Resolution No. 231/18/CONS*

ASSIGNMENT PROCEDURES AND RULES FOR THE USE OF THE FREQUENCIES AVAILABLE IN THE 694-790 MHz, 3600-3800 MHz AND 26.5-27.5 GHz BANDS FOR TERRESTRIAL SYSTEMS OF ELECTRONIC COMMUNICATIONS IN ORDER TO FAVOR THE TRANSITION TO 5G TECHNOLOGY, UNDER THE LAW 27 DECEMBER 2017, N. 205

THE AUTHORITY

IN the Council meeting of 8 May 2018;

HAVING REGARD TO the law of November 14th 1995, n. 481, on "*Rules for competition and regulation of public utility services. Establishment of regulatory authorities for public utilities* ";

HAVING REGARD TO the law of 31 July 1997, n. 249, bearing "*Establishment of the Authority for Communications Guarantees and Rules on Telecommunications and Radio and Television Systems*";

VIEW resolution no. 383/17 / CONS, of October 24, 2017, bearing "*Adoption of the regulation containing the access regulation pursuant to articles 22 and following of the law 7 August 1990, n. 241 and of the articles 5 and following of the legislative decree 14 March 2013, n. 33* ";

VIEW resolution no. 453/03 / CONS, of December 23, 2003, bearing "*Regulations concerning the consultation procedure referred to in Article 11 of Legislative Decree 1 August 2003, n. 259* ";

VIEW resolution no. 223/12 / CONS, dated 27 April 2012, containing "*Adoption of the new Regulation concerning the organization and functioning of the Authority*", as last amended by Resolution no. 405/17 / CONS;

CONSIDERING the directives of the European Parliament and of the Council, dated March 7, 2002, nos. 2002/19 / EC (*Access Directive*), 2002/20 / EC (*Authorization Directive*), 2002/21 / EC (*Framework Directive*), 2002/22 / EC (*Universal Service Directive*), as amended by directives nos. 2009/136 / EC and 2009/140 / EC;

GIVEN the directive n. 1999/5 / EC of the European Parliament and of the Council of 9 March 1999 *on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity* (c.d. R & TTE directive) and Directive n. 2004/53 / EU of the European Parliament and of the Council of 16 April 2014 *on the harmonization of the laws of the Member States relating to the making available on the market of radio equipment;*

***This is a courtesy translation with no effective legal value. Only the Italian language decision represents the official and binding text.**

GIVEN the directive n. 2009/114 / EC of the European Parliament and of the Council of 16 September 2009 updating the Council Directive n. 87/372 / EEC on the frequency bands to be reserved for the coordinated introduction of pan-European terrestrial digital mobile communications in the Community;

HAVING REGARD TO DECISION NO. 2008/411 / EC of the European Commission of 21 May 2008 *on the harmonization of the 3.400-3.800 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community*, as amended by Commission Decision n. 2014/276 / EU of 2 May 2014;

HAVING REGARD TO DECISION NO. 243/2012 / EU of the European Parliament and of the Council of 14 March 2012 *establishing a multi-annual program relating to radio spectrum policy;*

GIVEN the legislative decree of 1 August 2003, n. 259, on the "*Code of electronic communications*", hereinafter referred to as Code;

HAVING REGARD to the Decree of the Minister of Economic Development of May 27, 2015, which approves the new National Frequency Distribution Plan (PNRF) between 0 and 3,000 GHz;

VIEW resolution no. 209/07 / CONS of 9 May 2007 on "*Procedures for the allocation of rights to use frequencies for Broadband Wireless Access (BWA) systems in the 3.5 GHz band*";

HAVING REGARD to the call for tenders and the regulations concerning the allocation of rights to use frequencies for *Broadband Wireless Access* (BWA) systems in the 3.5 GHz band, published in the Official Gazette of the Italian Republic no. 122 of 19 October 2007, Part Five, Sheet of advertisements, on the basis of which the relative rights of use were assigned on the basis of the regulation referred to in Resolution no. 209/07 / CONS;

VIEW resolution no. 282/11 / CONS of 18 May 2011 on "*Procedures and rules for the allocation and use of frequencies available in the 800, 1800, 2000 and 2600 MHz band for terrestrial electronic communications systems and on the further rules to favor a effective competition in the use of other mobile frequencies at 900, 1800 and 2100 MHz ";*

HAVING REGARD TO the document of the Presidency of the Council of Ministers, *entitled "Italian strategy for ultra-broadband" approved at the Ministerial Council meeting of 3 March 2015;*

VIEW resolution no. 659/15 / CONS, of 1 December 2015, on *"Procedures and rules for the allocation and use of frequencies available in the 3,600-3,800 MHz band for terrestrial electronic communications systems";*

VIEW resolution no. 557/16 / CONS, of November 24, 2016, on "*Starting a cognitive survey concerning the development prospects of wireless and mobile systems towards the fifth generation (5G) and the use of new spectrum portions above 6 GHz ";*

HAVING REGARD TO the decision of the *Conférence Européenne des Postes et Télécommunications* (CEPT) no. ECC / DEC / (11) 06 of 8 December 2011 on "*Harmonized frequency arrangements for mobile / fixed communications networks (MFCN) operating in the bands 3.400-3.600 MHz and 3.600-3.800 MHz"*, in the updated version of March 2014;

SEEN the CEPT Report n. 49, developed on a mandate from the European Commission, on *"Technical conditions for spectrum harmonization for terrestrial wireless systems in the 3,400-3,800 MHz frequency band"*, and the Report of the Electronic Communications Committee (ECC) no. 203, entitled "*Least Restrictive Technical Conditions suitable for Mobile / Fixed Communication Networks (MFCN), including IMT, in the frequency bands 3.400-3.600 MHz and 3.600-3.800 MHz"*, approved in the ECC meeting of 8 November 2013 and amended March 14, 2014;

SEEN the ECC Report n. 254 of 18 November 2016, entitled "*Operational guidelines for spectrum sharing to support the implementation of the current ECC framework in the 3600-3800 MHz range";*

SEEN CEPT Reports n. 53 and 60, developed on a mandate from the European Commission and approved respectively on 28 November 2014 and 1 March 2016, "*to develop harmonized technical conditions for the 6941-790 MHz ('700 MHz') frequency band in the EU for the provision of wireless broadband and other uses in support of the EU spectrum policy objectives ";*

HAVING REGARD TO EXECUTIVE DECISION NO. 2016/687 / EU of the European Commission of 28 April 2016 *on the harmonization 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;*

HAVING REGARD TO DECISION NO. 2017/899 / EU of the European Parliament and of the Council of 17 May 2017 *on the use of the 470-790 MHz frequency band in the Union,* as corrected in the EU Official Journal of 22 September 2017;

GIVEN the Action Plan for the 5G of the European Commission, the so-called *Action Plan*, referred to the Communication of September 14th 2016, COM (2016) 588, aimed at achieving common objectives for the development of 5G networks and related services;

CONSIDERING the public notice of the Ministry of Economic Development (hereinafter also the Ministry) *for the acquisition of project proposals for the realization of pre-commercial 5G experimental proposals in the 3.6-3.8 GHz spectrum portion*, pursuant to the March 16 2017 Directive;

HAVING REGARD TO the Directorial Determination of the Ministry of 2 August 2017, which approved the ranking of the best project proposals for the implementation of pre-commercial 5G trials, and the subsequent Ministry's announcement of 20 September 2017 approving the final design proposals;

HAVING REGARD TO the opinions ("*opinions"*) of the Radio Spectrum Policy Group (RSPG) RSPG16-032 FINAL of 9 November 2016 on "*Strategic roadmap towards 5G for Europe - Opinion on spectrum related for wireless systems (5G)"*, and RSPG18-005 FINAL of 30 January 2018, on "*Strategic spectrum roadmap towards 5G for Europe - 2nd Opinion on 5G*";

HAVING REGARD to the mandate of the European Commission to CEPT RSCOM16-40rev3 of 7 December 2016 "*to develop harmonized technical conditions for the use of technology in the support of the introduction of next generation (5G) terrestrial wireless systems in the Union";*

VIEW resolution no. 503/17 / CONS of 19 December 2017 on "*Public consultation on the requests of operators ARIA S.P.A., GO INTERNET S.P.A., LINKEM S.P.A., MANDARIN S.P.A. and TIM S.P.A. extension of the duration of the rights to use the frequencies in the 3.4-3.6 GHz band as per resolution no. 209/07 / CONS ";*

HAVING REGARD TO the law of 27 December 2017, n. 205, on the "*State Budget for the 2018 financial year and the multi-year budget for the three-year period 2018-2020*", which provides for measures concerning the efficient use of the spectrum and the transition to 5G technology;

VIEW resolution no. 89/18 / CONS, of 26 February 2018, on "*Public consultation on the allocation procedures and the rules for the use of the frequencies available in the bands 694-790 MHz, 3600-3800 MHz and 26.5-27.5 GHz for terrestrial systems of electronic communications in order to facilitate the transition to 5g technology, pursuant to Law December 27, 2017, n. 205 "*, and the related outcomes;

GIVEN the opinion, pursuant to art. 22 of the law of 10 October 1990, n. 287 of the Italian Antitrust Authority (AGCM), dated March 14, 2018, regarding the implementation of the provisions of article 1, paragraphs 1026-1046, of the law of December 27, 2017, no. 205, and to the AGCOM resolution no. 89/18 / CONS;

CONSIDERED the following:

1. The law of 27 December 2017, n. 205, containing "*State Budget for the 2018 financial year and the multi-year budget for the three-year period 2018-2020*" (hereinafter also referred to as the *Budget Law 2018 or Law*) provides for measures aimed at encouraging the development of wireless and mobile fifth generation (5G).

2. In particular, the art. 1, paragraph 1026, states that "*In line with the objectives of achieving efficient spectrum management and facilitating the transition to 5G technology, as set out in the European Commission's 5G Action Plan, as set out in the European Commission Communication 14 September 2016, COM (2016) 588 final, and by decision (EU) 2017/899 of the European Parliament and of the Council of 17 May 2017, by 30 April 2018 the Communications Authority defines the procedures for the assignment of rights to use radio frequencies to be used for mobile broadband two-way electronic communications services using the 694-790 MHz band and the 3.6-3.8 GHz pioneer spectrum bands and 26 , 5-27.5 GHz, in accordance with the provisions of the code referred to in the legislative decree 1 August 2003, n. 259, taking into account and without prejudice to the temporary assignments of the frequencies in the 3.7-3.8 GHz band for the experimentation activity based on 5G technology promoted by the Ministry of economic development as well as the assignments for the fixed satellite service and for the Earth exploration service by satellite. In line with the European Union guidelines, the selection procedures on a competitive basis referred to in the first period are defined in accordance with the objective of ensuring the use of the spectrum ensuring the widest level of coverage and access to all users to services based on 5G technology, on the national territory, taking into account the duration of the rights of use granted, ensuring long-term socio-economic benefits. The national frequency distribution plan shall be adjusted by 30 September 2018 by the Ministry of Economic Development to the provisions of this paragraph and paragraphs 1028 to 1046. For the judgments referred to in this paragraph the article 119 of the Code of Procedure shall apply. administrative, referred to in Annex 1 of Legislative Decree 2 July 2010, n. 104 ".*

3. The Authority, therefore, in order to comply with the provisions of the Law, must proceed, in compliance with the procedures established by the Code, to the definition of a suitable band allocation plan that allows the achievement of the objectives set by the Law and in at the same time it sets the conditions for efficient use of the scarce spectral resource, as well as for the transition to new 5G technologies and the development of services based on them.

4. To this end, the Authority promptly launched a public consultation with resolution no. 89/18 / CONS, published March 5, 2018, containing a settlement scheme with the allocation procedures and the rules for the use of available bands, as required by the Budget Law 2018.

5. At the consultation, concluded on 4 April 2018, 24 subjects participated, sending as many contributions. Twelve of these subjects, following a specific request, were heard in the hearing, where they were able to illustrate their contribution. The list of respondents is reported in the summary document of the comments received during the consultation, published on the Authority's website. The aforementioned opinion of the AGCM was also received.

6. In the following, starting from what was stated in resolution no. 89/18 / CONS, we describe the summary of the main comments that emerged during the consultation and the Authority's assessments on the provision.

1. Introduction

7. The term 5G is generally used to indicate technologies and *standards* following those of the fourth generation - ie *Long Term Evolution* (LTE), LTE-*Advanced*, etc. - such as to meet certain requirements, in order to increase the performance of the services currently offered and to support new services. Work on the standardization and development of the 5G is still ongoing. *The International Telecommunication Union* (ITU) designation of the bands for *International Mobile Telecommunication* (IMT) systems, to which the interest of the 5G ecosystem is aimed at future developments in terms of spectrum use, is mainly based on hypotheses and studies concerning the implementation of radio-mobile systems and architectures, that is, with terminal devices used on the move, served by mobile service stations. This does not preclude, in compliance with the established technical conditions, the performance of fixed or nomadic services.

8. With reference to the bands in question, the provisions of the law referred to above are part of a legislative and regulatory process, both Community and national, which has long since been launched with regard to their availability and use for band-based electronic communications systems. wide, in particular with 5G technologies.

9. Following the World Radio communication Conference, the World *Radio communication Conference 2015* (WRC-15) of the ITU, held in Geneva in November 2015, has in fact been triggered internationally, and consequently also at European level, within *the Conférence Européenne des Postes et Télécommunications* (CEPT), and above all the Community, in the *Radio Spectrum Committee* (RSC) and *Radio Spectrum Policy Group* (RSPG), a rapid technical and regulatory process aimed at promoting the development of 5G wireless and mobile systems , not only in the bands of future IMT[1] designation and harmonization, but also in those already designated for these IMT

[1]As widely described in the text of the 5G Authority's investigation (see 35 and later), WRC-15, in consideration of the future needs of additional spectrum for the development of 5G systems, has launched, with the Resolution 238, the studies

systems (in use or already harmonized). Among the latter, particular attention was paid to both the 700 MHz band and the 3400-3800 MHz band, presumably also due to the fact that these bands had not yet been widely allocated and could therefore be used, in line with technological developments. and standardization, through the deployment of 5G networks.

10. With regard to the 700 MHz band (694-790 MHz), Decision (EU) 2017/899 of the European Parliament and of the Council of 17 May 2017 requires Member States to authorize their use for systems by 30 June 2020[2] terrestrial systems capable of providing wireless broadband electronic communications services in accordance with the harmonized technical conditions set out in Commission Implementing Decision (EU) 2016/687 of 28 April 2016, and in compliance with the harmonized technical conditions established by the Commission pursuant to Article 4 of Decision No 676/2002 / EC.

11. As described in the CEPT reports n. 53 and n. 60, adopted in November 2014 and March 2016, in response to the Commission's mandate on the technical harmonization of the 700 MHz band for terrestrial wireless broadband electronic communications services, this band is made up of the main segments of the coupled spectrum FDD 703-733 MHz and 758-788 MHz (60 MHz in total) for *wireless broadband* applications of interest for mobile network developments. Within these portions, the blocks are assigned according to multiples of 5 MHz (without precluding lower amplitude carriers within an assigned block). Additional spectral resources contained within the 700 MHz band are represented by the additional portions located in the guard bands (694-703 MHz and 788-791 MHz) or in the central band range, c.d. duplex gap (733-758 MHz), in which the aforementioned Commission decision of 28 April 2016, based on the relevant CEPT technical studies, indicates the possibility for Member States to implement a series of options at national level (c.d. *"national options"*). that include SDL (*supplemental down link*) applications for mobile, M2M (Machine to Machine) and PPDR (*public protection & disaster relief*). The following figure, as focused on services of interest in the context of this provision, illustrates the SDL option provided for in the aforementioned technical legislation.

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	**Uplink**						**Gap**	**SDL**				**Downlink**						**Guard band**
9 MHz	30 MHz (6 blocks of 5 MHz)						5 MHz	20 MHz (up to 4 blocks of 5 MHz)				30 MHz (6 blocks of 5 MHz)						3 MHz

12. With regard to the 3600-3800 MHz band, as noted, the Authority, with resolution no. 659/15 / CONS of December 1, 2015, had defined the procedures and rules for the allocation and use of the frequencies available in this band for terrestrial electronic communications systems. The definition of these procedures and rules was based, as well as on the technical and regulatory regulations

to reach, at the end of the next WRC-19, to be held in 2019, the identification of new frequency bands to be designated for use by the family of IMT mobile technologies and to assign, where necessary, to the mobile radio communication service with primary status.

[2]Article. 1, paragraph 1, of Decision (EU) 2017/899, states that "Member States may delay the authorization to use the 700 MHz frequency band for a maximum period of two years, based on one or more of the duly substantiated reasons set out in the Annex to this Decision ".

applicable, on the availability status of the aforementioned band 3600-3800 MHz on the national territory, as communicated to the Authority by the Ministry of Economic Development (hereinafter also Ministry or MISE), deriving from a partial process of liberation of the band in question from the existing uses of the fixed service.

13. The MISE had defined, in fact, on the basis of the state of occupation of the band, a national progressive *refarming* action of the uses of the existing fixed service, limited to some 30 MHz radio channels positioned in a portion roughly corresponding to the upper part of the band, i.e. the 3700-3800 MHz sub-band. In the lower sub-band 3600-3700 MHz, instead, the persistence of the fixed service channels made it possible to identify local areas (typically with a provincial extension) where to make available of the portions of the spectrum which, however, did not allow a generalized use on the national territory of mobile systems / *fixed communications networks* (MFCN).

14. It should also be noted that the regulation for the allocation of available spectral resources in the 3.6-3.8 GHz band was part of a framework outlined by the aforementioned Community Decision n. 2014/276 / EU, which made mandatory the provision of the band, as well as the objectives proposed by the national strategy for ultra-broadband (BUL), which also included the use of frequencies in non-mobile scenarios, possible with the bands in question.

15. Subsequently, in the light of ITU developments and of the studies launched downstream of WRC-15, the Commission, in order to accelerate the development of 5G systems and favor the achievement of the objectives of the Digital Agenda in terms of speed of access of at least 30 Mb / s, instructed the RSPG to evaluate the possible scenarios and options available up to 2020 about the use of the spectrum. This is also in order to put the Union at a driving level on a global scale in defining the bands and standards to be used for future 5G systems. To this end, the RSPG initiated an activity concerning the identification of frequency bands for 5G in order to facilitate the launch of large-scale fifth generation technologies in Europe for 2020 and at the same time to prepare a Community strategic position in preparation for the next ITU World Radio communication Conference to be held in 2019 (WRC-19).

16. As part of this activity, the RSPG adopted an opinion in November 2016[3] which provided the first indications on the frequency bands that can be used for the development of 5G systems, identifying, together with the 700 MHz band, the bandwidth 3.4 - 3.8 GHz and the 26 GHz band (24.25-27.5 GHz)[4] as priority bands to support the introduction of 5G systems. In particular, the RSPG considered that 5G systems will need to be developed primarily in bands already harmonized in the range below 1 GHz, with particular reference to the 700 MHz band, in order to achieve good coverage levels of 5G on national scale, even in indoor environments. With reference to the 3.4-3.8 GHz band, the RSPG opinion highlights its primary role to allow the introduction of 5G services in Europe by 2020, as this already harmonized band for mobile networks offers the possibility to exploit up to 400 MHz of contiguous spectrum, allowing wide bandwidth of frequency blocks, therefore suitable to provide performance capabilities (especially in terms of transmission speeds) in line with the requirements of certain applications / services of type 5G. Regarding the 26 GHz band, the RSPG,

[3] RSPG16-032 FINAL, "Opinion on spectrum related aspects for next-generation wireless systems (5G)", Brussels, 09 November 2016.

[4] As is known, this band has so far been used, also in Italy, according to the CEPT for applications of the fixed Wireless Local Loop (WLL) service, whose measures for the granting of rights to use frequencies available for broadband radio networks were last updated by the Authority with resolution no. 355/13 / CONS. Rights of use in this band were then assigned by the Ministry with duration until December 31, 2022.

in considering it must be considered a 5G pioneer band in the spectrum range above 24 GHz, recommends its harmonization by 2020 and the provision by the Member States for the 5G .

17. Complementing the aforementioned opinion, the RSPG subsequently finalized a second opinion[5] on 5G. With reference to the bands in question, this document:
i) confirms the importance of harmonized mobile bands below 1 GHz to ensure general coverage of 5G services, so as to allow anyone to benefit from them; ii) confirms the primary role of the 3400-3800 MHz band in order to obtain the capacity necessary for the development of 5G services, and also indicates that *"Member States should consider appropriate measures to defragment this band in time for sufficiently large blocks of spectrum by 2020 "*; iii) highlights the potential of the 26 GHz band to allow the provision of innovative services with very high capacity, capable of enabling new business models. With regard to this last band, the opinion also suggests that authorizations follow, as a matter of priority, an individual licensing regime[6], and that Member States make available to the 5G by 2020 a sufficiently large portion of the band, for example 1 GHz, in response to market demand, taking into account the fact that the development of the 5G in this frequency range is expected for a more local coverage of services.

18. In order to co-ordinate the various activities already undertaken with regard to the development of 5G networks, the implementation of the related standards and the harmonization and provision of the necessary spectrum, in September 2016 the Commission presented the Communication[7] concerning a *Plan of action* for the development of the 5G in Europe (hereinafter also Action Plan). This plan develops along some lines of action which envisage collaboration between the Commission, Member States and industry for setting a common timetable for launching 5G networks in Europe, developing specific *national roadmaps,* identifying bands lists. of frequencies for the launch of 5G services, the determination of roll-out and quality objectives for monitoring the progress of the development scenarios of the fiber and 5G cells in order to achieve the target of the urban areas and the main ones by 2025 Land transport lines for uninterrupted 5G coverage. The strategic nature of this objective for 2025 is also reiterated in the Communication[8] from the Commission presenting the vision of a European gigabit society, to make it operational for Europe's competitiveness through the aforementioned 5G coverage, also in order to enable the widespread use of products, services and applications in the digital single market.

19. The Action Plan presents some intermediate stages that involve the use of existing bands, before reaching the use, after WRC-19, of the bands that will be added to those already harmonized for the ECS (*Electronic Communications System*) services. and that, as mentioned, will necessarily be identified in the higher frequency ranges, with particular reference to millimeter waves. Specifically, these stages include: by 2016, the identification of some initial bands to start the 5G (objective achieved with the aforementioned opinion of the RSPG); by 2017, the development of national *roadmaps* for the *deployment* of 5G commercial networks as part of the national broadband

[5] RSPG18-005 FINAL, *"RSPG Second Opinion on 5G networks"*, Brussels, 30 January 2018.
[6] Without exclusion, in the respect of the conditions for the protection of the existing uses in the band, the possibility of a different regime such as that of the general authorization, which is however considered more suitable in the upper bands, such as 66-71 GHz In this regard, the opinion refers to the following: *"Authorizations include general authorization regimes" site-specific licensing), or using the geolocation databases in the highest frequency bands (e.g. 66-71 GHz) while focusing on an individual license scheme in the 26 GHz band, where sharing constraints would be higher ".*
[7] *COM (2016) 588 final, "5G for Europe: An Action Plan", Brussels, 14/9/2016.*
[8] COM (2016) 587 final, "Connectivity for a Competitive Digital Single Market: Towards a European Gigabit Society", Brussels, 14/9/2016.

plans, as well as the definition of the complete set of bands (below and above 6 GHz) to be harmonized for the initial development of these networks in Europe (target achieved in Italy with the 2018 budget law and the present provision); starting from 2017, the 5G trial (target set in Italy with the experimentation started by the MISE as described below); by 2018, the launch of the first fifth generation networks; by 2020, *the launch of 5G* commercial services in Europe, ensuring that each Member State enables such services at least in one of the main national cities (the latter objectives enabled in Italy through this provision).

20. The Commission, again with the aim of speeding up the 5G Community developments, therefore conferred in January 2017 a specific technical study mandate to the CEPT[9], concerning the development of harmonized technical conditions for the use of the supporting spectrum. of the various possible scenarios envisaged for the 5G systems, among which are precisely the pioneer bands, the 3400-3800 MHz band and the 26 GHz band. For the 3400-3800 MHz band, this study mandate is mainly aimed at verifying the adequacy for 5G of the technical regulation referred to in ECC Decision (11) 06, in order to amend, if necessary, the technical conditions to make them suitable for future 5G devices. For the 26 GHz band, the mandate also includes the development of possible channeling schemes, protection conditions and coordination requirements, even outside the borders of the Union.

21. Therefore, within the CEPT framework, work has been started on the aforementioned 3600-3800 MHz and 26 GHz bands, the results of which are expected by July 2018. In particular, as detailed below, for band 26 GHz is preparing a specific CEPT Report and a new ECC Harmonization Decision, while for the 3.4-3.8 GHz band, in addition to a specific CEPT Report in response to the aforementioned Commission mandate, the preparation of a new ECC Report which should provide guidelines for defragmentation of the band due to the presence of already released user rights.

22. Within this activity, the CEPT is paying particular attention to the bandwidth requirements suggested by the *Third Generation Partnership Project (*3GPP)[10] and identified in the draft ITU report of 22 February 2017[11], which in general for the 5G provides as an aggregate system bandwidth requirement of at least 100 MHz. This document specifies that bandwidth can be supported by a single or multiple radio frequency (RF) carriers, and that the technologies of the radio interface must be in capable of supporting bandwidths up to 1 GHz for use in higher frequency bands (for example, higher than 6 Ghz).

23. In 3GPP, in December 2017 the first technical specifications for 5G New Radio (NR) systems were approved, which concern for now the c.d. *non-standalone*, which provides a solution of c.d. *dual connectivity* to operate in an auxiliary way to LTE technology with particular reference to the control part and core network functions. The definition of these specifications marks an intermediate stage (so-called "early drop") of the first phase of the 3GPP standardization 5G[12] *roadmap*, whose finalization is expected for June 2018 with the Release 15 "*full*", which also provides the *standalone*

[9] RSCOM16-40rev3 "Mandate to CEPT to develop harmonized technical conditions for spectrum use" in support of the introduction of next generation (5G) terrestrial wireless systems in the Union ".

[10] See 3GPP Tdoc R4-1704402.

[11] ITU-R M. [IMT-2020.TECH PERF REQ] "Minimum requirements related to technical performance for IMT-2020 radio interface (s)".

[12] With reference to the bands subject to this provision, the 3GPP technical specifications currently available with regard to the RF characteristics of the 5G NR user devices provide support for the following channel widths: i) for the 700 MHz band: 5, 10, 15 and 20 MHz; ii) for the 3600-3800 MHz band: 10, 20, 40, 50, 60, 80 and 100 MHz; iii) for the 26 GHz band: 50, 100, 200 and 400 Mhz.

mode for the *deployment* of the NR, therefore without the assistance of LTE systems. By the end of 2019, the second phase of defining the specifications of the 5G standard is expected, which will lead to Release 16. Based on the 3GPP *roadmap*, the commercial *deployment* of Release 15 is expected with a time horizon of 2020, providing for the possibility of approximately one year *for non-standalone* NG 5G deployments.

24. The above activities are part of a specific CEPT 5G roadmap, which, for the purposes of the preparation of WRC-19, also highlights the following aspects of the European administrations: i) CEPT's intention to harmonize, as seen, the 26 GHz band in Europe for the 5G before the WRC-19 through the adoption of a European harmonization decision and the promotion of global harmonization; ii) the CEPT priority in 5G optics of the bands 24.25-27.5 GHz, 40.5-43.5 GHz and 66-71 GHz[13]; iii) the intention in Europe, unlike other non-European countries, to harmonize the 27.5-29.5 GHz band for satellite broadband and, consequently, to support the worldwide use of this band for the so-called ESIM applications (Earth Stations in Motion), thus making this band presumably unavailable in Europe for the 5G[14].

25. At the same time, again within the CEPT, with regard to the use of the 3600-3800 MHz band, the ECC Report 254 of 18 November 2016 entitled "*Operational guidelines for spectrum sharing to support the implementation of the current ECC framework in the 3600-3800 MHz range* ", which provides guidelines for the sharing of MFCN networks with respect to existing fixed service (FS) and fixed satellite service (FSS) applications, updating the previous guidelines.

26. With reference to the national scenario concerning the use of the 3600-3800 MHz band, in light of the forecasts concerning the start of the 5G technology experiments contained in the aforementioned Action Plan, the MISE, pursuant to the Directors' Determination of 16 March 2017, and according to the notice published on the site of that ministry on the same date, it identified the 3700-3800 MHz portion for the construction by interested operators, within four years[15], of project proposals concerning pre-commercial 5G[16] trials in three specific geographical areas: Area 1 - Milan Metropolitan Area; Area 2 - Prato and L'Aquila; Area 3 - Bari and Matera.

27. The aforementioned experimentation involves the adoption of technological solutions of the 5G family both for radio access and for system aspects, including network slicing features, and is aimed at analyzing one or more use cases among those defined for the 5G by the ITU, namely enhanced Multimedia Broadband (eMBB), massive Machine Type Communication (m-MTC), ultra-reliable Machine Type Communication (URLLC). The winning projects[17] were launched last year.

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[13] As also emerged in the Authority's 5G survey, the band 31.8-33.4 GHz no longer has the relevance initially attributed to it, mainly due to particularly difficult protection conditions, while the 66-71 GHz band emerged as a new candidate.

[14] Similarly to the 26 GHz band, the 28 GHz band is also used in Italy for fixed service applications of the WLL type, whose measures for the granting of rights to use frequencies available for broadband radio networks have been last updated by the Authority with resolution no. 355/13 / CONS. At present, this band should not be used for terrestrial mobile access services but could contribute to the realization of satellite services in a 5G hybrid ecosystem.

[15] The experimentation provides that at any time the Administration can proceed with a check on the progress of the project and on the results achieved, for the purposes of a possible proposal for the remodulation of the projects themselves.

[16] In the public notice on the MISE experimentation it is specified that the provisional authorization to use 100 MHz of the 3.7-3.8 GHz sub-band for the realization of pre-commercial 5G trials in the identified areas will not give any title for the attribution of additional rights of use of frequencies, either in the bands subject to the procedure or in other bands for any type of service, nor does it establish any title for the achievement of a subsequent general authorization for the public offer for commercial purposes of the network or services object of the experimentation.

[17] On the basis of the rankings approved by the MISE on 2 August 2017, the best project proposals were those of the

28. In terms of 5G, the Authority, as is known, was among the first European regulators to have started a cognitive survey on the development prospects of wireless and mobile systems towards the fifth generation and the use of new spectrum portions. above 6 GHz, with resolution no. 557/16 / CONS of 1 December 2016. This resolution led to the drawing up of a document published on 28 March 2017 which, analyzing in depth the issues under investigation, asked a series of questions to the various stakeholders, on which the Authority has acquired useful information and comments[18]. Among the aspects dealt with in the survey is also that related to the use of the 3600-3800 MHz band, on which various information regarding the prospects of development in 5G perspective and the related strategies of use were requested, also in light of the aforementioned experiments that the MISE has decided to start in the 3700-3800 MHz sub-band. The results of the survey were published on the Authority's website in January 2018.

29. Referring to this document for details, many of the survey participants requested to adapt the procedures and rules for the allocation and use of the 3600-3800 MHz band, established by resolution no. 659/15 / CONS, in order to make them more compliant with the new spectrum availability requirements for the construction of fifth generation networks. In particular, the need to have large frequency blocks for the exclusive use of mobile services and homogeneously used throughout the national territory has been highlighted, as the geographical separation between "city" and "territory" lots envisaged by the aforementioned resolution does not it would correspond to the real technological and service needs in a 5G perspective.

30. According to some respondents, also taking into account the compromise between technological needs and the creation of an appropriate competitive environment for the development of the market, the block size should be at least 80 MHz, and preferably up to 100 MHz contiguous, in line with what was made available by the MISE for the 5G experiments, considering however multiples of 20 MHz, quantity indicated as the typical minimum carrier for the implementation of 5G systems in the bands in question. In this sense, the need to revise the 50 MHz cap provided for in Resolution no. 659/15 / CONS for the 3.7-3.8 GHz sub-band, in order not to hinder the development of 5G services in Italy.

31. Several subjects then underlined the importance of the contiguity of the RF carriers, arguing that the use of carrier aggregation would risk limiting the achievable performance in terms of end-to-end latency while increasing the complexity of processing and energy consumption. terminal side, where the availability of 100 MHz contiguous would instead facilitate the achievement of the expected performance targets for 5G systems, including those related to reliability of communications and availability of services.

32. As part of the fact-finding investigation, some subjects, while acknowledging the possibility that in the light of the new 5G context, the regulation for the allocation of the band in question could be reviewed, as per resolution no. 659/15 / CONS, however, have upheld the adequacy, also in a 5G

following companies: Vodafone Italia S.p.A. in Area 1; Wind Tre S.p.A. and Open Fiber S.p.A. in Area 2; Telecom Italia S.p.A., Fastweb S.p.A. and Huawei Technologies Italia S.r.l. in Area 3.

[18] The fact-finding survey involved the involvement of about 20 subjects who provided their observations on the issues highlighted by the Authority, generally demonstrating a significant interest in the new fifth generation mobile radio systems, and in particular in relation to the multiple opportunities offered. available from 5G to accommodate the various intended use cases. Among these, the possibility of offering service also in wholesale mode was underlined.

perspective, of the criteria of said regulation, or in any case they have not explicitly requested its revision.

33. In addition to the aforementioned aspects of the rights to use the 3.6-3.8 GHz band, on which the market tends to consider it necessary to draw the Authority's attention - ie wide-ranging contiguous RF (possibly up to 100 MHz) and geographical extension national - the analysis has predicted the evolution of the band prediction characteristics in the 5G perspective. In fact, in terms of various factors in the meantime, between the technological advances of equipment and network limits, the forecast use of frequencies above 6 GHz (up to millimeter waves) and the evolution of the architectures of the transmission systems more and more towards the virtualization, heterogeneity and densification of radio-mobile networks, today the 3.6-3.8 GHz band, while remaining mainly a layer of capacity, appears to be configured as an intermediate band, in some scenarios and for appropriate network architecture, also thanks to the use of radio systems, it can also affect macro-cellular sites, without prejudice to the independence of radio-frequency propagation characteristics of the frequencies from transmission technologies.

34. This does not exclude that the band can be used in various ways (mobile, nomadic, fixed wireless) and various network architectures, in compliance with the principles of technology neutrality, as required by current regulations.

35. As part of the fact-finding investigation, the Authority also addressed the issue of future use in the 5G spectrum of the spectrum above 6 GHz. In short, as a warning, the 26 GHz band has been identified at Community level by priority bands for the development of 5G. In this regard, the analysis showed that, in general, the 26 GHz band is considered suitable for high transmission performance, with coverage performance compared to other even higher frequencies in the range above 6 Ghz.

36. Although some equipment manufacturers have expressed the need, even for the purposes of their own commercial developments in a 5G perspective, to be able to quickly dispose of the 26 GHz band, the survey did not reveal a significant and shared demand for this band from part of the market, which in general has limited itself to providing some observations on its prospects of employment for 5G systems, also due to the fact that, during the investigation, the preliminary status of the international studies aimed at defining the harmonized technical conditions for its use
with particular reference to possible channeling schemes, protection conditions and coordination requirements (including outside the Union). In particular, various subjects have highlighted the need to have at their disposal 5G very large carriers per operator, equal to some hundreds of MHz, and possibly up to 1 GHz, identifying, right in the 26.5-27.5 GHz portion, the most indicated at the moment in a 5G view, also in order not to affect the current uses of the lower part of the band. The hypothesis of having to migrate fixed connections outside the 26 GHz band has also been reported, and the need to open a national technical table to address the problems related to the coexistence between the current uses of the 24.25-27.5 GHz band and the new 5G systems.

37. With reference to the 700 MHz band, as part of the 5G fact finding survey, the general opinion was expressed that the total 2x30 MHz available in the coupled FDD portion should be assigned in compliance with the aforementioned Decision (EU) 2017/899 . With reference to the frequencies of the duplex gap, it has emerged the possibility of assigning this portion to mobile communications for uses of the SDL type. For the other spectrum portions positioned in the guard bands (694- 703 MHz and 788-791 MHz), some respondents expressed the request that they be kept free from further

applications, in order to protect those existing in the adjacent bands; others have highlighted the possibility of using PPDR applications or other applications foreseen by the CEPT options.

38. In this context, the aforementioned budget law 2018 was inserted, which set the national objective of accelerating towards the development of 5G systems, collecting and re-launching the challenge already posed at Community level; in particular, the Law provides for a joint allotment of the 5G pioneer gangs. With regard to the 700 MHz band, the aforementioned budget law 2018 confirms the need, already emerging in the national discussion of the aforementioned Community decision, to have to delay the use of the same for electronic communications systems up to the maximum of the envisaged derogation from the decision, i.e. to June 30, 2022, due to the need to reposition the current users of the broadcasting service. The Authority therefore takes note of this choice carried out by Italy. Regarding the other two pioneer bands, or better for the portions of the same, 3600-3800 MHz and 26.5-27.5 GHz, the same Law foresees the important novelty of a complete liberation from the FS type systems, and therefore their usability for wireless broadband systems as of 1 December 2018, with the need to protect only the FSS systems for the first band and the Earth's exploration services via satellite (EESS) for the second, and, for only the useful period, guaranteeing the operation of pre-commercial 5G experimentation projects already launched in the 3700-3800 MHz portion only, without prejudice to the need to protect existing uses in adjacent bands.

39. At the moment, Italy appears to be the first country in Europe called to define procedures for the assignment of all "pioneering" bands jointly, with the aim of favoring a timely transition towards 5G systems, in line with what has been described above on the objectives of the Commission's Action Plan and on the most recent indications in the Community area.

40. In the context of the consultation launched with resolution no. 89/18 / CONS, with regard to the previous introductory part, the Authority requested, in addition to additional observations on the general aspects discussed, any information about the network architectures and topologies of greatest interest for the use of the 694-790 MHz bands, distinguishing the FDD portion from the SDL, 3600-3800 MHz and 26.5-27.5 GHz portion of the commercial electronic communications
systems, on the timing, in case of award, for the use of the frequencies of each of the aforementioned bands, and further information about the standards and technologies related to the use of the bands in question, on the commercial availability of network devices and user terminals, as well as on the relative performance available to end users (in terms of throughput, latency, reliability, etc.) and the bandwidth required on the operator side.

41. The respondents explained the aforementioned aspects on the aforementioned aspects.

42. The majority of respondents considered the Authority's statement to be shared and exhaustive, in some cases adding some information or detailed consideration.

43. One respondent pointed out that the key concepts of 5G, such as network slicing and virtualization, will require the development of specific networks with particular characteristics, and therefore dedicated investments. According to this respondent, regulation should allow the emergence of the architectures envisaged for the new networks based on a three-level structure: a single infrastructure managed by infrastructure operators made available to mobile and fixed network operators; network operators with a wide range of services for many vertical markets; virtual operators specialized in a single market with advanced services.

44. Another respondent, in agreeing with the need for a multi-layered 5G network architecture, indicated that the radio part will initially be based on two layers:
first represented by macro-cellular sites, operating mainly in the 700 MHz and 3600-3800 MHz bands; the second consists of small cell and DAS (distributed antenna systems), which will mainly use the 3600-3800 MHz and 26 GHz bands (in addition to higher frequencies than those covered by this provision). This, in his opinion, confirms the fact that the 3600-3800 MHz band is configured as an intermediate band.

45. A respondent, interested in the development of enabling infrastructures, emphasized the need for widespread access to urban furniture (street lamps, signs, shelters, etc.) as a passive infrastructure for the development of small cell, and therefore has required to have flexible and simplified models within the local regulations, in particular for the authorization process. The same needs have been represented by other respondents for general access to public infrastructures, which in their opinion should be able to be increasingly shared.

46. Many respondents then called the regulator's attention to the stringent limits to electromagnetic emissions in Italy, which could put a brake on the development of radio systems. These subjects therefore required a revision of the current legislation in the field of electromagnetic impact, providing for the adjustment of the current emission limits to the European average and by regulating the millimeter band transmissions, possibly through the establishment of a specific national technical table. The review could start, according to some, from the new guidelines of the International commission on non-ionizing radiation protection (ICNIRP) in preparation.

47. One respondent highlighted the contraction of the mobile radio market in recent years, arguing that this phenomenon should lead to a definition of the tender values of the frequencies subject of this provision as small as possible, in order to avoid the risk that assignment procedures that are too burdensome may delay investment in 5G networks.

48. One respondent represented the need to make the band included between 3800 and 4200 MHz as soon as available for MFCN services, not subject to the procedures set out in this provision, which still falls within the potential of 3GPP standards and could guarantee an additional 400 MHz of spectrum.

49. One respondent underlined the soundness of Fixed Wireless Access (FWA) solutions to offer high capacity services, with faster connections, low activation costs and times and maintenance costs limited to the base station alone. The FWA solution therefore, in the respondent's opinion, would be particularly suitable for the accelerated development of 5G services.

50. One respondent emphasized that one of the key concepts of the 5G network, i.e. network slicing, could conflict with the current net neutrality regulation, requiring a prompt clarification of the fact that regulation does not put brakes to the development of the 5G on this front.

51. One respondent explained the development status for the use of the 700 MHz SDL band, which is harmonized only in Europe and presents problems of coupling with the 700 MHz FDD band due to the reduced distance between the carriers. Therefore, the respondent indicated that it will only be coupled with bands other than the one assigned in this procedure. These considerations generally induce a limitation and a delay in the development of the ecosystem of the terminals and of the apparatuses that support this band. On the same line, in fact, another respondent pointed out that the

development of the ecosystem to support the 700 MHz band for SDL and PPDR uses has yet to start and that macro-based radio stations for such services should be developed only on the basis of the request market.

52. Some respondents provided information about the development roadmap of the various equipment and terminals for the bands covered by this provision. In particular, from what emerged in consultation, for the 700 MHz FDD band macro-cellular radio base stations and smartphone user devices related to current technologies of use are already commercially available, also considering that the networking of networks is underway or in the planning phase in several European countries, and for the use with 5G NR technologies there are currently no specific solutions; for the SDL portion the ecosystem has yet to start and the related base stations can be developed in response to the market demand. According to a respondent for the 3.6-3.8 GHz band the commercial availability of macro radio-base stations with active antenna systems c.d. Massive-Multiple-input and multiple-output (MIMO) and Customer Premises Equipment (CPE) devices for indoor use is expected by the end of 2018, while the commercial availability of smartphones with 5G NR technology is expected within 2019. For the 26 GHz band, the first commercial CPE devices and terminals could be available in 2019.

53. One respondent stated that within the 5G roadmap the different scenarios of intended use will be met by a multi-Radio Access Technology (RAT) approach including the evolutions of existing IMT / LTE systems. In fact, 3GPP has decided to recognize as 5G all the specifications LTE and NR (New Radio) starting from release 15, so that the two technologies will play a joint role in the 5G. This is also because the new systems will have to satisfy a set of very different requirements, depending on the multiplicity of use cases that will be addressed.

54. One respondent pointed out that in the new mobile business ecosystem that will be outlined in 5G perspective, local actors will play a key role in accelerating digitalization and creating a competitive market for the benefit of consumers. Therefore, to promote competition and innovation in the market, enhancing the experience and know-how of actors who today allow the coverage of areas overlooked by large players, in our opinion we should also hypothesize spectrum licenses of non-national geographical extension.

55. The Authority takes note of the foregoing considerations, stating that some requests are outside the scope of the present proceeding. In particular, as regards the issue of net neutrality, it is noted that this is evolving and it is not possible in this provision to define a regulation suitable for 5G developments, on which the various national and Community authorities are already involved. Other observations are taken into consideration in the following sections.

2. Procedures for issuing rights of use

56. With reference to the procedure for the issue of rights to use frequencies in the bands in question, in the provision in consultation the Authority had proposed, in line with what has been determined in previous similar proceedings, to adopt an auction procedure, open to all the subjects in possession of certain requisites, that the participation was possible by consortia, at most one person per group or consortium, and that it was necessary to associate the rights of use with certain obligations for effective and effective use of the frequencies. Regarding the detailed aspects of the procedure, the Authority had proposed to create a multi-frequency auction, while still providing an order for the various bands available, to use a multiple simultaneous round ascending (SMRA) system

for non-fungible and simple clock auction lots for fungible lots, also dictating rules for the allocation of any unallocated lots in the first phase. Finally he proposed to share the costs of carrying out the procedure among all the participants.

57. Respondents referred to the following as regards these issues.

58. The majority of respondents approved the plan proposed by the Authority, except for one respondent who noted that a different mechanism, with a reward for coverage, and therefore similar to a beauty contest, would be more appropriate than the proposed auction. Among those who proposed changes to the Authority's orientation, the comments focused on aspects of detail.

59. Some respondents have shown that the proposed sequential auction mechanism could generate inefficiencies, favor predatory bidding, that is, the artificial offer able to increase the costs of competitors, and would be more vulnerable to exposure risk, or to the acquisition of a lot by an interested party without guarantee on additional lots deemed essential for the provision of services. Therefore, some considered a simultaneous auction mechanism to be more appropriate. On this aspect, a part of the respondents expressed the opinion that the simultaneous auction should also concern the reserved lot (the composition of which is shown below). As for the selection mechanism, among respondents who they proposed the simultaneous auction, some indicated a preference for the clock auction on all the lots, others instead for the SMRA.

60. Some participants then requested that, in the event that the winner of the reserved lot were to participate, or in one case, to win, even lots in open procedures (within the limits of the proposed cap), he would have to pay a higher price for the reserved lot appropriate to the value achieved in the open procedure.

61. In this regard, the Authority first of all considers that what was discussed in consultation regarding the greater opportunity of a simultaneous auction is worthy of acceptance by resolving the following.

62. With reference to the procedure for the granting of rights to use the frequencies of the bands in question, the Authority, in line with the provisions of the Budget Law 2018, which provides for competitive procedures, and in line with what has so far been regulated in the cases of procedures for assigning frequencies of national importance, believes that the assignment must be carried out through an auction system and that the procedure must be carried out in a unitary manner for all the available bands (so-called multi-band auction).

63. In this case, the auction procedure, as already explained in relation to numerous other comparable procedures already regulated by the Authority, appears to be the most appropriate to assign the resource to the user who can guarantee the most efficient use of the spectrum and , in general, to guarantee the conditions for effective competition due to several factors, including the simplicity and transparency of the procedure itself, the greater certainty in the preparation of business plans for competitors, the ability to attract international capital , etc.

64. An auction procedure also makes it possible to assign fungible goods at reasonably consistent prices between the contractors, while not impeding the association of the tender lots with the obligations, for example in terms of coverage, start-up and quality of service, and access towards

third parties, which unlike other types of tender procedures, can be the same among the contractors, thus posing conditions for more effective competition.

65. Participation in the auction procedure, as provided for by the Code, which for the issue of rights of use indicates the need for open, objective, transparent, non-discriminatory and proportionate procedures, must be allowed, subject to the guarantee of an appropriate deposit cautionary, to all the subjects in possession of the requisites foreseen by the norms in force for the attainment of the general authorization, included the technical and commercial suitability of such subjects to the use of the frequencies and to the supply of the relative services.

66. In order to mitigate the possible risk of acquiring spectral resources by operators with a mere speculative intent, the Authority considers it necessary to provide (as will be specified below) for the imposition of certain obligations concerning the effective and effective use of the frequencies, linked to the same number of obligations to use frequencies and start-up of the service, coverage and access obligations, limitations on trading for a minimum initial period, in addition to the imposition of specific cap.

67. The Authority also considers that, as in other comparable procedures already regulated, participation in the tender must be limited to one operator per group of companies, admitting the participation of consortia of companies. However, a participant cannot be a member of several consortia at the same time. This mechanism has the advantages of ensuring the independence of the participants, increasing the contestability of the blocks put out to tender, encouraging participation and therefore competition in general, reducing the possibility of collusion and the hoarding of resources.

68. With regard to the conduct of a multiband procedure, it is noted that the use of a combination of spectrum blocks belonging to the different bands in question appears to be able to determine, in a 5G perspective, particular synergies in favor of the development of innovative services. In fact, in fifth generation mobile radio systems, especially if dropped into a technological ecosystem that records the growing diffusion of the cds. "Heterogeneous networks" (Heterogeneous Network or HetNet), the possibility of exploiting the advantages and peculiarities of different frequency bands - from bands below 1 GHz to bands with millimeter waves - is particularly important in order to satisfy the various requirements of the new 5G applications. In order to better exploit the synergies and complementarities between the various bands, as required in consultation [19], considering the heterogeneity of the possible demand, limiting the risk of exposure of competitors, the various types of frequencies can be assigned through an auction simultaneous, with the exception of the reserved lot, as better described below.

69. A multifrequency auction, as the one object of the present provision, therefore appears fully in line with this approach, as it offers spectral resources: i) in the 700 MHz band, traditionally considered most suitable for achieving broad mobile coverage targets; ii) in the band 26.5-27.5 GHz, particularly indicated in a 5G perspective to satisfy the requirements for increasing the transmission speed of the end users; iii) in the 3.6-3.8 GHz band, which, as described above, is now considered, especially in the perspective of development of 5G systems, as intermediate between coverage and transmission capacity.

[19] Even if the difference between the economic values involved between the bands and the different timing of use would tend to decrease the aforementioned synergies.

70. The multifrequency auction also allows to provide, simultaneously and in real time, to all market operators (not just the winning bidders) certainty on the destination of all available bandwidth. This implies, for example, that already during the auction, operators can have significant information useful for perfecting their strategies. Other stakeholders can also benefit from these dynamics, such as the manufacturers, who can thus more easily plan the production of network equipment and terminals, favoring the rapid spread of such devices on the market, and therefore the rapid development of innovative services. and competition.

71. With regard to the detailed aspects of the auction procedure, the Authority considers that the most reliable and able to bring out the true value of the spectrum is represented by the adoption of an open type mechanism with simultaneous upward multiple rounds. (SMRA), already used in the past for other comparable procedures. Given the choice of the simultaneous procedure, which allows the exposure of competitors on several bands at the same time, the mechanism proposed in consultation for the sequential auction of the clock auction type does not appear to offer the same advantages. The SMRA mechanism is now consolidated and offers, as mentioned, the widest guarantee of a correct exploitation of the spectrum, limiting the irrational exposure of the participants. Simultaneity, however, must not concern the reserved lot, since the related procedure is an essential prerequisite for the allocation of the rest of the lots, and in the hypothesis that no one wins the reserved lot, whose blocks will complement the lots open to all participants, both in the event that some operator wins the said lot.

72. In the event that, for whatever reason, some blocks in the 700 MHz and 26 GHz bands are not allocated at the end of the procedures envisaged here, the Ministry of Economic Development may reopen the allocation procedures for these blocks to all operators admitted to the presentation of the offers that we have shown the interest, starting from a minimum price equal to the average value of the blocks in the same band, awarded in the first phase, and removing any fixed caps, provided that each subject can be assigned only one additional block. This mechanism is intended to ensure greater block contention compared to the previous phase and above all to allow the "completion" of the allocation in the same procedure. On the other hand, in the case of unallocated blocks in the 3600-3800 MHz band, or if an entire band is not assigned, the Authority considers it more appropriate to reserve the right to review the procedures for their destination, also in light of the results of the allocation for the other bands and the availability of spectral resources in the contiguous and "twin" band 3400-3600 Mhz.

73. As envisaged in other comparable procedures already regulated by the Authority, it is considered that any charges deriving from the preparation and execution of the procedures for assigning the rights of use referred to in this provision must be distributed proportionately among all the participants, according to the procedures set out in the contract notice.

3. Definition of lots, cap, tender procedures, contributions and duration of rights of use

694-790 MHz band

74. With regard to the 694-790 MHz band, in the provision in consultation the Authority had proposed to adopt the channeling provided for by the European legislation applicable to the present, with the obligation to update the future legislation that enables the 5G, and therefore the bandwidth available it could be divided into an FDD portion, equal to 2x30 MHz and divided in turn into coupled

5 MHz blocks, and in a portion falling between the national options, up to 20 MHz wide, to be used in SDL mode.

75. On the first portion, the Authority hypothesized the assignment of 6 blocks of 2x5 MHz, also providing for the possibility of reserving some blocks for a potential new entrant. In this regard, the Authority, in addition to identifying the category of potential new entrants in those operators not incumbent in the traditionally mobile bands, proposed, in the case of selection of the option of a reserved lot, the composition of this lot in a combination of one or two 2x5 MHz FDD blocks at 700 MHz with possibly in addition a 200 MHz block in the 26 GHz band. In case of introduction of the reserved lot, the Authority indicated the need to proceed with the awarding of this before the other lots, providing that the successful tenderer of this lot should not, however, pay a higher price on equal terms of the prices of the similar contracting blocks in the procedures of non-reserved lots.

76. About the SDL portion of the 700 MHz band, the Authority, in the provision in consultation provided, in line with the CEPT applicable for the case in question, the subdivision into 4 blocks of 5 MHz each, providing the option to reserve one of these blocks to the State for civil protection or public security applications (PPDR). In the case of the tendering of all the 4 blocks, the Authority requested to verify the need to impose an obligation to provide PPDR-type services for the winning parties of both FDD and SDL batches in the 700 MHz band. the contractors. Finally, the Authority identified the criteria for setting the minimum tender for the various lots identified.

77. The Authority also proposed rights of use on a national basis and, according to anti-hoarding, an intra-band cap system (equal to 2x15 MHz within the 700 MHz FDD band, and 10 MHz or 5 MHz in the 700 band) MHz SDL, in the case of a tender for 4 lots or 3 lots of SDL, respectively), and inter-band (equivalent to 2x30 MHz among all the mobile bands below 1 GHz, including those already assigned). The Authority also provided, in the allocation procedures, the offer for generic blocks in the frequency area, with the introduction of a procedure, also based on an economic offer, for the transformation of generic blocks into specific ones after the awarding , with the guarantee of the contiguity of the blocks awarded for all the bidders. Finally, the Authority identified the criteria for setting the minimum tender for the various lots identified.

78. With regard to the issues mentioned above, the respondents highlighted the following.

79. Some respondents represented that they did not consider the reserve of a lot for the new entrant to be correct tout court. In its view, the mechanism of the caps would already be sufficient to ensure competition in the procedure. Some believe that in any case, even if the spectrum reserve was envisaged for a new entrant, the operator who already has the spectrum for MFCN services even if he has not yet started the commercial service cannot be configured as a new entrant. Regarding this point, on the same line a respondent, if the Authority confirms the introduction of a reserve, requires the modification of the definition of new entrant so as not to include operators who, at the time of submission of the request to participate in the tender, are holders, directly or indirectly, of rights to use frequencies for over 12 months.

80. Another respondent, on the same line as opposed to the hypothesis of reserving a lot to a new entrant, noted that all participants should be considered new entrants, as this is a tender aimed at the transition to the new 5G networks; in particular, this respondent did not consider the definition of new entrant proposed by the Authority to be acceptable either, since the date of entry into the market can not in itself be used as a criterion. Furthermore, in its opinion, the operator resulting from the remedies

of the corporate merger between H3G S.p.A. and Wind Telecomunicazioni S.p.A. it cannot be considered new entrant precisely because it has already benefited from measures in favor of the spectral endowment. In the opinion of some respondents, this measure, if it were to propose itself, would be distorting competition, because it would benefit an individual who would have less incentives for optimal use and at the same time artificially raise the price of the remaining resources for the other operators.

81. One respondent underlined the complementarity of the bands put forward in the present provision and the fact that they are all necessary for the development of 5G services that can address all market sectors. Therefore, this respondent noted that an infrastructured operator should be able to provide spectrum in all bands, in particular in the intermediate band 3600-3800 MHz, which will be the first to be effectively used for the 5G. In fact, in fact, the 700 MHz band in Italy will not be usable before 2022, while the 26 GHz band, in addition to not predicting commercial network developments before 2020-2021, due to its characteristics can only be used as a complement to capacity in hotspots and is therefore not an alternative to the other two. Therefore, according to the respondent, the intermediate band assumes the important function of allowing the 5G services to be offered as soon as technically possible, presumably starting from 2019; otherwise, the operator who would not be awarded blocks in this band could not compete on the 5G services for at least another 3 years compared to the competitors.

82. In this context, some respondents represented that the reserve mechanism should cover all three bands in the tender; therefore, compared to the Authority's proposal, the reserved lot should also include the 3600-3800 MHz band. In this regard, one of the respondents in favor of this measure proposed to reserve a 40 MHz block, considering in addition that the reserved blocks should be competed as separate lots and not in a combined manner, to broaden the choice of new entrants. Along the same lines, another respondent noted that the reserved lot should not be bundled, because it would discriminate between new entrants to their business needs, while other respondents indicated that the lots for new entrants should be expanded on bands above the 700 MHz band, this being the most expensive and therefore not easily accessible by small operators.

83. A respondent unfavorable to the measure of the reserved lot, in the alternative, if the lot was confirmed, represented that the least distortive dimension would be that of the combination of only one block in the 700 MHz FDD band and one block in the 26 GHz band. another respondent instead considered a single 700 MHz FDD block sufficient without coupling with spectral resources in another band.

84. According to some respondents, a corrective measure associated with the reserved lot should be introduced providing that, if the successful tenderer intends to also participate in the open procedure for the acquisition of further lots, the price of the lot awarded is aligned, in a case, to the highest bid, for the same band, presented in the open auction, or, in another case, to the hammer price, by the winner of the reserved lot. This measure, in the opinion of the aforementioned subjects, would be necessary to avoid further distortions in the competition beyond that created by the existence of the reserved lot itself.

85. A respondent, qualified as interested in access to the reserved lot, deemed the Authority's proposals to be acceptable, considering that the best solution consists in defining the reserved lot with 2 blocks at 700 MHz FDD and a block at 26 GHz. in fact, only with this equipment will a new entrant be able to compete effectively in the 5G context, in which it will be necessary to provide mainly high

bit rate data connections over large areas and with the possibility of creating indoor coverage. All these possibilities would be assured at the same time only by having at least 2 blocks of 5 MHz FDD. According to this respondent, the lack of a confidential procedure would force new entrants to compete in the open procedure where traders could implement opportunistic behaviors including overbidding, and then cut out new entrants, with future detriment to effective competition .

86. One respondent, in not agreeing with the provision of national geographical extension of the lots, expressed preference for a regional extension of the rights of use.

87. One respondent welcomed the possibility of also assigning the SDL lots and the fact that all 4 blocks are allocated for telecommunications services. On the contrary, another respondent, in favor of the reserve of an SDL lot to the State, stated that the PPDR services, due to their security and integrity needs, should be implemented on public infrastructure and dedicated frequency bands. Furthermore, this respondent suggested the joint use of the 3 remaining SDL blocks to improve efficiency. Along the same lines, one respondent noted that, given the characteristics of the SDL band, it would be advisable to assign a single 20 MHz lot (assuming to assign all 4 blocks available for MFCN services).

88. Some respondents, in considering that all 4 SDL lots should be allocated to MFCN services, have shown that in this case there should be no particular obligations to provide PPDR services to the winning bidders. One of the respondents indicated in this regard that mobile networks are already equipped with features that can meet the needs of communications related to Public Security. Another respondent noted that specifications for PPDR services to be provided on commercial networks should be provided in advance, which, by way of example, could be provided in a way similar to those of a Mobile Virtual Network Operator (MVNO). possibly priority to traffic. In the case instead of reserve of a PPDR lot to the State, according to this respondent should not be imposed obligations to the contractors.

89. One respondent noted that specific PPDR obligations could not be introduced into commercial networks, which could entail "mission critical" requirements not natively supported by networks and would therefore require specific investments. According to this respondent, it would therefore be preferable to submit an offer on commercial terms for the provision of security services that may be requested by the public administration.

90. One respondent indicated that the Community technical standards, notably Decision 2016/687 / EU, provide for the possibility of PPDR services also in the 700 MHz FDD portion, and it is therefore correct to provide for the obligation to provide such services for successful tenderers.

91. One respondent in particular found that the whole 700 MHz band, both FDD and SDL, is considered fundamental for the development of PPDR applications. In particular, distinguishing between non-critical applications and critical applications, believes that commercial public networks will not be able to offer sufficient performance for critical applications for a long time. Therefore it requires in the first instance that 2 batches in the FDD band, ie 2x10 MHz to 700 MHz FDD, are reserved for PPDR services (see option A of the CEPT 218 report). Alternatively it requires that the 2x10 MHz, in its opinion necessary for the PPDR services, are satisfied through the coupling of an SDL lot with a 5 MHz guard block (as in the alternative hypothesis of the Authority) with in addition another 2x5 MHz lot in the FDD core band (so-called F option of the CEPT report No. 218). Alternatively, the minimum request of the respondent for PPDR services is for 2x8 MHz, of which

the first 2x5 as in the previous proposal of the Authority, and the other 2x3 allocating specific bands within the national options provided by CEPT (so-called option B) of the CEPT report 218).

92. The Defense General Staff indicated that it considered the reserve of a 5 MHz block to be required for PPDR broadband applications, unless the PPDR needs of the Defense and Security Sub-Fund were met in the 703-733 MHz and 758 frequency bands -788 MHz. At the same time indicated that the hypothesis proposed by the Authority of an implementation scenario in which, in the case of assignment of 4 5 MHz blocks for SDL applications, PPDR broadband services are provided through the MFCN networks of the contractors rights to use the frequencies in question, including those of the FDD type, in line with the provisions of the relevant technical compatibility and band harmonization measures, would not be compatible with the operational requirements of the Defense and Security Sub-Fund, considering the identification of the of spectral quotas assigned exclusively to PPDR services.

93. With regard to the chaps, most respondents deemed the Authority's orientation to be acceptable. A respondent, considering that the chaps proposed by the Authority are suitable to ensure the presence of three operators in the 700 MHz frequency range, has proposed lower cap to ensure the presence of four operators. One respondent noted that the appropriate FDD band cap should be unique and equal to 2 x 2 MHz batches for all participants, including new entrants, while it considered that the 10 MHz band for SDL bandwidth could be shared (in the hypothesis of assignment of 4 blocks). Regarding this portion, a respondent has instead proposed to eliminate the cap so as not to preclude the possibility of assigning to a single operator all 20 MHz for SDL use.

94. With regard to the criteria for setting the minimum value of the lots, some respondents welcomed the proposal in consultation. Other respondents, on the other hand, considered the factor of 10% increase in the benchmark to be unjustified due to the very low levels of electromagnetic emissions in Italy, which causes difficulties in the deployment of radio sites, and because the mobile communications market has depreciated from the previous auction of 2011. According to some, a further discount will have to be applied to the SDL band compared to what the Authority has proposed due to the reduced reference ecosystem and delays in use, as well as other technical difficulties in using this portion of band .

95. On the same line, another respondent has shown that the value of the increase proposed by the Authority for the minimum tender could be reduced because in comparison with the 800 MHz band the coverage obligations were defined in a much less stringent current case and, moreover, the 700 MHz band can only be used after about 3 ½ years from the assignment.

96. With regard to the criteria for setting the minimum value, one respondent requested that the sum of all the minimums be aligned with the collection requirement laid down for the State. Along the same lines, one respondent noted that any tender procedure should avoid the risk of obtaining excessive award prices, as these would reflect on the conditions of wholesale access contracts by MVNO operators.

97. One respondent pointed out that the plan to achieve the contiguity of the assigned blocks should not entail burdens for the contractors.

98. One respondent noted that the rules already envisaged in resolution no. 282/11 / CONS which provide for the possibility of a discount to the contractors who, in the construction of new networks,

undertake to introduce technologies with a low environmental impact, favoring the objectives of the green economy.

99. With regard to tendering procedures, the AGCM, in the opinion sent, believes that they are an opportunity to guarantee and extend competitive market conditions and to stimulate investment. The AGCM notes that "the market for mobile telecommunications services has the characteristics of an oligopolistic market, whose concentration level has increased as a result of the merger M.7758 concentration operation between Wind Telecomunicazioni SpA. and H3G S.p.A. ". According to the AGCM, in this context it is necessary that the tender procedures ensure "an opportunity for the entry and the affirmation of new operators". In fact, these procedures represent "the only moment in which the entry of new operators or the consolidation of operators (both infrastructured and virtual full-MVNO) of a still limited size, through competitive comparison" is possible ". This applies in particular to the finest frequencies below 1 GHz. The AGCM notes that these frequencies are assigned asymmetrically to the historical operators, who each hold 4 x 5 MHz FDD blocks, while the new entrant, who acquired the frequencies as a result of the community concentration M.7758, holds a single block, as also reported by the Authority itself in the analysis on the distribution of spectral resources published in January 2018. The AGCM also notes that in Italy, unlike other countries, the renewal of the existing rights of use at the time of their expiry rather than proceeding with new auctions, "excluding the possibility of bringing new players to the market" emerged. Therefore, the AGCM deems it appropriate to take advantage of the present opportunity to verify possible new entries, indicating the competitive procedures for the allocation of the bands subject to this provision as "power plants in order to ensure a competitive environment in the telecommunications market in the medium and long term. furnishings". The AGCM also emphasizes that even with regard to the incoming operator as a result of the Community concentration, this possibility is seen favorably by the European Commission itself. believes that the acquisition of new frequencies could allow the elimination of the scale constraints that the new operator could meet in the long run. In light of these assumptions, the AGCM positively assesses the Authority's measures proposed in consultation "which allocate reserves to certain operators and which limit the acquisition of frequencies". Regarding the definition of the reserved lot, the AGCM welcomes the forecast to reserve two FDD blocks at 700 MHz and the possibility to make the tender reserved before the open race, in which a new entrant would have the possibility to acquire an additional block. On the definition of the new entrant, the AGCM notes that it might be useful to clarify that it includes all new incoming subjects, thus excluding the three historical operators, including the remedy taker of the Community concentration, in particular by specifying in the Authority definition what is meant for "start of services".

100. Taking account of the foregoing the Authority, regarding the band 694-790 MHz, with reference to the identification of the lots and the procedure for the issue of the relative rights of use, as well as the setting of the cap and the criteria for the determination of the minimum tender, resolves the following.

101. With regard to the 700 MHz band, the Community legislation applicable to the harmonized technical conditions for use by terrestrial wireless broadband electronic communications services is today the aforementioned Commission Decision 2016/687 / EU of 28 April 2016 , adopted on the basis of CEPT reports n. 53 and n. 60. As described above, this decision foresees within the band the main FDD coupled spectrum portions ranging from 703 MHz to 733 MHz for uplink and from 758 MHz to 788 MHz for downlink, for a total of 2x30 MHz of available spectrum divided into blocks of 5 MHz. The mode of use FDD, based on what is known at the time, should not change even in the case of adoption of 5G type technologies.

102. The Authority, with the aim of guaranteeing the European harmonization of the bands, consistently with the best Community practices and according to the current prevailing technological developments, as well as in line with the guidelines emerged during the 5G survey, believes that a channeling plan must be adopted in compliance with the main plan envisaged by European legislation with the aforementioned Decision for wireless broadband services. In this regard, it is noted that the use of the FDD channeling plan does not affect technological neutrality, as it is permissible for contractors to use any type of technology within the assigned FDD blocks, in compliance with the technical regulations imposed, with particular reference to the spectral emission mask, ie the so-called Block Edge Mask (BEM), both in band (that is in the assigned portion) and out of band, in order to ensure compatibility both with the services present in the adjacent out-of-band channels and with services of the same nature within the channels of the band in question.

103. On the basis of what emerged in consultation, in addition, in the 700 MHz band there should not be any adaptive antenna systems that could lead to short-term changes to the reference system of technical standards. In any case, the need to update the aforementioned legislation remains in the light of the activities to complete the standardization of the 5G systems currently in progress.

104. On the basis of the aforementioned technical regulations, for the purpose of defining the most appropriate 700 MHz band allocation plan, the Authority foresees the availability of 6 coupled 5 MHz FDD blocks (i.e. 6 single 2x5 MHz blocks), corresponding to the blocks minimum allocation. In fact, it is believed that a combination of blocks of larger size, for example 2x10 MHz, considering that they are available in all 2x30 MHz, would not ensure the appropriate granularity to ensure flexibility and full competition in the allocation.

105. As regards the findings of the consultation, the Authority takes note of what has been reported on the needs of the PPDR services, but, in compliance with the objectives set by the 2017/899 / EU Community Decision and the budget law with reference to the development of services 5G, believes that the most appropriate allocation, in particular that of portions other than the so-called core band, is a competence that belongs to the National Frequency Distribution Plan (PNRF).

106. The 700 MHz band, due to the frequency propagation characteristics, is particularly suitable for mobile radio coverage, including indoor coverage. Therefore, this band can represent an important asset for new entrants, especially if their business plans provide for a large-scale development of services. In fact, as is known, among the factors that determine the costs of implementing a mobile radio network infrastructure there are the number of sites necessary to obtain certain levels of coverage of the territory and of the population, and of the quality of the services offered; in turn, the number of radio base stations is as low as the frequency used for the transmission of radio-mobile systems is low. Therefore, also in light of the fact that in the national market scenario the other two bands below 1 GHz (i.e. the 800 MHz and 900 MHz bands), from similar radio-electric characteristics, are already assigned, the Authority notes the need, from a pro-competitive point of view, for the benefit of both consumers and investment and innovation, to reserve a reasonable amount of spectral resources in the FDD portion of the 700 MHz band in favor of new entrants. This measure, also included in the report recently published by the Authority on the analysis of the distribution of spectral resources in Italy[20], is also among those provided for by art. 5, paragraph 2, of the decision n. 243/2012 / EU of the European Parliament and of the Council.

[20] Analysis of the distribution of spectral resources among the holders of rights to use terrestrial frequencies for

107. In this context, moreover, the Authority deems it appropriate to define a reserved lot, consisting of two 2x5 MHz blocks in the 700 MHz band, so as to form a single lot reserved for new entrants. In fact, from a pro-competitive perspective, a packet of frequency blocks of this type appears to guarantee an incoming new subject a suitable availability of spectral resources in the "most valuable" part of the classic 5G radio band in order to provide services , on the one hand oriented to the capillary coverage of the territory, both in the outdoor areas and inside the buildings. The simultaneous presence of several frequency lots in the other bands in the multifrequency auction allows the new entrant to complement this endowment, if desired, with frequencies more targeted to the offer of high data transmission capacity in specific areas with high traffic density.

108. With regard to the issues raised in consultation, it is firstly noted that the very nature of the reserve for a new entrant points to the need for the reserved lot to be sufficient for the initiatives of such a potential subject, taking into account overall the scarcity of the asset in radio spectrum object. Therefore the proposal to subdivide the reserved lot into components in the various bands is not justified in order to theoretically increase the number of subjects that can potentially access the spectrum in a facilitated manner. In fact, it is not precluded to an interested potential of a single lot, e.g. at 700 MHz to participate in the open auction. Otherwise the reserved package must constitute a suitable benefit for a subject who, abstractly, even if equipped with that single package, can offer services on a national scale; this of course having regard to the overall scarcity of the spectrum and to the need to reconcile also the development needs of the incumbent operators.

109. As regards the list of potential beneficiaries of the restricted access to the lot, the Authority intends to confirm what was proposed in consultation according to which it is reserved both to subjects qualifying as new entrants according to a classical definition, and therefore those operators who do not of frequencies in the classic mobile bands, i.e. up to 2600 MHz, and to the subject who, at the moment, is about to enter the market against the anticoncentrative measures of the merger between Wind Telecomunicazioni SpA and H3G S.p.A. In fact, the reserved lot consists of blocks in the 700 MHz band and what predominantly qualifies an incumbent mobile radio operator is the substantial frequency allocation in the bands below 1 GHz, which, as already mentioned and as also noted in the aforementioned opinion of the AGCM, are the more valuable by virtue of their characteristics of radio-electric propagation.

110. As noted in the consultation, if the reserved lot were to be acquired by the new mobile operator on the national market following the commitments undertaken as a remedy by the companies recently involved in a merger procedure [21], authorized by the European Commission and the competent national authorities , this would result in an extension of its overall spectral envelope, in particular with reference to the low bands, which in principle appears to enhance the envisaged remedy, with potential benefits for the competitive dynamics, as also specifically recognized in the AGCM opinion. This proposition, however, as is obvious, does not prevent similar benefits from being realized if the acquisition of the reserved lot was a different new entrant, as indicated in the AGCM opinion.

telecommunications services in Italy", available on the Authority's website.

[21] Community concentration operation M.7758 - Hutchison Europe Telecommunications S.à.r.l. / VimpelCom Luxembourg Holdings S.à.r.l.

111. The award of the aforementioned reserved lot must be completed before the start of the assignment procedure relating to the other lots in the tender, thus making it possible for the potential winner to participate in the related procedures, where deemed useful for their development plans, and also providing that the winner of this reserved lot will not have to pay a price higher than that determined in the procedures open to all participants, for the same blocks, determining otherwise, the measure as afflictive for the new entrant (or the remedy taker). In this sense, the proposals that emerged in consultation to modify the price paid by the new entrant in a pejorative way cannot be accepted, as it is not reasonable, if it also participates in the open procedure.

112. As described in the introduction, the aforementioned Commission Decision of 28 April 2016, based on the relevant technical studies of the CEPT, also provides for the possibility for Member States to implement the cds. "National options", which include the possibility of using up to 4 5 MHz blocks for SDL applications for mobile services within the 700 MHz bandwidth duplex gap, specifically in the 738 MHz to 758 MHz frequency portion. also taking into account the positions expressed by the participants in the 5G survey, the Authority notes the opportunity to exploit this possibility right now in order to encourage the development of innovative 5G services, which, for specific applications and in certain scenarios , can undoubtedly benefit from the availability of more spectral resources, even if destined to use exclusively additional downlink type, and therefore in association, as a rule, to FDD type systems, by aggregation to the transmission part of such systems, in line with the objectives indicated by the Law. This allows, for example, the same conditions of the mobile scenario, to increase the reliability of the transmissions and / or to increase the download speed for applications, for example, of the aforementioned eMBB type, guaranteeing at the same time high coverage distances and good levels of penetration of buildings by virtue of the radio-electric characteristics of the band in question.

113. With regard to this issue, the Defense General Staff raised the issue of the State reserve of an SDL lot, as in the Authority's alternative proposal in consultation, unless the commercial networks in the 700 MHz band fail to meet the needs Defense and Security, while another respondent stressed the need, as an alternative to their own preference for using core band blocks, that mission-critical PPDR needs require dedicated bandwidth and that this reserved lot is essential. In this regard, it is noted that the Authority is not the competent body able to carry out the verification requested by the General Staff, thus resolving to have to leave the open option for the call for tenders, in compliance with the law, and noting any case of not having objections to this eventuality, as already explained in consultation. With the possible solution of assigning only 3 SDL lots for electronic communications services while keeping one reserved for the State, the possibility of using 5 MHz from 698 to 703 MHz for uplink PPDR and 5 MHz from 753 to 758 would not be affected. MHz for PPDR downlink transmissions, in line with the CEPT Report n. 60, as already indicated by the Authority in the text for public consultation.

114. Therefore, for the purposes of this provision, the Authority defines the assignment up to 4 blocks of SDL frequencies of 5 MHz each, assignable in as many lots. In fact, given that they are available in all 20 MHz, this block size appears to provide all participants in the tender the flexibility to allow the acquisition of the most suitable bandwidth for their business technical plans, also depending on the market price , while ensuring full competition for the assignment.

115. As described in the introduction, the aforementioned European Commission mandate to the CEPT, for the study of harmonized technical conditions for the use of the 700 MHz band, shows how the PPDR applications represent one of the priority objectives of the European radio spectrum policy,

for the development of communication systems aimed at public security. The Commission also recognizes that broadband PPDR applications could in future be implemented on the basis of commercial wireless broadband technologies, indicating that this could lead to synergies, inter alia, for the designation and use of the spectrum.

116. In consideration of this, the Authority does not intend to provide specific status obligations to the contractors for PPDR. In fact, if an SDL block remains reserved for the PPDR development, it is more opportune that it is agreed at government level whether the best support for PPDR applications is through a dedicated 2x5 MHz network, or 2x8 MHz, as in one of the requests emerged in consultation, or vice versa through a non-mutually exclusive offer of services by commercial networks.

117. Therefore, in the case of assigning 4 blocks of 5 MHz for SDL applications, without prejudice to the different needs of the Ministry, it is more appropriate to provide a scenario in which the PPDR broadband services are provided through the MFCN networks of the holders of the rights of use of the frequencies in the subject, including those of the FDD type, on a commercial basis. However, this scenario could be pursued and complemented even in the case of the assignment of only 3 SDL blocks for electronic communications services.

118. As regards the territorial extension of the rights of use in question, in line with the guidelines within the Community and with the objectives set out in the budget law, as well as in line with the assignments already made in other radio bands with similar characteristics of employment, the Authority considers that this extension should be national.

119. In order to obtain a more balanced allocation of spectrum that could favor the increase in competitive dynamics, and limit possible hoarding phenomena, the Authority deems it necessary to establish limits with regard to the 700 MHz band spectrum assignable to individual operators in the procedure in question, as already laid down in other comparable tendering procedures.

120. The Authority considers that this ceiling should be assessed both considering the 700 MHz band and the 800 MHz and 900 MHz bands, whose propagation characteristics are very similar. In total, the three mobile bands below 1 GHz include 95 MHz paired. A limit of 2x30 MHz FDD for each operator evaluated including the frequencies coupled in the aforementioned three bands, is therefore judged proportionate to avoid an excessive concentration of resources for a single subject, in any case providing a limit of 2x15 MHz in the band 700 only MHz FDD for each successful bidder. Based on the described cap, a new entrant (or the remedy taker) could then acquire up to 3 blocks of 2x5 MHz in the 700 MHz band on the 6 available (including the 2 reserved blocks), while an operator who has 10 MHz, coupled in both the 800 MHz band and the 900 MHz band, it could acquire up to 2 2x5 MHz blocks in the 700 MHz band.

121. In addition, the Authority considers it appropriate to provide a limit of 10 MHz for each operator in the SDL portion of the 700 MHz band in the event that all 4 blocks will be assigned. On the other hand, if only 3 lots will be put out to tender, the Authority considers that it does not place restrictions in terms of cap. This is because, without affecting the results of market procedures, a limit of 10 MHz could in this case direct scenarios in which a subject can acquire a single 5 MHz block, with consequent potential inefficient use of the spectrum, as emerged in consultation, because of the SDL nature of this band. Moreover, since the same subject can acquire up to 15 MHz, this portion of

the spectrum becomes more attractive, which, as emerged in consultation, presents delays in the development of the related ecosystem.

122. It is further noted that the nature of the cap is to guarantee the fair concentration of frequencies for a single contractor, without undermining the competitive nature of the assignment procedure envisaged by the Law. In this sense, the proposals emerged in consultation that go in the direction of reducing the possibility of awarding blocks, thus favoring less competitive scenarios, cannot be accepted.

123. With regard to the relationship between available blocks and offers, the Authority considers the system already adopted in comparable procedures already regulated by the Authority to be pursued, namely that of allowing participants to bid on generic blocks in terms of allocation in the range of frequencies. At the end of the procedure, the contractors will then be assigned specific blocks, i.e. blocks whose nominal position within the frequency range is specified, in compliance with the principle of contiguity of the blocks assigned to the same contractor.

124. In this regard, the Authority considers it reasonable to provide for a procedure similar to the one already adopted in the 2011 LTE auction, which provides for a fixed period of time, starting from the award, so that contractors can propose possible agreements to establish the assignment order. If at the end of the period indicated the contracting operators have not agreed, the position of the blocks will be determined on the basis of the highest average bid per block per affected band (or MHz where the blocks are not equal), ensuring however the contiguity of the blocks assigned to each successful bidder. The requirement of block contiguity is fundamental so that the contracting operators can, in addition to simplifying the coordination, exploit broadband technologies with higher and multiple 5 MHz carriers, in compliance with the technical compatibility rules, thus obtaining a more efficient use of the spectrum radio. The selection of the SMRA selection mechanism does not require an onerous procedure for the definition of specific lots, as also required in consultation.

125. Finally, with regard to the contributions for the optimal use of frequencies, it should firstly be noted that the band in question exhibits slightly better propagation characteristics than the 800 MHz band, subject to the assignment procedures referred to in Resolution no. 282/11 / CONS. In particular, on equal terms in the mobile scenario and the quality objective of the service offered, it is possible to estimate an increase in coverage distance between 15% and 20% depending on the model considered. Furthermore, it seems reasonable that the present allocation procedure takes into account the broader and more innovative market context in the new 5G ecosystem. In return, it should be noted that the usability of the frequencies in question is deferred a few years from the allocation.

126. Concerning what emerged in consultation, about the request to discount the proposed increase against the delay of availability of the band with respect to the allocation, it is noted that, taken as a reference the case of the 800 MHz band, as proposed in consultation, also then there was a delay of about 2 and a half years between the assignment and the use, but in that case the payment of the bid awarded was totally foreseen in up-front mode, while now it is expected that only half of the disbursement is anticipated and the remainder divided into annual payments. However, taking into account the different package of coverage obligations associated with this band, compared to those of the 800 MHz band, and the fact that the minimum value is only the starting value of the competitive procedure, and that the minimum value does not necessarily have to be analytically identified, the Authority considers to accept the requests to review the increase factor. It is also recalled that the art. 35 of the Code provides that the Authority establishes the criteria for defining the contributions to

which the minimum bid is attributable and not the final values, which in any case are announced at the time of the call for tenders and therefore before each interested party presents the own offers.

127. Accordingly, the Authority considers that the minimum lot value foreseen for the procedures for the allocation of rights to use frequencies should be calculated from the minimum value of the rights to use frequencies in the 800 MHz band, allocated with the 2011 auction referred to in Resolution no. 282/11 / CONS, increased by a factor up to a maximum of 5%, calculated in proportion to the population of the relevant geographical area, related to the quantity of spectrum and the duration of the right to use frequencies, and decreased by an additional factor equal to 50% in the case of SDL frequencies. The minimum value of the combined batch will result from the sum of the minimum values of the component blocks. For any unallocated rights of use, put forward as additional rights, it is considered that the minimum value must start from the average value of the bids awarded to the blocks assigned in the same band.

Band 3600-3800 Mhz

128. As also represented in the text for consultation, the Authority first of all considers it necessary to revise the rules referred to in resolution no. 659/15 / CONS, in particular in accordance with the provisions of the Budget Law 2018 and in light of the changed technological and market context. More than two years after its approval, it is necessary to define a new plan for the allocation of the 3600-3800 MHz band consistent with the new objectives emerging at international level and with the roadmap set by the Community framework for the development of mobile radio systems fifth generation, as well as in line with what emerged during the Authority's investigation of 5G systems; this plan must be a harbinger of a market development that favors the transition to these new technologies and allows the full emergence of the benefits expected from them. This approach was also accepted in consultation.

129. With regard to this band, in the provision in consultation, the Authority proposed, in relation to the issue of packaging of the lots being tendered, three options: a) two lots, each of 100 MHz each; b) four lots, each of 50 MHz; c) 3 lots, of which two from 80 MHz each and the third one from 40 MHz. In all the options the national geographical extension of the lots was planned. In addition, the Authority, in incorporating the provisions of the Law, indicated the need for contractors, regardless of the packaging options, to protect incumbent services, namely the FSS services and the 5G experimental services in certain territorial areas. The Authority then pointed out the need to allow, under certain conditions, the possible future development of the FSS services, and that at the end of the 5G experimentation, the contractors would have obtained the use of the respective frequencies in the experimental areas.

130. Regarding the specifications of the allocation procedure, the Authority also reiterated for this band the considerations made for the 700 MHz band, regarding the subjective requirements for the participation and use of a competitive procedure of the SMRA type not being, in in this case, the lots, in any of the three proposed hypotheses, completely fungible. The Authority also proposed the introduction of a 100 MHz inter-band cap with the lower band 3400-3600 MHz, specifying that any successful bidders who obtained an extension of their rights in this lower portion of the bandwidth, should have exceeded the cap, renounce the extension.

131. Finally, with regard to the definition of the criteria for setting the minimum tender, the Authority proposed starting from the average values awarded by the "twin" frequencies at 3400-3600

MHz assigned pursuant to resolution no. 209/07 / CONS, proportionate to the amount of the legal spectrum and duration, to the population, excluding the fixed geographical areas of known restriction, increased by a factor of up to 30%, and possibly discounted by a factor of up to 10% if the award of the 700 MHz FDD band had exceeded the minimum expected for more than 10%.

132. With regard to the issues mentioned above, the respondents highlighted the following.

133. Regarding packaging, the preferences expressed by respondents (some even in the alternative) were distributed fairly evenly among the three options presented. Among those who showed preference for the 4-lot 50 MHz option, one of the reasons was that this increases the audience of potential bidders. On the other hand, those who preferred the option of 2 lots of 100 MHz, indicated, mainly, technical reasons, namely that 100 MHz would be the optimal size for offering a throughput in compliance with the 5G requirements. According to these respondents, this dimension would be the only one consistent with the set of recommendations / guidelines ITU, CEPT and the European Union in order to achieve the 5G objectives, also with a view to future proof; furthermore, it would achieve a more efficient use of the spectrum, because it would limit the coexistence problems due to network synchronization, and would increase market competition, thanks to two operators with adequate spectral resources, also able to effectively meet the obligations of access for new subjects.

134. Some respondents expressed preference for the 3-lot option (80, 80 and 40 MHz), considered more consistent with a differentiated service demand and a fair compromise with respect to potential competition. Regarding this option, a respondent represented the possibility of later coupling the 40 MHz block with a portion of the spectrum that could become available in the upper part of the 3.4-3.6 GHz band, stating however that the current characteristics of the devices do not allow to operate on a spectral range such as to allow the coupling between portions of the two bands 3.4-3.6 and 3.6-3.8 GHz and that technological developments in this sense could result in the availability of commercial products starting from about 2020, in the presence of appropriate market conditions.

135. Some then observed that the hypothesis of 4 50 MHz batches would result in an inefficient use of the spectrum, since the batch size is not a multiple of 20 MHz, ie the carrier on which they believe the equipment should attest, with this, considering this packaging option to be impractical. Along the same lines, a respondent, reiterating that the choice of packaging of 2 lots of 100 MHz is the most adequate to pursue the 5G development objectives, has observed that the option of 4 lots of 50 MHz: i) could constitute a brake on the cumulative investments of the operators, as the actual performance benefit or the real capacity of development of innovative services is not certain given the reduced availability of the spectrum; ii) introduce a speculative trading / leasing / sharing risk based on the interest of other operators wishing to work on wider and more appropriate spectrum portions; iii) would introduce a substantial disincentive to defragmentation and consolidation operations in the adjacent 3.4-3.6 GHz band, with negative consequences on the whole system and diseconomies of scale and cost.

136. Some respondents represented instead of not considering the options proposed by the Authority as appropriate, expressing preference for a 20 MHz block packaging (or, for a respondent, 10 MHz), considering that the market should determine the correct allocation for each successful bidder, thus leaving more flexibility. In the alternative, a respondent proposes an additional packaging hypothesis in 5 lots of 40 MHz each.

137. Some respondents noted that packaging solutions should be favored that extend the possibilities for all mobile operators to directly access the spectrum, thus proposing solutions with smaller batch size possible. This is because, in the Authority's proposal regarding access measures, no favorable terms are inserted for those operators that already have frequencies in mobile bands, and therefore access on a purely commercial basis could be penalizing for those operators who do not have to to directly award the batches of the 3600-3800 MHz band. In particular, on this point a respondent pointed out that substitution modalities for the block acquisition, such as wholesale access, are not judged sufficient, and because it is difficult to integrate into a model of business that currently provides flat rates independent of the technologies and bands, both because presumably the 3600-3800 MHz band could be used only in downlink with uplink in another band for reasons of technical efficiency and therefore the technical feasibility of the wholesale agreement would be complex and not yet verified.

138. The observations on the packaging of the lots have also been accompanied by those relating to chapters In general, the Authority's proposal was the most supported, with some clarification. Among the proponents of packaging with "small" lots, some have proposed to include an intra-band cap (50 MHz according to one subject, 80 MHz in the opinion of another respondent, generally less than 100 MHz in the opinion of a further participant), while maintaining the inter-band cap with the contiguous band 3400-3600 MHz at 100 MHz. A respondent considered it correct to provide a cap of 100 MHz, or even higher, provided it was extended to the whole band between 1 and 6 GHz. Another respondent has instead proposed to raise the cap to 120 MHz in the entire 3.4-3.8 GHz band in order to facilitate any consolidation activities and reduce fragmentation.

139. One respondent said he was in favor of a 100 MHz limit on the whole band regardless of the extension granted to the requesting operators in the lower band, otherwise another respondent did not agree that the frequency in the lower band would be excluded from the cap 3.4-3.6 GHz possibly held, until the expiration of 2023, as this could lead, if the situation is determined, to an excessive accumulation of frequencies in the period 2019-2023. One subject proposed to reduce the inter-band cap proposed by the Authority to 80 Mhz.

140. With regard to the geographical extent of the rights of use, the majority of respondents expressed favorably with respect to the national dimension, assessed as an essential requirement to support the dissemination and penetration of 5G technology and services, avoiding the geographical fragmentation that could compromise the pervasiveness of the use of services on the move or in remote areas of the country. Differently, a couple of respondents expressed preference for the regional extension. In particular, a respondent, in line with his preference of three asymmetric 80, 80 and 40 MHz lots, proposed to give the 40 MHz lot only a regional (or multi-regional) geographical extension, since, in his opinion , this would avoid attributing oligopolistic traits to the market resulting from national lots alone and would make it possible to exploit all the existing investment plans, which an access measure would solve only in a palliative way.

141. As already reported in the answers on the tender procedure, one respondent reiterated that, in the case of 3 asymmetrical lots, and in the small 20 MHz batches, a 40 MHz lot should be identified and released by procedure reserved for new entrants.

142. A respondent, in analogy with the case of the 700 MHz band, found that the competitive bidding mechanism is not suitable, preferring a system with reward for coverage, similar to a beauty contest.

143. With regard to the determination of the criteria for setting the minimum tender, many respondents welcomed the Authority's proposal. One respondent proposed that the starting value should be the minimum prices for the 2008 tender and not the average award price. Some other respondents, on the other hand, did not agree with the Authority's proposal. Among these, a subject proposed to eliminate the factor of increase of 30%, due to the presence of very low electromagnetic emission limits in Italy, which cause limits to the deployment of the radio network, the depreciation of the mobile market compared to the past, initial unavailability of terminals in this band. According to this respondent, a discount will also have to be applied deriving from the exclusion areas for the protection of the services provided, which must be clarified with appropriate maps before the start of the competition. Another respondent, along the same lines, noted that the 30% increase would not be justified, because, compared to the similar increase set by the budget law 2017 for the 900 and 1800 MHz bands, in this case the band is intermediate between coverage and capacity, and therefore not of the same value as purely mobile radio bands.

144. Several respondents considered the possibility of discounting the minimum values of the 3.6-3.8 GHz (and 26 GHz) bands in the hypothesis proposed by the Authority to be acceptable, ie in the case where the award prices at the end of the allocation procedure 700 MHz bandwidths exceed the auction base values above a certain percentage threshold. It has also been proposed to increase this discount. Other respondents, on the other hand, said they were against this mechanism, as they would introduce distortions in the tender procedures. Among the respondents who proposed the simultaneous auction system, it was noted that this mechanism, in the event that the competitive procedure is simultaneous, is not applicable, while another respondent noted that the discount should be applied to the post-tender award values.

145. With regard to the 5G experimentation, some respondents represented that it was correct that the successful tenderer of the frequencies involved acquired its use in the areas of experimentation at the end of the latter. Other respondents instead said they were against this approach. In particular, one respondent indicated that the trials will have to be completed by November 30, 2018 because if the investigator is not assigned to the band in question, it would not make sense to continue the experimentation as it has no future on the market, it is more convenient to switch the experimentation into a commercial service. Along the same lines, another respondent noted that the experimentation should end early, as otherwise it would come to the paradox that in some areas it could continue while at the same time the commercial services would be present in the rest of the country, proposing that, with the appropriate provision of MISE, the date of conclusion of the experimental projects is set at 31 December 2019.

146. One respondent noted that the winner of the block affected by the trial should immediately become the right holder (or part of it in the various cases) also on the areas of experimentation, without thereby providing for discounts on the share of the population related to the area of experimentation. If the owner of the trial and the contractor coincide, then, according to the respondent, he can, without jeopardizing the experimentation, start to immediately start also the commercial services. If, on the other hand, the holder of the trial is different from the winner, the first one should have access to the spectrum as a tender notice to complete the experimentation.

147. In the opinion of the AGCM mentioned in the introduction, the Authority considers that in the 3600-3800 MHz band in view of the wider spectrum, the risks of overbidding against new entrants should be more attenuated. For this reason, the AGCM does not propose a reserved lot but claims that

the presence of a multiplicity of lots may be sufficient. In this sense, it considers the option of 4 lots or, alternatively, the option of three lots to be preferable. The AGCM also approves the proposed cap in consultation and the measure that also takes into account the frequencies in the lower band 3400-3600 MHz, indicating that overall these measures appear to be able to broaden the competitive comparison and at the same time allow the participation of small operators infrastructures and virtual full-MVNO.

148. Based on this, the Authority, with regard to the 3600-3800 MHz band, with reference to the packaging of the lots, protection of incumbent services, setting the cap and the criteria for determining the minimum tender, defining the procedure for the release of the relative rights of use, resolves the following.

149. In light of the needs arising in relation to recent technological and market developments, in line with international recommendations, and in line with the above indications on the main orientations expressed by the market in the context of the 5G survey, the Authority considers that the optimal size of the rights to use the 3.6-3.8 GHz band is that which allows to more safely address the acquisition of a spectral envelope compliant with the indications of the current international studies, and therefore at least 80 MHz, and possibly up to 100 MHz. With this bandwidth, in fact, it is possible to guarantee a throughput for the cell sector qualifying to meet the various requirements outlined for the 5G systems. Moreover, such a large extent of the blockages would more easily make it possible to satisfy any requests for access by third parties who intend to provide 5G services in certain reference areas of the country. A smaller number of operators with high capacity, and with national networks, could in fact concentrate the investments on the networks themselves, and guarantee capacity to third parties, also in the local area, through appropriate access obligations. To this must be added that this dimension appears more appropriate also from the point of view of defragmentation and coexistence of networks as there would be at least two operators on a national scale that could more easily coordinate with each other for the possible management of the synchronization between their own apparatuses, and that in any case they would each have a spectral endowment that would allow to reserve a guard band to solve any interferential problems, without at the same time jeopardizing the availability of sufficient frequency resources for the supply of advanced services of the 5G type.

150. Both in consultation and in the opinion of the AGCM the need was also found to satisfy even a lower frequency demand, up to 40 MHz, and to verify the possibility of allowing, even if at the end of market, to satisfy a frequency question by a number of operators greater than two.

151. Given this, and the inherent limitations of spectrum availability, the Authority believes that the correct packaging of the available frequencies is in four lots, of which two from 80 MHz and two from 20 MHz. This solution represents a particularization of the option 3 proposed in consultation, in which the 40 MHz lot, instead of being proposed as a single lot, is proposed as two 20 MHz lots. This solution appears to be a fair balance between the above mentioned need, namely that of having at least two operators with a "future proof" equipment, and that of allowing other operators to satisfy their own request for more limited frequencies. It is also necessary to guarantee competitiveness in the tender procedure, so that no limits must be placed on the contestability of the lots, within the limits of the established cap.

152. From the point of view of the territorial extension of the lots, the trends at international level indicate the need for a defragmentation of the rights of use, including geographical, and therefore

emphasize the appropriateness of having lots usable at national level. The Authority considers this trend to be shared, and transversal to the packaging of the lots in the tender, also taking into account the need to develop, at the frequency management level, homogeneous networks throughout the country that can offer services without interruption and with a level quality as harmonized as possible on the territory. This does not mean that the service provider, which may be either the network operator, possibly integrated, and possibly a service provider, a partner service provider, etc. it must necessarily be a subject established at national level, but the network operator who manages the radio frequencies should be able to put in place a network of this level.

153. In accordance with the provisions of art. 1, paragraph 1029, of the budget law 2018, by 1 December 2018 the release of the frequencies in use by the existing applications in the 3.6-3.8 GHz band shall take place, without prejudice to the FSS assignments as well as the temporary assignments of the frequencies in the 3.7-3.8 GHz band portion for testing activities on 5G technologies.

154. Therefore, according to what will be established by the Ministry in the subsequent call for tenders, both the high and the low portion of the 3600-3800 MHz band provide for the availability of frequencies normally free in band from existing FS applications starting from the aforementioned fixed date. from the Law, while the existing FSS utilizations in the band and in the adjacent band as well as the 5G experimental systems authorized by the Ministry to use the high portion of the band in the relative experimental areas are to be protected both by band and out-band applications.

155. It is understood that, once the 5G pre-commercial system testing projects have been completed, it will be possible for the winner of the relevant lots to use the respective frequencies also in the aforementioned experimental areas. This without causing any burden on the state.

156. Regarding the question raised in consultation about the possibility / necessity of the early termination of the experimental activities on 5G, the Authority observes that the experimentation was initiated by the MISE with a specific public call, which the safeguarding of the experimentation is foreseen by the Law, and that in any case the rights of unexecuted investigators must be safeguarded (in addition to those of other companies and public and private bodies involved in various ways in the experimentation). The Authority, not being able to intervene in the contractual relations between the various parties involved, believes that the possibility of early termination of the experimentation and the one, connected but different, to allow the commercial services to start even by the bidders who are both experimenters in the relevant areas and for the part of the frequencies involved, it will have to be decided by the MISE. The Authority expresses the opinion that any acceleration for the launch of commercial services is still useful, in compliance with the objectives set by the experimentation.

157. As already provided for in the previous regulation, also in the context of this provision it is considered opportune that all the lots of frequencies competing for the band in question are open to the awarding by all the subjects in possession of the requisites provided for by the current regulations for the achievement of the general authorization, as specified above, without therefore providing for reserve mechanisms in favor of certain subjects. This orientation appears to be consolidated in the context of the present multi-band allocation procedure, also in light of the aforementioned evolution of the use characteristics of the 3600-3800 MHz band, which make it hybrid between coverage and transmission capacity, and in this sense more suitable for specific cases. of use.

158. As regards the cap, already provided for in the previous regulation, the Authority deems it necessary to confirm it as a necessary measure for anti-hoarding, adapting it to the structure of the lots in the tender and to the new 5G scenario. Specifically, the Authority considers that the limit of the awarding of rights of use in the 3.6-3.8 GHz band should also be assessed with reference to the frequencies relating to the rights of use held in the 3.4-3.6 GHz band, since, by now, Based on current Community recommendations, the entire 3.4-3.8 GHz band is considered a significant resource for the development of 5G services. To this end, attention is drawn to the Authority's resolution no. 183/18 / CONS, concerning the requests of some operators for the extension of the rights to use the frequencies in the 3.4-3.6 GHz band as per resolution no. 209/07 / CONS, with which the Authority has expressed to MISE its opinion on the conditions for granting the extension; among these, it notably detects the provision of a 100 MHz cap in the aforementioned portion only for each operator, on a national basis and for each area as defined in the original allocations of each right of use in question. The conditions set by the Authority for the aforementioned extension were published on its website in April 2018.

159. Therefore, in a context of development of the whole band for 5G services, it is considered that each contractor can acquire rights of use in the 3.6-3.8 GHz band with a limit of 100 MHz both intra-band and inter-band, evaluated in the latter case on a national basis and for each geographical area of validity of the rights of use, including at full speed the frequencies in the 3.4-3.6 GHz bands of which it has ownership. The aforementioned cap provided for the band 3.4-3.6 GHz is also made in any case.

160. If, therefore, at the end of the tender procedure, one or more of the 3.6-3.8 GHz in-band lots were awarded by a holder of rights to use frequencies in the 3.4-3.6 GHz band, two situations could be determined: in the case where these rights of use have been extended beyond the expiration of 2023[22], and if the cap is exceeded, even on individual geographical areas, then this subject is obliged to waive the extension and will therefore have to grant the rights in the 3.4-3.6 GHz band at the original expiry referred to in resolution no. 209/07 / CONS for the excess amount; in the other case, the rights will cease to expire, save for any extension if admissible and within the limits indicated. This forecast is necessary to give the possibility, to operators that today have 2x21 MHz lots, some even only on a regional basis, to compete on the lots under consideration, for the purpose of a possible expansion of their business capacity, increasing the attractiveness of lots and potentially improving competition. To this end, each participant must commit, at the time of submission of the application for participation, to the aforementioned waiver, keeping the State unharmed from any charge in this regard. Since the band subject of this provision is assigned for consideration, and accompanied by a certain package of access and coverage obligations, even in the presence of a possible hypothetical accumulation of frequencies in the other band, for a limited period and in which the services 5G will still have to be started, and the technical methods of joint use of the carriers still embryonic, it is not considered justified and proportionate a measure that foresees the early renunciation to legitimately assigned band.

161. Finally, as regards the contributions for the optimal use of frequencies, some of the considerations set out in the case of the previous regulation are considered valid, including the need to take into account, also for consistency with what has happened in the past, the established criteria. by the Authority for the adjacent band 3400- 3600 MHz referred to in resolution no. 209/07 / CONS, which has the same characteristics of use and propagation. Compared to the previous regulation,

[22] At the time of approval of this provision, the extension procedure, which is the responsibility of MISE, has not yet been formally concluded. In addition, there are operators in the band who have not requested an extension.

however, changes need to be made due to the need to adapt to the new tender structure and the new reference ecosystem. In particular, the factor increasing the contributions compared to the 2008 procedures taken into consideration must take into account the changed market scenario that is emerging with the new technologies. The new ecosystem, which in the previous regulation was commensurate with that of the LTE, must now be seen with reference to the 5G context.

162. Therefore, the Authority considers that the minimum value of the lot envisaged for the procedures for assigning rights of use, the starting date of which is here to be considered on 1 December 2018, should be calculated from the awarding values averages defined in the procedures for the allocation of rights to use frequencies in the 3400-3600 MHz band, as per resolution no. 209/07 / CONS, revalued on the basis of the ISTAT monetary rate, calculated in proportion to the population of the relevant geographical area, related to the total spectrum and the duration of the right to use the frequencies. The reference value thus identified must be increased by a factor up to a maximum of 30%, to take into account the broader and more innovative market context in the new 5G ecosystem. This increase is the same as that foreseen by the budget law of 2017 on the occasion of the extension with the authorization to refarming for the GSM bands at 900 and 1800 MHz. From this calculation the population of the stable zones of geographical restrictions known at the time of the announcement must be excluded. of competition.

163. As regards the aforementioned stable geographical restriction zones, including any necessary areas of compliance, determined by the need to protect the activities of the 5G experimentation, for the relevant rights of use, and the part of the frequencies, the Ministry will apply a discount proportional to the population of the restriction area and to the period in which this restriction will apply, with respect to the winning value.

164. The choice of the simultaneous multiband auction procedure with SMRA mechanism defined in the previous section makes the mechanism of discounts on minimum values foreseen in consultation inapplicable.

Band 26.5-27.5 Ghz

165. Regarding the 26 GHz band, in the consultation document the Authority indicated the need to wait for the completion of the technical activities for the definition of the reference legislation, but that the TDD type of channeling had been consolidated; therefore it indicated that the available bandwidth was divided into 5 batches of 200 MHz each (one possibly used as part of the combined lot for the new entrant), with an intra-band cap of 400 MHz (thus equal to 2 lots) . The batches, on a national basis, would have been assigned in the same way as those of the 700 MHz band, i.e. with the simple clock auction mechanism. The Authority then, in line with the provisions of the Budget Law, highlighted the need for protection, by the winning bidders, of the incumbent EESS in band and FS and FSS out-of-band services, also foreseeing, in a proportionate manner and reasonable, possible future development of the EESS service.

166. With regard to the use of the spectrum, in consultation the Authority envisaged an innovative mechanism on the basis of which the contractors could use, in areas where they did not directly cover with their own block, also the frequencies of the other contractors, without prejudice the pre-emption for use on one's contracted block. In addition, the contractors could make agreements with a trusted third party to manage concurrent installations and delegate to a third party (the same trusted third

party or a different person) the construction of the physical infrastructures of the radio network (without however right to use the frequencies for this subject).

167. Finally, as regards the definition of the criteria for fixing tender minima, the Authority proposed to base itself on the minimum values foreseen for the procedures for assigning frequencies in the same band for WLL use, related to the quantity of frequencies, to the population covered, to the duration of the right of use, and increasing the value to a maximum of double.

168. With reference to the proposals indicated above, the respondents highlighted the following.

169. With regard to packaging and cap, most respondents shared the Authority's proposal. One respondent proposed a different solution, with a package of 10 blocks of 100 MHz each, accompanied by a cap of 200 MHz on the band in assignment and 400 MHz including the frequencies in the range from 24.25 to 27.5 GHz. Some respondents while sharing the proposed packaging, they indicated that the correct cap would be 200 MHz, to avoid a possible excessive spectrum grabbing, considering that one of the blocks would be included in the reserved lot, and considering that the proposed club use model still allows an increase of use of frequencies under certain conditions. A respondent finally observed that the cap should be introduced considering also the adjacent band from 24.5 to 26.5 GHz and that to 27.5-29.5 GHz used for WLL services.

170. With regard to the extension of rights of use, most respondents shared the Authority's proposal. Some respondents have suggested that a regional type assignment should be envisaged for at least one lot, in order to enhance the territoriality of many fixed-wireless operators, and consequently proposed that the cap be calculated on a regional basis. Another subject represented that all rights of use in this band should have a regional extension, even more so if the proposal was confirmed in consultation with an access obligation in favor of operators other than electronic communication operators.

171. Many respondents shared the Authority's proposals on economic values. Some respondents, however, have shown that the increase of up to 100% would be disproportionate to the market values of WLL uses, proposing the maximum increase of 30% by analogy with the other 3600-3800 MHz band and those proposed in the budget law 2017 for mobile radio bands.

172. Another respondent proposed to eliminate the incremental factor of 100% because: i) in Italy the limits of electromagnetic emission are very low, and therefore the deployment of the radio networks is penalized; ii) the mobile market has depreciated compared to the past; iii) suitable terminals are not provided in the initial phase for this band. This respondent also noted that the appropriate discounts must be made for the restricted areas, which must be disclosed in detail from the beginning of the tender.

173. A respondent, in agreeing with the packaging and the cap proposed by the Authority, expressed the opinion that no lot should be reserved for new entrants, also considering that the tender mechanism should be of the SMRA type.

174. One respondent has shown that, from some results obtained by system simulations for eMBB scenarios, the best performance and economic convenience for the use of the 26 GHz band can be obtained with carriers of at least 400 MHz and up to 800 MHz in the middle term; this in order to support advanced services, such as 4K video transmission, virtual reality, etc. Therefore the

respondent expressed the hope of a speedy release also of the adjacent band portion 24.25-26.5 GHz from the existing services. Furthermore, this respondent considered the Authority's proposal for pooling particularly interesting, underlining that the coordination of possible interference should be managed on the basis of any 3GPP specifications (currently unavailable) or "DB-assisted spectrum access" mechanisms.

175. Based on this, the Authority, with regard to the 26 GHz band, with reference to the packaging of the lots, protection of incumbent services, setting the cap and the criteria for determining the minimum tender, definition of the procedure for issuing of the related usage rights and how to use it, resolve the following.

176. As mentioned, finalization (expected by July 2018) of a specific CEPT Report[23] and of a new ECC[24] Harmonization Decision (whose draft versions have recently been the subject of public consultation) is underway.

177. Although the aforementioned technical frame of reference is undergoing consolidation, the elements currently available, including indications on the prospects for technological and market development, as well as the guidelines and information that emerged during the fact-finding investigation of the Authorities on the 5G and the present consultation, lead us to believe that for the purpose of assigning the rights to use the band in question useful to respond effectively to the various requirements outlined for the 5G systems, the frequency range can be divided into 5 200 MHz blocks each, usable in TDD mode in compliance with the protection conditions of incumbent systems.

178. In particular, in accordance with the provisions of art. 1, paragraph 1029 of the Budget Law 2018 and on the basis of the Ministry's decision in the subsequent call for tenders, the applications of the EESS service in the band and in the adjacent band, as well as the FSS uses in the adjacent band, are to be protected , both by bandwidth and out-of-band applications. In this regard, the aforementioned second opinion on the 5G RSPG calls for the preservation of the possibility of developing EESS and FSS satellite services, safeguarding the operation of future earth stations, while respecting the development of 5G[25] systems.

179. For the blocks so divided, the Authority intends to assign individual non-exclusive rights of use and in shared mode, according to a framework of use similar to the one known as "club use", as better described below[26]. In fact, for the purposes of a more efficient use of the spectrum, also because of the characteristics of use of the band, it seems appropriate to provide the possibility of use of

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[23] *CEPT Report 68, Report B from CEPT to the European Commission in response to the Mandate "to develop harmonized technical conditions for the use of technology in support of the introduction of next-generation (5G) terrestrial wireless systems in the Union" - Harmonized technical conditions for the 24.25-27.5 GHz ('26 GHz ') frequency band.*

[24] *ECC Decision (18) FF "Harmonized technical conditions for Mobile / Fixed Communications Networks (MFCN) in the band 24.25-27.5 GHz".*

[25] *In particular, the RSPG document states: "the Commission should include as part of any technical harmonization for the 26 GHz band, in high level terms, the requirements for maintaining the possibility for the continued development of incumbent satellite services (FSS and EESS / SRS). Future earth stations should be based on transparent, objective and proportionate criteria to safeguard their future operations and ensure that they are unlikely to have a significant impact on 5G deployment and coverage. Member States will remain fully responsible for granting or rejecting a new satellite earth station application ".*

[26] *This is a variant of the classic "club use" formula, as the club members and the access criteria are decided by the regulator, while the club "members" decide on their own rules of coexistence and management.*

frequencies in a shared manner between all the bidders of the 26 GHz band, maintaining the pre-emption use of the frequencies of the specific lot awarded. This has a significant advantage inherent in the characteristics of the frequencies in question. In fact, since in terms of use modalities such frequencies are more adequate to satisfy requirements of high transmission capacity (both in terms of small cell radio cells (small cell) and, possibly, backhauling), it is evident that they will not typically be used for a widespread coverage of the territory, such as the 700 MHz band, but in a more limited area. At the same time, it appears to be inefficient that in the same place all the contractors install as many separate networks. The most plausible scenario therefore appears to be the one in which each successful bidder uses frequencies in some areas following the demand (or their network needs). In these areas, where one or a few contractors would typically be present with their own radio stations, the other frequencies would be unused.

180. Therefore, also in line with the main guidelines emerged during the 5G survey on the opportunity to exploit large blocks of frequencies in the 26 GHz band, possibly up to 1 GHz, as also confirmed by what emerged in the scope of the public consultation, and also taking into account the need to provide the possibility to various parties to be assigned the frequencies in question, as a guarantee of the development of competitive dynamics in the mobile market, it is possible for all the contractors to use dynamically all frequencies in areas, even inside buildings, where such frequencies are not used by the other contractors, up to the maximum bandwidth (1 GHz) in order to allow a considerable capacity boost and thus reaching the important objective of an extremely efficient use of the spectrum and consequent benefit for users[27]. This also taking into account that, given the peculiarities of propagation of the frequencies in question, in practical cases the adoption of separation distances of a few tens of meters or even less can prevent the occurrence of interference, even more so in the case of indoor applications.

181. Naturally, if all the successful tenderers wanted to be present at the same spot, the pre-emption on the lot awarded ensures that this right is not affected. In any case, each successful bidder can enter into agreements with other contractors, which are reasonable and non-discriminatory, by proportionally subdividing the costs. In this regard, it is considered plausible that the same contractors can identify a trusted third party to entrust the concurrent use of frequencies, also in order to avoid harmful interference, thus creating conditions of mutual benefit for the contractors in the use of the spectral resources in question, always for the benefit of end users. The Authority does not deem it necessary to intervene to further regulate the commercial relations between the operators and between them and the possible trusted third party, given the still embryonic phase of the development of the 5G 26GHz ecosystem. The Authority emphasizes that the pooling proposed with the club use model is an opportunity for operators to use the spectrum in an efficient and innovative manner and it is therefore in their interest to identify the most effective technical and procedural modalities.

182. With reference to the specific allocation procedures, as previously stated, this band is included in the simultaneous auction procedure with SMRA mechanism.

183. The Authority considers to confirm also for this band that the geographical extension of the rights of use must be national, also in order to allow the development of homogeneous networks on

[27] *This mechanism also appears to be in line with the aforementioned Communication of the European Commission COM (2016) 588 final, with which the 5G Development Action Plan was adopted, expressly providing that the spectrum-sharing approach "Should be maximized, since it generally represents support for innovation and market entry, in line with the objectives of the legislative proposals outlined in the proposed European electronic communications code".*

the national territory, able to convey 5G services with a level of quality as harmonized throughout the territory and limit fragmentation. This does not mean that the subject offering the services must necessarily be established at national level. In fact, as also emerged in the context of the aforementioned survey on 5G conducted by the Authority[28], the technological characteristics underlying the evolution of the 5G network architecture, aimed primarily at sharing network elements and dynamic management of services, favor the opportunities for developing new services not only for traditional mobile radio operators, but also for new intermediate players, outlining, especially in light of the aforesaid radio-electric characteristics of the frequencies in question, possible scenarios for the offer of services by different types of subjects , including network operators, possibly integrated, service providers, connectivity providers, partner service providers, or even small cell asset providers, which provide local small cell networks, for example in urban areas or in indoor public spaces, etc.

184. With regard to the cap in this band, the Authority deems it necessary to confirm, according to anti-hoarding, a limit of the awarding of rights to use in the 26 GHz band which, also on the basis of what emerged in consultation, is considered adequate to quantify in 400 MHz, ie 2 batches. This allows greater flexibility on the part of competitors to define the minimum carrier on which to have the pre-emption of use in order to guarantee a quality of service that can also introduce elements of commercial differentiation, where possible. As stated in the previous section, all said lots are offered in the procedure open to all participants.

185. As regards the contributions for the optimal use of frequencies, there are currently no international benchmarks useful for the use of this band for 5G systems. On the other hand, the definition of the minimum values of a competitive tender procedure does not require an analytical evaluation of the value of the frequencies. At the moment the 26 GHz band (in particular the lower part, adjacent to the one in the race), is used for WLL systems and has been assigned by means of a special auction procedure with offers in a sealed envelope. It is therefore considered that it is necessary to refer to this use as the alternative one that is closest to the intended use, adapting it to the new technological context. In fact, the contributions for the WLL systems were set about 15 years ago and since then revalued only in monetary terms, and represent an entirely different ecosystem than the current one.

186. Therefore, it is considered that the minimum value of the lot envisaged for the procedures for the assignment of rights of use, the starting date of which is to be considered on 1 December 2018, should be calculated on the basis of the average minimum values established for rights of use for WLL systems in the adjacent band, assessed on a national basis, discarding the population of the stable areas of geographical exclusion known at the time of the call for tenders, compared to the amount of bandwidth and duration, and increased by a factor up to 90%, therefore reduced compared to what was proposed in consultation to take account of what emerged in the same, namely the presumable delay, however contained, in the development of the related technological ecosystem compared to the time of release of the rights to use the band. In case of unassigned rights of use, put forward as additional rights as described above, the minimum value must start from the average value of the bids for the assignment of the blocks assigned in the same band.

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[28] *See text published on the Authority's website on 27 March 2017, in particular chap. 4, as well as the document summarizing the elements that emerged during the fact-finding investigation, available on the same site.*

187. Regarding the references that emerged in consultation with the adjacent band where the WLL systems are in use, the Authority observes that the frequencies for these systems are used for different services with different channels compared to what is proposed for the band subject of this measure. They envisage a use of the spectrum that today can be defined as more inefficient than possible with the new 5G systems in the band in question, using for example an FDD channeling with guard bands. Therefore the Authority expresses the orientation that for the future the band should be subject to a major refarming to adapt it to new technologies and that therefore the WLL systems in use today should not be extended.

Duration and extension of rights of use

188. With reference to the duration of the rights of use, in public consultation the Authority proposed a different duration of the rights of use for the various bands, with a deadline which, taking into account the band availability provided for by the budget law, resulted aligned to December 31, 2037. The Authority also proposed to make these frequencies extendable only once for a maximum of up to 8 years. Finally, bearing in mind that the 700 MHz band release calendar had not yet been fixed in detail, in the case of early release of the band from radio and television services, and where it was possible to define territorial areas where some of the 700 MHz bandwidth lots both FDD and SDL, were usable before the date established by the Law, then the bidders could anticipate the use of the frequencies involved, corresponding proportionate contributions.

189. With reference to the guidelines indicated above, the respondents highlighted the following.

190. Regarding the duration, most respondents agreed with the Authority's proposals, and only a few have proposed changes, including, in one case, the increase in the duration of 1 year. Other respondents expressed preference for a longer term, equal to 20 years, for all rights of use, one indicating that, in the invariance, however, of the minimum value set, this period would be more congruous compared to the stringent coverage requirements.

191. A respondent, on the basis of the Authority's proposal to meet the coverage obligations even at frequencies other than those awarded, expressed the opinion that the deadlines for the rights to use the bands below 1 GHz (800 and 900 MHz) already assigned should be aligned with the new expiration of the 700 MHz band.

192. On the question of the extension, on the other hand, several respondents expressed the opinion that the Authority should not comment on this, given the wide time horizon, and in particular some observing that the proposal to limit the extension conflicts with the provisions of the 'art. 25, paragraph 6, of the Code, which provides for the possibility of extending the rights of use up to a maximum of 15 years. On the other hand, a subject noted that the rights of use should in no case be extended. Another has indicated the duration of the extension as the same of the first assignment.

193. One respondent, an exponent of the category of radio and television operators, pointed out that any non-guaranteed time advance, for part of the blocks, and part of the national territory, can only take place in the presence of shared solutions with the radio and television operators involved.

194. On the basis of this the Authority, with regard to the duration of the rights of use subject of the present provision, and the extension of the same, resolves the following.

195. As regards the duration of the rights of use, as already explained in other similar tender procedures, the Authority considers that this duration should not be too short, in order to provide the successful tenderer with sufficient time to use the bands efficiently and recover the necessary investments. This also in order to increase the interest in the allocation of the frequencies in question and therefore the competitiveness of the tender procedure. At the same time, the duration cannot be too long, in order to allow the State, within a reasonable time, to be able to regain possession of the resource where necessary for the purpose of maintaining the efficient use of the scarce resource over time. Today, the cycles of technological development are increasingly rapid, as the accelerated framework of 5G development demonstrates, and it is therefore appropriate that the State may have, if necessary, the possibility of proceeding to a major band refarming, for example allocate the asset to other use or other users.

196. In this regard, points out that in the procedures so far regulated by the Authority the duration of the rights of use has always been set between 15 and 20 years. In the case of the multiband auction in 2011, the 800 MHz frequencies lasted 17 years and those at 2.6 GHz 18 years.

197. Moreover, in the light of what was considered about the possible synergies between the bands in question in favor of the development of 5G innovative services, it seems appropriate to align the expiration of rights of use, a long-term objective pursued also in other procedures by the Authority.

198. Therefore, given that the aforementioned Budget Law 2018 provides that frequencies in the 694-790 MHz band are available in a generalized manner on the national territory starting from 1 July 2022[29], it is considered that all rights of use of frequencies referred to in this provision must be valid until December 31st 2037; the date coinciding with the end of the year is also such as to induce further advantages in terms of administrative and accounting management. In this sense, the rights to use frequencies in the 3600-3800 MHz and 26 GHz bands will have a duration of 19 years and 1 month, while the rights to use the 700 MHz band will have an effective validity of 15 and a half years. Both durations appear adequate to reconcile the aforementioned needs and in line with the provisions contained in the Budget Law 2018, allowing to ensure long-term socio-economic benefits, as well as conforming to the best international practices and to what has already been regulated in the past.

199. With regard to the issue of the extension, bearing in mind that the new European Electronic Communications Code is also being prepared, the Authority deems it unnecessary for the State to indicate an orientation towards it, also in a pro-competitive key, in order to avoid crystallize the market for an extremely long period, thus preventing potential new entrants in the future from being able to participate in competitive dynamics, specifying, however, as previously stated in other provisions, that the extension is not an absolute right of the rights holders 'use,. Therefore, in case of need to recover the use of the band by the State, for example in case of need to operate a major band refarming, the rights of use may not be extended. This of course without prejudice to any rights and guarantees provided for by law.

200. In light of the provisions of the Law, the 700 MHz band refarming plan could start, in some parts of the territory, as early as 2020. However, it is not currently possible to know with certainty which blockages in terms of channels television will be released before July 1, 2022, or on which

[29] *In this regard, art. 1, paragraph 1028, of the Budget Law 2018 explains that this term "is established taking into account the need and complexity of ensuring the technical migration of a large part of the population towards advanced transmission standards".*

areas of the territory will be released early, having just begun the relative path by the MISE[30]. Nor is it possible to know at the moment precisely whether, in a given geographical area, the television channels will be freed up which will allow the complete use of a certain FDD or SDL block. Therefore, the Authority considers that the nominal date for the use of the 700 MHz frequencies, for the purpose of preparing the tender procedures, must be that established by the Law as of 1 July 2022. Where in the course of the development of the refarming plans , the possibility was established that in a given area of the territory one or more of the 700 MHz FDD or SDL blocks could be used in advance, the MISE could allow such early use, also differentiated between the various blocks assigned, while the contractor will have to undertake to pay a contribution, fixed proportionally, for this advance. Any such advance must in any case not have effects on the commencement of the use and coverage obligations that are associated with the lots of the band. Naturally, this early use can only take place respecting the rights of all operators to services free of harmful interference.

4. Conditions for the ordered and efficient use of frequencies and protection of existing services

band 694-790 Mhz

201. With regard to the orderly and efficient use of the 700 MHz band, in consultation the Authority pointed out that, at the moment, the technical regulations envisage the use in FDD and SDL mode of the various portions of the band, and that this modality should remain the same even in 5G environment. Furthermore, the Authority stressed that the contractors will still have to adapt to the new legislation when it comes into force. Finally, the Authority reiterated the rules already used in past regulations about the need to avoid harmful interference and how to remedy them should they arise.

202. With reference to the aspects mentioned above, the respondents highlighted the following.

203. With regard to the question of the compatibility of the 5G uses in the 700 MHz band with the adjacent radio-television band, some respondents, in similarity with a similar situation occurred at the time of the 800 MHz band, showed that the interferential problems could persist despite the 9 MHz watch interval and the uplink and downlink inversion of telecommunications services. In fact, the most significant interference would derive from the phenomenon of saturation of the amplifier of the system receiving the DVB-T / DVB-T2 television signal and would be independent of the operating frequency distance. This distance, in the opinion of respondents should only involve a reduction in the costs of any filters necessary to ensure the correct reception of TV signals in the case of interference from adjacent channel. The respondents then indicated that the technical studies for the protection from the interference generated by mobile devices are still ongoing. Moreover, these subjects have said that the interference situations could be exacerbated in case the 5G operators in 700 MHz FDD band should use carriers greater than 10 MHz (and therefore in the case in which a single contractor obtains 3 blocks, a case deemed not too probable) and from the fact that 5G telecommunications installations should be more numerous than those in the case of the 800 MHz band. These respondents have therefore asked to clarify who should bear the burden in case of necessity to eliminate the harmful interference, proposing to follow the model used in the case of the 800 MHz band. In this regard, they noted that in the case of the management of the interferences

[30] *In this regard, it is noted that, on 4 April 2018, the MISE launched a public consultation on the national calendar of the 700 MHz band liberation process.*

relating to the 800 MHz band there was a lack of transparency towards broadcasters and they proposed to put in place a procedure agreed with these subjects in order to prevent interferential problems and to decrease the overall charges.

204. One respondent in particular, in indicating that the problem of saturation of the receivers is similar to that of the 800 MHz band, suggested that, unlike in the previous case, it is not the successful tenderers who bear the burden of restoration, but rather than creating a fund to be used on the tender revenue, which will presumably exceed the minimum expected.

205. One respondent, on this point, reports that data from France, where the band is already in use with LTE systems, indicate that the cases of interference should be less numerous than in the case of the 800 MHz band.

206. A respondent asks to clarify at the time of the call for tenders, through appropriate maps, the areas of possible geographical restrictions for the use of the band.

207. One respondent informed that the current regulatory technical framework for the 700 MHz band does not require further updates regarding the introduction of the 5G; in fact, there are no basic radio stations with Massive-MIMO active antenna systems. Along the same lines, other respondents deemed the technical conditions envisaged to be sufficient, in particular there being no plans to introduce Active Antenna Systems (AAS) in this band.

208. Based on this, the Authority, with regard to the conditions for the orderly and efficient use of the frequencies in the 700 MHz band, resolves the following.

209. With regard to the 700 MHz band, the existing Community legislation on harmonized technical conditions for use by terrestrial wireless broadband electronic communications services is constituted by the aforementioned Commission Decision 2016/687 / EU of 28 April 2016, accompanied by the Reports of the CEPT n. 53 and n. 60, approved respectively in November 2014 and in March 2016, in response to the mandate of the European Commission concerning the aforementioned technical harmonization of the 700 MHz band.

210. This decision is sufficient to manage the use envisaged by the Authority, namely the availability of 2x30 MHz of FDD coupled spectrum (divided into blocks of 5 MHz), as well as additional portions within the guard bands and of the duplex gap, in which, on the basis of the aforementioned Commission decision, Member States can implement the so-called "National options", and which in this case provides up to 4 5 MHz SDL blocks in the range 738-758 MHz.

211. The winning bidders are therefore required at the moment to comply with the parameters and technical conditions set out in the Annex to the aforementioned decision no. 2016/687 / EU, with particular reference to the BEM values and the power limits issued, as well as to the respect, where applicable, of the relevant harmonized conditions of sharing and compatibility with existing services and applications in the same band or in adjacent bands (including the technical conditions for international coordination also foreseen at ITU level), including the technical measures currently available, referred to in the CEPT Reports as well as, where appropriate, to ECC Reports 221, 239 and 242.

212. With reference to what was reported in the consultation about the fact that the aforementioned technical decision of the Commission should be sufficient also for the implementation of the future 5G standards as no AAS equipment is expected, it is noted that at the moment such conclusion cannot be guaranteed. Therefore, without prejudice to any CEPT assessments concerning the possibility of updating some technical aspects of the use of this band in relation to the evolution of the new 5G standards and the implementation of AAS systems on radio base stations, the winning bidders are in any case held to adapt to the new harmonization standards and / or new technical application parameters adopted or possibly imposed by the Administration, in line with international best practices. In this case, the Ministry will also update the technical framework for the use of the band through the appropriate modifications of the PNRF.

213. It should be noted that this does not affect technological neutrality, as it is permitted to the contractors to use any type of technology within the assigned blocks, provided that the technical standards imposed, in particular the spectral emission mask, are in band that out of band, in order not to affect the 5G uses of the other contractors.

214. Concerning the coexistence with the broadcasting systems that use the frequencies in the adjacent band (below 694 MHz) it is premised that, compared to the case of the 800 MHz band, assigned according to the resolution n. 282/11 / CONS, the problem of possible interference from adjacent channel is undoubtedly of lower range, as in the case of the 700 MHz FDD band the separation is 9 MHz instead of 1 MHz and there is an inversion between use in uplink and downlink of FDD blocks. On the other hand compatibility studies are underway and some specific technical regulations are currently being prepared.

215. It should also be noted that no technical compatibility rule ensures the complete absence of harmful interference problems in all possible cases of interference, both in band and out-of-band, and that the same Community legislation provides for the possibility of having to apply rules additional mitigation measures in a proportionate way to resolve the remaining cases of interference. Therefore, in these circumstances the Authority considers that in the first instance the contracting operators have to adopt appropriate mitigation techniques to avoid residual interference phenomena and that in any case the operators of the interfered services must offer any technical support and collaboration in order to solve these problems. In case of problems of interference, the competent Administration reserves the right to identify and impose on a case-by-case basis specify obligations for the interested operators in a justified and proportionate manner, including, where strictly necessary, the provision that affected services must adopt appropriate mitigation and protection techniques.

216. It is then necessary to recall some basic principles of spectrum management. In fact, at the moment of the modification of the PNRF, which allows the use of telecommunications systems in the 700 MHz band, then with the attribution of a new service in a certain band, the users of the adjacent bands are also required to comply with the new standards of use of the own band in order to ensure coexistence with adjacent band uses, as required by national and international regulations. Furthermore, the Authority observes that spectrum is a scarce resource and all users have a right of use and must be an active part in ensuring effective and efficient use of scarce resources taking into account technological developments and market development needs.

217. It is also noted that in Italy the use of frequencies by terrestrial wireless broadband electronic communication systems is currently foreseen with a 2-year derogation from the first date foreseen by the Community decision and therefore with a few years of delay compared to the first uses that will

presumably occur in other countries. For this reason it is also possible to benefit from experiences, studies and best practices that will be developed internationally. Radio and television operators will therefore have to timely contribute to the dissemination of the appropriate equipment compliant with the new standards and best practices identified.

218. That said, in the case in question, there is the particularity that any interference generated, especially in relation to the saturation of the amplifiers, does not fall directly on the radio and television operators, but on the end users. It is therefore reasonable to indicate that, in the same way as in the case of the 800 MHz band, the new users have to take charge of the interference resolution charges in the first instance, since the interfering receiving plant is not available. of the assignees of the adjacent band. Since the actual use of the 5G systems will not take place, as far as known, before some years, it is also possible for the State to identify, also based on the experience accumulated in the other countries, a possible fund, even for revenues deriving from the sale of frequencies, to offset the aforementioned charges.

219. It is therefore reasonable to assume that the MISE can, in good time and benefit from the experience gained at international level, convene a technical table in order to identify ways to manage interference problems and burden sharing criteria. In any case it is believed that all future users of the 700 MHz band, both FDD and SDL pro quota, are required to contribute in proportional parts to the band awarded, regardless of the specific position of the respective block in the frequency range.

Band 3600-3800 Mhz

220. With regard to the orderly and efficient use of the 3600-3800 MHz band, in consultation, the Authority highlighted the need for protection of the FSS services in bandwidth along the 3600-3800 MHz frequency band and in the adjacent band, according to the measures already introduced in resolution no. 659/15 / CONS, in particular that which foresees the use of the TDD channeling. Protection of uses in the 3700-3800 MHz band portion related to the current 5G experimental activities was also envisaged, and therefore the obligation for the contractors to coordinate with the holders of the experimentation for the exercise of the frequencies, according to the inter- service provided for by resolution no. 659/15 / CONS. The Authority highlighted that the Ministry could define the appropriate areas of respect to facilitate the aforementioned coordination. It was also envisaged that, at the end of the experimentation, the frequencies on the metropolitan areas concerned would naturally fall within the availability of the successful tenderer (or the successful tenderers) of the corresponding lots, thus ceasing the need for protection.

221. In particular regarding the technical standards, the Authority highlighted the need to adopt synchronization techniques for a more efficient use of frequencies, which could also be imposed by the MISE. In any case, the assigned frequencies were to be considered gross, that is inclusive of each guard band or block to be used in restricted mode to guarantee the protection of adjacent services.

222. The Authority also recalled that the technical regulations for the use of frequencies by the 5G systems are being prepared indicating that the contractors should have nevertheless conformed to the new legislation when it came into force. In addition, the Authority reiterated the rules already introduced in similar regulations regarding the need to avoid harmful interference and how to remedy them. Finally, the Authority considered it appropriate not to preclude the future development of incumbent services, while respecting a minimum impact on the development of 5G networks and services.

223. With regard to the issues mentioned above, the respondents highlighted the following.

224. One respondent referred in particular to the almost parallel public consultation on the CEPT report concerning the coexistence and harmonization studies of the band in question, under which document indicates that the traditional measure Equivalent Isotopically Radiated Power (EIRP) for single antenna / cell / sector is inadequate for the AAS that should be introduced in this band. Instead it will be necessary to use the parameter Total Radiated Power (TRP), calculated as an integral of the power transmitted in the different directions over the whole radiating sphere. Moreover, thanks to the focused antenna beams, made possible by the AAS, it will be possible to reduce the interference both in band and out of band. Finally, it will be necessary to harmonize the BEM obtained with these new parameters.

225. One respondent noted that the currently available technical regulations may not be appropriate in the case of future 5G scenarios and that it may therefore be necessary to analyze various scenarios on a case-by-case basis. In particular, in the case of interference in the adjacent band according to this respondent, the impacts of the new AAS-type systems will need to be assessed, while in the case of co-channel interference with the trial owners, the CEPT ECC15 (01) Recommendation may be insufficient in the scenarios of metropolitan use in progress.

226. One respondent noted the need to know in advance how the technical regulation referred to may result in guidelines to allow use in a 5G perspective. He also underlined that the possibility of extending the protection to FWA applications in the adjacent 3.4-3.6 GHz bandwidth is not presented, and what could be the conditions for coordination and the impact of any termination charges.

227. Some respondents referred to the possibility of implementing less restrictive protection criteria than the current CEPT legislation, evaluating them on a case-by-case basis.

228. One respondent, an exponent of the category of operators with rights of use in the adjacent band, has shown that for years operators in this portion of the spectrum have been using TDD networks with synchronization characteristics compliant with the ECC decision (11) without problems. 06. The model used allows to maximize the use of the spectrum without using guard band and eliminating the interference between adjacent blocks. This respondent is therefore of the opinion that even users of the adjacent band subject to this provision must conform to this model of synchronization of the pre-existing networks. In the absence of such a measure, the respondent believes that the guard band necessary for protection should be borne by the newcomers.

229. One respondent in particular highlighted, from a technical point of view, a possible criticality on the synchronization between adjacent TDD LTE and 5G networks. According to this respondent, in fact, the benefits of the 5G NR radio interface are related to the frame structure. Therefore, if the frame structure of the LTE technology is set to the 5G networks in order to obtain compatibility, the latency requirements necessary to satisfy the IMT-2020 requirements for transmissions relating to the use scenarios of the URLLC and eMBB type will not be achieved. , in addition to introducing inefficiencies in cost structures.

230. On the basis of this the Authority, with regard to the conditions for the orderly and efficient use of frequencies and the protection in the 3600-3800 MHz band, resolves the following.

231. With reference to the 3.6-3.8 GHz band, the previous regulation indicated the requirements of the technical legislation in force for the use of the band, namely the rules of the Commission Decision n. 411/2008 / EC as amended by Decision n. 276/2014 / EU, including the technical conditions of use set forth in the relevant Annex, also in terms of in-band spectral emission mask and out-of-band emission limits. This last decision is still the binding technical regulatory reference for the use of the band in question. The channeling therefore remains that of blocks with 5 MHz TDD. The framework for the use of the band in question is the one currently envisaged by the current PNRF, subject to subsequent modifications by the Ministry, in relation also to the implementation of the measures envisaged in the Budget Law 2018. This, in fact, does not mention among the applications to be kept account for their protection those in the radio bridge of the FS service, thus providing for the release of the 3.6-3.8 GHz band from such applications.

232. The Authority therefore considers that the harmonized technical conditions for its use by terrestrial systems capable of providing electronic communications services, as well as the harmonized conditions of sharing and compatibility with existing services and applications in the same band or in adjacent bands (including the technical conditions for international coordination also foreseen at ITU level), they must be in the state and initially those specified by the aforementioned relevant Community and European legislation, including the technical measures referred to in the CEPT Report n. 49, the ECC Report 203 and the ECC Report 254, which provides operational guidelines for the purpose, with the possibility of implementing, where possible, less restrictive measures, evaluating specific cases. In addition, for the compatibility with the 5G experimental systems operating on homologous frequencies, at the borders of the relative administrative areas, the rules of the ECC Recommendation (15) 01 can be applied. In this regard, it is recalled that the protection of the 5G experimental applications is foreseen by the aforementioned budget law 2018.

233. The frequencies available in the 3600-3800 MHz band for electronic communication services are therefore intended, in addition to the gross of any guard bands, explicitly provided or not, in any case assigned for non-exclusive use, with the protection of existing applications in both band and adjacent bands, as required by the PNRF, including updates.

234. Compared to the previous regulation there is a simplification of the sharing framework, considering that the definition of the lots in the tender no longer provides for the distinction between "city" and "territory" lots, nor the macro-regional dimension of the "territory" lots .

235. The protection requirements of FSS services in bandwidth over the entire frequency range 3600-3800 MHz and in the adjacent band remain valid, and protection of uses in the 3700-3800 MHz band portion related to the 5G experimental activities is also envisaged. for the temporary duration of the related assignments, as defined by the Ministry. In fact, during the period of the experimentation it is necessary to manage the co-channel interference between the bidders of the lots whose frequencies fall within the aforementioned interval, and the subjects authorized to temporarily use the same frequencies for the 5G experimentation. It is noted that given the packaging structure and the cap described in the previous sections, it is not a priori predictable whether a single contractor or more successful tenderers will cover the entire portion of the spectrum involved in the experimentation. The Ministry will be able to provide any guidelines regarding the coordination between the assignees at full frequency and the parties authorized to experiment and define the appropriate areas of respect to facilitate the aforementioned coordination, in line also with the provisions of the ECC Recommendation (15) 01, with the address, where possible, in general, to maximize the deployment of 5G commercial networks. All the previously mentioned measures

related to the possible early termination of the experiments or the coexistence between commercial and experimental applications remain reserved.

236. In order to prepare a suitable model of sharing, it is necessary first of all to carry out by the Administration a survey of the existing applications to be protected whose data can be used by future contractors to verify in advance the compatibility of the new broadband technologies. To this end, it is considered appropriate that the Ministry notifies, with a level of detail on the basis of the need-to-know criterion and before the start of the assignment procedures, as also required in the consultation, to the subjects who have been admitted to the submission of tenders, upon signing of an appropriate confidentiality agreement, the list of existing primary uses of the FSS service for which protection is requested, with the related technical characteristics and information essential for protection purposes. This information could also concern applications in bands adjacent to the main band where necessary, namely the 3400-3600 MHz band and the 3800-4200 MHz band. Furthermore, it is considered appropriate that the Ministry should also note the exclusion zones related to the assignments. temporary contracts related to the systems operating in the 5G experimentation, with relative timing.

237. The sharing model must be generally based on the guarantee of compliance with an adequate protection criterion, as per the operational specifications provided for by the aforementioned technical reference standard, in terms of the I / N ratio between interfering power (I) and noise power (N), calculated at the ground stations of the FSS connections, taking into account, where appropriate, aggregate interference generated by multiple MFCN stations. This results in the determination of an appropriate combination between geographical separation and frequency separation by broadband uses compared to other existing uses, depending, where appropriate, also on the type of network architecture envisaged for the new systems and any additional protection techniques (coordination, mitigation, use of preferential or restricted channels, synchronization, etc.)[31].

238. As mentioned, the aforementioned technical studies are based on necessarily conservative assumptions, which leave to national administrations the task of regulating concrete cases in the light of national circumstances. From the point of view of the applications to be protected, based on the information previously provided by the Ministry, which were also the basis of the previous regulation, the existing applications in Italy of the FSS service in the 3600-3800 MHz band are mainly located in a well-defined area corresponding to the Fùcino (AQ) station. However, further stations to be protected may be disclosed as specified in the call for tenders[32]. Existing applications of the FSS service to be protected located outside the national territory may also be envisaged, subject to protection in accordance with international regulations.

239. The inclusion of additional areas related to applications of the FSS service for which protection is sought may be made known in the tender notice. In any case, the Authority deems it appropriate not to preclude the possibility of developing fixed satellite services in this band, providing

[31] *As described, in fact, the new MFCN applications that could use the band in question may relate to different network architectures and topologies (typically macro-, micro-, pico- and femto-cellular type mobiles, but without precluding fixed type ones). point-to-point or point-to-multipoint), each with its own characteristics also for compatibility with existing ones. In general, in application of the provisions of the ECC Report 203 and the ECC Report 254 in particular, the achievement of a compatibility condition may be possible, where necessary, with appropriate guard bands, power limitations and / or exclusion areas. , where the installation of stations at a fixed location by the contractors and / or areas in which, to protect the FSS service, only certain privileged configurations for the diffusion of broadband electronic communications networks and services would be inhibited.*

[32] *For example those used in the Defense / Public Security area.*

for this purpose, where necessary, the safeguarding of the operations of future FSS stations, while respecting the development of 5G systems. Therefore, the sharing model, in compliance with the technical standards defined for the coexistence of the systems in the band and in the adjacent band, may envisage the future development of the related incumbent services, through the adoption of transparent, objective and proportionate authorization criteria, having minimal impact on the development of 5G networks and on the coverage of related services.

240. Should the provisions of the sharing model not guarantee the total absence of harmful interference in all possible cases of interference, both in band and out of band, intervention guidelines should be established. Therefore, the winning bidders must first and foremost also ensure any additional measures that may become necessary, such as mitigation and coordination techniques, adopting them in a proportionate and justified manner, taking into account the relevant international standards, methodologies and best practices. In the eventual adoption of further technical coordination or mitigation techniques with the operator or operators using the same bands in neighboring regional geographic areas or contiguous bands in the same areas, the operators concerned, in accordance with the principle of fairness, reasonably subdivide charges in the areas concerned. The Authority reiterates the general principles mentioned several times in previous measures, namely that in the presence of a refarming or new assignment, all users of the spectrum must cooperate in good faith for the resolution of interference problems, also providing information relevant to their systems.

241. The competent administration may impose more restrictive technical standards, including later in the course of effective implementation of the new systems, including mitigating technical specifications, limits on the issued spectral power, preferential channels or other limitations, including geographical exclusion areas, in justified and proportionate manner, in order to resolve or prevent any cases of harmful interference and to ensure efficient use of the spectrum. In particular, and without prejudice to the fact that the lots referred to in the present procedure are to be considered gross of any need for guard band or band used for c.d. "Restricted", between the contractors operating in adjacent blocks, the synchronization of the networks, with the relative technical parameters, can be imposed by the Ministry. For the purpose of adopting the technical synchronization standard, the Ministry may convene and take into account the results of a specific technical table with the interested parties. Users of adjacent bands cooperate in good faith to resolve any possible case of harmful interference and are required to ensure the overall efficient use of the spectrum, in compliance with the principles set by the Code and applicable European legislation.

242. Contractors operating close to the border of the state are required to comply with the coordination procedures established by cross-border agreements and in general by international law. In particular, the provisions of the CEPT ECC Recommendation (15) 01 are highlighted. Without prejudice to these rules, in all cases, the contractors, if the application of the applicable technical standards does not guarantee protection from harmful interference, must ensure the adoption of specific mitigation techniques and / or coordination with the operator or operators using the same bands in neighboring geographical areas. The contractors may be required upon release of the right of use, or subsequently in the case of persistent harmful interference, the obligation that the Power Flux Density (PFD) produced by both the user terminals and the base stations of its own infrastructure does not exceed pre-established levels at the national border, at certain heights and for certain time periods.

243. Finally, with reference to the question of compatibility between intra-service band systems, provided for in the previous regulation, it is noted that the aforementioned rules must be provided

within the sharing framework and can be used, as well as for coordination at the borders of the areas of geographical extension of the rights of use referred to in this provision and in an adjacent band between the MFCN systems of the bidders and operators operating the 5G experimental systems that use the homologous frequencies on the basis of temporary assignments, also in relation to the access between bidders and new players, which will be discussed below.

244. To this end, the aforementioned coordination rules, as indicated in the CEPT ECC Report 203, in the ECC Report 254 and in the CEPT ECC Recommendation (15) 01, can also be applied in general for the efficient use of the band under consideration by different MFCN operators that use the same frequencies in adjacent geographic areas, for example on the basis of access agreements. These parties, in the related agreements, must ensure coordination and / or adoption of specific mitigation techniques in the border areas, and in all other circumstances susceptible of potential interference, with the aim of defining a configuration of the characteristic radio parameters. the operation of their own MFCN systems to avoid the occurrence of harmful interference. In any case, in the absence of coordination between MFCN systems operating in contiguous areas, the constraints envisaged by the aforementioned international regulations constitute the model of sharing of reference.

245. The agreements may also provide for the presence of a geographical area of respect between the reference areas of the two (or more) users, in which the installation of MFCN equipment is not envisaged. Should harmful interference persist, the Ministry, acting as an arbitrator and upon request, may impose more restrictive technical standards, including technical mitigation specifications or limits on the spectral power emitted or increase of the areas of respect for one or both users, synchronization parameters or use of preferential channels, in a justified and proportionate manner, in order to ensure efficient use of the spectrum.

246. That said, at the moment, the relevant technical bodies are carrying out the activities aimed at the adoption of new measures also connected to the possible 5G developments. In fact, as shown in the introduction, the European Commission, following the identification by the RSPG of the priority bands for the development of the 5G, has mandated the CEPT to study the new technical measures of use and compatibility, in parallel with the development of the relevant standards by the European Telecommunications Standards Institute (ETSI) and 3GPP.

247. Among the activities currently under way in the CEPT area related to the band in question are, in particular: the preparation of two new ECC[33] Reports; the preparation of a new CEPT[34] Report; the revision of the ECC Decision (11) 06 on "Harmonized frequency arrangements for mobile / fixed communications networks (MFCN) operating in the band 3400-3800 MHz". As reported in the consultation, many of the aforementioned activities are at an advanced stage and the related final documents, after the steps envisaged for their approval, should be available, subject to any changes to the program, by July 2018. Furthermore, it is also possible that further binding decisions of the Commission can be prepared after these activities, which amend the aforementioned decisions.

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[33] ECC *Report* 281 "*Analysis of the suitability of the regulatory technical conditions for 5G MFCN operation in the 3400-3800 MHz band*"; ECC *Report* "*Guidance on defragmentation of the frequency band 3400- 3800 MHz*".

[34] CEPT Report 67 ("Report A") "*to develop harmonised technical conditions for spectrum use in support of the introduction of next-generation (5G) terrestrial wireless systems in the Union*".

248. In order to allow compliance with the principle of technological neutrality, each tenderer will have to standardize the methods for using frequencies to the technical regulations in force at the time of use of the band in question.

249. When the new 5G standards and the new technical rules of use become available, the Ministry will update the technical framework of use of the band also through the appropriate modifications of the PNRF, and these changes will become mandatory also for contract holders of the rights of use referred to in this provision. However, for all areas where technologies that comply with the previous standards have been introduced, it is considered that they may continue to be used until they are replaced, provided they do not affect the other users' 5G uses. To this end, the Ministry will request notification of the plants that will remain active with the previous technologies and update plans. From the moment in which the 5G standards will be introduced, the new installed systems will therefore have to comply with the new standards or compatible according to the regulations.

250. In light of the changes that should be made available on a technical level at the time of the introduction of the 5G standards, the Ministry, in a justified and proportionate manner, can make the relevant changes to the sharing model initially defined on the basis of the above description.

Band 26.5-27.5 Ghz

251. With regard to the orderly and efficient use of the 26 GHz band, in consultation the Authority highlighted that the sharing model, on the basis of the provisions of the PNRF, and in compliance with the applicable technical standards defined in the CEPT framework, includes conditions and / or restrictions, including the application of geographic exclusion zones around the receiving stations of the victim interference system, arising from the need to protect the uses of the EESS service, which use frequencies both inside (in band) and outside the lot (in the adjacent band), and of the use of the FSS service in the adjacent band, relevant to the particular lot of frequencies in competition, or deriving from the need to protect any other incumbent services existing in the band. The Authority also indicated the possibility for the contractors to proceed with the experimental use of the bands awarded until the new technical legislation was implemented.

252. Also for this band, in particular with regard to technical standards, the Authority highlighted the need to adopt synchronization techniques for a more efficient use of frequencies, which could also be imposed by the MISE. In any case, the assigned frequencies were to be considered gross, that is inclusive of each guard band or block to be used in restricted mode to guarantee the protection of adjacent services. The Authority also recalled that the technical regulations for the use of 5G systems in this band are being prepared indicating that the winning bidders would still have to adapt to the new legislation when it came into force. The Authority also reiterated the rules already adopted in other similar measures regarding the need to avoid harmful interference and how to remedy it. Finally, the Authority considered it appropriate not to preclude the future development of incumbent services, while respecting a minimum impact on the development of 5G networks and services.

253. With regard to the issues mentioned above, the respondents highlighted the following.

254. One respondent referred to the almost parallel public consultation on the CEPT report, with preliminary results, indicating that further studies are needed to define the emission limits for the protection of EESS, FSS, and how to adjust synchronized operations / not synchronized between active systems on adjacent bands.

255. One respondent noted the still provisional situation of the development of technical legislation, pointing out that the protection requirements of EESS stations in the 23.6-24 GHz band, which could have repercussions on the emission masks of 26 GHz, which would then decrease the range of use, recognizing however that it has not yet been clarified whether this limitation will also impact the upper part of the band currently subject to the allocation procedures. The respondent indicated that a second uncertainty would concern the definition of the angle of up tilt, i.e. the pointing of the antenna. Therefore, according to this respondent, the aforementioned uncertainties should be considered in determining the minimum tender value, reducing the proposed values.

256. One respondent noted that, in order to protect the ongoing investments for WLL applications across the 26 GHz band (24.25-27.5 GHz), it would be appropriate to specify that the relevant plants, both existing and planned in the coming years (up to expiry of the related rights of use) must be protected and their future development not to be affected.

257. On the basis of what the Authority represents, as regards the conditions for the orderly and efficient use of frequencies in the 26 GHz band, it resolves the following.

258. International studies aimed at defining the harmonized technical conditions for the use of the 26.5-27.5 GHz band are currently underway, as described above. In particular, these studies concern possible channeling schemes, protection conditions and coordination requirements (even outside the borders of the Union). The Authority takes note of what was reported in the consultation that does not substantially change the framework known at the time of the consultation

259. As in the case of the 3.4-3.8 GHz band, also for the 26 GHz band, the final documents relating to the aforementioned activities, after the consultation phases envisaged for their approval, should be available, subject to any modification of the program, by July 2018. Furthermore, it is also likely that a binding Commission decision concerning the band in question can be prepared after these activities, the implementation of which should not be affected.

260. The Authority, in line with the best Community practices and according to what are currently the prevailing technological developments, as well as with the aim of ensuring the European harmonization of bands, believes that the frequencies in the 26 GHz band should be used according to the aforementioned technical standards of harmonization and standardization in preparation at the time of the adoption of this consultation. Therefore, the winning bidders are in any case required to comply with the new harmonization rules and / or new technical parameters of employment adopted or possibly imposed by the Administration. In this case, the Ministry will also update the technical framework for the use of the band through the appropriate modifications of the PNRF..

261. If the commercial availability of the devices should occur at a time after the release of the rights of use, it is believed that, for a limited period, the experimental use of the frequencies awarded may be allowed, which in the case will have to be done by the Ministry. , respecting the same conditions of protection of incumbent systems.

262. Each contractor of lots in the 26 GHz band shall make available the required bandwidth and the conditions necessary to avoid harmful interference with users of the same band and adjacent bands, in accordance with the relevant technical regulations, in the context of own assigned frequencies. If harmful interference persists, in order to ensure efficient use of the spectrum, the Ministry may impose, in a justified and proportionate manner, more restrictive technical standards, including

specific mitigation techniques or limits on the spectral power emitted or the synchronization of networks operating in adjacent blocks or the use of frequency blocks in "restricted" mode, up to the use of preferential channels. If these measures do not guarantee the total absence of harmful interference, each contractor is obliged, where necessary, to immediately deactivate the interfering system. The frequencies in this band, available for MFCN services, are understood in any case gross of any guard bands, explicitly foreseen or not, and their use must provide for the protection of existing applications both in band and in adjacent bands, as envisaged by the PNRF.

263. With regard to the conditions for the protection of the primary in-band uses referred to by the Budget Law 2018, based on the status envisaged by the current PNRF, and without prejudice to any subsequent amendments by the MISE, the frequency range from 26.117 GHz at 27 GHz foresees EESS type uses in the transmission direction from space to ground, ie the aforementioned protection refers to the earth stations receiving the signals transmitted by the satellites. In this regard, the PNRF provides that the EESS service stations operating in the 25.5-27 GHz frequency band cannot demand protection from fixed and mobile service stations, nor limit their use and development. The PNRF also provides that in allocating frequencies in the 26.2 - 27 GHz band portion, all the technical measures necessary to guarantee the protection of the terrestrial station of the Lario di Telespazio, operating within the European coordinated meteorology project, must be taken. from EUMETSAT.

264. To this end, in the light of the most recent documentation to the draft status in the CEPT concerning the calculation methodology to be adopted to guarantee the protection of EESS services by the 5G[35] applications, it is envisaged the adoption of exclusion zones, whose contours are determined starting from the calculation of the minimum propagation loss required for the aforementioned protection. For the purpose of calculating this parameter, the protection threshold not to exceed a certain percentage of time at the victim EESS receiver is fixed, based on the ITU-R SA Recommendation. 1161, in the value of -133 dBW in a reference band of 10 MHz for an associated percentage of time equal to 0.1%.

265. The aforementioned methodology provides that, once the minimum required attenuation is calculated, for each azimuth angle around the EESS ground station, the separation distance between the interfering transmitter and the victim receiver is determined, i.e. the minimum distance that allows to obtain a attenuation at least equal to that required for the protection of the EESS station on earth for a given percentage of time. To this end, for the calculation of propagation losses the coexistence method foresees the use of the model referred to in Recommendation ITU-R P.452-16, considering the effects of the ground around the EESS station.

266. Some early studies within CEPT[36] provided a preliminary calculation of the exclusion zone around the EUMETSAT del Lario earth station, obtaining a maximum separation distance of about 13 km. It should be emphasized that, although the methodology adopted considers a single 5G radio base station, the aforementioned ECC recommendation draft emphasizes that in general the aggregate effect of multiple BS can be considered reduced and that separation distances should not significantly increase as long as the antennas of the interfering BSs are not pointed at the same time to the victim antenna EESS.

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[35] *Draft ECC Recommendation "Methodology to calculate the exclusion / coordination zones around the EESS and SRS earth stations operating in the 25.5-27 GHz band to avoid interference by IMT-2020 mobile systems".*

[36] *In particular, we highlight the ECC report PT1 (17) 021 "Examples of exclusion zones that would be required around EESS and SRS earth stations vs. one single 5G base station".*

267. The Authority believes that, following the consolidation process of the aforementioned studies, in compliance with the related harmonized technical measures, the Ministry may appropriately publish a suitable model of sharing also for the portion of the 26 GHz band in question, in in line with the changes that will be made by the same department to the PNRF, to the extent of its competence, also in implementation of the provisions of the recent Budget Law 2018. This model must provide a set of technical compatibility rules to allow the installation of a installation using frequencies of the 26 GHz frequency lots by the contractors without causing harmful interference to other authorized users. In particular, said model will include conditions and / or restrictions, including the application of geographic exclusion zones around the receiving stations of the victim interference system, deriving from the need to protect the uses of the EESS service, which use frequencies both inside (in band) that outside the lot (in the adjacent band), and of the use of the service in the adjacent band FSS, relevant to the particular lot of frequencies in competition and to the area of geographical extension of the right, or deriving from the need for protection of any other incumbent services existing in the band and in the adjacent band according to the provisions of the current PNRF. To this end, as also required during the consultation, it is considered appropriate that the Ministry provides the qualified participants with the necessary information about the incumbent systems that require protection, with the most appropriate degree of confidentiality. The model of initial sharing can be published with the call for tenders, and can also be updated by the Ministry in a proportionate and justified manner. This is also due to the fact that typically the aforementioned technical studies are based on necessarily conservative assumptions, which leave to the national administrations the task of regulating the concrete cases in the light of national circumstances.

268. The Authority also believes that, in order not to preclude the possibility of developing satellite services in the band in question, it is appropriate to safeguard the operation of future earth stations, while respecting the development of 5G systems. Therefore, the sharing model, without prejudice to the technical standards defined for the coexistence of the systems in the band and in the adjacent band, may foresee the future development of the related incumbent services, through transparent, objective and proportionate authorization criteria, and that have the minimum impact on the development of 5G networks and coverage of related services.

5. Obligations to use frequencies and coverage associated with usage rights

Usage obligations and measures on trading

269. With regard to the obligations to use frequencies, in consultation the Authority had proposed to introduce first of all a general obligation to use frequencies, spread throughout the national territory, within a certain period of time, declined in a fairly broad manner to also allow the offer of wholesale and innovative services aimed at 5G. It was also envisaged the possibility of using frequencies also through leasing or sharing agreements, provided they were authorized, while as regards trading, it was proposed to prohibit it until the positive fulfillment of the coverage obligations.

270. The Authority also proposed specific reporting obligations for the implementation of its own radio network. Finally it indicated the need not to introduce coverage obligations for the 700 MHz SDL and 26 GHz frequencies, thus limiting them to the 700 MHz FDD and 3600-3800 MHz bands only.

271. With reference to the proposals in consultation indicated above, the respondents highlighted the following.

272. In general, most respondents deemed the Authority's guidelines to be acceptable, some formulating suggestions for partial changes.

273. Some respondents indicated that the possibility of using frequencies for the offer of both retail and wholesale services could lead to the initiation of the wholesale service by a successful bidder, but in the absence of a retail reseller the service would not be available to the public, therefore proposing to maintain the obligation while still providing the commercial retail offer together with the possibility of offering wholesale.

274. Some respondents, always among those who said they were favorable to the plant proposed by the Authority, suggested to change the reference to all Italian provinces with that of all the Italian provincial capitals, to avoid a possible circumvention through the parallel fulfillment of the proposed coverage obligation.

275. One respondent believes that the same coverage obligations set for the 3600-3800 MHz band should also be provided for the 26 GHz band.

276. Some respondents did not agree that the orientation to prohibit the trading of frequencies could be shared, in the proposed terms, while other respondents agreed with this provision. Some respondents also consider it useful to impose the cap constraint for the entire duration of the rights of use, even in the presence of trading or sale of the business segment as a result of the positive fulfillment of the coverage obligations.

277. A respondent who opposed the trading limit indicated that the bands subject to the measure are tradable and the underlying obligations may follow the exchange without detriment of the public interest. Along the same lines, a respondent, while considering the Authority's intent to avoid speculative financial trading phenomena, has observed that the formulation of the prohibition of trading could be an obstacle to legitimate corporate projects such as mergers, sales of company branches, etc. ., which are normal in the sector, and therefore proposes to eliminate the ban. In particular, some respondents believe that the transferee can also fulfill the expected coverage obligations, and also guarantee a possible acceleration of the same; to prohibit trading could mean, in its opinion, only compliance with minimum coverage obligations without further innovation.

278. One respondent pointed out that the equipment development roadmap for the 3600-3800 MHz band known to date makes it possible to comply with the use obligations as proposed by the Authority, while for the 26 GHz band, as far as known at present, the 36-month target appears to be a challenging undertaking. This respondent therefore proposed to bring the deadline to 48 months. Another respondent asked to increase to 60 months the period for the obligation to install the radio network for SDL frequencies in all the provinces, proposing to maintain the planned 24 months for the regional capitals only. Another respondent still observed that the obligation to install the radio network should be allowed with greater time, proposing for the regional capitals 24 months for the 700 MHz SDL and 3.6-3.8 GHz bands and 36 months for the 26 GHz band, and for the remaining Italian provinces 60 months.

279. One respondent represented that an obligation should be introduced for bidders to publish their roll-out plans, which should be made known to third-party operators in accordance with the schedule, in order to allow those operators, including MVNOs, to plan their commercial services offer plans.

280. One respondent objected to the exclusion of the coverage obligations for the frequencies in the 700 MHz SDL and 26 GHz bands, since, in his opinion, the radio-frequency peculiarities of such frequencies not to be found in the consultation document are such as to exclude them from said obligations.

281. One respondent noted in principle that use and hedging obligations should not be introduced within a competitive tendering mechanism, and that they are more appropriate to a different allocation modality; furthermore, this respondent noted that hedging obligations should be introduced on all bands or none.

282. On the basis of this the Authority, with regard to the obligations to use frequencies, resolves the following.

283. As already laid down in other procedures for the competitive allocation of rights to use frequencies, the Authority considers that the application of appropriate minimum requirements for the use of frequencies and coverage associated with the rights of use are adequate to obtain a use effective and efficient frequencies and allow a greater guarantee both in the credibility and solidity of the business plan of the operators concerned, and in the limitation of possible phenomena of hoarding and / or acquisition of rights of use with speculative intent only.

284. In this regard, in order for the contractors to have an effective interest in using the frequencies whose rights of use are acquired pursuant to this provision, the Authority deems it necessary to prohibit the assignment of the frequencies awarded, also in the form of transfer of the relative company branch, in whole or in part, for a minimum initial period. In consultation, it was noted that the prohibition up to the positive fulfillment of the coverage obligations could lead to the compression of legitimate business needs and dynamics, without particular advantages as hedging obligations, and also possible developments exceeding minimum obligations, could still be realized from the assignee. The Authority therefore considers that it partially agrees on this point, considering that an initial minimum ban period is necessary, setting it at 24 months from the award, and extending it to 48 months for the frequencies obtained through the awarding of the reserved lot.

285. The winners of the rights to use frequencies in the 700 MHz SDL, 3600- 3800 MHz and 26 GHz bands shall install the broadband or ultra-wide radio network and use the assigned frequencies with the corresponding right of use in all Italian provinces within a reasonable period of time from the release of the right of use or, if subsequent, from the nominal availability of frequencies. In consideration of the available indications on the expected timing to complete the 5G standardization process and to achieve the commercial availability of the related equipment and terminals, it is believed that the aforementioned period may be 24 months for the 3600-3800 MHz band, and, taking into account the findings of the consultation, 36 months for the 700 MHz SDL band and 48 months for the 26 GHz band, which, as mentioned, currently records less advanced development roadmaps than the other two bands.

286. With regard to what was brought to the attention in consultation, the Authority observes that the obligation to use with reference to all Italian provinces concerns all frequency bands, not only those 3600-3800 MHz. To this end, the public interest underlying the use of the specific frequencies assigned to 3600-3800 MHz can well be satisfied jointly with the obligation to cover. In this regard, the Authority observes that the two obligations are not mutually exclusive and fulfill two types of different objectives.

287. With a view to guaranteeing the effective use of the radio spectrum, the aforementioned use of the assigned frequencies shall be performed by putting into service radio base stations or fixed wireless links with the activation of the relevant radio bearers and coverage of the territory of reference, also guaranteeing the end-to-end transport of traffic and the launching of the commercial service, to be understood in the form of offer directly to the public or through the offer of wholesale access, also in the form of roaming, Multi-Operator Radio Access Network (MORAN), Multi-Operator Core Network (MOCN), or supply of slices, normally forbidden for frequency pooling. The eventual adoption by the contractors of network slicing functionality of the 5G networks for the offer of commercial services must in any case be subject to verification of compliance with the principles of safeguarding access to an open Internet according to current regulations, now established by Regulation (EU) no. 2015/2120 of the European Parliament and of the Council of 25 November 2015.

288. Again with reference to what was highlighted in the consultation, it is noted that in this provision the Authority regulates the use of frequencies, imposing obligations in this regard, declined in such a way as to lead to the effective and efficient use of the spectrum. It is the task of the contractor, who wins the frequencies for consideration, to define the business case most suited to his business, in compliance with the minimum obligations established. Therefore, the Authority does not consider compressing the possibilities for the formulation of commercial offers, unless a retail service is specifically requested. In this regard, the Authority further notes that where there is a retail demand and a wholesale offer, there is already an incentive for the entry of a service provider interested in providing services; vice versa, by constraining the wholesale offer to the simultaneous presence of a retail offer would make the business plan of the potential contractors less flexible.

289. In the exercise of the assigned frequencies, the winning bidders will have to use equipment that complies with the technical standards and standards provided by the current PNRF, or equivalent and compatible devices, in any case without causing harmful interference to the other authorized systems.

290. For the purpose of monitoring the degree of development of the network, the aforementioned awardees will have to transmit to the Ministry and the Authority annually the progress of the realization of the broadband or ultra-wide radio network using the frequencies awarded and the provision of the relative service, documenting in particular the dissemination of sites, network architectures and implemented technologies.

291. The Authority also considers that it is necessary to distinguish the coverage obligations to be imposed on the contractors on the basis of the characteristics of the bands subject of the present provision. To this end, it is envisaged to introduce separate coverage obligations for the operators awarded the frequencies in the 700 MHz FDD and 3600-3800 MHz band, while for the 26 GHz band and the 700 MHz SDL band, it is not intended to provide introduction of specific coverage obligations. This is because, as already mentioned, in the first case the radio-electric characteristics of the band configure it as a capacitive band and generally lend themselves to coverage, while in the second case,

as is known, the SDL nature of the frequencies allows its use. in combination with other bands and therefore the coverage cannot be freely planned.

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292. As regards the coverage obligations in the 700 MHz FDD band, in consultation the Authority proposed 4 different and complementary obligations, to which the awardees could fulfill by using frequencies other than those specific to 700 MHz, in order to provide the same type of 5G service to a customer with commercial terminals. In summary, the obligations were defined as follows:

1. the. individual coverage obligations: each of the contractors had to cover and provide 5G services to at least 80% of the population within 36 months of the availability of frequencies, including at least all provincial capitals and all municipalities with more than 30,000 inhabitants. At most 2 operators could implement the obligation jointly on part of the territory (even varying the territory in different agreements), and a new entrant had 12 months more time to reach the goal;
2. collective coverage obligation: it provided for a general coverage of 100% of the national population, to be realized within 54 months from the availability of frequencies, collectively through agreements between the contractors;
3. obligation to cover the main land transport routes: it covered the coverage of the main road and rail transport routes, to be carried out collectively, also through reciprocal agreements, within 42 months from the availability of the frequencies. The operator who carried out the coverage was obliged to offer the roaming service (also in the form with frequency pooling), also with different agreed technical modalities, on these lines to the other operators on reciprocal conditions;
4. obligation to cover the main tourist areas: including those not permanently inhabited, which would have been identified by the Ministry before also heard the ANCI, and then covered at a maximum number of 6,000 spread throughout the country. The coverage would have been proportionate for each successful bidder, by subdividing the locations into lists associated with the blocks awarded. It was proposed 2 years to identify the locations and 66 months to proceed with the coverage. A new entrant had 12 months more time to reach the goal.

293. With reference to the proposals indicated above, the respondents highlighted the following.

294. One respondent has generally criticized the presence of different coverage obligations for the bands subject to this provision compared to similar bands assigned in the past.

295. One respondent considered almost totally acceptable the Authority's proposals, with the exception of the one that foresees the possibility of reaching the first target of 80% of the population by means of an agreement between at most 2 operators for a maximum of 30% of the obligation, and that of allowing the achievement of the target even with bands other than those held by the bidders.

296. One respondent proposed a different declination of coverage obligations for the 700 MHz FDD band, which can be summarized as follows: lower percentage for the individual obligation; lower percentage (suggesting 99.6%) and greater timing for the collective obligation to cover the population and transport networks, elimination of the 10 dB increase for indoor coverage, elimination of the obligation to cover tourist areas.

297. One respondent indicated that Infratel Italia SpA, which should be involved by the Authority, should also contribute to the coverage obligations in order to provide infrastructure (backhaul network of fiber-optic sites, poles and power supply network) in some areas of the BUL market cluster clusters.

298. A respondent replied the proposed unbalanced obligations in relation to the requested investments, significantly addressing them in some directions and thus limiting the freedom of enterprise and the possibility of competition based on the differentiation of coverage. Moreover, the respondent believes that the technical characteristics of the obligation, as it has been declined, are difficult to achieve, if not aggregating large portions of the spectrum that could be unavailable. The target of 80% of outdoor coverage could be reached considering the speed of 30 Mbps as nominal, otherwise this objective would be difficult to reach considering the limitations on board the cell deriving from the technology used and the amount of bandwidth available. Moreover, this respondent noted that the collective obligation to cover 100% of the population does not seem easily achievable considering the particular orographic situation of the country and the distribution of the population on the territory. Regarding the indoor coverage, the additional 10 dB requirement provided in the proposal could, in the respondent's opinion, provide no guarantee on the use of indoor services, while for indoor coverage there would be more efficient and less costly solutions for operators, such as the use of other bands or domestic cells. Regarding the obligation to cover the transposing guidelines, the respondent noted that, in addition to being excessively extended, the mutual roaming solution could be not very functional, also considering that the obligation should also be extended to the owners / managers of the infrastructures that should grant free and unconditional access to operators on the relevant site and any other functional structures of the coverage. With regard to the obligation to cover tourist areas, the respondent considers it burdensome and not clearly defined, undermining the legal certainty that should conform the regulatory framework.

299. In the same line, a respondent has represented that the objective of providing a service with a speed of 30 Mb / s is not an achievable goal if an operator has only 5 MHz in the 700 MHz band, except with reference to a number limited number of users close to the base station. Another respondent also noted that the requirement to cover 30 Mb / s downloads with quality requirements and a 10 dB road-level increase is burdensome, considering it also not consistent with the European Council and European Parliament Decision 2017 / 899 / EU indicating that the 700 MHz band should contribute but not independently guarantee access to 30 Mb / s to all citizens. In his opinion, even the timing for achieving the objectives set out in the obligation appears very stringent compared to what happened in other European countries.

300. A respondent, in generally sharing the proposed facility for coverage obligations, proposed to further specify that in the case of use of other frequencies to fulfill the obligations themselves, such use must be aimed at the provision of 5G services as defined in the text of the proposed article.

301. With regard to collective obligations, one respondent noted that this approach is a novelty on the national scene and the possible mechanisms of agreement and coordination between the bidders should be clarified before the tender. In this regard, a respondent requested that the terms be clarified, believing that the agreement underlying them must be implemented within two years from the assignment of frequencies, and that the penalties for non-compliance should be the sole responsibility of those who 'caused. On the other hand, a respondent welcomed the provision of collective obligations, considering them efficient to achieve certain objectives, although noting that the set of obligations is very stringent, also with reference to what happened in the past on other bands, and therefore requiring a lightening of some technical parameters.

302. With regard to the definition of the characteristics of the 5G services subject to obligation, most respondents indicated that the Authority should not specify such features in a timely manner, as this would violate the principle of technological neutrality, and in In any case, the 5G standard is still under study and therefore a detailed definition of the 5G services would be premature, but there is currently no sufficient clarity on the requirements associated with the many specific services expected. Therefore, some respondents have pointed out that the definition proposed by the Authority is the only one that can be used.

303. In contrast, one respondent noted that coverage cannot be defined by referring generally to 5G type services, believing that the coverage obligation should be declined by identifying some key service parameters such as minimum throughput or signal level, in a relevant manner. at the frequencies involved and the amount of bandwidth available.

304. One respondent remarked that, since the electromagnetic limits present in Italy are very stringent, in order to achieve the planned objectives, complex and complex network solutions will be required, and this must be considered in the enhancement of the asset. A respondent also asked to eliminate the condition that the use of other bands is allowed only if it does not involve the use of user terminals different from those normally present on the market that support 5G services with the specific 700 MHz band, considering this condition in contrast to the principle of neutrality of the use of frequencies.

305. A respondent has represented that the fact that the Authority requires the transmission of final data of the coverage both to the Ministry and to the Authority itself constitutes a failure to apply the "once only" principle, ie the fact that the data should be provided only once to the public administration.

306. On this basis, the Authority, with regard to coverage obligations in the 700 MHz FDD band, resolves the following.

307. As an argument, the Budget Law 2018, in the aforementioned paragraph 1026, sets the goal of adopting "the widest level of coverage and access for all users to 5G technology services, in Italy".

308. In this regard, it is worth mentioning here the decision (EU) 2017/899, which in recital 9 states: "Due to the rapid increase in wireless broadband traffic and the growing importance of the economic, industrial digital economy and social, it is necessary to enhance the capacity of wireless networks. This is a band of frequencies of 700 MHz, which is very simple to use, but it is easier to use it in internal environments. In context telling, coherent measures and coordinating high quality wireless terrestrial coverage across the Union, drawing on best practices related to licensing obligations for operators, aiming to achieve the goal of the RSPP of all time, within one year , by 2020, as well as a concrete scenario of an ambitious vision of a gigabit society in the Union and of offering long-term socio-economic benefits ".

309. The 700 MHz band is the one that has the most suitable radio-electric characteristics for the purposes of widespread land cover. This is the best candidate for the purpose of achieving the aforementioned objective by law, as also indicated by the aforementioned Community decision.

310. Furthermore, it is necessary to consider that the band frequencies pass the last spectral resources below 1 GHz to be assigned (as is known, in fact, the bands of the 800 and 900 MHz bands, with similar characteristics, have already been assigned) and for a long time no other bands are foreseen. These frequencies, as mentioned above, are special suitable for large-scale convenient coverage, as well as offering better indoor coverage. It is therefore necessary to take the opportunity to use the 700 MHz band to offer the country a coverage of mobile radio services, however, in innovative 5G type, in line with the provisions of the Budget Law 2018, and in line with current trends. in the European context.

311. For users to end users, thus encouraging their use, as envisaged by the specific types of systems, various scenarios for the use of 5G (eMBB, m-MTC, URLLC), ensuring high levels of quality of the data transmission service , taking into account the relevant methodologies, including international ones; this, as foreseen by the most common ways of using the mobile radio services inside buildings, in line with the best practices in the community field[37].

312. It is also noted that among the purposes indicated in the aforementioned Decision (EU) 2017/899, which follows the 5G Action Plan for the European Commission, in addition to the objective of achieving "universal" coverage, in particular to bridge the digital divide in rural, mountain and island areas, there is also the purpose of covering the main land transport routes. In this regard, as shown above, one of the objectives of the Action 1 of the aforementioned 5G Action Plan, in the perspective of a European gigabit company, is precisely that of ensuring continuous 5G coverage along the main transport routes[38].

313. For the purpose of imposing coverage obligations, EU, 2017/899, coverage of the most remote areas of the country can be considered "economic difficulties", as, if necessary, not expensive, a low demand of services, for which the cost-benefit ratio is typically, but not used, unfavorable for an operator who intends to provide services in such areas. In these areas, it is therefore reasonable to hypothesize a scenario in which radio and television operators, in line with the provisions of the Community offer[39], will be able to share commitments aimed at offering services to end users, a benefit not only of the latter but also of their own investment plans. In the network virtualization network, such as Network Function Virtualization (NFV) and Software Defined Networks (SDN), which is to manage network resources[40], up to the realization of the slicing network concept, requires a physical infrastructure to take advantage of the advantages of offering differentiated services through separate logical networks.

314. In view of the wider area of the national territory, it is noted that often some localities falling within the type of territory identified by the aforementioned community decision of places with high tourist attendance at certain times of the season. In particular, there may be cases in which some tourist locations are sparsely populated in terms of the number of residents, and are considered a low priority in terms of network development, thus implying potential coverage limits. As far as the

[37] See BoR (17) 256, "Joint Report BEREC and RSPG on the Facilitation of Mobile Connectivity in" Challenge Areas "", December 2017.

[38] "*Ensuring that every Member State will identify at least one major city to be "5G-enabled" by the end of 2020 and that all urban areas and major terrestrial transport paths have uninterrupted 5G coverage by 2025*".

[39] In particular, par. 2 of the art. 3 of the Decision (EU) 2017/899 indicates the provision of measures to share resources, where it states: "[s] uch measures may include conditions to facilitate or encourage the sharing of network infrastructure or spectrum in accordance with Union law"

[40] See chap. 4 of the text of the Authority's survey of the 5G.

quality of services is concerned, the contractor must ensure that the networks of services are dimensioned even in a quota of these locations.

315. In the light of what is considered, it is justified and proportionate to the rights of use of the collective band in question, i.e. obligations that all contractors are required to respect collectively, as specified below.

316. In consideration of the observations made by the heads of the public coverage of chiefs in winning bidders. With reference to the collective obligation to cover the population, it must be considered that all the awardees together, is based agreements, as proposed in consultation. Consider, as they can divide coverage requirements, not having to reach the target population associated with the obligation. Moreover, operators are no longer able to improve resources and resources. of the 700 MHz band, if it wins, of the best propagation characteristics of these frequencies compared to other radio bands already provided by the same operators. It is important to underline the wide time horizon proposed by the Authority for the achievement of the collective obligation to cover the population, which, however, in the light of the possibility of using other laws for the purpose of the obligation, will be much better to intervene, in line with what has happened in recent years. However, considering also that it is better to maintain collective coverage, therefore consider a reasonable margin that can absorb cases of greater dispersion of the population in certain areas of the country, and therefore more onerous. Therefore, it is considered appropriate to set at 99.4% the percentage assigned to the collective obligation to cover the national population.

317. In addition, the Authority, in reiterating the importance of the goal of the broadest high quality wireless terrestrial coverage in order to ensure in the internal environment the use of broadband services at least 30 Mbps, in line with the provisions the aforementioned Community decision, however, considers it appropriate to eliminate the specific requirement on the increase in the level of radio-electric signal for indoor coverage, also accepting in this case some comments made in this regard during the consultation, which indicate that the forecast of an average value of increase, even if used in other European countries, would not be adequate for the Italian scenario

318. In order to mainly achieve a generalized and competitive urban coverage with the frequencies in question, each of the bidders, within 36 months of the nominal availability of frequencies, is obliged to start the commercial service useful to meet at least the objectives set by the Digital Agenda European Union and to allow the use of innovative applications that qualify as 5G to at least 80% of the national population, including at least all provincial capitals and all municipalities with a population of more than 30,000 inhabitants. To meet the objectives described above, the coverage is intended as supply of a level of radio-electric signal useful for the establishment and maintenance of a network connection able to meet the standard operating requirements necessary to allow the end users the correct fruition, in a reasonable way even in an indoor environment, of 5G services such as to guarantee the development of applications for all the expected use scenarios m-MTC, URLLC, eMBB, however ensuring in this last use case a nominal speed of download not less than 30 Mbps. The Authority reserves the right to verify the adequacy of these requirements for 5G services, as also required in consultation, in order to ensure the widest use of the same by end users. It is believed that at most 2 operators can fulfill the obligation jointly on part of the territory, with in this case the specific frequencies 700 MHz FDD, and that a possible new incoming subject (but not the remedy taker who already has at the own network being launched) may have 12 months more time to reach the goal. The possible sharing in some limited areas leads to greater efficiency in the use of the spectrum, favoring the sharing of infrastructures.

319. In addition, a second obligation requires that contractors must carry out, in a collective manner through agreements between them, a generalized coverage of 99.4% of the national population, starting the commercial service within 54 months from the availability of frequencies. The collective obligation allows to limit the coverage effort in areas of digital divide, not immediately remunerative or with low demand, allowing appropriate agreements between operators, in compliance with the rules on competition. The coverage must be considered realized by supplying the level of radio-electric signal useful for the establishment and maintenance of a network connection able to meet the standard operating requirements necessary to allow the end users the correct use, in a reasonable manner even in the environment indoor, 5G services as described above.

320. Having lowered the overall percentage of population to be covered, however, the Authority intends to address the coverage to a number of areas that are generally free of broadband communications services, and at the same time without mobile coverage with 4G type technologies, therefore attributable to those CD areas deep digital divide. In consideration of the above, regarding the possible technical-economic difficulties of covering these areas in general, the Authority also notes in this case the opportunity to provide a margin in the coverage of these areas. Therefore, the Authority considers it reasonable that contractors include within the population covered under the previous obligation, at least 90% of the population residing in each of the specific municipalities identified on the basis of an analysis conducted through the use of broadband map of the Authority, and listed in a table attached to this provision. In any case, the Ministry will be able, on the basis of its own assessments, to integrate the aforementioned list for no more than 20% of the total number of municipalities, at a reasonable 120, including a population of about 100,000.

321. With regard to what was highlighted in the consultation regarding the possibility of using another public entity to fulfill the coverage obligations, the Authority observes that the obligations envisaged are, as in all the procedures carried out so far, relevant to the frequencies acquired, without further conditions. Moreover, the Authority has no right, in the context of this provision, to involve other public entities to finance the construction of the networks of the winning bidders. However, it is not without prejudice to the fact that the public bodies invoked, in compliance with the rules on competition and state aid, can make available the infrastructures required to all the contractors to facilitate the achievement of the common objectives.

322. With regard to the above, the Authority also deems it necessary to introduce a third coverage obligation, which is also of a collective nature, so that, within 42 months of the availability of the frequencies, they are also required, through mutual agreements, to the main national road and rail transport routes, including those forming part of corridors identified at Community level, as required by Regulation (EU) no. 1316/2013, ensuring 5G qualifying coverage continues along these lines. In order to avoid an inefficient duplication of networks, where necessary and limited to the areas not covered by an urban perimeter, the hiring operator offers the roaming service (also in the form with frequency pooling) on the transport routes object of coverage to other operators on terms of reciprocity. The roaming service is a national one. In this case, the obligation is considered satisfied if at least one of the contractors provides a level of radio-electric signal that meets the standard operating requirements necessary to allow end users the correct use of 5G services, as described above, also taking into account the scenarios mobility of the receiving system including the relevant applications for the vertical sectors involved and relevant to the specific frequencies. It is without prejudice to the documented technical reason impeding the reaching of the coverage in a given area of the opposition of the owner of the site to the laying of the infrastructure, for example to cover

tunnels, tunnels, etc. It should be noted that the collective nature of the obligation represents an opportunity for contractors, which does not prevent any concurrent coverage where desired.

323. Finally, the Authority, while confirming the obligation of contractors, on an individual basis, to cover the main tourist areas, including those not permanently inhabited, nevertheless considers it appropriate to reduce the number of such tourist areas. These areas will first be identified by the Ministry, within two years of the award, even after hearing the ANCI, taking into account the number of tourists compared to the number of residents, as deemed appropriate by the competent local authorities, also in relation to the specificities of the localities : subsequently, these areas will be covered by a maximum number of 2,400 spread throughout the national territory. The coverage must be proportionate for each contractor, by subdividing the locations into lists associated with the blocks awarded, as detailed below.

324. The Ministry subdivides the aforementioned localities into a number of lists equal to the number of blocks in the 700 MHz FDD band. The lists are formed by ordering all the identified localities, subdivided by region, on the basis of the area's surface, proportionally between the lists. At the end of the construction of the lists, the Ministry carries out a draw by associating each list to a 700 MHz FDD lot. Each wager of the 700 MHz FDD lots is required, within 66 months from the association of the aforementioned list as a notifier, to cover at least 90% of the locations included in the list associated with the rights of use awarded, offering a service covering and starting the service identical to that set out in the previous individual obligation to cover 80% of the national population. Also in this case, the new entrant (but not for the same reason as above, the remedy taker) has 12 months more time to fulfill the obligation.

325. With reference to the difficulties expressed in consultation regarding the coverage of tourist areas, the Authority first of all observes the particular importance of the obligation to address a target for the diffusion of services in areas which by their nature often escape the traditional coverage of the networks carried out so far . The Authority then observes that no contractor must cover all the proposed areas, nor offer access to other operators in certain areas, ensuring the presence of a competitive dynamic. It is also presumed that most of the sites will be indirectly already covered in the context of the implementation of the other obligations, in particular the collective obligation of 99.4% of the population. However, it is deemed necessary to accept the request made in consultation to lighten and make the obligation more limited, providing for the introduction of a limitation of the obligation. In particular, for the fulfillment of the obligation on the part of the successful tenderer, coverage can be achieved for each identified tourist area, and where this area is verified to have no qualified coverage in an area, specifically identified[41] at the time of the inclusion of the same area in the list, through the verified installation of at most a new radio base station by the successful bidder itself. The overall number of locations to be included in the lists is also reduced, and the percentage of areas to be covered within each list, compared to what was proposed in consultation.

326. For each of the hedging obligations described above, the bidders may also use other frequencies they hold, provided they do not involve the use of other than consumer-type terminals normally available on the market that support 5G services in the 700 MHz band. FDD, respecting the quality of the service provided; moreover, the commercial service is always to be understood in the form of an offer directly to the public or through the offer of wholesale access, also in the form of

[41] Without referring to a particular contractor when identifying the area. The area could therefore be the geographical center or the representative center of the area.

roaming, MORAN, MOCN, or supply of slices. The possible use of network slicing functionality of the 5G networks for the offer of commercial services must be verified in the light of the principles of which, at present, Regulation (EU) no. 2015/2120, as previously described. The offer must in any case allow the operator purchasing the wholesale service to offer the service to the public in areas where there is a coverage obligation, with the same timing and the same procedures.

327. With regard to other issues highlighted in consultation, the following is noted. The fact that the contractors can also use other frequencies they possess, this is a measure also present in the regulation of many other European countries, and is based on the principle of optimizing investments and on the fact that the main objective of the measure it is the service (coverage) in a technologically neutral way. In any case, the use of other frequencies is a possibility and not an obligation for the bidders. If the contractor uses the specific frequencies of the 700 MHz FDD band, there are no conditions on the terminals; if instead the contractor covers some of the obligatory areas with other frequencies, the situation in which a user cannot exploit this coverage in continuity with other areas with a single commercial terminal must be avoided. To the new entrant (but not to the remedy taker), in the case of individual obligations, 12 more months are granted to achieve the goal, similar to what was previously done on similar occasions, considering the fact that it is presumably all beginning without a radio network already available.

328. In any case, it remains the right of every successful bidder to cover where and when he wishes with the frequencies awarded, in compliance with the minimum obligations indicated above.

329. The winning bidders are finally required to send the Authority and the Ministry annually the degree of progress with respect to the objectives set in the coverage obligations, for the purpose of their monitoring. On the point raised in consultation on the alleged failure to apply the "once only" principle, we limit ourselves to observing that this principle, formulated in the Communication of the European Commission COM (2015) 192 final, of 6 May 2015 laying down the "Strategy for the digital single market for Europe" provides that the public administration uses the information already in its possession on citizens and businesses in order to avoid asking the same subjects again. In the present case, in the reply to a single request, the bidders are asked to send at the same time to the Authority and MISE information not yet available to these administrations; moreover, this submission can be performed simultaneously and in digital form, with no particular burden on the successful tenderer.

Band 3600-3800 Mhz

330. As regards the coverage obligations in the 3600-3800 MHz band, in consultation the Authority proposed a coverage obligation concerning municipalities with less than 3,000 inhabitants, providing coverage of at least 10% of these, which then formed the mandatory list, with a ready-to-deliver mechanism, ie a 5G service offer following the application. The winners of the lots (with appropriate variations in the case of the three proposed packaging options) could freely choose which of those municipalities wished to cover, in compliance with the minimum size of the mandatory list, and then to do so progressively within 72 months. Once a successful bidder had declared a municipality ready to offer 5G services, any request had to be satisfied in that municipality by the successful tenderer who had chosen it. All the bidders could also choose the same municipality. For all the municipalities that at least one contractor had not placed on his mandatory list, there was the right for a third party (intended as an operator that had no mobile frequencies up to 3.8 GHz, also a service provider) to acquire in leasing the frequencies against the payment of a fee to the successful tenderer and to

proceed with the coverage (always intended as ready to deliver) for those municipalities (therefore mandatory use-it-or-lease-it).

331. With reference to the issues mentioned above, the respondents highlighted the following.

332. Some respondents, in sharing the proposed coverage obligation in general, proposed to increase the scope of the coverage obligation to municipalities with a population below 5,000 inhabitants (a number that corresponds to the definition of a small municipality of to the Law of 6 October 2017, No. 158, concerning the support and enhancement measures of the said centers) instead of 3,000, so as to capture about 10 million inhabitants instead of 6 (a respondent, on the same line, proposed as a threshold 8,000 inhabitants). According to a respondent, however, this obligation should be generalized to the population, i.e. without providing mandatory lists, and provide for an initial moratorium of 3-5 years. Another respondent has shown that in addition to bringing the limit to 5,000 inhabitants, it would be necessary to increase the percentage of the obligation list to 20%, also introducing specific reporting obligations. This is also to strengthen the supervisory activity in order to be able to possibly move municipalities from mandatory lists to the free list.

333. Some respondents noted that demand-driven coverage could be easily circumvented and that deadlines and intermediate milestones appear excessively loose, thus demanding stricter deadlines and a timely reporting of the state of the art of mandatory coverage, in a such that the municipalities where the frequencies are not used can be immediately inserted in the "free" list.

334. A respondent highlighted the criticality underlying the possibility that a successful bidder, declaring 100% of the municipalities in his mandatory list, adopts pre-emption behavior towards interested third parties, citing for example the lower band where current operators holders of the rights of use have in the past refused to grant the leased frequencies. In this regard, the respondent proposed to eliminate the demand driven approach.

335. A respondent, who proposed the establishment of a block reserved for new entrants also in the 3600-3800 MHz band, has found that it is possible to introduce for this possible block reserved specific and diversified coverage obligations with respect to the other lots, for which however, he considered the proposed system to be acceptable in consultation.

336. One respondent has shown that even the coverage obligations in the 3600-3800 MHz band should be able to be acquitted also with other bands, possibly using the frequencies at the end of the period and that, similarly to the 700 MHz band, Infratel should be involved by the regulator by providing specific infrastructures in some areas to market failure of the C and D clusters of the BUL strategy.

337. One respondent noted that the requirement of retail supply based on the application to any resident of a municipality included in the mandatory list would be inapplicable, and also the obligation to publicize the willingness to cover the common data by the successful tenderers themselves. it would not be proportionate.

338. Another respondent indicated that the mandatory coverage plan should be complemented by the prescription of the subdivision by annuity.

339. One respondent claimed that for this band should not be required coverage obligations, or at most places in a similar way to those previously defined for the 2.6 GHz band, based on a minimum percentage of population. This is because the band will presumably be used as a capacitive layer on macro-sites in populated areas. In its view, the envisaged obligations are more relevant to FWA scenarios that are not fully in line with the 5G system development requirements. The respondent also indicated that the model proposed in consultation would be further inefficient in consideration of the overlap of the areas related to the present coverage obligations and the areas where other interventions are present, according to the model of the "Eurosud" project, with interventions c.d. incentive and private ownership of infrastructures financed by public grants, and the Infratel model, with tenders currently underway, which sees public ownership of the infrastructures financed by tender with direct intervention by the State and private management. Along the same lines, a respondent indicated that duplication should be avoided with the provisions already set out in the recent Infratel tenders.

340. One respondent objected to the use-it-or-lease-it requirement that his notice would severely limit the long-term capacity of the tenderer to take action, as it may no longer have his frequencies in a time when it might need it for its traffic growth. Moreover, according to the respondent, this model, as foreseen at the municipal level, would increase fragmentation and would result in an inefficient use of the spectral resource due to the need to synchronize multiple networks in the same area.

341. A respondent, in sharing the demand driven approach of the obligation to cover, also believes that this approach must follow market logic, without thereby providing for an obligation to that effect, which, in its opinion, as outlined would be configured as a universal service obligation on a mobile network that is not required by current legislation.

342. A respondent who opposed the coverage obligations in this band said he was in favor of the access obligation based on the use-it-or-lease-it principle, on commercial terms, in any case considering that access obligations should exclude operators who have frequencies up to 28 GHz and not only up to 3.8 GHz as in the proposal in consultation.

343. With regard to the definition of the characteristics of the 5G services subject to the obligation, most respondents indicated that the Authority should not specify such features in a timely fashion. In particular, one respondent noted that at present there are no preconditions for such a precise definition, and that the characteristics of the services must not be sterilized by the regulator but left to natural market developments. Along the same lines, some respondents, did not consider it appropriate to specify that the obligations proposed by the Authority should concern the 5G, but only that certain performance requirements must be met.

344. A respondent, in sharing the system of the obligation in general, noted two critical issues. The first concerns the fact that the coverage of a municipality must have as its starting point the development of a fiber-optic network such as that which is developing in the context of the national BUL project. The second concerns the imposition of economic conditions for the fulfillment of service requests, which does not take into account possible difficulties due to the characteristics of radio signal propagation or the orographic peculiarities of the territory and the typology of urban development characterizing the territory. Therefore, this respondent proposed two changes: 1) the introduction of a clause stating that the hedging plan may be susceptible to changes in the absence of optical infrastructures and site availability, the latter appropriately documented by the operator; 2) the elimination of the price condition in the provision of the service.

345. One respondent noted that the use-it-or-lease-it requirement could conflict with the growth of an industrial project, as the development of a hedge is a gradual process that evolves according to market opportunities. and investment capabilities that can also evolve over time. Therefore, in your opinion, it would be more appropriate to exclude all forms of automatism and make leasing possible in the municipalities of the free list where the contractor does not plan to start his services in the following 36 months. According to the respondent, what was proposed by the Authority would also favor a fragmentation of the use of the spectrum with the consequent obstacle to the development of 5G services on a national scale.

346. One respondent underlined the technical difficulties on co-channel coordination that could arise in the case of leasing between the successful bidder and transferee and potentially with other non-synchronized operators operating in the adjacent band. In its opinion, co-channel coordination could follow the rule of Recommendation 15 (01) but should not penalize the licensee, and also the possibility to update the free list could induce complexity due to possible fragmentation and the increase of the parties involved . This respondent therefore noted the need that, if the obligation is maintained, the related mechanism is coordinated by the contractor, with interference mitigation measures, including synchronization between equipment, to be paid by the operator who intends to use the frequencies not employed by the successful tenderer. Alternatively, the respondent proposed to leave the possibility of free leasing on the basis of voluntary agreements and that these should also be possible outside the list of municipalities. Still on the same point, another respondent proposed instead of leasing the obligation to offer wholesale capacity or services, in which the contracting operator would remain obliged to set up the network.

347. One respondent noted that the areas covered by the obligation to cover overlap with those set out in the Infratel tenders where the concession holder has similar objectives of providing an FWA service. Therefore, according to the respondent, the introduction of the obligation forces the development of competition with respect to the concessionaire by modifying the pre-existing scenario. In this sense, the respondent requested the elimination of coverage obligations.

348. A respondent expressed the opinion that the public concession holder of the Infratel tenders should have a pre-emptive right to meet the coverage obligations in the white areas where FWA coverage is envisaged, under regulated conditions, and also in excess of the cap of 100 Mhz.

349. On the basis of the foregoing, the Authority, with regard to coverage obligations in the 3600-3800 MHz band, resolves the following.

350. The propagation characteristics of the 3600-3800 MHz band, as mentioned, are not similar to those of the 700 MHz band. Therefore, it is considered appropriate to associate the rights of use of the frequencies in this band with different coverage obligations, not specifically oriented to the general coverage of the territory, but to a form of offer of innovative services meeting the requirements defined by the 5G standard. The coverage is intended to meet the standard operating requirements necessary to allow end users the proper use of 5G services such as to ensure the development of applications for the deployment scenarios expected on the relevant frequencies, and in particular ensuring in case of eMBB usage scenarios a nominal download speed of not less than 30 Mbps. The Authority reserves the right to verify the adequacy of these requirements for 5G services, as also required in consultation, in order to ensure the widest use of the same by the end users.

351. Furthermore, it is considered appropriate that such coverage is "demand driven" and localized on areas that in general, but not necessarily, are complementary to those envisaged in the case of the 700 MHz band. Therefore this coverage is to be understood on the basis of the request by potential users located in an Italian municipality with a low population, or where a broadband digital divide is possible, according to the "ready to deliver" method, already introduced with the previous regulation pursuant to resolution no. 659/15 / CONS.

352. The obligation in the 3600-3800 MHz band must be realized with the specific frequencies assigned, unlike the case of the 700 MHz band; otherwise, being able to use other frequencies, there could be some elusions. In fact, the complex of 700 MHz obligations (which can also be achieved with other bands) does not provide, as observed by the participants in the consultation, the simultaneous and timely provision of a 5G service to users. It is therefore of a different nature from the obligation laid down here for the 3600-3800 MHz band, for larger batch sizes. In this band, the minimum coverage obligation envisaged is however relatively limited, leaving the market, through a dynamic between the business plan of the bidders and the interests of third parties incentivized by a package of access measures, the task of finding the correct balance . In this sense, the coverage is demand driven, to avoid excessive dispersion of investments in areas where there is already coverage with other bands deemed satisfactory by users, which therefore represent one of the forces at stake, in the request for services in this specific band intermediate 3600-3800 Mhz.

353. As noted in the case of the 700 MHz band, it is not considered that the Authority should commit other public bodies to finance an obligation relevant to the use of specific frequencies assigned for burdens in a public tender. The Authority also does not believe that the obligations introduced pose competitive problems between the bidders and the public tender concession holder for the BUL project, given that the frequencies covered by this provision are expected to be awarded by public tender since 2012, and have been the subject of measures pursuant to resolution no. 659/15 / CONS, published in December 2015, from which the measures introduced today largely derive. Furthermore, the obligations introduced are limited in scope and specifically provide for the supply of 5G-type services, but also at the retail level. Also, no pre-emption can be granted to any subject, as there is no provision in this band, leaving obviously open the possibility that even the Infratel tenders can participate and win the frequencies, if so desired.

354. In any case, from a systemic perspective, in order to better target the initiatives aimed at providing innovative services of ultra-broadband connectivity, avoiding as said an excessive dispersion of the related investments, also taking into account that the projects concerning the BUL national strategic plan, relating to calls for tenders managed by Infratel, already provide coverage with said services of real estate units related to the white areas grouped in the C and D clusters, it is believed that the demand driven coverage obligation envisaged here must be focused on applicants who belong to real estate units of each municipality, with population below 5,000 inhabitants, which, according to the aforementioned projects concerning the BUL plan, are not affected by ultra-broadband connectivity services. The Ministry, after consultation with Infratel, may publish the list of the aforementioned real estate units in the municipalities envisaged, with the necessary level of detail, in order to determine the mandatory basin, which remains fixed at the time of the call for tenders. This being understood that each winner of the frequencies in question is free to offer its commercial services in any area of the national territory, in accordance with the rights of use acquired through the auction procedure in question, and in compliance with what else provided by present provision.

355. This obligation, seen in synergy with the coverage obligations proposed for the 700 MHz band (where the urban areas, the larger municipalities, the rural and tourist areas and the transport routes prevail in terms of coverage obligations) appears in able to direct the broadband wireless coverage of the country and the provision of innovative services to the users where it is most requested. In consideration of the definition of the packaging of the lots and the relative cap provided previously, it should be noted that the demand driven coverage obligation is the responsibility of the 3.6-3.8 GHz bandwidths who have acquired a large spectral endowment, considered adequate in at least 80 MHz national basis, as well as to those contractors who obtain such endowment by adding to the resources awarded in the 3.6-3.8 GHz band the frequencies in the 3400-3600 MHz band of which they are in possession, or of which they are also used through agreements.

356. Each contractor who is responsible for the above-described demand-driven coverage obligation must then submit to the Ministry, within 90 days from the award, an obligatory list of municipalities to be covered. This list must include, for each region, at least 10% of Italian municipalities, among those with a population of less than 5,000, where there are real estate units that require coverage as specified above. With respect to the orientation envisaged in consultation, it is therefore considered to welcome the proposal that emerged in this forum to increase the threshold of inhabitants of the municipalities subject to the mandatory list, in order to increase the number of municipalities and the relative population that will benefit from the mandatory coverage of 5G services, always on demand, and in line with the definition set by the aforementioned legislation for small municipalities. In fact, the obligation of coverage declined through the mandatory list aims at providing services to the population of specific municipalities, without replacing systematic and generalized coverage mechanisms, thus leaving the contractors free to choose in which municipalities within a certain category offer a minimum level of coverage, reasonable and proportionate. A municipality can be present in the mandatory lists of all the bidders. The percentage indicated is minimum, and therefore each successful bidder can increase it if desired.

357. Furthermore, on the basis of the findings of the consultation, it is necessary to make some corrections to the mechanism proposed in consultation, with reference to the timing and type of service. Regarding the timing, the Authority observes that this has been defined taking also into account the availability of the equipment, as explained also in consultation. To this end, any reference to the previous resolution no. 659/15 / CONS is not relevant because it regulated an LTE-type ecosystem, in which the apparatuses were, and are, already available. However, considering the progress made in the meantime and the current declination of the coverage obligation, the Authority believes that it can reformulate the deadlines proposed in consultation.

358. For each region, each successful bidder will have 72 months from the award, to prove that he is ready to supply all the municipalities declared on his mandatory list, with linear intermediate milestones from the 24th month and then annual until 72 ° month, a connectivity service, both at retail and wholesale level chosen by the applicant belonging to the identified area, able to satisfy the requirements described above for the various types of 5G applications. The connectivity service must be provided on terms, including price, equivalent and non-discriminatory with respect to the rest of its users and without entering any greater burden arising from the location of the applicant. The declarations submitted become part of the obligations associated with usage rights.

359. It is also considered opportune that, following the actions referred to in the BUL projects related to the Infratel tenders in the final balance of the uncovered real estate units in the areas envisaged, the contractor, for each municipality present in his obligation list, may declare interested

in providing the service (always in demand driven mode) also to applicants belonging to the aforementioned real estate units. The Ministry, possibly heard by Infratel, will provide the relevant data to the bidders as soon as they are available.

360. At the beginning of each period relevant to the obligation, each successful bidder shall make known, by public billposting or equivalent, or according to the procedures set out in the contract notice, in each municipality subject to the obligation and present in the on the one hand, the availability to supply the service to the users located within the municipality itself and the modalities for carrying out the requests for commercial activation of the service. The Ministry may carry out similar forms of advertising for that municipality in agreement with the municipal authorities or the ANCI or Infratel. Subject to any technical limitations deriving from compliance with the sharing model, which must be individually justified in relation to the impossibility of providing service to a specific applicant, must be exceptionally specific.

361. In order to incentivize the coverage of 5G services on a larger number of Italian municipalities, allowing an extremely efficient exploitation of spectral resources, the Authority considers it appropriate to introduce an additional measure, which is configured as an obligation to use-it- or-lease-it. In particular, all the national municipalities with less than 5,000 inhabitants that are not included in the mandatory lists of all the contractors constitute a c.d. "Free". This list can be modified in relation to the updates of the winning plans and is published on the Ministry website. For all municipalities belonging to the free list, there is the right for any third party, intended as an operator that does not have mobile frequencies (up to and including 3.8 GHz), also a service provider, to lease the frequencies against the payment of a fee to the successful tenderer and proceed, with the same procedures described above, to cover those municipalities (understood as ready to deliver at least to requests from entities that relate to real estate units in each municipality as before not affected by the BUL projects referred to in notices managed by Infratel and, moreover, to applicants who, although interested by the aforementioned initiatives, are eventually discovered). Leasing refers to the entire municipality, also for the purpose of optimal management of any interference, except for different agreements between the parties, also necessary to take account of any previous coverage by the successful tenderer. This third party can also apply to the contractor for the provision of services to those applicants located in the property units of municipalities present in the list of obligatory bidders and subject to Infratel tenders which may have been left uncovered and for which the contractor has expressed the coverage option.

362. The successful tenderers for the lots to which the obligation is due may over time add other municipalities to their mandatory list, with the exception of those for which the frequency block has been leased by the third party as described above.

363. The aforementioned third party that intends to access the use of frequencies is required to request a special authorization from the Ministry for the management of the network, if it is not already in possession of it, and for the use of the frequencies obtained under leasing. The Ministry may identify simplified procedures for the authorization of this type of leasing, for example, but not necessarily, scheduling requests periodically and / or establishing any procedural agreements with the Authorities involved. This third party must submit to the Ministry its plan to use the frequencies in the municipality indicated, which is also published on its website. The details of this plan will also be published on the Ministry's website as an update to the free list. This subject is held to the same obligations of the winning bidders in relation to the use of the frequencies and to the respect of the sharing model.

364. In order to efficiently use the spectral resources in question within the aforementioned mechanism use-it-or-lease-it, it is believed that the management of coexistence measures that may be necessary to avoid interferential problems in the shared use of frequencies , including mitigation and coordination techniques, including synchronization techniques, must remain under the control of the successful tenderer, who, however, cannot impute technical reasons for denying applicants the use of frequencies according to the aforementioned methods.

365. As regards the possible awardees of a spectrum in the 3.6-3.8 GHz band of 20 or 40 MHz (i.e. one or two 20 MHz batches), it appears reasonable and proportionate to associate the respective rights of use with an obligation to coverage aimed at ensuring the effective use of frequencies and avoiding the acquisition of the spectrum with mere speculative intent. In particular, it is considered necessary to associate to each 20 MHz lot an obligation, borrowed from the provisions of the Authority for the 2.6 GHz band, with resolution no. 282/11 / CONS, and comparable with the obligations established for the contiguous band 3.4-3.6 GHz, with resolution no. 209/07 / CONS, covering 5% of the population, for each region, with type 5G services as described above, within 48 months from the release of the rights of use. In the event that a successful bidder wins both 20 MHz lots, the aforementioned obligation is to be understood as cumulative, i.e. with a target of covering 10% of the population, for each region. Furthermore, this obligation may be absorbed by the demand-driven coverage obligation on municipalities in the event a successful bidder wins the 20 MHz lot together with an 80 MHz lot. The Authority reserves the right to subsequently define a hedge obligation plan, in a justified and proportionate manner, for the aforementioned holders of rights of use of a spectrum of 20 or 40 MHz in the band in the event of any subsequent consolidation or use agreements of frequencies with subjects having frequencies in the band 3.4- 3.6 GHz.

6. Access obligations associated with usage rights

366. In addition to the obligations for the use of frequencies and start-up of the service, and the coverage obligations, which are aimed at ensuring the effective use of frequencies and the provision of specific services with certain quality levels, in specific geographical areas, directly by the bidders, the Authority in consultation, as in the past in similar proceedings, proposed additional obligations generally included in the category of access obligations.

367. The envisaged access obligations were aimed at the important objectives of promoting competition, efficient use of resources and promotion of the development of advanced services in a 5G perspective. The Authority believed that, in a particularly evolving moment such as the present, where the forthcoming 5G technology promises not a simple evolution of networks, but also a revolution in access systems and the ability to support advanced services, the three objectives first indicated are inherently connected. In fact, ensuring, in a reasonable and proportionate manner, that other subjects, in addition to mere contractors, can, under certain conditions, make use of the frequencies, makes possible an increase in potential competition, with indirect benefits for citizens, and always efficient use of resources, as it creates an incentive for some subjects also different from the awardee to use the scarce resource, both the development of innovative services that by their nature, today cannot be simply assumed and codified by the regulator, but they must be left to natural market developments.

Band 700 Mhz

368. In consultation, the Authority indicated that it did not consider it appropriate to introduce access obligations for the 700 MHz band, but only for the 3600-3800 MHz and 26 GHz bands.

369. With reference to the above question, the respondents highlighted the following.

370. One respondent noted that a specific access obligation should also be introduced for this band, both for electronic communication operators, including MVNOs, and for service providers specialized in specific vertical markets. In particular, the obligation, according to the respondent, should provide for a wholesale offer, under regulated, fair and non-discriminatory conditions, satisfactory with all frequencies below 1 GHz by the obliged tenderer, with a possible discount for the benefit of the obligor if access is made by a new entrant who has obtained lots in the 3600-3800 MHz and / or 26 GHz bands.

371. One respondent pointed out that in this band should also be made compulsory access to any other incumbent operator who has not participated in the tender or has not been awarded, or in the alternative to another incumbent who has not participated in the tender in consortium with at least one new entrant.

372. One respondent agreed with the Authority's proposal not to introduce access obligations, which in addition to not being justified, would constitute an obvious discrimination with what was done in the past in access to frequencies in the bands 800, 900, 1800 MHz .

373. Unlike a respondent, he expressed the opinion that, consistent with the introduction of access obligations to the 3600-3800 MHz band, similar obligations should also be introduced for the 700 MHz band, as well as for the 800 and 900 MHz bands, in favor of operators who do not have rights to use frequencies in this range. According to this respondent, access should take place on fair and non-discriminatory conditions and, in areas covered by the coverage obligation served by other frequencies, the obligation will have to be extended to these frequencies. Along the same lines, a respondent has said that it would also be necessary to include wholesale access obligations for the 700 MHz band, also in the form of roaming, MORAN, MOCN, or supply of slices, or other regulated technical forms in favor of new entrants.

374. One respondent indicated that, unlike the proposal in consultation, an obligation to access the 700 MHz band and the 26 GHz band should also be introduced. The respondent also expressed the wish for a regulatory intervention for the setting of pricing and technical specifications of the wholesale access conditions of third-party operators at the frequencies of the contractors. The lack of access obligations in the 700 MHz FDD band would be contrary to the principles, referred to by the Authority itself, of promoting competition, efficient use of resources and promoting the development of services in a 5G perspective and contrary to the same principles set also in the Communications Code .

375. One respondent found that the 5G development roadmap for m-MTC applications was subject to updates for which the development of an NR interface is not expected soon but will use the existing NB-IoT standards and LTE-M, i.e. the same technologies as the 800 and 900 MHz networks. Therefore, since this type of application should be satisfied primarily with the 700 MHz band, the respondent requested to evaluate the conditions of wholesale access to that band in a coordinated manner. with the 800 and 900 MHz bands.

376. One respondent noted that the MVNOs and Full MVNOs will also play a key role in the new 5G ecosystem. Therefore, this subject deemed it appropriate that the Mobile Host Operator (MHO) be allowed to enable 5G capabilities also with regard to the hosted MVNO, and that the MHO adopts standard interfaces.

377. On the basis of this the Authority, with regard to the access obligations in the 700 MHz band, resolves the following.

378. The Authority believes to confirm that these access obligations are relevant only to the 3600-3800 MHz and 26 GHz bands. For the 700 MHz band, on the other hand, the presence of generalized coverage obligations as described above, also to be carried out collectively , already ensures the conditions for achieving the stated objectives, naturally remaining free to provide access on the basis of commercial negotiations. In particular, the Authority observes that the 700 MHz spectrum is assigned with a competitive procedure with significant economic values, and is associated with a robust package of coverage obligations aimed also, but not exclusively, to allow competition based on infrastructure that until now has produced a reasonably competitive and innovative market, as well as internationally recognized.

379. However, the Authority considers that it accepts certain requests made in consultation to allow access to the 700 MHz FDD frequencies for a limited period, only to new entrants who have been awarded 700 MHz FDD lots. This is in line with what was adopted in the past by the Authority in the case of the 800 MHz band and is aimed at allowing the new entrant initial conditions facilitated in the launch of its network. These considerations lead to not being able to consider the remedy taker as beneficiary of the measure, as an operator that, following the remedies imposed, already owns appropriate roaming and RAN sharing agreements with another incumbent operator.

Band 3600-3800 Mhz

380. With regard to access obligations in the 3600-3800 MHz band, during the consultation the Authority had proposed that the contractors should allow access to third parties (defined as subjects not in possession of radio-mobile frequencies, up to 3.8 GHz included, also a service provider), with priority for the deployment of 5G services nationwide. The proposed access was on fair, commercial and non-discriminatory terms, and such that, where the contractor did not intend to cover certain areas that the service provider requesting access considered necessary, the coverage could be achieved by the latter through a frequency leasing agreement, or other commercial agreement, in that area (use-it-or-lease-it). This is in addition to the use-it-or-let-it-it mechanism described above in order to achieve the coverage obligation on municipalities with less than 5,000 inhabitants, which can rightly also be considered an obligation to access.

381. In consultation, in the case of the packaging option of 4 50 MHz batches, an assessment was also requested on the possibility of frequency pooling for the benefit of the applicant access, in order to make available, to the accessing subject, a capacity greater than that which can be guaranteed by a single contractor.

382. With reference to the above proposals, the respondents highlighted the following.

383. Some respondents represented that the access foreseen in the Authority's proposal should be in favor of all the subjects entitled to the offer of electronic communication services, without the

limitations set in the text in consultation. In particular, some have pointed out that those subjects, even in possession of frequencies in the mobile radio bands, that should not be awarded the lots in this band, with the proposal in consultation would be excluded from access (on obligatory conditions) to such important spectral resources in 5G perspective, with detriment to its customer base.

384. In any case, one respondent said he was against the access obligation, since the type of wholesale access could make it difficult to promote flat-rate offers that require unlimited data consumption regardless of the frequency band, would limit the ability to make independent business choices for the operator, and therefore would pose competitive bias, and finally could give technical complications if the 3600-3800 MHz band is used as a downlink band coupled with another band for uplink for reasons of efficiency of network.

385. Some respondents did not agree that the obligation of access foresees a priority for the diffusion of services on a national scale, as this modality could be penalizing for the operators that offer services on a local scale; furthermore, in its view, this limitation appears to be a contradiction with the very objective of the measure and constitutes discrimination. Similarly, a respondent expressed concern about the possibility envisaged in consultation to offer 5G services also in wholesale mode, which, in his opinion, combined with the national size of lots of frequencies, could give rise to competitive problems by disfavoring local operators.

386. One respondent said he was in favor of the obligation to use-it-or-lease-it, as long as the leased network remained open to the tenant's clients, too, with arrangements to be agreed. One respondent proposed that the price of the lease is commercial and not tied only to the frequency fee.

387. A respondent, reiterating that the use-it-or-lease-it type of access obligations should take place on commercial terms, has observed in any case that the obligation should exclude subjects with frequencies up to 28 GHz and not up to 3.8 GHz as in the Authority's proposal.

388. One respondent represented the imposition of access obligations for the band in question not justified, as the competitive dynamics of the Italian market and the wholesale services market through MVNO / ESP, work well and already ensure offers cost-effective and the development also in the 5G context, or proportionate, as the development of the 5G is still today in its embryonic state and it is not possible now to provide technical methods of access and types of use. Basically, according to the respondent, this obligation would reduce the incentives for investments by the assignees.

389. One respondent indicated that the proposed access obligation could generate a pulverization of allocations such as to render inefficient spectrum management and interference between recipients and tenants, and would also be excessive, technologically inefficient and risky for the competitive developments of fifth generation services.

390. A respondent, stressing again the importance of synchronization between the networks, has shown that the use-it-or-lease-it mechanism, in the absence of coordination, could cause potential problems of co-channel interference between operators, with the consequent necessity in this case of zones of respect. Therefore, this respondent reiterated the need that, if the obligation is maintained, the related mechanism is coordinated by the contractor, with interference mitigation measures, including synchronization between equipment, to be paid by the operator who intends to use the frequencies not used by the successful tenderer.

391. Regarding the economic conditions, a respondent requested that the obligation to access be based on costs, while another respondent noted the opportunity to eliminate any provision in this regard, leaving to the negotiation between the parties the determination of the access price .

392. A respondent, in agreeing with the Authority's proposal on use-it-or-lease-it, required specific price and technical regulation of the wholesale access conditions applied to third parties not awarded.

393. One respondent noted that, since the Infratel call licensee already has an FWA-type service obligation in the uncluttered areas, the leasing obligation should not be required to avoid repercussions on the operator's business plans.

394. With regard to frequency pooling in the case of the hypothesis of 4 50 MHz batches, some respondents, although largely unfavorable to this packaging option, considered that this measure could be shared. In particular, some pointed out that the expected cap should in any case be respected.

395. Otherwise, some respondents said they were against a possible pooling obligation. Among these, one respondent noted that this obligation would run counter to the need to have all the elements and the framework of rights and obligations before the tender itself, and would also be difficult to manage from a technical point of view as it requires use of complex technical methods (for example MOCN) to which operators cannot be obliged as part of the industrial strategies of each operator. Another respondent, along the same lines, indicated that this type of obligation would be theoretical, since technical complexity in practice makes it unachievable.

396. One respondent expressed the opinion that the pooling obligation should be used only in rural areas, where it is more likely to provide services at maximum speed, compared to urban areas, where the amount of spectrum is not the main constraint on 'offer of services at maximum speed, which is unlikely to be reached for all users of the cell.

397. Some respondents, those in favor of those who oppose the pooling obligation, have asked in any case that a definition of pooling is provided in order to have a clearer understanding of how to use it in this scenario of sharing the spectrum.

398. On the basis of this the Authority, with regard to the access obligations in the 3600-3800 MHz band, resolves the following.

399. In view of the definition of the packaging of the lots and the relevant cap provided previously, it should be noted that the access obligations are the responsibility of the frequency contractors in the 3.6-3.8 GHz band which have been awarded frequencies for at least 80 MHz and those contractors who sum up the frequencies in the 3400-3600 MHz band which they possess, or whose use is also through agreements, reach at least 80 MHz on a national basis. This is because only a conspicuous spectral endowment, considered congruous in the aforementioned value, allows the contractor to be able to manage both the offer of its services and the management of access by third parties. The Authority reserves the right to subsequently define a plan of access obligations, in a justified and proportionate manner, to be borne by any holders of rights of use of a spectrum in the 3.6-3.8 GHz band of 20 or 40 MHz (ie up to two batches of 20 MHz) in case of possible consolidations or agreements to use frequencies with subjects having frequencies in the 3.4-3.6 GHz band.

400. In order to encourage the development of the 5G innovative services offer also by new entities, in any case different from the contractors, it is appropriate to provide for an obligation of access to third parties that are not already in possession, directly or indirectly, of radio-mobile frequencies, and obviously of frequencies in the same band. This is intended to facilitate access for subjects other than traditional mobile operators. These subjects could therefore be, in addition to fixed network operators, also service providers interested in the provision of specific 5G services. The access obligation provides for fair, non-discriminatory commercial conditions. The Authority shares the fact, emerged in consultation, that there should be no particular priority for the deployment of services on a national scale, even if these are not naturally excluded.

401. Unlike the low bands, however, where the use of frequencies by the winner usually occurs through a coverage layer that can be specified on a large scale (e.g. regional, national, etc.), in the case of the band In question, even in areas where the same contractor has hedging obligations, it may happen that the applicant access needs the service in areas where the contractor has no coverage or, on a commercial basis, has an interest in covering. In such circumstances, in order to always allow the maximum diffusion of the services, it is believed that the above obligation must be declined in the form of sharing, and therefore, in the areas that the contractor does not intend to cover, the operator or the service provider, duly authorized, and upon payment of a fee, will use the frequencies with an appropriate commercial agreement for the provision of the service. The agreement will specify the type of sharing of frequencies and if this should configure the hypothesis of leasing.

402. In the current variability of the 5G scenarios that are assumed to be developed in the future, in particular in terms of type of services and use cases, the obligation outlined above represents a balance between the various needs, ensuring the flexibility necessary to accommodate the much of the hypothetical cases.

403. Regarding the issues raised in consultation, the Authority first of all considers that it is not possible to define all the possibilities of use and access at the moment, also taking into account that there are still no experiences of roll out and development of the 5G networks, nor of the relative methods of use according to the various expected use cases, and therefore it is necessary to limit the regulation to general measures, expressing on the detailed issues of the guidelines. Regarding the possibility that the contractor can also use the frequencies granted to the access, the Authority considers that the share-with-use-back should remain a possibility, left to commercial negotiations, and not an obligation , otherwise the obligation itself would be distorted. Regarding the requests to regulate the price in areas not covered, it is considered unjustified to recognize other costs than those of acquisition of the spectrum, since the use would insist on areas that the contractor does not cover, remaining open the possibility that the cost access, on the wishes of the parties, may also include other remunerated services. It is therefore necessary to indicate the price level in the fee for frequencies to be used in areas where the contractor does not cover on his own, to avoid any possible dilatory or exclusionary effects on the part of the successful tenderer.

404. With regard to the question of allowing the access to all operators in general (excluding only the assignees in the 3.4-3.8 GHz band), the Authority first observes that the spectrum is a scarce resource, which is assigned by law on the basis a competitive procedure which by its nature can not satisfy all applicants. To this must be added that the provision of an obligation of access to all operators appears to entail the risk of discouraging competitive dynamics for the acquisition of the lots of the band in question and to favor opportunistic behavior in the context of the tender procedure. Moreover, in the absence of the limitation envisaged by the Authority, the number of subjects to be

considered potentially beneficiaries of the aforesaid access measure could in general be very high, as well as the geographical extension with which these individuals typically operate, with consequent significant impacts on resources of the bidders to whom they could access. In any case, operators who do not win the resource can use alternative solutions or negotiate access to commercial conditions. Furthermore, with regard to the observation that the obligation should exclude all subjects in possession of frequencies up to 28 GHz and not up to 3.8 GHz, it is noted that, as already widely reported, the band in question now appears to be an intermediate band between coverage and capacity, while the upper bands (26 and 28 GHz) have propagation characteristics that cannot be compared to the typically radio mobile bands.

Band 26.5-27.5 Ghz

405. With regard to the 26 GHz bandwidth access obligations, during the consultation the Authority had proposed that the contractors should have the obligation to allow access also to third parties (defined as service providers, not public telecommunications services). If the request for access concerned an area where there was no coverage, the contractors had to manage the agreement collectively or delegate to a trusted third party the task of regulating the use of frequencies; in this case the applicant for access and the contractors could assign to a third party (the same or another) the task of realizing the network coverage (with the ownership of the frequencies that remained in any case for the winner). The obliged operators also had to publish a plan for the management of access requests and keep it updated, even if based on changes that the Ministry and the Authority, on the basis of their respective competences, could request during the development of services and management experience.

406. The access obligation was also extended in all those public or private funds with limited public area, in case the coverage with the frequencies at 26 GHz had requested the permission of the fund manager, in this case to favor of the other contractors. Non-exhaustive such funds were referred to as ports, airports, stadiums, concert arenas, cinemas, theaters, national parks, subways, etc.

407. With reference to the proposals indicated above, the respondents highlighted the following.

408. In general, the overall plant proposed by the Authority was well received and many respondents appreciated its innovation and the ability to allow the very efficient use of the spectrum. Many respondents then presented considerations on aspects of detail.

409. As also emerged from the comments made by the participants on the theme of packaging and how to use the blocks, most respondents favorably saw the use of club use frequencies, considering it very interesting and able to exploit the resources available in the 26 GHz band were extremely efficient. In this regard, some subjects stressed the importance of coordination among the users of the frequencies in order to avoid possible interference in the sharing scenarios, to be managed also on the basis of any indications that will be available. in ITU and 3GPP.

410. One respondent represented that the pooling measure should be an opportunity and not an obligation, thus proposing that it can only take place on the basis of commercial negotiations, without any taxation. Similarly, a respondent pointed out that given the preliminary situation of technical knowledge of the use of the band, in application of the principle of legal certainty, the obligation of access, although shared in principle, should not be imposed.

411. A respondent, in place of pooling obligations, expressed preference for a sharing or leasing obligation in order to minimize disputes between operators. In this regard, the contracting parties should be required to publish a framework contract to regulate the contractual, technical and operational aspects of sharing. According to the respondent, the sharing obligation, which should not be extended to the entire band, would also allow the assignee to be able to use their own frequencies, for example at a later time, avoiding that they are occupied by other users.

412. A respondent did not consider the use of club use to be acceptable, considering it difficult to implement and not compatible with an efficient infrastructure development plan. Moreover, this respondent noted that the terms of reversibility, duration and operating conditions should be specified, and that there are technical doubts about the possibility of a terminal operating in transmission over a 1 GHz band.

413. With reference to the proposed access obligation, some respondents, in their view shareable, have asked that the beneficiaries of the access be public telecommunications operators so as to allow everyone to enrich their offer, also for the coverage of areas locals. Along the same lines, a respondent did not agree with the requirement that the access obligation be limited to non-electronic communications operators, considering it discriminatory towards those electronic communications operators operating on a local basis for which participation would not be sustainable to the allocation procedure foreseen for this band, moreover in the hypothesis of maintaining the national dimension of the lots. In the opinion of some, in fact, in the absence of an obligation, access based solely on commercial conditions would limit the bargaining power of these operators.

414. On the other hand, in the opinion of a respondent, the access obligation, as well as not justified, would also be non-proportionate and discriminatory, taking into account that according to the Code, only authorized operators have the right to obtain access or interconnection of networks.

415. One respondent noted that, similarly to the 3.6-3.8 GHz band, for this band the Authority should introduce a use-it-or-lease-it obligation, which in its view is an effective mechanism to open the ultra-broadband market to greater competition.

416. A respondent, in fully sharing the Authority's proposal on the obligation to access, noted that this measure makes the band more interesting and enables access to verticals and to those players who can offer them services.

417. One respondent requested that the role and type of the "trusted third party" subject introduced by the Authority be defined more precisely.

418. Based on this, the Authority, with regard to the access obligations in the 26 GHz band, resolves the following.

419. The Authority considers that, considering the propagation characteristics of the 26 GHz band, the objectives indicated can be achieved through a method of use and management of innovative frequencies, which privileges the sharing of resources.

420. First of all, as described above, the right to use frequencies is issued in individual but not exclusive terms. This means providing for two different types of usage conditions. The first, as described above, concerns the incumbent services, both in the band and in the adjacent band, which

share the same statute with the MFCN services and must therefore be protected, without jeopardizing any future developments, which must be justified and proportionate. The second condition of use concerns the possibility for each successful bidder to use all the band currently placed in a bid of 1 GHz, in places where the other contractors do not use it, with a binding pre-order for the block (or blocks) awarded. For the purposes of this use, the contractors can stipulate commercial agreements, reasonable and non-discriminatory, subdividing the costs proportionally, possibly entrusting a trusted third party with the task of managing the uses to avoid harmful interferences.

421. Regarding the issues raised in consultation, the Authority first of all considers that the obligation in question is particularly significant in order to use the resource scarce efficiently and innovatively. The certainty of the right to use the contract awarded is ensured through the pre-emption mechanism, which allows an industrial plan to be guaranteed. As also observed in the case of the 3600-3800 MHz band, it is not possible for the Regulatory Authority to regulate all aspects of the use of resources, also because there are no experiences of using them. The trusted third party, which to the extent of the Authority is possible, even if recommended, can manage, in the name and on behalf of the contractors, the collective agreements to define the detailed methods of access to frequencies (for example coverage notifications, deadlines for release and reversibility, technical conditions, etc.). For this reason, it is therefore in the best interest of the bidders to avoid detailed prescriptions on the activity of the trusted third party which could risk slowing down the band's use developments.

422. With regard to the methods of sharing by means of frequency pooling, the Authority notes first of all that the set of obligations introduced is sufficient to introduce competition in the market, and that a different type of obligation, for example use in sharing on the lot or lots awarded by two or more successful tenderers, it would not ensure the capacitive boost introduced by the standard in question. Other forms of access to spectral resources, such as leasing (which in principle is not prohibited on a voluntary basis) do not seem adequate, because, due to the characteristics of the frequencies, they could lead to an uncontrolled fragmentation of the resource with the risk of generating interference and prevent efficient use. The use of the spectrum must therefore always remain under the control of the successful tenderer. Moreover, also the European recommendations, in particular the second opinion of the RSPG, indicate as preferable mode for the allocation of this band the individual license, underlining in this way that the problem of interference is still predominant (while for higher bands, such as the 66-71 GHz band, unlicensed regimes are under discussion). With regard to the technical feasibility of pooling when operating on carriers over 400 MHz, it is noted that it is not mandatory to operate on the entire range of 1 Ghz.

423. In addition to this innovative mode of use and sharing of frequencies, the Authority considers it further necessary to provide specific access obligations, which are specially defined for the band in question. The contractors therefore have the obligation to allow access to third parties, who are not operators of public telecommunications services, however authorized, in the wholesale form, according to the agreed technical modalities that will depend on the characteristics of the networks (for example, in slicing mode), and which may also include the use of frequencies. If the request for access concerns an area where there is no coverage, the bidders manage the agreement collectively or delegate to the trusted third party the task of regulating the use of frequencies; in this case, the applicant for access and the contractors can assign to a third party (the same or another) the task of realizing the network coverage.

424. However, the ownership of the rights of use of frequencies remains with the successful tenderer and the specific use of the frequencies under his control. This access mode is therefore able,

depending on the specific technical characteristics of the 5G networks, to satisfy needs on various geographical scales, at the limit up to the single plant access.

425. It is confirmed that the access obligation for this band is limited to those who are not already telecommunications operators. This on the one hand not to reduce the attractiveness of the band (which already provides for 5 lots), on the other hand to facilitate access in question by those subjects who make business models in the various sectors c.d. vertical, thus "packaging" frequencies and services, and which are not of traditional "telco" origin.

426. In relation to what was raised in consultation regarding the nature of the subject accessing, the Authority notes first of all that the access obligation as introduced has the objective of encouraging the development of services by new subjects in the value chain , which are expected to develop within the 5G ecosystems. It is therefore not to guarantee access to other electronic communications operators as far as possible through normal commercial agreements. Therefore, it should be noted that these subjects cannot, in principle, resell the pure telecommunications services, unless specifically agreed with the holder of frequencies, and therefore assume the role of mere resellers, but resell the content and services they use specific frequencies. This is important in order to avoid that in certain situations, including, but not limited to, those where the end customer is also the owner of a fund where an agreement is required for the use of frequencies, these may remain unused where both the winning network operator and the fund owner do not have the correct incentives to proceed with the development of attractive services.

427. It is therefore necessary for the beneficiaries of the access obligation to be independent of traditional mobile radio operators. In any case, it is considered that traditional telecommunication operators that are not awarded will be able to negotiate the most appropriate access mechanisms on a commercial basis, given that at the moment the technological developments concerning the specific band are not known in detail. market developments regarding new business dynamics and the opening of the value chain.

428. The obliged operators must also publish a plan for the management of access requests and keep it updated, also possibly on the basis of the changes that the Ministry and the Authority, within their respective competences, may request during the development of the services and management experience.

429. Finally, the Authority deems it necessary to extend the access obligations also in all those public or private funds with limited area to public attendance, in case the coverage with the frequencies in the 26 GHz band requires the permission of the fund manager. These funds are not ports, airports, stadiums, concert arenas, cinemas, theaters, national parks, subways, etc. In this case, as well as being able to use all frequencies not used by other contractors as aforementioned, the contractor who realizes the fund's coverage also offers access to the other contractors within the fund. This therefore ensures that there are no restrictions on the use of frequencies by the bidders in these specific funds, or that any successful tenderer has an interest in exclusive agreements for such funds which could affect the dissemination of the services.

HEARES the report by Commissioners Antonio Nicita and Francesco Posteraro, speakers pursuant to art. 31 of the Regulations concerning the organization and functioning of the Authority.

RESOLUTION

CHAPTER I
General provisions

Article 1
(Definitions)

1. For the purpose of the present provision we mean:

a) "paired spectrum": two portions of the radio spectrum, of the same amplitude, separated by a distance called a duplex step, usable for FDD (Frequency Division Duplex) communication systems;

b) "SDL (Supplemental Down Link)": the use of a portion of frequencies in association, as a rule, to FDD communication systems by aggregation to the transmission part of such systems;

c) "700 MHz FDD band" means the 703 MHz to 733 MHz frequency portion coupled with the 758 to 788 MHz portion; it contains 6 blocks of FDD frequencies, assignable with the procedures referred to in this provision, each of 2x5 MHz, named A1 to A6 in the order;

d) "700 MHz SDL band": the frequency portion from 738 MHz to 758 MHz; contains 4 blocks of SDL frequencies, each of 5 MHz, assignable with the procedures set out in this provision, as specified in the call for tenders, named by B1 to B4 in the order,

e) "26 GHz band": the frequency band that can be assigned with the procedures referred to in this provision, which ranges from 26.5 to 27.5 GHz; it is divided into 5 blocks of 200 MHz nominal each, usable in TDD (Time Division Duplex) mode, named from D1 to D5 in the order; as established by the Ministry in the subsequent call for tenders, in this band there are applications of the Earth exploration service via satellite (EESS) to be protected; the lots are considered gross of each frequency necessary for use and compatibility both in band and out of band;

f) "specific lot": a lot of frequencies that can be assigned with the procedures referred to in this provision whose nominal position in the frequency range is specified at the time the tenders are launched for the award of the related right of use;

g) "generic batch": a lot of frequencies that can be assigned to the procedures referred to in this provision whose nominal position is not specified in the frequency range at the time the tenders are launched for the award of the related right of use but it will be specified, for each lot awarded, at the end of the related procedures;

h) "winner": a person who is the assignee of rights to use frequencies following the tender procedures established by the present provision;

i) "call for tenders": the deed issued by the Ministry of Economic Development, with the related regulations, which specifies, on the basis of the provisions of this provision, the procedures for the allocation of rights to use the frequencies referred to this provision and art them;

j) "mobile radio operator": a subject who, at the time of submission of the application for participation in the procedures referred to in this provision, holds rights of use of terrestrial frequencies for the public offering of electronic communications services in a or more than the bands 800, 900, 1800, 2100, 2600 MHz; the subjects who:

a. exercise direct or indirect control, including jointly, on a subject owner of land-based rights for the public offering of electronic communications services in one or more of the bands 800, 900, 1800, 2100, 2600 MHz;

b. are subjected to the control, directly or indirectly, also jointly, by a holder of rights to use terrestrial frequencies for the public offer of electronic communication services in one or more of the bands 800, 900, 1800, 2100, 2600 MHz;

c. are subject to the control, even indirectly, also jointly, by an entity that in turn controls, even indirectly and jointly, a holder of rights to use terrestrial frequencies for the public offer of services of electronic communication in one or more of the bands 800, 900, 1800, 2100, 2600 Mhz;

k) "new entrant": a single person who, at the time of submitting an application for participation in the procedures referred to in this provision, does not:

a. be a mobile radio operator;
b. exercises control, direct or indirect, also jointly, on a mobile radio operator;
c. is subjected to the control, directly or indirectly, also jointly, by a mobile operator;
d. is subjected to the control, even indirectly, also jointly, by an entity that in turn controls, even indirectly and jointly, a mobile operator;

or a consortium that, at the time of submitting the application for participation in the procedures referred to in this provision, does not include a mobile radio operator among its members even in a non-supervisory position;

l) "remedy taker of Community concentration M.7758": the individual who has been the recipient of the measures implementing the commitments of the parties to the concentration for the purposes of the authorization of the concentration, including the assignment of rights of use of frequencies;
m) "band 3600-3800 MHz": the frequency band from 3600 MHz to 3800 MHz subject to the procedures referred to in this provision, usable in TDD mode; it is divided into two portions: a low portion, with frequencies between 3600 MHz and 3700 MHz, and a high portion, with frequencies between 3700 MHz and 3800 MHz; as established by the Ministry in the subsequent call for tenders, both the high and the low portion of the 3600-3800 GHz band foresee the availability of frequencies normally free in band from existing fixed service (FS) applications, starting from the fixed date from the law 27 December 2017, n. 205 (hereinafter also Law), art. 1, paragraph 1029, and may include in the band existing satellite fixed service (FSS) applications to be protected both by bandwidth and out-of-band applications; as specified by the Ministry in the subsequent call for tenders in addition, the high portion is the subject of temporary allocation of frequencies, for the purpose of their use by experimental systems 5G authorized by the Ministry itself, in the related areas of experimentation, which must be protected by of applications both in band and out of band;
n) "lot of frequencies 3600-3800 MHz": in relation to the available bandwidth and the availability plan of the 3600-3800 MHz frequencies, four lots of frequencies in competition are identified, called lots C1, C2, C3 and C4; the lot C1 and lot C2 are composed of nominal 80 MHz each, while the lots C3 and C4 are composed of 20 MHz nominal each; the lots are considered gross of each frequency necessary for use and compatibility both in band and out of band; the frequencies used for the 5G experimentation in progress at the time of the adoption of the present provision are initially excluded in the relevant geographical areas (exclusion zones for 5G experimentation) for the frequencies pertinent to each lot;
o) "plan for availability of the 3600-3800 MHz frequencies": the plan, with relative timetable for the disposal of the systems to be protected, published together with the call for tender by the Ministry with indication of the FSS systems and systems experimental 5G to be protected, with indication of the restriction and exclusion zones for each portion of frequencies;
p) "geographical extension area": the geographical area of validity of the rights to use the frequencies subject of this provision; the geographical area of the lots referred to in this provision is

national, except where applicable, the restrictions determined by the protection of existing services and by the specific rules of use established by this provision;

q) "3600-3800 MHz band sharing model": a set of technical compatibility rules to allow the installation of a plant that uses frequencies of 3600-3800 MHz frequency lots by the bidders without causing harmful interference to the other authorized users; the model provides for conditions and / or restrictions, deriving from the need to protect the use of the FSS service, which use frequencies both inside (in band) and outside the lot (in the adjacent band), existing at the time of assignment , relevant to the particular lot of frequencies in the tender and to the area of geographical extension of the right, or deriving from the need for mutual protection of the homologous frequencies between the lots involved in the 5G service trials;

r) "5G experimentation area": the geographic area where pre-commercial experimentation projects for 5G networks and services can be carried out in accordance with the Ministry Public Notice of 16 March 2017; the areas of reference for experimentation are those delimited by the administrative boundaries of the following areas: the metropolitan area of Milan, Prato, L'Aquila, Bari, Matera;

s) "exclusion zone for 5G experimentation": the geographic area where equipment of the contractors of the 3600- 3800 MHz frequency lots cannot be installed for the purposes of the protection of the experimental equipment in the 5G experimentation area;

t) "26 GHz bandwidth sharing model": a set of technical compatibility rules to allow the installation of a plant that uses frequencies of the 26 GHz frequency lots by the bidders without causing harmful interference to other authorized users; on the basis of the provisions of the current PNRF, and in compliance with the applicable technical standards, the model provides for conditions and / or restrictions, including the application of geographic exclusion zones around the receiving stations of the victim interference system, arising from the need to protection of the uses of the EESS service, which use frequencies both inside (in band) and outside the lot (in the adjacent band), and the use of the service in the adjacent band FSS, relevant to the particular lot of frequencies in the race and all area of geographical extension of the law, or deriving from the need to protect any other incumbent services existing in the band or in the adjacent band;

u) "700 MHz frequency availability plan": the plan, with relative timetable, published together with the call for tender by the Ministry, with an indication of the availability of frequency lots in the 700 MHz FDD and 700 MHz SDL bands, and the relative geographic area of progressive availability, according to the provisions of the Law, art. 1, paragraph 1032; the plan can be updated even after the awarding;

v) "26 GHz frequency availability plan": the plan, with relative eventual calendar, published together with the call for tender by the Ministry, indicating the availability of the frequency lots in the 26 GHz band, and the related area geographical, according to the provisions of the Law, art. 1, paragraph 1029, inclusive of the protection conditions of the incumbent systems;

w) "auctioneer": the current administration, or the body responsible for carrying out the assignment procedures referred to in this provision, as specified in the call for tenders.

2. For the purposes of what is defined in paragraph 1, control exists, also with reference to subjects other than companies, in the cases provided for by article 2359, first and second paragraphs, of the civil code, and is considered also existing in the form of dominant influence, unless otherwise proven, in the cases provided for by art. 43, paragraph 15, of the decree n. 177/05, and of the significant influence referred to in the same article 2359, paragraph 3. For the purposes of verification, the subjects who submit an application for participation in the procedures referred to in this provision are required to detail the related

control chains, specifying each level the subject or the subjects that exercise the control according to the modalities provided for in the present paragraph and explicitly declaring that they are or are not in the conditions referred to in paragraph 1, lett. j) and k).

3. To the extent applicable, the definitions set forth in art. 1, paragraph 1, of the Code.

Art. 2
(Object and scope)

1. This provision establishes the procedures for the granting of rights to use the frequencies available in the 700 MHz FDD band, in the 700 MHz SDL band, in the 3600-3800 MHz band and in the 26 GHz band, on a national basis, subject to the conditions and limitations specifically indicated for each band, for the use of land-based broadband and ultra-broadband electronic communications services, and the conditions of use of each band.

2. Frequency bands in the 3600-3800 MHz band and in the 26 GHz band are assigned with individual but not exclusive rights of use. The winners of these rights of use are required to protect, both in frequency and in geography, the existing primary uses of the FSS service and the EESS service, relevant to the specific lot, which use frequencies both inside and outside the lot , including uses in adjacent bands, taking into account the availability plan for the 3600-3800 MHz frequencies and the 26 GHz frequencies, according to the sharing model in the 3600-3800 MHz band and in the 26 GHz band. The winners of the rights of use in the 3600-3800 MHz band are required to the shared use of the frequencies also with the subjects carrying out the 5G experiments, guaranteeing the protection both in band, for the frequencies pertinent to the specific lot, and, where necessary, in the adjacent band, for the period of experimentation. The holders of rights to use in the 26 GHz band are required to protect the other incumbent services in the adjacent band as specified by the PNRF.

3. Authorizations for new primary incumbent services are permitted after coordination with the contractors, even after the assignment procedures referred to in this provision have been carried out.

4. The frequency blocks of the rights to use in the tender are considered gross, i.e. inclusive of any need for use of frequency resources for the purposes of protecting the ordered use of the spectrum. Any external guard bands are specified in the contract notice. Any areas of geographical exclusion for the protection of incumbent services are specified in the call for tenders or follow the model of sharing. The channeling of said blocks is at nominal 5 MHz steps. Larger carriers can be used in contiguous blocks in compliance with the compatibility rules applicable to each band.

5. This provision also regulates the rules aimed at ensuring conditions of effective competition in the assignable bands referred to in paragraph 1.

6. In relation to the available band, as specified by the Ministry in the call for tenders, are assignable: six blocks of frequencies in the 700 MHz FDD band (A1-A6), up to four blocks of frequencies in the 700 MHz SDL band (B1- B4), available and usable according to the 700 MHz frequency availability plan; five blocks of frequencies in the 26 GHz band (D1-D5), available and usable according to the availability plan of the 26 GHz frequencies; four blocks in the 3600-3800 MHz band (C1-C4), available and usable according to the availability plan of the 3600-3800 MHz frequencies.

7. Two of the frequency blocks in the 700 MHz FDD band are coupled in a single lot combined in the tender reserved for new entrants and for the remedy taker of the community concentration M.7758.

8. At the end of the 5G experimentation, the successful tenderers may use the relevant frequencies of the lots awarded even in the exclusion zones for 5G experimentation, without any charge for the State.

9. The use of the frequencies assigned under this provision takes place in compliance with the relevant binding technical regulations. At the time of the adoption of this provision it is defined for the 3600-3800 MHz band by decision n. 411/2008 / EC of the European Commission, as amended by Decision n. 276/2014 / EU, for the 700 MHz FDD and 700 MHz SDL bands by Commission Decision n. 2016/687 / EU, and as specified in the PNRF. Starting from the moment in which new technical rules for the use of the frequencies subject of this provision, in particular for the development of 5G services, will be made binding through changes to the aforementioned regulations, or through national regulatory acts, the bidders are required to use equipment compliant with the new regulations. Any equipment already installed may continue to be used provided they do not affect the installation of the equipment complying with the new standards. In any case, and without prejudice to any binding Community or national rules, the bidders submit a transition plan to the Ministry that verifies their congruity.

10. In the case of allocation of all SDL lots, the winners of the lots in the 700 MHz FDD band, taking into account the technical characteristics of the public networks, are required on a commercial basis to provide a PPDR service according to the methods and technical specifications possibly provided by the Ministry.

Art. 3
(Reserves, cap, limitations, duration)

1. Based on the provisions of art. 2, the procedures referred to in this provision provide for the allocation of the following frequency lots:

a. 1 lot reserved for new entrants and for the remedy taker of the community concentration M.7758, with frequencies in the 700 MHz FDD band (blocks A1 + A2);
b. 4 batches in 700 MHz FDD band (A3-A6 blocks);
c. up to 4 lots in the 700 MHz SDL band (B1-B4 blocks);
d. 4 batches in the 3600-3800 MHz band (C1-C4 blocks)
e. 5 lots in band 26 GHz (blocks D1-D5).

All the lots are proposed for allocation initially as generic lots, with the exception of lot C1, which is proposed as a specific lot and is placed in the upper part of the range.

2. Each participant in the procedures referred to in this provision may be granted rights of use with the following limitations also related to the frequencies of the rights already in use:

a. for lots in the 700 MHz FDD band, with a limit of 2x30 MHz evaluated including the frequencies in the 800 and 900 MHz bands of which it has ownership, in any case with a limit of 2x15 MHz in the 700 MHz FDD band only;
b. for batches in the 700 MHz SDL band with a limit of 10 MHz in the case of assignment of all 4 lots, i.e. no limit in case of allocation of a smaller number of lots;
c. for lots in the 3600-3800 MHz band, with a limit of 100 MHz intra-band, and, inter-band, with a limit of 100 MHz evaluated on a national basis and for each area also including the frequencies in the bands 3400-3600 MHz of which it has ownership, as specified in the following paragraph 3;
d. for lots in the 26 GHz band, with a limit of 400 Mhz.

3. Holders of rights to use frequencies in the 3400-3600 MHz band can participate in the procedures referred to in this provision for lots C1-C4 and, in the case of award, if they exceed the cap, they will renounce to the frequencies in band 3400 -3600 MHz for the excess quota, starting from the expiry of the initial rights of use pursuant to resolution no. 209/07 / CONS, in case these have been extended. To this end they explicitly commit themselves to such renunciation at the time the application for participation is submitted and they hold the State unharmed from any charge in this regard.

4. The rights to use the frequencies referred to in paragraph 1 issued with the procedures referred to in this provision expire on December 31st 2037.

5. Frequencies whose rights of use are issued pursuant to this provision can be used in the manner and timing specified by the call for tenders in the relevant availability plans for each band and as provided for in the PNRF.

6. For the purposes of evaluating the possession of frequencies pursuant to paragraphs 2 and 3, a participant shall be considered the holder of rights to use frequencies in the band 800 (900) (3400-3600) MHz even if:

a. exercises control, direct or indirect, also jointly, on a subject owner of rights to use frequencies in band 800 (900) (3400-3600) MHz;
b. is subjected to the control, directly or indirectly, also jointly, by a subject owner of rights to use frequencies in band 800 (900) (3400-3600) MHz;
c. is subjected to the control, even indirectly, also jointly, by an entity that in turn controls, even indirectly and jointly, a subject owner of rights to use frequencies in band 800 (900) (3400- 3600) Mhz.

7. For the purposes of the provisions of the preceding paragraph, control exists, also with reference to subjects other than companies, in the cases provided for by Article 2359, first and second paragraphs, of the Civil Code, and is considered to exist also in the form of dominant influence, unless otherwise proven, in the cases provided for by art. 43, paragraph 15, of the legislative decree n. 177/05, and of the significant influence referred to in the same article 2359, paragraph 3. For the purposes of verification, the subjects who submit an application for participation in the procedures referred to in this provision are required to detail the related control chains, specifying each level the subject or the subjects that exercise the control according to the modalities provided for in the present paragraph and explicitly declaring the ownership or non-ownership of rights of use referred to in paragraph 6.

CHAPTER II
Assignment procedures

Art. 4
(Presentation of the application form)

1. The submission of the application for participation in the procedures for the granting of rights to use the frequencies in the 700 MHz band FDD, 700 MHz SDL, 3600-3800 MHz and 26 GHz referred to in this provision is open to all subjects in possession the requirements set out in the subsequent call for tenders for the achievement of the general authorization.

2. The requirements referred to in paragraph 1 above may include, among other things, the technical and commercial suitability of the subjects to the use of the frequencies in question and the provision of the relative services.

3. The participation of consortium companies pursuant to art. 2602 of the Italian Civil Code is allowed, on condition that they assume, even after the awarding and in any case before the release of the rights of use, the form of joint stock company as established by art. 2615 ter of the Civil Code, respecting the following additional requirements:

a. the deed of incorporation must provide for the obligation for members to pay cash contributions;
b. for the entire duration of the rights of use, the share capital must be kept to the extent of the minimum value set in the call for tender;
c. the duration must be at least equal to the duration of the rights of use;
d. the corporate purpose provides for all the activities connected to the use of rights of use;
e. any foreign companies participating in the consortium comply with the same requirements established for the foreign companies in paragraph 1.

4. The assignment procedures envisaged by the present provision cannot participate in single and at the same time members, even in a non-controlling position, of participating consortia, or members, even in a non-controlling position, of more than one participating consortium.

5. Without prejudice to the provisions of Article 3, paragraph 2, parties who, individually or as members of a consortium, may not participate in the procedures referred to in this provision:

a. exercise direct or indirect control, also jointly, on another participant, individual or consortium member;
b. are subjected to direct or indirect control, also jointly, by another participant, single or consortium member;
c. they are subject to direct or indirect control, also jointly, by an entity that in turn controls, also indirectly and / or jointly, another participant, individual or consortium member.

6. For the purposes of the provisions of paragraphs 4 and 5, control exists, also with reference to subjects other than companies, in the cases provided for by Article 2359, paragraphs 1 and 2 of the Italian Civil Code, and is considered to exist also in the form of the dominant influence, unless there

is proof to the contrary, in the cases envisaged by art. 43, paragraph 15, of the legislative decree n. 177/2005, and the significant influence referred to in Article 2359, paragraph 3, of the Italian Civil Code. For the purposes of verification, the subjects who submit the application for participation in the procedures referred to in this provision are required to detail the relative chains of control, specifying for each level the subject or the persons exercising control in the manner provided for in this paragraph and declaring explicitly not to be in the conditions of exclusion referred to in paragraphs 4 and 5.

7. Participation is guaranteed by a suitable security deposit fixed in the call for tenders. The security deposit can be adjusted to the progress of the competitive improvements, according to the call for tenders.

8. When submitting the application, and under penalty of exclusion, the participants explicitly accept the obligations deriving from the assignment of the frequencies subject of the present provision, in particular the assignment, where envisaged, in shared mode as specified in this provision , and that of the collective obligations referred to in art. 12 and 16.

Art. 5
(Procedures for issuing rights of use)

1. Those entitled to the use of the frequencies are identified, for each right of use, on the basis of rankings divided by band and for the reserved lot, based on the amount offered through a system of competitive improvements, according to the modalities established in the call for tenders, starting from a minimum amount, established for each lot in the race and indicated in the same call for tenders, taking into account the limitations set forth in art. 3.

2. The allocation procedure for the reserved lot takes place before that for the other lots, which takes place simultaneously. All the procedures referred to in this provision are carried out as part of a single allocation procedure.

3. Should the reserved lot remain unallocated at the end of the procedure, it shall be divided into separate lots in the 700 MHz FDD band and added to the lots available for the non-confidential procedure.

4. The ranking lists awarded pursuant to this article are made public.

5. At the end of the procedures referred to in paragraphs 1 and 2, the proceeding Administration invites the assignees to the assignment of generic lots, including the winner of the reserved lot, within a time set in the call for tenders, to submit a proposal allocation of generic lots, in compliance with the principle of contiguity of the blocks assigned to the same contractor, for each band. If at the end of the said period the contractors of the generic lots do not come to an agreement, then the Administration assigns the generic lots, for each band, according to an order of choice based on the average bidder for the highest batch category. The choice is made within a number of combinations that allow compliance with the principle of contiguity for all the bidders. In the event of a tie between two or more average bidder bids, the order is determined by drawing lots. The Administration makes the resulting assignments public.

6. The successful tenderer may pay, for the combined lot, a price equal to the sum of the prices of the two 700 MHz FDD lots awarded at the lower prices in the open procedure, if the sum of these two prices is lower than the bid awarded the combined lot.

7. The bid for each lot in the 700 MHz FDD and 700 MHz SDL band is increased by the amount resulting from the possibility of using the respective frequencies before 30 June 2022, deriving from the availability plan of the frequencies in the 700 MHz band, as indicated in the contract notice, by proportionate the winning amount to the period of advance and to the potentially serviceable population. The Ministry may reserve, in the call for tenders, to change the availability calendar of the 700 MHz band in a less restrictive manner than published with the tender until 30 June 2022. In this case the lot winner agrees to pay the higher amounts corresponding to the anticipated availability of frequencies at the time the change is notified, according to the procedures indicated by the Ministry. Early availability does not change the expiration of usage rights.

Art. 6
(Procedures in the case of unallocated frequencies)

1. Upon completion of the procedures pursuant to art. 5, if rights of use were left unassigned in the 700 MHz FDD, 700 MHz SDL, 26 GHz bands, these are put to competition among those admitted to the submission of bids that have expressed interest. For these additional rights of use the limitations set forth in art. 3.

2. To the same subject, in addition to the rights of use that may have already been awarded, only one additional use right as per paragraph 1 may be assigned for each band, except for the 700 MHz SDL band where it is possible to assign all additional rights of use to the same subject.

3. The awardees of the additional rights of use are identified on the basis of different rankings for each right based on the amount offered through a system of competitive improvements, according to the procedures established in the call for tenders, starting from the average value of the bidders blocks in the same band in the procedure referred to in art. 5, except for the 700 MHz SDL band, where the procedure is starting from the initial minimum value.

4. If unused user rights were left in the 3600-3800 MHz band, or if all rights to use the same band were left unassigned, the Authority reserves the right to subsequently define the allocation plan for the related band frequencies.

Art. 7 (Contributions)

1. The winning bidders are required to pay the bid produced at the end of the procedures referred to in art. 5, for the relative rights of use, as a contribution for the use of radio frequencies in accordance with the provisions of art. 35, paragraph 1, of the Code, according to the procedures specified in the call for tenders.

2. The payment of the bidder awarded is paid in installments according to the procedures laid down in the call for tenders, pursuant to the Law, art. 1, paragraph 1045. The installment does not imply the transformation of the bidder awarded as an annual contribution.

3. The minimum value of the lot envisaged for the assignment procedures referred to in the previous art. 5, is determined, for each right of use, on the basis of the criteria listed below:

a. for the 700 MHz FDD band not exceeding the minimum value set for the 800 MHz band referred to in Resolution no. 282/11 / CONS, increased by a factor of up to 5%, compared to the amount of the legal spectrum and the duration of the right, which, for the purposes of calculating the minimum value, is considered, as of today, starting from 1 July 2022;

b. for the 700 MHz SDL band, to an extent equal to that determined in point a. previous, with the same spectral quantity, decreased by a factor of up to 50%; for the purposes of calculating the minimum value, the right of use is considered, as of today, starting from 1 July 2022;

c. for the 26 GHz band on the basis of the minimum values foreseen in the last allocation procedure for rights of use for WLL systems in the adjacent band, assessed on a national basis, compared to the amount of bandwidth and duration, and increased by a factor of up to 90%; for the purposes of calculating the minimum value, the right of use is considered to start, as of 1 December 2018;

d. for the 3600-3800 MHz band, starting from the average award values defined in the procedures for the allocation of rights to use frequencies in the 3400-3600 MHz band, as per resolution no. 209/07 / CONS, possibly revalued on the basis of the applicable ISTAT monetary revaluation rate, calculated in proportion to the population of the relevant geographical area, related to the total spectrum of the right, the duration of the right to use the frequencies, increased by a factor up to a maximum of 30%; for the purposes of calculating the minimum value, the right of use is considered to start, as of 1 December 2018.

The minimum value of the combined batch is determined by the sum of the minimum values of the component blocks.

4. For the purposes of the provisions of paragraph 3, lett. d., the Ministry excludes from the calculation the population of the stable zones of geographical restriction known at the time of the call for tenders, for the applicable period. The Ministry applies to the bids of the lots referred to in art. 3, paragraph 1, lett. d., affected by the need to protect the 5G experimental services, a proportional discount to the population relative to the exclusion zone for the 5G experimentation, and to the period in which the aforementioned restriction is in force, for the relevant frequencies.

5. For the purposes of any discounting of the contributions referred to in this article, unless otherwise provided, the Ministry may proceed with the monetary revaluation of the starting amounts and the use, where necessary, of the average of the BTP rates of duration closest to duration of the rights of use, of the previous 3 years.

6. The winning bidders are required to pay the administrative fees referred to in art. 34 of the Code, in relation to the necessary authorizations for the provision of the services subject of this provision, as well as any other contributions for the granting of rights to use the numbers or rights to install infrastructure pursuant to art. 35 of the Code.

7. Any charges deriving from the preparation and execution of the procedures for assigning the rights of use referred to in this provision, including the remuneration due to the eventual external

party in charge of supporting the preparation and management of the same, not falling between those foreseen by the Law, are distributed proportionally between the winning bidders and the other participants and their measure and the payment methods are fixed in the call for tenders.

CHAPTER III
General obligations on the effective, efficient and orderly use of frequencies

Art. 8
(Conditions for the ordered, efficient and non-interfering use of the 700 MHz FDD and SDL band frequencies)

1. Where the application of the applicable technical standards does not guarantee the total absence of harmful interference in all possible cases of interference, the operators awarded the frequencies in the 700 MHz FDD and SDL band must ensure the coordination and / or adoption of specific additional techniques mitigation with users of the contiguous bands to resolve these cases. The Ministry, also possibly using a specific technical table with the interested parties, may impose more restrictive technical standards, including technical mitigation specifications or limits to the issued spectral power, or further technical interventions, in a justified and proportionate manner, in order to resolve eventual, residual, cases of harmful interference and ensure efficient use of the spectrum. Without prejudice to the use of a possible dedicated public fund, all the winners of the frequencies in the 700 MHz FDD and SDL band, regardless of the type of interference, subdivide any additional charges with respect to those imposed individually or relevant to their specific plants, in the areas interested in a proportionate way to the quantity of spectrum awarded and to the number of plants in the area.

Art. 9
(Conditions for the ordered, efficient and non-interfering use of frequencies in the 3600-3800 MHz band)

1. The Ministry shall make known, prior to the start of the lot allocation procedures, to the subjects that have been admitted to the submission of tenders, upon signing of a confidentiality agreement, the list of existing primary uses of the fixed satellite service (FSS)) for which protection is required, both in the band and in the bands adjacent to each block in competition, with the related technical characteristics relevant to the relative blocks. The Ministry also announced the exclusion zones for 5G experimentation.

2. The Ministry publishes in the call for tenders the model for sharing the 3600-3800 MHz frequencies referred to in this provision. This model must allow the installation of new facilities for broadband and ultra-wide electronic communication services through the use of the frequencies referred to in this provision, for the purpose of the protection and the uninterrupted functioning of the existing uses for which the protection, and shared use with the other contractors, and may provide different schemes for block frequencies.

3. The winning bidders must take all appropriate measures to avoid interference with other authorized electromagnetic spectrum users and plan the activation of each new installation of their network, checking in advance that they are compatible with existing uses that require protection, through the correct implementation of the protection conditions and the sharing model as defined, without prejudicing any further development of the incumbent services in the adjacent band. In

compliance with the technical standards that will be defined for the coexistence of in-band systems, the Ministry may envisage the future development of incumbent services in band, through transparent, objective and proportionate authorization criteria, and having the least impact on the development and coverage of 5G services.

4. In the eventual adoption of further technical specifications for coordination or mitigation with the operator or operators using the same bands in neighboring geographical areas or contiguous bands in the same areas, the operators concerned, in accordance with the principle of fairness, reasonably subdivide the charges in the areas concerned. All spectrum users work together in good faith to solve interference problems, also providing relevant information about their systems.

5. The contractors and operators operating the 5G experimental systems that use the homologous frequencies, with the mutual agreements, are required to coordinate the installation of the related equipment in the border areas of their geographical extension areas, and in all other circumstances susceptible to potential interference, in order to avoid harmful interference, taking into account, where applicable, the provisions of the ECC Recommendation (15) 01. To this end, the call for tenders may provide for the presence of a geographical area of respect between the areas of reference, usually defined outside the boundary of the area of experimentation, without prejudice to possible exceptions on a local basis to be defined proportionally and justified for the most efficient use of the spectrum. The contractors and the experimenters may by mutual agreement, and subject to authorization, modify the aforementioned areas of respect, in a justified and limited manner. If harmful interference persists, the Ministry may impose more restrictive technical standards, including technical mitigation specifications or limits on the spectral power emitted or use of preferential channels or the prohibition of the use of certain architectural configurations or increase the areas of respect charged to operators. concerned, in a justified and proportionate manner, in order to ensure efficient use of the spectrum. The awardees may be required, at the time of issuing the right of use or subsequently, the obligation that the Power Flux Density (PFD) produced by both the user terminals and the base stations of its infrastructure does not exceed pre-established levels at the border geographical allocation areas or the use of appropriate guard bands within the right of use or use of preferential channels or blocks in "restricted" mode.

6. Without prejudice to the penalties provided for by the Code for the use of frequencies inconsistent with the authorizing titles, in the case of persistence of harmful interference in the use of the frequencies assigned under this provision, the Ministry may impose, pursuant to the Code, in proportionate and justified way, every measure able to remove the causes of such interference, according to a principle of fairness in the distribution of any charges, whose non-compliance is punishable according to the rules of the Code itself.

Art. 10
(Conditions for the ordered, efficient and non-interfering use of frequencies in the 26 GHz band)

1. The Ministry publishes in the call for tender the model for sharing the 26 GHz frequencies referred to in this provision. This model must allow the installation of new facilities for broadband and ultra-wide electronic communication services through the use of the frequencies referred to in this provision, for the purpose of the protection and the uninterrupted functioning of the existing uses for which the protection, and shared use with the other contractors, and may provide different schemes

for block frequencies. The model can be updated even after the awarding, in a proportionate and justified manner.

2. The contractor for lots in the 26 GHz band shall make the necessary guard band available and implement the technical measures necessary to avoid harmful interference with the users of the adjacent bands, in accordance with the relevant technical regulations, within their own frequencies assigned. If harmful interference persists, in order to ensure efficient use of the spectrum, the Ministry may impose more restrictive technical standards in a justified and proportionate manner, including mitigating technical specifications or limits on the spectral power emitted or the synchronization of networks operating in adjacent blocks or the use of frequency blocks in "restricted" mode or preferential channels. If these measures do not guarantee the total absence of harmful interference, each contractor is obliged, where necessary, to immediately deactivate the interfering system.

3. The winning bidders must take all the necessary measures to avoid interference with other authorized electromagnetic spectrum users and plan the activation of each new installation of their network, checking in advance the compatibility with the existing uses, in band and in adjacent band, of which protection is required, through the correct implementation of the protection conditions and the sharing model as defined, without jeopardizing any further development of the incumbent services in the adjacent band. In compliance with the technical standards that will be defined for the coexistence of in-band systems, the Ministry can foresee the future development of incumbent services, through transparent, objective and proportionate authorization criteria, and having the least impact on the development and coverage of 5G services .

4. Experimental use of the frequencies awarded in the 26 GHz band is allowed up to the time of introduction of the equipment complying with the new 5G technical regulation, which must be notified in advance to the Ministry. To this end, the winning bidder presents an experimentation plan that does not include commercial uses and which is authorized by the Ministry. The equipment for the experimentation respects the same obligations for the protection provided for the band in question.

5. without prejudice to the penalties provided for by the Code for the use of frequencies inconsistent with the authorizing titles, in the case of persistence of harmful interference in the use of the frequencies assigned under this provision, the Ministry may impose, pursuant to the Code, in proportionate and justified way, every measure able to remove the causes of such interference, according to a principle of fairness in the distribution of any charges, whose non-compliance is punishable according to the rules of the Code itself.

Art. 11
(General requirements for the use of frequencies in the 700 MHz SDL, 3600-3800 MHz and 26 GHz band)

1. Within 24 months from the issuing of the right of use, or from the nominal availability of frequencies if later, in the 3600-3800 MHz band, within 36 months in the 700 MHz SDL band, and within 48 months in the 26 GHz band, the bidders are required to install the broadband or ultra-wide radio network and use the assigned frequencies with the relative right of use in all the Italian provinces, geographically bounded by the administrative boundaries reported in the latest data released by the ISTAT, included in the extension area geographical area of its right of use.

2. For the purposes of the preceding paragraph, the use of the assigned frequencies means the commissioning of the relative Base Stations or Central Stations or fixed connections (P-P or P-MP) or small cell with ignition of the relative carriers with specific use. of the assigned frequencies and coverage of the reference territory of the cell or sector, connected to a transport network that guarantees the transport of the traffic in an end-to-end mode and the start of the commercial service, using the assigned frequencies. The commercial service is understood in the form of an offer directly to the public or through the offer of wholesale access, also in the form of roaming, MORAN, MOCN, or supply of slices, normally forbidden for frequency pooling.

3. The winners of the lots in the 700 MHz SDL, 3600-3800 MHz and 26 GHz bands, transmit to the Ministry and to the Authority, on an annual basis, until the end of the right of use, the state of progress concerning the construction of the network broadband or ultra-broadband radio using the frequencies awarded and the provision of the related service, documenting, in particular, the dissemination of the sites, the network architectures and the technologies implemented.

CHAPTER IV
Coverage obligations

Art. 12
(Coverage and utilization requirements for 700 MHz FDD frequencies)

1. Within 36 months of the nominal availability of frequencies, each bidder of the frequency bands in the 700 MHz FDD band is required to start the commercial service, as defined in art. 11, paragraph 2, useful to meet the standard operating requirements necessary to allow at least 80% of the national population the correct use, in a reasonable manner in the indoor environment, of 5G services, such as to ensure the development of applications for all expected use scenarios m-MTC, URLLC, eMBB, however ensuring in this last use case a nominal download speed of not less than 30 Mbps. The coverage must in any case include all the municipalities with more than 30,000 inhabitants and all the provincial capitals. A new entrant has 12 months more to achieve the same coverage and start-up goals. For the purposes of the aforementioned obligation regarding the coverage of the municipalities it is possible to resort to agreements between the operators with the following conditions and limits:

a. the agreement concerns at most 2 operators for a specific group of municipalities;
b. each agreement does not exceed 20% of the amount of the obligation;
c. the agreement concerns the fulfillment of the obligation using the specific 700 MHz FDD frequencies;
d. the duration of the agreement is normally equal to the duration of the right of use; should the agreement cease for any reason the contractors must meet the obligation individually.

2. Within 14 months of the award, the contractors shall submit a general plan to the Ministry and the Authority for the achievement of the coverage objective referred to in paragraph 1, specifying the sites and frequencies to be used, and updating it on an annual basis. , detailing any agreements reached. The plan presented at the 62nd month details the achievement of the objective and becomes binding. The plan can be modified, in compliance with the obligation, and notified to the Ministry and the Authority. The Authority may publish the aforementioned plans in aggregate form.

3. The winners of frequency bands in the 700 MHz FDD band are collectively bound to reach, within 54 months from the nominal availability of frequencies, on the basis of reciprocal agreements in compliance with the competition rules, the coverage of 99.4% of the national population with the start of the commercial service, as defined in art. 11, paragraph 2, useful to meet the standard operating requirements necessary to allow the correct use, in a reasonable manner even in indoor environments, of 5G services, as described in paragraph 1 above. For this use roaming is allowed also in the form with pooling of frequencies.

4. In calculating the percentage of population referred to in paragraph 3, the winning bidders include at least 90% of the population of the municipalities indicated in the table in Annex 1 of this provision. The Ministry, with the publication of the call for tenders, may supplement the said table with additional municipalities in a maximum number equal to 20% of the current one.

5. Within 14 months of the award, the contractors shall submit to the Ministry and to the Authority a preliminary plan for achieving the objective referred to in paragraph 3, including the verification procedures, and update it on an annual basis. The plan presented at the 74th month details the achievement of the objective and becomes binding. The plan may be amended on the basis of subsequent agreements notified to the Ministry and to the Authority. The plan specifies the commitments of the contractors to fulfill their obligations. Furthermore, unless otherwise agreed by the parties, the plan provides that, in the case of non-compliance, even partial, the economic consequences are shared equally between the parties. The application of the applicable administrative sanctions remains unaffected. Penalties are usually proportionate to the untapped population.

6. In case of repeated application of the agreement referred to in paragraph 3, in addition to the sanction referred to in the same paragraph, the Ministry shall have the revocation of the rights of use of all the contractors in the areas concerned. In case of revocation no refund is due.

7. Within 42 months of the nominal availability of frequencies, the tenderers of the 700 MHz FDD frequency lots in a collective manner, through mutual agreements in compliance with the competition rules, are required to cover all the main national road and rail transport routes. to be intended respectively as the motorways, defined according to the classification of the Highway Code, and the high-speed railway lines, as defined in Legislative Decree 8 October 2010, n. 191, including the railway stations connected to them, as well as the national road and railway lines that are part of the corridors identified at Community level, according to the provisions of Regulation (EU) no. 1316/2013. They are also included in the obligation to cover, with the specific frequencies of 700 MHz FDD lots, the areas, as indicated in the call for tenders, represented by the presence of national, commercial and tourist sea ports, according to the classification referred to in Article 4 of the law of 28 January 1994, n. 84, with the exception of those referred to in category I, having commercial, industrial and passenger service functions, also for tourism purposes, as well as national operating airport airports open to scheduled commercial civil traffic. The obligation is considered satisfied if at least one of the contractors provides the radio-electric signal to meet the standard operating requirements necessary to allow the end users to use 5G services, as described in paragraph 1 above, also taking into account the mobility scenarios of the receiving system, including applications relevant to the vertical sectors involved and relevant to specific frequencies.

8. Each contractor, in the covered areas referred to in the previous paragraph, not falling within the scope of an urban area, is obliged to provide the roaming service, also in the form with frequency pooling and on reciprocal terms, to all other contractors. frequency bands in 700 MHz FDD band in

order to establish national services without interruption along the identified transport routes. The roaming service, on a commercial basis, on fair, transparent and non-discriminatory terms, may also be provided in other technical modalities subject to agreement between the parties. It is without prejudice as a technical reason impeding the achievement of coverage in a given area of the documented opposition of the owner of the site to the laying of the infrastructure, for example for the coverage of tunnels, tunnels, or similar.

9. Within 14 months of the award, the contractors shall submit to the Ministry and the Authority a general plan for achieving the objective referred to in paragraph 8, including the verification procedures, and update it on an annual basis. The plan presented at the 62nd month details the achievement of the objective and becomes binding. The plan may be amended on the basis of subsequent agreements notified to the Ministry and to the Authority. The plan specifies the commitments of the contractors to fulfill their obligations. Furthermore, unless otherwise agreed by the parties, the plan provides that, in the case of non-compliance, even partial, the economic consequences are shared equally between the parties. The application of the applicable administrative sanctions remains unaffected. Penalties are usually proportionate to the extent of the non-compliance.

10. In case of repeated application of the agreement referred to in paragraph 7, in addition to the sanction referred to in paragraph 9, the Ministry shall have the revocation of the rights of use of all the contractors in the areas concerned. In case of revocation no refund is due.

11. Within 2 years of the award, the Ministry of Economic Development identifies, even if necessary the ANCI, the number of tourist resorts subject to coverage obligations, in the upper limit of 2,400 throughout the national territory, affected by a quota of attendance significant tourism compared to the number of residents. These locations are identified on the basis of the applicable territorial administrative classifications, taking into account the most recent lists defined by the ISTAT, including, in an exemplary but not exhaustive way: a) municipal districts; b) temporary residential areas such as conference venues or tourist villages, groups of cottages or hotels and similar used for holiday, inhabited seasonally; c) "special" locations such as sub-threshold cores or special mountain cores, including groups of isolated houses or seasonally occupied residential settlements.

12. The Ministry subdivides the aforementioned localities into a number of lists equal to the number of blocks in the 700 MHz FDD band. The lists are formed by ordering all the identified localities, subdivided by region, on the basis of the area's surface, and taking for the list i, with which goes from 1 to the number of the K blocks, the locations that are in the place + Kn in the overall order, for each region, with n ranging from 0 to the value necessary to exhaust the lists. At the end of the construction of the lists, the Ministry carries out a draw by associating each list to a 700 MHz FDD lot. Each wager of the 700 MHz FDD lots is required, within 66 months from the association of the aforementioned list as a notifier, to cover at least 90% of the locations included in the list associated with the rights of use awarded, offering a service covering and starting the service identical to that referred to in paragraph 1. The new entrant has 12 months more time to fulfill the obligation. The coverage can be fulfilled for each identified area, where this area is verified to have no qualified coverage in an area, specifically identified at the time of inclusion of the area on the list and normally independent of the network of a specific contractor, by the contractor to whom the area is relevant, by means of the verified installation of at most one new radio station by the successful tenderer.

13. Within 180 days from the notification referred to in the previous paragraph, the bidders shall submit to the Ministry and to the Authority a preliminary plan for achieving the aforementioned

objective, including the verification procedures, and update it on an annual basis. The plan presented at the 54th month of the aforementioned notification details the achievement of the objective and becomes binding. The plan may be modified on the basis of subsequent agreements authorized by the Ministry, no more than once a year, where changes do not result in an avoidance of the obligation. The lists are published and updated by associating the name of the successful tenderer to the coverage.

15. For the purposes of the obligation set out in paragraphs 1, 3, 7 and 12, the winning bidders may also use other frequencies they hold, provided that they do not involve the use of terminals other than consumer-type terminals normally available on the market. they support 5G services in the 700 MHz FDD band.

16. The service referred to in paragraphs 1, 3, 7, 12 is intended in the form of an offer directly to the public or through the offer of wholesale access, including in the form of roaming, MORAN, MOCN, or supply of slices, provided that said offer allows , in areas where there is a coverage obligation, to the operator who buys the wholesale service to offer the service to the public with the same timing and the same procedures.

Art. 13
(Obligations to cover the bidders of the lots in the 3600-3800 MHz band)

1. The obligations set out in paragraphs 2 to 12 of this article apply to the bidders of the frequencies in the 3600-3800 MHz band that have been awarded frequencies for at least 80 MHz in that band, pursuant to this provision, and to those contractors who summing the frequencies in the 3400-3600 MHz band of which they are in possession or of which they can also be used through agreements, reach at least 80 MHz on a national basis. For the purposes of evaluating the cumulative nature of the rights of use, the provisions of art. 3, paragraphs 6 and 7.

2. The hedging obligation consists in the supply, on request and within a reasonable time proportionate to the average market timing for similar services, in any case no longer than six months from the request, of a connectivity service, both at retail and wholesale level. at the choice of the applicant, able to meet the standard operating requirements necessary to allow end users the correct use of 5G services such as to guarantee the development of applications for the use scenarios relevant to the relevant frequencies, and in particular ensuring in case of eMBB usage scenarios a nominal download speed of not less than 30 Mbps, on terms, including price conditions, that are non-discriminatory with respect to the rest of their users and without charging any additional charges arising from the location of the applicant.

3. Any natural or legal person domiciled, even not permanently, in real estate units which, for each region of the national territory, on the basis of the projects concerning the national BUL strategic plan, related to the tenders managed by Infratel, is not a priority applicant, are affected by ultra-broadband connectivity services, in municipalities with fewer than 5,000 inhabitants. For each Italian region, the Ministry, possibly heard by Infratel, publishes the list of tenders with the call for tenders in order to determine the extent of the obligation.

4. Within 90 days of the award, each successful bidder in the 3600-3800 MHz band in compliance with the obligation shall submit to the Ministry his own list of obligations for municipalities to be covered. The mandatory list must include, for each Italian region, at least 10%

of the municipalities with a population of less than 5,000 in which there are priority applicants as specified in the same paragraph 3. The aforementioned mandatory list is included among the obligations associated with usage rights. A municipality can be present in the mandatory lists of all the bidders. The plan of the mandatory list for each successful bidder is made public by the Ministry.

5. The successful bidder has 72 months from the award to prove that he is ready to provide the service referred to in paragraph 2 to all priority applicants in the municipalities declared in his mandatory list. Without prejudice to cases of documented and exceptional technical difficulty to proceed with the connection. It must also achieve this goal at least linearly with respect to the number of municipalities starting at the 24th month and then continuing with annual deadlines up to the 72nd month. To this end the plan of the municipalities to be covered presented provides for the specific timeline. The sequence of the plan can be changed not retroactively, after notification to the Ministry, at the beginning of each year starting from the presentation of the list, no more than once a year, provided that no municipality declared servable remains uncovered. Once awarded the relevant information, the contractor can declare his interest in providing the service also to applicants, located in the municipalities of his mandatory list, belonging to the real estate units subject to the Infratel tenders and which may have remained uncovered. The Ministry, possibly heard by Infratel, provides the above information to the bidders as soon as they are available.

6. In order to comply with the obligation referred to in paragraph 5, at the beginning of each period, each successful bidder shall make known, by public billposting or equivalent, or according to the procedures set out in the call for tenders, in each municipality subject to the obligation and present in the approved plan referred to in paragraph 4, the availability to provide the service to the users to be served located within the municipality itself and the procedures for making requests for commercial activation of the service. The Ministry may prepare a complementary advertising mechanism after hearing the competent municipal authorities or the ANCI or Infratel.

7. Any discrepancy in the provision of the service referred to in paragraphs 2 to 5 in the areas of obligation within the prescribed time is punishable according to current regulations and where generalized may lead to suspension of the right of use in the areas concerned, at least regional extension . Should the failure to comply be generalized in more than 40% of the municipalities subject to the obligation, withdrawal of the right of use is ordered. In case of revocation, no reimbursement is due to the contractors subject to the sanction and the related frequencies can be reassigned.

8. In relation to compliance with the obligations referred to in paragraph 5, any technical limitations deriving from compliance with the sharing model shall be reserved, which must be individually justified in relation to the impossibility of providing service to a specific applicant. In particular, the contractor subject to the obligations indicated cannot include in their obligatory plan those municipalities where the aforementioned technical limitations prevent the use of frequencies for more than 40% of the territory. In the event of such limitation, the municipality concerned must be promptly replaced in its coverage plans with appropriate publicity.

9. All national municipalities with fewer than 5,000 inhabitants that are not included in the mandatory lists of all successful tenderers constitute the free list. The free list can be modified in relation to the updates of the plans of the obligation lists referred to in paragraph 12. Any subject that meets the requirements of paragraph 10, starting from 120 days from the award, can declare to the Ministry the availability to offer the service referred to in paragraph 2 in a municipality of the free list, obligatorily at least to priority applicants as defined in the same paragraph 3 as well as to

applicants of that municipality that fall into real estate units covered by the BUL projects, related to the notices managed by Infratel, eventually discovered. The subject specifies which block of frequencies he intends to use in case there is more than one unused block. The successful tenderer of the frequency block concerned, for that municipality, is required to lease the respective frequencies. Said leasing is intended to refer to the whole municipality, unless otherwise agreed between the parties. The subject who assumes the obligation to cover that municipality with that certain frequency block, unless otherwise agreed between the parties, is required to pay the contractor a fee equal to the corresponding proportionate share of the price of the block, compared to the population of and the residual duration, which must be until the expiry of the rights of use. The access can submit cumulative requests. This subject may request access to a successful bidder also for the provision of services to the applicants of municipalities present in his list of obligations, located in real estate units covered by the BUL projects, related to the notices managed by Infratel, eventually left uncovered and which the contractor did not disclose the coverage option referred to in paragraph 5. For this request, the access conditions are negotiated between the parties who must act in good faith in the interest of the user. The start of the offer of services by the parties who assume the obligation to cover must take place, in the manner referred to in paragraph 6, within 6 months from the conclusion of the leasing contract. Any sharing agreements are left to the negotiation between the parties. The Ministry publishes updates to the free list, the list of municipalities covered by the new subjects and the frequency block used.

10. The subject who intends to access the use of frequencies pursuant to paragraph 9 may not be a network operator to whom, directly or indirectly, also following the procedures referred to in this provision, rights of use of terrestrial frequencies are assigned for electronic communications services up to the 3.6-3.8 GHz band on a national basis or on a geographical area where at least 40% of the national population resides or has agreements for the use of the same frequencies on a similar area. Said subject is required to request a special authorization from the Ministry for the management of the network, if it is not already in possession of it, and for the use of the frequencies obtained under leasing. The Ministry can identify simplified procedures for the authorization of this type of lease. Said subject must also submit to the Ministry its frequency use plan in the indicated municipality which is also published on the website of the subject. The accessing subject is held to the same obligations of the winning bidders in relation to the use of the frequencies and to the respect of the sharing model.

11. The subject accessing the frequencies pursuant to paragraph 9 is obliged to agree with the successful tenderer the mechanisms of protection and mutual coexistence, including the synchronization of the networks, so as to reasonably reduce the overall charges, also with regard to users of the adjacent band and the same band in adjacent areas. The bidders, and reciprocally, the persons who access the frequencies pursuant to paragraph 9, put in place all the measures to protect the mutual installations and do not unduly restrict new installations. In the event of a discrepancy with regard to the specific mode of synchronization, this is defined by the contractor who has the burden of proving that a different method would constitute an irreparable prejudice to the proper functioning of its network.

12. A successful bidder may, in the first ten days of each month, include a municipality not already included in his mandatory list, except for those municipalities that are covered by his own block by third parties pursuant to paragraph 9. The contractor shall provide to communicate to the Ministry the modification of its mandatory list for the purpose of updating the free list, the possible exercise of the option referred to in paragraph 5, and, at the first useful deadline, updates its hedging plan in

compliance as provided for in paragraph 5. If the update takes place after the end of the obligation referred to in paragraph 5, the availability to offer the service in the added municipality is immediate.

13. Within 48 months from the granting of the rights of use, the winner of the 20 MHz lot in the 3600-3800 MHz band is required to cover, with the specific frequencies assigned, at least 5% of the population for each Italian region. The coverage is intended to meet the standard operational requirements necessary to allow end users to use 5G services to guarantee the development of applications for the use scenarios relevant to the relevant frequencies, and in particular ensuring in case of scenarios of eMBB type of use a nominal download speed of not less than 30 Mbps. The obligation is cumulative if a successful bidder wins both 20 MHz lots pursuant to this provision and can be considered absorbed by the obligation of in paragraph 5, in case the winner has also been awarded a lot of 80 MHz. Failure to comply with the obligations referred to in this paragraph shall be sanctioned according to the provisions of the Code. If the non-compliance concerns more than 40% of the obligation, the withdrawal of frequencies can be arranged. In this case, no reimbursement is due to the defaulting contractor.

14. The Authority reserves the right to subsequently define a plan to cover, supplement or substitute the one referred to in paragraph 13, in a justified and proportionate manner, for the bidders of the 20 MHz lots in case of any consolidation or agreements of use of frequencies with subjects having frequencies in the 3.4-3.6 GHz band.

CHAPTER V
Access obligations

Art. 14 (Roaming obligations)

1. Radio operators that acquire rights of use in the 700 MHz FDD band, in accordance with the provisions of this provision, shall grant the new entrant who has acquired lots in the 700 MHz FDD band the national roaming on their own networks of the 700-band public mobile radio service , 800 and 900 MHz, on fair terms, non-discriminatory, transparent and, unless otherwise agreed between the parties:

a. for a period of 30 months, throughout the national territory;
b. up to 60 months, limited to areas not covered by the new operator;

2. The roaming agreements referred to in paragraph 1 apply to all services offered commercially by the roaming provider, and may also be provided using the MOCN, MORAN method, or slice supply.

3. The new entrant winner is entitled to roaming in accordance with the procedures referred to in paragraphs 1 and 2 on the condition that he has started the commercial service and completed the coverage, with its own frequencies, of such areas to ensure coverage of at least 10% of the national population. The entitlement to roaming by the new entrant, according to the procedures referred to in paragraphs 1 and 2, cannot be exercised more than 24 months after the nominal availability of the frequencies.

4. For the purposes of the obligations pursuant to art. 12 the new entrant may consider the areas in which the roaming agreement referred to in paragraph 1 is included as part of their hedging plan

but is still required to participate in the collective agreements envisaged therein, the relevant part of which will also be after the end of the roaming.

5. The Authority supervises the application of this article and intervenes in any disputes between companies. In the event of a dispute by the new entrant awarded the economic and technical conditions applied for roaming by an obliged mobile operator, the latter has the burden of proving to the Authority that the requested prices are based on the principles of fairness, transparency and non-discrimination and that the technical conditions are not unreasonably restrictive, as well as to provide the Authority with all the information necessary to verify compliance with the conditions set out in this article. Failure to comply with the provisions of this article can be punished according to current regulations

Art. 15
(Access obligations in the 3600-3800 MHz band)

1. The obligations referred to in paragraphs 2 and following of this article shall apply to the bidders of the frequencies in the 3600-3800 MHz band that have been awarded frequencies for at least 80 MHz in that band, pursuant to this provision, and to those bidders who add up the frequencies in the 3400-3600 MHz band of which they are in possession or of which they can also be used through agreements, reach at least 80 MHz on a national basis. For the purposes of evaluating the cumulative nature of the rights of use, the provisions of art. 3, paragraphs 6 and 7. The Authority reserves the right to subsequently define a plan of access obligations, in a justified and proportionate manner, for the bidders of the 20 MHz lots in case of possible consolidations or agreements for the use of frequencies with subjects which have frequencies in the 3.4-3.6 GHz band.

2. Each successful tenderer of the frequencies of the 3600-3800 MHz lots for which he is responsible is obliged to provide an access service to any person, excluding those to whom they are assigned, directly or indirectly, also following the procedures referred to in present provision, rights of use of terrestrial frequencies for electronic communication services up to the 3600-3800 MHz band included on a national basis or on a geographical area where at least 40% of the national population resides. The access service is provided on the following terms and conditions:

a. access follows a reasonable request for the development of 5G services and is based on a commercial agreement between the parties, on fair and non- discriminatory terms;
b. the agreement specifies the reference area, up to the minimum of the area covered by a single plant;
c. the agreement may also include areas outside the territory subject to the coverage obligation;
d. the technical modalities of access are agreed between the parties and may also provide for the creation of the network by the accessing subject if the contractor does not intend to cover the reference area directly, specifying in this case whether the network is built under the control of the successful tenderer or by leasing; always in this case the agreement provides, unless otherwise agreed, in both cases, for the use of the frequencies, the payment of a fee equal to the corresponding proportionate share of the contracting price of the block.

The obligation to provide access is extended to subjects who in certain reference areas have obtained the availability of frequencies pursuant to art. 13, paragraph 8.

3. The subject that accesses the capacity, or the autonomous use of frequencies in the case of leasing, pursuant to paragraph 2, must acquire, if it is not already in possession, suitable authorization from the Ministry for the management of the network and the use of frequencies, notifying the agreement reached, even if it intends to use the capacity or frequencies for private purposes or for the resale of services other than pure electronic communication services. It publishes its own development plan and network roll out on its website, and defines and conforms to a hedging plan in the case of leasing. If this subject is a public operator of electronic communications services, it undertakes to also start the commercial service in the area of reference. The Ministry can identify simplified procedures for the authorization of this type of lease.

4. Third parties that access the availability of capacities or frequencies pursuant to paragraphs 2 and 3 are bound by the same obligations as the assignor in relation to the use of frequencies and compliance with the sharing model.

Art. 16
(Access obligations for the 26 GHz band)

1. The rights to use frequencies in the 26 GHz band provide for the use of frequencies in a shared manner between all the bidders of the lots in that band, with pre-emption of binding use of the frequencies of the lot awarded. The bidders can dynamically use all band frequencies in areas where they are not used by the other contractors. For the purposes of this use, the contractors can stipulate commercial agreements, reasonable and non-discriminatory, subdividing the costs proportionally, possibly entrusting a trusted third party with the task of managing the uses to avoid harmful interferences and managing the various schedules of the bidders.

2. The winners of the rights to use the lots at 26 GHz, are required to allow access to suitable parties as defined in paragraph 4 for the offer of services of type 5G. Access means wholesale supply of capacity, according to the agreed technical methods, which may also include the use of frequencies by the accessing party. For the fulfillment of the obligation of access, the bidders comply with the following minimum criteria, not mutually exclusive:

a. if the applicant requests access to a reference area for which frequencies or part of them are already used by a particular contractor, the agreement is made with this contractor, which provides access to the frequencies awarded;
b. if the applicant requests access to an area where there is no coverage, the bidders manage the agreement collectively or delegate to the trusted third party the task of regulating the use of frequencies; in this case the applicant for access and the contractors can assign to a third party the task of realizing the network coverage.

The agreement can also be made for a part of the frequencies in the 26 GHz band.

3. The use of frequencies in the access cases referred to in paragraph 2 takes place under the control of the successful tenderer. The subject who accesses the capacity or use of frequencies does not become the holder of rights on the use of frequencies.

4. The person who accesses the capacity or use of the frequencies pursuant to paragraph 2 cannot be directly or indirectly an operator of public electronic communication services. Said subject is

required to request a special authorization from the Ministry for the management of the network and the use of frequencies and cannot resell pure electronic communications services to the public, unless specific agreements are made with the successful tenderer. It will have to notify the ministry of the agreement reached and of its capacity or frequency use plan. The details of this plan are published on the Ministry website.

5. The agreements referred to in paragraph 2 are without prejudice to all obligations set forth in relation to the use of frequencies and compliance with the sharing model.

6. In all public and private funds of the national territory with limited area for public use, whose coverage with the frequencies at 26 GHz requires the permission of the fund manager, within the limits of non-interference with the homologous frequencies used in the external public territory to the aforementioned funds, by way of example but not limited to ports, airports, stadiums, concert arenas, cinemas, theaters, national parks, subways, etc., the coverage can be made by any contractor who, on the basis of non-interference with any other contractors operating in the fund, may use all frequencies of the band at 26 GHz. The contractor, or contractors, who carry out such coverage are required to offer the other contractors the rights of use in the 26 GHz band, on commercial terms, fair and non-discriminatory, access within the fund in the form of roaming or other agreed technical conditions in order to allow customers of all the contractors of lots in the 26 GHz band access to the services offered by their operator within the fund.

7. Within 180 days from the awarding, and before the release of the rights of use, the winning bidders shall submit to the Ministry and the Authority a general plan for handling the requests referred to in paragraph 2, and update it annually. The plan is published on the website of the successful bidders. At any time the Ministry and the Authority, each for their own competences, in a justified and proportionate manner, can order the modification of the conditions of the aforementioned plan.

CHAPTER VI
Common rules

Art. 17
(Common obligations of successful bidders)

1. The obligations set forth in this provision, including the level of coverage also with regard to possible changes to the plans, must be maintained for the entire duration of the respective right of use and are transmitted to any person with whom agreements are made for use and transfer of frequencies.

2. Without prejudice to the consequences envisaged by current legislation in case of non-compliance with the obligations under the right to use frequencies, to contractors who do not respect the obligations deriving from the effective use of frequencies, including coverage and use of frequencies in terms envisaged, including the start-up of the commercial service, the suspension of the right of use in the areas concerned, of at least provincial extension, may be further arranged. In case the obligations are not respected for more than 40% of what is foreseen the withdrawal of the right of use is ordered. In case of revocation, no reimbursement is due to the contractors subject to the sanction and the related frequencies can be reassigned.

3. The winning bidders are required to request, if they are not already in their possession, the authorizations required by current legislation on the supply of electronic communications services, and to comply with their respective obligations.

4. For the use of frequencies, the bidders are required to comply with the specific provisions of the Code and other relevant laws, including in particular the rules on network security and data protection, referred to in the Annex n. 1, part A, points 7 and 16, of the Code, having regard to the new scenarios deriving from the development of 5G networks.

5. The activation of stationary active apparatuses operating on the frequencies adjudicated, even if of free use, takes place under the control of the winning operator. The successful tenderers must keep in a special register the data relating to the location of the said equipment, where not free to use.

6. For the purposes of the installation or operation of two-way radio stations in civil airports and adjacent areas subject to the related easements, the successful tenderer is required to acquire the prior approval of the National Civil Aviation Authority in relation to the aspects of aeronautical safety.

7. The winning bidders are required to provide the Authority with the information necessary for the verification of the efficient use of the frequencies, in compliance with the provisions of the Code.

8. The successful tenderer must take all measures necessary to avoid interference with other authorized users of the electromagnetic spectrum. For the effective operation of the plants, the contractors are required to comply with the current regulations on urban planning, accident prevention, landscaping, environmental, occupational hygiene, as well as compliance with the limit values of the electromagnetic field, providing to take care, for each of the aforesaid aspects, where envisaged, the authorizations by the competent Authorities.

9. In order to allow the appropriate coordination, the bidders are required to make available to other operators, on the basis of a motivated request and on condition of reciprocity, the technical characteristics and geographical location of the installed systems. In case of co-location of plants, the bidders are required to adopt the best practices of site engineering suggested by the technical literature.

10. Successful bidders are required to comply with the technical standards that the Ministry adopts for the purpose of international frequency coordination.

11. Successful bidders operating close to the Italian State border are required to comply with the coordination procedures established by cross-border agreements and in general by international regulations and where necessary by ECC Recommendation (15) 01 for applicable frequencies. The awardees may be required upon release of the right of use, or subsequently in case of harmful interference persistence, the obligation that the PFD produced is from the user terminals and from the base stations of its infrastructure, does not exceed levels pre-established at the border.

12. The contractors shall identify appropriate mitigation and coordination techniques, including synchronization techniques, to avoid any interference problems in the band and in the adjacent band in relation to installations which are entitled to protection, and shall adopt them proportionately and justified, taking account of the relevant international standards, methodologies and best practices.

13. If the application of the technical standards envisaged does not guarantee the total absence of harmful interference in all possible cases of interference, both in band and out-of-band, the bidders must take the additional measures that may be necessary, such as mitigation techniques and coordination, adopting them in a proportionate manner, taking into account the relevant international standards, methodologies and best practices, including network synchronization. In the case of the adoption of specifications, additional coordination or mitigation techniques with the operator or operators using the same bands in neighboring geographic areas or adjacent bands in the same areas, the operators concerned reasonably divide the charges in the areas concerned. If these measures do not guarantee the total absence of harmful interference, the Ministry may impose more restrictive technical standards, even subsequently, during the effective implementation of the provisions of this provision, including technical mitigation specifications, limits on the emitted spectral power, use of preferential channels or other limitations, including additional geographical exclusion zones or where only certain privileged architectural configurations are envisaged, in a justified and proportionate manner. In the event of the existence of harmful interference between operators operating in adjacent blocks, the Ministry may be required to synchronize the networks or impose an internal guard band on the right to use or use frequency blocks in "restricted" mode. For the purpose of adopting the technical synchronization standard, the Ministry may convene and take into account the results of a specific technical table with the interested parties. The users of the adjacent bands cooperate in good faith for the resolution of every possible case of harmful interference and are required to guarantee the efficient use of the spectrum, in compliance with the principles established by the Code.

14. To disputes between operators that may arise pursuant to the provisions of art. 13, paragraph 11, art. 14, art. 15 and art. 16 of the present article the provisions of art. 1, paragraph 11, of the law n. 249 of 31 July 1997, together with the specific provisions concerning the resolution of disputes between electronic communications operators, pursuant to resolution no. 226/15 / CONS, as last amended by resolution no. 449/16 / CONS.

Art. 18
(Uso degli apparati e approvazione delle interfacce)

1. The successful tenderer is required to use equipment that complies with the standards and technical standards established by the current National Frequency Distribution Plan, which are equivalent and compatible to them. The conformity assessment is carried out according to the regulations in force. In any case, the contractor who uses declared compatible equipment, without prejudice to the obligations envisaged and the verification of such compatibility, undertakes not to cause harmful interference to the other authorized systems.

2. The equipment used, including those used by the user, must comply with the provisions of Directive no. 2014/53 / EU.

3. The technical specifications of the interfaces of the systems used by the contractors, if not already public, must be published in an exact and adequate manner in accordance with the provisions in force.

CHAPTER VII
Final provisions

Art. 19
(Final provisions)

1. The Authority reserves the right to adapt the content of this provision in relation to any subsequent recommendations and / or decisions of the European Commission on the subject, or in general to the evolution of the regulatory framework of the sector, in particular in relation to the need for development and dissemination of 5G services.

2. The issue of the rights to use the frequencies, referred to in this provision, does not constitute a title for the assignment to the contractors of rights of use for further frequencies, either in the bands subject to this provision, or in other bands. Any third parties that access the use of frequencies by virtue of access obligations or agreements for use or leasing pursuant to this provision, do not in any case accrue rights to the allocation of the frequencies they use or other frequencies .

3. The winning bidders are required to accept any incremental interference levels in the bands subject to this provision arising from the primary services existing in the adjacent bands or where specified in the band, as well as from the use of specific devices authorized on the basis of the current legislation without individual use, such as those based on Ultra Wide Band (UWB) and Short Range Device (SRD) technology.

4. The obligations envisaged for the winning bidders, including the payment of the bid awarded, constitute obligations associated with the related rights of use and their non-compliance is subject to the penalties provided for by the regulations in force. In particular, the requirements for admission to the award procedure and those relating to the achievement of minimum coverage must be maintained for the entire duration of the rights of use.

5. The sale of frequencies (trading), whose rights of use are acquired pursuant to the present provision, also in the form of transfer of the related company branch, in whole or in part, is prohibited for 24 months from the issue of rights of use; for frequencies obtained by awarding the reserved lot, this term is extended to 48 months. The authorization of the assignment is carried out according to the rules established by the Code, providing a suitable guarantee by the transferee for compliance with the obligations of use and coverage.

6. In relation to any future plans for the allocation or refarming of the adjacent bands of the bands subject to this provision, the bidders are obliged, in a justified and proportionate manner, after any compensation for the costs incurred for the retuning of the equipment, to adhere to possible plans for the reallocation of the frequencies aimed at achieving a more efficient use of the spectrum, in particular to obtain contiguous assignments of frequencies for the same operator.

7. Resolution no. 659/15 / CONS.

This resolution is published on the Authority's website.

Rome, 8 May 2018

PRESIDENT

Autorità per le Garanzie nelle Comunicazioni

Angelo Marcello Cardani

THE REPORTING COMMISSIONER
Antonio Nicita

THE REPORTING COMMISSIONER
Francesco Posteraro

For attestation of conformity to what has been deliberated
THE GENERAL SECRETARY
Riccardo Capecchi

Attachment 1

List of municipalities pertinent to the obligation referred to in art. 12, paragraph 4.

	Municipality of	**Province**	**Region**
1	Gagliano Aterno	L'Aquila	Abruzzo
2	Civita d'Antino	L'Aquila	Abruzzo
3	Morino	L'Aquila	Abruzzo
4	Castiglione a Casauria	Pescara	Abruzzo
5	Brittoli	Pescara	Abruzzo
6	Canistro	L'Aquila	Abruzzo
7	Introdacqua	L'Aquila	Abruzzo
8	Barete	L'Aquila	Abruzzo
9	Tossicia	Teramo	Abruzzo
10	Montebello di Bertona	Pescara	Abruzzo
11	Fresagrandinaria	Chieti	Abruzzo
12	Sorbo San Basile	Catanzaro	Calabria
13	Sorianello	Vibo Valentia	Calabria
14	Canolo	Reggio Calabria	Calabria
15	Capistrano	Vibo Valentia	Calabria
16	Letino	Caserta	Campania
17	Savignano Irpino	Avellino	Campania
18	Raviscanina	Caserta	Campania
19	San Gregorio Matese	Caserta	Campania
20	Montecorice	Salerno	Campania
21	Vernasca	Piacenza	Emilia-Romagna
22	Bore	Parma	Emilia-Romagna

23	Ventasso	Reggio Emilia	Emilia-Romagna
24	Pontebba	Udine	Friuli Venezia Giulia
25	Tramonti di Sopra	Pordenone	Friuli Venezia Giulia
26	Bordano	Udine	Friuli Venezia Giulia
27	Resiutta	Udine	Friuli Venezia Giulia
28	Lauco	Udine	Friuli Venezia Giulia
29	Ragogna	Udine	Friuli Venezia Giulia
30	Comeglians	Udine	Friuli Venezia Giulia
31	Nespolo	Rieti	Lazio
32	Pozzaglia Sabina	Rieti	Lazio
33	Rocca Sinibalda	Rieti	Lazio
34	Pico	Frosinone	Lazio
35	Varco Sabino	Rieti	Lazio
36	Petrella Salto	Rieti	Lazio
37	Trivigliano	Frosinone	Lazio
38	Cittareale	Rieti	Lazio
39	Santopadre	Frosinone	Lazio
40	Morro Reatino	Rieti	Lazio
41	Nasino	Savona	Liguria
42	Zignago	La Spezia	Liguria
43	Prelà	Imperia	Liguria
44	Vendone	Savona	Liguria
45	Rezzoaglio	Genova	Liguria
46	San Colombano Certenoli	Genova	Liguria
47	Valbrevenna	Genova	Liguria
48	Cergnago	Pavia	Lombardia
49	Oltressenda Alta	Bergamo	Lombardia
50	Tartano	Sondrio	Lombardia
51	Val di Nizza	Pavia	Lombardia
52	Rosasco	Pavia	Lombardia
53	Tornata	Cremona	Lombardia
54	Canevino	Pavia	Lombardia
55	Bianzano	Bergamo	Lombardia
56	Crotta d'Adda	Cremona	Lombardia

57	Brallo di Pregola	Pavia	Lombardia
58	Santa Margherita di Staffora	Pavia	Lombardia
59	Mezzana Rabattone	Pavia	Lombardia
60	Rognano	Pavia	Lombardia
61	Comazzo	Lodi	Lombardia
62	Lanzada	Sondrio	Lombardia
63	Genga	Ancona	Marche
64	Monte Grimano Terme	Pesaro e Urbino	Marche
65	Montegallo	Ascoli Piceno	Marche
66	Conca Casale	Isernia	Molise
67	San Pietro Avellana	Isernia	Molise
68	Fossalto	Campobasso	Molise
69	Pietracupa	Campobasso	Molise
70	Cercemaggiore	Campobasso	Molise
71	Pizzone	Isernia	Molise
72	Sambuco	Cuneo	Piemonte
73	Isasca	Cuneo	Piemonte
74	Sabbia	Vercelli	Piemonte
75	Valloriate	Cuneo	Piemonte
76	Falmenta	Verb-Cus-Ossola	Piemonte
77	Rossa	Vercelli	Piemonte
78	Valmala	Cuneo	Piemonte
79	Campiglia Cervo	Biella	Piemonte
80	Cortandone	Asti	Piemonte
81	Celle Enomondo	Asti	Piemonte
82	San Giorgio Scarampi	Asti	Piemonte
83	Villaromagnano	Alessandria	Piemonte
84	Solonghello	Alessandria	Piemonte
85	Paroldo	Cuneo	Piemonte
86	Prasco	Alessandria	Piemonte
87	Druogno	Verb-Cus-Ossola	Piemonte
88	Premia	Verb-Cus-Ossola	Piemonte
89	Brondello	Cuneo	Piemonte
90	Trezzo Tinella	Cuneo	Piemonte

91	Cerretto Langhe	Cuneo	Piemonte
92	Pontestura	Alessandria	Piemonte
93	Ricaldone	Alessandria	Piemonte
94	Revigliasco d'Asti	Asti	Piemonte
95	Avolasca	Alessandria	Piemonte
96	Roascio	Cuneo	Piemonte
97	Vigliano d'Asti	Asti	Piemonte
98	Marsaglia	Cuneo	Piemonte
99	Montemarzino	Alessandria	Piemonte
100	Gabiano	Alessandria	Piemonte
101	Montabone	Asti	Piemonte
102	Segariu	Medio Campidano	Sardegna
103	Pompu	Oristano	Sardegna
104	Noragugume	Nuoro	Sardegna
105	Sclafani Bagni	Palermo	Sicilia
106	Monteverdi Marittimo	Pisa	Toscana
107	Valfloriana	Trento	Trentino-Alto Adige
108	Sover	Trento	Trentino-Alto Adige
109	Castel Condino	Trento	Trentino-Alto Adige
110	Terragnolo	Trento	Trentino-Alto Adige
111	Bionaz	Aosta	Valle D'Aosta
112	Perloz	Aosta	Valle D'Aosta
113	Cogne	Aosta	Valle D'Aosta
114	Laghi	Vicenza	Veneto
115	San Germano dei Berici	Vicenza	Veneto
116	La Valle Agordina	Belluno	Veneto
117	Cinto Euganeo	Padova	Veneto
118	Bevilacqua	Verona	Veneto
119	Gambugliano	Vicenza	Veneto
120	Vallada Agordina	Belluno	Veneto