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## Executive summary

The general purpose of this document is to provide an overview of benchmarking and of related activities in Europe. This report intends to offer an introduction and overview of the subject, within the framework of eInclusion. It is by no means an extensive examination or expert report of benchmarking activities but rather an introduction to the field, and a guide for further reading, to be used as a reference text to newcomers in the field of eInclusion.

**Chapter 1: What is benchmarking?** provides an overview of the definitions and the terms related to the subject, such as types of benchmarking, uses of benchmarking, and benchmarking criteria and indicators with examples.

**Chapter 2: Evaluation methods and tools** introduces the issues of validation and automated evaluation tools, and the evaluation of web sites in general.

**Chapter 3: European benchmarking initiatives** presents a couple of major European benchmarking initiatives, the European i2010 Strategy and the WAB Cluster.

**Chapter 4: National benchmarking initiatives – some good practice examples** highlights some of the national benchmarking initiatives that have had impact and success, and which might be of inspiration for others.

**Chapter 5: Important issues regarding benchmarking** wraps up by pointing to some of the problems, important issues and questions that are involved in benchmarking.

**Chapter 6: Appendix – Examples of national benchmarking initiatives** is an overview of the on-going activities in 14 European countries, provided by the respective EDeAN NCCs.

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## **Introduction**

The general purpose of this document is to provide an overview of benchmarking and of related activities in Europe. This report intends to offer an introduction and overview of the subject, within the framework of eInclusion. It is by no means an extensive examination or expert report of benchmarking activities but rather a guide for further reading, to be used as a reference text to newcomers in the field of eInclusion.

An introductory definition of the main terminology is provided in the first section, and descriptions of benchmarking tools and methods are described in the second section. A short overview and examples of European benchmarking initiatives, as well as national good practice initiative examples. Finally, a discussion of the main problems, pitfalls, and important issues that have to be considered with regard to the use of benchmarking are provided.

## 1 What is benchmarking?

For some years the term benchmarking has been a buzzword which is used in many contexts. Within the area of Design for All and e-accessibility it has also surfaced since the new millennium. This is particularly due to the fact that within the framework of the European Information Society it is extremely helpful to exchange information about the current status in the member states, and to learn from best practice examples. The systematic analysis and comparison of solutions and experiences has become increasingly important for policy makers.

The technical use of the term comes from the world of management, and from the computer hardware production companies.

### 1.1 Lexical level definition

The Oxford Dictionary and Thesaurus has the following definition:

*“Benchmark:*

*1) A surveyor’s mark cut in a wall, pillar, building etc., used as a reference point in measuring altitudes.*

*2) A standard or point of reference.*

*3) A means of testing a computer, usually by a set of programs run on a series of different machines.*

*Benchmark test: a test using a benchmark.”<sup>1</sup>*

Benchmarking assumes the definition of benchmarks for comparison. Benchmarking can be used to address either the comparison of a process or product against corresponding third party processes or products, or the comparison of a process or product against previous versions of the process or product.

### 1.2 Types of benchmarks

Benchmarking is not just one specific well-defined method, and there can be several types of benchmarks:

- a) *Performance benchmarks*, which include efficiency metrics and effectiveness metrics (efficiency compares output with input, effectiveness compares a certain level of performance against a benchmark which is well defined and often ideal)
- b) *Guidelines and standards* which involve qualitative assessments to determine the degree to which certain criteria are met, or to which degree a process or product adheres to and complies with recommendations of a standard (official or de facto)
- c) *Other types*, e.g. customer satisfaction, which seek to determine factors which will impact on product/service adoption.

When performing a benchmark, one needs to use a tool or instrument in order to collect the data (and perhaps to process and/or interpret the data). This could involve e.g. the use of periodic surveys or questionnaires as well as interviews; it could also mean the use of software packages that facilitate measuring (which is automated and quantitative).

### 1.3 Typical uses of benchmarking

Often benchmarking will be used for an assessment of the current status of a product (e.g. a web site) measured against a certain standard (or benchmark) such as the WCAG 1.0 criteria; or in order to assess the status of the product or web site in comparison with other web sites of the same nature, in the same region or some other comparison factor.

Benchmarking can also be used on a larger scale to compare across branches, sectors, regions or countries. Here the intention is to identify differences and similarities in a large sample of participants. The aim is to identify which specific areas might need special attention (which branches, sectors, regions, countries lack behind), but also to identify the participants that perform well and which can function as examples of best practice. Large scale benchmarking of targeted criteria may be used for the analysis and estimation of

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<sup>1</sup> Oxford Dictionary and Thesaurus, Oxford University Press, 1996

progress within a specific area of attention, or the effect of other measures, like legislation or other policy initiatives.

Depending on the set-up of the benchmarking activity, and the way the results are put forward, benchmarking can function as a motivating factor, a 'carrot' rather than a 'stick'. Particularly with regard to legislative measures, it can be very motivating for participants that perform less well, as well as for the ones who perform well.

#### 1.4 Benchmarking within a policy framework, an example

One example of large-scale benchmarking is the measuring of progress of the eEurope 2002 Action Plan. The Action Plan was endorsed at the European Council meeting in Feira, Portugal in June 2000. The overall objective of the plan was to bring Europe online as fast as possible. There were three specific areas of attention, or goals: 1) cheaper, faster and securer internet; 2) investing in people and skills; and 3) stimulating the use of the internet.

In order to monitor the progress within these areas of attention, a number of benchmarking reports were produced which identified the status of all EU members (EU-15) in specific areas, based on national reporting of e.g. number of households with internet connection.

23 indicators were identified and selected, and recent data collected from all member states (and cross-checked with existing data sources). In the eEurope Benchmarking Report it is stated that: "*Benchmarking works within a political context*" (...) *It must be designed in a way to be relevant to policy decisions. Benchmarking is not an end in itself and is not a purely statistical exercise*"<sup>2</sup>

A key element in the Action Plan was the adoption by member states of the W3C WAI guidelines, the Web Content Accessibility Guidelines 1.0 (of 1999), and the benchmarking of public web site compliance.

#### 1.5 Benchmarking criteria and indicators

[**Criterion:** (plural: criteria): a principle or standard that a thing is judged by; **Indicator:** a person or thing that indicates (synonyms: pointer, marker, identifier, index); **Indicate:** point out, make known, show."<sup>3</sup>]

If a benchmarking exercise shall make sense, the selection of the appropriate benchmarking criteria and the identification of the particular indicators which are relevant for the particular criteria for benchmarking must be made with great diligence. The selection of the wrong set of indicators might produce useless and irrelevant results. Also, the misinterpretation of the data may lead to conclusions that are wrong.

Indicators are, as the word implies, indicative; they point to some status within a certain area, but are not a 1:1 representation. E.g. a low number of mobile phones per 1000 citizens in a country can be the indicator of bad coverage by the mobile service providers, but may also be the indicator of a less prosperous population, or conservative customers.

For one selected criterion it is often wise and necessary to identify many indicators; the larger the number of indicators, the more reliable the analysis will be within the criterion.

In some areas, data is already available or easy to collect. In other areas it is necessary to analyse the area and identify potential types of data and sources of information, before one can start the benchmarking.

In some benchmarking reports data is based on formally agreed criteria; in other areas there may not be formally agreed or common criteria available, and thus the benchmarking exercise involves the setting up of a set of criteria that can be understood by others, and which actually form basis for the result that one is looking for. If there are no agreed formal standards within an area, the definition of criteria and indicators will often be the subject of discussion and scrutiny by people outside the benchmarking group.

<sup>2</sup> eEurope 2002 Benchmarking Report, p 3, available at:

[http://ec.europa.eu/information\\_society/eeurope/2002/news\\_library/new\\_documents/benchmarking/benchmarking\\_en.pdf](http://ec.europa.eu/information_society/eeurope/2002/news_library/new_documents/benchmarking/benchmarking_en.pdf)

<sup>3</sup> From Oxford Dictionary and Thesaurus, Oxford University Press, 1996

The subjectivity or objectivity of the benchmark is another important aspect. Objective criteria and indicators can be gathered by setting up automated procedures that are either performed by computers or by people using a formalised data gathering tool. Sometimes the criteria are of a more subjective nature, and if this is the case, it will be necessary to ensure that there is a way of making the process less reliant on the person that performs the evaluation. The criteria can also be of a subjective nature, depending on the responses collected on a particular issue.

## 1.6 Some examples of criteria and indicators

Quite a large number of examples of benchmarking criteria and indicators are available. Some of the most well-known and commonly used include:

- Accessibility indicators, i.e. conformance with WCAG 1.0 and WCAG 2.0
- Broadband penetration indicators, i.e. number of broadband connections per country, etc
- eGovernment indicators, i.e. number of government services that can be provided online

More specifically, the Web Content Accessibility Guidelines 1.0<sup>4</sup> of the World Wide Web Consortium, provide a number of guidelines intended for all **web content developers**<sup>5</sup> (page authors and site designers) and for developers of **authoring tools**<sup>6</sup>. The primary goal of these guidelines is to promote accessibility and make web content more available to *all* users, irrespective of the technology (e.g., desktop browser, voice browser, mobile phone, automobile-based personal computer, etc.) and/or environment of use (e.g., noisy surroundings, under- or over-illuminated rooms, in a hands-free environment, etc.). A number of indicators/checkpoints are provided that may be used to review a webpage or website for accessibility<sup>7</sup>.

Other benchmarking criteria and indicators may be used to assess the level of success of eInclusion policies. For example, the EC Communication: *eEurope 2005: Benchmarking Indicators* (COM(2002) 655 final) published in 2002, proposes a set of indicators to monitor progress of the eEurope 2005 Action Plan towards an information Society for All. These included a number of policy, statistical and other supplementary indicators assessing:

- Citizens' access to and use of the Internet
- Enterprises' access to and use of ICTs
- Internet access costs
- Number and kinds of e-government services available
- Availability of e-learning services, courses, etc
- Availability and access to e-health services
- e-business readiness
- Use of ICT by business
- Internet users' experience and usage regarding ICT-security
- Broadband penetration

Following the publication in June 2005 of the Communication: *i2010 A European Information Society for Growth and Employment*, that built upon the eEurope2002 and eEurope 2005 Action Plans, this set of benchmarking indicators was updated. The first version of the *i2010 Benchmarking Framework*<sup>8</sup> was published by the *i2010 High Level Group* and sets out a number of indicators to monitor progress in achieving the *i2010* priorities, including:

<sup>4</sup> Available at: <http://www.w3.org/TR/WAI-WEBCONTENT/>

<sup>5</sup> See: <http://www.w3.org/TR/WAI-WEBCONTENT/#content-developer>

<sup>6</sup> See: <http://www.w3.org/TR/WAI-WEBCONTENT/#authoring-tool>

<sup>7</sup> This checklist is available at: <http://www.w3.org/TR/WAI-WEBCONTENT/full-checklist.html>

<sup>8</sup> Available at:

[http://ec.europa.eu/information\\_society/europe/i2010/docs/benchmarking/060220\\_i2010\\_benchmarking\\_framework\\_nov\\_2006.doc](http://ec.europa.eu/information_society/europe/i2010/docs/benchmarking/060220_i2010_benchmarking_framework_nov_2006.doc)

- Digital literacy and ICT skills<sup>9</sup>
- e-inclusion<sup>10</sup>
- Use of public services on line<sup>11</sup>
- Take up of advanced services<sup>12</sup>
- Use of broadband<sup>13</sup>
- Access and Use of ICT in European Schools
- Availability of online public services
- Broadband coverage in Europe

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<sup>9</sup> [http://ec.europa.eu/information\\_society/eeurope/i2010/docs/benchmarking/wp6\\_digital\\_literacy\\_and\\_ict\\_skills.pdf](http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/wp6_digital_literacy_and_ict_skills.pdf)

<sup>10</sup> [http://ec.europa.eu/information\\_society/eeurope/i2010/docs/studies/wp5\\_benchpol\\_e-inclusion.doc](http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/wp5_benchpol_e-inclusion.doc)

<sup>11</sup> [http://ec.europa.eu/information\\_society/eeurope/i2010/docs/studies/wp4\\_report\\_online\\_public\\_services.doc](http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/wp4_report_online_public_services.doc)

<sup>12</sup> [http://ec.europa.eu/information\\_society/eeurope/i2010/docs/studies/wp3\\_report\\_advanced\\_services\\_24\\_09\\_2006.doc](http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/wp3_report_advanced_services_24_09_2006.doc)

<sup>13</sup> [http://ec.europa.eu/information\\_society/eeurope/i2010/docs/studies/wp1\\_report\\_broadband\\_june2006.doc](http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/wp1_report_broadband_june2006.doc)

## 2 Evaluation methods and tools (automated evaluation)

Within the context of the European Design for All e-Accessibility Network (EDeAN) and of the DfA@eInclusion Coordination Action, the most relevant subject for benchmarking activities is perhaps the benchmarking of web accessibility<sup>14</sup>. A common activity in many national benchmarking initiatives (see Appendix) is the measurement of a particular web site's compliance with accessibility standards and guidelines. This is used to rank the web site (either against other web sites or against an ideal goal). In this particular context benchmarking becomes a tool for evaluation, because the problems of a particular web site can be analysed, and suggestions for improvement identified.

The ranking of web sites is used for motivation; the web sites that comply and have tried to comply with accessibility guidelines will receive acknowledgements for their effort (and may get status as examples of best practice); the web sites that do not perform well, are expected to react by wanting to improve their performance.

A common standard for the evaluation of web accessibility is the Web Content Accessibility Guidelines 1.0<sup>15</sup> developed by WAI, the Web Accessibility Initiative of W3C, the World Wide Web Consortium<sup>16</sup>.

### 2.1 Validation and evaluation of a web site

*[Validation: the process necessary to perform conformance testing in accordance with a prescribed procedure and an official test suite; (X)HTML validation: Validation is a process whereby documents are verified against the associated DTD (Document Type Declaration), ensuring that the structure, use of elements, and use of attributes are consistent with the definitions in the DTD.<sup>17</sup> ]*

The W3C has supplied a set of validation tools<sup>18</sup> that check the conformance with the different web-formats such as: HTML, XHTML SMIL, CSS<sup>19</sup> etc. Validating the formal structure is important as a basis for accessibility, although accessibility as such is not validated

When evaluating a web page or a web site against a set of fixed criteria, such as the WCAG 1.0 checkpoints, it is very common to use automatic evaluation tools.

Accessibility tools perform automated checks of web pages for accessibility issues. It is important to remember that accessibility tools can only partially check accessibility through automation. Web accessibility also requires human judgement of several factors – in general the key is to learn and understand Web Accessibility standards rather than relying on a tool.

The standards and guidelines most commonly used are WCAG 1.0 (with 3 priority levels that act as an industry standard) and Section 508 (United States Rehabilitation Act – requirements for making federally-funded web sites accessible to individuals with disabilities<sup>20</sup>)

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<sup>14</sup> The MeAC study showed that Europe is lacking behind in e-accessibility. The "Measuring progress of eAccessibility in Europe" (MeAC) study was launched as part of the follow-up to the European Commission's Communication on eAccessibility of 2005. This Communication highlighted the need for improving access to Information and Communication Technologies (ICTs) by people with disabilities. It also announced that a follow-up on the eAccessibility situation would be made two years after the Communication, at which time the Commission may consider additional measures. The current report supports that follow-up, providing the results of an extensive benchmarking exercise and analysis on the status and progress of eAccessibility in Europe. Available at: [http://ec.europa.eu/information\\_society/activities/einclusion/library/studies/meac\\_study/index\\_en.htm](http://ec.europa.eu/information_society/activities/einclusion/library/studies/meac_study/index_en.htm)

<sup>15</sup> <http://www.w3.org/TR/WAI-WEBCONTENT>

<sup>16</sup> <http://www.w3.org>

<sup>17</sup> from W3C Glossary: <http://www.w3.org/2003/glossary/>

<sup>18</sup> See: <http://www.w3.org/QA/Tools/>

<sup>19</sup> See: <http://validator.w3.org>

<sup>20</sup> Available at: <http://www.section508.gov/>

## 2.2 Accessibility evaluation tools

There are a number of accessibility evaluation tools with a range of different facilities and characteristics that must be considered when selecting the appropriate tools for the purpose.

First of all, one has to decide whether or not to use a commercial tool. The commercial tools often offer a wider range of facilities and options, but for some purposes the free tools might suffice.

Another important feature of accessibility evaluation tools is whether they contain a repair functionality. Many tools can only perform an evaluation, but some tools can perform the evaluation **and** guide the repair process. This is a more common characteristic of commercially available tools that often spend time educating their user and guiding both the evaluation and repair process

The platform on which the tools work is also an important aspect. Some tools are online services; some will function within a browser, e.g. as a toolbar; still other come as part of a web authoring tool; and some are to be installed on the web server.

Grouped by platform:

- Online service (Examples: Cynthia Says, WAVE, WebXact); within a browser – e.g. as a toolbar (Examples: AIS Accessibility Toolbar, Web Developer Extension for Mozilla-based Browsers, Accessibility Extension for Internet Explorer, Accessibility Extension for Mozilla/Firefox)
- Within an authoring tool - with accessibility functions (Lift, Accessibility Suite for W3C/WCAG created by UsableNet)

When one is evaluating a large web site, or when comparing large samples of web sites, some of the tools might be less efficient than others. Some of the tools only offer an evaluation of one url at a time. Therefore it can be very time consuming to validate a large web site or many web sites by means of e.g. the AIS Accessibility Toolbar.

Some of the tools are intended more for the use of particular users, like web designers, web developers or web evaluators<sup>21</sup>.

Many of the accessibility evaluation tools are developed and designed for websites that are based on the ‘traditional’ web programming languages; HTML, XHTML and CSS. As new languages such as FLASH, AJAX etc. are becoming more frequently used this may very well prove a challenge to the automated evaluation tools, as the code in these languages is hidden from the evaluation tools, and the coding may also be more difficult to analyse from an accessibility perspective.

It may also prove a challenge to assess password restricted websites from the “outside”, because it is necessary to have a user-ID to log on, and automated tools may have problems with different logon procedures

## 2.3 Comparison of several web sites

Benchmarking of accessibility levels (and other criteria) of web sites – national and international benchmarking initiatives will be described in chapters 3 and 4, and country specific examples can be found in the Appendix.

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<sup>21</sup> For a more detailed description and complete list of the tools, see: WebAIM: <http://www.webaim.org/articles/tools>

### 3 European benchmarking initiatives

The European e-Strategies of 2002, 2005 and 2010<sup>22</sup> have all set up a strategy for the development of the European Union Information Society. During the implementation period of each of these initiatives reports were produced which have monitored progress within specific areas of interest - key elements in the strategies. The intentions with the benchmarking activities has also been to quantify the 'digital divide' within the European Union, and to identify examples of excellence in each of the themes of action. Some of the earlier strategies have been mentioned previously. This section focuses on the current European strategy.

#### 3.1 European i2010 Strategy

The i2010 European Information Society 2010 aims to exploit opportunities for economic growth and jobs in Europe by promoting an open and competitive digital economy.

In order to achieve this it proposes 3 priorities for Europe's information society policies:

- 1) a single European information space which promotes an open, competitive and content-rich internal market for electronic communications, media and content;
- 2) strengthen innovation and investment in ICT research – a wider adoption of ICT;
- 3) achieve an Inclusive European Information Society that prioritises better public service and quality of life.

Benchmarking will play a central role in monitoring progress towards achieving these i2010 priorities. But compared with the two previous strategies, the focus now is on more complex issues, and thus benchmarking methods must become more sophisticated.

A list of themes has been set up regarding the priorities. Within each priority there are a number of criteria and corresponding indicators which have been selected, and which will be monitored closely through annual European Information Society Progress Reports, i.e. benchmarking reports:

Priority 1: Development of broadband (coverage/take up/speed and prices/multiplatform access); Advanced services (availability/usage); Security ; Impact (growth of ICT sector)

Priority 2: Investment in ICT research; Adoption of ICT by business (basic connectivity and ICT adoption/e-Commerce/e-Business/e-Readiness); Impact of adoption of ICT by business (Investment and expenditure in ICT/Productivity/Employment and skills)

Priority 3: Inclusion (Disparity indexes: connectivity and usage/e-Accessibility/Digital literacy); Public services (e-Government)<sup>23</sup>

The reports and the benchmarking effort will be based on a mix of data from e.g. Household Community Surveys, EUROSTAT surveys, Community Enterprise Surveys and other specifically targeted data.<sup>24</sup> (See also chapter 1.6 for more information on the i2010 benchmarking criteria and indicators)

<sup>22</sup> eEurope 2002 – An Information Society for All

[[http://ec.europa.eu/information\\_society/eeurope/2002/index\\_en.htm](http://ec.europa.eu/information_society/eeurope/2002/index_en.htm)]

eEurope 2005: [[http://ec.europa.eu/information\\_society/eeurope/2005/index\\_en.htm](http://ec.europa.eu/information_society/eeurope/2005/index_en.htm)]

i2010 A European Information Society for Growth and Employment:

[[http://ec.europa.eu/information\\_society/eeurope/i2010/index\\_en.htm](http://ec.europa.eu/information_society/eeurope/i2010/index_en.htm)]

<sup>23</sup> see: i2010 Benchmarking Framework, i2010 High Level Group, Issue no 1, April 2006

Download link:

[http://ec.europa.eu/information\\_society/eeurope/i2010/docs/benchmarking/060220\\_i2010\\_benchmarking\\_framework\\_nov\\_2006.doc](http://ec.europa.eu/information_society/eeurope/i2010/docs/benchmarking/060220_i2010_benchmarking_framework_nov_2006.doc).

<sup>24</sup> For details on the e-Inclusion benchmarking criteria and indicators, see: Benchmarking in a Policy Perspective, Report no.5: eInclusion (2006)

[http://ec.europa.eu/information\\_society/eeurope/i2010/docs/studies/wp5\\_benchpol\\_e-inclusion.doc](http://ec.europa.eu/information_society/eeurope/i2010/docs/studies/wp5_benchpol_e-inclusion.doc)

## 3.2 The WAB Cluster ([www.wabcluster.org](http://www.wabcluster.org))

The WAB Cluster is a cluster of European projects to develop a harmonised European methodology for evaluation and benchmarking of websites. The primary goals of the Cluster are:

- to develop a EU-harmonised assessment methodology for Web accessibility, based on W3C/WAI and to be synchronised with the foreseen migration from WCAG1.0 to WCAG2.0.
- to ensure that evaluation tools and methods developed for global monitoring or for local evaluation, are compatible and coherent among themselves (and with WAI)
- to provide a strong European feedback and contribution to WAI and others for future guidelines or versions of guidelines.

The WAB Cluster involves the following activities/projects:

### 3.2.1 EIAO: ([www.eiao.net](http://www.eiao.net))

The European Internet Accessibility Observatory (EIAO) concerns the preparation of a platform for a possible observatory (measurement machine with modular tests, site inventory for jurisdictions, results management and aggregation). The platform prototype, once sufficiently advanced, will provide a facility for testing aspects of the WAB Cluster methodology

### 3.2.2 BenToWeb: ([www.bentoweb.org](http://www.bentoweb.org))

BentoWeb refers to the production of test suites for evaluation tools, and evaluation modules for checkpoints difficult to automatise. Research into integration of testing modules in CMS and issues related to dynamic multiversion webpages

### 3.2.3 SupportEAM: ([www.support-eam.org](http://www.support-eam.org))

Support EAM (Supporting the creation of a e-Accessibility Quality Mark) has proposed a certification mechanism and authority, training material and tools supporting a unified European approach to Web Accessibility evaluation. This includes third party and self-certification

### 3.2.4 UWEM: ([www.wabcluster.org/uwem/](http://www.wabcluster.org/uwem/))

Accessibility checks can be carried out in different ways even if the checks are based on the same guidelines. The Unified Web Evaluation Methodology (UWEM1.1) is the result of a joint harmonisation effort by 23 European organisations of the three European projects mentioned above. They have developed UWEM to ensure that large scale monitoring and local evaluation are compatible and coherent among themselves and with the Web Content Accessibility Guidelines from W3C/WAI. The UWEM methodology has already incorporated support for the migration from WCAG 1.0 to WCAG 2.0. Thus, UWEM is the ideal instrument to support evaluation, (self)certification, and benchmarking of web content in Europe and beyond. The WAB Cluster is building an observatory for large scale European evaluation and benchmarking of website accessibility. This supports large scale and local evaluation. The UWEM methodology is conformant with the W3C Web Content Accessibility Guidelines and based on an interpretation of WCAG agreed among stakeholders. In this way, it can offer unprecedented guidance for evaluation and benchmarking.

In December 2007, the Web Cluster delivered version 1.2 of the European instrument for evaluation and benchmarking of websites to the EU.

The UWEM methodology contains a complete methodology including detailed tests for the evaluation of websites for WCAG1.0 conformance. The document is separated into a Core document and a Tests document. The UWEM has been developed in order to improve the Tool and Browser Independence, the Unique Interpretability, Repeatability and Translatability of the WCAG1.0 guidelines. The Methodology can be downloaded from: <http://www.wabcluster.org> .

## 4 National benchmarking initiatives - some good practice examples

A recent United Nations benchmarking report provides interesting information about the European effort in e-government. According to the report, “UN e-Government Survey 2008: From E-government to Connected Governance.”<sup>25</sup>:

*“This year Sweden (0.9157) surpassed the United States as the leader. Three Scandinavian countries took the top three spots in the 2008 Survey, with Denmark (0.9134) and Norway (0.8921) in second and third place respectively. The United States (0.8644) came in fourth. In this year’s global e-government readiness rankings, the European countries made up 70% of the top 35 countries while the Asian countries made up 20% of the top 35. A large part of the success of the European countries has been their investment in infrastructure and connectivity, most notably in broadband infrastructure.”<sup>26</sup>*

This indicates that, measured by the specific UN benchmarking criteria, the European Information Society Strategies have had an important impact, and that some of the initiatives that are highlighted below are in fact good practice examples. Further details on these examples can be found in the country specific information in the Appendix, .

### **Legislation must be accompanied by information and guidance**

In some of the EU countries legislative measures have been taken which aim at providing equal access to the internet and public web sites in particular. The problem, however, is that legislation alone does not provide web accessibility. If legislation is not accompanied by intensive information and guidance, as well as initiatives to raise awareness, it seems as though legislation does not have an effect.

### **Raising awareness through benchmarking awards with public web sites**

In Norway, Sweden and Denmark government bodies have been put in charge with monitoring public web sites, web accessibility compliance, and awareness-raising.

This means that there are some good examples of government initiatives that aim at raising awareness about web accessibility issues by performing benchmarks of public web sites and rewarding the ones that perform well. The intention is that web sites that perform less well will be motivated to improve the accessibility of their web site, and that the ones who perform really well will be used examples to be followed.

The experience in all three countries is that over time awareness of web accessibility issues grows, but very slowly – many years of constant motivation lie ahead for any country wanting to improve public web accessibility.

In all three countries the web sites performing really well are awarded with a number of stars, crowns or other symbol which they can announce on the particular web site, and which – in effect – works like a certification: web sites with a high ranking in the national benchmark will announce the number of stars or crowns they have obtained. On the other hand, the ones performing less well will be in the list of results of the benchmark, but they are not obliged to announce their rank on their web site!

### **Conferences combined with awards on e-accessibility**

In Norway, the awarding of the best web sites is combined with an annual national conference on web accessibility and public web quality. This combines the issues of raising awareness and getting media attention with the excellent networking possibilities that exist at a conference.

<sup>25</sup> Available at: <http://unpan1.un.org/intradoc/groups/public/documents/UN/UNPAN028607.pdf>.

<sup>26</sup> UN e-Government Survey 2008.: Executive summary, p. xiii

**Criteria and Guidelines**

Benchmarking of web sites needs to be performed according to a fixed set of criteria and indicators which is explicitly announced and explained prior to the benchmarking exercise. But an accompanying guideline with recommendations on how to perform well, or how to fix problems is equally important. In many countries, like e.g. Finland, the government has issued national guidelines for web accessibility with online guides and recommendations, including best practice examples.

Recently, WCAG 1.0 has become a mandatory standard for public web sites in Denmark, and because research had shown that web developers had difficulties in understanding the guidelines, a set of interpretation guidelines have been developed. The idea is that if there is an explanation of what the guidelines mean in practice for different user groups, what kind of problems are encountered if a web site fails to comply with a particular guideline, and what to do in order to comply, then hopefully web developers and purchasers will understand why accessibility is an important issue.

**Certificates and quality marks**

In other countries (e.g. Belgium) there is a semi-public quality label scheme that also functions like an in-official web accessibility auditing body which can also perform consultancy on web site accessibility if a web responsible would require this.

**Annual benchmarking to monitor progress**

Recurring national benchmarking initiatives that monitor progress may also be both necessary and informative, like the 6-monthly studies of broadband penetration in Greece, or the benchmarking of all ministry and county web sites performed in Denmark in 2006.

*Details of the mentioned initiatives and a number of other examples of national benchmarking activities with regards to e-accessibility in Europe is provided in Appendix I of this report.*

## 5 Important issues regarding benchmarking

### **Benchmarking in itself does not provide solutions**

Benchmarking will only provide information about the state of a certain indicator (perhaps over time) – but cannot in itself provide any solutions on how to improve, enhance or alter the state.

If we compare the status of a certain indicator in two or many different countries, we do not know anything about why the numbers are different, neither can we be sure that the data is obtained in exactly the same way (there might be significant national differences to how data is collected – and these differences might not be explicitly stated in the data).

The statement that factor a is at the level x in country B, while the mean level is y for EU-25, does not provide any information on why country B differs, or how to change the status of factor a in country B.

### **Benchmarking is a soft measure**

Benchmarking may very well function as a ‘soft measure’ or ‘carrot’ (as opposed to the ‘stick’ of regulation and law) in order to convince policy makers, decision makers and web site developers of the importance of accessibility. The only problem is that soft measures tend to take a very long time to sink in. Maybe benchmarking as a soft measure will only work in combination with legislative measures, and intensive follow-up and information to all stakeholders.

### **Automated evaluation**

Automated evaluation (or benchmarking in general) can help identify particular areas that are problematic, and which need further attention. It can also raise public awareness, which often makes organisations that perform less successfully ask for advice on how to improve quality (Note: often web sites fail mainly because of lack of knowledge or awareness of accessibility issues and problems!)

Large scale sampling or benchmarking is only possible if automated (cost and time), but many of the accessibility guidelines require manual checking. However, automated evaluation is ‘low cost’ and will still provide a lot of useful data that is comparable across countries and sectors, and will provide ‘indicators’ that can be used by all stakeholders.

Automated benchmarking can: a) identify web sites with many barriers, and b) identify web sites with good (automated) accessibility, and c) conformance with language standards. The assumption is, then, that if a web developer has spent resources in making the sites accessible in the areas that can be tested automatically, they have probably also thought about the other aspects as well.

### **Criteria and indicators**

The selection of proper indicators is crucial. It is necessary to analyse whether the data that is being used actually is able to state anything about the issue that you are trying to benchmark.

Setting up goals for improvement can be very tricky, as one has to be very specific about the existing level (index) and in what way improvement is to be measured<sup>27</sup>.

### **Comparison across borders**

One difficulty today is that all countries more or less use their own subset of the WAI-criteria in the assessment of national websites. From an international point of view, it would be very useful to have a harmonised measurement of accessibility. The UWEM mentioned in chapter 3.1. is a methodology to compare national evaluation methods, and should as such be promoted towards the member states.

### **e-Accessibility consultancy**

There might be a need for a publicly financed free-of-charge consultancy service on e-accessibility issues and how to improve a specific web site. In Denmark, there was such a service for at short period of time, but

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<sup>27</sup> see: Benchmarking in a Policy Perspective – report no. 5 eInclusion, empirica dec 2006, available at: [http://www.empirica.biz/empirica/publikationen/documents/No02-2007\\_BenchPol\\_Broadband-Internet.pdf](http://www.empirica.biz/empirica/publikationen/documents/No02-2007_BenchPol_Broadband-Internet.pdf)

once the consultancy service became something that the web site owners had to pay for, they stopped using it.

### **Instructive guides for improving web quality and understanding accessibility guidelines**

Benchmarking and evaluation of web sites does not provide any suggestions or specific solutions on how to improve or how to mend problems. Some of the professional automatic evaluation tools provide a repair mechanism, and e.g. in Finland, the Quality in Web solution includes a tool to support improving the quality of the web site.

The lack of suggestions and proper explanations as a kind of feedback on negative benchmarking performance is a problem in many areas, but particular problems have been identified with the interpretation of the de facto standard for web accessibility, WCAG 1.0. Many web developers, whose web sites fail, find it very difficult to understand the guidelines that are a part of WCAG. In Denmark the National IT & Telecom Agency has developed a set of interpretations of these guidelines which explains why each of the checkpoints is a problem and to whom, and which also provides explanations and suggestions to how to solve the problems.

### **Only public web sites – what about private companies?**

It is obvious that the public web sites should become role models for private web developers as well.

If there is a national standard for public web sites, and a national benchmarking competition – then the public web sites will have to comply with the standard. The question is how we can enforce or further the uptake by the rest of the web community of these standards.

Policy initiatives, like legislative measures, are not necessarily the ideal way. But they might be one step towards awareness and understanding. However, they probably need to be accompanied by both strong measures like monitoring (and some kind of legal action against non-conformers) and soft measures like information and guidance.

In Norway, there are discussions whether the organisation (norge.no) that has assessed around 700 public web sites in their annual benchmark in the last couple of years, should also take up assessment of a smaller number of private websites. Candidates for this would be online banks, travel agencies, web shops and other major enterprises that address a large number of users.

### **Process oriented benchmarking**

Web sites are by nature very dynamic products, and their dynamic environment of web maintenance, changing and updating contents, development of new technologies, the very different users and user requirements are not reflected in a purely result and product oriented benchmarking activity. In other words there is a need for a kind of benchmarking of e.g. the process of updating and changing a web site: how can we ensure that the Design for All and e-accessibility issues are a part of this process?

## 6 Appendix: Examples of national benchmarking initiatives

This is a collection and description of the national initiatives in 14 European countries, supplied by the respective EDeAN NCC. Countries are listed in alphabetical order.

### 6.1 Belgium

Although there is no formal benchmarking system put in to place by the Belgian government, there are a growing number of initiatives on benchmarking. Below some examples are given of these initiatives. These include auditing and labelling accessible websites, testing products and equipment with special attention to the needs of people with a disability, etc.

#### 6.1.1 Anysurfer – Belgian quality label for accessible websites

AnySurfer is a Belgian quality label for accessible websites. AnySurfer, formerly known as BlindSurfer, is a project of Blindenzorg Licht en Liefde and Oeuvre Nationale des Aveugles.

Websites that carry the AnySurfer-label, comply with a carefully crafted set of guidelines. A website that's labelled is accessible to everyone, including people with a disability.

There are two kinds of labels: (1) the 'AnySurfer' Label and (2) the 'Anysurfer Plus' label. The second one uses more strict guidelines.

Organisations can ask AnySurfer to audit their websites. Besides audits Anysurfer offers consultancy services and organises training sessions for web designers.

Information about the guidelines, information concerning the application procedure, prices and an overview of the services can be found on their website: [www.anysurfer.be](http://www.anysurfer.be).

Anysurfer's most important allies are the disabled internet users themselves. As experts by experience, they're involved with the audits, the user tests and the training programs.

The guidelines include the use of the right HTML tags, operability of the website using the mouse, adding subtitles or transcriptions to audio and video fragments, adding descriptions to images and graphical buttons, use the right modes to convey structural information, how to use Flash and JavaScript, etc. A detailed description can be found on their website.

Unfortunately there is still no Belgian law that obliges companies, organizations and public bodies to have an accessible website and to follow accessibility guidelines when building websites.

In the period 2001-2007 about 330 Belgian websites got this web-accessibility label. Approximately 83% all requests for an audit result in a label.

#### 6.1.2 AnySurfer – EURACERT consortium

AnySurfer (cf. infra) has grouped with several other European web site testing groups to form the EURACERT consortium. This is a logical next step in the domain of web accessibility testing: although all groups involved ultimately rely on the WAI WCAG1.0 guidelines (WCAG2.0 is still not official), results often depend on the procedures used for testing.

AnySurfer has become the de facto expert group on web accessibility testing in Belgium. They are collaborating e.g. with the Flemish government and the Walloon government.

Anysurfer and K.U.Leuven have participated in the CEN workshop on Web site accessibility certification but as no formally agreed outcome was reached, AnySurfer decided to become partner in Euracert, a voluntary certification organisation.

Links:

CEN WAC workshop:

<http://www.cen.eu/cenorm/businessdomains/businessdomains/iss/activity/ws-wac.asp>

Euracert: <http://www.euracert.org/en/>

### **6.1.3 COST219ter – Action Working Group 3**

Within the COST219ter action working Group 3, several activities have taken place to benchmark assistive technology items. Jan Engelen (K.U.Leuven, Belgium and Dfa@eInclusion collaborator) is Management Committee member of this action.

More specifically the work has been focussing on the accessibility of mobile phones. The results have been incorporated in an accessibility toolkit that can be found at:

General info: <http://www.tiresias.org/guidelines/mobile.htm>

Wiki: <http://accessibilitytoolkit.wikispaces.com/>

### **6.1.4 Testaankoop – consumer organisation**

Belgium's largest consumer organisation (Test Aankoop – Test Achats) is well known for its tests of all kinds of household appliances, cars, computers etc. Recently they have published several tests in which special attention was paid to the needs of persons with a handicap. Furthermore this was not done in special publications but their conclusions formed an integral part of the printed general magazine.

Their articles can be downloaded (subscribers only).

A link to their Corporate mission: <http://www.test-aankoop.be/map/src/403903.htm>

### **6.1.5 Infovisie – information on technologies**

Since 1985, a special organisation, Infovisie, has been active within the Flemish region in advisory work related to technologies intended to increase the autonomy of persons with a visual handicap.

In its quarterly magazine (in Dutch), tests of a range of equipment is publicised. Currently these tests are performed in collaboration with the group Blindenzorg Licht en Liefde. Technical descriptions per equipment type are produced in collaboration with the Flemish technology support and knowledge centre KOC. This group also maintains the database of technical equipment for all types of handicaps, Vlibank.

The journal is available in a printed version, an audio version (daisy-format) and electronically (HTML). In 2006 Infovisie Magazine has celebrated its 20th anniversary.

## 6.2 Czech Republic

There is no formal benchmarking system in the Czech Republic. The largest amount of work in the direction of accessible public websites was done under patronage of Ministry of Informatics (dissolved after last elections).

There were several works in academia regarding the state of accessibility of the public services web sites. But mostly the goal of these works is to help formalize and adapt the rules for accessible web in the Czech Republic. There are already second version of the rules that incorporate some of the novelties from the WCAG 2.0 proposal. Information about approach to accessibility in Czech Republic is available - in Czech only on <http://www.mvcr.cz/micr/verejnost/pristupnost.htm>

### 6.2.1 Dobrý web

There are some particular benchmarking approaches coming from certain areas of disability organizations - for particular disabilities, namely SONS which is behind Blind Friendly Web ([blindfriendly.cz](http://blindfriendly.cz) – short info also available in English).

The largest benchmarking activity is done under “Dobrý web” initiative – where the name means “Good Web”. This site among other things offers professional audit in accessibility and other features of the websites – that might be described as Design for all approach.

The “Dobrý web” is also performing annual benchmarking of the web pages “WebTop100”. Info in Czech on this years result can be found on <http://www.webtop100.cz/>

The criteria that were used for assessing the web pages were divided into several fields of interest:

#### Usability:

- Overall informational architecture
- Usability of site navigation
- Search
- Usability of first page
- Usability of all web elements

#### Graphical design

- First impression
- Graphics suitability
- Graphics consistency throughout the web
- Readability of content holding elements
- Creativity of graphics

#### Technical solution

- Code elaboration
- Independence on additional technologies
- Data demandingness
- Web browser compatibility
- Accesibility

#### Marketing

- Marketing forcibleness
- Suitable Domain selection
- Search engine visibility
- Interaction of web with other information channels of the company
- Usage of additional marketing techniques

#### Information value

Each web`s information value had been evaluated individually by expert in given domain.

## 6.3 Denmark

### 6.3.1 Bedst på Nettet (Best on the Net – public web sites)

Every year since 2001, the National Danish IT and Telecom Agency has evaluated and benchmarked the quality of public websites.

In 2007, the project "Bedst på Nettet" (Best on the Net) examines around 600 websites on criteria pertaining to user-friendliness, advances in e-government, utility, openness, and technical accessibility.

Every year, awards are presented for the best public websites. In 2003, the UN Year of People with Disability, there was particular focus on compliance with the WCAG accessibility guidelines.

Each web site receives a number of crowns according to how well they have performed. They are not required to advertise the result on their web site, but may do so if they want.

In November 2001, the Best on the Net project received praise from the EU Commission for its demonstration of best practice in digital administration.

Link (limited info in English): <http://www.bedstpaanettet.dk/english>

(In Danish: <http://www.bedstpaanettet.dk>)

The 2007 criteria are as follows:

1. Compliance with web conventions (50 points max)
  - 1.1 Navigation (8 indicators)
  - 1.2 Web dissemination/communication (7 indicators)
2. Digital self-service (50 points max)
  - 2.1 Utility/usefulness (2 indicators)
  - 2.2 User friendliness (8 indicators)
- 3) Openness and usefulness (50 points max, 11 indicators)
- 4) Technical accessibility (50 points max, 12 indicators)

Here the WAI guidelines' checkpoints 1.1, 2.1, 3.2, 3.5, 4.3, 5.1, 5.2, 5.3, 9.2, 12.1, 12.4, 13.1 are used.

NOTE: This category is considered a prerequisite – it ensures that any user can access the content of the web site. Therefore, in order to be nominated, any web site needs to score at least 75% of the max value in this category.

During the 7 years that the competition has existed, it has raised awareness about the use (and design) of public web sites, and the general level of public web sites has definitely improved. As always with this type of competition, the ones that have received good marks are very proud and want to advertise this on their web. It is difficult to see whether the ones that perform less well, actually do anything to improve their web, and they are not obliged to advertise their status.

The initiative has raised awareness in the public sector about web design, user friendliness, digital self service etc. Since 2003 (Disability year) the accessibility features have become more prominent, but there is still not enough attention on that specific area (see the initiative on Benchmarking of Public Web Sites below).

### 6.3.2 Bedst til Nettet (Best for the Net (web developers))

This initiative has only existed since 2005(?) and is a competition for web developers and internet agencies. There is a description of the requirements for a web site, and the web companies need to develop a web site that complies with these requirements.

A winner is awarded with a prize and may announce on their web that they are the winners of the 2007 Best for the Net award.

Link (limited info in English): <http://www.bedstpaanettet.dk/english>

(in Danish: <http://www.bedstpaanettet.dk/bedst-til-nettet>)

The site has to consist of several levels, and has to contain a search form, a contact form with fields for user data entry, a data table with labels and a site map. The pages have to contain text and pictures.

Basically, the web site will be evaluated on the basis of important parts of the WCAG 1.0 guidelines.

Maximum is 17 on the basic score, but sites can score extra points for added functionalities that provide more accessibility, and for well structured programming etc.

If a web site receives less than 15 points it has failed and will not receive any mentioning at all in the competition.

Only a limited number of web developing agencies have entered the competitions during the few years that it has existed. The winners have been actively promoting themselves and advertising their ability to produce web sites that comply with the accessibility guidelines.

It is hard to judge the actual impact in general. It has raised awareness among some of the web agencies – but the general impression is that web agencies still are not too concerned about accessibility (they focus more on intuition and user friendliness for web editors in their particular CMS).

### **6.3.3 Benchmarking of the web accessibility of government websites in Denmark (dec 06)**

In 2006 the structure of the Danish administrative system changed. The number of boroughs (local administrative unit) changed from 275 smaller units to 98 larger units. The regional authorities responsible for a.o. health and environment were dismantled, and a new regional structure was implemented with responsibility for only health. In this context, the Danish government authorities responsible for web accessibility (Danish IT and Telecom Agency) made a large survey of the public web sites: Government ministries, Regional authorities and Local authorities. This benchmark included an automated test of WCAG guidelines compliance plus an expert evaluation of other aspects of the WCAG guidelines. It also included a survey among decision makers and IT responsible persons in all the fields, regarding the use of IT-based tools, and the view of the respondents on the cost of implementing accessible web tools.

(link (only info in Danish): <http://www.oio.dk/tilgaengelighed/kortlaegning07>)

The accessibility check included an automated manual checking of 122 public web sites: 98 borough web sites, 5 regional authority web sites, and 19 ministry web sites.

The survey was based on questionnaires and telephone interviews with buyers, consultants and vendors. The questions were about web-solutions, software products and hardware, and whether the respondents considered the acquirement (or development) of accessible solutions would cost more, and if so, how much more?

The result and conclusion of the benchmarking initiative was that none of the websites complied with the WCAG level A or AA guidelines. There were general accessibility problems, and particular problems with e.g. forms and pdf-files for download.

The survey concluded that most people thought that accessible solutions would cost more. Web solutions were estimated to cost 10 to 50% more, software 30% more, hardware 10-30% more.

The impact of the initiative was that there was a lot of media attention to the fact that none of the public web sites were accessible, and politicians were in favour of acting in such a way that this would improve. However there were different views on how to respond. The Danish Parliament decided on an array of new initiatives to improve accessibility of the public websites:

1. Ensuring that accessibility guidelines are part of the government agreements with other public bodies (borough, regions etc) in relation to the deployment of the Parliament Decision on public use of open standards.
2. Development of guidelines to the interpretation of WCAG as guidelines for web developers. A group of experts are currently working on a paper and presentation aimed at web developers in general, and which will explain and interpret the guidelines (and which will include examples on what happens for particular user groups, if a web site does not comply with a particular WCAG checkpoint).

NOTE: As of January 1<sup>st</sup>, 2008, the WCAG 1.0 Guidelines are a mandatory standard for public bodies. This means that guidance and explanations are even more important. The Guidelines for Interpretation of the WCAG standard were published in January 2008 and can be found at:

<http://www.itst.dk/kommunikation-og-tilgaengelighed/tilgengelighed/tilgengelighed-i-praksis>  
(only in Danish)

3. Monitoring progress with an annual benchmarking of public web sites which will be published on the internet. First time will be in the spring of 2008. This will be a 'window of exposure' – both for web sites that do not comply (or that have not improved since the above mentioned benchmark) and for web sites that can be seen as exemplary, or examples of best practice.

4. The creation of a common and shared strategy by all relevant ministries, for the development of accessible it-based tools.

5. Explicit national support to the EU standardisation initiatives, by sending a support letter to Viviane Reding, Commissioner for Information Society and Media.

## 6.4 Estonia

### Policy Documents

#### 6.4.1 Estonian Information Society Strategy 2013

The Estonian Information Society Strategy 2013, approved by the Order of the Government of the Republic Nr 667 (of 30 November 2006), sets out objectives and defines action fields and measures for the development of the information society as a whole in the long-term perspective.

In this policy document the following goal is set: By 2010, all public sector websites will comply with WAI quality criteria so as to ensure their accessibility for all, including people with special needs.

**The Implementation Plan of the Estonian Information Society Strategy** specifies priorities in the short-term perspective, proceeding from the objectives of the strategy and considering the current situation. By 2008 60% of public sector websites should comply with WAI quality criteria.

The Department of State Information Systems of the Ministry of Economic Affairs and Communications has approved the guidelines concerning the State IT Architecture and Interoperability. According to the Guidelines, all public organisations are obliged to follow the Web Content Accessibility Guidelines (WCAG).

*Sources:*

Estonian State IT Architecture (version 1.01, 14.01.2007)

IT Interoperability Framework (version 2.0, 15.09.2005)

#### 6.4.2 Compliance with Web Content Accessibility Guidelines

Compliance with Web Content Accessibility Guidelines has been studied in Estonia in 2000 and 2002. According to the study of 2002 out of 64 public web-sites analysed, 58 did not comply at all, only 1 corresponded to level AA (Patent Office), 5 to level A (Bank of Estonia, EENet, Information Board, Ministry of Economic Affairs, National Police Board). There were no web-sites with AAA ranking.

**In 2006** Ministry of Economics conducted a survey based on WCAG test version 1.0 (64 questions used) on accessibility of public sector web sites. 60 sites of different Estonian public authorities were included into survey (ministries, state administrations and inspections, constitutional institutions and two main state portals).

All the web sites were tested by using the following test tools:

- Accessibility Vallet
- WatchFire WebXCAST
- A-prompt (version 1.0.6.)
- Web Accessibility Tool WAVE (version 3.0.)
- Web Accessibility Test TAW

All the mistakes discovered by five test tools were taken into account. When one or more of the test tools suggested testing some parts of web page manually, these parts were tested manually.

On request of Department of State Information Systems of Ministry of Economics and Communications **in 2007** survey based on WCAG test version 1.0 (64 questions) on accessibility of local government and county government public web sites was conducted. 252 sites of different Estonian local governments were included into survey (226 web sites of local government, 15 web sites of county government and 10 info servers of county government).

The same methods (Inc test tools) as in the survey 2006 were used.

#### **Survey (2006)**

Out of 60 sites of different Estonian public authorities tested only 4 (6.67%) met the elementary standards A (Estonian Land Board, Information Board, Justice Administration, Department of State Information Systems).

Out of others 11 pages were close to meeting the standard A, but failed by one certain aspect of priority I. None of the pages met the priorities II and III. Thus none of the tested websites complied with the WCAG level AA or AAA.

*Source: State Information System*

*[http://www.riso.ee/et/koosvoime/internet/Valitsuasutuste\\_veebid\\_2006](http://www.riso.ee/et/koosvoime/internet/Valitsuasutuste_veebid_2006), in Estonian*

#### **Survey (2007)**

Out of 252 web sites tested, only 11 (4,37%) met the elementary standards A. Amongst these were 3 web sites of county government and 8 web sites of local governments. Only one web site met the standards AA and no web sites met the standards AAA.

*Source: State Information System*

*<http://www.riso.ee/et/node/330>*

## 6.5 Finland

STAKES contribution:

Päivi Tahkokallio

Mira Koivusilta

Jouko Kokko

### 6.5.1 Overview

There is no formal benchmarking system of accessibility of public sector websites in Finland and so far no extensive surveys on the accessibility of public sector websites have been carried out.

However, there is a variety of guidelines for the production and development of accessible websites as well as for the accessibility testing in Finland. Academic surveys have been carried out. Government initiatives include recommendations and the Quality to the web service, initiated by the Ministry of Finance and completed in 2004. The second generation service is currently under development and the updated service in Finnish and Swedish should be completed during spring 2008.

### 6.5.2 Guidelines for Web Accessibility in Finland

There is a variety of free guidelines for the production and development of accessible websites as well as for the accessibility testing of existing websites in Finland. They are usually produced by NGO's, non-profit organisations and universities.

In general, guidelines are based on the W3C-WAI recommendations and criteria. Although many are available online, only few have been updated since their release.

One of the first sets of guidelines was a booklet and an online resource pack produced by TIEKE - Finnish Information Society Development Centre in cooperation with Finnish Design for All Network in 2002. In addition to technical issues, the guidelines also opened the concept of accessibility to those new to the topic: why, what and for whom. The aim of the guidelines was to narrow the gap between strict accessibility guidelines and reality. Emphasis was put on how existing sites can be improved for all users. These guidelines are still one of the most quoted accessibility resources in Finland.

<http://arkisto.tieke.fi/esteettomyysopas/> (in Finnish)

User organisations representing those visually impaired have produced their own guidelines, again largely based on WAI recommendations. Finnish Federation for the Visually Impaired, Library for the Visually Impaired and Arla Institute have developed joint guidelines: they emphasise the benefits of accessibility to all users, however, the focus of their work lies within the needs of those visually impaired. Their guidelines have been developed in particular for accessibility testing of existing websites.

<http://www.nkl.fi/tietoa/esteettomyys/testohje.htm> (in Finnish)

In 2006 Hypermedia laboratory at the University of Tampere has published a comprehensive web accessibility online resource. The resource outlines different user needs and situations as well as regulations and recommendations related to web accessibility. The user can browse the site from three different points of views: those of planning, production and evaluation.

<http://matriisi.ee.tut.fi/saave/index.html> (in Finnish)

University of Jyväskylä produced guidelines and online course material in 2003 that focus on the accessibility of web content, instead of technologies. The user can follow different paths through the guidelines, e.g. all content, evaluation of accessibility or content relevant to writers of web content. They can also create their own path according to their specific needs.

<http://appro.mit.jyu.fi/essikurssi/> (in Finnish)

### 6.5.3 Academic surveys

Interest in academic research on web accessibility has grown during the last few years. Thesis work completed in various universities has so far had a focus on development of tools for accessibility testing. See <http://dfasuomi.stakes.fi/FI/DFA+tieto/Tutkimus/tutkimus.htm#verk> to check details in academic surveys done. Even if most of the surveys are published in Finnish many of them include abstracts in English.

Pekka Hanelius tested the accessibility of websites of Finnish ministries and the Finnish government in his graduation thesis for the University of Art and Design Helsinki UIAH and the Medialab in 2003. The survey included total 14 public sector websites. Accessibility level varied strongly but at the time none of the websites scored WAI A-level. No research results exist of the present accessibility level.

#### 6.5.4 Quality to the web service

The Quality to the web service is an initiative of the Ministry of Finance in Finland. The first generation service was completed in 2004. The second generation service is currently under development and the updated service in Finnish and Swedish should be completed during spring 2008.

The Quality to the web service is published under the suomi.fi portal, access to the service is from the main page. Suomi.fi portal is a website providing information on and access to public services in Finland and aimed at citizens to ease the running of their everyday life. The service is in Finnish, Swedish and English. For the service in English see <http://www.suomi.fi/suomifi/english/index.html>. The portal conforms with W3C-WAI guidelines.

The Quality to the web service includes the following sections: quality criteria; recommendations and guidelines; suomi.fi information and suomi.fi network. The quality criteria are intended to act as a tool for assessing and developing public web services. At present 40 quality criteria have been drawn up in a cooperation project set up by the Ministry of Finance, with representatives from ministries, government agencies and government departments, local authorities and user organisations. The Suomi.fi editorial team, which is based in the Government Information Management Unit at the Ministry of Finance, is responsible for developing the criteria. Accessibility issues are integrated in all sets of quality criteria rather than taken up separately: use of web services, content, management, production, benefits. There is also a separate evaluation tool associated with the criteria.

For more on the Quality to the web service in English see:

<http://www.suomi.fi/suomifi/qualitytotheweb/index.jsp>. Please note that information in the Finnish language service is more extensive e.g. on recommendations and guidelines:

<http://www.suomi.fi/suomifi/laatuaverkkoon/index.jsp>.

An example of broad-based recommendations influencing accessibility of public web services is JHS 129 - Principles for planning and implementing public administration web services. The JHS recommendations have originally been developed by the Ministry of Internal Affairs, but the responsibility of their development is now with the Ministry of Finance, starting January 2008. The Public Administration Recommendations (JHS-recommendations) provide information management guidelines for public administration (both governmental and municipal). A JHS-recommendation can be a uniform procedure, definition or instruction to be used in public administration.

## 6.6 Greece

Following the launch of the eEurope initiative and the consecutive eEurope 2002 and eEurope 2005 Action Plans, a number of benchmarking activities with regards to ICT in Greece have been carried out over the last 5 years in Greece. All national activities related to ICT, eAccessibility and eInclusion have been initiated following the launch in 2002 of the Operational Programme "Information Society" of the 3rd Community Support Programme (Secretariat for the Information Society, Hellenic Ministry of Economy and Finance) in the domains of: Education and Culture, Health, Employment, Public Administration, Telecommunications. The Programme financially supports most of these activities.

### 6.6.1 Promoting e-inclusion and e-accessibility

In that respect, the first major national benchmarking activity was carried out as part of a study conducted by the University of Crete in 2004, entitled: *Universal Access and Equal Participation of people with disabilities in the Information Society*<sup>28</sup>. The study was carried out in the context of the Operational Programme "Information Society" (<http://www.infosoc.gr/infosoc/en-UK/epktp/>) and laid out the framework for current activities promoting e-inclusion and e-accessibility. The study provided a thorough account of the status of policy and legislation, education, technological development and availability of services related to people with disability in Greece. It provided recommendations towards the formulation of a national policy on the advancement of an inclusive Information Society. A thorough examination of the accessibility of public web sites in Greece was conducted. The accessibility check was carried out in the form of an automated manual checking of 255 public web sites, including websites of Ministries, schools, universities and research institutions, hospitals, online portals, news portals, libraries, online shops. The results were analysed according to the W3C-WAI web content accessibility guidelines (W3C-WCAG 1.0). The overall results of the study illustrated that 79% of the web sites were totally inaccessible, 20% were of medium accessibility (WCAG level A) and only 1% were of high accessibility (WCAG level AA and above).

Moreover, as a follow up of the above activity, a new study on the accessibility of public web sites in Greece was conducted during the course of 2007, by the Institute of Computer Science of FORTH (<http://www.ics.forth.gr>), for GR-DeAN (<http://www.e-accessibility.gr>), the Greek EDeAN network. This study examined the accessibility level of the same 255 web sites, aiming to compare results and assess the possible impact of policies promoting web accessibility in Greece three years after the publication of the study. The results were disappointing: Only 1,5% of the web sites examined report a high level of accessibility (above WCAG level AA), whereas 22% reported medium accessibility (WCAG level A) and 76% were inaccessible.

### 6.6.2 Observatory for the Greek Information Society

Benchmarking activities are carried out on a regular basis by the Observatory for the Greek Information Society (<http://www.observatory.gr>). The Observatory was set up in 2004, under the supervision of the Ministry of Economy & Finance and the Ministry of Interior, Public Administration & Decentralization in order to:

- a. collect and assess quantitative and qualitative data on issues related to the Information Society in Greece
- b. compare data and assess national progress made towards the Information Society
- c. diffuse best practices
- d. conduct relevant studies and,
- e. contribute to the policy formulation processes to the Greek Government and any other party interested.

<sup>28</sup>[http://www.infosoc.gr/NR/ronlyres/0B306F9C-A819-4F96-ABB1-A21945D1D2B3/1092/final\\_report.pdf](http://www.infosoc.gr/NR/ronlyres/0B306F9C-A819-4F96-ABB1-A21945D1D2B3/1092/final_report.pdf)

Since 2004, the Observatory has created the “eDatabank”, an electronic archive with studies – surveys conducted by greek and foreign institutions as regards the national progress made towards the IS. The eDatabank contains a number of surveys and reports dating from 2001 to present. Moreover, the Observatory is undertaking a number of surveys on ICT indicators in Greece. These surveys are in most of the cases implemented for the Observatory by contracting companies. In that respect, research was carried out among households in Greece as part of a study for determining and monitoring the indicators of the eEurope plan 2005 resulting in the publication of the Study on eEurope indicators in Greece for the year 2005. A similar study on the status of eEurope2005/i2010 indicators in Greece was published by the Observatory in 2006. Since 2004, the Observatory is also carrying out regular six-month reports regarding broadband development in Greece. Main conclusions from the latest report published in February 2007 (4th Six-Month Report<sup>29</sup>) include:

- broadband penetration in Greece amounts to 4,39%, while the increase in broadband connections during the second semester of 2006 reached 65%
- the domestic market shows the highest and most stable increase in the EU-25, with a tendency towards medium-term convergence
- Greece will converge with the EU-25 countries, within the forthcoming five-year period.

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<sup>29</sup> [http://www.observatory.gr/files/press\\_releases/FS\\_BROADBAND%20\\_ENG%20120307.pdf](http://www.observatory.gr/files/press_releases/FS_BROADBAND%20_ENG%20120307.pdf)

## 6.7 Hungary

### 6.7.1 Project: Providing the professional background information to establish the barrier free physical and informatics communication

The following three years programme has been started in Hungary by 1 December 2007. It should last till 31 January 2010: “Providing the professional background information to establish the barrier free physical and informatics communication”. Among others the following activities are supported:

1. Universal and barrier free design
2. Assure access with equal chance
3. Training and further training in sign language use
4. special training courses

On above project I will be able to supply more detailed summary only in the beginning of January, as the project manager will be able to supply the necessary information only in January.

### 6.7.2 W3C Hungarian Office

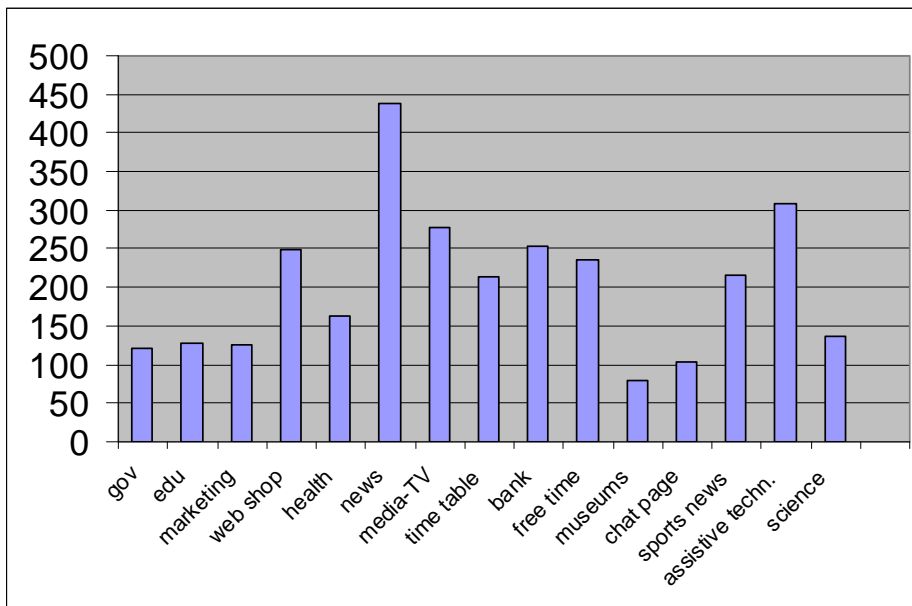
Further on there functions in Hungary a W3C Hungarian Office: <http://www.w3c.hu/>. Task of this office is to provide information on the W3C activities for the Hungarian enterprises and institutions and help them to cooperate in its activities.

### 6.7.3 Validation software

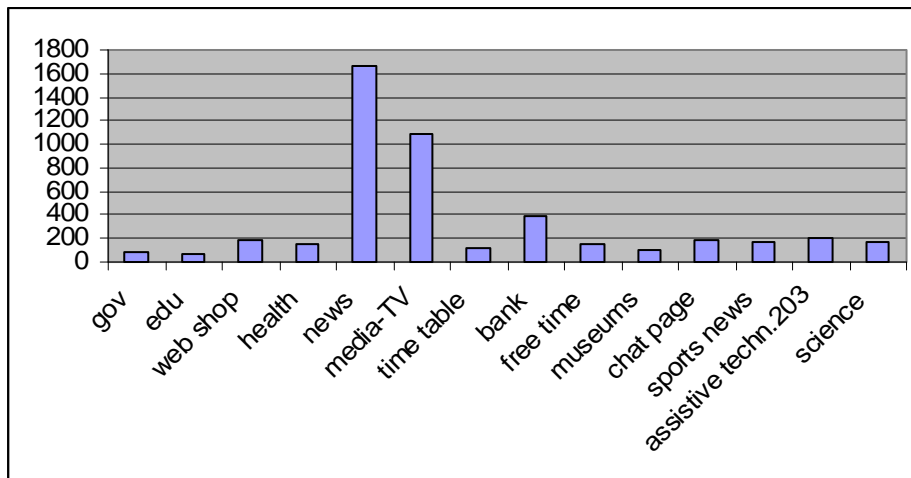
Although the following is not a national initiative, but at the University of Pannonia a validation software has been developed (XValid ) that enables to test for WCAG 2.0. More than 300 web pages have already been tested, for 12 countries.

The following 14 categories have been tested: Journals, Web Shops, Government Sites, TV channels’ , Educational, Commercial, News, Time-tables, Spare time, Museums, Assistive technologies, Chat sites and Sport news, Bank, science web pages.

Number of errors in each category occurring on WEB pages in Europe (WCAG 2.0)



Number of errors in each category occurring on WEB pages in Hungary (WCAG 2.0)



After the statistical analysis we paid attention over the 50% errors. Based on these errors and messages we wrote our 10 points requirements list.

- Based on our research work we provided a 10 point recommendation for the minimal requirement system that a WEB designer has to take into consideration that more than 50 % of the WEB pages should be free of barriers.
- After this 357 WEB pages collected from 12 countries have been tested using XValid validators.
- Based on these tests statistical analysis was made for Hungarian, European and other WEB pages.
- These statistics helped us to determine the most common errors. These have been considered when our recommendations were formulated.

See:

**Sik Lanyi C.**, Forrai S., Czank N., Hajgató A.: On Developing Validator Software XValid for Testing Home Pages of Universal Design, Universal Access in HCI, PART I, HCII 2007, *Lecture Notes in Computer Science, LNCS 4554*, pp. 284-293.

**Sik Lányi C.**, Forrai S., Czank N., Hajgató Á.: Are the WEB Sites Barrier-free, if they are not, how many of the Sites are Barrier-free?, Challenges for Assistive Technology, 9th European Conference for the Advancement of Assistive Technology in Europe, San Sebastian - Spain - October 3-5, 2007, pp. 627-932.

## 6.8 Ireland

There is no formal benchmarking system in Ireland. The Irish government has yet to carry out a survey on the accessibility of public sector websites. However there have been a number of academic surveys and theses carried out in the area, as well as surveys carried out by commercial organisations in Ireland.

### 6.8.1 Academic research

Early academic work was carried out by Dr. Barry McMullin, of Dublin City University in 2002, the Web Accessibility Reporting Project (WARP). This work was carried out using a combination of automated and manual checks. In her 2006 Masters thesis “A Comparative Investigation of the Accessibility Levels of Irish Websites”, Vivienne Trulock took this work, and assessed the same websites as WARP using Dr. McMullin’s work as a baseline.

The following is a quotation from Vivienne Trulock’s thesis:

“Accessibility levels have increased among the 152 sites tested in 2002 during the WARP study. This is clearly indicated by the *automatic testing* compliance results, attained using WebXact online, which have risen from the 2002 levels of 6.3%, 0% and 0% respectively for Compliance Levels A, AA and AAA to 36.2%, 8.6% and 3.3% in 2005.

Further *manual* checks on the same sites indicate that the *actual* compliance levels for 2005 are 1.3%, 0% and 0% for A, AA and AAA Compliance Levels respectively. While over a third of web developers know about accessibility (as indicated by the 55 sites which are compliant with the automatic checks at level A), the automatic checks have become the standard, and fully testing the sites against the WCAG 1.0 guidelines is generally not done.”

This represents the best and most comprehensive academic work carried out on Irish websites.

Trulock, V.: A Comparative Investigation of the Accessibility Levels of Irish Websites, Masters Thesis, Napier University.

[http://www.ilikecake.net/docs/A\\_Comparative\\_Investigation\\_of\\_the\\_Accessibility\\_Levels\\_of\\_Irish\\_Website\\_s.doc](http://www.ilikecake.net/docs/A_Comparative_Investigation_of_the_Accessibility_Levels_of_Irish_Website_s.doc)

ref: McMullin, B. (2002). WARP: Web Accessibility Reporting Project Ireland 2002 Baseline Study. 1-82. [WWW document] URL <http://eaccess.rince.ie/white-papers/2002/warp-2002-00/warp-2002-00.pdf> (Visited 15 March, 2005)

### 6.8.2 Commercial Research

A number of companies have carried out research in the Irish market regarding accessibility. In November 2006, Red Cardinal carried out a survey on the accessibility of government websites. This examined whether they were compliant with WAI standards, and what standard they met. According to the survey, only a small number of websites met the standards requirement at the time.

<http://www.redcardinal.ie/webdev/10-12-2006/irish-egovernment-accessibility-analysis/>

In 2005, Iqcontent produced the eGovernment Benchmarking Report. This was available for purchase from Iqcontent, <http://www.iqcontent.com>.

### 6.8.3 Government Initiatives

In 2006, the National Disability Authority launched the Excellence Through Accessibility Awards:

“The Excellence through Accessibility award scheme acknowledges those Departments and Agencies under their remit that have taken steps to make their services more accessible. Through the Award, the NDA hopes to support the achievement of maximum accessibility of public services for people with disabilities in Ireland.”

<http://www.nda.ie/eta>

These awards work under three criteria:

Access to Quality Customer Services  
Access to the Built Environment  
Access to Information and Communication Technology

The first awards ceremony was held at the beginning of 2007.

The NDA have also produced a set of guidelines for websites that currently require government departments to provide WAI AA accessibility.

## 6.9 Italy

In Italy there is a formal benchmarking system of accessibility of public sector websites.

In the following an official document<sup>30</sup> authored by S. Sintini that describes the evolution of the Italian legislation approach to accessibility is included.

### 6.9.1 Introduction

During 2003, the European year of People with Disabilities, the Italian Government chose to address the topic of eAccessibility through a body of legislative acts which, at the moment, is made up of a Law (No. 4/2004, also known as the “Stanca” Law), containing the general principles, and two Decrees, containing the implementation regulations and the technical accessibility requirements respectively.

This body of laws provides that public services and information should be accessible, that disabled people should be provided with adequate IT working instruments and equipment and the public Procurement of ICT goods and services should always take accessibility into consideration.

This paper will analyse the birth and the development of the culture of eAccessibility in Italy and the positive effects Law No. 4/2004 had on the process of eInclusion.

### 6.9.2 The history of eAccessibility in Italy

The Italian government has always been aware of the importance of the Web as a means of communication. The Italian Presidency of the Council of Ministers was in fact the first government to become officially member of the World Wide Web Consortium (W3C). In order to grant everyone access to the benefits of the upcoming Information Society, following the works of the Web Accessibility Initiative (WAI), many recommendations and directives addressing eAccessibility were produced in Italy since 2001:

- March 2001 - Directive n. 3/2001 by the Ministry of Civil Service: “Guidelines for the organization, the usability and the accessibility of Public Administration Web Sites”.
- September 2001 - Circular Letter by the Authority for Informatics in Public Administration: “Criteria and instruments to improve the accessibility of Web Sites and computer programs for disabled people”.
- May 2002 - Directive by the Presidency of the Council of Ministers: “Information on the use of the ‘.gov.it’ domain”.

These directives either invited Public Agencies to comply with the Web Content Accessibility Guidelines (WCAG) 1.0 or gave specific suggestions on how to develop accessible web pages. Unfortunately though, while these recommendations remained mostly unattended, the associations of the disabled were beginning to claim for their rights.

In order to find a solution to this problem, the Government established an Interministerial Committee (the “Interministerial Committee for the development and the employment of IT for the weak” which involved three Ministries) in May 2002. The studies carried on by these experts produced a White Book on accessibility and suggested that a stronger competence centre on eInclusion needed to be established. Last but not least, the Commission concluded that a law had to be written to address this topic in order to obtain a quick and positive result.

During 2003, European Year of People with Disabilities, the urge to foster the process of digital inclusion was perceived even more clearly. In July a second Interministerial Committee was established, involving seven Ministries this time, whose scope was extended not only to the inclusion through ICT of people with disabilities but also to the eInclusion of the elderly and the disadvantaged.

This Committee was to be supported by a Technical Secretariat which was instituted at the National Centre for Informatics in Public Administration (CNIPA). The Secretariat immediately formed several Working Groups, each of which had to deal with a specific technical issue regarding eInclusion.

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<sup>30</sup> See <http://www.pubbliaccesso.it/english/eAccessibility-Italy.doc>, last retrieved on 2008-02-04.

In the meanwhile, eight bills supported by politicians of various parties in Parliament and the three bills coming from the Senate all merged into a single law which explicitly addressed eAccessibility. The law was voted unanimously in both Houses before the end of the year and published in January 2004.

### 6.9.3 The body of laws on accessibility

#### **Law n. 4, January 9, 2004**

“Provisions to support the access of the disabled to information technologies” is the principal act of the body of laws regarding accessibility. The first choice that was made while it was being written was to separate the general principles from the technical requirements.

Article 1 contains a clear reference to the principles of non-discrimination which are imbued in the Italian Constitution and acknowledges the right everyone has to access to public information and services.

Article 2 provides definitions for the terms “accessibility” and “assistive technologies” while article 3 lists the addressees of this act. To simplify, we could say that those who are involved in the enforcement of the law are all the public bodies and agencies, both national and local. The law also applies to private subjects, if they are concessionaries of public information or services, and to public transport and telecommunications companies.

Article 4 is probably one of the most important since it points out the obligations and duties regarding accessibility and inclusion in the case of public procurement of IT goods and services. In particular, when purchasing ICT goods and services, signing contracts regarding their development and maintenance or carrying out competitive tenders, the accessibility requirements must always be taken into consideration.

At this point there are two different levels of obligation: on one hand, the compliance with the accessibility requirements is mandatory for public Web sites (and in general for Web applications) and whenever private or public subjects draw on public grants for the procurement of ICT equipment and tools explicitly meant for disabled users or workers.

In every other case of competitive tender regarding IT procurement, the administration must simply give preference to the bidder which offers the best compliance with the accessibility requirements in the event of similar technical offers. Public agencies must eventually provide an adequate justification for not taking the accessibility requirements into account or for buying a product that fails to reach compliance.

Any stipulated contract failing to respect such mechanism may be declared null and void and this may also entail both executive responsibilities and disciplinary actions, as well as civil liability provided for by the current anti-discrimination laws (article 9). The most important anti-discrimination act in Italy is Legislative Decree No. 67/2006 “Judiciary measures to protect disabled people against discrimination”, amendment of Legislative Decree No. 196/2003 which mainly dealt with work discrimination.

Last but not least, another important point in this article is the commitment to provide disabled workers with adequate IT equipment in order to allow them to work efficiently.

Article 5 recalls the importance of accessibility in the sector of education including the production of teaching tools, courseware and electronic textbooks.

Article 6 fosters the voluntary commitment of the private sector to this law and articles 7 and 8 assign duties and explain how to support, monitor and enforce the provisions of the law both at national and at local level stressing the need to spread the culture of eInclusion through positive actions and training courses.

Articles 10 and 11 provide for the writing of two decrees containing the enforcement regulations and the technical accessibility requirements while article 12 explicitly reminds that these requirements could be updated and that they should be compatible with and inspired by other relevant national and international recommendations on accessibility.

#### **Decree of the President of the Republic, March 1st 2005, No. 75**

The “Enforcement Regulations for Law 4/2004 to promote the access of the disabled to information technologies.” goes further into the topics regarding the implementation of the provisions of Law 4/2004.

The most important accomplishment of this decree is the introduction the key concept of usability. Web sites must not only be barrier-free but also simple, effective, efficient and they must satisfy the user’s needs.

In order to give visibility to the most accessible and usable Web sites, a national accessibility mark was established along with a list of trusted accessibility evaluators held by the National Centre for Informatics in Public Administration.

Private subjects must necessarily apply for an accessibility assessment made by a member of the evaluators' list in order to obtain the accessibility mark. Public agencies and bodies instead may autonomously assess their compliance with the accessibility requirements and with the provisions of the law, in adherence to the principle of self-government.

### **Ministerial Decree, July 8 2005**

Apart from a few articles giving further details on the implementation of the law, the decree "Technical Rules of Law 4/2004" is mainly made up of annexes which contain the technical Web accessibility requirements, the methodology for the evaluation of Web sites and the requirements for accessible hardware and software.

In order to enforce a law on accessibility which introduced the concept of managerial responsibility, the requirements had to be as clear and measurable as possible. To achieve this goal, the Technical Secretariat of the Interministerial Committee set up several working groups with the aim of writing the technical accessibility requirements.

Since general consensus was probably the most important success factor, the Working Groups were made up of experts coming from 35 agencies and organizations, including Central Government, local Administration, associations of the disabled, developers associations, W3C, and both national and international ICT companies such as IBM, Microsoft, Oracle, Sun, etc...

The primary sources of inspiration for these groups were of course the W3C's Web Accessibility Initiative (especially the WCAG 1.0) and the positive experience of Section 508 of the U.S. Rehabilitation Act. For the requirements to be easily applicable though, only those that were measurable were chosen.

As a result Annexe "A" of the Ministerial decree contains 22 technical requirements regarding Web sites. Compliance with these requirements guarantees an almost full WCAG-AA accessibility level. Annexe "C" has a list of 7 requirements for the accessibility of Personal Computer hardware and Annexe "D" is made up of 11 requirements for software accessibility.

Apart from listing the technical requirements, Annexe "A" also explains how the technical accessibility evaluation should be carried out. In detail:

- It sets which and how many pages in a Web site must be tested for compliance:
- The home page;
- The first level of pages linked from the homepage;
- All pages involving user interaction;
- Samples of response pages;
- A statistical sample (5%) of pages chosen among those not falling into the above mentioned.
- It provides a list of further checkpoints:
- The content and the functionalities of a page are the same in different browsers;
- the presentation of a page is similar in every browser that supports modern Web technologies;
- the contents and functionalities of a page are still usable when images are not displayed;
- the contents of audio files are also available in a text version;
- the contents of a page are usable when the functions of the browser used to define the size of the characters are operated;
- the page is browsable even using the keyboard alone;
- the contents and functionalities of a page are still usable when style sheets, scripts and applets and other objects are deactivated;
- all contents and functionalities are still available even if read through a textual browser.
- It explains how to draw up a final accessibility report;
- It suggests a list of helpful testing tools.

Due to the flexible nature of the Decree, the technical requirements could be updated whenever relevant changes should occur in the national and international eAccessibility scene. This will probably happen when the WCAG 2.0 and the ISO accessibility recommendations shall be released.

#### 6.9.4 Monitoring the enforcement of the Law

##### Institutional duties

Law 04/2004 assigns the duty to monitor the enforcement of the Law to the Presidency of the Council of Ministers (Department for Innovation and Technology) and to CNIPA. This applies especially to central public agencies. These two agencies must also trace the accessibility criteria for the development of IT systems in public administration, and introduce the issues relating to accessibility in public personnel training programs.

On the other side, the Regions, the autonomous Provinces and Municipalities are responsible for the enforcement of the provisions of the law by local authorities. What is happening is that many Regions are now establishing their own competence centres in order to support the effectiveness of the Law on a local level through positive actions and training programmes under the coordination of CNIPA.

CNIPA also plays an important part in monitoring the enforcement of accessibility policies in the processes of public ICT procurement. One of its institutional duties is in fact to give advice on any relevant public ICT project or contract signed by central agencies.

Taking such advice is compulsory but not binding and one of the checkpoints is the compliance of the project with government laws, directives and policies. Other checkpoints include:

- Comparing the project with the priorities and goals of the administration;
- Assessing the internal coherence with other projects of the administration;
- Comparing the project with similar initiatives by other administrations;
- Updating the solution to the state of the art.

During 2006, 15 major procurement projects (worth 71 million Euros) were assessed to evaluate or improve their compliance with the Laws on accessibility. These projects, carried out by 10 different central administrations, were mostly relative to Web sites and hardware procurement.

#### 6.9.5 The importance of a “culture of accessibility”

Since the Law and the Decree with the technical requirements came into force, the attitude towards the issue of web accessibility has begun to improve slowly but steadily. Public agencies are now more sensitive to the problem and many of them are planning to modify, or have already updated, their institutional web site and their online services.

The compulsiveness of the legislative approach had of course an influence on this process but it would not have been so effective if it hadn't been supported by a strong campaign of information, training and sensitization.

CNIPA, the Italian International Webmasters Association (IWA) and many Public Agencies and Universities have organized and taken part in several seminars, events and workshops on accessibility, always meeting the interest of many actors of the public ICT scene.

CNIPA has also set up three training programs on web accessibility, each one of which is targeted specifically to chief officers, editors and webmasters of public web sites. The courses are already at their third edition and the plans are now to replicate this successful experience at local level through Regional competence centres.

An incredibly efficient and cost-effective way to increase the quantity of accessible Web content is to help the smaller agencies and branches of central institutions in standardizing their Web sites. For example, the Ministry of Foreign Affairs has provided every Italian Embassy with a standard, accessible Web template, the Ministry of Cultural Heritage and Activities has developed a Content Management System for small museums and libraries, the Italian Drivers Association is providing its Provincial branches with a standard Web site and the Ministry of education has set up a very interesting and successful project called “School and Services” with the aim of providing thousands of schools all across the nation with tools and training courses to ease the development of accessible and usable Web sites.

A strong incentive has also come from the diffusion of the Italian web accessibility mark (see Fig. 1) on public Web sites. Public Agencies that have positively passed the technical accessibility test and want to bring out their commitment to the cause of e-inclusion, may report the result to CNIPA and add the “accessibility logo” to their home pages.

For this purpose CNIPA set up and runs a database containing all the information relative to the web sites which currently display the logo and up to now (mid 2007) almost 70 web sites belonging to central and local bodies have registered. The figures regarding accessible web sites are even more encouraging though (a few hundreds) if we include those that are not interested in displaying the logo and those that are very accessibility-oriented even if they are not fully compliant with the requirements.

CNIPA is also carrying out, for the second year, a monitoring action over tens of central administration Web sites to assess their compliance with the law and to aid and coordinate their adjustment thanks to the collaboration of some of the most skilled Italian web developers.

### **6.9.6 Conclusions**

Italy may not have been the first country to concretely face the issues of accessibility and eInclusion but a series of positive factors have determined a rapid and surprising shift in public opinion over the last few years.

A great thrust was surely given by the positive influence of the Year of People with Disabilities and by the will of many Members of Parliament and of the Government (especially Minister Stanca) to find a solution to the lack of self-commitment to the cause of eInclusion.

There is no doubt that the body of laws on accessibility has proved to be a valid measure thanks to the straightforward nature of the accessibility requirements and to the general climate of consensus in which they were set.

Nonetheless the most effective success factor seems to be a cultural approach to the issue of eInclusion. Often disabled people are subject to passive discrimination only because of the lack of knowledge in the field of the interaction between disability and information technologies.

Spreading the culture of accessibility through events, training courses and aiding toolkits probably proved to be the easiest way to change obsolete and non-inclusive ICT processes.

Only facing this challenge with an adequate culture and stock of knowledge, the benefits of the Information Society shall truly be delivered to all.

## 6.10 Malta

### 6.10.1 FITA Web Accessibility Audits

The Foundation for Information Technology and Accessibility (FITA) has the assistive technology, know-how and computer equipment required in order to provide a review and assessment service for both websites and software applications. Although FITA is free to assess any one product or service upon its own initiative, material can be also submitted for appraisal directly by the service provider. The resulting report will contain guidelines and suggestions as to where improvements can be implemented and how.

FITA's service provides assistance in ensuring compliance with the legal obligations enforced by the Equal Opportunities Act (for Persons with Disability). It is now common knowledge that the ease of use and clarity demanded by persons with disability, very often benefits all members of society and makes for a better and more popular service or product.

FITA reviews main service providers' websites, including government ministries, newspapers, banks, corporate entities and internet portals. If you wish to verify whether your website incorporates basic accessibility criteria you may download the FITA Web Accessibility Guidelines via <http://www.knpd.org/mittsfita/dokumenti/webpages.doc>.

Web Accessibility Audit Categories are priced as follows:

A - Lm25 inclusive of one review and one certification audit

B - Lm40 inclusive of one review and one certification audit

C - Lm60 inclusive of two reviews and one certification audit

Certification expires one year from date of successful audit.

FITA maintains a list of the web sites on which it carries out accessibility audits. A subset, made up of the accessible web sites, is made available via [http://www.knpd.org/mittsfita/dokumenti/web\\_access\\_audits.pdf](http://www.knpd.org/mittsfita/dokumenti/web_access_audits.pdf), so that service providers can get an idea of how to go about presenting information on the Internet, whilst ensuring it is easily accessible to all potential users.

FITA also contributes suggestions towards software applications developed through the Management Information Technology and Training Systems Limited. Other local software developers can contact FITA and avail of this service. We also researched and compiled a set of general guidelines on making information accessible. The mediums covered range from printed paper to audio tape and video.

(Link: <http://www.knpd.org/mittsfita/consultancy.htm> and <http://www.knpd.org/mittsfita/assessment.htm>)

b) Methods and criteria

FITA's Web accessibility document is intended to help all service and information providers, to carry out a self-evaluation exercise focusing on accessibility of Web sites to people with disabilities. We hope that this challenge will be met with enthusiasm, by people willing to evaluate the strengths and weaknesses of their Web pages and developing strategies for making this resource more accessible to everyone.

Different communities of people with disabilities experience different barriers to access when using Web pages:

- People who are blind and who use screen readers may require that all non-text items (such as pictures, charts, and graphic elements) have text alternatives.
- Users with cognitive disabilities and those who have visually-induced seizure disorders may require content without flashing or distracting elements.

Generally, removal of barriers on Web sites is simply a matter of good design. It also benefits others, such as those who use low-end technology with lower modem speeds and people who use wireless Internet connections.

The focus of self-evaluation of the accessibility of Web pages involves answering the the objective format questions in the Web Accessibility Checklist.

However, there is also a subjective-form of self evaluation that requires designers to view each of their evaluated Web pages using a text-only browser. Using a text-only browser such as Lynx, (a public domain text browser that is available at <http://lynx.browser.org>) as an evaluation tool is intended to have nondisabled users experience -- to some degree -- what a person using a screen reader or refreshable Braille display would experience when accessing those same Web pages.

One can also test web page accessibility using utilities other than the public domain Lynx browser. Many individuals use the interactive Web accessibility evaluation tool "BOBBY," which is provided and maintained by the Center for Applied Special Technology (CAST). Others evaluate their Web pages using IBM's Home Page Reader.

In addition, as part of the overall assessment, entities must evaluate the accessibility of their Web pages as a whole and describe any changes that they intend to implement in order to address any accessibility problems they encounter and thus improve their service.

This effort by FITA has created some very tangible results. For instance, FITA has reviewed 123 websites in 2002, out of which 113 were certified as accessible, 2 as Partially Accessible and 8 as inaccessible. The partial list of reviewed websites and their results can be found via [http://www.knpd.org/mittsfita/dokumenti/web\\_access\\_audits.pdf](http://www.knpd.org/mittsfita/dokumenti/web_access_audits.pdf). However it is important to note that this effort has helped immensely to raise awareness among local web agencies about design for all issues.

### 6.10.2 Public Service Websites Framework

The objective of the Public Service Websites Framework is to identify factors and issues related to the Websites of the Public Service of the Government of Malta (Public Service).

The document aim aimed to set the direction towards consistency in Public Service Websites from a management and technical perspective. In this regard, it seeks to indicate areas where Policies, Standards and Directives are already in place in support of e-Government.

The Public Service Websites Framework shall serve as an initial reference point for management within Ministries and Departments, Website developers and practitioners with respect to design, development, implementation, hosting and maintenance of 'gov.mt' Websites. Agents of Government and local private sector organisations contracted for the development and/or hosting of related Websites shall draw upon the Public Service Website Framework and the related Policies, Standards and Directives of CIMU.

Link: (<http://ictpolicies.gov.mt/docs/CIMU%20T%200002%202002%20v2.0.pdf>)

The creation and the upkeep of a Public Service Website calls for effective management:

- at a strategic level. This implies understanding the needs of the beneficiaries of the Website whilst aligning with Government's objectives and strategic direction
- of the Website content, to ensure that the information is accurate and up to date
- through audits of performance and maintenance of the Website
- through a Website team, led by a Site Manager. This team is expected to ensure that the latter three objectives are met.

The need for Website management is particularly necessary, given that Government is encouraging the outsourcing of Web services to its entities. Outsourcing, does not in any way exonerate a Public Service entity from responsibility of its Website – which ultimately reflects its image and Government's image to the outside world.

A critical element of an effective Public Service Website is good content – i.e. content that is authoritative, well written, clear, concise and up to date. A number of criteria are seen to reach this objective at the design stage of the Website. They provide direction in terms of:

- language availability

- information and documents on-line
- Web page contents
- feedback and contact facilities
- official logos and e-Government branding
- other information requirements that may effect a service
- accuracy of information.

The content of a Public Service Website needs to be conformant to Maltese legislation and to Government's national objectives. This calls for a number of advice and measures that need to be taken into account. They relate to:

- accountability
- data protection
- equal opportunities
- electronic commerce requirements
- copyright issues
- archiving requirements
- advertising and Website links
- discussion forums

Reference is made to internationally recognised standards and recommendations to facilitate the design process of a Website. The World Wide Web Consortium (W3C) shall be the key reference point. In this respect:

- Reference shall be made to W3C's design principles;
- Content shall be available in a standard HTML format and browser compatibility shall be considered at all times;
- Web Access Initiative (WAI) - Level A (Priority 1) recommendations shall be applied as a minimum.

As regards Web browsers, it is expected that all Public Service Websites render properly with Microsoft Internet Explorer, Version 5.5 as a minimum - as established on the Office Automation Standard Software Products at <http://www.cimu.gov.mt>. However it needs also be kept in mind that the public may avail of browsers which may vary in functionality, release version and targeted usability. Therefore as much effort as possible shall be made for Websites to be useable also on such browsers.

A number of technical features are given so as to:

- enable the design of a Website in terms of navigation, display, accessibility and use, whilst considering the standards highlighted above
- ensure good development coding practices

Third party Web hosting service is defined as the process by which a local private sector organization furnishes a Public Service entity with a Website presence. The Third party Web hosting services Policy (CIMU P 0012: 2003) conveys Government's invitation to the local private sector in this regard. It also calls for a high quality of the service to be provided. This is backed by a number of conditions, including conformance to European based and internationally recognised standard MSA ISO EN 9001:2001 Quality Management Systems. The Third party Web hosting services Security Policy (CIMU P 0013:2003) looks in particular, at the physical and logical information security aspects expected of the service to be provided. One of its conditions, also calls for conformance to another European based and internationally recognised standard MSA BS 7799 Part 2:2003 – Information security management.

### 6.10.3 Malta Information Technology & Training Services Ltd Web Framework Development and Deployment Policy

The MITTS Ltd Web Framework is a centralised platform that hosts a number of critical e-Services for the Government of Malta. It is the aim of this policy to ensure that all software applications and/or components implemented on this environment meet a set of specified criteria with the main purposes of maximising uptime and providing a smooth, uninterrupted and reliable service to all clients of the Web Framework. (link: <http://ictpolicies.gov.mt/docs/CIMU%20T%200002%202002%20v2.0.pdf>)

1. All Web applications must conform to the Web Framework's architecture. All new Web applications must target the Windows 2003 platform. All development and testing of new Web applications and their related components is to be carried out on this operating system.

- A Web application is defined as new if it does not make use of any of the following items of an existing Web application: static pages, application logic, components or media, such as documents and images.
- A diagrammatic representation of the Web Framework can be made available by MITTS Ltd upon request on condition that the Solution Provider regards this as confidential information that is not to be disclosed to parties other than the Solution Provider and that it is used for the sole purposes of assisting the Solution Provider in the formulation of a proposal and/or the development of a Web application resulting thereof.

2. MITTS Ltd's Core Technology Unit (CTU) must review the logical and physical architecture and design of all new Web applications, or amendments to existing ones, prior to commencement of any development.

3. MITTS Ltd's CTU may request rectification, within a period of six (6) months or less (the 'Cure Period'), of any Web application that does not comply with the Web Framework Policy or which is deemed by CTU to be adversely impacting the overall performance of the Web Framework. The Cure Period shall be established by CTU at its sole discretion upon assessment of the severity of such impact. MITTS Ltd reserves the right to suspend the hosting of any Web application that has not been rectified in accordance with its request.

4. The MITTS Ltd Quality Assurance Unit must certify all new Web applications and/or amendments to existing ones, excluding static content.

5. A version control mechanism will be applied to all application constituents submitted for deployment.

6. Deployment on the Web Framework is always to be carried out by MITTS Ltd personnel via a staging mechanism. No more than 3 updates of binary constituents per week and 1 daily update of static content are allowed on the Web Framework, each governed by a 24 hour lead time.

7. Updates submitted to MITTS Ltd for deployment will be published within 8 hours of these updates having passed any necessary testing procedures.

8. All new applications and components must include a working installation procedure. If data needs to be preloaded into the database before live use of the application, this data must be provided, accompanied by all relevant SQL scripts.

9. It is mandatory that the Solution Provider makes use of the Web Framework Core Library. Functionality provided by the Core Library is not to be recreated independently.

10. The Core Library is to be made available by MITTS Ltd to all Solution Providers, upon signing of a Software License Agreement governing the use of the Software. The use of the Core Library must be discussed and agreed with MITTS Ltd prior to the commencement of development of the solution.

11. Client side scripting must be kept to an absolute minimum when developing Web applications/sites. The client side scripting model adopted must be supported by the major Internet browsers. The MITTS Ltd Quality Assurance Unit will challenge any client side scripting which may be deemed unnecessary.

12. Any server side scripting for all new Web applications must be carried out using ASP.NET. In addition, all new server side components (for new Web applications) must be written to the .NET specification. Where .Net development skills shortages exist, development of applications in ASP and components in COM+ must be agreed upon with MITTS Ltd prior to commencement of any development.

13. The source code of all binary constituents to be deployed on the Web Framework must be made available for examination by the MITTS Ltd Quality Assurance Unit. For those components that originate from third

party organisations apart from the Solution Provider and for which the source code cannot be made available, details of

the origin of these components must be provided and the components themselves must be digitally signed either by the third party or an internationally recognised organisation.

14. Access to data is only allowed through a component via the Web server, with no other types of access being allowed. Where the Core Library provides access to the database, all interaction must be affected through the relevant methods in the Core Library, namely `WfSqlDataPump (Mitts.Webframework.DataAccess)`.

15. Access to Web servers will only be possible via standard applications and/or services that listen on ports 80 or 443, i.e. via http or https. If a Web application's database is hosted on the Web Framework's database servers, access to this data by the Web master can only be achieved via a Web-based content management system

separate from the Web application/site intended for public use. Direct client-server access to the data is not allowed on the Web Framework. The development and hosting of Content Management Systems are also governed by this Policy.

16. Where applicable, application authentication to databases must be delegated to the relevant operating system.

17. All .NET applications will be localized, i.e. they will not be registered in the global assembly cache.

18. IIS session handling is to be affected via SQL Server.

19. No application specific configurations are allowed to be stored outside SQL Server. For those configurations that cannot be accommodated by the Core Library tables (`TBL_table_name`), agreement for this must be reached with MITTS Ltd beforehand.

20. Inter-page linking must be relative within the application scope.

21. Unless significant proof is provided that the application requires long-running transactions using transactions

across multiple domains, the use of Enterprise Services (ES) and Microsoft Distributed Transaction Coordinator (DTC) by applications is prohibited. Any use of ES and DTC must be agreed upon with MITTS Ltd.

22. Any sensitive data must not be stored in clear text.

23. The generic user account for Web access (`IUSR_machine_name`) is only allowed read access on the application's folder on the file system and does not have any other permissions whatsoever. Furthermore, any users in the Administrator group must not be personified.

## 6.11 Norway

### 6.11.1 Assessment of public web sites

Quality testing and labelling of public web sites started in 2001, when the first set of criteria was developed. The criteria have been continuously revised, and since 2004 a systematic assessment of public web sites has been carried out. The assessments are carried out by Norway.no, a public agency subordinate to the Ministry of Government Administration and Reform.

One of Norway.no's main tasks is to act as a portal to the public sector in Norway by organizing public information and by accessing public services for the public. The project "MinSide" (MyPage), offers one common login for all the public sites behind the portal.

The testing is done manually, with the aid of different assessment tools as the free WebAccessibilityToolbar. The last few years nearly 700 public sites have been tested every year.

The testing criteria have been revised more or less every year and the requirements have become increasingly stricter. The criteria are divided into 3 main groups;

- Accessibility (12 indicators)
- Usability (13 indicators)
- Content (7 indicators)

The overall result for each site is converted into a rating system from one to six stars.

Accessibility: Public web sites should be accessible for all.

Usability: Public web sites shall present information and services in a way that makes navigation on the site easy. This includes making it easy to find and make use of the resources on the site.

Content: Public web sites should have content that implies easy navigation for the user. The user shall be given basic information on their rights, obligations and possibilities. The sites should make the most of the technology in means of interaction. The services should stimulate and make response from the user easy to carry out, and generally invite the user to have a dialog with the owner of the site.

On releasing the results from the yearly assessment, Norway.no arranges a conference. See 3.8.2.

The response from the assessed public sites is that the labelling system act normative to their further development of their sites. 52% of the respondents had made improvements to their web site according to the 2007 assessment.

There are also quite clear indications that organizations making a bad outcome in the assessment tend to make an effort to come stronger back next year.

### 6.11.2 Best public websites awards

Every year at the end of the assessment period (end of November), Norge.no is hosting a conference, where politicians, web developers, public site owners and media are invited to receive the result from the years assessment. Also at this conference, awards for best municipal website, best governmental website, best web service and the most accessible website is handed out.

Norge.no nominates websites in the different categories on the background of the recent assessment. The nominees are estimated by a jury consisting of members from private and public enterprises. The jury does have the freedom to choose a website that is not perfect in every means, but the winner should present something unique in its category. Following the awards is also a statement from the jury which addresses both strong and weak aspects of the awarded websites.

The conference and awards get attention in media, among owners of public websites and in the web community.

There are quite clear indications that these awards are considered quite prestigious in the web community in Norway, and that the rewarded websites are scrutinised and acts as cases of best practice.

### 6.11.3 Guidelines on accessible websites

To support the Norwegian goal of accessible websites, the Delta centre has produced a series of 3 guidelines on accessible websites; the last one issued November 2007.

The guidelines have been issued in 3 parts, aiming at somewhat different target groups.

- Overview and production of content – for content providers, students and for persons with general interest in accessible websites
- Design and coding – for designers and personnel with more technical background
- Procurement and quality criteria - for public and private procurers, website owners and persons responsible for accessibility.

The production has been done in cooperation with Norway.no and the accessibility criteria from their assessment are used as basis for a suggested accessibility specification for procurement purposes.

The guidelines represent a concentrated overview of web-accessibility and links to web resources. The guidelines can be downloaded or can be ordered for free in printed version.

There are clear indications that the guidelines are used, as the Delta centre receive positive feedback referring to the use of the guidelines. Demand for printed versions has also been satisfactory. This indicates that the guidelines represent an easy way to achieve information on accessible websites, which should lead to more attention and better performance over a period of time.

### 6.11.4 Standards and guidelines on ICT

The Norwegian government is proposing a new law against the discrimination of people with impairments winter/spring 2008. The law will cover both private and public sector, and demands Design for All (DfA / Universal Design) principles as a means to ensure access to products and services offered to the public. This has made it imperative to define how DfA principles may be implemented in ICT-based products and services to ensure accessibility.

The trend in Europe is to use functional or generic terms in legislation and to use standards and guidelines to support legislation in terms of defining the more technical requirements at lower levels. When laws are independent of contemporary technology, the need for revision becomes less frequent. This also describes the Norwegian approach.

The challenge consists of “translating” DfA-principles into comprehensive and measurable criteria, as DfA is more of a methodology and approach, than concrete and measurable products.

The Ministry of Government Administration and Reform has taken the initiative to establish a project that shall:

- Describe state of the art in Norway regarding standards, guidelines etc. that can support the enterprises owning and developing ICT –solutions affected by the law.
- Point out areas that are poorly covered by standards etc.
- Take steps to establish standards, guidelines etc.

The result will be to have means of communicating how DfA principles shall be implemented into ICT products and services to achieve accessibility. It will presumably also be necessary to try some cases before a court of law to establish precedent, as there must be expected dispute if solutions may be regarded accessible after DfA principles or not.

The intended impact will be that public and private enterprises have standards and guidelines on how to achieve accessible ICT solutions. The government will have criteria to assess ICT solutions.

### **6.11.5 Indicators on accessibility**

The Ministry of Labour and Social Inclusion (LSI) was responsible for the development of accessibility indicators in all areas in the society. In October 2007 the responsibility moved to The Ministry of Children and Equality. LSI gave in the summer 2007 the Delta Centre the mandate to coordinate the development. The Delta Centre was also asked to map and describe the ongoing work in the area of indicators in Norway and to suggest relevant contributors to the further work on developing accessibility indicators. In addition to this the Delta Centre was asked to establish a forum for all existing and possible future agents in the field. The accessibility indicators will be based on the Governments aim on grounding all their work on equality and the principles of universal design.

Developing accessibility indicators is the responsibility of each ministry. That implies that indicators on transportation are the responsibility The Ministry of Transport and Communications and indicators on man-made outdoor areas are the responsibility of The Ministry of the Environment, for example. In some areas the work has started, whereas in others it has not.

The coordination of the work includes ensuring that all sectors are covered, that there is no overlap between the sectors, that the terminology is consistent, and that sectors having experience may guide the late starters.

The intention of the work is to have indicators to document the status and the development within the area of accessibility in the society. The indicators should also support the work and implementation of a law against discrimination of people with disabilities. The law is due end 2008.

The long term impact is to have a tool to document development in the area of accessibility and contribute to a more accessible society for all.

## 6.12 Slovak Republic

In the Slovak Republic there is a governmental regulation “Standards for information systems of public administration N. 1706/M-2006“ from 1st August 2006

Standards are in the areas like for example: eAccessibility standards, standards for one-term electronic data interchange, standards for terminology of electronic services, safety standards, technical standards, data standards etc.

For Web page accessibility Compulsory standards are:

a) compliance with guidelines of accessible web with priority 1 from „Web Content Accessibility Guidelines 1.0“, namely articles: 1.1, 1.2, 1.3, 1.4, 2.1, 2.2, 3.5, 3.6, 4.3, 5.1, 5.2, 6.1, 6.2, 6.3, 7.1, 9.1, 10.4, 11.4, 12.1, 12.4, 13.6, 14.1 and article 8.1 in the case if functionality is important and it is not presented on other site,

b) compliance with guidelines of accessible web from document „Principles of web accessibility for users with severe visual impairments“, namely articles: 5, 7, 9, 10, 11, 13, 14.

Compulsory effective from 1.8. 2008

Recommended requirement is compliance with accessible web rules with priority 2 and 3 from document „Web Content Accessibility Guidelines 1.0“, namely next articles: 1.5, 3.1, 3.2, 3.3, 3.4, 3.7, 4.1, 4.2, 5.3, 5.4, 5.5, 5.6, 6.4, 6.5, 7.2, 7.3, 7.4, 7.5, 8.1, 9.2, 9.3, 9.4, 9.5, 10.1, 10.2, 10.3, 10.5, 11.1, 11.2, 11.3, 12.2, 12.3, 13.1, 13.2, 13.3, 13.4, 13.5, 13.7, 13.8, 13.9, 13.10, 14.2, 14.3.

References to standards, rules and other sources:

a) Slovak translation „Web Content Accessibility Guidelines 1.0“, placed on public web page

b) „Guidelines for creation of accessible web.“, placed on public web page,

c) „Principles of web accessibility for users with severe visual impairments“, placed on public web page.

### 6.12.1 Activities

The Project Blind friendly web provides a source of information (in Slovak language) for experts, general public, and other stakeholders on web access conditions, particularly applicable to the Slovak visually-impaired internet users. Project started as a spin off of ICT training for users with visual impairment. The experience gained during this ICT courses for visually-impaired users shows that it is necessary to adapt websites to needs of visually impaired users.

The main goal of the project is to encourage webmasters to make their sites accessible (at best not only) to visually-impaired users.

By providing a gateway to accessible websites, the Project allows visually-impaired users to take advantage of at least those sites that comply with the blind-friendliness criteria.

The main document of the project is called “Materials on principles of web accessibility for users with severe visual impairments” and is intended for webmasters who want to create accessible web pages. This document is available at: <http://www.blindfriendly.sk/index.php?room=2>

Project activities:

1. Mapping of accessible web pages and adding them to the catalogue “Blind Friendly”.  
<http://www.blindfriendly.sk/index.php?room=4>
2. Creation and updating of methodology guidelines for web designers.
3. A list of interesting links to information sources on websites that deal with creation of barrier-free web.
4. Creation of a check-list for testing websites for accessibility to visually impaired people.

More information on the Blind friendly project is available at <http://www.blindfriendly.sk>

The BlindFriendly rules are also involved in the competition for the best self-government web site Zlatý Erb – Golden Crest <http://www.zlatyerb.sk/>

### 6.12.2 Competition Zlatý erb – Golden Crest

The aim of this competition is to encourage the use of the Internet for provision of information by the local government bodies and departments and online presentation of Slovak towns and municipalities in support of their further development. The annual competition is announced by Union of Slovak cities and Civic association eSlovakia under the auspices of prime minister, chairmen of National Council of the Slovak Republic and Ministry of economy, Ministry of transport, posts and telecommunication and Member of the European Commission.

This competition is announced for the local government bodies, the main prize of the competition, will be awarded to the winners of the following three categories:

- a) self-governing regions
- b) cities, cities districts
- c) villages

#### Competition criteria:

- a) Test for response on request for information
- b) Compulsory information according to law n. 211/2000
- c) Recommended information
- d) Supplementary information
- e) Web page navigation and well arrangement
- f) Test for information search speed
- g) eAccessibility
- h) Innovative added value
- i) Auxiliary services
- j) Technical accuracy

### 6.12.3 EuroCrest Contest 2008

Best of the web sites: European competition of towns and communities

The aims is to reward excellence and promote the exchange of best practice, to highlight the efforts made by European local administrations in using Information Society Technologies to improve the quality and accessibility of their public services and to speed up the development of on-line administrative services in Europe.

#### Subject of the contest

The focus of the contest EuroCrest is on

- Exploitation of information and communication technologies as a tool of intensification of democratic mechanism especially in these areas:
  - a) Transparency in decision making by elected authorities
  - b) Degree of opening to the public
  - c) Extent of public participation in preparation of decision making influencing everyday life of the municipality
- Level of the delivery of information and services to citizens and businesses (the four-stage model adopted for eEurope's benchmarking of eGovernment services to citizens and enterprises: Information–Interaction–Transaction–Integration).

#### Participants of the contest

The contest is open to all European towns and communities; it is under consideration to create two categories according to population there.

Organizers of the contest

Announcer of the contest is the Golden Crest Association in the cooperation with the European Commission and with European IT networks, e. g. TeleCities.

Nomination

Based on the call for proposals associations of towns and communities of the Central and East European countries will nominate competitors--winners of national contest or similar organisations, if this national contest is held, or if not, than on the bases of their own evaluation.

From the countries, in which there are held national contests concerning the web sites of towns, municipalities and regions, there are generally nominated for this contest those who reached the top positions -- such is the case for example in the Czech Republic (Golden Crest), Poland (Golden At), Slovakia (GoldenCrest.sk) and in some other countries. There is in the competence of jury to nominate other web sites of the towns and communities from Central and East European countries.

Nominations are accepted on [zubr@ceskyzavinac.cz](mailto:zubr@ceskyzavinac.cz).

### **History**

Winners of the EuroCrest Contest 2002: Jihlava (Czechia), Bernolakovo (Slovakia) and Lodz (Poland).

Winners of the EuroCrest Contest 2003: Stara Zagora (Bulgaria), Most (Czechia), Tapa (Estonia), Vilnius (Lithuania), Szczecin (Poland) and Nove Zamky (Slovakia). A special prize was given to the city of Vienna (Austria), whose web pages can be used as a reference as far as quality is concerned.

Winners of the EuroCrest Contest 2003: Praha (Czech Republic), Vranov nad Toplou (Slovakia), Tartu (Estonia), Jurbarkas (Lithuania), Ventspils (Latvia), Sopoty (Poland), Rousse (Bulgaria).

Winners of the EuroCrest Contest 2004: Riga (Latvia), Panevezys (Lithuania), Zielona Gora (Poland), Lucenec (Slovakia), Nyiregyhaza (Hungary), Gabrovo (Bulgaria), Timisoara (Romania). Placed among the main prize-winning projects was also the official website of the Vysocina Region (Czech Republic).

Winners of the EuroCrest Contest 2005: Aizkraukle (Latvia), Siauliai (Lithuania), Gdansk (Poland), Dacice (Czech Republic), Nitra (Slovakia), Constanta (Romania) and Dobrich (Bulgaria).

Winners of EuroCrest competition 2006 belong official web pages of the towns: Poznan (Poland), Constanta (Romania) and Bratislava (Slovakia), official web pages of the town district Prague 12.

As the winners of the last year competition -- EuroCrest Contest 2007 -- were announced the web pages of the towns and communities: Campulung Moldovenesc (Romania), Dubnica nad Váhom (Slovakia), Sliven (Bulgaria), Tyczyn (Poland), Valmiera (Latvia) and Decin (Czech Republic).

## 6.13 Slovenia

There have been few initiatives related to benchmarking in the field of Design for All and e-Accessibility in Slovenia. Initiatives, which contain elements of measuring/assessment/benchmarking, are mentioned below. One of them is a genuine accessibility research, the second one inquires about accessibility with the help of questionnaires, while the third one includes accessibility as a point of view without focusing on it.

There have been other activities as well, e.g. a study on accessible web design with recommendations and a thesis analysing certain websites, but they either lack some sort of benchmarking process or do not include accessibility as one of the aspects. Therefore, they are not mentioned here.

### 6.13.1 Virtual and physical accessibility of museums (Projekt virtualna in fizična dostopnost do muzejev)

16 Slovenian museums were checked for physical and online accessibility. The results were presented online and are available at <http://fjz.web.siol.com/vfd/Dostopnost.htm> (in Slovene only). The starting point of this project were EU documents calling for equal access to cultural heritage without regard to one's race, nationality, disability etc.

First, Slovenian legislation and EU and UN recommendations regarding accessible architecture for public buildings were examined. After that, user groups were defined: people with physical disabilities, visually impaired and/or hearing impaired. Next, methods of research were chosen and 16 state and provincial museums were examined. Results were collected and put on a newly created website.

The project dates back to 2002.

Virtual accessibility, understood as the level of information available online, was examined both by an automatic tool and manually by a blind computer user.

The accessibility verification tool used was the WCAG-based Bobby. The report generated by Bobby for each museum is available on the project website.

The blind consultant's report is also available online. A detailed description of the website as interpreted by assistive technology (Jaws screen reader and Apollo speech synthesiser) is given for each museum along with remarks on critical defects and hints for solving the biggest problems.

Physical accessibility was another point of view. In this respect, the project team examined the inside and outside of each museum building and checked wheelchair-friendliness, visibility of signs and other visual information etc. They also focused on museum-specific accessibility issues like availability of exhibit descriptions in Braille or audio format, level of their language complexity, possibility of a blind user to touch the exhibits etc.

Museums' websites turned out to be only partly accessible. Most common errors were, according to the blind consultant, the following:

- Missing alternative descriptions for non-text content
- Poor interpretation by the text reader due to use of tables
- Nonexistent alphanumeric navigation
- Confusing layout of pages

Physical accessibility shows significant differences among museums. They vary from partly accessible buildings where a disabled person needs substantial help to be able to enter and move around to accessible spaces with only minor lacks.

Both methodology and presentation of information were adequate, therefore this project and its website continue to be a relevant and much used source of information. Financed by Ministry of Culture, the project stimulated the institutions to take measures in terms of providing more accessible services.

### **6.13.2 Analysis of museum accessibility to children and the disabled (Analiza dostopnosti muzejev otrokom in invalidom)**

In 2006, the Ministry of Culture renewed their effort to render museums more accessible. Apart from the disabled, children were identified as another user group whose needs should be met better.

Final report is available at:

[http://www.mk.gov.si/fileadmin/mk.gov.si/pageuploads/Ministrstvo/raziskave-analize/analiza\\_dostopnosti-rezultati-MUZEJI-komentar-koncno.pdf](http://www.mk.gov.si/fileadmin/mk.gov.si/pageuploads/Ministrstvo/raziskave-analize/analiza_dostopnosti-rezultati-MUZEJI-komentar-koncno.pdf) (Slovene only)

Questionnaires were sent to 30 museums in Slovenia. Main issues were following:

- Meeting law-enforced criteria regarding accessibility of exhibits and museum activity to children
- Museum affordability in case of children
- Children-specific challenges faced by museums
- Accessibility of exhibitions to the disabled
- Special projects for the disabled
- Museum affordability in case of the disabled
- Disability-specific challenges faced by museums

Main conclusion in case of children is that many museums take good care of this user group in terms of content and activities that attract young visitors. However, the overall verdict is somewhat worse due to charging admission to children by almost all museums. Only two museums do not charge children under 18, while others do, exception being children under 6 years of age. This is considered, first, a discrimination on the basis of age, and second, a discrimination on the basis of income (as children do not have funds of their own and rely on their families' income).

The disabled are found to be well taken care of in terms of affordability/discounts and in case of mental disability, the latter being a result of excellent cooperation with special educators. Problems of the disabled remain limited wheelchair accessibility inside and outside the buildings; about 50% of the museums are considered accessible in this respect. People with sensory disabilities face most problems as limited funds prevent many museums from introducing pricey audio/video equipment required by the visually and hearing impaired.

Current and future action to be taken by the Ministry of Culture is founded on the findings of the analysis. Main focuses are the following:

- Introducing a normative for the financial aspect of accessibility to children and the disabled
- Improvement of physical accessibility of museums through more consistent compliance with existing legislation and stricter supervision and enforcement of its requirements

### **6.13.3 Analysis of Websites of Governmental Institutions and Ministries of The Republic of Slovenia (Analiza spletnih strani vladnih služb in ministrstev Republike Slovenije)**

The analysis was ordered by the Slovenian Ministry of Information Society and carried out by a marketing consulting and research company CATI. It dates back to 2002.

Public websites examined were checked from various aspects, among them the following:

- Usability
- Content
- Graphic design
- Accessibility, Security and Privacy

The report includes recommendations for immediate corrections and gives directives regarding future development of websites and their convergence on the level of a central state portal.

Websites were tested for accessibility by means of an automated procedure. General suggestions on how to improve their universal accessibility were given.

The final report is available at:

[http://mid.gov.si/mid/mid.nsf/V/K81367427FF8F033BC1256C8D002A8BA8/\\$file/Koncno\\_porocilo\\_analiz\\_e\\_spletnih\\_strani.pdf](http://mid.gov.si/mid/mid.nsf/V/K81367427FF8F033BC1256C8D002A8BA8/$file/Koncno_porocilo_analiz_e_spletnih_strani.pdf) (Slovene only)

Methodologies used in the research varied from interviews to technical analysis. Accessibility was tested by a WCAG-based tool.

As found by the analysis, users claim usability is their main expectation in case of state websites. Existing pages were found to vary too much in terms of content, design and technology. A generic development process, common graphics and similar navigation for all state portals was suggested.

One of the recommendations was a widespread promotion activity among citizens informing them of the possibilities and advantages of online interaction with state services, one of the projected outcomes being improved e-Inclusion.

Suggestions regarding accessibility demanded compliance with WCAG principles, especially compatibility with screen readers.

The analysis was the basis for future action taken by the Ministry of Information Society in the field of e-government. State portals were unified to some extent and offered limited accessibility. Today, portals again look less similar, as only approximately half of them use a common design platform. Pages which differ are usually newer, better designed and offer more accessibility features. This shows that a generic approach to designing state portals is welcome when it comes to achieving a unified online image, but can on the other hand slow down the implementation of new, advanced features which improve the usability and the accessibility of websites.

## 6.14 Spain

### 6.14.1 Important developments in legislation, standards, and public procurement have taken place in Spain.

The Act for Equal Opportunities, Non Discrimination and Universal Accessibility ( Act 51/2003) has been developed with the participation of all administrations and the Council of Representatives of Persons with Disabilities (CERMI), the following new Royal Decrees have been approved in 2007: RD on the relations of persons with disabilities with the Administrations; RD for the access and use of the built environment; RD for the access to the information and communication society; and RD for the access and use of the different means of transport.

New developments of the Act on the Promotion of Personal Autonomy and Care for dependent persons (Act 39/2006), including Personal Assistance for people with severe disabilities.

New Act on the Recognition of Spanish sign languages and regulation of support Systems for oral communication for deaf people, people with hearing disabilities and deaf blind people.

New Act on the Right of the citizens to communicate with the Administrations by electronic means (Act 11/2007), in the Principles it states “Accessibility to the information and to the services by electronic means, in a secure and comprehensive way, with the guarantee of accessibility and design for all”

New Act on Public Sector Contracts (2007) which includes Social conditions and accessibility or design for all criteria.

New Royal Decree on Education in University (RD 1393/2007), with the obligation of training in Human Rights and the principles of universal accessibility and design for all, as well as accessibility criteria for information and access to all the universities degrees, and accessibility in all environments in the universities, and in infrastructures, laboratories, libraries, and new technologies.

New standards published for universal accessibility, for sign language in the web, for subtitles (close captioning), for audio description. New certification systems from AENOR (Spanish Standardization Body) on Global Accessibility and Web Accessibility.

New initiatives for Research and Development, Programme for Assistive products, accessibility and design for all in the National Plan for Research and Development (2004-2007, 2008-2011) , and Plan Avanza for the Information Society and for eInclusion (2006-2010)

New National Centres in collaboration with CEAPAT: National Centre for Subtitling and Audio description (CESyA), and Centre for Accessible Technologies (INTECO)

CEAPAT - National Reference Centre for Assistive products, Accessibility and Design for All , has received the CERMI (Spanish National Council of Representatives of Persons with Disabilities)2007 Award for Research and Development in Social and Technical issues.

CEAPAT is next coordinator of EdeAN and is preparing a European Conference on Teaching Design for All in Leon Spain June 2008.

### 6.14.2 Description of national initiatives

The second part of the White Paper on Design for All in Universities has been approved. The first document has two parts , part one is about the concept and the importance of teaching Design for All in the universities, the second part is a summary of training initiatives on design for all going on in the Spanish universities. The second part of the White Paper is a summary of programmes and tools used for teaching Design for All in the Universities.

New legislation has been published by the Spanish Government( Royal Decree 1393/2007 29 October) it states that universities must teach about human rights and about accessibility and design for all. It also states that teaching materials, including digital formats, infrastructures and products must be accessible for teachers and students with disabilities.

The second part of the White Paper on Design for All in Universities is produced in collaboration with the universities, and the selection is done by the “Coordinadora del Diseño para todas las personas” and a group

of experts, including representatives of organizations of people with disabilities. The project has been financed by IMSERSO-Ministry of Labour and Social Affairs and ONCE Foundation.

### **6.14.3 Methods and criteria**

A group of experts, users and teachers, has been formed for the selection of materials and projects and for the publication.

Meetings with CRUE Council of Responsibles of Spanish Universities have taken place, as well as workshops to present the different works in order to make the selection.

Accessible publication in different formats: book as good example of accessible reading, accessible CD and accessible web format.

### **6.14.4 Results/conclusions of initiative**

The results of the first part of the White Paper have been:

- knowledge on what is Design for All in relation with Universities.
- information of good practices in different fields of different universities.
- Universities consider this “their” document.
- In close relation with new obligations on teaching Design for All as development of the law on Studies in the Universities.
- The Council of Responsibles of Spanish Universities CRUE presented the White Paper together with the Minister of Education and the Secretariat for Social Affairs, Families and Disability. Good dissemination of the presentations and of the White Paper.
- The second part of the White Paper has been approved.

#### **Impact and consequence of the initiative**

Universities consider this White Paper as part of their work and it is a very helpful tool for the new legal obligations on teaching Design for All in Spanish Universities, in order to have better prepared students who will become well prepared professionals.

## 6.15 Sweden

### 6.15.1 Swedish National Guidelines for Public Sector Websites

The purpose of the Swedish National Guidelines for Public Sector Websites is to support public administrations in their development and design of websites that offer equal usage for all citizens and companies.

The guidelines are produced by Verva, the Swedish Administrative Development Agency. One of Verva's aims is to ensure that the communication between citizens and government authorities, municipalities and county councils is perceived as simple, efficient and suited for its purpose. The guidelines are developed as part of Verva's strategy to reach this aim.

The target readers are primarily people that work with websites for government agencies within the Swedish public sector.

The Golden Link ("Guldlänken" in Swedish) is a special award stimulating the Swedish public sector in their Internet-based services to the citizens.

The prize is awarded to the governmental authority or similar public organization, e.g. municipalities, county councils etc., that uses Internet and other e-media in the most innovative way to facilitate the contact and dialogue with the citizens.

The Golden Link Award, unlike most other awards does not judge content. Instead it highlights innovation in tools and methods that utilizes the unique possibilities offered by the Internet medium. The goal is to spread concrete, useful inspiration for the public sector agencies that want to exploit the Internet and other e-media in cost-effective ways that also offers better services for the citizens.

The first Golden Link Award was presented in 1999 and has since then become a yearly event.

2007

In 2007 it has been run by Vinnova together with Verva, the Swedish Administrative Development Agency, and the Swedish Association of Local Authorities and Regions. In 2007 the Award was presented to SAM – an innovative service for Swedish farmers provided by the Swedish Board of Agriculture. Among the nominees were also "Tolken i fickan" (which translates to "An Interpreter in Your Pocket" in English). This is a mobile sign language interpretation service for deaf people who use 3G telephones and their communication partners. After development work and trials, the service is now procured by the National Post and Telecom Agency.

2006

The Golden Link Award 2006 for innovative public e-services was awarded to the National Tax Board of Sweden for its electronic income-tax return service system

In March 2006, the Government summarized the present State-of-the Art regarding progress related to the National Action Plan in its Communication 2005/06:110 (in Swedish).

### 6.15.2 National Guidelines for accessibility, usability

The purpose of the guidelines is to support public administrations in their development and design of web sites. The guidelines cover areas such as accessibility, usability, web standards, information structuring, writing for the web media, publishing tools (CMS). Part of the content is related to web accessibility and reference is made to WAI content guidelines and W3C guidelines for authoring tools.

A new version of the national guidelines was published by Verva in November, 2006. Clarifications concerning web standards, web accessibility guidelines and measurements have been made in this version. More usability guidelines have also been added. Added to this version were also checklists, practical examples (e.g. on coding and information structure), procurement support and testing tools.

The guidelines have made a strong impact and are much appreciated within the public sector in Sweden. The electronic version is frequently downloaded and the last printed edition of 1200 copies is almost sold out. A recent assessment of the awareness and usage of the National Guidelines among staff members, responsible for the web sites of Swedish Governmental authorities, showed a very positive result. More than 90% of the

staff members reported that they know about the Guidelines, and approximately 80% reported that they are active users of the Guidelines. The assessment was made in February 2007.

The strategy to incorporate web accessibility guidelines into general web development guidelines is seen as one key factor of the success. Involving the readers of the Guidelines in the development of future updates is another. The next updated version is planned to be released in 2008.

### 6.15.3 Measurement of basic accessibility

#### Public websites in Sweden

Verva is regularly running an automatic test of basic accessibility of public web sites. The start pages of about 1000 public sector organisations are tested. The tool used is based on W3C Validator. The test, which is limited in purpose, gives information as to whether the web page is created according to standard and if the coding is made in a correct way. The latest measurement was made in March, 2007. The results showed that 20% of the websites have valid HTML code in comparison with 8% one year earlier. In March 2007 approximately 34% of public sector websites in Sweden were using a correct heading structure. 31% of the websites are using a style sheet based layout, 17% are still using frames and the remaining 52% are still using different sorts of table based layouts.

#### European websites

On the commission from Handisam the recently established Funka Foundation has made a study of the accessibility of the websites of the governments and parliaments of EU member states. 60 websites were tested. 12 checkpoints (five from WCAG 1.0, level A (1.1; 2.1; 5.1; 6.1; 6.3) and seven from level AA (2.2; 3.1; 3.2; 3.3; 3.4; 3.5; 12.4) were tested.

The websites that were given a top ranking according to criteria are presented below. (Numbers in brackets correspond to the average score across the 12 checkpoints tested. The maximum score is 2.0).

1. Great Britain, Government (1.45)
2. Sweden, Government (1.42)
3. Sweden, Parliament (1.33)
4. Italy, Parliament (Chamber) (1.33)
5. Spain, Government (1.27)
6. Germany, Government (1.25)
7. Italy, Government (1.25)
8. Italy, Parliament (Senate) (1.25)
9. Germany, Parliament (1.17)
10. The Netherlands, Parliament (1st Chamber) (1.17)
11. Finland, Government (1.17)
12. Austria, Government (1.00)
13. Slovakia, Government (1.00)
14. Finland, Parliament (1.00)

The results showed that no website met completely with the requirements for the 12 checkpoints tested. 27 of the 60 websites do not provide "alt text". 35 of the websites do not provide the user with the possibility of adjusting font size with their web browsers. Information about the methodology of the study and the scoring principles are presently available in Swedish only.

#### Using accessibility requirements in public procurement

There is an increasing awareness that public procurement can be an effective instrument to promote developments of accessibility. During 2006 and 2007 a collaborative effort between Handisam and The Swedish National Financial Management Authority, ESV has taken place. ESV has been commissioned to disseminate information about how to use accessibility requirements in public procurement.

#### EU Mandate 376

The European Commission has given a Mandate (Mandate 376) to the European Standardisations Organisations for general requirements and conformance assessment related to the area of Public Procurement of accessible Information and Communication Technologies. In Sweden, a mirror group has

been established, in which both Verva and Handisam are participants. SHI is also going to join this mirror group.

#### **6.15.4 Areas for innovation**

Involving people with disabilities in the development of information technology will improve the potential for usable technical innovations as well as it is a matter of empowerment of users. Information about user needs will provide private businesses as well as the public sector with valuable input. The Swedish Handicap Institute has been commissioned by the Swedish National Post and Telecom Agency to investigate the feasibility of a new platform for systematic contact with users regarding IT, telecom and media. The work was started in November, 2006. Regular web based surveys, supplemented by other forms of dialogues, are planned to be used to collect information about problems and barriers re: information and communication, encountered by users, as well as information about user experience, requests, and ideas. Requirements for usable and accessible web surveys have been specified, and user tests have been made, in order to find tools for appropriate surveys.