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*700 MHz band*

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*National Roadmap*

*(Summary)*

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## **1. Introduction**

Decision (EU) 2017/899 of the European Parliament and of the Council of 17 May (Decision 2017/899) on the use of the 470-790 MHz frequency band in the Union, published on 25 May 2017, states (article 1), that Member States are to make the 694-790 MHz band ("700 MHz band") available for terrestrial electronic communications services by 30 June 2020. Since DTT (Digital Terrestrial Television) networks are currently operating on frequencies of the 700 MHz band, Member States are required to migrate such uses to frequencies in the 470-694 MHz band.

To fulfil the obligations which stem from the Decision, article 5 of the same Decision sets out that Member States will approve and publish their national plans and timetables ("national road maps") by 30 June 2018.

In this context, two actions should be undertaken in parallel by 30 June 2020:

- I. Release of the 700 MHz band from current uses of DTT - it will be necessary to change the broadcast frequency of about 240 stations that form part of the current DTT network;
- II. Allocation of the 700 MHz band - definition of the process for the allocation and use of this spectrum for the provision of terrestrial wireless broadband electronic communications services.

The status of the activities undertaken, as associated and related to these two actions, together with the action plan, is detailed in the following two sections.

## **2. Process of releasing the 700 MHz band**

Currently, in Portugal, as under the National Table of Frequency Allocations (NTFA), the 694-790 MHz band is used by DTT, with further permitted use by auxiliary broadcasting equipment.

In Mainland Portugal, release of the 700 MHz band necessarily entails migration of the only DTT network in operation, comprising 240 transmitters - a single frequency network (SFN) broadcasting on channel 56, which will be migrated to a multi-frequency network (MFN), given the lack of a planned SFN network below 694 MHz. This situation is somewhat complex and is expected to entail significant costs.

Several factors were duly taken into account in devising this migration scenario, including definition of the future topology of the DTT network (which may be different from current topology), a possible period of coexistence between the two networks (SFN and MFN) as well as a technological upgrading (e.g. DVB-T2).

In order to outline and evaluate the various transition options, taking into account, as referenced above, the technology and structure/topology of the new network as well as a period of coexistence between the two networks (current and new), in October 2016, ANACOM selected LS Telcom to conduct a study<sup>1</sup> with the objective of supporting the migration scenario to be adopted, in both technical and economic terms.

Meanwhile, in order to support expansion of the provision of DTT programme services, ensuring proper technical conditions and price control. as regards provision of the DTT signal transmission and distribution service, Law no. 33/2016 of 24 August (as subsequently amended by Law no. 2/2017 of 16 January) established that ANACOM and ERC - Entidade Reguladora para a Comunicação Social (Media Regulatory Authority) shall jointly promote financial, technical and legal studies to analyse the various possibilities of further extending the provision of programmes on the Digital Terrestrial Television Platform (paragraph 1 of article 5).

In this context, Leadership Business Consulting, S.A. was contracted to conduct the study promoted by ANACOM on 20 July 2017; the final report was received by ANACOM on 14 December 2017 and submitted to *Assembleia da República* (Assembly of the Republic) and the Office of His Excellency the Secretary of State for Infrastructure on 22 December 2017. As regards the advantages and disadvantages of the different possible scenarios for migration, this study<sup>2</sup> corroborates the conclusions of the *LS Telcom* study.

Finally, ANACOM organised and hosted a Workshop on the future of DTT in Portugal, held on 30 May 2018, and saw participation from various stakeholders.

In this Workshop, a debate was held on the future prospects for DTT in Portugal, given the necessary release of the 700 MHz band. From these discussions, a convergent position emerged around adoption of the simpler migration scenario.

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<sup>1</sup>Future Development of DTT in Portugal

<sup>2</sup>Available at <https://www.anacom.pt/render.jsp?contentId=1427736&languageId=1>

In these circumstances, and in view of the results obtained in the studies, as well as the convergent position that resulted from the Workshop, current technology [DVB-T/MPEG-4 (H.264/AVC)] will be maintained in migration of the current DTT network and there will be no simulcast period. Each transmitting station will be switched off so that it is possible to change the frequency and make other necessary adjustments, and will be connected soon after to transmit on the new frequency.

Migration should take place according to the plan<sup>3</sup> indicated in Annex 1, while the timetable for altering the radio channel of each transmitter is referred to in that annex, notwithstanding any future decisions that may be taken on these matters. Annex 2 contains a graphical diagram of the various stages of the process until its conclusion.

In the Autonomous Region of Madeira, the current channel 54 will be replaced by one of the following radio channels, already coordinated internationally: 21; 22; 24; 27; 33; 40; 46 and 47.

In the Autonomous Region of the Azores, there is no need for international coordination of the frequencies; the network transmitters in operation, using channels 49, 55 and 56, will switch to using the radio channels that ANACOM deems most appropriate.

### **3. Allocation of the 700 MHz band**

As set out in ANACOM's 2018-2020 Multi-Year Activities Plan<sup>4</sup>, ANACOM aims to "(...) assign the 700 MHz band (and other relevant bands) considering the national interest and the European and national regulatory framework"; Accordingly, and by determination of 7 March 2018, a public consultation was launched to sound out the market<sup>5</sup> and stakeholders, seeking, in particular, to set out relevant developments and those expected at an international level, such as relevant EU decisions. As such, manufacturers, operators, private and public entities, users and others were consulted on the availability of the 700 MHz band and other bands where there might be interest in joint deployment.

Although the report has not yet been published<sup>6</sup>, several parties have stated that the process of allocating the 700 MHz band should not occur until 2020 or later, due to constraints that arise from the migration of DTT. It was also proposed that allocation should take place only after allocation of the 3.6 GHz band or occur simultaneously with other frequency bands, even if full use is only possible later.

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<sup>3</sup>Note that there are planned alternative radioelectric channels that could be used if they are considered more appropriate.

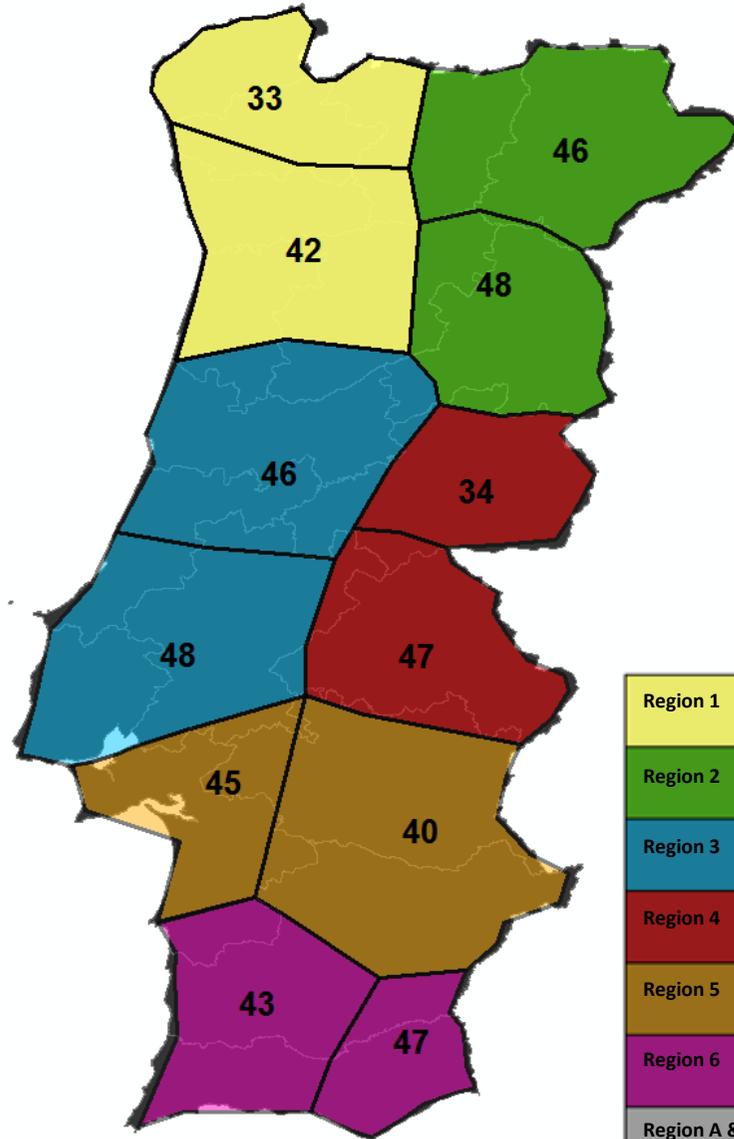
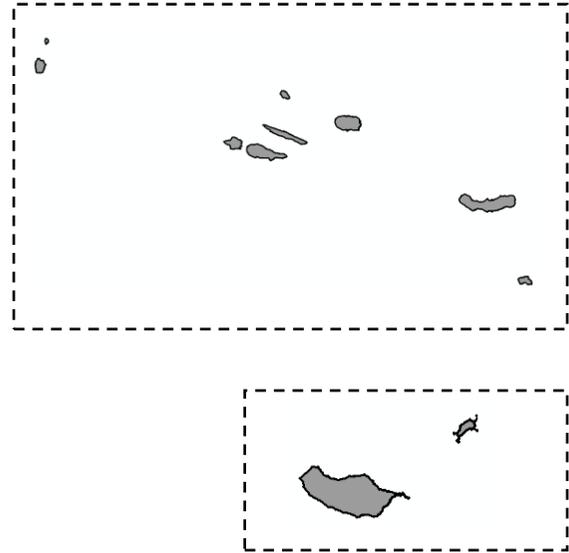
<sup>4</sup> <https://www.anacom.pt/render.jsp?contentId=1428459&languageId=1>.

<sup>5</sup> <https://www.anacom.pt/render.jsp?contentId=1431846&languageId=1>.

<sup>6</sup> It is expected to be completed and published before the end of the present month,

In this context, ANACOM will, following approval of the market consultation report, analyse and weigh up the different scenarios with the aim of undertaking allocation of this spectrum in accordance with the time limits established in the Decision 2017/899, i.e., by 30 June 2020. Naturally, ANACOM will not fail to consider the different constraints that may affect use of this spectrum.

# Annex 1



<b>Region 1</b>	Migration process to commence from 4th quarter 2019
<b>Region 2</b>	Migration process to commence within one month from date defined for Region 1
<b>Region 3</b>	Migration process to commence within one month from date defined for Region 2
<b>Region 4</b>	Migration process to commence within one month from date defined for Region 3
<b>Region 5</b>	Migration process to commence within one month from date defined for Region 4
<b>Region 6</b>	Migration process to commence within one month from date defined for Region 5. To be completed no later than May 2020
<b>Region A &amp; M</b>	Migration process to occur between January and May 2020

# Annex 2

