicated by the National Bank of Romania, valid on the date of payment, in the account RO86RNCB0082044181470003 opened with the Romanian Commercial Bank – Unirea Branch.

A participant in the selection procedure may submit only one bid.

By submitting the application form, the participant unconditionally and irrevocably accepts the rules concerning the participation in the selection procedure described in Sections 4.3.1-4.3.5, as well as the applicable sanctions if breaching these rules, specified in Section 4.3.6.

4.3.1. Rules on the participants' independence

A candidate/bidder that is a member of the group of another candidate/bidder may not participate in the selection procedure.

In view of enforcing this rule, the notion "group of the candidate/bidder" has the meaning set, for the purposes of verifying the economic concentrations, in the Instructions of 5 August 2010 on the concepts of economic concentration, involved company, full operation and turnover, with subsequent amendments, implemented by Order no. 386/2010 of the Competition Council's president. In this respect, the notion "group of the candidate/bidder" is defined as including the following entities:

- a) the candidate/bidder;
- b) the companies in which the candidate/bidder, directly or indirectly:
 - (i) holds more than half of the social capital or of the operating capital; or
 - (ii) has the competence to exercise more than half of the voting rights; or
 - (iii) has the competence to name more than half of the members of the oversight board or of the management board; or
 - (iv) has the competence to name more than half of the members of the bodies which legally act on behalf of the respective companies or has the right to lead the activities of the respective companies;
- c) the companies which hold within the candidate/bidder the rights or competences specified under letter b);
- d) the companies in which a person holds within the candidate/bidder the rights or competences specified at letter b);
- e) the companies within which two or more of the persons provided for under letters a)-d) hold together the rights or competences specified at letter b).

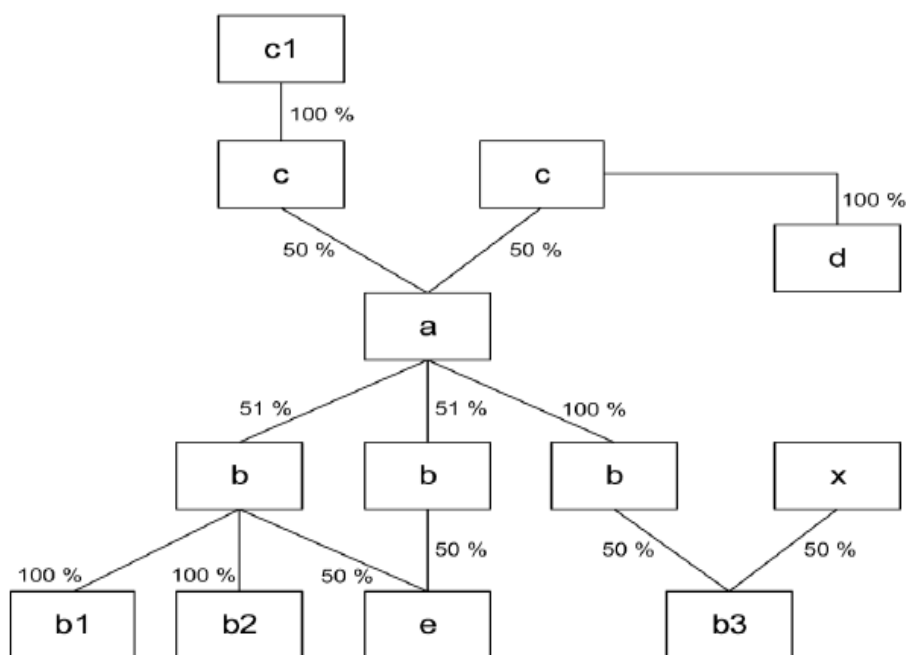
The competences specified under letter b), on the exercise of voting rights or naming of members, may derive from a *de jure* situation (constitutive act, contractual agreements etc.) or a *de facto*

situation (the competences are exercised *de facto*, in the absence of certain provisions). The exercise of competences as a result of a *de facto* situation are determined according to the Instructions of 5 August 2010 on the concepts of economic concentration, involved company, full operation and turnover, with subsequent amendments, implemented by Order no. 386/2010 of the Competition Council's president.

The right to lead the activity of the company may result, among others, from holding the voting rights (standalone or in combination with contractual agreements, such as the shareholders' agreement) which allows for establishing the strategy of a company, based on certain rightful stable elements. The right to lead also includes the situations where the candidate/bidder holds, alongside third parties, the right to jointly manage the activity of a company.

The figure below provides a graphical exemplification of the notion "group of the candidate/bidder".

Figure 4.9. – Example of structure of the group of a candidate/bidder



Legend of the represented categories:

- a = candidate/bidder;
- b = subsidiaries of the candidate/bidder;
 - b1, b2 = subsidiaries of the companies in category "b";
 - b3 = companies jointly held by the "b" category companies with third parties;
- c = parent companies of the candidate/bidder;
 - c1 = parent companies of the companies in category "c";
- d = other subsidiaries of the companies in category "c";
- e = companies jointly held by two or more companies in a group;
- x = third party.

4.3.2. Rules relating to agreements between the participants

The conclusion of, or the attempt to conclude, any agreements between the participants in relation to the selection procedure, during the procedure or previously to the procedure being held, is forbidden.

The scope of this interdiction covers the agreements between the candidates/bidders themselves and the agreements involving members of the groups of different candidates/bidders.

4.3.3. Rules relating to the confidentiality of information

The participants are forbidden to disclose confidential information to other participants or to third parties, during the procedure or previously to the procedure being held.

The scope of this interdiction covers:

- a) the disclosure of confidential information by the candidates/bidders themselves and by members of the group of a candidate/bidder;
- b) the disclosure of confidential information to the candidates/bidders themselves and to members of the group of a candidate/bidder.

This interdiction does not apply to the disclosure of information to companies within the same group, to the candidate's/bidder's employees or to the candidate's/bidder's lawyers or consultants. These entities or persons have the obligation to keep confidential the information they received.

For enforcing this rule, "confidential information" means the information of any kind which concerns, directly or indirectly, the strategy of a participant within the selection procedure or any bid which a participant submitted or intends to submit within the procedure, regardless of the support of such information.

4.3.4. Rules relating to the participants' conduct

During the selection procedure, the participants will refrain from any actions that might affect the conduct of the procedure or its outcomes, including, for instance:

- a) the attempt to influence the members of the Commission, to hinder in any way the decisions of the Commission, or to influence or hinder the actions of other participants in the procedure;
- b) the attempt to contact the members of the Commission in other way or on other issues than those specified in Sections 5.1.3, 5.1.4 and 5.1.5, from the moment when the envelopes containing the application files are opened and until the moment the licences are issued;
- c) any conduct which constitutes a threat for, or an intimidation to, the other participants or the members of the Commission, irrespective of the pursued goal;
- d) the attempt to reach the other bidders, directly or indirectly, in any of the locations made available to them or sited in the premises where the selection procedure is being held;
- e) the transmission of communications on the progress of the selection procedure, the participants in this selection procedure or any other details that may arise during the procedure;
- f) the disturbance of the conduct in good conditions of the bidding rounds during the auction stage etc.

4.3.5. Rules relating to the submission of information to the Commission

At any time during the selection procedure, the Commission may request any participant any clarifications, documents or information, indicating also the deadline by which these must be submitted, in view of establishing or clarifying the actual situation which:

- a) grounds or grounded the qualification of a candidate; or
- b) might lead to the finding of certain breaches by one or more participants of the rules provided for in Sections 4.3.1-4.3.4 above.

The participants have the obligation to respond to the information requests addressed by the Commission, within the term established by the latter.

Considering the importance of ensuring the integrity of the selection process, the terms granted by the Commission may sometimes be very short, to allow maintaining or rapidly restoring the normal course of the procedure and/or to prevent the destruction of certain evidence, especially if there are indications concerning the breach of the rules laid down in Sections 4.3.1-4.3.5.

Furthermore, the participants have the obligation to provide truthful, accurate and complete information in the application file as well as anytime during the procedure. In the event of changes in the information grounding the qualification, occurred subsequently to a candidate's qualification, the candidate/bidder concerned, as well as any other participant to the procedure aware of the respective changes, has the obligation to notify at once the Commission on the respective changes. The Commission has the obligation to analyse the respective changes and to reconsider the decision on the participant's admission, if the respective changes involve an alteration of the actual situation which grounded the qualification decision to such extent that the qualification criteria are not fulfilled anymore.

4.3.6. Applicable sanctions

If, during the selection procedure, the Commission discovers breaches of the rules specified in Sections 4.3.1-4.3.5 above, the Commission will disqualify from the procedure all the participants involved and will withhold the participation bond submitted by these participants. If the breach of the rules under Section 4.3.1 is discovered during the qualification stage, then the rules mentioned in Section 4.6.2 will apply.

If the breach of the aforementioned rules is discovered after the issuance of the licences for the use of radio frequencies, ANCOM may revoke the licences awarded to the participants involved and/or may withhold the participation bonds they had submitted, as applicable.

4.4. Bonds

4.4.1. Format of the bond

To participate in the selection procedure, the participants will set up participation bonds as a bank guarantee letter/letters issued by a banking company and will submit them in original within the application file, in the amount provided for in Section 4.4.2 and for the periods specified in Section 4.4.3.

The bonds must be irrevocable and unconditional.

The bank guarantee letter must provide that the payment of the bond will be executed unconditionally, respectively upon the first and plain request of ANCOM, based on the latter's declaration regarding the bidder's classification in one of the bond execution cases presented in Section 4.4.4.

Both the participation bond and the execution bond can be set up under the form of several bank guarantee letters that can be issued by different banking companies, each such letter having to observe all the format requirements stipulated in this Section.

The participation bond will be set up in the format available under Annex 5.

The execution bond will be set up in the format available under Annex 6.

The submission of the letter of bank guarantee in another format is not allowed.

4.4.2. Value of the bonds

The value of the participation bond is 25% of the price of the initial bid, established according to Section 4.5.3.

The participation bond will be included in the application form and submitted as part of the application file.

During the selection procedure, if the offered price exceeds the threshold of 150% of the initial bid, the Commission may ask the bidders to increase the value of the bank guarantee letter submitted within the application file so that the total value of the submitted bond/bonds could stand for at least 25% of the price offered at the respective time. In such case, the bank guarantee letter must observe all the requirements specified in Sections 4.4.1, respectively 4.4.3.

The value of the execution bond is set in accordance with the provisions of the Government Decision no. _____/_____ on setting the minimum amount of the licence fee for awarding certain radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands, as well as the payment conditions for the licence fee.

4.4.3. Validity of the bond

The participation bond will be valid at least between the date when the application file is submitted and 31st December 2022⁴³.

The validity of the execution bond is determined in relation to the provisions of the Government Decision no. _____/_____ on setting the minimum amount of the licence fee for awarding

⁴³ ANCOM may ask the bidders to extend the validity of the bank guarantee letter if the timeframe for carrying out the auction stage exceeds the date of 31st December 2022.

The deadline for submitting the bank guarantee letters whose validity was extended according to the previous paragraph may not be longer than 10 calendar days from ANCOM's request date.

certain radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands, as well as the payment conditions for the licence fee.

4.4.4. Cases of bond withhold

The purpose of the participation bond is to protect ANCOM in the event of an improper conduct of the participants during the procedure and to ensure, in particular, that:

- a) the licence fee/the first instalment of the licence fee, as applicable, owed by the winning bidders is paid for all the frequency blocks awarded following the selection procedure, and the corresponding licences are issued;
- b) the candidates/bidders observe the rules concerning the participation in the selection procedure.

The participation bond is withheld in the following cases:

- a) if the winning bidder does not pay the licence fee/the first instalment of the licence fee or does not submit the execution bond according to the Government Decision no._____/_____ on setting the minimum amount of the licence fee for awarding certain radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands, as well as the payment conditions for the licence fee;
- b) if the winning bidder waives the right to be awarded the licence for the use of radio frequencies;
- c) if a candidate/bidder breaches the rules concerning the participation in the selection procedure, set out in Sections 4.3.1-4.3.5 herein.

The execution bond is withheld in the circumstances provided for in the Government Decision no._____/_____ on setting the minimum amount of the licence fee for awarding certain radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands, as well as the payment conditions for the licence fee.

4.4.5. Return of the bond

The participation bond is returned to the participants in the selection procedure, to the extent no withholds in the sense of Section 4.4.4 were made, as follows:

- a) to the candidates that did not qualify to the next stages of the selection procedure, within 30 days from the communication on the candidature rejection;
- b) to the bidders that did not gain radio frequency usage rights following the procedure, within 30 days from the date on which the Commission communicates the closing of the auction stage;
- c) the bidders that gained radio frequency usage rights following the procedure for those blocks whose reserve prices, taken together, are below the price of the initial bid, will be able to obtain, upon request, after the final price according to Section 4.8.1 letter a) is communicated, the reduction of the participation bond to 25% of the reserve price for the blocks won;
- d) to the bidders that gained radio frequency usage rights following the procedure, within 30 days from the payment of the licence fees under the law or from the date of submission of the execution bond, as applicable;
- e) if the selection procedure is cancelled in accordance with the provisions of Section 6.3, the participation bond will be returned to all the candidates/bidders, within 30 days from the communication on the cancellation of the selection procedure.

In view of enforcing the provisions under letter c) above, the bidders will need to present, alongside the mentioned request, a bank guarantee letter for the reduced value indicated under letter c) above, while the initial bond will be returned within 30 days from the date when ANCOM receives the request. Where the bond was set up under the form of several bank guarantee letters, the partial return of the bond will be made by returning some of the bank guarantee letters if the provisions under letter c) may be applied by this way.

The execution bond will be returned gradually at the payment terms set in the Government Decision no. _____/_____ on setting the minimum amount of the licence fee for awarding certain radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands, as well as the payment conditions for the licence fee, in the amount corresponding to the amounts paid by the winners of the selection procedure. In this respect, the winning bidders will need to submit a guarantee letter reduced correspondingly with the amount of the instalment paid, whereas the initial bond will be returned to them within 30 days from the date of its reception by ANCOM. Where the guarantee was set up under form of several bank guarantee letters, the partial return of the bond will be done by returning some of the bank guarantee letters to the extent their value matches the amount of the set instalments.

The participation bond, respectively the execution bond will be returned by returning the bank guarantee letter/letters, in original, upon signature, accompanied by a letter issued by ANCOM whereby it expresses its agreement on the cancellation of the bank guarantee letter, a document exclusively addressed to the bank which issued the bank guarantee letter.

4.5. Application submission stage

4.5.1. Application file

During this stage, the interested persons must submit to ANCOM an application file. Once the file submitted, the person concerned becomes a *candidate*, a quality which the respective person keeps until the decision on the admission to the next stages of the selection procedure (when the candidate becomes a *bidder*) is communicated, or until the decision on the rejection of the candidature (when the respective person is eliminated from the procedure) is communicated.

The application file must contain the following documents:

- a) documents on the candidate's standing;
- b) the application form (the initial bid);
- c) the participation bond.

These documents will be presented in detail in Sections 4.5.2-4.5.5 below.

4.5.2. Documents on the candidate's standing

The application file will contain the following documents presenting the candidate's standing:

- a) the authenticated power-of-attorney granted to maximum 3 natural persons acting on behalf of the candidate, certifying that the respective persons are authorised to engage the candidate during the selection procedure and showing the limits of each of the respective power-of-attorney, without a limitation concerning the joint signature of the mandated persons; the authenticated power-of-attorney is not required in the case of the person mandated to legally represent the candidate;
- b) the acknowledging certificate (in original) issued by the National Trade Register Office at most 30 days before the date of submitting the application file, which shows at least:
 - (i) the legal identification attributes;
 - (ii) the company life duration;
 - (iii) the main and secondary (if applicable) object of activity;
 - (iv) the social capital (subscribed and paid-in);
 - (v) the administrators/members of the Management Board and Managers (in unitary system)/members of the Oversight Council and members of the Directorate (in dual system), the identification data and the length of the mandate with the conferred powers;
 - (vi) the indicators from the annual financial statements;
 - (vii) the non-existence of a dissolution procedure either voluntary, judicial or following the enforcement of the insolvency procedures;
 - (viii) the status of the company.
- c) the registration certificate issued by the National Trade Register Office;
- d) the candidate's constitutive act (company contract and/or statute), in a consolidated updated form (including all changes to date);
- e) the structure of the candidate's group, valid at the time of submitting the application file, which must include the names and addresses of all the companies enlisted at letters a)-e) in Section 4.3.1, as well as the connections between them;
- f) the certificate of fiscal acknowledgement of the compliance with the outstanding payment obligations to the state budget, the social insurance budgets and special tax, contributions and other revenues funds, issued according to the legal regulations in force (in original);
- g) the financial statements for the last year, approved under the law, according to the accounting standard applied; in the case of a newly established company, it is not necessary to submit this information, but it is necessary to observe the requirements concerning the subscribed and paid-in social capital;
- h) the statement of the candidate's legal representative regarding the capacity as a participant in the selection procedure (in original), drawn up according to the format set in Annex 2.

As for associations, each member of the association must submit the documents enlisted at letters b)-h) above. The document under letter a) will be submitted by the representative of the association.

The associations must present an association agreement concluded between all the members of the association. This agreement will be presented, in original, in an authentic form and will contain at least the following elements:

- a) the names of the members of the association and the share of each of the members within the association;
- b) the legal person, member of the association, which represents the association within the present procedure;
- c) the firm commitment of all the association's members to submit a joint bid during the selection procedure and grant unconditional financial and/or technical support to the legal person that will be issued the licence and represents the association;
- d) the validity period of the association agreement; this is not to cease before 31st January 2023.

In the cases where the original documents are not requested, the candidate will present a legalised copy or a copy of the documents certified by the candidate for the conformity with the original. The person performing the conformity certification on behalf of the candidate must be one of the persons mandated to represent the candidate according to letter a) of the first paragraph in this Section.

4.5.3. The application form (the initial bid)

The application form must be filled in by one of the persons mandated to represent the candidate according to Section 4.5.2 letter a) or by the candidate's legal representative, in the format presented in Annex 3 hereto, without deletions and/or additions, and represents the initial bid of the candidate, should the latter be admitted to the next stages of the selection procedure, following the qualification stage.

In view of completing the application form, the candidate will select the number of blocks it wishes to acquire in each of the A to E categories, using the multiple answer boxes available in the table included in the application form. The candidate must observe the limitations on the acquiring of the usage rights laid down in Section 4.1.3, as well as the conditions cited in Section 4.7.1; its candidature will otherwise be rejected.

The price of the initial bid is established as follows:

- a) for each category, the number of blocks in that category included in the bid will be multiplied by the reserve price for that category (minimum licence fee), specified under Section 4.1.2; and
- b) the values calculated according to letter a) will be summed up for all block categories.

The initial bid must be firm, definitive, irrevocable, unconditional and valid at least until 31st December 2022.

Alternative bids are not accepted.

4.5.4. Bank guarantee letter/letters (the participation bond)

The application file will contain the bank guarantee letter/letters, in original, in the format and amount provided for in Section 4.4, according to the model in Annex 5. The submission of a bank guarantee letter in another format is not allowed.

4.5.5. Preparation and submission of the application file

4.5.5.1. Language of the documents

All the application documents will be elaborated in Romanian, including the annexes. Nevertheless, in the case of the annual financial statements, although the provision of a version in Romanian is preferable, the candidates may present a version in English, if only this one is available.

4.5.5.2. Form of the documents

The representative authorised to engage the candidate has the obligation to sign each page of the application file (original and copies), as well as to attach an inventory list of the documents submitted.

As for the documents issued by official institutions/bodies authorised therefor, the respective documents must be signed and sealed according to the legal provisions. Any deletion, addition, interlining/underlining or overwriting are valid only if endorsed by the person authorised to sign the documents. These documents shall not be signed by the candidate's authorised representative.

The application file will be submitted in original and in one hardcopy, certified by the candidate for conformity with the original, as well as in electronic format, on CD with full rights over the use of files, in Microsoft Word, Microsoft Excel and/or Adobe Acrobat format. The original documents will be signed by the representative authorised to engage the candidate.

If the application file contains confidential information, an inventory list of this information will be provided in a separate annex. It is recommended that the candidate explicitly signals that the respective information is confidential. ANCOM will keep confidential this information to the extent the information is not considered public under the law.

4.5.5.3. Envelope sealing and marking

The candidate must seal the original and the copy in separate envelopes, marking the envelopes correspondingly with the wordings "ORIGINAL" and, respectively, "COPY". The envelopes will be introduced in a non-transparent and adequately closed exterior envelope. The exterior envelope must bear the inscription "**APPLICATION FILE FOR THE PARTICIPATION IN THE 2022 SELECTION PROCEDURE**", the ANCOM address, the name and address of the sender. If the exterior envelope is not marked according to the aforementioned provisions, ANCOM is not liable for the mislaid documents or for the delayed reception of the documents.

The candidate will cover all expenses incurred by the preparation and submission of its application file. ANCOM shall not be in any way liable for the payment of these expenses, irrespective of the progress or outcome of the selection procedure.

4.5.5.4. Transmission and reception of the application file

The application file will be sent by post with confirmation of receipt or will be submitted personally to the ANCOM headquarters in 2 Delea Noua Street, Sector 3, Bucharest, and must be received by ANCOM until _____, _____ hours ("deadline for receiving the applications"), Romania's time. The files received by ANCOM after the deadline set for receiving the applications will not be taken into consideration and will be returned unopened to the address written on the

envelope. The candidate must take all measures to make sure that its file is received by ANCOM by the deadline set for receiving the applications and will assume all the risks related to the transmission of the dossier, including force majeure.

ANCOM reserves the right to extend the deadline set for receiving the applications and, consequently, the date set for opening the envelopes containing the application files, case in which it will communicate the new deadline set for receiving the applications and, respectively, the new date set for opening the envelopes containing the application files, on its website (www.ancom.ro), at least 10 days before the initial deadline.

4.5.5.5. Modification of the application file

Any bidder has the right to modify or withdraw its application file only prior to the deadline set for receiving the applications and only by submitting a written request therefor, received by ANCOM before the deadline set for receiving the applications. While preparing and submitting the modified documents, the candidate has to observe the instructions included in Sections 4.5.5.1-4.5.5.4, with the amendment that the exterior envelope will mandatorily be marked with the wording **"MODIFICATIONS TO THE APPLICATION FILE FOR THE PARTICIPATION IN THE 2022 SELECTION PROCEDURE"**. If the candidate withdraws its application file after the deadline set for reception, the participation bond will not be returned.

4.5.5.6. Opening of the envelopes containing the application files

The envelopes containing the application files will be opened by the Commission, on the first working day following the deadline set for their submission.

4.5.5.7. Clarification requests

Only the persons who purchased the Terms of Reference may request clarifications.

The requests for clarification may be addressed to ANCOM in writing, to its headquarters in 2 Delea Noua Street, sector 3, Bucharest, for the attention of the **Auction Commission for the 2022 selection procedure**, or in electronic format, having included, attached or logically associated an extended electronic signature based upon a qualified certificate that has not been invalidated or revoked at the respective moment, generated using a secured device for creating electronic signature, to licitatie2022@ancom.ro, until _____. ANCOM shall answer to the clarification requests until _____, at the latest.

The candidates will indicate, within the application file, a fax number and a valid e-mail address to which ANCOM may send its messages.

The ANCOM fax messages will be deemed transmitted when ANCOM receives the transmission confirmation generated by the fax machine upon sending the message.

Both the questions received and the answers thereto will be communicated to all the persons who purchased the Terms of Reference and will be published on the ANCOM website, without revealing the identity of the person who asked for the respective clarifications.

4.6. The qualification stage

In the qualification stage, the Commission evaluates the compliance by the candidates that submitted files during the application submission stage with a set of qualification criteria (Section 4.6.1) and, following evaluation, decides either the admission of the candidate to the next stages of the selection procedure or the rejection of the application.

4.6.1. Qualification criteria

To be admitted to the next stages of the selection procedure, the candidate must cumulatively fulfil the following qualification criteria:

- a) the candidate must be a legal person (company) registered according to the law⁴⁴, as applicable;
- b) the candidate must have submitted all the documents provided in Sections 4.5.2-4.5.4, completely and correctly prepared, no later than the deadline set for receiving the applications;
- c) the life duration of the candidate company provided in its constitutive act must run at least until 31 December 2045;
- d) the average turnover of the candidate for the last year must be the equivalent in lei of minimum 10,000,000 euros, or the subscribed and paid-in social capital must be the equivalent in lei of minimum 1,000,000 euros;
- e) the candidate must not be in a state of insolvency or liquidation, its business must not be managed by a syndic judge, its commercial activities, in their entirety, must not be suspended or the candidate must not be in a situation similar to those previously mentioned, regulated by the law;
- f) the candidate must not be subject to a legal procedure launched upon its initiative and aimed at declaring it in one of the situations provided for at letter e);
- g) the candidate must have submitted the participation bond (in original) in the format and amount specified under Section 4.4;
- h) the bidder must have fulfilled the standing payment obligations to ANCOM, the state budget, the budgets of social insurance and the special tax, contributions and other revenues funds, by the date of submitting the application file; the taxes, contributions and other revenues which benefited from payment facilitation (postponements, phasing etc.) granted by the competent bodies are not deemed standing payment obligations, to the extent the conditions imposed at the facilitation granting were observed;
- i) the candidate must not be a member of another candidate's group;
- j) the candidate must have purchased the Terms of Reference;
- k) the candidate must observe within the application form the limitations set in Section 4.1.3, as well as the conditions laid down in Section 4.7.1.

As for the associations, each of the association members must fulfil all the criteria mentioned above, with the following exceptions:

- the criterion under letter c), which is to be fulfilled by at least one member of the association and by the person to whom the licence will be issued; and
- the criteria specified at letters g) and j), which are to be fulfilled by the designated representative of the association.

⁴⁴ Law no. 26/1990 on Trade register, republished, with the subsequent amendments and completions and Companies' Law no. 31/1990, republished, with the subsequent amendments and completions.

4.6.2. Evaluation of the application files

After the deadline set for receiving the applications, the Commission will evaluate all received application files, based on the qualification criteria (Section 4.6.1), and will decide on the admission of the candidate to the next stages of the selection procedure or on the rejection of the application.

At any time during the evaluation of the application files, the Commission may request any specifications, documents and/or additional information and/or clarifying documents, in view of establishing or clarifying the actual situation based on which a candidate's qualification is determined, while the rules under Section 4.3.5 and the sanctions under Section 4.3.6 will apply.

As regards the criterion under Section 4.6.1 letter i), if it finds that there is a connection of the type envisaged by this criterion between two or more candidates, the Commission informs all the involved candidates about this finding, requesting them to express in writing, within a certain term, the option for only one of the applications, to be maintained within the procedure. The non-expression of an option or the expression of several different options trigger the rejection of all implicated applications. To avoid any doubt, in accordance with the provisions under Section 4.3.1, corroborated with Section 4.3.6, in case the abovementioned situation is discovered after the qualification stage, all the involved bidders will be excluded from the procedure.

4.6.3. Announcing the results of evaluation of the application files and presenting the qualified candidates

Following the evaluation of each application file, the Commission may take one of the following decisions:

- a) to admit the application, if all the qualification criteria are met; or
- b) to reject the application, if at least one of the qualification criteria is not met.

After completing the evaluation of the application files, the Commission will communicate to each candidate the admission or the rejection of its application within the procedure, and implicitly, the participation in the subsequent stages of the selection procedure, in the case of the qualified candidates.

When informing the candidate on its application admission, the Commission shall, at the same time, inform about the change of its status within the selection procedure into *bidder*.

When informing the candidate on its application rejection, the Commission shall, at the same time, inform that it is eliminated from the procedure and the reasons thereof. The candidate will also be informed on the timeframe within which the participation bond will be returned in accordance with the provisions of Section 4.4.5, letter a).

The Commission will not communicate to the qualified candidates neither the initial eligibility of the other qualified candidates nor the identity of the candidates who did not qualify to the next stages of the selection procedure.

The participation bond will be returned to the candidates who did not qualify to the next stages of the selection procedure within 30 working days from the application rejection date. These candidates are further subject to the rules on information confidentiality provided for in Section 4.3.3, for the entire duration of the selection procedure.

4.6.4. Establishing and announcing the procedure continuation

During the qualification stage, the Commission evaluates the level of the aggregated (initial) demand of frequency blocks within each of the A to E categories, based on the application forms submitted by the qualified candidates (bidders), and may take one of the following decisions:

- a) to organise the auction stage starting with the primary rounds, if the aggregated demand exceeds the number of frequency blocks available in the selection procedure in at least one category; in this situation, the Commission will communicate each bidder the identity of all other bidders, the fact that the auction stage is required, as well as the starting date of the primary rounds;
- b) to organise the auction stage starting with the additional primary round, if the aggregated demand does not exceed the number of frequency blocks available in the selection procedure in any category and there are blocks for which there is no demand; in this case, the Commission:
 - (i) will communicate each bidder the identity of the other bidders, as well as that the primary rounds of the auction stage are not required;
 - (ii) will declare as winning all the initial bids of the bidders, which will thus be declared winning bidders, and will communicate each bidder the number of abstract blocks it won in each of the A to E categories; and
 - (iii) will communicate each bidder: (i) the basic price of its winning bid, which is the total price for all frequency blocks in the initial bid, and (ii) the specific basic prices for each of the blocks included in its winning bid, for the purpose of applying the provisions of Section 4.8.2 herein, which are equal to the reserve prices for the categories to which these blocks belong;
 - (iv) will communicate each bidder the starting date of the additional primary round.
- c) to organise only the assignment round of the auction stage, if the aggregated demand does not exceed the number of frequency blocks available in the selection procedure in any category and there are no blocks without demand; in this case, the Commission:
 - (i) will communicate each bidder the identity of the other bidders, as well as that the primary rounds of the auction stage are not required;
 - (ii) will declare as winning all the initial bids of the bidders, which will thus be designated winning bidders, and will communicate each bidder the number of abstract blocks it won in each of the A to E categories; and
 - (iii) will communicate each bidder: (i) the basic price of its winning bid, which is the total price for all frequency blocks in the initial bid, and (ii) the specific basic prices for each of the blocks included in its winning bid, for the purpose of applying the provisions of Section 4.8.2 herein, which are equal to the reserve prices for the categories to which these blocks belong;
 - (iv) will communicate each bidder the starting date of the assignment round.

4.6.5. Disputes

A participant in the procedure may challenge the rejection of its application within 2 working days from receiving the communication sent by the Commission in this regard, in accordance with the provisions under Section 4.6.3. The complaint must be made in writing and submitted to the ANCOM headquarters in 2 Delea Noua Street, Sector 3, Bucharest, by the mandated representative of the candidate, upon signature, or sent by mail, with confirmation of receipt.

The complaint may also be submitted in electronic format, having included, attached or logically associated an extended electronic signature based upon a qualified certificate that has not been invalidated or revoked at the respective moment, generated using a secured device for creating electronic signature. The extended electronic signature will be put by the person mandated to legally represent the candidate.

Within 3 days from the lodging of the complaints, a commission designated by decision of the ANCOM president (the "Complaints settling commission"), composed of other persons than those who were members of the Commission, will examine the lodged complaints. The Complaints settling commission may extend the 3-day term, if the examination of the complaints involves the processing of a large volume of information. The complaints lodged within the due term will be settled in the sense of admission or rejection, while the complaints lodged after the due term will be rejected. The Complaints settling commission will conclude a minute, approved by the president of ANCOM, and

will communicate each complainant the outcome of the lodged complaint, as comprised in the minute.

The Commission will establish and announce the continuation of the procedure in line with Section 4.6.4 only after the expiry of the period for lodging the complaints set in this Section, and if complaints are lodged within the aforementioned period, only after the approval of the minute on the settlement of complaints, in accordance with the provisions of this Section.

4.7. Auction stage (main stage)

The main stage consists of one or several primary rounds, followed by one additional primary round (if required) and one assignment round.

All bids submitted during the main stage are bids for frequency blocks packages. This means that a bid submitted in a round may be a winning one only in its entirety and that bidders cannot win a frequency blocks package for which they did not place a bid.

The maximum amount of spectrum for which a bidder may acquire usage rights is limited by the total number of eligibility points (Section 4.1.2), by the established spectrum caps (Section 4.1.3) and by the conditions set in Section 4.7.1.

4.7.1. Primary rounds

At the beginning of each primary round, the Commission communicates the bidders the price for a frequency block in each of the A to E categories. In the first primary round, the price for each of the A to E categories will be equal to the reserve price (minimum licence fee) for that category.

Each bidder is invited to submit one bid stating the category and the number of blocks in each category it wishes to bid at the price set by the Commission, subject to the activity rules described below and to the overall spectrum caps. When each primary round is closed, demand is aggregated across all bidders. If, in the respective primary round, demand (represented by the total number of blocks requested according to the bids) exceeds the number of frequency blocks available in one or several categories, another primary round is scheduled.

In the next primary round, the Commission will increase the price only for the blocks in the category or categories for which the demand exceeded the availability thereof in the previous round. The increase will be made by adding a bid increment to the price of the previous round, expressed as a percentage, in a pre-established value.

Thus, for the categories for which there is demand in excess, the Commission will set in the next primary round prices higher than the prices from the previous round, with a bid increment ranging between:

- 5% of the reserve price, starting with the second primary round until the round where the price will be equal or will exceed 125% of the reserve price;
- 2% of the reserve price, starting with the round immediately following the one in which the value set in the previous bullet was reached and until the round in which the price will reach or will exceed 150% of the reserve price;
- 1% of the reserve price, starting with the round immediately following the one in which the value set in the previous bullet was reached or exceeded.

The primary rounds end after a round in which there is no demand in excess for frequency blocks in any of the categories.

During the primary rounds, bidders are subject to activity rules whose purpose is to prevent the unnecessary extension of the procedure. As shown before, each frequency block has attached a number of eligibility points (Section 4.1.2). A bidder's activity in a certain round is expressed as the

sum of eligibility points pertaining to the blocks included in its bid in that round. In any round, a bidder's eligibility is equal to that bidder's activity in the previous round.

Prior to beginning the auction, upon the set-up of the participation bond, each bidder holds a budget of eligibility points (initial eligibility), which defines its vocation (maximum) for acquiring the frequency usage rights. A bidder's initial eligibility is determined by the sum of the eligibility points pertaining to the blocks included in its application form. A bidder's activity in the first primary round cannot exceed its initial eligibility, and its activity in each subsequent primary round may not exceed its activity in the previous round. This means that a bidder's eligibility may remain constant or decrease throughout the primary rounds, but it cannot increase. Therefore, the bidders are stimulated to bid in every round at a level that would enable them to gain the desired usage rights while avoiding the loss of vocation for acquiring those usage rights.

Following the primary rounds, the winning bids, respectively the winning bidders (see Section 5.3.6) and the basic prices they must pay (see Section 5.3.7) are determined.

4.7.2. Additional primary round

If, upon aggregating the initial bids or following the primary rounds, there will still be frequency blocks not awarded, ANCOM will organise an additional primary round, according to the additional specific rules laid down below.

In this round, each bidder will be able to submit a bid indicating one or several packages containing one or more blocks, as well as the amount it is willing to pay for acquiring each such package. There are no maximum limits as to the bid amount but there are however minimum limits in this respect, pursuant to specific rules stated in Section 5.4.3.

All bidders are allowed to participate in the additional primary round, regardless of their eligibility at the closing of the primary rounds and regardless of whether they acquired or not frequency blocks in the primary rounds.

Following the additional primary round, the winning bids for the blocks remained not awarded after the primary rounds, respectively the winning bidders (see Section 5.4.5) and the basic prices they must pay (see Section 5.4.6) are determined.

4.7.3. Assignment round

The initial bids, the primary rounds and the additional primary round allow for establishing the number of generic (abstract) blocks the winning bidders will receive in each category, as well as the basic prices for the respective frequency blocks, but not the specific positions in the band of these blocks, which will determine the frequency sub-bands these bidders are to be allotted.

The purpose of the assignment round is to determine the position in the band, following the primary and additional rounds, of the abstract blocks won by bidders in the A to E categories, as well as the additional prices to be paid by each winning bidder for obtaining a specific allotment of frequencies.

All bidders that have won two or more blocks in the same category will receive adjacent frequency blocks allotments within the respective frequency band/sub-band available within the procedure.

Each bidder that has won frequency blocks in the A to E categories, based upon the initial bid or in the primary and additional rounds, will express its preferences, based on a list of pre-defined options regarding the specific allotments in each band of the obtained frequency blocks, as provided for by the Commission. In this regard, each winning bidder has the opportunity to bid the amount that it would be willing to pay for a specific allotment in each band, in addition to the overall basic price it has to pay, as resulted from the primary and/or additional rounds.

Winners that do not have any preference as regards the allotment options do not have to make an assignment bid. The combination of bids identified as having the highest total value for each category

of blocks is the winning combination for the respective category, and the bids compounding it are declared winning bids for that category.

If there is only one winning bidder in a certain category following the primary and additional (if required) rounds, an assignment bid for the frequencies in that category is not necessary. In such case, the sole bidder will be allotted the frequencies obtained according to the rules on the positioning of the not awarded blocks, described in Section 5.5.6. For the 3400-3800 MHz band, the additional rules in force for this band, detailed in Section 5.5.4, will also be considered. No additional price will be paid for the allotment of frequencies in a band which has only one winning bidder.

The additional prices will be established according to Section 5.5.7.

4.7.4. Determining the winners and establishing the licence fees

The bidders that submitted valid bids during the last primary round and/or those that compose the winning combination resulted from the additional primary round, if the case, are designated as winning bidders. These bidders will obtain the usage rights for the radio frequencies corresponding to the winning bids, provided that they pay a licence fee, the amount of which is established by summing up the basic price determined according to Sections 5.3.7 and, as the case may be, 5.4.6, to which the additional price determined according to Section 5.5.7 is added, if applicable.

4.8. Licence granting stage

4.8.1. Presentation of the procedure results

At the beginning of the licence awarding stage, the Commission will communicate each winning bidder:

- a) the final price, representing the licence fee that the winning bidder shall pay for obtaining the usage rights for the frequency blocks it acquired during the procedure, which represents the sum between the basic price determined, as the case may be, following the qualification stage or/and the primary rounds and/or the additional primary round (if applicable) and the additional price determined following the assignment round;
- b) the payment conditions mentioned in Section 4.8.2 and the conditions relating to the issuance of the licences.

4.8.2. Payment of the licence fee

The licence fee owed by each of the winning bidders following the bids they submitted within the selection procedure will be paid according to the Government Decision no. ___/2022 setting the minimum amount of the licence fee for awarding radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands, as well as the payment conditions of the licence fee.

4.8.3. Granting the licences

The licences, new or amended, are granted to the winning bidders after the payment of the licence fee as resulted from the selection procedure.

The bidders that won rights awarded in the 2600 MHz bands and held usage rights below 3 GHz prior to the selection procedure will be issued amended and updated licences to include the newly won usage rights.

The provisions of the licences in force granted for usage rights in the aforementioned frequency bands become applicable, with the due updates, for the holders that have rights in these bands, and to the blocks in the 2600 MHz band awarded through the selection procedure organized according to these Terms of Reference.

The provision of electronic communications networks and services is bound by the observance of Article 6 of the Framework-Ordinance.

Chapter 5 – AUCTION RULES

5.1. General rules for the auction stage

5.1.1. Auction premises

The auction will take place at the headquarters of ANCOM-Bucharest Regional Division in 4 Lucian Blaga Street, block M110, Sector 3, Bucharest, where each bidder will be provided with a room endowed with wireless internet access connection. Also, in accordance with the rules under Sections 5.1.3, 5.1.4 and 5.1.5, the bidders will also have access to the room where the Commission will carry its activities, located in the proximity of the rooms made available to the bidders.

During the auction, the bidders' representatives will be able to use their own technical means in view of communication.

The bid rounds may take place during one or several working days, as necessary, between 9.00 hours and 18.00 hours.

Access of the bidders' representatives within the premises of the auction will only be allowed as follows:

- the persons mandated according to Section 4.5.2. letter a); the maximum number of three mandated persons includes the legal representative, if the latter attends;
- two representatives without right of signature, expressly appointed, in writing, by the bidders;
- the persons mandated under the same conditions specified in Section 4.5.2. letter a), designated to replace the initial representatives mentioned in the first bullet.

5.1.2. Informing the bidders

The Commission will provide the bidders with various information prior to each bidding round, at the end of each type of round, as well as at any time the auction process requires it. The communication of the information at the closing of the bidding rounds will be made as soon as this becomes available and is properly verified by the Commission. The general rules on the provision of such information are depicted under this Section, while specific rules are mainly provided under Sections 5.2.3, 5.3.2, 5.3.8, 5.4.2, 5.4.7, 5.5.2, 5.5.5 and 5.5.8.

Information is to be made by a representative of the Commission. The information forms will be drawn up in two original copies, signed by the representatives of both parties, and each of these parties is to keep their copy. The form must be signed by only one representative of a bidder. Where no representative of a bidder can be reached until the next round begins or where the representatives of a bidder refuse to sign the information form, it will be considered that the respective bidder has waived its participation in the auction and therefore the rules under Section 4.4.4 will apply.

5.1.3. Bid submission

In order to submit the bid during a certain round, a representative of each bidder will fill in and sign a specific bid form within the timeframe established for the respective round, except if the bidder makes use of one of its extension rights (Sections 5.1.4 and 5.1.5). The bid will not be submitted before the expiry of the time provided for exercising the extension right according to Section 5.1.4.

The form will be filled in by hand. In order to be valid, the form must bear the handwritten signature of a representative of the bidder. In view of ensuring the filling in of the bid form, the Commission will provide each bidder with enough bid forms to enable the submission of bids within a certain ongoing round, and these forms will be filled in using a blue ink pen.

After or before the bid submission, if the Commission is in the course of receiving another bid, the bidder's representative can partake at the bid submission by the other bidders, in the location reserved therefor (the room reserved for the Commission).

After each round, the chairman of the Commission (or the member of the Commission replacing the chairman) will sign the form submitted by the bidder for proof of non-alteration, will give the bidder a copy of the form and will write down the receipt of the bid in the synoptic table of the respective round.

5.1.4. Extension rights

During the auction stage, each bidder has at its disposal two extension rights that may be exercised in two distinct rounds, irrespective of their type (primary or assignment).

An extension right confers the bidder additional time for submitting a bid during a round. The extension rights are granted to the bidders in order to protect them in the event of certain circumstances which may prevent them from submitting a bid during a certain round.

On the first day of the auction stage, before starting the first primary round, the Commission will give each bidder two customised cards to be used as a "bargaining chip" for requesting and being granted an extension right.

The extension right may be exerted only during one round and by maximum 10 minutes before the ending of the respective round. Failure to observe the term for requesting the extension right triggers the refusal of the Commission to grant this right for the respective round.

The extension right may be exerted only actively and only if it has not been exerted previously by one of the bidders.

In case of exercising its extension right, the bidder will announce the Commission during a round on the occurrence of a situation that prevents it from submitting a bid in the timeframe set therefor during the respective round and will request the granting of an extension period in order to submit the bid. The extension period is of 30 minutes from the scheduled closing time of the round. The extension may be requested only during a round [with the observance of the specifications laid down in paragraph (4) of this Section], and not during the recess between rounds or at another time.

The extension period has effects towards all bidders, regardless of whether they hold or not extension rights at the time when the extension is granted.

To request the extension right, one of the bidder's representatives will go to the room reserved to the Commission and will hand in to one of the Commission's members one of the cards it has at its disposal.

Upon receiving the request for exerting an extension right, a member of the Commission or a representative of ANCOM, which ensures the logistical support at the auction premises, will go to each of the rooms reserved to the bidders and will inform them on the exertion of the extension right.

Only one extension right may be exerted during one round, irrespective of the bidder that chooses to exert this right.

If more than 20 rounds are held during the auction, the Commission may decide to grant each bidder an additional extension right.

5.1.5. Exceptional circumstances

Should exceptional circumstances occur during the auction, the Commission may take one of the following actions:

- a) postpone the scheduling of a round, the closing of an ongoing round, or postpone the announcement of the results of a round;

- b) cancel an ongoing round or a round whose results have not yet been announced and reschedule the respective round;
- c) cancel one or several rounds and the bids submitted during these rounds and restart the auction stage from a previous round;
- d) suspend the auction stage, cancel the auction stage and/or restart the auction stage.

The occurrence of an exceptional circumstance is ascertained by the Commission. Such circumstances may include, for example, the occurrence of natural catastrophes, demonstrations, strikes, violent conflicts or incidents of any kind, technical faults or any other exceptional events that may disturb or hinder the activities carried out at ANCOM premises, the existence of an indication or the acknowledgement of breaches of the rules regarding the participation in the selection procedure by one or several bidders, as well as any other exceptional circumstances that may in any way endanger the carrying out of the auction.

The bidders are obliged to immediately announce the Commission on the occurrence or imminence of an exceptional situation. To this end, a representative of the bidder that seized in this situation will go to the room reserved for the Commission.

5.2. Other rules for the auction stage

5.2.1. Security measures

Only the bidders' mandated representatives pursuant to Section 4.5.2 letter a) of these Terms of Reference will have access to the premises of the auction.

The access of the bidders' representatives in the premises of the auction is only allowed when the rounds are being held and only upon the identification of representatives in accordance with the provisions of the first paragraph. The identification will be performed based upon the submission of the identity card.

Where a bidder is legally represented by two or more persons (as resulted from the information available in the acknowledging certificate provided for in Section 4.5.2 letter b), indent (v) of these Terms of Reference), the access into the premises where the selection procedure is being held will be allowed only to one of these representatives. The person in question is to be expressly nominated by the bidder. The provisions of this paragraph apply in view of reasonably limiting the number of persons that can access the auction premises and the space that is to be allocated to each bidder.

Upon verifying the identity of the bidders' mandated representatives, ANCOM will distribute badges to each person. The badges will be worn at sight in the premises of the auction throughout the auction stage.

The space allocated to each bidder will be accessible only to the representatives of that bidder.

The intervention of any type on the supporting means (e.g. cables, extension cords etc.) found in the rooms reserved for each bidder and made available to the bidders is forbidden. In case of necessity, the intervention can only be performed by the ANCOM staff, upon prior notice to the Commission.

It is forbidden to connect electrical accessories (extension cords, plug, plug adapters etc.) to the electrical network in the premises of the selection procedure. If the bidders intend to use their own equipment, this will be connected directly to the electrical network or the electrical accessories made available by ANCOM. The rooms reserved to the bidders will be endowed with extension cords with minimum 3 schuko alternative power ports-220 V/50 Hz.

During the auction, the Authority reserves the right to monitor, through an audio-video system, the common spaces (including the ways of access to the rooms reserved to the bidders) and the room of the Commission. The registrations will be used in view of monitoring the observance of the auction rules and will be archived by ANCOM at the end of the procedure.

The monitoring will not concern the interior of the rooms reserved to each bidder.

5.2.2. Rules on the bidders' communication with the Commission

To ensure the bidders' communication with the Commission, each bidder will nominate a person who will facilitate the bidders' connection with the Commission.

In view of the bidders' communication with the Commission, the nominated person will go to the room reserved to the Commission.

The nominated person will go to the room reserved to the Commission exclusively for the following purposes:

- a) to submit a bid within a certain round;
- b) to announce the exertion of the extension right;
- c) to communicate the clarifications, documents or information requested by the Commission in accordance with the provisions of Section 4.3.5 herein;

- d) to inform the Commission on the occurrence of unforeseen circumstances which make it impossible for the bidder to submit a bid within a round.

5.2.3. Rules on the Commission's communication with the bidders

To ensure the Commission's communication with the bidders, one of the Commission's members will go therefor to the rooms reserved to each bidder.

The Commission's member will go to the room reserved to the bidder/bidders for the following purposes:

- a) to announce on the exertion of the extension right by one of the bidders;
- b) to inform on the occurrence of an exceptional situation in accordance with the provisions of Section 5.1.5 of these Terms of Reference;
- c) to inform each bidder in line with the provisions of Sections 4.3.5, 5.3.2, 5.3.8, 5.4.2, 5.4.7, 5.5.2, 5.5.8. and 5.2.2 of these Terms of Reference.

The Commission will inform the bidders in accordance with the provisions of Section 5.1.2 of these Terms of Reference.

5.2.4. Language used

The language used throughout the selection procedure is Romanian.

5.3. Rules for the primary bid rounds

5.3.1. Scheduling of the primary rounds

The primary rounds are scheduled by the Commission.

Rounds are exclusively scheduled one by one, and not several rounds simultaneously, considering that, depending on the result, the scheduled round may be the last round of the auction. The Commission sets the starting date and time of the round as well as its duration (closing date and time). In principle, the duration of a round may not be shorter than 30 minutes and may not exceed two hours.

All primary rounds will be scheduled to take place between 9.00 and 18.00 hours, on the working days. Each bidder must ensure daily the permanent presence of its representatives at the auction premises, starting 9.00 hours and until 18.00 hours or until the receipt of the Commission's notification regarding the completion of the rounds for that respective day. The Commission will communicate the starting time of a round at least 15 minutes and at most 30 minutes in advance.

One or several rounds may be scheduled during the same day, and the duration of the recess between rounds is to be established by the Commission (but it cannot be less than 30 minutes). The rounds must begin and end on the same day, while round interruption by the end of the day and resumption during the next morning are not accepted. By the end of the last round of the day, the Commission will announce the bidders that no other rounds are to be organised during that respective day. Also, in case exceptional circumstances occur and justify the interruption of the auction for the rest of the day or for a longer period, the Commission will immediately announce the bidders thereon.

5.3.2. Informing the bidders prior to the primary rounds

Once the starting time of a primary round is announced, the Commission will inform each bidder with respect to:

- a) the duration of the respective round (hours, minutes), specifying its closing time;
- b) the prices for each category, applicable to the respective round;
- c) the category of blocks for which demand in excess was registered;
- d) its eligibility for submitting bids during the respective round (expressed as number of eligibility points); and
- e) the number of remaining extension rights.

5.3.3. Bid prices

In the first primary round, the price for each of the A to E categories will be equal to the reserve price (minimum licence fee) for that category. Starting with the next primary round, for the blocks for which a demand in excess has been recorded, the Commission will set prices applicable in this round that are higher than the reserve prices with a percentage (bid increment) set pursuant to Section 4.7.1.

The same rules for setting the prices will apply to the following primary rounds. Thus, in case the block demand in a given category exceeds the availability thereof during a certain round, the price for that category will be increased during the next round.

The price will remain unchanged during the next round for those categories for which there is no demand in excess.

During a certain round, a demand in excess for a category of blocks appears when the total number of blocks in that category, as indicated in the valid bids submitted during the respective round, is higher than the number of blocks available in that category.

5.3.4. Bidding rules

All blocks in the A to E categories are available for the submission of bids during the primary rounds.

In each primary round, a bidder may submit only one bid.

Each bid will specify the number of blocks in each category which the bidder wishes to acquire at the price communicated by the Commission at the beginning of the round. A bid may include any combination of blocks, while observing the spectrum caps (Section 4.1.3), as well as the conditions provided for in Section 4.7.1.

To submit a bid, the bidders fill in, by hand, the dedicated bid form indicating the number of blocks they wish to acquire in each of the categories. The bidders may choose to submit a "zero" bid that does not contain any block within the A to E categories. In this case, the current amount of the eligibility points for the respective bidder will be considered "zero". If a bidder does not submit a bid during the round or during the extension period granted to that bidder (see Section 5.1.4), the Commission will record *ex officio* a "zero" bid for that bidder.

The price of the bid is determined as follows:

- a) for each category, the number of blocks in that category that have been included in the bid will be multiplied by the price for that category communicated by the Commission; and
- b) the values determined according to letter a) will be summed up for all block categories.

The bid will be submitted according to the rules set out under Section 5.1.3.

Each submitted bid is considered valid and represents a firm, definitive, irrevocable and unconditional commitment to acquire the frequency block or the package of blocks specified in the respective bid, at the bid price determined in accordance with the rules set out in this Section.

A bid remains valid until:

- a) it is replaced by a valid bid, submitted by the same bidder during one of the subsequent primary rounds; or
- b) it is cancelled as a result of the Commission cancelling one or several rounds, as well as the bids submitted during those rounds; or
- c) the winning bidders are granted licences for the rights of use gained as a result of the selection procedure.

5.3.5. Activity rules

The activity associated with a bid submission represents the total amount of eligibility points for all the blocks included in the bid and is calculated as follows:

- a) for each category from A to E, the number of blocks in that category, included in the bid, will be multiplied by the eligibility points per block for that category; and
- b) the values determined according to letter a) will be summed up for all block categories.

In each primary round, a bidder may submit a bid with an activity level lower than or equal to its current eligibility (corresponding to the respective round) for the A to E categories, while observing the spectrum caps (Section 4.1.3), as well as the conditions mentioned in Section 4.7.1.

The eligibility of a bidder for the first primary round is its initial eligibility. The initial eligibility is the sum of the eligibility points for all the blocks in the A to E categories included in the application form, submitted by the respective bidder as part of its application file, and is calculated as follows:

- a) for each of the A to E categories, by multiplying the number of blocks specified in the application form with the eligibility points associated to each radio frequency block; and
- b) by summing up the values determined according to letter a) for all the radio frequency block categories.

For each of the subsequent primary rounds, the eligibility of each bidder is equal to the activity of that bidder during the previous primary round. Thus, after a certain number of successive primary rounds, a bidder's eligibility may remain constant or may decrease, but it can never increase. However, during the primary rounds, a bidder's eligibility may fluctuate between the different block categories, considering that, from one round to another, the bidder may change the content of the package of blocks included in its bid, including by discarding some blocks in certain categories and selecting blocks from other categories.

5.3.6. Determining the winning bidders

The valid bids submitted during the last primary round will be declared as winning bids, and those who have submitted them will be designated as winning bidders. These persons will be awarded the rights to use radio frequencies upon the payment of the corresponding licence fees or of the first instalment thereof.

After the completion of the primary rounds and/or of the additional primary round (should it be the case) and of the assignment round, the winning bidders will be awarded the frequency usage rights corresponding to the blocks included in the winning bids.

5.3.7. Determining the basic price

Each winning bid has an associated basic price. This basic price is the total price for the aggregate of abstract frequency blocks included in the winning bid.

5.3.8. Completion of the primary rounds

The primary rounds end after a round where no demand in excess appeared for frequency blocks in any category. From this moment on, the Commission establishes the winning bids in the primary round, the winning bidders and the basic prices. Also, the Commission announces that the primary rounds have ended and, as the case may be, that the auction continues with the additional primary round or directly with the assignment round.

Moreover, the Commission informs each bidder on the results of the primary rounds, as follows:

- a) each bidder will be informed on the number of abstract blocks it won in each of the categories from A to E;
- b) each winning bidder will be informed on:
 - (i) the basic price corresponding to its bid declared as a winning bid;
 - (ii) the specific basic prices for each of the frequency blocks included in its winning bid, with a view to applying the provisions of Section 4.8.2 herein, which are equal to the prices against which the bidder gained the respective block/blocks.
- c) if the additional primary round is not scheduled, each bidder will be informed on the identity of the winning bidders after the closing of all primary rounds, as well as the number of blocks won by each of them in each category from A to E.

Information mentioned under letters a) and b) above will not be communicated to other bidders, should the additional primary round be held.

5.4. Rules for the additional primary round

5.4.1. Scheduling the additional primary round

Rules laid down in Section 5.3.1 apply in this case.

5.4.2. Informing the bidders before the additional round

At the same time with announcing the starting time of the additional round, the Commission will inform each bidder with respect to:

- a) the number of frequency blocks still available in each category;
- b) the duration of the respective round (hours, minutes), expressly specifying its closing time;
- c) the minimum applicable price for the respective round, for each category; and
- d) the number of remaining extension rights.

5.4.3. Bid prices

During the additional primary round, each bidder may bid for one or several packages consisting of one or several frequency blocks available in this round by submitting a bid for each package and indicating therein the price it is willing to pay for acquiring the respective package, with the limitations specified below.

Thus, during the additional primary round, the bid price for any of the frequency blocks included in any of the packages may not be lower than the prices which represent:

- a) the prices applicable in the last primary round in the case of those categories for which a demand in excess has been recorded during the primary rounds; and
- b) the reserve prices (minimum licence fee) for the categories where no demand existed for all the available blocks, during any of the primary rounds.

The bid price in the additional primary round shall be expressed in Euro.

5.4.4. Bidding rules

Rules laid down in Section 5.3.4 apply, with the exceptions provided below.

Only the blocks in the A to E categories that remained not awarded following the initial bids or following the primary rounds will be available for the submission of bids during the additional primary round.

Each bid may be submitted for one package including one or several frequency blocks. Each package represents itself a bid. For each package, the bid will specify the number of blocks in each category the bidder wishes to acquire, as well as the total package price.

As well, for each package, the bidder will indicate an individual price for each of the blocks composing the respective package, which, if the respective package will be a part of the winning combination, will represent the specific basic price for those blocks, exclusively for the purpose of applying the provisions of Section 4.8.2.

A package may include any combination of blocks, with the observance of the conditions mentioned in Section 5.4.3.

During the additional primary round, the bidders may bid irrespective of their existing eligibility at the time of completion of the primary rounds and without needing to observe the spectrum caps specified in Section 4.1.3.

5.4.5. Determining the winning bidders

After the completion of the additional primary round, the Commission will establish the winning combination.

The winning combination is the combination of packages included in the valid bids submitted during the additional primary round that, taken together, have the highest value among all possible combinations, if the following conditions are met:

- a) in each category the number of granted blocks is equal with or lower than the number of available blocks in the respective category;
- b) the combination contains no more than one package from each bidder;
- c) the combination ensures the awarding of the largest number of blocks among those available in all categories.

In case there are two or several combinations of packages which meet the above conditions and have an equal value, the combination that includes packages from the largest number of bidders will be declared the winning combination. If this rule does not lead to identifying a single combination either, the Commission will toss for the winning combination from among the potential winning combinations.

The bids for the packages that are part of the winning combination will be declared winning bids and those who have submitted them will be designated as winning bidders.

After the completion of the auction stage, during the licence granting stage, the bidders declared winners in the additional primary round will be awarded the frequency usage rights corresponding to the blocks included in the packages that are part of the winning combination.

5.4.6. Determining the basic price

Each winning bid has an associated basic price. This basic price is the total price for the aggregate of abstract frequency blocks included in the package that is part of the winning combination.

5.4.7. Closing of the additional round

After the completion of the additional primary round, the Commission will inform each participating bidder on the results of the additional primary round, as follows:

- a) each bidder will be informed on the number of abstract blocks that it won in the additional primary round;
- b) each winning bidder will be informed on:
 - (i) the basic price corresponding to its bid declared as a winning bid in the additional primary round;
 - (ii) the specific basic prices for each of the blocks included in its winning bid, for the purpose of applying the provisions of Section 4.8.2 herein, which are equal to the individual prices indicated by the bidder for the respective blocks within its package that is part of the winning combination, in accordance with the provisions of Section 5.4.5.

Information mentioned under letter b) above will not be communicated to other bidders.

As well, upon the closing of the additional primary round, the Commission will communicate each bidder the identity of the winning bidders after the closing of all the primary rounds and/or of the additional primary round, as well as the number of blocks won by each of them in each category from A to E.

5.5. Rules for the assignment round

5.5.1. Scheduling the assignment round

The assignment round for each category is scheduled by the Commission, which sets the starting date and time of the round as well as its duration (closing date and time). The duration of the assignment round may not be shorter than one hour.

The assignment round for each category will be scheduled to take place between 9.00 and 18.00 hours, on a working day, while assignment rounds for several categories may take place on the same day. The bidders will be announced on the date and time of the assignment rounds with at least one working day in advance.

The assignment round for one category must begin and end on the same day, as round interruption by the end of the day and its resumption during the next morning are not accepted. If exceptional circumstances occur and justify the interruption of the auction for the rest of the day or for a longer period, the Commission will immediately announce the bidders thereon.

5.5.2. Informing the bidders prior to the assignment round

When announcing the starting date and time of the assignment round, the Commission will also inform each bidder with respect to:

- a) the duration of the respective round (hours, minutes), expressly specifying its closing time; and
- b) whether the bidder still has or not an extension right available after the primary and additional rounds.

5.5.3. Bid prices

There is no price limit as regards the assignment bids. Prices shall be expressed in euro.

5.5.4. Bidding rules

The gaining of a certain number of blocks in one of the A to E categories, as the case may be, following the initial bid or the primary rounds and/or the additional primary round implies the winning bidder's right as well as obligation to acquire one of the frequency allotment options presented to that bidder by the Commission for each category during the assignment round.

The bidders are invited to submit bids for the specific frequency allotment options, as set out by the Commission, in accordance with the rules below.

For each of the frequency bands where there are two or more winning bidders, the Commission will establish a set of frequency allotment options, for each bidder. More specifically, for each bidder, for each block category, the Commission will identify an exhaustive list of adjacent frequency blocks that meet the following conditions:

- a) the number of blocks in each option is equal to the number of blocks won by the bidder during the primary rounds and/or the additional primary round;
- b) any option for the allotment of frequency blocks to a certain bidder is compatible with the options of all other winners in the same block category receiving adjacent spectrum; and
- c) the frequency blocks not awarded in a certain band will be re-arranged in the respective band according to the rules under Section 5.5.6.

During the assignment round, the participating bidders will submit a bid form, in accordance with the rules described in Section 5.1.3.

For each bidder, the bid form will include a list of all the frequency allotment options available to the respective bidder in each of the bands for which it has won abstract frequency blocks during the primary rounds and in the additional round. A member of the Commission will make available the bid form to each bidder at the beginning of the assignment round.

Each bidder may submit one assignment bid for each option listed in its bid form, indicating the amount it is willing to pay to acquire the respective allotment option.

“Zero” bids will be automatically recorded for the frequency allotment options for which no bid is submitted. If a bidder does not submit a bid form during the allocated timeframe, it will be considered as submitting a “zero” bid for each of the frequency allotment options in each band available to the respective bidder.

Each bid submitted during the assignment round represents a firm, definitive, irrevocable and unconditional commitment to pay the specified price for each allotment option, in order to obtain the respective specific frequency allotments, as an additional price to the basic price the bidder must pay as a result of the primary rounds and/or of the additional round.

A bid stays valid until:

- a) it is cancelled as a result of the Commission’s cancelling the round and the bids submitted during that round;
- b) the winning bidders are granted the licences for the usage rights gained in the selection procedure.

In the case of the usage rights in the 3400-3800 MHz band, bidders must consider that the contiguity rule will be ensured for the spectrum to be won in the selection procedure, irrespective of whether the usage rights are held in the 3400-3600 MHz band and/or in the 3600-3800 MHz band.

Special rules will apply for this band as regards the means for determining the maximum total value of all possible combinations, described below.

Thus, after the submission of the bids in the assignment round, the winning bids will be those included in the combination of bids which maximize the value calculated according to the following formula:

$$\sum_{i=1}^n \text{cuantumoferta}_i \times a_i$$

where

$$a_i = \frac{|x_i - y_i|}{\max(|x_i - z_i|, 2,5)}$$

for the operators that hold at present allocations in the band in question:

and for the operators that do not hold at present allocations in the band in question: $a_i = 1$

The parameters the formula above have the following meanings:

n = the number of winners in the frequency band for which the assignment round is held;

x_i = the value (in MHz) of the mid-point of the allotted frequency sub-band (as a geometrical segment) held at present by the winning operator “i”;

y_i = the value (in MHz) of the mid-point of the allotted frequency sub-band (as a geometrical segment) that would correspond to the farthest allotment option from x_i ;

z_i = the value (in MHz) of the mid-point of the allotted frequency sub-band (as a geometrical segment) that corresponds to the allotment option for operator “i” in the analysed combination (allotment variant).

5.5.5. Determining the winning bids

After the completion of the assignment round for each block category, the Commission will assess the bids and will establish the winning combination, representing the combination of submitted valid assignment bids that has the highest total value among all possible combinations, if the following conditions are met:

- a) the combination includes only one bid from each bidder;
- b) each bidder will be allotted in the respective category the amount of spectrum that it won during the primary rounds and/or the additional round;
- c) each bidder is assigned adjacent frequencies in each category;
- d) the frequency sub-bands allotted to a bidder do not overlap with those allotted to another bidder; and
- e) any unawarded blocks must be positioned in accordance with the rules under Section 5.5.6.

After each assignment round, the Commission will inform the bidder on:

- (i) the price of its winning bid;
- (ii) the specific blocks resulted following the assignment round.

Each bidder shall have a winning assignment bid in each band where it has won abstract blocks during the primary rounds and/or the additional round. The winning assignment bid may be a “zero” bid, automatically recorded on behalf of the bidder for an allotment option for which the respective bidder has not submitted an assignment bid.

If there are several combinations of assignment bids which meet the above conditions and have the same highest value, the Commission will toss for the winning combination.

5.5.6. Positioning the unawarded frequencies

It is possible that some blocks from certain bands remain not awarded following the primary rounds and the additional round. Any unawarded blocks will be positioned according to the rules in the table below.

Table 5.1 – Positioning the unawarded frequencies

Category	Number of blocks	Band	Block size	Positioning unassigned blocks
A	6	703-733/758-788 MHz FDD	2 x 5 MHz	Any blocks not awarded will be adjacent and positioned immediately above 703 MHz and respectively above 758 MHz
B	3	738-753 MHz SDL	1 x 5 MHz	Any blocks not awarded will be adjacent and positioned immediately above 738 MHz
D	8	1452-1492 MHz	1 x 5 MHz	Any blocks not awarded will be adjacent and positioned immediately below 1492 MHz
E	4	2550-2570 /2670-2690 MHz FDD	2 x 5 MHz	Any blocks not awarded will be adjacent and positioned immediately below 2570 MHz and respectively below 2690 MHz
G	40	3400-3800 MHz	1 x 10 MHz	Any blocks not awarded will be adjacent.

5.5.7. Determining the additional price

Each winning bid, in each band, has an associated additional price. This price corresponds to the allotment option belonging to the winning bid of each bidder in the respective band and represents the amount to be paid by the bidder who submitted the respective bid, in addition to the basic price determined as a result of the primary rounds and of the additional round (if the case), in order to obtain the said allotment.

5.5.8. Completion of the assignment round

After the completion of the assignment round for each category, the Commission informs each participating bidder on the results of the round, as follows:

- a) each bidder will be informed on the allotment obtained within the respective category;
- b) each bidder will be informed on the additional price for the allotment obtained within the respective category.

Information under letters a) and b) above will not be communicated to other bidders.

5.6. Completion of the auction stage

At the completion of the auction stage, the Commission:

- a) will establish the final price each winning bidder must pay to gain the rights to use the frequency blocks awarded to the respective bidder, representing the sum between the basic price determined based upon either the initial bid or the primary rounds or the additional round (and which cannot be lower than the reserve price for each category) and the additional price determined after the assignment round; this final price will be announced at the same time with the results of the procedure, in the licence granting stage;
- b) will inform the bidders that did not gain usage rights during the procedure on the term within which the participation bond is to be returned to them, in accordance with the provisions of Section 4.4.5, letter b).

Chapter 6 – MISCELLANEOUS

6.1. Advertising the selection procedure

ANCOM may issue any public communication related to the selection procedure, as it deems necessary, without prior notification to the participants in the procedure. ANCOM may use any communication means, as it considers necessary, including written and online mass-media, its webpage (www.ancom.ro) etc.

Information publicly communicated by ANCOM may relate, *inter alia*, to:

- a) the identity of the participants (candidates) in the selection procedure, of the bidders in the auction stage and/or of the winning bidders upon the completion of the selection procedure;
- b) the frequency band/bands within which the winning bidders have gained usage rights following the procedure;
- c) the licence fees owed by the winning bidders;
- d) the licences that will be granted as a result of the selection procedure.

The candidates/bidders have the obligation to refrain from any communication concerning the selection procedure throughout its progress.

6.2. Suspension of the selection procedure

In the event of occurrence of exceptional circumstances that may affect the procedure, ANCOM has the right to suspend the selection procedure at any time during its progress. The occurrence of an exceptional circumstance is ascertained by the Commission. Such circumstances may include, for example, the occurrence of natural catastrophes, demonstrations, strikes, violent conflicts or incidents of any kind, technical faults or any other exceptional events that may disturb or hinder the holding of the selection procedure, the existence of indications or the acknowledgement of breaches of the auction rules by one or several bidders, as well as any other exceptional circumstances that may in any way endanger the carrying out of the auction.

In case of suspending the procedure, ANCOM has the obligation to request the candidates/bidders to extend the validity of their bids, as well as of their participation bond, if necessary.

6.3. Cancellation of the selection procedure

According to the provisions under art. 26 paragraph 6) of the Framework-Ordinance, ANCOM may cancel the already started selection procedure, before the deadline for the submission of the last bid during the main stage. The decision to cancel the selection procedure must be objectively justified or must be the consequence of certain conditions that could not have been known at the time when the selection procedure had been initiated. ANCOM will communicate publicly the reasons for cancelling the selection procedure, within a 30-day timeframe.

Annexes

Annex 1 – List of settlements to be covered with mobile communications services according to Section 3.3.1.1 of the Terms of Reference

Annex 2 – Statement on the capacity as a participant in the selection procedure

Annex 3 – Application form

Annex 4 – Model of a licence for the use of radio frequencies

Annex 5 – Model of a participation bank guarantee letter

Annex 6 – Model of an execution bank guarantee letter

Annex 1

List of settlements to be covered with mobile communications services according to Section 3.3.1.1 of the Terms of Reference⁴⁵

⁴⁵ Annex 1 can be consulted as a separate document, is part of the Terms of Reference and is published on the website alongside this document.

Annex 2

[heading of the individual candidate/associate candidate]

STATEMENT ON THE CAPACITY AS A PARTICIPANT IN THE SELECTION PROCEDURE

To:

National Authority for Management and Regulation in Communications
2 Delea Nouă Street, Sector 3, Bucharest

With reference to:

Participation in the competitive selection procedure held in view of awarding frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3600 MHz bands

After examining the provisions of the *Terms of Reference for the organisation of the competitive selection procedure for awarding certain frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands*, as well as the provisions of the Decision of the National Authority for Management and Regulation in Communications no. ___/___ on the selection procedure for awarding rights radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3600 MHz bands, the undersigned, *[name and first name]*, legal representative of *[name and headquarters of the individual candidate/associate candidate]*, under the sanction of being disqualified from the selection procedure and being aware of the sanctions applicable in case of false statements, declare on my own responsibility the following:

1. In the selection procedure, I participate and submit a bid in my capacity as (tick the corresponding option):

individual candidate;

associate candidate in the association led by *[name and address of the association leader]*.

2. I do not submit more than one application, individually and/or in association with another legal person, being aware that breaching this rule triggers the rejection of all applications thus submitted.

3. The candidate on whose behalf I act (tick the corresponding option):

is not a member of a group of undertakings;

is a member of a group of undertakings whose names, addresses and links are presented in the document *[name of the document comprising the structure of the candidate's group]*, which I submit as part of the application file.

4. All documents and information presented and provided as part of the application file are complete, accurate in every detail and concordant with the reality, and the auction commission appointed by

decision of the president of ANCOM has the right to request any justifying documents for verifying and confirming my statement.

5. I will immediately inform the auction commission appointed by decision of the president of ANCOM if any changes occur to the present declaration at any time during the selection procedure.

I, the undersigned, hereby authorise any institution, commercial company, bank, other legal persons to provide information to the authorised representatives of ANCOM on any commercial, technical and financial aspect related to the activity of the candidate I represent.

I also declare that I acknowledged the provisions of art.326 paragraph (1) of the Penal Code of Romania which states that, "*A statement which does not correspond to the truth, delivered to a person from those provided for in article 175 or to an entity within which these carry out their activity, for the purpose of producing legal effects, on the own behalf or on somebody else's behalf, in such a case when, in accordance with the law or the circumstances, the delivered statement serves for generating the respective consequence, shall be sanctioned by 3 months to 2 years imprisonment or by fine*".

The present statement is valid until [*the date when the bid validity expires*].

Filled in on

[*name of the individual candidate/associate candidate*]

(authorised signature)

Annex 3

[candidate's heading]
APPLICATION FORM

To:

National Authority for Management and Regulation in Communications
2 Delea Nouă Street, Sector 3, Bucharest

With reference to:

Participation in the competitive selection procedure held in view of awarding radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3600 MHz bands

After examining the provisions of the *Terms of Reference for the organisation of the competitive selection procedure for awarding certain frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands* (hereinafter referred to as the "*Terms of Reference*"), as well as the provisions of the Decision of the National Authority for Management and Regulation in Communications no. ___/_____ on the selection procedure for awarding radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3600 MHz bands (hereinafter referred to as the "ANCOM Decision"), I, the undersigned, [*name and first name*], legal/mandated representative of [*name and headquarters of the candidate*], hereby firmly, definitely, irrevocably and unconditionally undertake:

1. To participate in the selection procedure and observe its rules (including the sanctions applicable in case of breaching the said rules), as these have been established by the Terms of Reference and the ANCOM Decision, during the entire duration of the procedure, until the licences are awarded, without causing any prejudice to the right of ANCOM to enforce certain sanctions after the licence award also (e.g. licence revoking);

2. To maintain valid the bid for the usage rights over the amounts of radio spectrum in each of the bands indicated in the table below, at the basic price specified therein (to which the possible additional price communicated by ANCOM by the closing of the primary round/rounds or assignment round may be added) until [*the date when the bid validity expires*] or until the date of the bid validity advance termination⁴⁶; I thereby acknowledge that the submission of this bid does not bring prejudice to my right to subsequently submit a bid for any other package of frequency blocks in the primary and/or assignment rounds of the auction stage, provided that the activity and eligibility rules, as well as the rules on the spectrum caps established in the Terms of Reference and in the ANCOM Decision are observed.

3. In case the candidate I represent is designated winner in the selection procedure, I will pay within the term and under the conditions established by ANCOM the basic price and, as the case may be, the additional price resulted from the procedure for the usage rights gained, and I will observe the provisions under Chapter 3 of the Terms of Reference and the ANCOM Decision.

(Note: The candidate will fill in the following table and will indicate the number of blocks in each frequency band for which it submits the initial bid. If the candidate does not submit a bid for any of the blocks within a certain band, it will cross the respective sections. Pay attention! The candidate must observe the caps referring to the gaining of the usage rights imposed in Section 4.1.3, as well as the conditions specified at Section 4.7.1 under the Terms of Reference; its application will otherwise be rejected.)

⁴⁶ The date of the bid validity advance termination is the date when:

- a) the bid is replaced by a higher bid for the same package of frequency blocks, submitted by the same bidder during the primary round/rounds and/or the assignment round; or
- b) the bid is cancelled as effect of the Commission's cancelling one round or several rounds, as well as the bids submitted therein; or
- c) the winning bidders are granted the licences for the usage rights gained as a result of the selection procedure.

Category	No. of available blocks	Frequency band (MHz)	Use (period)	Reserve price/block (euro)	Initial bid (no. of frequency blocks)	Total (euro)
A	6	700 (FDD)	01.01.2023-31.12.2042			
B	3	700 (SDL)	01.01.2023-31.12.2042			
C	8	1500 (SDL)	01.01.2023-31.12.2042			
D	4	2600 (FDD)	01.01.2023-05.04.2029			
E	40	3400-3800 (TDD)	01.01.2026-31.12.2045			
Total price of the initial bid						

5. I hereby expressly, unequivocally, irrevocably and unconditionally declare that, in case of any dispute/issue arising in relation with the present selection procedure and the awarding of the radio frequency usage rights as a result of the said procedure, I understand to accept that the substantive and procedural rules under the Romanian law and the Romanian Court of Law jurisdiction are to be applied and I waive the applicability of any foreign jurisdiction that may be competent in solving the respective dispute/issue.

Filled in on

[*name of the candidate*]
(*authorised signature*)



2 Delea Noua Street, Bucharest 3, 030925, Romania
Phone: +40 372 845 400 / +40 372 845 454. Fax: +40 372 845 402
E-mail: ancom@ancom.ro. Website: www.ancom.ro

On grounds of the Parliament's Decision no. 28/2020 on the appointment of the president of the National Authority for Management and Regulation in Communications,

On grounds of the provisions of art. 10 paragraph (2) points 12 and 13, art. 11 paragraph (1), art. 12 paragraph (1) of the Government Emergency Ordinance no. 22/2009 setting up the National Authority for Management and Regulation in Communications, approved by Law no. 113/2010, with the subsequent amendments and completions,

On grounds of the provisions of art. 14 paragraph (1), of art. 17 paragraph (1), letter a), of art. 23 paragraphs (1) and (2), of art. 24, as well as of art. 31 of the Government Emergency Ordinance no. 111/2011 on electronic communications, approved, with amendments and completions, by Law no. 140/2012, with the subsequent amendments and completions,

Having regard to the provisions of the Decision of the president of the National Authority for Management and Regulation in Communications no. ____/____ on the selection procedure for awarding rights to use the radio frequencies in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3600 MHz bands,

the president of the National Authority for Management and Regulation in Communications
issues this

LICENCE⁴⁷
FOR THE USE OF RADIO FREQUENCIES
FOR THE PROVISION OF PUBLIC ELECTRONIC COMMUNICATIONS NETWORKS AND
ELECTRONIC COMMUNICATIONS SERVICES
no. _____

Holder: _____

With headquarters in: _____

registered with the Trade Registry Office under no. _____,

unique registration code: _____,

is authorised to exercise the right to use the radio frequencies specified in this licence to provide public electronic communications networks and mobile electronic communications services, in the following allotted frequency sub-bands:

1. in the frequency bands _____:
2. in the frequency bands _____;

⁴⁷ The Licence for the use of radio frequencies to be granted to the winners of the usage rights will be drawn up by taking into consideration the requirements set under the Terms of Reference. The document "Licence" presented as an annex to these Terms of Reference has a guiding character, as regards the form and content, and is only drawn up for its presentation within the selection procedure, whereas the authorisation act is to contain specific conditions for each radio frequency band.

I. Definitions

1. For the purposes of the present Licence, the relevant definitions provided for in the Radio Regulations adopted by the International Telecommunication Union (ITU) or in the national legislation in the electronic communications field apply.

II. Technical and operational conditions⁴⁸

1. The licence holder may use any available technology for each type of application established in the National Table for Frequency Band Allocation (NTFA) and in accordance with the provisions of the European Union and national legislation, as the case may be.

2. The licence holder has the obligation to exercise its rights deriving from the present Licence under conditions that would ensure the effective, rational and efficient use of the radio frequencies and the prevention of harmful interferences.

3. The licence holder has the right to install, operate, control and make available to third parties a public electronic communications network, as well as the corresponding infrastructure, in view of providing publicly available mobile electronic communications services.

4. The frequency assignments for the network provision, the identification characteristics of the radiocommunication stations, the technical parameters that define the service area associated to the assigned frequencies and the characteristics of the radio signals transmitted within the network are comprised in the assignment authorisations which are an integral part of the present Licence.

5. The licence holder has the obligation to comply with the requirements deriving from the observance of all international agreements to which Romania is a party concerning the use of radio frequencies, including in the border areas.

6. In the border areas, the licence holder will use the allocated frequency blocks only based on coordination with the communications administrations from the neighbouring countries, in compliance with the requirements deriving from the enforcement of the international agreements to which Romania is a party or from the international regulations on frequency coordination applicable to the allocated spectrum. The technical conditions for the use of radio frequencies in border areas are provided for in Section 3.3.3.6 of the Terms of Reference.

7. The licence holder has the obligation to comply with the requirements deriving from the achievement of the objectives of European harmonisation and international cooperation in the electronic communications field and which may consist of the modification of the assigned radio frequencies or of the corresponding technical parameters set under the present Licence. The modifications specified at this point will be implemented within a reasonable term fixed by ANCOM, upon consulting the holder, in accordance with the provisions of art. 24 paragraphs (3) and (4) of the Government Emergency Ordinance no. 111/2011.

8. The licence holder has the obligation to notify to ANCOM the location of the base stations, at least 30 days before starting the execution works. ANCOM may request the holder to change the location, in view of ensuring the electromagnetic compatibility. The licence holder has the obligation to notify to ANCOM the values of the technical parameters of the base stations (locations, proposed frequencies, emission power, antennae/equipment used etc.) at least 15 calendar days prior to the putting into operation.

⁴⁸ The reference technical and operational conditions are provided in the Terms of Reference and will be practically specified depending on the outcomes of the selection procedure (the radio frequency sub-bands to be gained by the interested parties).

9. The change of the base station locations notified in accordance with item 8 or the decommissioning of a notified location entails the obligation to notify the situation within 30 days.

10. The licence holder has the obligation to abide by the standards adopted by the European Telecommunications Standards Institute (ETSI), as well as by the regulations adopted by ANCOM.

11. With a view to prevent or remove the harmful interferences, the licence holder has the obligation to observe the technical and operational conditions for the use of radio frequencies established by ANCOM.

12. The licence holder will take the necessary actions, on its own expense, to remove the harmful interferences that are caused by or may be imputable to the holder, including but not limited to repairs, insertion of certain additional filters, the correction of errors owed to the improper or faulty installation of the network or to the improper operation of the equipment.

13. The radio equipment within the network will observe the essential⁴⁹ requirements and the harmonised European standards applicable in Romania. The licence holder will not pretend – directly or indirectly – for the terminal equipment other requirements than those defined by the applicable standards adopted by ETSI.

III. Coverage and/or development and quality obligations⁵⁰

IV. Monitoring and verification of the compliance with the obligations

1. The verification and evaluation methodology to be used to verify the compliance with the coverage obligations is laid down in Section 3.7 of the Terms of Reference.

V. Modification of the radio frequency usage rights

1. The radio frequency usage right may be amended, upon the ANCOM initiative, in accordance with the procedure established under the law, in the following situations:

- a) observance of the conditions on the effective, rational and efficient use of the radio frequencies;
- b) prevention of harmful interferences;
- c) implementation of the objectives of European harmonisation and international cooperation regarding the use of the radio frequencies;
- d) compliance with the international agreements to which Romania is a party relating to the use of the radio frequencies;
- e) resolution of the limited availability of the radio frequencies, in certain geographic areas and under specified technical conditions, in the radio frequency bands designated for the type of application intended for the provision of the network making the object of the licence;
- f) implementation of the strategy for the development of the electronic communications and management of the radio frequency spectrum;
- g) modification of the NTFA.

2. In the situation mentioned under item 1, ANCOM will inform the licence holder regarding the modifications which must be operated and grants the licence holder a suitable term in view of implementing these modifications, proportionate to their qualitative or quantitative nature.

⁴⁹ On the date of granting this licence, the essential requirements are those set by Art. 3 of the Government Decision no. 740/2016 on the placing on the market of radio equipment.

⁵⁰ The obligations set in the Terms of Reference will be specified.

3. ANCOM will also modify the licences for the use of radio frequencies as a result of the occurrence of one of the following situations:

- a) transfer/rental of the usage rights;
- b) shared use of radio spectrum;
- c) partial waiver of the usage rights;
- d) partial withdrawal of the usage rights, if applicable, under the law.

VI. Transfer of the radio frequency usage rights⁵¹

1. The radio frequency usage rights may be totally or partially transferred/rented to a third party, under the law, only with the prior approval of ANCOM, with the observance of all the deriving obligations, as well as with the compliance with the conditions and/or objectives set or considered at the award of the right.

2. If the radio frequency usage rights conferred under the Licence are partially transferred, the Licence holder will be able to transfer only blocks of at least 5 MHz (2x5 MHz, in case of the FDD bands).

3. The transfer of the radio frequency usage rights must not result in the restriction, deterrence or distortion of competition and, where the use of the radio frequencies is harmonised at European level, must not lead to changing the usage destination of the frequencies that make the object of this Licence in a way that would contravene to this harmonised use.

4. If the usage rights are transferred, the change of the usage destination of the frequencies for which the Licence was awarded is not allowed.

VII. The shared use of the radio frequency spectrum allotted under the licence for the use of radio frequencies

VIII. The spectrum usage tariff

The licence holder has the obligation to pay, for the entire validity period of the usage rights, the spectrum usage tariff, in the amount and within the terms set according to the normative acts in force.

IX. Validity period

X. Revoking of the radio frequency usage rights

The radio frequency usage right may be revoked, totally or partially, in accordance with the procedure established under the law, in the following situations:

1. total withdrawal of the radio frequency usage rights, under the terms of art. 27, art. 147 letter b) in conjunction with art. 141 paragraph (1) or of art. 148 of the Government Emergency Ordinance no. 111/2011 on electronic communications;
2. revoking of the right to use radio frequencies, under the terms of art. 6 paragraph (6) of the Government Emergency Ordinance no. 111/2011 on electronic communications.

XI. Final provisions

1. ANCOM may forbid for a limited period, at the reasoned request of the competent institutions within the system of national defence, public order and national safety, the partial or total use of the usage rights awarded under this Licence where the national safety, public order or national

⁵¹ The transfer of the usage rights will also comply with art. 35 of the Government Emergency Ordinance no. 111/2011 on electronic communications.

defence impose this measure, as well as where certain engagements assumed under international agreements must be observed.

2. The licence holder has the obligation to provide ANCOM with all the information and materials the latter requests in view of fulfilling the incumbent duties on the oversight and control of the compliance with the obligations under the present Licence or in the legislation in the electronic communications field.

3. The licence holder has the obligation to allow the access of the ANCOM control personnel in any location where equipment, apparatus and electronic communications installations are found, in view of their inspection for verifying the compliance with the conditions and obligations set under the Licence or in the legislation in the electronic communications field.

4. The non-compliance with the technical and/or operational conditions, as well as with the obligations provided in this Licence, including in its annexes, or the non-observance of any other legal provisions and/or technical regulations applicable to this Licence lead to the enforcement of the sanctions provided for in the legislation in force, which consist of the application of contravention fines, suspension of the right to use the radio spectrum, for a specified term, or the revoking of the usage right, as applicable.

5. The failure to pay in due term the spectrum usage tariff, according to the law, entails the enforcement of delay penalties, and, for exceeding the legal due date determined under the terms of the normative acts in force, ANCOM may dispose the suspension and/or revoking of the Licence.

6. The present Licence does not replace other agreements or approvals that are necessary, according to the national legislation in force in other fields than electronic communications, for the carrying out of the holder's activity in Romania during the validity period of the usage rights.

7. The provisions of the present Licence are rightfully completed by the legal provisions in force in the field of electronic communications.

[*heading of the issuer*]

GUARANTEE LETTER
for the participation with a bid in the competitive selection procedure held for
awarding frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3600
MHz bands

To:

National Authority for Management and Regulation in Communications

2 Delea Nouă Street, Sector 3, Bucharest

Regarding the competitive selection procedure held for awarding rights to use the radio frequencies, we [*name and headquarters of the bank*], unconditionally and irrevocably commit hereby toward the National Authority for Management and Regulation in Communications (ANCOM) to pay the amount of

[*amount in letters*] ([*amount in figures*]) euro,

payable in lei, at the exchange rate valid on the date of payment, set by the National Bank of Romania, upon the first and simple written request of ANCOM, which does not have the obligation to justify the respective request provided that it specifies therein that the amount owed to, and requested by, ANCOM is thereby requested because of the existence of one of the situations described below:

- 1) [*name of the candidate*], being declared winner in the selection procedure, does not pay in due time the licence fee/the first instalment of the licence fee or does not submit the execution bond in accordance with art. 3 of the Government Decision no._____/_____ on setting the minimum amount of the licence fee for awarding certain radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands, as well as the payment conditions for the licence fee;
- 2) [*name of the candidate*], being declared winner in the selection procedure, waives the right to be awarded the licence for the use of radio frequencies;
- 3) [*name of the candidate*] breaches the rules concerning the participation in the selection procedure, set out by ANCOM.

This guarantee is valid until [*day/month/year*].

This guarantee tool/guarantee letter is governed by the Romanian law.

The Romanian Courts of Law are competent to settle any disputes arising in relation to the present guarantee tool/guarantee letter.

Endorsed by the Issuer _____ on [*day/month/year*].
(authorised signature)

Annex 6

[*heading of the issuer*]

GUARANTEE LETTER for the execution in relation to the competitive selection procedure held for awarding radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3600 MHz bands

To:

National Authority for Management and Regulation in Communications

2 Delea Nouă Street, Sector 3, Bucharest

Considering the results of the competitive selection procedure held for awarding certain radio frequency usage rights, we [*name and headquarters of the bank*], unconditionally and irrevocably commit hereby toward the National Authority for Management and Regulation in Communications (ANCOM) to pay the amount of

[*amount in letters*] ([*amount in figures*]) euro,

payable in lei, at the exchange rate valid on the date of payment, set by the National Bank of Romania, upon the first and simple written request of ANCOM, which does not have the obligation to justify the respective request provided that it specifies therein that the amount owed to, and requested by, ANCOM is thereby requested because of the existence of one of the situations described below:

- 1) [*name of the winning candidate*], does not pay, for any reason, at any of the due dates set according to art. 3, the amount resulted following the selection procedure in accordance with the Government Decision no. ____/____ on setting the minimum amount of the licence fee for awarding certain radio frequency usage rights in the 700 MHz, 1500 MHz, 2600 MHz and 3400-3800 MHz bands, as well as the payment conditions for the licence fee;
- 2) [*name of the winning candidate*], waives the right to be awarded the licence for the use of radio frequencies;
- 3) [*name of the winning candidate*], at any time before the last due date, waives the won usage rights for which it has already obtained the licence for the use of radio frequencies;
- 4) [*name of the winning candidate*], is withdrawn the licence for the use of radio frequencies as a result of art. 6, art. 27, art. 147 letter b) or art. 148 of the Government Emergency Ordinance no. 111/2011 on electronic communications, approved, with amendments and completions, by Law no. 140/2012, with the subsequent amendments and completions.

This guarantee is valid until [*day/month/year*].

This guarantee tool/guarantee letter is governed by the Romanian law.

The Romanian Courts of Law are competent to settle any disputes arising in relation to the present guarantee tool/guarantee letter.

Endorsed by the Issuer _____ on [*day/month/year*].
(authorised signature)