

# Frequently asked questions about web accessibility

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Generalitat de Catalunya  
[www.gencat.cat](http://www.gencat.cat)

This document answers some of the most frequently asked questions that arise when web accessibility is mentioned, from *what is accessibility?* to how to tell if a website is accessible. It is a basic requirement which must be taken into account when developing a website for the Generalitat of Catalonia, as public administration websites must comply with level AA accessibility.

It is also intended to dispel the following myths:

- Accessibility is just for blind users.
- Accessibility just means putting the alt (alternative) function on images.
- Accessibility just means passing the TAW automatic tests and obtaining zero errors.

This summary is complemented by a Guide to Accessibility which sets out the WCAG 1.0 and WCAG.2.0 guidelines and the technical solutions available to ensure compliance. This guide **must be read and complied with** by all website providers and developers working for the Generalitat of Catalonia.



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## What is accessibility?

Accessibility refers to the ease with which something may be used, visited or accessed by anyone, especially by people with some form of disability.

(<http://en.wikipedia.org/wiki/Accessibility>).

## And web accessibility?

Web accessibility ([http://en.wikipedia.org/wiki/Web\\_accessibility](http://en.wikipedia.org/wiki/Web_accessibility)) refers to the practice of making websites and their contents accessible to people with all levels of physical, mental and technical capability. Web accessibility is, in most cases, inseparable from usability (<http://en.wikipedia.org/wiki/usability>)

From now on we will use the terms accessibility and web accessibility indistinctly.

## What can prevent or impede accessibility?

### 1. Physical (sensory or motor) limitations:

- Sensory disabilities: Principally blindness and deafness, but also other conditions which may affect eyesight (including colour blindness) and hearing.
- Motor disabilities: Limitations of movement of one or more limbs or postural limitations due to disability.

These disabilities may affect the individual's experience of using the website to a greater or lesser extent. Situations of temporary disability may also arise, such as a broken arm.

It should also be borne in mind that, for disabled people, access to the internet is often even more vital than for the population in general, which has greater ease of accessibility to traditional sources of information, such as printed media.

According to a study of the Spanish autonomous communities carried out in 2003, estudi (.doc), one in ten of the Spanish population suffers from some form of disability. Around 15% of the disabled population of Spain lives in Catalonia.

## 2. Mental disabilities:

- Cognitive disabilities, learning difficulties (hyperactivity, attention deficit disorder, dyslexia, etc.), memory problems, etc.
- Limited literacy or illiteracy, lack of experience with technology, language difficulties, etc.

3. Problems caused by old age: Older people, who may suffer from reduced physical or mental capabilities (eyesight, hearing, hand mobility, memory, learning abilities, etc.), are a group to which we must pay particular attention. There are 1.1 million people over the age of 65 in Catalonia (Idescat, 2005).

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Web accessibility, nevertheless, also benefits organisations and non-disabled people, providing the flexibility to satisfy different needs and preferences.

There are, furthermore, other external circumstances which may affect accessibility to a website:

4. Technological limitations: Every element related to the hardware and software used to access information may affect the way the user obtains information and interacts with it.

Approximately 47.8% of the Catalan population has access to the internet (Idescat, 2005). But not everyone uses the same devices, programs, etc.

- Hardware: The devices used (PC, PDA, mobile phone, type of internet connection, etc.) Hardware may, furthermore, be old and not support certain technologies.

- Software: For example, different computers use different **browsers** (Mozilla, Internet Explorer, Opera, Safari, Konqueror, etc.). They have different versions and different engines installed, may run on different platforms (operating systems) and may work differently. Apart from visual browsers (for text and images), there are other **user agents** (applications that interpret html documents and obtain information) such as non-visual browsers (audio and braille), search engines, proxies, etc.
- Assistive technologies: Virtual keyboards, voice recognition programs, etc.

5. Environmental limitations: Other external conditions, such as noise levels, poor lighting, etc., may impede access to information.

## **What technologies are used to build accessible websites?**

A website is made up of a number of technological "layers" which allow us ultimately to access a document containing the information we need. If we ignore some of these layers, above all those that refer to the website or applications server, or to the business logic of the application, we can reduce the "problem" to three technologies:

- **html** (HyperText Markup Language)
- **css** (Cascading Style Sheets)
- **javascript**

html - content

The **content** is the information contained in a web page or application. It includes text, forms, embedded images, sound, etc.

**html** is the code or language that allows us to "mark up" the information to give it **meaning**. If the document has been well constructed, it will contain:

- Elements indicating the start of a section (headers).
- Elements forming a series or a list which have to be understood as such.
- Highlighting on the most important elements.

These mark-ups relate to how the information is presented. A website also contains *tags* which make the content meaningful, give it context and help the user to find their way around. Some of these *tags* are:

- **title**: indicates the name of the website or the section of the website which we are in.
- **h1-h6**: marks up headers or sections of a document.
- **ul, ol**: indicates that a range of elements form a list (*ul* = unordered list, *ol* = ordered list).
- **p**: marks up paragraphs and separates them visually.
- **em**: emphasises one or more words.
- **strong**: gives further emphasis.
- **abbr** and **acronym**: abbreviations and acronyms
- and many more.

Correct mark-ups enrich the meaning of a document and facilitate access to information for users of certain assistive technologies. For example, on a page with the headers (h1-h6) well defined, with semantically meaningful tags, a person using a screen reader can move directly between these headers.

To ensure your website is supported by all (or most) assistive technologies, always use **formal grammars** and adhere to **standards**.

An incorrect mark-up can be the **main cause of inaccessibility to a website**.

## CSS - Introduction

CSS, or cascading style sheets, refer to the presentational layer of the website. The rules indicated in these sheets allow us to define the appearance of html documents.

The rules are normally applied by assigning a value to the *class* attribute of the html element in which we are interested, or to a unique identifier (*id*).

The presentation could be the **second barrier to the accessibility of the content**.

- The style rules could hide some of the information from the user. For example, in a pull-down menu, an element with the value 'none' assigned to the 'display' property will not be interpreted by a screen reader. It won't be seen by a person navigating without a mouse, who doesn't execute events by rolling over a link.
- Badly written rules can result in parts of the screen being hidden or in the document being inflexible to different user configurations (screen resolution, font size).
- To ensure your website is supported by all (or most) assistive technologies, always use **formal grammars** and adhere to **standards**.
- The presentation style must be consistent throughout the website.

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## JavaScript - behaviour

**JavaScript** is the programming language used to create more interactive websites. It allows the html document to be dynamically modified, communicating behind the scenes with the server and updating part of the information on the screen (the *ajax* technique) or informing the user about defined actions. All this can be done without reloading the page.



This "layer" can often impede accessibility to the information on the website but, if well used, JavaScript **can be a tool to improve the accessibility of a website as well as its usability.**

The use of complex functionalities with JavaScript can impede or block access to information for users whose agents do not support JavaScript, who have JavaScript disabled, or who use screen readers or other (non-mouse) interface devices.

## How can navigation be made easier for the user?

In addition to structuring the document well, with headers and appropriate html tags, using standard style rules, we can improve the user's experience by doing the following:

- **Identify the objective of a link:** Links must be intelligible out of context. For this reason, "click here" is an example of a link which is not recommended.
- Use **website maps** which show how to navigate around a site.
- Keep **navigation bars** consistent throughout the website. In gencat we have a generic navigator for sections (top bar) and a specific navigator (left side bar) for each section or specific website.
- **Search** mechanisms should have different levels (basic or advanced search) to make it easier to find the information one is looking for.
- Use *link* tags to link documents. Some navigators may use these elements to facilitate navigation to or printing of linked documents.  
<http://www.w3.org/TR/1999/REC-html401-19991224/types.html#h-6.12>

## **Do links open pop-ups?**

Pop-ups cause the user to lose control over the content being visualised, and may cause uncertainty and confusion. To improve the user's experience, it is recommended that options are included allowing the disabling of pop-ups.

Where it is necessary to open a link in a new window or pop-up, this must be indicated to the user, either visually (for example with an icon), or through the link's "**title**" tag, announcing that it will open in a new window.

## **Can segments of text be highlighted with colours, bolding or italics?**

People with visual disabilities or difficulties interpreting colours (e.g. colour blind people) may have problems if colour forms part of the meaning of the message.

But they are not the only ones who may lose information that we wish to transmit. It could also be hidden from people who use personalised style sheets to navigate and who may, therefore, modify the colours of the elements, and to users who navigate with styles disabled.

For this reason we should use the correct mark-ups (e.g. *strong*) and headers (h1-6, which have defined sizes when used without styles and which help to structure the document).

## **Can any combination of colours be used for text and backgrounds?**

The contrast between text and background should be strong enough to be perceived by people with visual difficulties. There are tools to analyse this,



such as the Colour Contrast Analyser - <http://www.watc.org/tools/CCA/1.1/>

## Tables allow content to be positioned. Is it valid to use them to design the layout?

Tables should only be used for the purpose for which they are intended: to show tabular information, such as statistics, but not to position elements on the screen.

And whenever we do use tables, they must be correctly marked up. Not only must table rows (*tr*) and columns (*td*) be marked up, but we must also identify data headers (*thead, th*) and/or footers (*tfoot*), and also include a *summary* of the data contained in the table. These mark-ups allow certain assistive technologies to help the user to identify and find data according to the axes or headings they fall under.

## How can audiovisual content be made accessible?

If a document contains images, video or audio, an alternative equivalent must be provided of the content presented.

### Images

Accessibility can be improved using the ***alt*** attribute, which indicates the meaning of the image in the context of the website. If the image is decorative and doesn't give important information, it is recommended to label the attribute but without adding any text. On the other hand, if the information is significant (for example a graph), it is recommended to create a page containing the information and use the ***longdesc*** attribute to create a link between the image and the data it contains.

### Video and audio



If we provide html transcripts, we ensure that users who do not have the required plug-in installed, or who suffer from any visual or auditory impairment can access the information.

We can also use descriptive subtitles with multimedia presentations that contain audio.

## Is Flash accessible?

Flash is not a W3C standard technology. Developing websites and interactive elements using Flash causes serious accessibility difficulties. It is difficult to ensure specific access to the object, and furthermore, we cannot guarantee that users will have the plug-in installed, or the appropriate version of it.

Whenever we use Flash, we must ensure an alternative is provided. For example, in the case of the gencat picture headlines, we have decided to include html (which may be direct html or images with an html alternative), providing a real alternative to *flash* content.

To embed Flash objects we have opted to use a technology called *nested objects*, which allows Flash to work in different browsers.

## Can we use moving or time-sensitive elements?

It is always better to avoid these wherever possible, as they may cause screen flicker and, if they contain text, may be difficult for some users to read. Strobe and flashing effects can also cause photo-epileptic seizures.

If they are used, avoid using more than 20 flashes per second, and provide the option of switching off the movement, or make it stop automatically. Avoid periodically auto-refreshing content (time-sensitive) and the use of auto-redirect, or give the user the option to stop it.



## Any recommendations about language use?

**Simple and clear language** benefits all users, especially those who have not fully mastered the language in which the document is written or who have reading or cognitive difficulties. Graphics should also be kept simple.

In pages where a **different language** to the natural language of the document is used, it is important to identify this. We can do this by applying the attribute *lang* or *xml:lang* (in stricter versions of xhtml or versions later than 1.0, *lang* has disappeared) to the element marking up text in another language (*p*, *div*, *span*, *a*, etc).

If a link directs users to a page in a different language from that of the document, this must be indicated with the *hreflang* attribute.

## How can a web page be assessed for accessibility?

The first rule for building web pages is to use the technologies specified by W3C. These set out guidelines and standards for all user agents. If we follow these guidelines, we will guarantee a minimum level of access to the information in our documents. Where we want to use a technology not recommended by W3C (e.g. *flash*), we must provide a suitable alternative with accessible content.

Then we must carry out the following steps to check that the pages have been correctly developed:

1) Install a toolbar which allows quick checks to be made

- For Internet Explorer

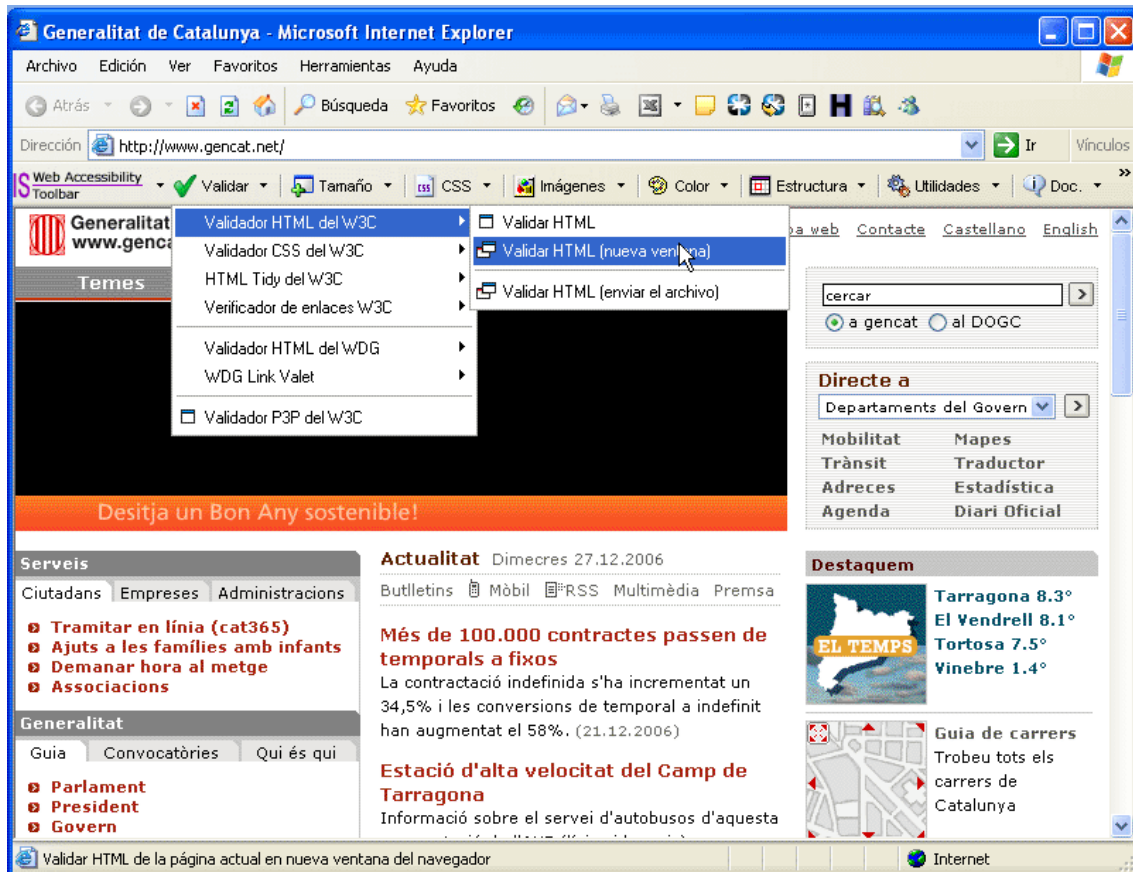
<http://www.visionaustralia.org.au/ais/toolbar/>

- For Firefox

<https://addons.mozilla.org/firefox/60/>

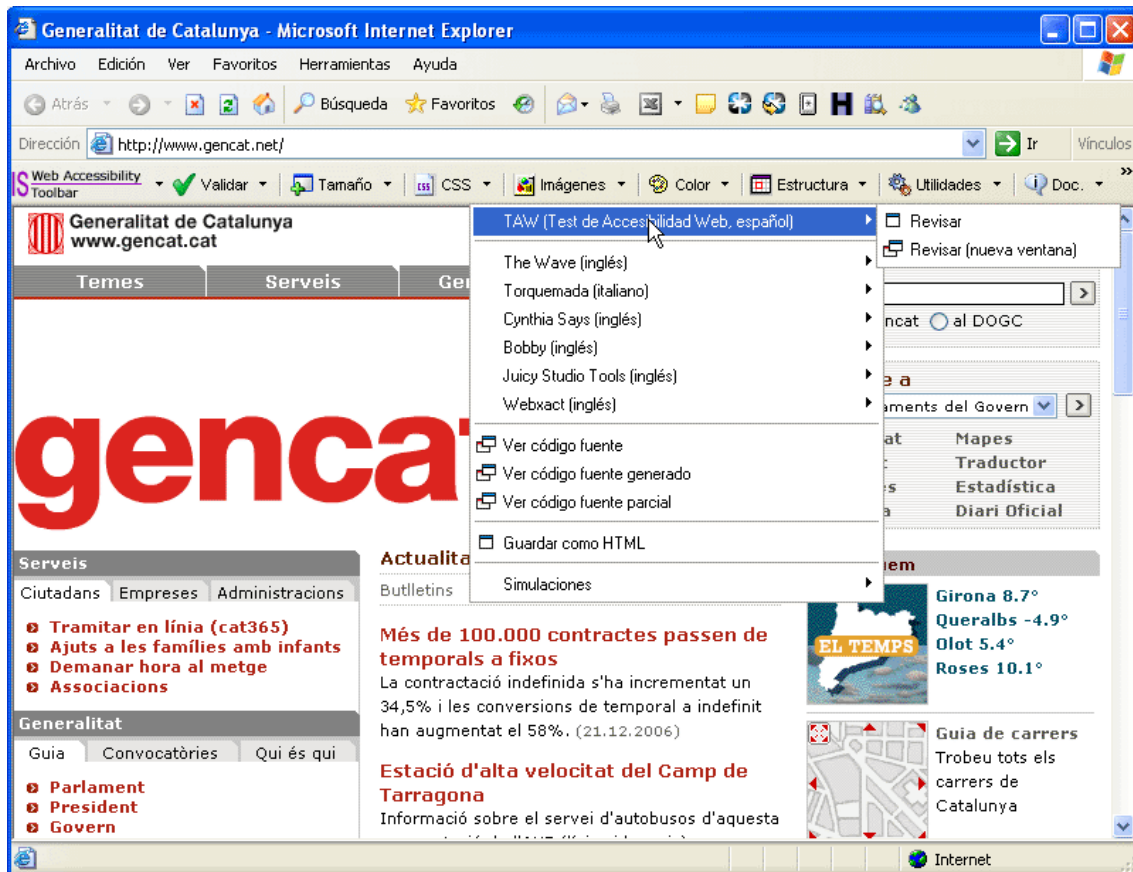
2) Check mark-up syntax validity

- Directly using the validator at <http://validator.w3.org/>
- Sending the page with the toolbar ("validate" menu → "validate html" or "validate in a new window", if you are on a public server, and the "send file" option if you are on a non-public server)

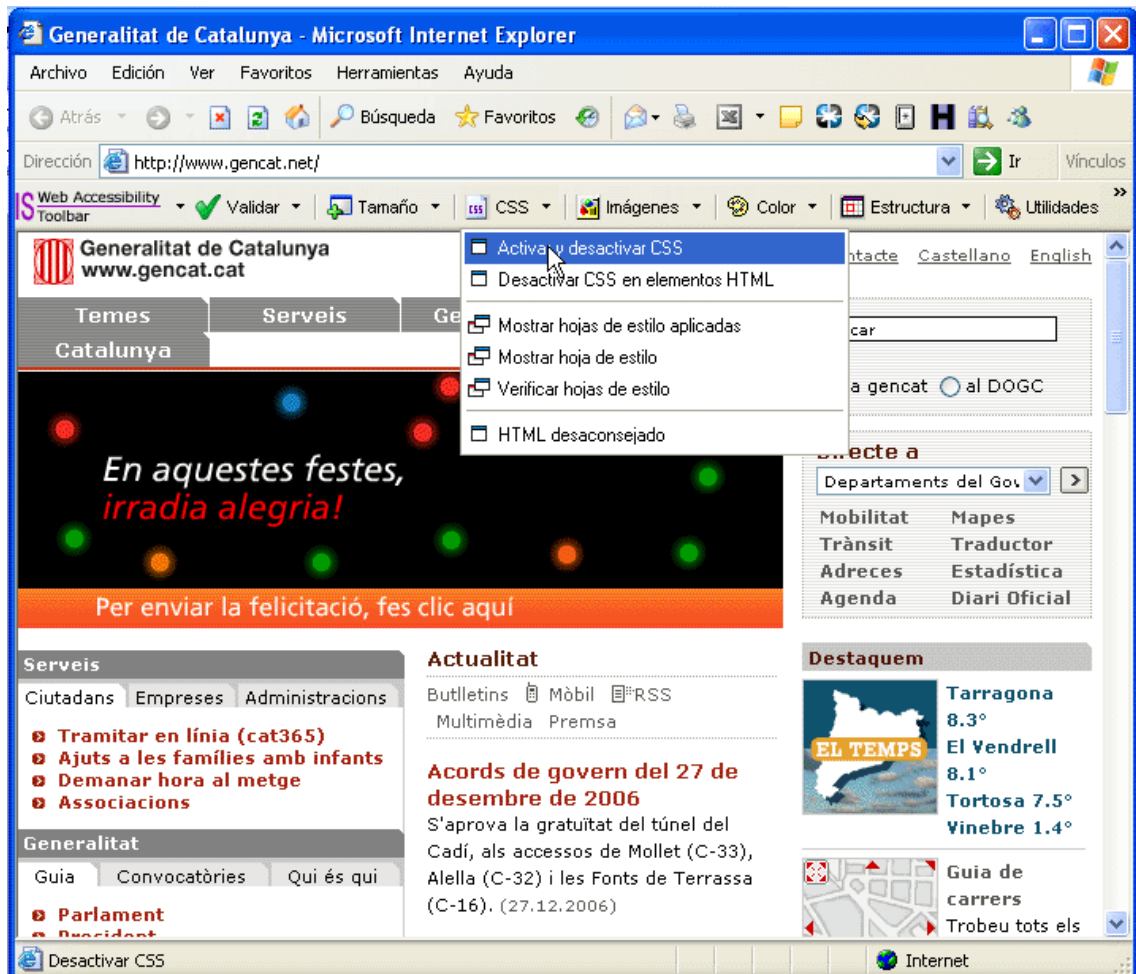


3) Validate using the TAW automatic test (pages must be published on a public server)

- Directly using the validator at:  
<http://www.tawdis.net/taw3/cms/en>
- Using the toolbar ("Utilities" menu)



- 4) Check we have marked up all structural elements. This can be done easily by disabling the CSS.



5) If there are images, check that they have a suitable alternative, and, if the image contains text, that there is sufficient contrast between the foreground and the background.

(install the program colour contrast analyzer from <http://www.wat-c.org/tools/CCA/1.1/#download>)

- 5.1. Select the foreground colour
- 5.2. Select the background colour
- 5.3. Check the combination using different algorithms (menu options → algorithm) and for all conditions ("show contrast result for colour blindness").

