

Analysis of public consultation on the National Table of Frequency Allocation

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1. Introduction

By deliberation of the Management Board of ICP-Autoridade Nacional de Comunicações (ICP-ANACOM), of March 24th, 2011, under and in compliance with articles 15 and 16 of the Law of Electronic Communications (LCE) - Law number 5/2004, of February 10th - it was approved for submission to the general consultation procedure foreseen in article 8 of LCE, the National Table of Frequency Allocation (NTFA, version 2010/2011) to be in effect in 2011/2012.

The version of NTFA placed for consultation included the following elements:

- **Frequency allocation table** (Annex 1): has a detailed presentation of the subdivisions of the radio spectrum, for frequencies between 9 kHz and 275 GHz, discriminating the radio services for each frequency band, according to the allocations of the Radio Regulation (RR) of the International Telecommunication Union, Radiocommunications Sector (UIT-R) applicable to Portugal, indicating the used and planned services and systems;
- **Publication of uses of frequency bands** (Annex 2): contains the frequency bands and the number of channels used for the operation of networks and electronic communication services accessible to the public until 15th November 2010;
- **Frequency allocation reservations** (Annex 3): contains the reserved frequencies and those that will be made available in 2011/2012, for the operation electronic communication networks and services (i) accessible to the public and (ii) not accessible to the public;

- **Uses dispensed from licensing** (Annex 4): shows the spectrum uses that are dispensed from radio licensing, divided into (i) network license exemption and (ii) station license exemption;
- **Equipments / Systems that use ultra wideband technology, UWB** (Annex 5): details the "generic" *Ultra Wide Band* (UWB) equipments and the "specific" UWB equipments;
- **Use of frequencies amateur and amateur satellite services** (Annex 6): contains the frequency bands and conditions of use (maximum allowed powers) for the different amateur categories, in addition to the status of amateur and amateur satellite services;
- **Appendixes** (Annex 7): includes a set of complementary elements (e.g., definitions, acronyms, relevant documents, figures).

Since this is a measure with a significant impact on the relevant markets, it was determined to submit the NTFA version 2010/2011 to the general consultation procedure, foreseen in article 8 of LCE, ending on April, 27th 2011. However, considering that other public consultations are simultaneously under way, ICP-ANACOM decided to extend for another ten work days the deadline for the interested parties to produce statements regarding the mentioned consultation procedure. Therefore, the deadline for the general consultation procedure ended on May 11th 2011.

Within the deadline, comments were received from the following entities:

- Grupo Portugal Telecom (GRUPO PT), on behalf of the companies Portugal Telecom SGPS, S.A., PT Comunicações, S.A., PT Prime – Soluções Empresariais de Telecomunicações e Sistemas, S.A. and TMN – Telecomunicações Móveis Nacionais, S.A.;
- João Costa (Radio amateur);

- José Moreira (Radio amateur);
- Optimus - Comunicações, S.A. (OPTIMUS);
- Pedro Ribeiro (Radio amateur);
- Vodafone Portugal, Comunicações Pessoais S.A. (VODAFONE);
- ZON TV Cabo Portugal, S.A. (ZON).

According to the procedures adopted by ICP-ANACOM, in February 12, 2004, in particular for the general consultation procedure foreseen in Article 8th of LCE, this Authority analyses all the replies received and makes available a final document with a reference to all replies and a global appreciation that reflects its understanding of those (item 3), sub-paragraph d) of the deliberation) – is, therefore, the purpose of this document.

ICP-ANACOM is pleased with the positive and constructive character of the received proposals.

Given the synthetic character of this document, its analysis does not dispense the consultation of the mentioned replies, which are made available in the Internet site of the Authority, in the part for which confidentiality has not been requested. Also, the relevant contributions to the public consultation being appreciated, identified by the entities as confidential information, were taken into consideration in the analysis done by ICP-ANACOM, and the requested anonymity was kept.

Regarding the concerns expressed in the received contributions and so as to obtain more clarity in exposure, ICP-ANACOM chose to structure this report by reference to the greater themes identified by the respondents, summarizing, regarding each one, the positions defended and explaining the understanding of this Authority about them.

2. General themes

2.1. Allocation of the frequency usage right in the 450, 800, 900, 1800, 2100 and 2600 MHz bands

Several comments were received about the matters under discussion regarding the process for the allocation of frequency usage rights in the 450, 800, 900, 1800, 2100 and 2600 MHz bands, namely about the auction model, requests for clarification about some of the articles in the Regulation Project and “*spectrum caps*”.

ICP-ANACOM's Understanding

ICP-ANACOM has taken note of the received comments, although considering that those must be handled in the adequate place, i.e., in the processes regarding the “Limitation to the allocation of frequency usage rights and definition of their allocation process in the 450, 800, 900, 1800 MHz and 2.1 and 2.6 GHz bands” and in the “Project for the Regulation of the Auction for the allocation of frequency usage rights in the 450, 800, 900, 1800 MHz and 2.1 and 2.6 GHz bands” – the so-called multi-band auction –, which were also submitted to the adequate general consultation procedure.

2.2. Amount of spectrum to make available at 1800 MHz

Regarding the spectrum in the frequency band of 1800 MHz, VODAFONE requests that ICP-ANACOM clarifies, if possible, and if it does not conflict with the confidentiality rules applicable to some usages of the spectrum at stake, why only 2 x 30 MHz are being made available as well as the prevision for the release of the remaining 2 x 27 MHz.

ICP-ANACOM's Understanding

The availability of 2 x 30 MHz in the frequency band of 1800 MHz was duly pondered by ICP-ANACOM for the multi-band auction process (still ongoing), and this Authority took into account the result of the last public consultations that involved this matter, in which no special interest was shown from the market in the complete availability of the spectrum that is currently free (2 x 57 MHz). It is stressed that the final decision about this issue will be taken in that scope (i.e., in the multi-band auction process), and the NTFA, if necessary, will be changed later in accordance with the decisions made.

2.3. Principles of neutrality in the 1900-1910 MHz band

OPTIMUS refers that in the scope of allocating bands through the announced auction, the table regarding the frequency band of 1900-1910 MHz in the present version of NTFA, must be updated so as to reflect the application of the principles of technological and service neutrality.

ICP-ANACOM's Understanding

ICP-ANACOM states that, regarding the 1900-1910 MHz band, the reference to the ECC Decision from March 24th, 2006, ECC/DEC/(06)01 is still valid, about the "harmonized usage of the spectrum for IMT-2000/UMTS land systems that operate in the 1900-1980 MHz, 2010-2025 MHz and 2110-2170 MHz frequency bands" since it is the only reference currently in existence that identifies the technical conditions of band usage for the Land Mobile Service. However, considering that in the scope of CEPT studies are taking place that aim at allowing a more flexible usage of this band and that

the review of the Decision ECC/DEC/(06)01 is undergoing, ICP-ANACOM in line with the progressive implementation of the principles of technological and service neutrality does not inhibit the rendering of any electronic communications services, namely in the 1900-1910 MHz band. Naturally, the usage of this band must take into account the relevant international agreements, namely those that arise from the fulfilment of the obligations resulting from the Regulation for Radiocommunications of the International Telecommunication Union (ITU).

2.4. Digital Terrestrial Television

GRUPO PT suggests that the footnote (1) on page 260, of the NTFA 2010/2011¹ placed for public consultation, be changed so that it is more precise, arguing with the decisions of ICP-ANACOM from March 9th, 2011 (channel change of Mux A) and from April 4th, 2011 (consequent change of the Frequency Usage Rights of PT Comunicações).

ICP-ANACOM's Understanding

Considering the developments occurred in the scope of DTT in Portugal, including those mentioned by Grupo PT, ICP-ANACOM reviewed the final version of NTFA 2010/2011 in public consultation so as to include the latest decisions regarding DTT, namely updating the Introduction to NTFA and Annexes 1 and 2 in the corresponding bands, as well as deleting section 7.5 (Scope of Usage of DVB-T).

¹ "A public consultation is currently under way to change the radio channels above 790 MHz, used by PT Comunicações."

2.5. Potential impact of usage in the sub-band of 790-862 MHz in cable networks

ZON reiterates the comments made in previous public consultation regarding the need to include mechanisms that prevent the existence of eventual radio interferences in the cable networks.

Additionally, ZON reiterates that a technical commission be created, which conducts an independent study, composed of operators of Mobile Telephone Service (MTS), cable network operators, and Independent Entity - responsible for conducting the tests -, with the purpose of determining the impact of usage of the sub-band of 790

ICP-ANACOM's Understanding

Regarding the comments from ZON - in line with those presented by this company for consultation about the spectrum designation of the Digital Dividend - regarding eventual situations of interference or degradation of service quality of television reception (namely cable TV) caused by the electronic communication services that will use the sub-band 790-862 MHz, ICP-ANACOM reiterates that it has followed the tests and studies that have been done in several countries (e.g. at the regulator level), which do not show, until now, in an unequivocal way, the occurrence of such situations, whilst the most conclusive results point at probable causes of an entire set of equipments (plugs/outlets, cables, receivers, etc.), in particular if these display faulty conditions.

Once again, it is stressed that debates at European Commission level have been organized - which mandated ETSI and CENELEC to analyse this matter in the scope of the Electromagnetic Compatibility Directive², namely the creation of standards for TV receivers

² <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:390:0024:0037:pt:PDF>

(broadcast and cable) - aiming thus at improving the coexistence with the electronic communications systems that will explore the sub-band 790-862 MHz. In that sense, the Technical Committee 210 (TC210) point to a set of mitigation techniques can be implemented by both cable operators that use the sub-band 790-862 MHz in order to provide electronic communication services, so as to improve the reception of the services provided by the cable operators.

Naturally, since this matter is quite relevant in the context of the availability of the band for the provision of services of electronic communications, ICP-ANACOM will follow the international instances closely (in particular for the creation of standards) so as to prevent any situations of potential interference such as that manifested by ZON. Therefore, it is understood that at the moment there is no motive to formally create a group in the moulds proposed by ZON, without prejudice to, in the scope of the competences at the standardization level, ICP-ANACOM has the intention of conduction some technical tests (e.g., according to standard EN61000-4-3), so as to evaluate the impact of emissions on television receivers, in order to detect the scenarios and mainly the possible causes for eventual interferences.

2.6. NTFA and Frequencies Portal

VODAFONE suggests the involvement, since now, of operators, future users of the e-NTFA and other interested parties in the development of the Frequencies Portal, so as to contribute and make suggestions in order to maximize the benefits of this tool.

ICP-ANACOM's Understanding

The tool being developed, called e-QNAF by ICP-ANACOM, will surely bring advantages for all activities related with the radio spectrum. Its users are undoubtedly a much wider universe than the Regulator (Spectrum Manager), so it is beneficial that there might be collaboration on behalf of the remaining potential users of the tool in its current development stage. ICP-ANACOM is currently evaluating the viability of this suggestion within the scope of that project.

2.7. Secondary spectrum trading

OPTIMUS refers that, considering the remission of article 37 of LCE to NTFA, ICP-ANACOM should clarify in this scope, the generic conditions that currently frame the frequency transmission. Additionally, without prejudice to recognizing the convenience of waiting for the transposition of the European regulation framework, this operator reiterates the importance of clarifying the market about the concrete conditions in which it will be possible to resell spectrum as soon as possible.

VODAFONE manifested its agreement with the decision proposed by ICP-ANACOM of assuring that the adoption of rules and procedures regarding the secondary spectrum trading is done according to the transposition of the new European regulatory framework and thus assure the maximum possible harmonisation at the procedure and best practices level at the European level.

VODAFONE also reiterated that the rules regarding the secondary spectrum trading must take into consideration the respect for the principle of equality of access to the markets by the different entities,

which will determine that ICP-ANACOM, in its role of consultant to the Government in the transposition, aims at safeguarding the in existence of different terms and conditions between the operators that resort to this market and those that ICP-ANACOM allocated the usage rights previously.

ICP-ANACOM's Understanding

The new European regulatory framework (designated, Revision 2006) establishes specific rules about the transmission and lease of the usage rights of frequencies that, when transposed to national law, will compose the legal basis for the definition of the rules and conditions associated with the secondary spectrum trading.

As such, ICP-ANACOM maintains its position, exposed in the consultation document, in order for these rules and conditions to reflect the legal changes arising from the transposition of the new regulatory framework, which should be concluded during 2011.

3. Specific themes

3.1. Annex 1 - Table of Frequency Allocation

OPTIMUS and VODAFONE refer the need to include in Annex 1 of NTFA 2010/2011 the recent change to Decision 2009/766/EC, regarding the technical conditions to be respected when using the 900 MHz and 1800 MHz frequencies for the development of 4th generation technologies (UMTS, LTE, WiMAX).

ICP-ANACOM's Understanding

The change of Decision 2009/766/EC -- Implementing Decision from the Commission 2011/251/EU, April 18th, 2011, which changes Decision 2009/766/EC regarding the harmonisation of frequency bands of 900 MHz and 1800 MHz for land systems capable of providing pan-European electronic communication services in the Community -- was published in the Official Journal of European Union on 27.4.2011, i.e., after the NTFA submitted to public consultation was approved. Accordingly, the corresponding reference is inserted in the final version of NTFA 2010/2011 to be published.

3.2. Annex 2 - Publication of Usages

OPTIMUS requests that its name be updated in the tables that publicize the usage of frequencies: instead of Sonaecom – Serviços de Comunicações, SA, it should be Optimus – Comunicações, SA.

GRUPO PT also requests that the name of the company in the Group that uses WAS/RLAN (p. 171): instead of PT Comunicações, SA, it should be TMN – Telecomunicações Móveis Nacionais, SA.

VODAFONE questions the usage of the 2.6 GHz band by ZON TV Cabo Madeirense, since this spectrum is in the Regulation Project of the Auction for allocation of frequency usage rights being created by ICP-ANACOM.

ICP-ANACOM's Understanding

The changes in title referred by OPTIMUS and GRUPO PT were contemplated in the final version of NTFA 2010/2011 to be published.

Regarding the usage of ZON TV Cabo Madeirense of the 2.6 GHz band (p.151), it should be said that the company in question has obtained an extension of the authorization it held (MMDS) from this Authority until 31/12/2011. When that period ends, the 2.6 GHz spectrum will be effectively available without limitations in all national territory and NTFA will then be changed accordingly.

3.3. Annex 3 - Reservation of spectrum

Regarding the section of the reservations of spectrum, VODAFONE highlights the existence of a reservation of spectrum of 900 MHz and 1800 MHz for the mobile communications service on board vessels, and alerts to the need of assuring and safeguarding the absence of interferences with other electronic communications services provided in those bands.

ICP-ANACOM's Understanding

ICP-ANACOM confirms the existence of reservation of spectrum of 900 MHz and 1800 MHz for Mobile Communications on board Vessels (MCV). It is also stated that the Management Board of ICP-ANACOM deliberated, on January 6th, 2011 (see <http://www.anacom.pt/render.jsp?contentId=1034299>), to approve

the public consultation report issued to the probable decision, and future usages and MCV must respect:

- all the technical condition specified in the Decision of the Commission 2010/166/UE, March 19th, 2010;
- The act of licensing from the competent Maritime Authority.

This way, it is considered that the - pertinent - concerns of VODAFONE were duly taken into consideration, namely regarding the mitigation techniques contemplated in the mentioned Decision, resulting from analyses performed by CEPT, and set on the report CEPT 28³, so as to protect the systems currently contemplated to operate in the bands at stake: GSM and UMTS.

3.4. Annex 4 - Usages exempt from licensing

ICP-ANACOM, faced with the many requests of information regarding VSAT terminals, as well as requests of network and services offer that it has received in a more recent period, thought it would be appropriate, although no concrete comments were received for this public consultation, to analyse the possibility of extending the operation band of VSAT terminals exempt from licensing in the 14 GHz.

ICP-ANACOM's Understanding

Regarding the change of the frequency band for the operation of VSAT terminals exempt from licensing, the following must be noted: on one side, the Decision ECC/DEC/(03)04 about the exemption of individual license for VSAT in the 14/11 GHz is partially adopted, since the VSAT terminals operating in the frequency bands 10.7-11.7 GHz and 14-

³ Available in www.ero.dk

14.25 GHz are already exempt from licensing in Portugal; on the other hand, the usage of the broadcast band 14.25-14.5 GHz on behalf of VSAT stations is only a problem when an Administration allows the usage of the said band for Fixed Service, which is not the case in Portugal.

As such, and faced with the many request of information and requests of network and services offer regarding this kind of terminals, ICP-ANACOM considered it to be appropriate to review the regulatory framework for this type of terminals, and proceeded with the extension of the frequency band (upper limit goes from 14.25 GHz to 14.5 GHz) for the operation of VSAT terminals exempt from licensing (change in the table of item b) of Annex 4.2), facilitating the access to the spectrum by this type of applications, with the extension of the scope of exemption from radio licensing of these terminals.

3.5. Annex 6 - Amateur and amateur satellite services

The items brought forth in three contributions from amateur radio operators are presented below.

a) Amateurs in category 3

Mr. Pedro Ribeiro proposes that category 3 is included in the table of Annex 6 of NTFA so as to adequate with the future revision of Decree-Law number 53/2009.

ICP-ANACOM's Understanding

The questions associated with the change of the regulatory framework of amateurs of category 3 have been analysed. However, any eventual

changes to Annex 6 of NTFA must necessarily be preceded with eventual changes to Decree-Law number 53/2009, March 2nd.

b) Category transition

Mr. Pedro Ribeiro proposes that, as a motivation for amateurs to move from categories A, B and C to categories 1, 2 and 3, in case of an extension of privileges, this would be made available only to new categories.

ICP-ANACOM's Understanding

According to information available at ICP-ANACOM, namely following previous contacts with amateurs of categories A and B, this Authority does not consider it to be relevant to promote any motivation in the transition of amateurs from those categories to category 1, although it is already allowed for amateurs to move from category C to category 2.

c) Extension of the band 1810-1,850 kHz

Mr. José Carlos Moreira and Mr. João Costa propose to extend the limit of band 1810-1850 kHz to 1810-2000 kHz, according to the recommendation of the *International Amateur Radio Union* (IARU) for Region 1 (power of 1500W or above, secondary status and access to amateurs in categories 1 and A). As an alternative, Mr. José Carlos Moreira proposes that an authorization is given, exceptionally, for the upper part of the band for limited periods of time and during international contests.

ICP-ANACOM's Understanding

Using the sub-band (1850-2000 kHz) by the amateur service in Region 1 can only be done under the footnote RR 5.96 (in which Portugal is not included). As such, ICP-ANACOM maintains the current framework of the 1850-2000 kHz for usage by the amateur service in Portugal.

d) Extension of the band 50-50.5 MHz

Mr. José Carlos Moreira and Mr. João Costa propose that the limits of band 50-50.5 MHz are changed to 50-52 MHz and that ARP goes from 25W to 100W, considering the release of this band by the broadcast service (on 26-04-2012).

ICP-ANACOM's Understanding

ICP-ANACOM accepts the proposal to change the upper limit of the band 50-50.5 MHz to 52 MHz, for usage by the amateur service with secondary status, with practical application from the date that band is released by the broadcast service, and Annex 6 of NTFA was updated accordingly.

e) 15 kHz in band 415-526.5 kHz

Mr. João Costa proposes the allocation of 15 kHz in the band 415-526.5 kHz with secondary status and access to amateurs of categories 1, A and B.

ICP-ANACOM's Understanding

This allocation will be analysed in Item 1.23 of the Agenda of the next World Radiocommunications Conference (WRC-12). The adequate national measures will be taken in accordance with the result of that Conference.

f) Frequencies for propagation tests

Mr. João Costa proposes the assignment of two frequencies (5371.5 kHz and 5403.5 kHz, in A1A and J3E) for the conducting of ionospheric propagation tests, with an apparent radiated power not under 200 W, secondary status and access to amateurs of categories 1 and A, without need for prior authorization from the spectrum management.

ICP-ANACOM's Understanding

Given the characteristics of the current usages, ICP-ANACOM does not consider it to be acceptable to meet this proposal. For the mentioned tests, amateurs must continue to request authorizations, which will be granted case by case, after previous coordination with the existing usages.

g) Frequency band 70-70.5 MHz

Mr. João Costa proposes the creation of the band 70.0-70.5 MHz, in which the current 70.1570-70.2125 MHz and 70.2375-70.2875 MHz will be included, with ARP 200W, secondary status and access to amateurs of categories 1 and A.

ICP-ANACOM's Understanding

The suggestion was analysed, and ICP-ANACOM concluded that it can only continue to make available the two sub-bands currently in existence given the usage of the remaining spectrum under active radio licenses.

3.6. Update to NTFA 2010/2011

In the present version of NTFA, some information in annexes was updated, in particular the publication of the usages of frequency bands with reference to May 31st, 2011.

ANNEX

LIST OF ACRONYMS

EC	European Commission
CENELEC	<i>Comité Européen de Normalisation Electrotechnique</i>
CEPT	<i>Conference of European Postal and Telecommunications Administrations</i>
SST	Secondary Spectrum Trading
DVB-T	<i>Terrestrial Digital Video Broadcasting system</i>
ECC	<i>Electronic Communications Committee</i>
ETSI	<i>European Telecommunications Standards Institute</i>
GSM	<i>Global System for Mobile Communications</i>
IARU	<i>International Amateur Radio Union</i>
ICP-ANACOM	ICP-Autoridade Nacional de Comunicações
OJEC	Official Journal of the European Communities
LCE	Law of Electronic Communications (Law number 5/2004, of February 10th)
LTE	<i>Long Term Evolution</i>
MCV	<i>Mobile Communications on board Vessels</i>
MMDS	<i>Multipoint Microwave Distribution System</i>
PAR	Apparent Radiated Power
NTFA	National Table of Frequency Allocation
RR	Radiocommunications Regulation

MTS	Mobile Telephone Service
DTT	Digital Terrestrial Television
TV	Television
ITU-R	International Telecommunication Union, Radiocommunications Sector
UMTS	Universal Mobile Telecommunications System
UWB	Ultra Wide Band
VSAT	<i>Very Small Aperture Terminal</i> ○
WAS/RLAN	<i>Wireless Access Systems/ Radio Local Area Network</i>
WiMAX	<i>Worldwide Interoperability for Microwave Access</i>
WRC-12	<i>World Radiocommunications Conference – 2012</i>