

Decision

Definition of terrestrial coverage obligations and amendment of DTT RUF (MUX A)

1. BACKGROUND AND DEVELOPMENTS OCCURRED

- 1.1 ANACOM's draft decision of 04.07.2014 and consultation procedures carried out
- 1.2 Temporary network license, MEO's request to integrate frequencies in the RUF and renewal of temporary license
- 1.3 MEO's responses to ANACOM's requests for information
- 1.4 Additional measures

2. ANACOM'S ANALYSIS AND POSITION

- 2.1 Integration of frequencies in the RUF
- 2.2 Determination of terrestrial coverage obligations
- 2.3 Degree of service availability at reception level and methodology for setting and verifying such availability
- 2.4 Statistical margin of error
- 2.5 Conditions of provision of information to users

3. AMENDMENT TO RUF ICP - ANACOM NO 6/2008 ALLOCATED TO MEO

4. PRIOR HEARING AND CONSULTATION PROCEDURES CARRIED OUT

5. DETERMINATION

Decision
Definition of terrestrial coverage obligations and amendment of
DTT RUF (MUX A)

1. BACKGROUND AND DEVELOPMENTS OCCURRED

1.1. ANACOM's draft decision of 04.07.2014 and consultation procedures carried out

Further to and in the context of ANACOM's determination of 16 May 2013¹, which defined the model for the evolution of the digital terrestrial television (DTT) network², associated to Multiplexer A (Mux A), this Authority approved, by determination of 4 July 2014³, a draft decision on the definition of terrestrial coverage obligations to be included in the Right of Use for Frequencies (RUF) ICP-ANACOM No 06/2008 allocated to MEO – Serviços de Comunicações e Multimédia, S.A (previously PT Comunicações, S.A., hereinafter MEO), having decided as follows:

1. *To amend RUF ICP - ANACOM No 06/2007 allocated to PTC, as follows:*

1.1 *In the Mainland, PTC must comply with DTT broadcasting coverage obligations, per municipality, set out in the table in annex to this determination.*

1.2 *Statistical margins of error associated to coverage obligations per municipality, set out under the preceding paragraph, are as follows:*

a) *Where $CovPop^{20} \geq 100.000$: $Sme^{21} = 500$ persons²²;*

b) *Where $100.000 > CovPop \geq 10.000$: $Sme=0.5\%$;*

c) *Where $CovPop < 10.000$: $Sme = 50$ persons, to a maximum of 4%.*

¹ Decision on the development of the DTT network, available at: [Final decision on the development of the digital terrestrial television network](#) .

² Model that consists in the phased implementation of an MFN network (MFN of SFNs), throughout the mainland, by using spectrum according to the allocation/assignment of frequencies already planned and coordinated at international level by Portugal, in which the 3 transmitters that integrate the DTT network and that were temporarily licensed in 2012 to MEO, remain.

³ Document available at: [Draft decision on DTT terrestrial coverage obligations](#)

- 1.3 *PTC must ensure a degree of availability of the service at reception level by 99%; in the months between June and September, a given location in the national territory shall be deemed not to have terrestrial coverage where it does not show signal-noise and signal-interference values required for access to the service for longer than 100 minutes, consecutive or with intervals, during any consecutive 7 days; in the months between October and May, a given location in the national territory shall be deemed not to have terrestrial coverage where it does not show signal-noise and signal-interference values required for access to the service for longer than 30 minutes, consecutive or with intervals, during any consecutive 2 days.*
- 1.4 *Where the means for assessing levels of quality of service show that, taking into account the respective statistical margin of error, the coverage of population has not been ensured at the percentages defined in the annex to the determination, without prejudice to a possible procedure for administrative offences, ICP - ANACOM shall notify PTC of this fact, and this company has up to 10 working days to report to this Authority the solution to be implemented and also a proposal for provision of appropriate information to affected final users, as well as the period of time deemed to be required for putting these steps in place, which may be altered by ANACOM, if deemed to be excessive.*
- 1.5 *PTC is required to implement the solution communicated under the preceding paragraph within the time limit set by ICP - ANACOM.*
- 1.6 *In compliance with ICP - ANACOM determination of 16 May 2013, the solution to be implemented by PTC, under the preceding paragraphs, shall consist solely and necessarily in reinforcing the SFN network coverage or in anticipating migration to the MFN network, being incumbent on PTC to ensure levels of terrestrial coverage set out in the annex to this determination.*
- 1.7 *In the context of the solution to be implemented, under the preceding paragraphs, PTC is required to update information at the DTT website (<http://tdt.telecom.pt>), as regards the indication of the best-server transmitter, as well as to ensure the provision of information to all affected final users, according to the communicated proposal and subject to*

validation from ICP - ANACOM, any additional burdens that may arise, namely the redirection of reception antennas, being fully covered by PTC.

2. *To reissue RUF ICP - ANACOM No 06/2008, incorporating in the respective qualifying document the preceding paragraphs, as well as amendments previously set out in endorsement No 1 to the referred RUF, in determinations amending the operating channels of Mux A, as well as in determination of 16 May 2013.*

It was also decided to submit determination in point 1. to the prior hearing of MEO, under articles 100 and 101 of the former Code of Administrative Procedure, for a period of 20 working days from the date of notification of the draft decision, for written comments on the matter by MEO, and also to the general consultation procedure, provided for in article 8 of the Electronic Communications Law (ECL)⁴, by reference in article 20, paragraph 3, of the same Law, also for written comments on the matter by interested parties, for the same period of time, in this case from the date on which the draft decision was made available at ANACOM's website.

Having been notified for the purpose, MEO assessed the subject within the time limit, by sending mail and email received at ANACOM on 05.08.2014.

By expiry of the period set out for comments to be provided (07.08.2014), the following contributions were received:

- Associação Portuguesa para a Defesa do Consumidor (DECO) - the Portuguese Association for Consumer Protection;
- DTT blog in Portugal (DTT Blog);
- Ricardo Jorge;
- RTP, Rádio e Televisão de Portugal, SA (RTP);
- SIC, Sociedade Independente de Comunicações, S.A. (SIC);
- TVI, Televisão Independente, S.A. (TVI).

A summary of contributions received and this Authority's views thereon have been included in the "Report of the prior hearing and consultation on the draft decision on terrestrial coverage obligations to be included in the DTT RUF (MUX A)", which is deemed to be an integral part of this decision, available at www.anacom.pt.

⁴ Law No 5/2004 of 10 February, as amended and republished by Law No 51/2011 of 13 September, and subject to subsequent amendments.

1.2 Temporary network license, MEO's request to integrate frequencies in the RUF and renewal of temporary license

By letter dated 24 July 2014, ANACOM informed MEO of the results of a probe system monitoring action, through which it was found that in the week from 14 to 20 July 2014, the network showed a marked instability, having ordered the company to indicate the steps it would take to promptly and definitively remedy the instability verified in the network.

By letter of 31 July 2014, MEO requested the temporary licensing of four radio channels, undertaking to request also the final integration thereof in the RUF it holds.

Further to this request, and by determination of 11 September 2014⁵, ANACOM decided as follows:

1. *To grant PTC a temporary network license, for a period of 180 days, consisting of 4 stations, to be implemented within at the most 5 working days from the date of notification of this determination, as follows:*
 - a) *Mendro transmitter: channel 40 (622-630 MHz);*
 - b) *Palmela transmitter: channel 45 (662-670 MHz);*
 - c) *São Mamede transmitter: channel 47 (678-686 MHz);*
 - d) *Marofa transmitter: channel 48 (686-694 MHz).*

2. *To determine that the maximum effective radiated power (e.r.p.) of each station referred to in the preceding paragraph shall be limited to 10 kW. As regards the São Mamede transmitter, the maximum e.r.p. shall be 100 W in the 20°-110° sector.*

3. *To order PTC to submit to ICP - ANACOM, within 10 working days, the following elements for each station:*
 - a) *antenna height;*
 - b) *antenna radiation pattern;*
 - c) *e.r.p. to be used.*

⁵ Available at: [Temporary network licensing - DTT](#) .

4. *To order PTC to put in place, by no later than the date of effective implementation by PTC of the network referred in paragraph 1, the appropriate procedures intended to reimburse costs incurred by users due to the adjustment to the network now licensed, on the basis of means identified in point III.2, and to subsequently report steps taken to ICP - ANACOM.*
5. *To order PTC to put in place, by no later than the date of effective implementation by PTC of the network referred in paragraph 1, the plan for communication to DTT users covered by new transmitters, disclosing the information required by the entry into operation of the network now licensed, including the responsibility for adjustment costs which may be incurred in, which shall be notified to ICP - ANACOM.*
6. *To order PTC to present, within 10 working days, a plan for the installation of main transmitters required to address problems encountered in areas not covered by the current MFN network or by the 4 transmitters now temporarily licensed.*

It was also decided to submit the determination in point 6. to the prior hearing of MEO, under articles 100 and 101 of the former Administrative Procedure Code, for a period of 10 working days from the date of notification of the determination, for written comments from the company. This matter was decided in a separate procedure, on the date of this decision.

As already resulted from the commitment undertaken by MEO in the scope of the above-mentioned application for temporary network licensing and further to the allocation of the respective license⁶, concerning the four radio channels - Mendro (channel 40), Palmela (channel 45), São Mamede (channel 47) and Marofa (channel 48) - this company, by letter of 30.10.2014, requested ANACOM to launch procedures designed to include the referred channels in the RUF.

By letter of 13.02.2015, MEO questioned ANACOM on the state of the process for integration of the 4 radio channels concerned in the RUF, reiterating its request for their final inclusion in the RUF.

Taking into consideration the legal-regulatory framework under which MEO was allocated the temporary license, that is, under point 4. of the determination of

⁶ ANACOM's Determination of 11 September 2014, available at: [Temporary network licensing - DTT](#) .

16.05.2013, ANACOM considered that the process for final integration of radio channels in the RUF, which involves the alteration of this right under article 20 of ECL, should not be regarded separately from the present process of definition of terrestrial coverage obligations, the draft decision (DD) of which had been approved on 4 July 2014, that is, prior to the beginning of the temporary use of frequencies. This view was transparently and promptly notified to MEO - the company was informed in advance, by letter of 4 March 2015.

As such, and taking into account that a final decision on terrestrial coverage obligations would not be taken before the date of expiry of the allocated temporary license and given that assumptions on which such allocation was based remain pertinent, this Authority considered that there were grounds to renew it, such renewal having occurred through determination of 13 March 2015⁷, as follows:

1. To renew the temporary network license granted to MEO, in compliance with and under the conditions laid down in ICP - ANACOM's determination of 11 September 2014, for a period of 180 days, to take effect as from 15 March 2015.

2. To order MEO to provide for the reimbursement of costs borne by end users with DTH coverage that have requested or will request the services of an installer, further to the reception of the letter sent in the scope of MEO's communication plan.

It was also decided to submit determination in point 2 to the prior hearing of MEO, under articles 100 and 101 of the Administrative Procedure Code, for a period of 10 working days from the date of notification of the determination, for written comments from the company. The issue was decided by determination of 16 July 2015⁸, having MEO been ordered to provide for the reimbursement of travel costs of an installer borne by end users with DTH coverage that requested or request in the future such displacement, further to the reception of the letter sent in the scope of MEO's communication plan, insofar as such reimbursement is applied for until 31.10.2015.

⁷ Available at [Renewal of temporary DTT network licence - MEO](#)

⁸ Available at [DTT - Reimbursement of costs borne by end users with DTH coverage](#) .

1.3. MEO's responses to ANACOM's requests for information

Further to the allocation to MEO, on 11 September 2014, of the temporary network license and taking into account that:

- (i) Under the RUF, MEO must supply ANACOM with information that is requested in the scope of paragraph 1 of article 108 of ECL, for the purposes provided for in article 109 of that Law; and
- (ii) Determination of 13 May 2013 lays down that information on coverage, specified in point 3.A thereof, must be updated before this Authority whenever changes in the network's geographical coverage occur, namely further to the installation of new stations;

ANACOM ordered MEO, by letter dated 18.12.2014⁹, to provide up-to-date information, which would be assessed by this Authority and would become an integral part of RUF ICP-ANACOM No 6/2008, with any amendments that could be determined, binding MEO to minimum values established as from that date, as provided for in decision of 16 May 2013.

By letter of 06.01.2015, and seeking to comply with ANACOM' request, MEO submitted a geo-referenced image, indicating areas with coverage estimates for the 4 new MFN transmitters, which overlapped with channel 56.

Bearing in mind the provision in point 3.A of the decision of 16 May 2013 and that, since the last information update provided by MEO¹⁰, four new stations had been installed and licensed (Gerês, Moledo and Covas in channel 56 and Boa Viagem in channel 46), ANACOM took the view that the reply submitted by MEO had not met its request. As such, it again requested MEO, by letter of 14.01.2015¹¹, to update with this Authority the information specified in point 3.A of ANACOM's decision of 16 May 2013.

MEO replied by letter of 21 January 2015, updating with this Authority the requested information, namely percentage estimates of population covered by DTT and by DTH at parish level, as well as the electronic file with identification of DTT and DTH geographic coverage as provided at the time.

⁹ Cfr. letter ANACOM-S091683/2014.

¹⁰ Between 25.06.2014 - date on which MEO submitted the last update on information concerned - and 14.01.2015 - date of ANACOM's letter ANACOM-S091683/2014, delivered further to MEO's letter of 06.01.2015.

¹¹ Letter ANACOM-S002538/2015.

1.4 Additional measures

In compliance with the decision of 16 May 2013, MEO submitted to ANACOM quarterly reports on optimization of SFN network for the 1st and 2nd quarters of 2015, having been found that for some locations or part of locations a change in the information on the type of available coverage had been registered, both from DTT to DTH and also from DTH to DTT.

Notwithstanding the optimization reports, MEO failed to update with ANACOM the coverage information concerning population covered by DTT or DTH at parish level, as well as to submit the associated updated shapefile.

Taking into account that it was not ANACOM's intention to impose new burdens on MEO as far as coverage is concerned, this Authority deemed that it was imperative for the conclusion of this procedure that MEO updated the coverage information for the referred parishes, and in this context, it carried out the respective additional measure.

As such, by letter of 3 September 2015¹², ANACOM, in the light of article 104 of the former Administrative Procedure Code¹³, ordered MEO to update the coverage information specified in point 3.A of the determination of 16 May 2013, within 5 working days, so as to reflect in the information to be submitted the coverage changes occurred in the meantime.

Notified for the purpose, MEO submitted the requested information, in due time, by letter received by ANACOM on 10 September 2015¹⁴.

¹² Letter ANACOM-S063751/2015.

¹³ Which applies *ex vi* article 8 of Decree-Law No 4/2015, of 7 January, the statutory instrument that approves the new Administrative Procedure Code.

¹⁴ With reference 0607SG.

2. ANACOM's analysis and position

2.1. Integration of frequencies in the RUF

ANACOM's determination of 11 September 2014, by means of which a temporary license was granted for the network consisting of transmitters located in Mendro, Palmela, São Mamede and Marofa, was taken under point 4 of ANACOM's decision of 16 May 2013, which provides that the installation of main transmitters of the MFN network (MFN of SFNs) may be brought forward relatively to the implementation to be undertaken, further to any harmonization at international or Community levels or when a higher degree of security exists as to the need of implementation of the digital dividend 2, or also in case the operating network fails, or is expected to fail, to present the necessary stability to provide the service with the levels of quality determined in Recommendation ITU-R BT.1735-1 and future reviews thereof.

In fact, it was in a context of network instability that, in order to protect the interests of users and seeking to put in place an immediate alternative for access to a quality DTT service, ANACOM considered that it was appropriate and sufficient to decide on the use of the 4 radio channels under consideration under the regime of temporary licensing, taking into account that MEO had undertaken the commitment to apply to this Authority, by the end of October 2014, for the final integration of radio channels in the DTT RUF associated to MUX A, held by it, a commitment which the company fulfilled.

Having MEO, by letter of 30.10.2014, requested ANACOM to start procedures leading to the inclusion of the referred channels in the RUF and having reiterated, by letter of 13.02.2015, the request for final inclusion of such channels in the RUF, this Authority deems that the integration of the 4 radio channels under consideration in the RUF associated to MUX A held by MEO, in conformity with allocations/areas set out in **Annex 1** hereto, is in line with the target established in the decision of 16 May 2013 as far as the evolution of the DTT network is concerned, allowing the four stations to remain in operation definitively, ensuring the necessary continuity and stability of conditions for access to the service by the population.

Points that define the areas associated to allocations in Annex 1 have been identified in determination of 24 October 2013¹⁵.

¹⁵ Available at: [Identification of points that define areas associated with award of DTT network development frequencies](#) .

2.2. Determination of terrestrial coverage obligations

For the reasons set out in determination of 4 July 2014 and in the report of prior hearing and consultation to which the respective draft decision was submitted, ANACOM reiterates its position that terrestrial coverage obligations must be determined per municipality.

In fact, given factors to be taken into account (namely, size of administrative units, number of inhabitants and standardization and techniques for monitoring coverage), the determination of such obligations at municipality level allows for the reduction of variability as regards results of estimates and measurements of coverage conditions, at the level of NUTS I.

In addition to arguments already put forward, this Authority considers that the breakdown of the overall coverage value at the level of NUTS I in smaller units (corresponding to coverage at municipality level) improves the quality of information provided to users and citizens in general, showing in a more accurate way the effective coverage levels of the DTT network, in addition to allowing ANACOM to better assess these levels.

In short, the detail of the level of coverage of the DTT network at municipality level is considered by ANACOM to be a measure that increases the transparency of the whole DTT process, allowing for the assessment and analysis of the respective results in a more detailed way.

As such, terrestrial coverage obligations shall be set per municipality and have been included in **Annex 2** to this determination, being directly associated to information in the shapefile submitted by MEO, in annex to the letter of 10 September 2015.

As regards the method for calculating estimates of the number of people with terrestrial coverage at parish level, where the product of the percentage of covered population by the number of inhabitants resulted in a number with decimal places, this number was rounded down to the nearest whole number, the population covered by DTH being obtained by subtracting the number of inhabitants by the population covered by DTT.

Together with the setting of these obligations, it is essential to establish criteria according to which it is determined that a location has DTT coverage; in this context, and considering that no radio network ensures permanent coverage, it is fundamental

to define a specific period of time - degree of service availability at reception level - during which the service may not be available, an aspect which is dealt with in detail in the following section.

2.3. Degree of service availability at reception level and methodology for setting and verifying such availability

To determine whether a location has DTT coverage, it is fundamental to define the period of time during which the service is available - degree of service availability at reception level -, given that in radio networks it is impossible to ensure, due to the various factors involved, namely atmospheric phenomena that condition radio wave propagation, that a location permanently shows (100% of the time) levels that enable a quality access to that service. It is recalled, for example, that at the time of the analogue television service, the respective planning was made for 50% of the time.

According to ETSI TR 101 190 technical report¹⁶, a location is considered to be covered where the required carrier-to-noise and carrier-to-interference values are achieved for 99% of the time.

However, international standards and recommendations do not indicate the period of time¹⁷ for which the established condition of availability (99% of the time) should be observed, thus it is necessary to define it.

In order to undertake this definition, ANACOM carried out several consultations and analyses, and concluded that, although this has not been yet established nor standardized, an observation period for monitoring the quality of service of these networks, in practical terms, must take into account a minimum one-year period, so that it is statistically significant.

In the light of the above, the observation period is deemed to be one year.

To assess the degree of service availability at reception level, ANACOM will use international recommendations from reference bodies of the sector, namely the most current versions of ITU-R BT.1735 "Methods for objective reception quality assessment

¹⁶ "Implementation guidelines for DVB terrestrial services; Transmission aspects" available at: [ETSI TR 101 190 V1.3.2 \(2011-05\) Technical Report](#).

¹⁷ A year? A month? A day?

of digital terrestrial television broadcasting signals of System B specified in Recommendation ITU-R BT.1306” and ITU-R SM.1875 “DVB-T coverage measurements and verification of planning criteria”. It is considered that there is service availability at reception level, at a given location and in a given moment, where the probe installed (or placed) therein detects a level of quality equal to or higher than Q3, according to Recommendation ITU-R BT.1735.

Where a probe signals, for a given installation location, values for the Modulation Error Ratio (MER) values that are lower than the signal-noise relation defined for the adopted network setting (19.5 dB for a Rice channel), or a quality level lower than Q3, for longer than 3.65 days (87h and 36s), consecutively or with intervals, in the course of a one-year period, than that location will be deemed not to have DTT coverage.

According to the Report ITU-R BT.2143-2¹⁸, this availability is evaluated taking into account both the transmitter status and channel conditions (interferences, reflections, etc.)

Where the means for assessing the levels of quality of service show that the coverage of population has not been ensured at percentages defined in **annex 2** hereto, without prejudice to a possible procedure for administrative offences, ANACOM shall notify MEO of this fact, and this company has up to 20 working days to report to this Authority the solution to be implemented and also a proposal for provision of appropriate information to potentially affected final users, as well as the period of time deemed to be required for putting these steps in place. ANACOM may determine different time limits than those proposed.

In compliance with ANACOM's determination of 16 May 2013, the solution to be implemented by MEO, referred to in the preceding paragraph, shall consist solely and necessarily in reinforcing the SFN network coverage or in anticipating migration to the MFN network¹⁹, being incumbent on MEO to ensure the levels of terrestrial coverage set out in **annex 2** to this determination.

Where MEO opts for the installation of a new transmitter station to reinforce DTT coverage, it must preferably use the transmission channel provided for in the map

¹⁸ “Boundary coverage assessment of digital terrestrial television broadcasting signals” available at http://www.itu.int/dms_pub/itu-r/opb/rep/R-REP-BT.2143-2-2010-PDF-E.pdf .

¹⁹ In this last case, where the network fails to present the necessary stability for the provision of service with the required levels of quality of service, under point 4. of determination of ICP - ANACOM of 16 May 2013.

included in Annex 1 of this Authority's determination of 16 May 2013, namely where the main transmitter of the station under consideration is already in operation.

In addition to the update, where and as soon as appropriate, of the information at the DTT website (<http://tdt.telecom.pt>) as regards the indication of the best-server transmitter, MEO must ensure the provision of information to all potentially affected final users, according to the proposal presented and subject to ANACOM's validation, being MEO fully responsible for any additional burdens they may incur in, namely the redirection of antennas.

Without prejudice, ANACOM reserves the right to publish assessment reports of the quality of service made available.

2.4. Statistical margin of error

Although ANACOM proposed in the DD a tolerance for coverage estimates - statistical margin of error - in order to meet a set of contingencies, including unintentional or random propagation phenomena, such margin was always challenged by MEO, as its assessment on the subject confirms, on the grounds that there are no international standards supporting its definition. ANACOM acknowledges the high degree of complexity in establishing a margin of error, given the large set of factors that may have an impact on the coverage estimate.

In any case, it is stressed that MEO decided, in the course of all this process, to adopt a margin of safety/implementation that is considerably wider than previously, in order to compensate in a conservative way, according to the operator, for any gaps and inaccuracies of data models in use, namely as regards the land morphology, station radiation diagrams, etc., declaring that this will make the coverage estimate much more reliable.

As such, having been addressed problems underlying the need for the definition of a margin of error in the assessment of coverage, ANACOM takes the view that it is not necessary to take into consideration any tolerance or margin of error related to the coverage estimate.

2.5. Conditions of provision of information to users

On 24.04.2013, ICP - ANACOM recommended MEO, as regards information made available at the DTT website²⁰, that it proactively promoted, for locations initially identified as having DTT coverage and where subsequently DTH coverage was indicated, the compensation of users affected, both where the operator was contacted via call centre and where users purchased the DTH Complementary Kit.

However, and according to information currently available at ANACOM, it was found that:

- Complaints still remain on the change of information concerning the type of available coverage²¹, and (i) there are users affected by the referred alteration that, whether or not they filed a complaint, did not purchase the DTH kit, which in some cases could be due to imperfect information; and (ii) some of the users affected by the referred change of information only purchased the respective kits several months after the referred alteration, which could also be due to imperfect information;
- There may be users residing in areas affected by the change of information that, being unaware of this fact, do not have access to a quality television service.

Being ANACOM entitled for the purpose, reasons given above objectively justify the need for imposing on MEO a new obligation for provision of information to users potentially covered by changes of type of coverage, from DTT to DTH. In fact, while MEO is aware of affected users who have complained and affected users that in the meantime purchased a DTH kit, there may still remain a group of users that abstained from taking any action, even facing problems in the reception of the DTT service, having been concluded, from the information provided by MEO, that there is a lack of information in locations where coverage was changed from DTT to DTH.

A clear and comprehensive provision of information in this scope is of a particular importance, bearing in mind that costs incurred in or to be incurred in by any user, which would be avoided if information on coverage coincided with the coverage

²⁰ ANACOM's recommendation of 24.04.2013

[\(Recommendation made to PT Comunicações as regards information provided on the DTT website\).](#)

²¹ MEO's letter of 23.03.2015, with reference S0198 SG/2015.

effectively existent, fall under the responsibility of MEO, and as such the measure is deemed to be fit for purpose.

The measure, however, must also be proportionate, so that costs that have to be borne by the company to meet this imposition do not become excessive comparatively to benefits for the public interest arising therefrom.

As such, MEO must put in place an information plan that includes an advertisement in its DTT website, in a properly distinct manner and in the homepage of the referred website, of a structured file according to district/municipality/parish/location, with the record of coverage changes from DTT to DTH, including the date on which coverage information was changed. It is deemed appropriate that the plan also integrates the delivery of a postal or electronic communication to all *Juntas de Freguesia* (local councils) with authority on any location, or part of locations, concerned by a change of information as regards the type of available coverage, from DTT to DTH. This plan must also clarify that, under ANACOM's Determination of 7.4.2011, MEO is responsible for costs incurred in or that may take place further to this change of information.

3. Amendment to RUF ICP - ANACOM NO 6/2008 allocated to MEO

MEO holds a right of use for frequencies (RUF) of a national scope, for the provision of the digital terrestrial television broadcasting service, associated to Multiplexer A, intended for the broadcasting of free-to-air television programme services - RUF ICP - ANACOM No 6/2008.

Frequency bands assigned to the digital terrestrial television broadcasting service and allocated to MEO, for this purpose, were identified in the referred RUF (*vide* clause 7, paragraph 1), having been already amended and replaced on 10.03.2010²², 09.03.2011²³, 04.04.2011²⁴ e 16.05.2013²⁵.

²² ANACOM determination of 10.03.2010 ([Alterations to DTT network associated with Mux A in Azores](#)), corresponding to endorsement No 1 to RUF ICP - ANACOM No 6/2008, available at http://www.anacom.pt/streaming/Averbamento_Mux_A.pdf?contentId=1067991&field=ATTACHED_FILE.

²³ ANACOM determination of 09.03.2011 ([Alterations to operating channels of DTT Mux A](#)) further to the general consultation procedure ([Consultation on alterations to operating channels of DTT Mux A](#))

²⁴ ANACOM determination of 04.04.2011 ([Alterations to operating channel of DTT Mux A in Mainland Portugal](#)).

²⁵ ANACOM determination of 16.05.2013 ([Final decision on the development of the digital terrestrial television network](#)).

Under the law, the use of frequencies depends on the allocation of rights of use only where this is necessary to: (a) avoid harmful interference; (b) ensure technical quality of service; (c) safeguard efficient use of spectrum; (d) meet another general interest objective defined in the law²⁶.

As stated in the decision on the evolution of the DTT network, of 16 May 2013, “*it is unquestionable, in the opinion of ICP-ANACOM, that the digital terrestrial television broadcasting service intended for the broadcast of free-to-air television programme services means that the use of associated frequencies is subject to requirements of coverage and technical quality of the service, which are also connected to general interest objectives. These requirements - the mentioned conditions - arise from the RUF allocated to PTC in 2008 and, as such, should be maintained.*”

Also under the law - legal regime applicable to the licensing of radiocommunication networks and stations²⁷ - ANACOM is entitled, at any time, in the exercise of its powers and the performance of its duties, to alter, cancel or replace the allocation of frequencies for the operation and use of radiocommunications networks and stations, to the extent required to pursue the public interest, within the scope of the management of the radio spectrum and in accordance with the principle of proportionality and respect for established rights.

As regards the evolution of the DTT SFN network to an MFN network (MFN of SFN), the same decision of 16 May 2003 establishes the framework both for the network alteration and for a possible anticipation of such change.

As such, although ANACOM determined that MEO must “*carry on with the installation of the MFN network (MFN of SFN)*”, such installation was conditional upon the occurrence of one of two events (which were clearly set out by ANACOM in the referred determination).

On the one hand, MEO was bound to carry on with the installation of the MFN network (MFN of SFN) “*following any harmonisation at international or Community level or when a higher degree of security exists as to the need of implementation of the digital dividend 2 and respective conditions*”, always according to an autonomous decision on the part of this Authority, including the development schedule and plan that are established and published further to a proposal by MEO (as network operator).

²⁶ Cfr. article 30, paragraph 1, of ECL.

²⁷ Cfr. article 4 of Decree-Law No 151-A/2000 of 20 July, as amended by Decree-Law No 264/2009, of 28 September.

On the other hand, ANACOM provided for the possibility of anticipating the installation of main transmitters relatively to moments mentioned above, *“any costs arising therefrom being borne by PTC, in case the operating network fails, or is expected to fail, to present the necessary stability to provide the service with the levels of quality determined in Recommendation ITU-R BT.1735-1 and future revisions thereof”*.

In the Report of consultation procedures on the draft decision that preceded this decision, ANACOM explained that this provision serves a different purpose than that of the established evolution, and is not dependent on a decision on the digital dividend 2. As such, this Authority clarified that the installation of main transmitters is the preferential solution in case the network fails to present stability and, as such, in the final decision it was made clear that, if justified on those grounds, MEO must ensure an advance installation of the referred transmitters, relatively to a future ANACOM decision on network transition.

As regards channels whose integration in the RUF MEO now requests, under point 5 of decision of 16 May 2013, ANACOM determined their reservation in the National Frequency Allocation Plan (NFAP), with full access by the RUF holder to the digital terrestrial television broadcasting service, connected to the Multiplexer A, intended for the broadcast of free-to-air television programme services. As such, this Authority is entitled, in the exercise of its spectrum management powers, to dispose of these frequencies, for the purpose of this request.

On the other hand, also as regards the issue of integrating coverage obligations described above in RUF ICP - ANACOM No 06/2008, which also represents an amendment to the referred RUF, it follows from decision of 16 May 2013, in particular from point 3.3. thereof, that *“minimum values resulting from information provided pursuant to point 3.A. become an integral part of RUF ICP-ANACOM No 6/2008, with any amendments that may be determined, binding the operator thereto as from that date.”*

It must also be referred that conditions, rights and procedures applicable to the exercise of the activity, including rights of use, may be amended in cases of objective justification and in accordance with the principle of proportionality - article 20 of ECL.

As referred above, conditions associated to the RUF granted to MEO are currently set out in the respective qualifying document (RUF ICP-ANACOM No 6/2008), in endorsement 1 thereto, in determinations amending the operating channels of Mux A

and also in decision of 16 May 2013, conditions described above being now also added.

Taking into account the successive amendments introduced to conditions associated to the RUF, ANACOM deems that there are grounds for reissuing the qualifying document which establishes it, as this is the solution that in a more transparent and integrated manner allows for the publication of amendments introduced by this determination. In addition, it is stressed that amendments arising from determination of 16 May 2013 have a deep impact in the RUF, as they do not only entail the integration of new frequencies (geographically defined), given that conditions associated at the moment of award apply throughout the territory.

4. Prior hearing and consultation procedures carried out

By determination of 25 June 2015, ANACOM approved a draft decision on the definition of terrestrial coverage obligations to be included in the DTT RUF²⁸ (MUX A)²⁹ and decided to submit the referred DD to the prior hearing of MEO, under articles 100 and 101 of the former Administrative Procedure Code, interested parties having been given a period of 20 working days from the date of notification of the DD to respond, in writing. The DD was submitted also to the prior consultation procedure, under article 8 of ECL, also for 20 working days, in this case from the date on which the DD was made available at ANACOM's website, for written comments from interested parties.

Having been notified for the purpose, MEO assessed the matter within the time set, having sent mail and email received at ANACOM on 31.07.2015.

By the deadline set for reception of comments (31.07.2015), the following contributions were received:

- Amitrónica, Lda (**Amitronica**);
- DTT Blog in Portugal (**DTT Blog**);
- Confederação Portuguesa dos Meios de Comunicação Social (**CPMCS**);
- RÁDIO BAÍA, Sociedade de Radiodifusão, Lda. (**Radio Baia**).

²⁸ Right of use for frequencies ICP-ANACOM No 6/2008.

²⁹ Determination available at [Draft decision on DTT terrestrial coverage obligations](#) .

A contribution from DECO - Associação Portuguesa para a Defesa do Consumidor (Portuguese Association for Consumer Protection) was received after the due date³⁰, and for this reason it was not taken into consideration, although it has been made available at this Authority's website together with other contributions.

The report of these consultation procedures was drawn up, being an integral part of this decision and including a summary of arguments presented by MEO in its assessment in the scope of the prior hearing, positions taken by the various DD stakeholders, as well as ANACOM's views thereon.

5. Determination

Therefore, in the light of the above, the Management Board of ANACOM, in the scope of assignments provided for in article 8, paragraph 1 e) and h) of its Statutes approved by Decree-Law No 39/2015, of 16 March, in pursuing regulatory objectives provided for in article 5, paragraph 1 c) of ECL, and pursuant to articles 8, 16, 20, 30 and 32, paragraph 1 a) and b), all of ECL, and under points 3.3. and 4. of its determination of 16 May 2013, hereby determines:

1. To amend RUF ICP-ANACOM No 6/2008, allocated to PTC, as follows:

1.1 To integrate in the right of use for frequencies, of a national scope, for the provision of the digital terrestrial television broadcasting service, associated to Multiplexer A (Mux A), intended for the broadcast of free-to-air television programme services, according to assignments/areas described in **annex 1** hereto, the following frequencies:

- a) Channel 40 (622-630 MHz);
- b) Channel 45 (662-670 MHz);
- c) Channel 47 (678-686 MHz);
- d) Channel 48 (686-694 MHz).

1.2. To submit the use of frequencies referred to in the preceding number to conditions defined in RUF ICP-ANACOM No 6/2008.

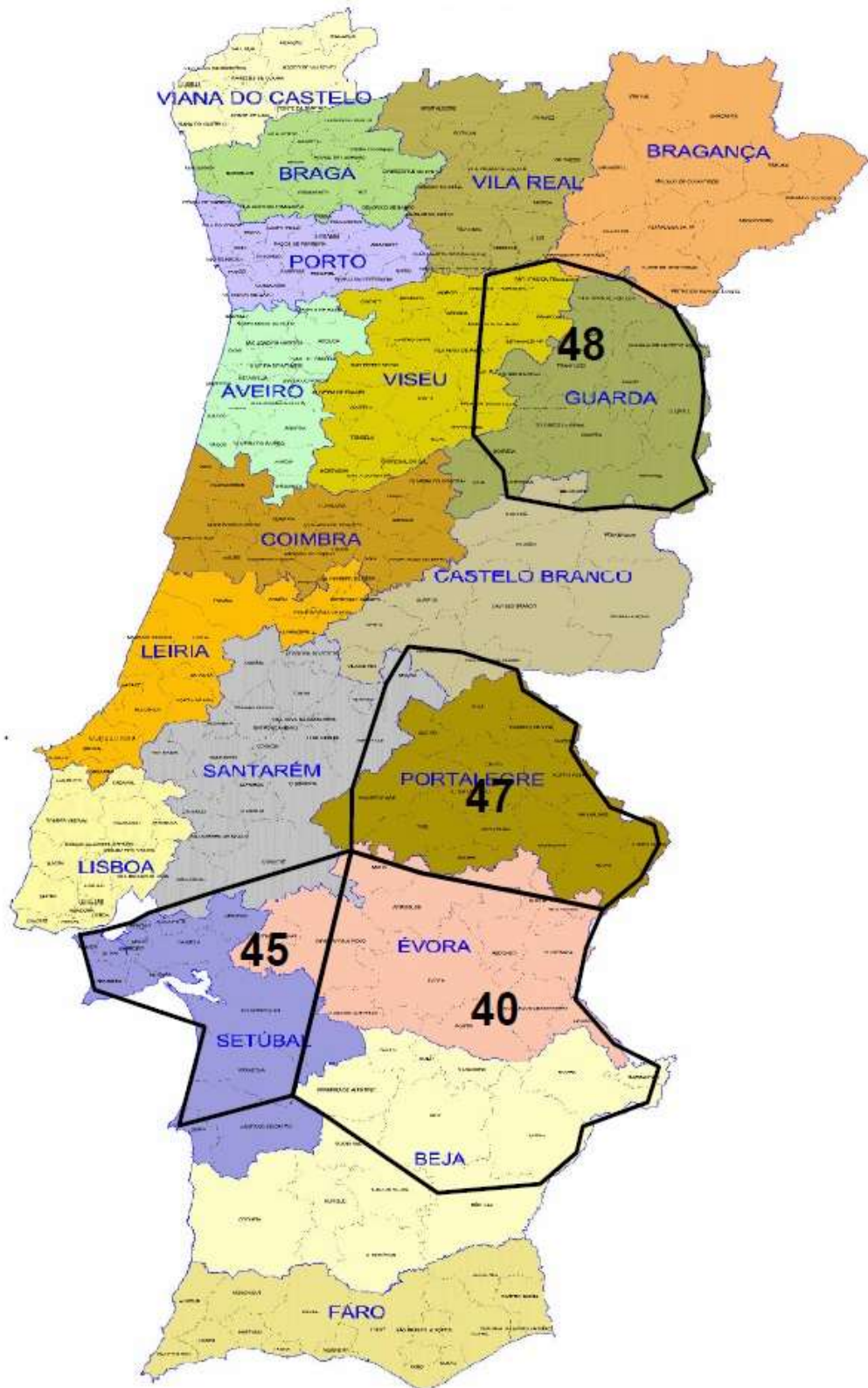
³⁰ Contribution received on 05.08.2015.

2. RUF ICP-ANACOM No 6/2008 shall be subject to the following conditions which are deemed to be an integral part thereof:
 - 2.1. MEO is subject in the Mainland to meet obligations of terrestrial population coverage, per municipality, as set out in the table in **annex 2** hereto;
 - 2.2. MEO is required to ensure a degree of availability of the service at reception level by 99% of the time, being applied Rec. ITU-R BT.1735-3 and future reviews thereof for the assessment of the quality of reception, and it is considered that, where a probe signals, for a given installation location, values for the Modulation Error Ratio (MER) values that are lower than the signal-noise relation defined for the adopted network setting (19.5 dB for a Rice channel), or a quality level lower than Q3, for longer than 3.65 days (87h and 36s) consecutively or with intervals, in the course of a one-year period, such location will be deemed not to have DTT coverage;
 - 2.3. Where the means for assessing the levels of quality of service show that the coverage of population has not been ensured at percentages defined under the preceding paragraphs, without prejudice to a possible procedure for administrative offences, ANACOM shall notify MEO of this fact, and this company has up to 20 working days to report to this Authority the solution to be implemented and also a proposal for provision of appropriate information to potentially affected final users, as well as the period of time deemed to be required for putting both steps in place, which may be altered by ANACOM, if deemed to be excessive.
 - 2.4. MEO is required to implement the solution communicated under the preceding paragraph within the time limit set by ANACOM.
 - 2.5. In compliance with ANACOM's determination of 16 May 2013, the solution to be implemented by MEO, under the preceding paragraphs, shall only and necessarily consist in reinforcing the SFN network coverage or in anticipating migration to the MFN network, being incumbent on MEO to ensure levels of terrestrial coverage set out in **annex 2** hereto.
 - 2.6. In the context of the solution to be implemented under the preceding paragraphs, MEO is required to update information at the DTT website (<http://tdt.telecom.pt>), keeping it updated, as regards the indication of the best-server transmitter, as well as to ensure the provision of information to all

affected final users, according to the communicated proposal and subject to validation from ANACOM, covering any additional burdens that may arise, namely the redirection of reception antennas, tuning of the DTT receiver and/or replacement/tuning of the amplifier.

- 2.7. To order MEO to put in place, within 10 working days, the plan for information to users that clarifies the areas/locations for which, since 2012, the information on the type of available coverage, from DTT to DTH, has changed, and specifies that MEO is responsible, under ANACOM's Determination of 7.4.2011, for costs incurred or that may yet be incurred in, due to this change of information, which must include:
 - a) the provision, in the DTT website (<http://tdt.telecom.pt>) of a structured file according to district/municipality/parish/location, with the record of coverage changes from DTT to DTH, including the date on which coverage information was changed (from DTT to DTH);
 - b) the delivery of a postal or electronic communication to all *Juntas de Freguesia* (local councils) with authority on a location, or part of locations, concerned by a change of information as regards the type of available coverage, from DTT to DTH.
3. To amend the National Frequency Allocation Plan (NFAP) according to point 1.1.
4. To reissue RUF ICP - ANACOM No 06/2008, incorporating in the respective qualifying document the preceding paragraphs, as well as amendments previously set out in endorsement No 1 to the referred RUF, in determinations amending the operating channels of Mux A, as well as in determination of 16 May 2013.
5. The decision in point 1 takes effect on the date of expiry of the validity of the temporary network license allocated to MEO by determination of 11 September 2014 and renewed by determination of 13 March 2015.

ANNEX 1



ANNEX 2

Municipality	% Terrestrial coverage
Abrantes	88.01%
Águeda	91.79%
Aguiar da Beira	59.74%
Alandroal	93.79%
Albergaria	82.95%
Albufeira	99.46%
Alcácer do Sal	67.86%
Alcanena	82.46%
Alcobaça	93.46%
Alcochete	100.00%
Alcoutim	19.38%
Alenquer	84.15%
Alfândega da Fé	77.27%
Alijó	73.95%
Aljezur	75.83%
Aljustrel	62.68%
Almada	99.81%
Almeida	58.27%
Almeirim	89.83%
Almodôvar	48.11%
Alpiarça	100.00%
Alter do Chão	94.76%
Alvaiázere	94.37%
Alvito	26.08%
Amadora	100.00%
Amarante	83.24%
Amares	98.81%
Anadia	81.04%
Ansião	84.63%
Arcos de Valdevez	82.05%
Arganil	61.18%
Armamar	93.49%
Arouca	76.51%
Arraiolos	55.90%
Arronches	74.53%
Arruda dos Vinhos	89.77%

Municipality	% Terrestrial coverage
Aveiro	99.38%
Avis	73.06%
Azambuja	80.53%
Baião	83.17%
Barcelos	96.65%
Barrancos	84.19%
Barreiro	100%
Batalha	92.68%
Beja	94.55%
Belmonte	97.49%
Benavente	97.49%
Bombarral	92.83%
Borba	85.77%
Boticas	83.35%
Braga	98.44%
Bragança	84.16%
Cabeceiras de Basto	86.13%
Cadaval	88.93%
Caldas da Rainha	93.59%
Caminha	83.31%
Campo Maior	92.77%
Cantanhede	91.28%
Carraceda de Ansiães	80.32%
Carregal do Sal	89.38%
Cartaxo	78.71%
Cascais	100.00%
Castanheira de Pera	83.11%
Castelo Branco	94.73%
Castelo de Paiva	80.83%
Castelo de Vide	82.73%
Castro Daire	38.81%
Castro Marim	67.05%
Castro Verde	87.64%
Celorico da Beira	86.77%
Celorico de Basto	85.88%
Chamusca	67.74%
Chaves	89.18%
Cinfães	77.93%
Coimbra	89.90%

Municipality	% Terrestrial coverage
Condeixa-a-Nova	72.67%
Constância	92.56%
Coruche	85.38%
Covilhã	96.07%
Crato	57.03%
Cuba	67.25%
Elvas	96.95%
Entroncamento	100.00%
Espinho	79.25%
Esposende	91.60%
Estarreja	98.29%
Estremoz	85.06%
Évora	96.32%
Fafe	92.36%
Faro	99.89%
Felgueiras	89.50%
Ferreira do Alentejo	61.89%
Ferreira do Zêzere	88.84%
Figueira da Foz	86.91%
Figueira de Castelo Rodrigo	90.57%
Figueiró dos Vinhos	67.34%
Fornos de Algodres	76.32%
Freixo de Espada à Cinta	65.35%
Fronteira	65.09%
Fundão	92.40%
Gavião	61.13%
Góis	27.25%
Golegã	89.24%
Gondomar	99.70%
Gouveia	79.73%
Grândola	65.34%
Guarda	92.21%
Guimarães	98.40%
Idanha-a-Nova	78.90%
Ílhavo	99.28%
Lagoa	94.59%
Lagos	89.34%
Lamego	89.55%
Leiria	90.75%

Municipality	% Terrestrial coverage
Lisbon	99.99%
Loulé	95.71%
Loures	93.51%
Lourinhã	87.33%
Lousã	94.91%
Lousada	96.58%
Mação	38.89%
Macedo de Cavaleiros	73.65%
Mafra	94.23%
Maia	99.22%
Mangualde	91.59%
Manteigas	82.05%
Marco de Canaveses	88.23%
Marinha Grande	98.47%
Marvão	55.16%
Matosinhos	98.93%
Mealhada	80.15%
Meda	87.18%
Melgaço	54.01%
Mértola	51.82%
Mesão Frio	95.91%
Mira	57.98%
Miranda do Corvo	50.31%
Miranda do Douro	58.72%
Mirandela	86.51%
Mogadouro	60.37%
Moimenta da Beira	89.53%
Moita	100.00%
Monção	97.63%
Monchique	64.80%
Mondim de Basto	81.11%
Monforte	78.81%
Montalegre	58.87%
Montemor-o-Novo	61.61%
Montemor-o-Velho	97.11%
Montijo	99.36%
Mora	64.20%
Mortágua	83.91%
Moura	59.03%

Municipality	% Terrestrial coverage
Mourão	76.59%
Murça	48.84%
Murtosa	98.55%
Nazaré	92.47%
Nelas	91.55%
Nisa	94.12%
Óbidos	96.94%
Odemira	36.54%
Odivelas	99.94%
Oeiras	100.00%
Oleiros	45.02%
Olhão	99.66%
Oliveira de Azeméis	92.41%
Oliveira de Frades	47.33%
Oliveira do Bairro	94.32%
Oliveira do Hospital	79.48%
Ourém	80.66%
Ourique	55.04%
Ovar	91.41%
Paços de Ferreira	96.11%
Palmela	100.00%
Pampilhosa da Serra	64.34%
Paredes	94.91%
Paredes de Coura	94.24%
Pedrógão Grande	51.15%
Penacova	45.57%
Penafiel	93.05%
Penalva do Castelo	89.12%
Penamacor	96.02%
Penedono	91.32%
Penela	70.37%
Peniche	94.85%
Peso da Régua	96.94%
Pinhel	78.42%
Pombal	83.38%
Ponte da Barca	81.89%
Ponte de Lima	94.23%
Ponte de Sor	74.85%
Portalegre	84.50%

Municipality	% Terrestrial coverage
Portel	81.23%
Portimão	99.84%
Oporto	100.00%
Porto de Mós	83.06%
Póvoa do Lanhoso	96.98%
Póvoa do Varzim	99.20%
Proença-a-Nova	85.34%
Redondo	99.36%
Reguengos de Monsaraz	96.80%
Resende	82.33%
Ribeira de Pena	87.38%
Rio Maior	92.07%
Sabrosa	74.84%
Sabugal	65.53%
Salvaterra de Magos	91.87%
Santa Comba Dão	93.87%
Santa Maria da Feira	92.04%
Santa Marta de Penaguião	91.70%
Santarém	80.85%
Santiago do Cacém	78.50%
Santo Tirso	97.78%
São Brás de Alportel	100.00%
São João da Madeira	100.00%
São João da Pesqueira	82.36%
São Pedro do Sul	76.45%
Sardoal	30.98%
Sátão	80.85%
Seia	62.98%
Seixal	97.74%
Sernancelhe	78.91%
Serpa	83.57%
Sertão	89.02%
Sesimbra	99.29%
Setúbal	97.87%
Sever do Vouga	49.36%
Silves	88.79%
Sines	99.60%
Sintra	98.45%
Sobral de Monte Agraço	74.65%

Municipality	% Terrestrial coverage
Soure	87.75%
Sousel	57.48%
Tábua	93.18%
Tabuaço	80.09%
Tarouca	86.98%
Tavira	96.38%
Terras de Bouro	64.32%
Tomar	80.38%
Tondela	92.02%
Torre de Moncorvo	92.72%
Torres Novas	91.74%
Torres Vedras	80.47%
Trancoso	86.82%
Trofa	98.73%
Vagos	87.63%
Vale de Cambra	87.40%
Valença	99.88%
Valongo	96.19%
Valpaços	61.85%
Vendas Novas	74.20%
Viana do Alentejo	75.86%
Viana do Castelo	94.23%
Vidigueira	94.20%
Vieira do Minho	84.80%
Vila de Rei	70.17%
Vila do Bispo	52.28%
Vila do Conde	98.04%
Vila Flor	65.80%
Vila Franca de Xira	89.41%
Vila Nova da Barquinha	77.41%
Vila Nova de Cerveira	99.15%
Vila Nova de Famalicão	95.97%
Vila Nova de Foz Côa	89.37%
Vila Nova de Gaia	99.14%
Vila Nova de Paiva	52.03%
Vila Nova de Poiares	87.43%
Vila Pouca de Aguiar	82.22%
Vila Real	90.77%
Vila Real de Santo António	89.33%

Municipality	% Terrestrial coverage
Vila Velha de Ródão	83.32%
Vila Verde	90.46%
Vila Viçosa	100.00%
Vimioso	42.09%
Vinhais	60.52%
Viseu	93.65%
Vizela	99.94%
Vouzela	56.87%