

Decision

**to update the list of registration objects and their characterization
elements to be made available in the Information System of
Suitable Infrastructures (SIIA)**

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I – Framework and purpose

With the publication of Decree-Law No. 92/2017, of 31 July – diploma undertaking the fourth amendment to Decree-Law No. 123/2009 of 21 May (hereinafter DL123/2009)¹ – the transposition into national law of Directive No. 2014/61/EU² of the European Parliament and of the Council, of 15 May 2014, on measures to reduce the cost of implementing high-cost electronic communications networks, was concluded.

Among the changes made is the adjustment of the concept of “*infrastructure suitable for the accommodation of electronic communications networks*” or “*suitable infrastructures*” provided for in subparagraph h) of paragraph 1 of article 3 of DL123/2009.

Under DL123/2009 what is understood by “*suitable infrastructure*” is “*the physical infrastructure that forms part of a network that is designed to accommodate other network elements without becoming itself an active network element, such as pipes, posts, masts, conduits, boxes, manhole covers, cabinets, buildings or entrances to buildings, antenna installations, towers, their accessories and any associated infrastructures which may be used for housing or maintaining electronic communications cables, equipment or other communications network resources, as well as connecting devices, gaskets and other equipment necessary for the transmission of electronic communications in those networks;*”

Pursuant to paragraph 2 of article 3 of the same law, “[t]he associated infrastructures include access branches to buildings and all other infrastructures which are indispensable to the installation, removal, maintenance or repair of electronic communications cables in ducts and sub-ducts” and “[c]ables, including dark fibre, and the network elements effectively used for the supply of water for human consumption do not constitute suitable infrastructures.”

The adjustment made by law to the concept of suitable infrastructures makes the revision of the ANACOM Decision of 11.11.2010³ necessary and justified regarding the definition of registration objects and the terms and format of information provision in the previous Centralized Information System (SIC), now renamed “*Information System of Suitable Infrastructures*” (SIIA) (hereinafter “2010 ANACOM Decision”) – in order to accommodate new objects, the inclusion of which in the register of infrastructure for the entities referred to in

¹ <https://www.anacom.pt/render.jsp?contentId=1418606>

² <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0061&from=EN>.

³ Available at: <https://www.anacom.pt/render.jsp?contentId=1062883>

article 2 of DL 123/2009 and subsequent availability in the SIIA is, by virtue of the legislative change, mandatory.

In this context, the amendments to the current 2010 ANACOM Decision are intended to update the list of registration objects that are included, in line with the new concept of suitable infrastructures established by law, without calling into question the technical solution of the system already in place and in operation since January 2016.

This is also an opportunity to undertake some adjustments in specifications and information requirements for the registration objects identified in the current determination, so as to ensure their suitability with practical and technical requirements, identified in the meantime, due to the entry into operation of the SIIA, as well as its systematic integration of the registered objects which are hereby added.

In short, this decision:

1. Updates the universe of registration objects which, due to the legislative amendment recommended by Decree-Law No. 92/2017, of July 31, include the concept of suitable infrastructures and must mandatorily be included in the registers to be made available in the SIIA, in addition those identified in points 1 and 3 of the 2010 ANACOM Decision;
2. Specifies the characterization elements of the registration objects now added and their definition, also adjusting some of those previously defined so as to make their insertion into the SIIA uniformly possible;
3. It updates, in accordance with the changes now made, the table characterizing the registration objects contained in the 3rd point of the 2010 ANACOM Decision, taking advantage of the opportunity to give the new table a clearer title.

II – Registration Objects and their respective characterization elements

1. Registration objects

1.1. New registration objects

It is important to add to the list of registration objects provided for in the 2010 ANACOM Decision, those that, due to the publication of Decree-Law No. 92/2017, of 31 July, have been included in the concept of suitable infrastructures. The said legislative amendment implies, therefore, that the registrations made available or to be made available in the SIIA in compliance with the provisions of paragraph 3 of article 24 of DL 123/2009, now include the objects that are here being identified and characterized.

Given this, new registration objects, ‘*masts*’ and “*building entrances*” are identified, being understood as:

- **Mast**: physical infrastructure intended or capable of being used for the installation of radiating elements of electronic communications networks, fixed, particularly on a tower, building or other construction;
- **Building Entrance**: termination of the conduit section between the Manhole Cover and the piping network boundary of a building.

Regarding the **Installation of Antennas**, referred to in subparagraph h) of paragraph 1 of article 3 of DL123/2009, it is understood that, at the moment, this actually occurs in the SIIA through two objects – **Tower** and **Mast** –, which at the moment makes their individualization as a registration object unnecessary.

1.2. Registration objects provided for in the 2010 ANACOM Decision

Regarding the registration objects identified in the 2010 ANACOM Decision, the following adjustments must be made in order to ensure their suitability to the practical and technical requirements resulting from the entry into operation of the SIIA and its inclusion of the registration objects and the respective characterization elements which have been added:

- **Tower**

Regarding this registered object, it should be noted that the 2010 ANACOM Decision provided for its inclusion in the SIIA as an option. Almost eight years after that decision and in view of the legislative developments regarding the understanding of suitable infrastructures and the experience that has been collected, it is important to make this concept more precise and to make its inclusion in the SIIA mandatory. Thus, for the purposes of establishing the registration to be made available in the SIIA, **Tower** is understood as the physical infrastructure intended or capable of being used for the installation of masts or radiating elements of electronic communications networks or support for high-voltage and very high-voltage electricity aerial lines.

- **Aerial Line Section or Aerial Section**

As for this registration object, its concept is adjusted, so as to conform to the definition of tower, now introduced.

Thus, **Aerial Line Section** or **Aerial Section**, is understood as the set of aerial links between adjacent posts or towers, between post and facade or between facades, being represented by a line in a layout plan.

2. Elements characterizing registration objects and their definition

In order to allow for the proper inclusion in the SIIA of the information on the registration objects identified above, it is important to specify which data should be included in the system for each object, thus allowing SIIA users, when consulting the information available in the system, to be able to assess the importance of the infrastructures in question and interest in their use.

2.1. New characterization element

Taking as reference the elements defined in the 2010 ANACOM Decision, a new characterization element is introduced – **Installation Base** – only applicable to **Mast** and **Tower** registration objects, in order to ensure their better characterization, defined as:

- **Installation Base:** specific place where each object is installed, with the following values being defined:
 - **Mast**
 - 01 - tower
 - 02 - building or other construction
 - **Tower**
 - 02 - building or other construction
 - 03 - ground

2.2. Change of characterization elements set out in the 2010 ANACOM Decision

Considering the characterization elements currently in force, the following adjustments are hereby made:

- **Location**

With respect to this characterization element when the attributes **street** and **police number** refer to the objects **Technical Building or Building Entrance** and these are located in a place which it is not possible to identify by reference to a **street** and **police number** this must be filled in with the value “0”.

- **Line**

When this characterization element refers to the **Conduit Section** object it can also be referred to with the **suspended** attribute, since, for example, in storm water networks, conduits may be suspended in bridges and viaducts.

- **Holding**

In relation to this element, it is necessary to adapt its concept to cover the infrastructures which, under the terms of paragraph 1 of article 24 of DL123/2009, must be included in the register, that is, suitable infrastructures which are owned or managed by the entities referred to in article 2 of the said diploma.

Therefore, when filling in this characterization element, which applies to all registration objects, the entity that owns or manages the registration object must be identified and, according to DL123/2009, is obliged to include it in the register to be made available in the SIIA.

The filling of this characterization element is carried out automatically by the system with the identification of the entity that loaded that registration object.

- **Size**

When this characterization element refers to:

- a. The object **Manhole Cover**, it must be completed as follows:
 - For round-shaped manhole covers, the following attributes must be specified:
 - Height
 - Diameter
 - In manhole covers with a different shape to round, the following attributes must be specified:
 - Height
 - Length
 - Width
- b. For the **Technical Building** object, the attributes **height** and **altitude** are important for the characterization of this object, particularly in the case of registration information on wastewater networks, such that filling this in is mandatory.
- c. For the objects **Post**, **Tower**, and **Mast**, the **height** attribute is important in the characterization of these objects, so its filling in is mandatory.

- **Operational State**

Finally, in relation to this characterization element, the purpose of which is to draw the conclusion that a given registration object is available to be used normally in the network of which it forms part, it is considered important, in order to ensure effective information for the beneficiaries of the right of access to suitable infrastructures and a suitable management of resources, which through consulting the system it will possible to immediately know if the infrastructures described are available for shared use. Therefore, it is important to ensure that the operational state of each infrastructure is clarified using one of the following values:

- 01 – object under development
- 02 – object installed and available
- 03 – object installed and unavailable

04 – object being uninstalled

For the registered object **Aerial Line Section** or **Aerial Section**, the Operational State characterization element is considered not applicable (NA) as a result of the amendment regarding the 2010 ANACOM Decision on the meaning of values 02 and 03 of this element.

2.3 Characterization elements of the new registration objects

Considering the specificities of the new registration objects that have now been implemented, it is also important to identify the elements through which their characterization is ensured in the SIIA:

- Characterization elements for the object **Mast**:
 - Installation Base
 - Location
 - Georeferencing
 - Main Utilization
 - Size
 - Holding
 - Type of Use
 - Operational State
 - State of occupation

- Characterization elements for the object **Building Entrance**:
 - Location
 - Georeferencing
 - Main Utilization
 - Size
 - Holding
 - Type of Use
 - Operational State
 - State of occupation

3. Characterization table of the registration objects

The 2010 ANACOM Decision, which is hereby amended, contains a table where the various registration objects, on that date defined and discriminated, have the characterization elements that, relative to each of them, must be considered in the preparation of the register to be made available in the SIIA. As a result of the experience acquired with the implementation of the system, it is considered necessary and opportune to introduce some adjustments to the table in order to clarify what each user should consider when preparing the register to be made available in the SIIA.

A new version of the table that includes the registration objects now added and their characterization elements, and also the characterization elements of the previously defined registration objects are updated in line with the changes identified and justified in the previous points.

In short, taking as a reference the table in the 2010 ANACOM Decision:

- The changes that have been introduced are indicated in “**bold**” and underlined, for a clearer understanding.
- The opportunity has been taken to replace the form describing the applicable characterization elements by a title with clear acronyms for users. Thus, the previous signage is replaced by the following title:

NA- Not applicable

MAN- Required

OPT- Optional

Characterization table of the registration objects

Characterization elements		Registration Objects									
Type of infrastructure (Classes)		Cabinet	Manhole Cover	Conduit Section	Aerial Section	Technical Building	Service Shaft	Post	Tower	Mast	Building
Location	District	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	<u>MAN</u>	<u>MAN</u>
	Council	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	<u>MAN</u>	<u>MAN</u>
	Parish	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	<u>MAN</u>	<u>MAN</u>
	Street	NA	NA	NA	NA	MAN (1)	NA	<u>OPT</u>	<u>OPT</u>	<u>OPT</u>	<u>MAN (1)</u>
	Police No.	NA	NA	NA	NA	MAN (1)	NA	<u>OPT</u>	<u>OPT</u>	<u>OPT</u>	<u>MAN (1)</u>
Installation Base	—	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>NA</u>	<u>MAN</u>	<u>MAN</u>	<u>NA</u>
Georeferencing ⁴	Type	Point	Point	Line	Line	Point	Line	Point	Point	<u>Point</u>	<u>Point</u>
	System Coordinates	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	<u>MAN</u>	<u>MAN</u>
	Coordinates	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	<u>MAN</u>	<u>MAN</u>
Line	Underground	NA	MAN	<u>MAN (2)</u>	NA	NA	MAN	NA	NA	<u>NA</u>	<u>NA</u>
	Suspended	NA	NA	<u>MAN (2)</u>	NA	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>
	Aerial	NA	NA	NA	MAN	NA	NA	MAN	MAN	<u>NA</u>	<u>NA</u>
Main Utilization	—	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	<u>MAN</u>	<u>MAN</u>
Holding	—	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	<u>MAN</u>	<u>MAN</u>
Size	Diameter	NA	MAN (3)	MAN	NA	NA	NA	NA	NA	<u>NA</u>	<u>NA</u>
	Length	MAN	MAN (3)	MAN	MAN	OPT	MAN	NA	NA	<u>NA</u>	<u>OPT</u>
	Width	MAN	MAN (3)	NA	NA	OPT	MAN	NA	NA	<u>NA</u>	<u>OPT</u>
	Height	MAN	MAN	NA	NA	<u>MAN</u>	MAN	<u>MAN</u>	<u>MAN</u>	<u>MAN</u>	<u>OPT</u>
	Altitude (4)	NA	NA	<u>NA</u>	NA	<u>MAN</u>	NA	MAN	MAN	<u>MAN</u>	<u>NA</u>
Type of use	Wiring accommodation	NA	MAN	MAN	MAN	NA	MAN	MAN	MAN	<u>MAN</u>	<u>MAN(5)</u>
	Equipment accommodation	MAN	NA	NA	NA	MAN	NA	<u>MAN</u>	<u>MAN</u>	<u>MAN</u>	<u>MAN(5)</u>
	Joining devices/branch-joint	MAN	MAN	NA	NA	MAN	MAN	MAN	NA	<u>NA</u>	<u>MAN(5)</u>
	Terminations	NA	NA	NA	NA	MAN	NA	NA	NA	<u>NA</u>	<u>MAN(5)</u>
Operational state	—	MAN	MAN	MAN	<u>NA</u>	MAN	MAN	MAN	MAN	<u>MAN</u>	<u>MAN</u>
State of occupation	Value between (0% and 100%)	OPT	OPT	OPT	OPT	OPT	OPT	OPT	OPT	<u>OPT</u>	<u>OPT</u>

⁴ Due to a lapse the line corresponding to the Type attribute was left blank in the first version of the document table submitted for consultation. This lapse did not occur in the second version of the same table in that document. This situation has now been corrected.

Caption

NA	Not applicable
MAN	Mandatory
OPT	Optional
(1)	In the case of a Technical Building and a Building Entrance, the characterization element Location in respect of the Street and Police No. is mandatory. In situations where the corresponding infrastructure is not located in a street and has no police number assigned, the value to be placed will be "0".
(2)	The Conduit Section is usually underground. However, it may be suspended and, in this case, it applies to crossings in bridges and viaducts particularly the rainwater network. It is mandatory to fill in one of the attributes
(3)	It is mandatory to fill in the diameter where the Manhole Cover is round or the length and width where the Manhole Cover has a shape other than round.
(4)	Altitude – Defined by the Altitude of the terrain (where the respective object is installed) plus the ground-top distance of the object.
(5)	It is mandatory to fill in one of the attributes

III – Consultation Procedure

By determination of 09.08.2018, ANACOM, in the exercise of the powers provided for in paragraph 3 of article 24 of Decree-Law No. 123/2009, of 21 May, submitted the draft decision on the updating of the list of registration objects and their respective characterization elements to be made available in the SIIA for public consultation, in accordance with the provisions of subparagraph d) of paragraph 1 of article 124 of the Code of Administrative Procedure, for a period of 20 working days, and the respective notice was published on 27.08.2018 in Series II of the Official Gazette *Diário da República* No. 164/2018 – Notice No. 12218/2018.

Announcements were also published in two national newspapers (*Correio da Manhã* and *Público*) and one regional in the Azores (*Açoriano Oriental*) and one regional in Madeira (*Diário de Notícias da Madeira*).

ANACOM prepared the report of this public consultation, which contains a summary of the statements received, as well as the regulator's understanding of the issues raised by the respondents. That report shall form the basis and shall form an integral part of this decision.

IV – Determination

Considering the foregoing, in pursuance of the attributions provided for in subparagraphs a) and b) of paragraph 1 of article 8 of the Statutes approved by Decree-Law No. 39/2015, of 16 March, in the exercise of the powers conferred by subparagraph f) of paragraph 1 and subparagraph b) of paragraph 2, both of article 9 of the same Statutes and of the powers provided for in paragraph 3 of article 24 of Decree-Law No. 123/2009, of 21 May, and under the terms of subparagraph d) of paragraph 1 of article 124 of the CPA, the Board of Directors of ANACOM, pursuant to subparagraph b) of paragraph 1 of article 26 of its Statutes, hereby determines:

1. To add to point 1 of Part III of the 2010 ANACOM Decision, the following registration objects and their respective technical definitions:
 - **Mast:** physical infrastructure intended or likely to be used for the installation of radiating elements of electronic communications networks, fixed in particular in a tower, building or other construction;
 - **Building Entrance:** termination of the Conduit Section between the Manhole Cover and the piping network boundary of a building.
 - **Tower:** physical infrastructure intended or capable of being used for the installation of masts or radiating elements of electronic communications networks or support for high-voltage and very high-voltage electricity aerial lines.
2. To approve the alteration of the definition of the registration object **Aerial Line Section** or **Aerial Section**, provided for in point 1 of part III of the 2010 ANACOM Decision, under the following terms:
 - **Aerial Line Section** or **Aerial Line:** set of aerial links between posts or adjacent towers, between post and facade or between facades, being represented by a line in a layout plan.
3. Delete point 2 of part III of the 2010 ANACOM Decision.
4. To approve the alteration of the characterization elements provided for in point 3 of Part III of the 2010 ANACOM Decision, under the following terms:
 - Location: administrative address that allows each registered object to be referenced, indicating the police number, street, parish, council and district where it is located, whenever these are applied according to the functional and technical definition of the

SIIA registration object and the minimum applicable element under consideration, according to the registration objects characterization Table.

When the attributes **street** and **police number** refer to the objects Technical Building or Building Entrance and these are situated in a location where it is not possible to identify them by reference to a **street** and **police number** they must be filled in with the value "0";

- **Line**: in the case of linear objects, the line is no more than the set of coordinates that define the path of the object. This characterization element describes the type of line that houses the object, with the following types being defined:

1. Underground line (network of simple pipes; network of tubing composed, grouped or structured in formations; service shafts);
2. Suspended line (crossings on bridges, building facades and conduits where applicable);
3. Aerial line (posts, towers).

- **Holding**: enables the identification of the entity that owns or manages the registration object and which, under DL123/2009, is obliged to be included in the register to be made available in the SIIA;

- **Size**: enables the characterization of the registration objects in terms of their important sizes.

Under the SIIA, objects may be considered where their characteristic variables have a dimensional expression in standard units of measurement (length, for example) or dimensionless variables the values of which are only expressed as a quantity without reference to any system of standardised units of measurement. For characteristic dimensional type variables, the measurement representation includes:

- the denomination of the variable measured (diameter, length, width, height);
- the value of the measurement;
- indication of the unit in which the measured value is expressed.

When used to characterize the **Manhole Cover** object, the element size follows the following rules:

- For round-shaped manhole covers, the following attributes must be specified:
 - Height
 - Diameter
- For manhole covers with a different shape to round, the following attributes must be specified:
 - Height
 - Length
 - Width

When used to characterize the **Technical Building** object, the height and altitude attributes of the element size are important for the characterization of this object, particularly in the case of registration information for wastewater networks, such that filling this in is mandatory;

When used to characterize **Post**, **Tower**, and **Mast** objects, the height attribute of the element size is mandatory.

- Operational state: element that allows the characterization of registration objects as to their availability to be normally used in the network of which they form part, as well as for shared use. The operational state of a registration object will assume one of the following values:

- 01 – object under development
- 02 – object installed and available
- 03 – object installed and unavailable
- 04 – object being uninstalled

This element, Operational State, is not applicable (NA) to characterize the Aerial Line Section or Aerial Section object.

5. To amend point 3 of part III of the 2010 ANACOM Decision, the following characterization element is added:

- Installation Base: understood as a specific place where each object is installed.

This element, which is only applicable to Masts and Towers, has the following values:

- Mast
 - 01 - tower
 - 02 - building or other construction
- Tower
 - 02 - building or other construction
 - 03 – ground

6. To approve the **Characterization Table of the registration objects**, under the terms set out in point II.3 of this decision.
7. Part III of the 2010 ANACOM Decision is republished in the Annex hereto, incorporating the amendments to points 1, 2, and 3 as set out in the preceding paragraphs and mere editing adjustments to paragraphs 4, 5 and 6.
8. To determine that, in compliance with the provisions of paragraph 3 of article 24 of Decree-Law No. 123/2009, the entities provided for in article 2 of the same law, within 120 working days, counting from the implementation in the SIIA of the functional changes that make it possible to comply with the obligations to update the information, update the information input into the System in accordance with what is established in this decision.

Lisbon, 14 November 2018

ANNEX

Republishing of part III of the ANACOM Decision of 11.11.2010, with the changes to the BD's determination of 14.11.2018, as established in point 7 of this decision

1. The registration objects to be included in the Information System of Suitable Infrastructures (SIIA), and their respective definitions, are as follows:

- Cabinet: box or frame assembly, watertight and with devices and equipment housed inside;
- Manhole cover: a compartment or box for access to underground tubing, generally located outside buildings, through which cables can be installed, removed and connected and maintenance performed;
- Technical Building: buildings suitable for the housing of electronic communications network equipment, i.e., excluding network termination buildings, in accordance with the ITED. Since the SIIA must cover passive elements installed in the external network, the introduction of a building in the SIIA should only take place if, and when, the continuity of a certain conduit cable line implies the passage through the interior of a technical building, for example, with transit through the main distribution frame;
- Service Shaft: compartment or corridor containing cableways or other enclosed spaces suitable for the passage of cables and their connections, the dimensions of which allow free movement of people;
- Conduit Section: set of conduits between two adjacent manhole covers or between a manhole cover and the infrastructure boundary, where a conduit corresponds to a pipe or set of pipes generally underground or arranged along communication paths;
- Aerial Line Section or Aerial Line: set of aerial links between posts or adjacent towers, between post and facade or between facades, being represented by a line in a layout plan.

- Post: vertical support element suitable for cable interconnection and equipment of aerial lines of electronic communications networks;
- Mast: physical infrastructure intended or likely to be used for the installation of radiating elements of electronic communications networks, fixed in particular in a tower, building or other construction;
- Building Entrance: termination of the conduit section between the Manhole Cover and the piping network boundary of a building.
- Tower: physical infrastructure intended or capable of being used for the installation of masts or radiating elements of electronic communications networks or support for high-voltage and very high-voltage electricity aerial lines.

2. Removed

3. The characterization elements of the registration objects referred to in point 1, to be included in the SIIA, are those identified in Table 1.

Characterization table of the registration objects

Characterization elements		Registration Objects									
Type of infrastructure (Classes)		Cabinet	Manhole Cover	Conduit Section	Aerial Section	Technical Building	Service Shaft	Post	Tower	Mast	Building
Location	District	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN
	Council	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN
	Parish	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN
	Street	NA	NA	NA	NA	MAN (1)	NA	OPT	OPT	OPT	MAN (1)
	Police No.	NA	NA	NA	NA	MAN (1)	NA	OPT	OPT	OPT	MAN (1)
Installation base	—	NA	NA	NA	NA	NA	NA	NA	MAN	MAN	NA
Georeferencing	Type	Point	Point	Line	Line	Point	Line	Point	Point	Point	Point
	System Coordinates	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN
	Coordinates	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN
Line	Underground	NA	MAN	MAN (2)	NA	NA	MAN	NA	NA	NA	NA
	Suspended	NA	NA	MAN (2)	NA	NA	NA	NA	NA	NA	NA
	Aerial	NA	NA	NA	MAN	NA	NA	MAN	MAN	NA	NA
Main Utilization	—	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN
Holding	—	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN	MAN
Size	Diameter	NA	MAN (3)	MAN	NA	NA	NA	NA	NA	NA	NA
	Length	MAN	MAN (3)	MAN	MAN	OPT	MAN	NA	NA	NA	OPT
	Width	MAN	MAN (3)	NA	NA	OPT	MAN	NA	NA	NA	OPT
	Height	MAN	MAN	NA	NA	MAN	MAN	MAN	MAN	MAN	OPT
	Altitude (4)	NA	NA	NA	NA	MAN	NA	MAN	MAN	MAN	NA
Type of use	Wiring accommodation	NA	MAN	MAN	MAN	NA	MAN	MAN	MAN	MAN	MAN(5)
	Equipment accommodation	MAN	NA	NA	NA	MAN	NA	MAN	MAN	MAN	MAN(5)
	Joining devices/branch-joint	MAN	MAN	NA	NA	MAN	MAN	MAN	NA	NA	MAN(5)
	Terminations	NA	NA	NA	NA	MAN	NA	NA	NA	NA	MAN(5)
Operational state	—	MAN	MAN	MAN	NA	MAN	MAN	MAN	MAN	MAN	MAN
State of occupation	Value between (0% and 100%)	OPT	OPT	OPT	OPT	OPT	OPT	OPT	OPT	OPT	OPT

Caption

NA	Not applicable
MAN	Mandatory
OPT	Optional
(1)	In the case of a Technical Building and a Building Entrance, the characterization element Location in respect of the Street and Police No. is mandatory. In situations where the corresponding infrastructure is not located in a street and has no police number assigned, the value to be placed will be "0".
(2)	The Conduit Section is usually underground. However, it may be suspended and, in this case, it applies to crossings in bridges and viaducts particularly the rainwater network. It is mandatory to fill in one of the attributes
(3)	It is obligatory to fill in the diameter where the Manhole Cover is round or the length and width where the Manhole Cover has a shape other than round.
(4)	Altitude – Defined by the Altitude of the terrain (where the respective object is installed) plus the ground-top distance of the object.
(5)	It is mandatory to fill in one of the attributes

- Location: administrative address that enables the referencing of each registration object, indicating the police number, street, parish, council and district where it is located, whenever these are applied according to the functional and technical definition of the SIIA registered object and the minimum applicable element in question, as shown in Table 1. When the attributes **street** and **police number** refer to the objects Technical Building or Building Entrance and these are situated in an area where it is not possible to identify them by reference to a **street** and **police number** they must be filled in with the value "0";
- Georeferencing: coordinates that enable the identification, in a given coordinate system, of the precise geographic position of the object.
- Line: in the case of linear objects, the line is no more than the set of coordinates that define the path of the object. This characterization element describes the type of line that houses the object, with the following types being defined:
 1. Underground line (network of simple pipes; network of tubing composed, grouped or structured in formations; service shafts);
 2. Suspended line (crossings on bridges, building facades and conduits where applicable);
 3. Aerial line (posts, towers).

- Main utilization: from the functional point of view, the main utilization of the registration object refers to the function performed by the network of which it forms part or that it houses.
- Holding: enables the identification of the entity that owns or manages the registration object and which, under Decree-Law No. 123/2009, is obliged to include it in the register to be made available in the SIIA;
- Size: enables the characterization of the registration objects in terms of their important dimensions.

Under the SIIA, objects may be considered where their characteristic variables have a dimensional expression in standard units of measurement (length, for example) or dimensionless variables the values of which are only expressed as a quantity without reference to any system of standardized units. For characteristic dimensional type variables, the measurement representation includes:

- the denomination of the *variable* measured (diameter, length, width, height);
- the *value* of the measurement;
- indication of the *unit* in which the measured value is expressed.

When used to characterize the **Manhole Cover** object, the element size follows the following rules:

- For round-shaped manhole covers, the following attributes must be specified:
 - Height
 - Diameter
- In manhole covers with a different shape to round, the following attributes must be specified:
 - Height
 - Length
 - Width

When used to characterize the **Technical Building** object, the height and altitude attributes of the element size are important for the characterization of this object, particularly in the case of registration information on wastewater networks, such that filling this in is mandatory;

When used to characterize **Post**, **Tower**, and **Mast** objects, the height attribute of the element size is mandatory.

- Infrastructure type: refers to the type of registration object within the universe of objects considered in the SIIA, with the types listed in Table 1 being covered.
- Type of use: indicates the type of use from a topological-operational perspective, of each object forming part of the network, thus distinguishing the types of operations accessible/achievable within each particular object, particularly, housing junction points/branch-joints, cable accommodation, access to power points or connection to active equipment.
- Operational state: element that allows the characterization of registration objects as to their availability to be normally used in the network of which they form part, as well as for shared use. The operational state of a registration object will assume one of the following values:
 - 01 – object under development
 - 02 – object installed and available
 - 03 – object installed and unavailable
 - 04 – object being uninstalled
- Installation Base: understood as a specific place where each object is installed. This element, which is only applicable to Masts and Towers, has the following values:
 - Mast
 - 01 - tower
 - 02 - building or other construction
 - Tower
 - 02 - building or other construction
 - 03 – ground

4. The “state of occupation”, as an element that allows an assessment, based on the current state of how this is filled in, of the capacity of the registration object, concerning the occupied part and the available part of that capacity, is a characterization element of the registration object, the filling in of which in the SIIA is optional.

5. All registration objects are geographically characterized by association with their administrative location, as well as their geo-referencing expressed in terms of their physical coordinates, under the following terms:

- Administrative location: The location should be provided whenever possible, with information at the level of street or address (in the case of objects located in buildings). For linear elements whose spatialization does not allow such a precise location, because they cross more than one street, information on the respective parish and locality should be provided.

The SIIA contains a hierarchy of location, and geo-referencing is a priority with respect to the administrative location. The main location to associate with each element to be included in the SIIA is obtained by georeferencing from the coordinates of each element and the administrative location is used as help in cases of incompatibility or as a complement in the identification of the location.

- Georeferencing: in order to normalize and standardize georeferenced information contained in the SIIA, the PT-TM06/ETRS89 system for Mainland Portugal has been adopted which, in addition to being the global reference system recommended by the *European Reference Frame*⁵ (EUREF), is also the only one that the Portuguese Geographical Institute currently has in force, with all others considered obsolete⁴ (it is important to mention that there are community recommendations in the sense that the old systems still in use are to be suppressed in the short/medium term).

For the reasons given regarding the adoption of the PT-TM06/ETRS89 system, the PTR08-UTM/ITRF93 system is also adopted for the Autonomous Regions of Madeira and the Azores.

The SIIA makes possible the transformation to the reference systems mentioned above, however, for convenience, the registration information should be sent without the need to carry out this procedure.

- Transfer formats: the following formats are hereby adopted:

⁵ Information available on the website of the Portuguese Geographic Institute at http://www.igeo.pt/produtos/Geodesia/inf_tecnica/sistemas_referencia/Datum_ETRS89.htm

1. Format '*Shape-file*', types shp, dbf and shx, without limiting other file extensions associated with this type of format.
2. XML format in "Well-known text (WKT)" mode specified by the Open Geospatial Consortium (OGC). This format allows for the simple representation of points, lines or polygons.
3. Other XML formats, due to their portability, since they are formats that do not depend on hardware or software platforms, with it being sufficient for the entity to write its registration information in a file of this type so that it can later be read by the SIIA. However, other formats of this type, other than WKT, may only be used upon agreement of the Provider Entity/SIIA for the standardization of respective data structures.
4. Excel format – the transfer of data in this format is also conditioned to the pre-establishment of a Provider Entity/SIIA agreement, regarding the standardization of the respective data structure.

For each element, the entity provides the key that uniquely identifies the object in its registration system, to perform future updates of that element. SIIA uses its own classification, but the code associated with the entity is stored in the database.

- Metadata: the geographic registration information provided by the different entities must have an associated set of metadata, that is, in addition to the vectors and attributes of the objects, it is necessary that each level of information has a file associated with a set of information about the data furnished which, through it, allows, as a minimum, the theme (object) to be understood, the scale at which the information was collected, the EPSG indication used, the date of the survey, and so on. The metadata establish the compatibility criteria of the information received from the various entities.

The ranges adopted are within the following intervals, depending on the type of land occupation:

- Urban environment: 1:1000 or 1:2000;
 - Rural environment: 1:5000.
- Base cartography: considering the scope and objectives of the SIIA project, it is important to have contextual information about suitable infrastructures for hosting electronic communications networks. Considering the acquisition and update costs and the associated execution times, a mixed information solution has been adopted, i.e., vector

and raster, with complementary levels of detail, since this is available in various entities in the public domain or accessible within a reduced cost and time.

The use of the national orthophotographic coverage, which is periodically carried out by the Portuguese Geographic Institute, along vector information of a statistical, administrative and addressing character is also available in the SIIA.

In the context of this system, the base cartography was duly defined with the detail considered suitable for the representation of polygon type cartographic elements. It is thus possible to represent buildings, various equipment, service areas and administrative divisions such as the council boundary or the parish boundary, among other cartographic elements commonly found in geographical maps.

The codification of the administrative division is established in *Statistics Portugal* (INE) and the delimitation and demarcation of the administrative districts of the Country are based on the information made available in accordance with the Official Administrative Map of Portugal (CAOP), carried out by the Portuguese Geographic Institute.

The codification of the toponymy to be used in the naming of streets and roads and other public thoroughfares is based on tables to be created in the system.

6. Non-registration information to be included in the SIIA is presented in text format (e.g. through .pdf files) as received by the entities covered by Decree-Law No. 123/2009, without prejudice to the establishment of links to Internet sites, if any, of the respective entities responsible for information on the procedures.