

DECISION

Definition of the precise location of spectrum in the 900 MHz band

1. Framework

By determination dated 23 December 2019¹, the Board of Directors of Autoridade Nacional de Comunicações (ANACOM) decided to grant the request submitted by NOS Comunicações, S.A. (NOS) for the allocation of 2 x 200 kHz in the 900 MHz band, in a full accessibility regime, with no guarantee of contiguity with spectrum already held by the company in that band.

ANACOM also decided to amend the “*Title of Rights of Use for Frequencies for Terrestrial Electronic Communications Services ICP-ANACOM No 01/2012*” held by NOS, by integrating the Right of Use for Frequencies (RUF) of the abovementioned 2 x 200 kHz and making the use of these frequencies subject to the conditions defined in Chapter I of Part III of the referred Title.

Under the referred decision, the allocation of this RUF would only take effect after the allocation of RUF that would be acquired under the future procedure for allocation of the 700 MHz band and other relevant bands, including the 900 MHz band, at which time the effective location of this spectrum in the band should be established and RUF (at the time already) held by NOS should be amended.

By determination of 23 November 2021², ANACOM approved the final report of the Auction for the allocation of Rights of Use for Frequencies in the 700 MHz, 900 MHz, 1800 MHz, 2.1 GHz, 2.6 GHz and 3.6 GHz bands, governed by Regulation No 987-A/2020, of 5 November (Auction Regulation), which includes the decision to allocate the corresponding RUF.

Within the scope of this Auction and specifically with regard to the 900 MHz frequency band, the following rights of use were allocated:

- a) 2 x 5 MHz to DIXAROBIL TELECOM, Sociedade Unipessoal, Lda. (DIXAROBIL);
- b) 2 x 2 MHz to MEO – Serviços de Comunicações e Multimédia, S.A. (MEO);

¹ Available at <https://www.anacom.pt/render.jsp?contentId=1488441>.

² Available at <https://www.anacom.pt/render.jsp?contentId=1710770>.

- c) 2 x 2 MHz to NOS Comunicações, S.A. (NOS).

As evidenced, in particular, by the National Frequency Allocation Table (NFAT), MEO, NOS and Vodafone Portugal, Comunicações Pessoais, S.A. (VODAFONE) already held RUFs in the 900 MHz band on the date on which the Auction Regulation came into force.

Pursuant to paragraph 1 of article 39 of the Auction Regulation, it falls on ANACOM's Board of Directors to establish the precise location of spectrum to be assigned in the 900 MHz band, taking into account the number of lots assigned in this band, as well as the spectrum already assigned in the band under rights of use for frequencies effective on the date of entry into force of the Regulation.

To this end, ANACOM is required to comply with the following principles:

- a) To ensure the pursuit of public interest in the framework of radio spectrum management, in accordance with proportionality criteria and respecting acquired rights.
- b) To optimise the efficient use of spectrum in the 900 MHz band.
- c) To maximise the contiguity of assigned spectrum and of spectrum held by each body, as well as of unassigned spectrum (cf. paragraph 2 of article 39).

For the purpose of paragraph 1 of article 39 referred above and pursuant to paragraph 3 of the same provision, a period of 30 days, as from the date of notification of the decision to award the RUF³, was granted to bodies which, at the end of the Auction, were declared the winners of lots in the 900 MHz band, as well as to holders of rights of use for frequencies in the 900 MHz band who did not come forward to the Auction or, having come forward, were not declared winners of lots in this band, so that they could agree among themselves on the precise location of spectrum in the said frequency band. It is incumbent on ANACOM's Board of Directors, pursuant to paragraph 4 of the aforementioned article 39, to approve the result of the agreement reached.

By communication dated 6 January 2022, DIXAROBIL, MEO, NOS and VODAFONE submitted to ANACOM the agreement concluded between them, in which they defined the precise location of the spectrum held by each one in the 900 MHz band, as follows:

³ Taking into account that the awarding act was notified to stakeholders on 23.11.2021, this period expired on 06.01.2022.

- DIXAROBIL: 880.0-885.0 / 925.0-930.0 MHz;
- VODAFONE: 885.0-895.0 / 930.0-940.0 MHz;
- NOS: 895.0-905.0 / 940.0-950.0 MHz;
- MEO: 905.0-915.0 / 950.0-960.0 MHz.

In that communication, the companies explained that the agreement they had entered into *«requires a period of more than 90 days for the release by Vodafone of frequencies in the 895.0 - 895.1 MHz / 940 - 940.1 MHz frequency range, in order to mitigate the impacts on that operator resulting from the change in the assignment of frequencies.»*.

2. Assessment

2.1. On the precise location of spectrum to be assigned

According to the NFAT, spectrum in the 900 MHz band (880-915 MHz / 925-960 MHz) is designated for terrestrial electronic communications services, and, on the date on which the Auction began, MEO held a RUF of 2 x 8 MHz, NOS held a RUF of 2 x 7.8 MHz and VODAFONE held a RUF of 2 x 10 MHz, all with the location indicated in the table below. The remaining spectrum was made available under the Auction (with the exception of the aforementioned 2 x 200 kHz allocated to NOS).

Figure 1. Distribution of spectrum prior to the Auction

	100 kHz					100 kHz					
Up Link [MHz]	880,0	885,0	885,0	890,0	890,1	895,1	898,1	905,9	905,9	913,9	915,0
LB [MHz]	5		5		5		7,8		8		1
Operador	Livre		VODAFONE		VODAFONE L		NOS		MEO		L

Down Link [MHz]	925,0	930,0	930,0	935,0	935,1	940,1	943,1	950,9	950,9	958,9	960,0
LB [MHz]	5		5		5		7,8		8		1
Operador	Livre		VODAFONE		VODAFONE L		NOS		MEO		L

Taking into account the RUF awarded as a result of the auction procedure and pursuant to paragraph 3 of article 39 of the Auction Regulation, DIXAROBIL, MEO, NOS and VODAFONE agreed among themselves the following precise location of spectrum in this band:

Figure 2. Distribution of spectrum proposed in the agreement submitted by operators

Up Link [MHz]	880,0	885,0	885,0	895,0	895,0	905,0	905,0	915,0
LB [MHz]	5		10		10		10	
Operador	DIXAROBIL		VODAFONE		NOS		MEO	

Down Link [MHz]	925,0	930,0	930,0	940,0	940,0	950,0	950,0	960,0
LB [MHz]	5		10		10		10	
Operador	DIXAROBIL		VODAFONE		NOS		MEO	

Bearing in mind the principles which, in accordance with paragraph 2 of article 39 of the Auction Regulation, must govern the definition of the precise location of spectrum to be determined by the Board of Directors of ANACOM under paragraph 1 of the same provision, and taking into account paragraphs 3 and 4, also of article 39 of the Auction Regulation, ANACOM believes that this (re)distribution of spectrum, without failing to take into account previous locations, ensures contiguity of spectrum to be assigned to each operator, thereby optimising the efficient use of spectrum in the 900 MHz band.

In light of the above, ANACOM has no objection to the agreement reached between DIXAROBIL, MEO, NOS and VODAFONE on the precise location of spectrum held by each of these operators in the 900 MHz band.

2.2. Regarding the deadline for the release of spectrum located in the 895.0 - 895.1 MHz / 940 - 940.1 MHz

As mentioned above, in the communication attached to the agreement, DIXAROBIL, MEO, NOS and VODAFONE explained that the agreement they had entered into «requires a period

of more than 90 days for the release by Vodafone of frequencies in the 895.0 - 895.1 MHz / 940 - 940.1 MHz frequency range, in order to mitigate the impacts on that operator resulting from the change in the assignment of frequencies.».

In fact, although point 2 of the said agreement establishes that parties undertake, where applicable (given that DIXAROBIL will only now hold a RUF in this band), to carry out the agreed redistribution within the 90-day period provided for in paragraph 8 of article 39 of the Auction Regulation, point 3 of the same document establishes that *«by way of derogation from the previous paragraph, frequencies in the 895.0-895.1 / 940.0-940.1 MHz bands shall be released by VODAFONE:*

- a. Up to 24 months after the date of issue of the qualifying titles provided for in paragraph 2 of article 40 of the Regulation, except in the situations identified in the following point;*
- b. After January 1, 2023 and before the expiry of the 24-month period referred to in the previous paragraph, NOS has the right to request the release of these frequencies and Vodafone the obligation to release them, should the former intend to implement a technology that requires the use of 2x5 MHz in the 895.0-900.0 MHz / 940.0-945.0 MHz frequency range, in the geographical areas indicated by NOS. In this case, NOS must indicate to Vodafone, in writing and at least 2 months in advance of the intended date(s), the geographical areas where it requires the release of that band to occur, and Vodafone shall be entirely free to determine the procedures to be followed for the purpose of the requested release.*
- c. The request for the release of frequencies under the previous point shall be made in a phased manner.*

In the above-mentioned communication, the parties state *«that this condition allows for a faster issue of qualifying titles of spectrum allocated in the 5G auction and, consequently, a faster use of most of the spectrum allocated in the 900 MHz band, with the exception of 2x100 kHz, which compensates, from a public interest point of view, the limitation of the use of 2x100 kHz of the 900 MHz band for a period longer than the 90 days provided for in the Regulation».*

As results from paragraphs 3 and 4 of article 39 of the Auction Regulation, bodies which already held RUF in the 900 MHz band and those which were declared winners of lots following the Auction were granted a period *«to agree among themselves on the precise location of spectrum in this frequency band»*, being incumbent on ANACOM's Board of Directors to

approve the result of the agreement (or, in the absence thereof, to decide on the redistribution of spectrum in that band) (emphasis added).

Paragraph 8 of that article provides that *«holders of the rights of use of frequencies in the 900 MHz band are required, no later than 90 days from the date of issue of the qualifying titles provided for in article 40 of this Regulation, to implement the redistribution of frequencies determined under the terms of paragraph 4 of this article»*.

In other words, RUF holders do not enjoy the power to agree among themselves on the deadline for carrying out the redistribution of spectrum that was assigned to them.

In this regard, the Report on the public consultation to which the Draft Auction Regulation⁴ was submitted stated that *«ANACOM considers that the redistribution of frequencies should be carried out with relative speed, so as to allow their full use by those who invested in the acquisition of RUFs in this auction. Hence the need to define a deadline that is not impacted by negotiation between parties that may be encouraged to extend it strategically. In fact, given that this redistribution may involve different operators, including new entrants, with different types of bargaining power, the failure to set a time limit, or the possibility of setting it by agreement between the parties, could lead to a less optimal result, since in some circumstances the companies required to redistribute frequencies could have increased incentives not to make the agreement viable. In such cases, adding a timeframe to agreements would not reflect the commercial interests of potential RUF holders with less bargaining power.»* (pg. 186).

Nevertheless, fulfilling its duty to examine the procedure and in compliance with the principles that guide the activity of this Regulatory Authority, namely the pursuit of public interest and the protection of rights and interests of citizens, proportionality and reasonableness, clarifications were requested from NOS and VODAFONE - the only two companies affected by the stipulation of the extended deadline referred to above – so that a better decision could be taken on this issue.

By communication sent at 4:56 pm on 13 January 2022, which, for all due purposes, is deemed to be fully reproduced herein, NOS provided the necessary clarifications, of which the following

⁴ Available at <https://www.anacom.pt/render.jsp?contentId=1502250>.

are highlighted:

1. «The derogation set out in point 3) of the agreement on the precise location of the 900 MHz band frequencies submitted to ANACOM (Agreement) takes place at the request of Vodafone and is accepted by NOS on the grounds that **[Beginning of confidential information]**

[End of confidential information]

[information].

3. Accordingly, NOS believes that the agreement submitted to ANACOM is in line with its current plans for technological evolution and use of spectrum. Furthermore, NOS considers that the assignment of spectrum in the 900 MHz band through an agreement between the operators will ensure faster availability and use of additional spectrum in this band».

By communication sent at 17:47 on 13 January 2022, which, for all due purposes, is deemed to be fully reproduced herein, VODAFONE also provided the necessary clarifications, with emphasis on the following:

- «The assignment agreement for the redistribution of the precise location of frequencies in the 900 MHz band (“Agreement”), as provided for in paragraph 3 of article 39 of Regulation No 987-A/2020, of 5 November (“5G Regulation”), which was concluded by NOS, MEO, Vodafone and Dixarobil, requires Vodafone to move by 100 kHz its 2 x 5 MHz block used for GSM from 890.1-895.1/ 935.1-940.1 MHz to 890-895/ 935-940 MHz.»;
- «This scenario means that the ARFCN=25 GSM channel (a 200 kHz channel), widely used in the network as BCCH, would no longer be usable by Vodafone and any other operator adjacent to this band (...);»;
- «(...) in order to be able to maintain the 25 GSM channels in its network, without affecting the quality of service provided to its customers, the use of channel ARFCN=0 was considered. For this reason, on 26 November 2021, Vodafone requested authorisation from ANACOM to carry out tests in the band where channel 0 is located, which was

promptly granted on 30 November 2021 for a period of 10 working days.»;

- *«It is common knowledge in the industry, particularly among network equipment manufacturers (...), that not all mobile terminals support the E-GSM band (Extended, referring to the 880.1-890.1/ 925.1-935.1 MHz band), and so Vodafone was unaware, at the time, of the specific impacts of adding channel 0 (belonging to the E-GSM band) and joining it with the remaining channels of the P-GSM band (Primary, referring to the 890.1-914.8/ 935.1-959.8 MHz band).»;*
- *«To this end, Vodafone carried out various tests with a view to assessing the actual impact of implementing the redistribution of frequency bands provided for in the Agreement, as far as Vodafone is concerned (...);*
- *«(...) the tests carried out between 6 and 16 December concluded that the use of channel 0 (E-GSM) produces direct negative impacts on network indicators of cells under analysis, namely on signalling and voice traffic and on mobility between cells and technologies. The negative impacts may be related to the fact that there are customers using mobile terminals that do not support E-GSM (in this case, channel 0), resulting in a degradation of their service.»;*
- *«In order to take account of the work that will be required to fully assess and address the impacts that will result from the change from channel 25 to channel 0, the parties to the Agreement have agreed to the terms specifying the derogation set out in paragraph 3 thereof.»;*
- *«(...) the proposed solution mitigates any negative impact on the provision of services to end customers and maximises the full and efficient use of spectrum by all spectrum holders following the change in the precise location of rights of use of frequencies in the 900 MHz band, having therefore been agreed to by all parties involved under the Agreement.»*

Having analysed the communications referred to above and bearing in mind, on the one hand, the technical grounds now put forward by VODAFONE, which indicate a concrete impossibility of ensuring the release of 2 x 0.1 MHz within the period of 90 days laid down in paragraph 8 of article 39 of the Auction Regulation and, on the other hand, the public interest in ensuring the timely use of spectrum acquired at the auction, either by operators already active in the market or by an operator now entering the market, it is considered reasonable, appropriate and proportional to allow that (only) this small part of the spectrum in question (2 x 0.1 MHz of

a total of 2 x 35 MHz) can be released under the terms agreed, which, moreover, affect only two of the four parties involved in this spectrum redistribution procedure, both of which already hold spectrum in the band in question, which can be used immediately, with obvious benefits for end users.

In fact, to deny the release of this small part of the spectrum under the terms agreed upon by the operators directly involved - which was also agreed upon by the other parties to the agreement - could undermine the swift redistribution of all the assigned spectrum and the effective and efficient use of the spectrum to be assigned in the 900 MHz band, and thus affect the full use by those who have (already) invested in the acquisition of spectrum, which would clearly result in a (more) damaging solution - in terms of the «*net balance*» of public and private interests to be considered - for all those involved, as well as for users who could benefit from it. The solution would therefore also be less in line with the positive side of the principle of impartiality, which requires consideration of all relevant public and private interests and a fair balance between them, as well as an appropriate cost-benefit analysis.

Accepting that this release (of a very small amount of spectrum) is delayed in time thus proves to be the (most) appropriate measure to ensure the impartial pursuit of public interests entrusted to ANACOM, be it the promotion of competition and ensuring freedom in the offer of networks and services, or the effective and efficient use of spectrum and the protection of the interests and needs of end users.

The *sacrifices* that could result from the impossibility of immediately using 2 x 0.1 MHz of the 2 x 10 MHz assigned to NOS were accepted by the latter, having been mitigated by the release of spectrum according to geographical areas in line with its interests. With such a narrow scope that was agreed upon by the affected parties (together with the *endorsement* of the other operators that signed the agreement), it seems unreasonable to compromise the timely implementation of spectrum redistribution and the original use resulting from the agreement entered into by those involved in this procedure, who unanimously state that «*this condition allows for a faster issue of qualifying titles of spectrum allocated in the 5G auction and, consequently, a faster use of most of the spectrum allocated in the 900 MHz band, with the exception of 2x100 kHz, which compensates, from a public interest point of view, the limitation of the use of 2x100 kHz of the 900 MHz band for a period longer than the 90 days provided for in the Regulation.*».

In light of the above, ANACOM acknowledges that there are relevant and weighty grounds to accept that the release of spectrum by VODAFONE of frequencies in the 895.0 - 895.1 MHz / 940 - 940.1 MHz range may be carried out as provided for in the *Agreement on the location of spectrum in the 900 MHz band*, signed by DIXAROIL, MEO, NOS and VODAFONE, without prejudice to this Authority monitoring the progress of the referred release.

2.3. Taking into account the change of the current assignment of frequencies in the 900 MHz band which results from the approval of the agreement entered into under paragraph 3 of article 39 of the Auction Regulation, ANACOM will amend, under point b) of paragraph 1 of article 16 of Decree-Law No 151-A/2000, of 20 July, the corresponding radiocommunications network licences, in line with the date on which the operators carry out the redistribution of frequencies now agreed to, whereby operators are required to inform ANACOM of this fact.

2.4. Given that the assignment of spectrum in the 900 MHz band at issue results in a change in the assignment of frequencies in force on the date on which the Auction Regulation came into force, in pursuit of the public interest in the framework of radio spectrum management, it should be recalled that, under paragraph 6 of article 39 of the Auction Regulation, compensation may be awarded to cover all or part of any costs associated with the mentioned changes, according to the regime provided for in article 4 of Decree-Law No 151-A/2000, of 20 July.

In effect, under paragraph 4 of the aforementioned article 4, «(...) *compensation shall be awarded to licence holders to fully or partially cover costs which are proven to occur with the alteration, cancellation or substitution of the assignment of frequencies, under the conditions and according to the general criteria to be defined by administrative rule of the Government member in charge of communications*».

To this end, ANACOM, in the framework of its advisory duties to the Government, will identify and propose the general conditions and criteria to be considered for the award of the mentioned compensation, by identifying the costs deemed eligible for compensation, specifically those arising from the substitution and/or alteration of the relevant equipment, which must be auditable.

3. Decision

In the light of the above, **ANACOM's Board of Directors**, pursuant to article 39 of the Auction

Regulation, articles 15 and 16 of the Electronic Communications Law⁵, paragraph 1 b) of article 16 of Decree-Law No 151-A/2000 of 20 July, and under paragraph 1b) of article 26 of its Statutes, approved by Decree-Law No 39/2015 of 16 March, **hereby determines as follows:**

1. To approve the result of the agreement entered into between DIXAROBIL TELECOM, Sociedade Unipessoal, Lda., MEO - Serviços de Comunicações e Multimédia, S.A., NOS Comunicações, S.A. and Vodafone Portugal - Comunicações Pessoais, S.A., regarding the precise location of the spectrum held by each of them in the 900 MHz band, corresponding to the following assignments:
 - ❖ DIXAROBIL: 880-885 MHz / 925.0-930.0 MHz;
 - ❖ VODAFONE: 885.0-895.0 / 930.0-940.0 MHz;
 - ❖ NOS: 895.0-905.0 / 940.0-950.0 MHz;
 - ❖ MEO: 905.0-915.0 / 950.0-960.0 MHz.
2. To amend the National Frequency Allocation Table to reflect the above.
3. To allow Vodafone Portugal - Comunicações Pessoais, S.A. to release the spectrum located in the 895.0 - 895.1 MHz / 940 - 940.1 MHz range according to points 3, 4 and 5 of the *Agreement on the location of spectrum in the 900 MHz band*, without prejudice to this Authority monitoring the process of this release.
4. To order DIXAROBIL TELECOM, Sociedade Unipessoal, Lda., MEO - Serviços de Comunicações e Multimédia, S.A., NOS Comunicações, S.A. and Vodafone Portugal - Comunicações Pessoais, S.A. to notify ANACOM of the date when the redistribution of frequencies is carried out 10 working days in advance.
5. To determine the amendment of radio licences in force that are covered by the redistribution indicated in paragraph 1 in accordance with the schedule notified under the previous paragraph.

Lisbon, 14 January 2022.

⁵ Law No 5/2004, of 10 February.