

ABSTRACT OF THE METHODOLOGY OF THE WEB ACCESSIBILITY OBSERVATORY UNE 139803:2012

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TABLE OF CONTENTS

1.	INTRODUCTION	4
1.1.	History	4
2.	METHODOLOGY	5
2.1.	Sample of Portals	5
2.2.	Sample of Pages	6
2.3.	Check lists	8
2.4.	Obtained results	9
2.4.1.	Average Scores	10
2.4.2.	Level of adequacy	11
2.5.	Grouping by aspects	12
2.6.	Evolution of the results	14
3.	METHODOLOGY TABLES	15
3.1.	Detailed Level of Analysis I table	18
3.2.	Detailed Level of Analysis II Table	24
3.3.	Correspondence with WCAG 2.0	29
4.	DETAILED METHODOLOGY	31

1. INTRODUCTION

The purpose of the **Web Accessibility Observatory** is to review the degree of compliance by a series of websites regarding their accessibility.

The creation of a periodic Web Accessibility Observatory allows determining the degree of compliance with the Web Accessibility principles and how it evolves throughout time. Also evaluated is the use of standards and the most common problems are identified. This way we can draw conclusions in order to devise the appropriate action plans to support the organisations in achieving the following objective: To reach an optimum level of compliance that is sustainable over time.

The different iterations of the Observatory Study are carried out based on our own methodology, which entails an abstraction of the accessibility principles based on a set of significant evaluations. The objective in this case consists of having a set of relevant checks that allows **showing a summary of the state of accessibility** of a Website and a portal.

This Observatory Study analyses the state in which Public Administration Websites in Spain are in as far as compliance with the accessibility requirements that are required by law (priority 1 and 2 of UNE 139803:2012, equivalent to AA level of WCAG 2.0). The study is carried out on portals belonging to the National State Administration. Likewise, an equivalent study is carried out regarding a set of websites from the Regional Governments and Local Entities.

1.1. HISTORY

The Directorate for Information and Communications Technologies, which is part of the **Ministry of the Treasury and Public Administrations, through the Secretary of State for Public Administrations**, is responsible for promoting the Digital Administration via the conducting of studies and the design and the technical execution of action plans, cooperation with other public administrations and by developing and disseminating the tools and common services that are required to accomplish this.

Likewise, they are responsible for evaluating the actions that are carried out and for drafting the required recommendations; all within the framework of the guidelines that are established by the ICT Strategic Commission and by the Electronic Administration Committee, to which it will provide technical support.

The initiative promoted by the [Web Accessibility Observatory](http://administracionelectronica.gob.es/PAe/accesibilidad)¹ began in the year 2010 and since then it has been providing different services based on standard UNE 139803:2004 (WCAG 1.0). With the approval of the new standard 139803:2012 (WCAG 2.0) in 2013, different actions were initiated to promote the application of this new standard.

¹ <http://administracionelectronica.gob.es/PAe/accesibilidad>

2. METHODOLOGY

The methodology of the **Accessibility Observatory** is based on the experience of accessibility experts and on the conductance of different preliminary observatories.

The analysis of the pages are carried out automatically and an important effort has been made to ensure that the verification conducted on each page does not only consist of those that are purely automatic; instead, via different algorithms and metrics, an important number of checks, which have traditionally been reviewed manually, have been automated through estimates.

This way the range of analysed checks has been widened, allowing analysing most of the most representative accessibility requirements of a website based on standard UNE 139803:2012.

The most important aspects of this methodology are conveniently explained and listed below.

2.1. SAMPLE OF PORTALS

The study is carried out in 3 completely different areas: the state, regional and local.

In the case of the **state**, the study encompasses most portals belonging to the National State Administration and the State powers (executive, legislative and judicial), including from the websites of the Ministries, to the electronic offices and smaller sized portals. For the purpose of obtaining comparable results between same types of portals, a categorisation of these has been carried out based on their level of importance within the administration, its type of content or the purpose for which they were created. This way, five groups of portals are obtained:

- **Primary Segment.** Portals of the main Ministries and Public Organisations with greater access.
- **Departments Segment.** Identifying the portals of the rest of AGE departments.
- **Thematic Segment.** Portals managed by the Administration that do not identify a department: promotional websites, those providing specific information about specific aspects, of services, data collection, etc.
- **Other Segment.** Other State and Administration organisms.
- **Electronic Offices Segment.** Electronic offices for online services.

In the **case of the regional area**, the study encompasses a large number of Regional Administration portals, which include the main regional websites to the electronic offices portals as well as the portals for Health, Employment and others. This way, eight groups of portals are obtained for the Observatory of the Regional Governments, where each one contains the same type of portal for each Region:

- **Segment I.** Main portals of each Regional Government.
- **Segment II.** Official Gazettes of each Regional Government.
- **Segment III.** Parliament of each Regional Government.
- **Segment IV.** Electronic Headquarters or Virtual Offices (one per Regional Government).
- **Segment V.** Education Portals.
- **Segment VI.** Employment Portal.
- **Segment VII.** Health Portals.
- **Segment VIII.** Taxes Portals.

Lastly, in the case of the local area, the study encompasses a selection of portals from the Local Administration of each Province. For the purpose of obtaining comparable results between same type portals in each one of the Provinces, a categorisation of these has been carried out based on the characteristics of each local agency. In the case of the Observatory of Local Agencies, the sample has been divided into four groups of portals, where each one contains the same type of portal for each Province:

- **Segment I.** Main Portals of the provincial Councils.
- **Segment II.** Portals of the City councils for the capitals of each Province.
- **Segment III.** Portals for the municipalities with the largest populations in each province (excluding the capital).
- **Segment IV.** Portals of municipalities with a population between 3000 and 4000 inhabitants in each Province.

For the local entities section and based on their population, the demographic data published by the National Statistics Institute, as of 1 January 2014, has been used as a reference.

2.2. SAMPLE OF PAGES

The sample consists of a **set of pages** that will be reviewed in the analysis of each portal. The selection of the sample is carried out automatically via a random process where a total of 16 pages are selected, corresponding to different levels in the navigation structure of the portal. Also the sample always contains the portal's homepage, which makes a total of 17 pages analysed. Exceptionally, it may be possible that the crawler will not be able to obtain 17 pages, either because sufficient links cannot be obtained or because the portal does not

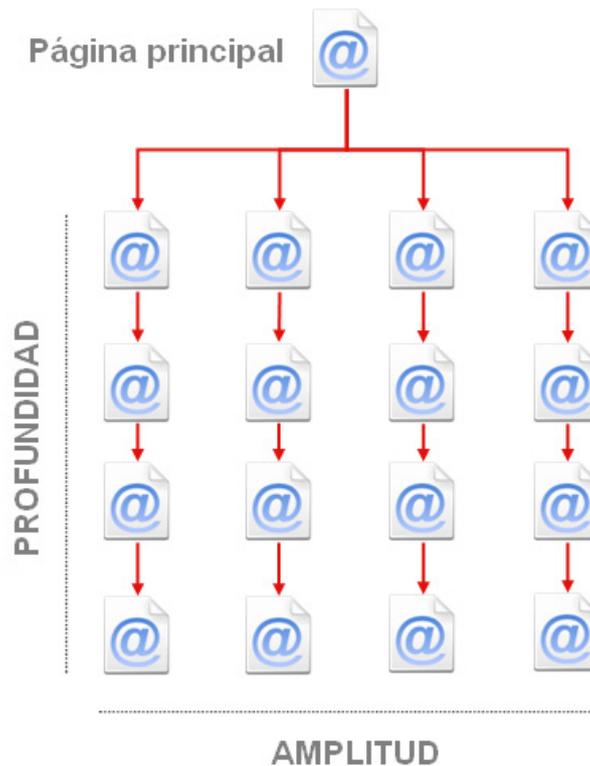
reach that number of pages. In this case the sample of pages analysed in the portal will be lower.

For the automatic crawling of pages, an initial URL is used as the seed, which corresponds to the portal's homepage. Based on said seed, a crawling of depth 4 and breadth 4 is carried out.

to properly understand this crawling, the depth and breadth concepts are defined below:

- **Depth.** This value is used to define the degree of depth that is reached by the crawling within the portal's navigation structure. The reached depth does not necessarily correspond with the depth inside the content hierarchy of the portal, instead it refers to the depth of navigation; in other words, the number of clicks required for reaching the page. This way a page of depth 4 is one where four links had to be followed to reach it from the homepage.
- **Breadth.** This parameter refers to the number of pages analysed in each depth level; in other words, for each level the crawler enters inside the portal, as many pages are selected as are defined in the breadth.

A graph representing the crawling carried out by the observatory is provided below based on the defined depth and breadth values.



In the case that the Main Segment portals in the state area, the sample of pages is carried out manually to ensure the inclusion of different pages and templates. This selection contains some of the following types of pages:

- Pages from the Press Office section. Two different type pages will be selected from this section.
- Page/s from the search engine.
- Website Map.
- Pages in a language other than Spanish.
- Pages from the most visited sections of the portal.
- First level pages.
- Interior level pages (second and third level).

2.3. CHECK LISTS

When conducting an accessibility analysis of each page of a portal, we discover the adequacy of a finite set of checks that are defined based on a level of analysis and a level of adequacy.

- **Level of analysis:** refers to the type of characteristic to be observed inside a specific Website. Two levels of analysis are defined where each level of analysis contains a set of checks.
 - **Level of Analysis I:** responsible for accessibility characteristics related with the accessibility of the content.
 - **Level of Analysis II:** responsible for accessibility characteristics related with the accessibility of the navigation and the interaction.
- **Level of adequacy:** two levels of adequacy are defined based on the priority of the analysed characteristics.
 - **Priority 1:** is responsible for the basic characteristics that a Website must meet in order to be accessible. The checks performed by this level are included within the framework of the priority 1 requirements of standard UNE 139803:2012 (level A WCAG 2.0).
 - **Priority 2:** is responsible for the more complex characteristics that a Website must meet in order to be accessible. The checks performed by this level are included within the framework of the priority 2 requirements of standard UNE 139803:2012 (level AA WCAG 2.0).

Each check is defined by a series of elements:

- **Check identifier:** This is the unique identifier of each check. It is comprised of three digits separated by points that indicate the level of analysis, the level of adequacy and the sequence number of the check. It is used to provide a unique reference to a check.
- **Name of the check:** Indicates the element or characteristic to be evaluated.
- **Question:** This is a specific question that specifies how the check must be evaluated.

- **Answers:** Possible responses to the question formulated for each check.
- **Value:** Indicates the degree of compliance with a response with respect to the check and represents the quantitative measure of the check. This is a numeric value indicating if the minimum degree of quality has been exceeded for the check. The possible values are 0, 1 or Not Scored. When a page does not contain the elements evaluated in the check (for example a check of the data tables in a page that does not have data tables) a value of Not Scored will be assigned; a value of 1 will be assigned when a page exceeds the minimum values required by the check; otherwise a value of 0 will be assigned.
- **Modality:** Indicates the accessibility adequacy of a specific response. This element represents the qualitative measure of the check, which indicates whether or not a check complies with the accessibility. The possible values are Pass (represented by a green check mark indicating that the check is complied with) and Failure (represented by a red X indicating that the check is not complied with). In a check, a Not Scored value always corresponds to a Pass modality because since no elements of this type exists on the page, this does not represent an accessibility problem.

The observatory consists of a total of **20 checks** distributed in the previously explained analysis and adequacy groups. These checks consider the main aspects of accessibility that a website must comply with.

For each one of the checks, a variable number of unitary checks are carried out, which combination of results generates the response to the check along with its value and modality. All these unitary checks are carried out automatically, including the analysis of several manual review requirements, which have been automated via several algorithms with a very high degree of reliability.

The selection of a representative sample of the accessibility aspects to be analysed instead of the analysis of all the requirements of standard UNE 139803:2012, allows not only to **reduce the time** required for obtaining the results, but also to **centre the attention and the efforts in those aspects that are of a greater importance** and are relevant to the accessibility of a website.

While the purpose of an in depth accessibility analysis is to obtain detailed results about the accessibility of a website, including all the possible inadequacies of the website with respect to the accessibility requirements of standard UNE 139803:2012; the object of an Accessibility Observatory is to obtain a **global vision** of the degree of accessibility that is present in a set of websites.

2.4. OBTAINED RESULTS

Conducting an Observatory brings about a large amount of numbers and values, and consequently a series of **graphs and statistical values** have been generated, which provide a schematic representation of the obtained results.

With the aim of having aggregate indicators that show the status of the different portals based on the proposed checks, four types of average scores: Average Score of the Page

(PMP), Average Score of the Portal (PMPO), Average Score of the Check (PMV) and Average Score of the Analysis (PMNA).

Also, adequacy indicators are obtained for each check, level of analysis, page and portal.

2.4.1. Average Scores

The Average Score for a Page is obtained by adding the score obtained in the 20 checks of the methodology and dividing this result between the number of scored checks on the page, obtaining a value between 0 and 1 and finally, this value is multiplied by 10.

$$\text{PMP} = \frac{\text{SRV}}{\text{VP}} \times 10$$

PMP: Average Score of a Page

SRV: Sum of the results of all the checks on a page

VP: No. of scored checks of the page

By adding the scores of the pages we obtain the **Average Score of the Portal** by calculating the arithmetic average of the average scores of all pages of the portal:

$$\text{PMPO} = \frac{\text{SPMP}}{\text{NP}}$$

PMPO: Average Score of the portal

SPMP: Sum of the average scores of the pages

NP: No. of pages

The **Check Average Score** shows the overall score of a specific check in a portal. To calculate this value, we take into account the sum of all the points obtained in the given check for each page of the portal as well as the number of pages where the check has obtained a different value of "Not scored". This way the average score of a check is obtained using the following formula:

$$\text{PMV} = \frac{\text{SR}}{\text{PP}} \times 10$$

PMV: Check Average Score

SR: Sum of the results of the check of each page

PP: No. of scored pages

Overall, the average scores of the different checks are grouped by levels of analysis. To obtain the **Average Score of a Level of Analysis**, the arithmetic average is calculated of the average scored obtained for each check belonging to the level of analysis:

$$PMNA = \frac{SPMVN}{VN}$$

PMNA: Average score of the level of analysis

SPMVN: Sum of the average level check scores

VN: No. of level checks (10)

All these average score values oscillate between 0 and 10, allowing to easily compare the results between the different portals.

2.4.2. Level of adequacy

In order to clearly obtain a general view of the degree of accessibility, the Partial level of adequacy is obtained, Priority 1 or Priority 1 and 2 for the different metrics of the observatory: check, level of analysis, page and portal.

To facilitate the understanding of this check, divide the 20 checks into four groups of 7 or 3 checks each:

- Level I, Priority 1
- Level I, Priority 2
- Level II, Priority 1
- Level II, Priority 2

First we obtain the level of **adequacy of a check (modality)** in accordance with the table of the methodology described in the previous paragraph.

The degree of **adequacy of the level of analysis** (Level I and Level II) is obtained based on the conformity of the checks of said level, as per the following rules:

- **Priority 1 and 2** Is obtained when the Priority 1 and Priority 2 adequacy groups have a maximum of one check per group with a "Red" (Failure) modality.
- **Priority 1.** Is obtained when a Priority 1 adequacy group has a maximum of one check with a "Red" (Failure) modality and the Priority 2 adequacy has two or more checks with a "Red" (Failure) modality.
- **Partial.** Is obtained when the Priority 1 adequacy group has two or more checks with a "Red" (Failure) modality.

Based on the adequacy of the levels of analysis we obtain the **adequacy of the page** as follows:

- **Priority 1 and 2.** A Priority 1 and 2 level is obtained when the Levels of Analysis I and II have a Priority 1 and 2 adequacy.
- **Priority 1.** A Priority 1 level is obtained when at least one of the Levels of Analysis has a Priority 1 adequacy.
- **Partial.** A Partial level is obtained when at least one of the Levels of Analysis has a Partial level of adequacy.

Finally, the level of **adequacy of a portal** is obtained based on the adequacy of each page and a mathematical formula.

Once the conformity of each page is obtained, a numeric value is assigned to each one based on the following rule:

- If it has a Partial level, 0 points will be assigned.
- If it has a Priority 1 level, 5 points will be assigned.
- If it has a Priority 1 and 2 level, 10 points will be assigned.

Then the points assigned to each page is divided by the number of pages, obtaining a numeric value for the portal that is between 0 and 10.

$$\text{VNP} = \frac{\text{SP}}{\text{NP}}$$

VNP: Numeric Value of the Portal

SP: Sum of the Scores of the pages

NP: No. of pages

Based on the numeric value of the portal, the level of conformity will be assigned as follows:

- If the value is lower than **3.5**, the level will be **Partial**.
- If the value is greater or equal to **3.5** and less than **8**, the level will be **Priority 1**.
- If the value is greater than or equal to **8**, the level will be **Priority 1 and 2**.

2.5. GROUPING BY ASPECTS

From a technical point of view we have focussed the observatory as a review of the elements dealing with the accessibility organised by aspects. The reviewed aspects are:

- **General:** this aspect encompasses those generic elements of a Website such as the identification of languages, the title of pages or the compatibility of the code.
- **Alternatives:** are those elements that provide different methods of accessing the information so that it may be understood by most people. In this group, the textual alternatives to all non textual element are considered.

- **Structure:** this aspect includes elements dealing with the technique applied to the construction of the different elements that comprise a Website such as the tables, lists, headers or other forms of grouping or structural association.
- **Presentation:** are those elements dealing with the arrangement and appearance of a Website such as the separation of content and presentation or the use of combination of colours with sufficient contrast.
- **Navigation:** are those elements that provide the proper methods for facilitating the user transition throughout the different pages of a Website. This group includes the links, redirections to the general navigation mechanisms for the site such as the web map.

A table listing the aspect that each check falls under is provided below.

CODE	NAME	ASPECT
Level of Analysis I		
1.1.1	Existence of textual alternatives	Alternatives
1.1.2	Use of headers	Structure
1.1.3	Use of lists	Structure
1.1.4	Data tables	Structure
1.1.5	Structural grouping	Structure
1.1.6	Separation of content and presentation	Presentation
1.1.7	Identification of the main language	General
1.2.1	Identification of the language changes	General
1.2.2	Sufficient contrast	Presentation
1.2.3	Accessibility Section	General
Level of Analysis II		
2.1.1	Navigation with Javascript accessible	Navigation
2.1.2	User control	Navigation
2.1.3	Forms	Structure
2.1.4	Page title and frames	General
2.1.5	Descriptive links	Navigation
2.1.6	Changes of context	Navigation
2.1.7	Compatibility	General
2.2.1	Multiple navigation routes	Navigation
2.2.2	Keyboard focus	General
2.2.3	Consistent navigation	Navigation

By adding the results obtained in the different checks for all the portals of the observatory we obtain the average scores of the defined accessibility aspects.

In order to properly understand how we obtain this score we must introduce the Aspect Average Score of the Portal concept.

The **Aspect Average Score of the Portal** represents the average value obtained by the checks belonging to this aspect for a portal in particular and we obtain the arithmetic average of the Average Scores of said checks.

$$\text{PMAP} = \frac{\text{SPMVA}}{\text{VA}}$$

PMAP: Aspect Average Score of the Portal

SPMVA: Sum of the average scores of the checks of the aspect

VA: No. of aspect checks

Finally, an arithmetic average of the score of all the portals is carried out to obtain the **Aspect Average Score**.

$$\text{PMA} = \frac{\text{SPMA}}{\text{NP}}$$

PMA: Aspect Average Score

SPMA: Sum of the aspect average scores of the portals

NP: No. of portals

2.6. EVOLUTION OF THE RESULTS

The intent of the Accessibility observatory is to serve as an instrument to carry out an effective monitoring of the level of accessibility of the public Websites. For this, analysing and comparing the results obtained throughout time in the different observatories is of vital importance in order to determine the trend.

For this a good number of progress graphs are provided to allow determining, overall as well as in a more specific manner, the results obtained in the last observatories that are carried out. These graphs show the progress of the overall score of the observatory as well as of the levels of adequacy, the score of each check or the score of the accessibility aspects.



3. METHODOLOGY TABLES

Summary tables of the checks carried out in the Observatory are provided below as well as the detailed tables, which contain more accurate information about the different unitary checks that are carried out on each page for each check or requirement.

Table 1. Definition of Level of Analysis I check points

LEVEL OF ADEQUACY PRIORITY 1					
Identifier	Name	Question	Answer	Value	Modality
1.1.1	Existence of textual alternatives	<i>Do the non textual elements have an adequate alternative text?</i>	Non textual elements are not present Yes No	Not Scored 1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
1.1.2	Use of headers	<i>Are headers used to show the structure of the document in an acceptable manner?</i>	Yes Yes but not enough No	1 0 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
1.1.3	Use of lists	<i>Are the lists properly marked?</i>	No lists are included Yes No	Not Scored 1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
1.1.4	Data tables	<i>Do data tables have headers, adequate summary information and association of cells in case they are complex?</i>	No data tables are used Yes No	Not Scored 1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
1.1.5	Structural grouping	<i>Are the text paragraphs properly marked?</i>	Yes No	1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
1.1.6	Separation of content and presentation	<i>Is the content of the presentation properly separated without using styles for transmitting information or structural elements only for displaying purposes?</i>	Yes No	1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
1.1.7	Identification of the main language	<i>Is the main language properly identified?</i>	Yes No	1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
LEVEL OF ADEQUACY PRIORITY 2					
Identifier	Name	Question	Answer	Value	Modality
1.2.1	Identification of the language changes	<i>Are the changes in language properly identified?</i>	Yes No	1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
1.2.2	Sufficient contrast	<i>Is there sufficient contrast between the colour of the text and its background?</i>	Yes No	1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
1.2.3	Accessibility Section	<i>Does the page have a link to the Accessibility section and does this link have a contact address and review date?</i>	Yes Yes, without contact information or date No	1 0 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

Table 2. Definition of Level of Analysis II check points

LEVEL OF ADEQUACY PRIORITY 1					
Identifier	Name	Question	Answer	Value	Modality
2.1.1	Navigation with Javascript accessible	<i>Is Javascript used regardless of the device?</i>	Javascript is not used in interaction elements Yes No	Not Scored 1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2.1.2	User control	<i>Can the user properly control the flashing, re-routings and updates?</i>	Yes No	1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2.1.3	Forms	<i>Do all the controls have associated tags, are the related controls grouped and are the mandatory fields identified on the forms?</i>	No forms are available Yes Yes, but there is a small number of fields that are not grouped	Not scored 1 0 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2.1.4	Page title and frames	<i>Does the page and the frames have a significant title that identifies its content?</i>	Yes, valid page title and without frames Yes, valid page title and frames with title No, without a page title or without frame titles	1 0 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2.1.5	Descriptive links	<i>Do the links have a suitable text?</i>	No links are included Yes No	Not Scored 1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2.1.6	Changes of context	<i>Are the changes in context carried out properly?</i>	Yes No	1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2.1.7	Compatibility	<i>Can the code be processed?</i>	Yes No	1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
LEVEL OF ADEQUACY PRIORITY 2					
Identifier	Name	Question	Answer	Value	Modality
2.2.1	Multiple navigation routes	<i>Is a Web map or a search engine available?</i>	Yes No	1 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
2.2.2	Keyboard focus	<i>Is the visibility and order of the keyboard focus observed?</i>	Yes Yes, with a moderate use of tabindex No	1 0 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>

2.2.3	Consistent navigation	<i>is the use of links consistent and does it meet user expectations?</i>	No links are included Yes Yes, with at least one broken link No	Not Scored 1 0 0	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>
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3.1. DETAILED LEVEL OF ANALYSIS I TABLE

Requirement	Analysar Check	Results	Value	Modality
Adequacy Priority 1				
1.1.1.- Existence of textual alternatives	<ul style="list-style-type: none"> - It is checked that all "area" elements use the "alt" feature. - It is checked that if an "area" element has an "href" attribute, it also has the "alt" not empty attribute. - It is checked that if any image type input is available, that it has an alternative non empty text. - It is checked that all "applet" elements have an "alt" attribute and a textual content in the content of the "applet" element. - It is checked if the alternative text follows the pattern "*.jpg", "*.jpeg", "*.gif", "*.png", "*.bmp"; is one of the following "Image", "Drawing", "Picture", "Photograph", "Graph", "Separator", "Decorative", "Decorative image", "Alternative text"; or it follows similar patterns in the same page such as "Pic1", "Pic2", "0001", "0002". - It is checked that the images without alt are correctly marked as decorative images that are transparent for the readers of the screen - It is checked that the images with alt empty are correctly marked as decorative images that are transparent for the readers of the screen - It is checked that the images with alt not empty do not have an attribute role marking them as decorative 	<p>a. No element of the ones examined are present</p> <p>b. some elements are present and all of them have a valid alternative (they pass the validations)</p> <p>c. Elements without an alternative are present, at least one element has the name of the file or a filler text as an alternative, decorative images that are not transparent for the reader of the screen are present or incorrect urls are present for long descriptions.</p>	<p>a. Not scored</p> <p>b. 1</p> <p>c. 0</p>	<p>a. Pass</p> <p>a. Pass</p> <p>c. Fail</p>

Requirement	Analysers Check	Results	Value	Modality
	<ul style="list-style-type: none"> - It is checked that small images that cannot provide visual information are declared as decorative and are transparent for the readers of the screen - It is verified that in all images with a "longdesc" attribute, this attribute is a URL. 			
1.1.2.- Use of headers	<ul style="list-style-type: none"> - It is checked that the document is not missing headers - It is verified that a first level header is present in any position. - It is checked that no empty headers (H. elements) are present. - It is checked that two headers of the same level (or higher) are not present without content between them. - It is verified that, after the first document header, and regardless of the level, no jumps occur in the levels of subsequent headers. - It is verified that headers are properly used for structuring the content (more than one header if there is at least 15 lines of text). 	<ul style="list-style-type: none"> a. All the header checks are correct b. Headers are used but not enough for structuring the content or without the presence of a first level header. c. At least one header check is incorrect 	<ul style="list-style-type: none"> a. 1 b. 0 c. 0 	<ul style="list-style-type: none"> a. Pass a. Pass c. Fail
1.1.3.- Use of lists	<ul style="list-style-type: none"> - It is checked that each "li" element is an offspring of "ul" or "ol". - It is verified that the definition lists are properly structured. - It is checked that each "dt" element is an offspring of "dl". - It is checked that each "dd" element is an offspring of "dl". - It is verified that there is no type of list directly placed under another ordered list, without it being a part of said list. - It is verified that there is no type of list directly placed under another list that is out of order, without it being a part of said list. - It is checked that all offspring of an ordered list are "li". - It is checked that all offspring of a list that is out of order are "li". - It is verified that there are 3 or more sequential lines beginning with "- " or "- " or "*". 	<ul style="list-style-type: none"> a. The page does not have any lists b. The page has lists and all are correct c. The page has lists and at least one is not correct 	<ul style="list-style-type: none"> a. Not Scored b. 1 c. 0 	<ul style="list-style-type: none"> a. Pass a. Pass c. Fail

Requirement	Analysers Check	Results	Value	Modality
	<ul style="list-style-type: none"> - It is verified that there are 3 or more lines separated by BR beginning with “- “ or “- “ or “*”. - It is verified if there are 3 or more consecutive lines beginning with “x” or “x “ or “x.” or “x” or “x””, “x)”, “x-”, “x.-” where ‘x’ belongs to a sequence of numbers, letters, Roman numerals. - It is verified if there are 3 or more lines separated by BR and beginning with “x” or “x “ or “x.” or “x” or “x””, “x)”, “x-”, “x.-” where ‘x’ belongs to a sequence of numbers, letters, Roman numerals. - It is verified that 3 or more elements of a list that is out of order are not beginning with “x” or “x “ or “x.” or “x” or “x””, “x)”, “x-”, “x.-” where ‘x’ belongs to a sequence of numbers, letters, Roman numerals. - It is verified that 3 or more sequential lines are not beginning with an image, which size is equal to or less than 10*10. - It is verified that 3 or more lines separated by BR are not beginning with an image, which size is equal to or less than 10*10. - It is verified that no tables are comprised of a single column and 3 or more rows with an average length not exceed 150 characters. - The presence of list elements "ul" or "ol" without any element from the offspring list is verified. 			
1.1.4.- Data tables	<p>Note: header = TH, TD with “scope”, or cell with WAI-ARIA “rowheader” or “columnheader” attributes.</p> <p>Locate data tables: those that do not have any TABLE element nested, are not formed by a single row or column, do not have more than 150 characters of text in any of its cells and at least 70% of the cells have text. In these cases the following will be valued:</p>	<ul style="list-style-type: none"> a. No data tables are present b. Data tables are included and all have proper headers and if used or required, associations between cells and proper summary information are also included. 	<ul style="list-style-type: none"> a. Not scored b. 1. c. 0 	<ul style="list-style-type: none"> a. Pass a. Pass c. Fail

Requirement	Analyser Check	Results	Value	Modality
	<ul style="list-style-type: none"> - It is verified that there is at least one table header element present (in the outside rows or columns). - It is verified that the headers are properly marked in the simple data tables. It is verified that the data table must have headers (all the elements are headers) in the first row or the first column with the exception of elements with empty text. In other words, a fault is generated if there are no headers in the first row or in the first column or if there is at least one header cell and at least one data cell with text. - It is verified that the headers are properly marked in the complex data tables. It is verified if a table with more than one level of headers is present (in other words, if TH elements are present in two rows or in two columns) and no id attributes are present in the TH elements and headers in the TD elements. <p>Also, the following is verified when we find a table with headers in the first file and first column and upper left cell empty. If the table has the first cell empty (TD) and the rest of cells with text marked as headers (TH), then it will be checked that all the cells of the first column (that have text) are headers; otherwise a fault will be generated. This rule is also conversely applicable; in other words if the upper left cell is empty and the first column are headers, then the first row must also be headers.</p> <ul style="list-style-type: none"> - It is verified that the value of the "scope" attributes is valid. - It is verified that the value of the "headers" and "axis" attributes corresponds with the actual identifiers that are used in headers of the same table. - It is verified that the title of the table is not simulated via a header cell that occupies the entire width of the table. - It is verified that no table headers are simulated using page headers 	<p>c. Tables are included and at least one header is not marked; the associations between cells are incorrect or are not used when required; or the summary information is not properly provided.</p>		

Requirement	Analysers Check	Results	Value	Modality
	<ul style="list-style-type: none"> - It is verified that very complex tables include summary information in the summary attribute - It is verified that the title and summary of the data tables are not duplicated 			
1.1.5 - Structural grouping	<ul style="list-style-type: none"> - It is verified that paragraphs are not being simulated by the BR element (sequences of two or more sequential BRs inside a P with more than 150 characters of text). - It is verified that paragraphs are not being simulated by the DIV element (DIV elements containing over 150 characters of text as a direct offspring). - It is verified that no more than 10 BR elements are being used on the page. 	<ul style="list-style-type: none"> a. None of the checks have failed b. At least one of the checks has failed 	<ul style="list-style-type: none"> a. 1 b. 0 	<ul style="list-style-type: none"> a. Pass b. Fail
1.1.6 - Separation of content and presentation	<p>Locate the formatting tables: those with an added TABLE element, role="presentation", have at least one cell with more than 150 characters of text or at least 70% of the cells have text. In these cases the following will be valued:</p> <ul style="list-style-type: none"> - It is verified that no formatting tables are included that use elements or attributes of the data tables themselves. - It is verified that non-recommended presentation elements are not used - It is verified that content is not included which transmits information from the style sheets with pseudonyms :before or :after. 	<ul style="list-style-type: none"> a. None of the assessed cases are present. b. At least one of the assessed cases occurs where the content and the presentation are not properly separated. 	<ul style="list-style-type: none"> a. 1 b. 0 	<ul style="list-style-type: none"> a. Pass b. Fail
1.1.7.- Identification of the main language	<ul style="list-style-type: none"> - It is verified that the document properly specifies a language via the LAG attribute. - It is verified that the language of the page coincides with the language that is identified 	<ul style="list-style-type: none"> a. The languages are properly identified b. The languages are not properly identified 	<ul style="list-style-type: none"> a. 1 b. 0 	<ul style="list-style-type: none"> a. Pass b. Fail

Requirement	Analysers Check	Results	Value	Modality
Adequacy Priority 2				
1.2.1.- Identification of the language changes	<ul style="list-style-type: none"> - It is checked that all the languages specified by the elements are valid. - It is verified that the most common language changes (links to change the language of a Website) are properly marked. - It is verified that the English texts that are found in a document are properly marked. 	<ul style="list-style-type: none"> a. The languages are properly identified b. The languages are not properly identified 	<ul style="list-style-type: none"> a. 1 b. 0 	<ul style="list-style-type: none"> a. Pass b. Fail
1.2.2 - Sufficient contrast	<ul style="list-style-type: none"> - It is verified that the colour combinations of the foreground and the colour of the background in a same style sheet rule have sufficient contrast. 	<ul style="list-style-type: none"> a. The contrast is sufficient in all assessable cases b. At least one element has sufficient contrast 	<ul style="list-style-type: none"> a. 1. b. 0 	<ul style="list-style-type: none"> a. Pass b. Fail
1.2.3.- Accessibility Section	<ul style="list-style-type: none"> - It is verified that all pages have a link which text includes the word "accessibility", either in Spanish, Catalan, Basque language, Galician language, English or French. - It is verified that an e-mail address or a link to the contact page is included on the accessibility page. - It is verified that the accessibility page includes the latest Website review date. - It is verified that the accessibility page includes information about the Level of Conformity. 	<ul style="list-style-type: none"> a. The page includes a link to the accessibility section and it lists the level of conformity, it also includes the contact address and the review date. b. The page includes a link to the accessibility section but this section does not list the level of conformity, it does not include the contact address or the review date. c. The page does not include a link to the accessibility section or this section does not list the level of conformity, it does not include the contact address or the review date. 	<ul style="list-style-type: none"> a. 1 b. 0 c. 0 	<ul style="list-style-type: none"> a. Pass a. Pass c. Fail

3.2. DETAILED LEVEL OF ANALYSIS II TABLE

Requirement	Analysers check	Result	Value	Modality
Adequacy Priority 1				
2.1.1.- Navigation with Javascript accessible	<ul style="list-style-type: none"> - It is verified that if events dependent on a device are used, that these are replicated (with the exception of "onclick"). - It is verified that the elements with event managers are standard interaction elements or that the "tabindex" and "role" attributes are used to make them accessible and compatible with the screen readers. 	<ul style="list-style-type: none"> a. No element of the ones examined are present b. Elements are present and these may resemble tables via the keyboard and no dependent events are used or they are replicated. c. Non tabular Interaction elements are present or with non-replicated dependent events 	<ul style="list-style-type: none"> a. Not scored b. 1 c. 0 	<ul style="list-style-type: none"> a. Pass a. Pass c. Fail
2.1.2. - User control	<ul style="list-style-type: none"> - It is verified that the "blink" or "marquee" label is not used. - It is verified that the page does not automatically redirect with the "meta" and the "http-equiv" attribute (with time > 0). - It is verified that the page does not automatically refresh with the "meta" and the "http-equiv" attribute (regardless of the defined time). - It is verified that the 'text-decoration: blink' CSS property is not used 	<ul style="list-style-type: none"> a. The validations are correct b. At least one of the validations is incorrect 	<ul style="list-style-type: none"> a. 1 b. 0 	<ul style="list-style-type: none"> a. Pass b. Fail
2.1.3 - Forms	<p>Note: A <label> (with text) is considered a label that is explicitly associated; "aria-labelledby" with an "id" corresponding to an element with a textual content; "aria-label" or "title" with content.</p> <ul style="list-style-type: none"> - It is verified that all the non-hidden text type form controls have an associated label. 	<ul style="list-style-type: none"> a. The page does not have any form controls b. The page has controls and all are correct 	<ul style="list-style-type: none"> a. Not scored b. 1 c. 0 	<ul style="list-style-type: none"> a. Pass a. Pass c. Pass

Requirement	Analysers check	Result	Value	Modality
	<ul style="list-style-type: none"> - It is verified that all the select type form controls have an associated label. - It is verified that all the textarea type form controls have an associated label. - It is verified that the "for" attributes of a label correspond to a form control - It is verified that the explicitly associated label elements, being the only associated label, are not hidden with CSS. - It is verified that if several groups of radio buttons or checkboxes exist on a form, that these are grouped inside a fieldset. - It is verified that no header elements are used for grouping the form controls instead of using the fieldset element - It is verified that fieldset elements are used when a form has more than 10 text entering fields - It is verified that all fieldsets have a corresponding legend label - It is verified that optgroup elements are used on selects with more than 20 options - It is verified that selects are not included with filler options that simulate groups instead of optgroup - It is verified that the "optgroup" elements have a "label" attribute with content. - It is verified that mandatory fields are identified (presence of text "mandatory", "optional" or equivalent) on forms with more than 4 text entering fields 	<p>c. The page has controls, all are correct but there are 8 or more and less than 12 data entering fields without a <fieldset> for grouping them.</p> <p>c. The page has controls, and at least one is correct but there are 12 or more data entering fields without a fieldset for grouping them.</p>	d. 0	d. Fail
2.1.4 - Page title and frames	<ul style="list-style-type: none"> - It is verified that the document has a title. - It is verified that the text in the title is not the empty chain, nor the standard text such as "title", "untitled". 	a. The page has a valid page title and does not have any frames	a. 1	a. Pass

Requirement	Analysed check	Result	Value	Modality
	<ul style="list-style-type: none"> - It is verified that all the frames have a title. - It is verified that the text of the "title" attribute of the frames, iframes... is not empty. - It is verified that all the iframes have a title. - It is verified that the title is not identical as the rest of titles of the sample (for sample sizes >= 10). 	<ul style="list-style-type: none"> b. The page has a valid page title and frames are present with a title c. The page lacks a valid title or frames are present without a title 	<ul style="list-style-type: none"> b. 0 c. 0 	<ul style="list-style-type: none"> a. Pass c. Fail
2.1.5 - Descriptive links	<ul style="list-style-type: none"> - It is verified that links such as "aquí", "pinche aquí" "haga click aquí", "haga clic aquí", "pincha aquí", "pulse aquí", "haz click aquí", "haz clic aquí" ("here", "click here" or similar type links) are included. - It is verified that no links are included with "href" without textual content inside them in the form of text or as textual alternatives. - It is verified if a link has more than 250 characters, except in cases where the link begins with Legal texts. With words such as: <ul style="list-style-type: none"> Constitución, Convención, Decreto, Decreto Foral, Decreto Foral Legislativo, Decreto Legislativo, Decreto-ley, Directiva, Enmienda, Estatuto, Instrumento de Aceptación, Instrumento de Adhesión, Instrumento de Aprobación, Instrumento de Ratificación, Ley, Ley Foral, Ley Orgánica, Nota Diplomática, Orden Foral, Posición Común, Real Decreto, Real Decreto Legislativo, Real Decreto-ley, Resolución-Circular. Or the following acronyms: RD, R.D., R.D, RD-L (78) - It is verified that the textual alternative of the images included inside the links is not the same as the rest of textual content of the link. 	<ul style="list-style-type: none"> a. The page does not have any links b. The page has links and all are correct c. The page has links and at least one is not correct 	<ul style="list-style-type: none"> a. Not scored b. 1 c. 0 	<ul style="list-style-type: none"> a. Pass a. Pass c. Fail
2.1.6.- Changes in context	Change in context is defined as a new page, window, tab or application, or change in focus (window.location, window.history, window.open, window.focus, etc.).	a. The validations are correct	a. 1	a. Pass

Requirement	Analysers check	Result	Value	Modality
	<ul style="list-style-type: none"> - It is verified that a change in context does not occur in the "onfocus" or "onblur" events. - It is verified that a change in context does not occur as soon as the page is loaded (onload). - It is verified that a change in context does not occur in the "onchange" event of the "select" elements. 	b. At least one of the validations is incorrect	b. 0	b. Fail
2.1.7 - Compatibility	<ul style="list-style-type: none"> - It is checked that the document has a valid DTD. - It is verified that the HTML code is parseable (opening and closing labels and proper adding of elements). - It is verified that the same attribute with a different value in the same element is not repeated. - It is verified that the values of the attributes are placed between quotation marks. - It is verified that the value of the attributes that must have a unique value per page ("id", "accesskey") indeed have a unique value. - It is verified that the CSS code is parseable (properly formed, without syntax errors) 	<p>a. The document has a valid DTD and the HTML code as well as the CSS is processable (parseable)</p> <p>b. The document is missing a valid DTD, it has errors that affects its proper processing (parsing) or the style sheets are not syntactically correct</p>	<p>a. 1</p> <p>b. 0</p>	<p>a. Pass</p> <p>b. Fail</p>
Adequacy Priority 2				
2.2.1. - Multiple navigation routes	<ul style="list-style-type: none"> - It is verified that a map of the site is provided or a search function within the Website. 	<p>a. The document includes a link to the Web map or a search function</p> <p>b. The document lacks a link to a Web map as well as of a search function.</p>	<p>a. 1</p> <p>b. 0</p>	<p>a. Pass</p> <p>b. Fail</p>

Requirement	Analysers check	Result	Value	Modality
2.2.2. - Keyboard focus	<ul style="list-style-type: none"> - It is verified that the style sheets do not use the "outline" property with a value of "0" or "none" in interaction elements. - It is verified that the "tabindex" attribute is not being abused for modifying the default tabulation order 	<ul style="list-style-type: none"> a. Styles are not used that eliminate the visual indicator of the keyboard focus and the tabindex attribute is not abused (up to 3) to modify the tabulation order b. Styles are not used that eliminate the indicator of the keyboard focus and between 4 and 10 tabindex attributes are used c. Styles are used to eliminate the visual indicator of the keyboard focus or more than 10 tabindex attributes are used to modify the default tabulation order 	<ul style="list-style-type: none"> a. 1 b. 0 c. 0 	<ul style="list-style-type: none"> a. Pass a. Pass c. Fail
2.2.3 - Consistent navigation	<ul style="list-style-type: none"> - It is verified that the links are not broken (code 404 returned by the server). - It is verified that two adjacent links are not redirecting to the same destination. The adjacent links are those that are separated by a maximum of one character and/or set of blank spaces. If a label is present between both links, then they are not considered to be adjacent. 	<ul style="list-style-type: none"> a. No links are included b. The navigation is correct (all the verifications are adequate) c. The navigation is correct although the page has no more than 1 broken link inside the domain or no more than 2 external links are broken d. The navigation is inconsistent 	<ul style="list-style-type: none"> a. Not Scored b. 1 c. 0 d. 0 	<ul style="list-style-type: none"> a. Pass b. Pass c. Pass d. Fail

3.3. CORRESPONDENCE WITH WCAG 2.0

As previously mentioned, the verifications carried out by the observatory are a representative extract of the most relevant aspects of the accessibility that must be met by the Website, and therefore they are directly related with the requirements of WCAG 2.0 of W3C and also with Standard UNE 139803:2012 that applies the same requirements.

A diagram of the relationship that exists between the verifications of the observatory and the accessibility requirements of the WCAG 2.0 are provided below.

Relationship between the verifications of the Observatory and the WCAG 2.0

Verifications of the Observatory	Conformity Criteria WCAG 2.0
1.1.1 Existence of textual alternatives	WCAG 1.1.1
1.1.2 Use of headers	WCAG 1.3.1
1.1.3 Use of lists	WCAG 1.3.1
1.1.4 Data tables	WCAG 1.3.1
1.1.5 Structural grouping	WCAG 1.3.1
1.1.6 Separation of content and presentation	WCAG 1.3.1
1.1.7 Identification of the main language	WCAG 3.1.1
1.2.1 Identification of the language changes	WCAG 3.1.2
1.2.2 Sufficient contrast	WCAG 1.4.3
1.2.3 Accessibility Section	-
2.1.1 Navigation with Javascript accessible	WCAG 2.1.1 WCAG 4.1.2
2.1.2 User control	WCAG 2.2.1 WCAG 2.2.1 WCAG 2.3.1
2.1.3 Forms	WCAG 1.3.1 WCAG 3.3.2 WCAG 4.1.2
2.1.4 Page title and frames	WCAG 2.4.1 WCAG 2.4.2

Verifications of the Observatory	Conformity Criteria WCAG 2.0
	WCAG 4.1.2
2.1.5 Descriptive links	WCAG 2.4.4
2.1.6 Changes of context	WCAG 3.2.1 WCAG 3.2.2
2.1.7 Compatibility	WCAG 4.1.1
2.2.1 Multiple navigation routes	WCAG 2.4.5
2.2.2 Keyboard focus	WCAG 2.4.3 WCAG 2.4.7
2.2.3 Consistent navigation	WCAG 3.2.3

4. DETAILED METHODOLOGY

In the Spanish version of this document, available at <http://administracionelectronica.gob.es/PAe/accesibilidad/metodologiaUNE2012>, this section includes a more exhaustive description for each unitary check of the accessibility analyser that is involved in the evaluation of each check.