

## eAccessibility Standardization

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**Abstract:** Developments of assistive devices have been going on for a long time now, an evolution driven mainly by the availability of low cost hard- and software. Despite this, it is felt that *ad hoc* developments for persons with disability will never make it on a European or on a wider scale. This led many years ago to the concepts of Design for All or Universal design (a term mainly used in the USA): main stream products built so that they can be useful for persons with impairments too, and without adaptations. Because full design for ALL understandably is hard to achieve, many groups prefer to call it Design for the most.

One of the major road blocks to DfA concepts is the fact that the commercial impact of designing for all is not well understood, which resulted in a lot of “wait and see” reactions within the industrial community.

In the USA, Australia, Japan and the European Union more and more legislative actions are put in place to require public bodies and companies to make sure that their products and services are accessible and usable not only by “normal” users but also by others such as elderly persons or people with a disability. As it would be unwise to write down technical - and therefore time-bound - requirements into a law, these legislative texts have to refer to international standards. This chapter briefly sketches the formal, the *ad hoc*, the company driven and the informal standardization activities in Universal Design and assistive technology in general.

**Keywords:** standardization, guidelines, universal design, assistive technology

## **1 Standards: brief overview**

In very general terms, producing a “standard” (*fr*: norme, standard; *de*: Norme; *es*: norma) is a voluntary action set up, almost uniquely, by commercial partners who believe that the standardization will permit easier exchanges of products and goods (see Chapter ++ “Standards and Guidelines” of this Handbook for an in depth discussion of the process of producing standards and guidelines). This implies very often that the acceptance of the standards is also voluntary and triggered by expected commercial benefits.

On the other hand, laws in many countries are referring more and more to the required acceptance of several standards (e.g., on safety or on ecological aspects). The net result of this need for standards is that nowadays many standardization initiatives are stimulated (= subsidised) by public bodies or, in Europe, directly and indirectly by the European Commission. Many guidelines have also been created by stakeholder groups.<sup>1</sup>

## **2 New developments in DfA related standardization**

As DfA standardization was explicitly mentioned in the eEurope2002 plan, several new actions were established over the last years in the European context (Engelen 2003a). Four major recent changes can be distinguished: the set up of coordinating working groups and organisations; the democratisation of the standardisation processes themselves; the increasing impact of non-formal standardisation bodies, and the establishment of standardisation related discussion fora open for non-specialists. Each of those aspects will be briefly explained in the remainder of this contribution.

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<sup>1</sup> More information about the standardisation processes can be found in chapter 54 by G. Vanderheiden

## 2.1 Formal vs informal standardisation activities

Over the last years, several standardisation bodies have set up standardisation-related initiatives that are easier to manage and can produce outcomes much faster. They all have special designations so that they cannot be confused with formal standards. For example, ISO has developed a new range of "deliverables", or different categories of specifications, allowing publication at an intermediate stage of development before full consensus is reached.

Some of these standardisation related activities are summarised in Table 1:

Name	Website	Names of related activities
ISO	<a href="http://www.iso.ch/">http://www.iso.ch/</a>	<ul style="list-style-type: none"> <li>▪ Publicly Available Specification (PAS)</li> <li>▪ Technical Specification (TS)</li> <li>▪ Technical Report (TR)</li> <li>▪ International Workshop Agreement (IWA).</li> </ul>
ITU-T	<a href="http://www.itu.int/ITU-T/">http://www.itu.int/ITU-T/</a>	<ul style="list-style-type: none"> <li>▪ Recommendations</li> </ul>
CEN	<a href="http://www.cenorm.org/">http://www.cenorm.org/</a>	<ul style="list-style-type: none"> <li>▪ CEN Workshop Agreement (CWA)</li> </ul>
ETSI	<a href="http://www.etsi.org/">http://www.etsi.org/</a>	<ul style="list-style-type: none"> <li>▪ Specialist Task Forces (STF)</li> </ul>
CENELEC	<a href="http://www.cenelec.org/">http://www.cenelec.org/</a>	<ul style="list-style-type: none"> <li>▪ CENELEC Workshop Agreement (CWA)</li> <li>▪ CENELEC Guides</li> </ul>
CEN/CENELEC		<ul style="list-style-type: none"> <li>▪ CEN/CENELEC Guides</li> </ul>

Table 1 Examples of standardization related activities

## 2.2 European initiatives

### 2.2.1 Initial steps

In the middle of the nineties, when ICT systems started booming, ETSI, one of the three

European standardisation organizations, organised, in collaboration with the Danish Centre for Technical Aids and the European Commission, the 1996 "European Policy Workshop ICT Standardization and Disability in Europe". The three major outcomes (Brandt 1996) retain their importance, even nowadays, although the third one (legislation) has since then been taken on board in several EU countries:

- Industry is not sufficiently aware of the market potential for accessible products;
- Standardization processes should take into account the requirements of people with disabilities and these users should be more involved in standardisation work;
- There is a need for legislation in the accessibility domain.

### *2.2.2 Coordination initiatives*

#### 2.2.2.1 ICTSB

The ICT Standards Board (ICTSB)<sup>2</sup> is an initiative from the three recognised European standards organizations, with the participation of specification providers as partners to co-ordinate standardisation activities in the field of Information and Communications Technologies (ICT).

The ICTSB listens to requirements for standards and specifications that are based on concrete market needs and expressed by any competent source. The Board then considers what standards or specifications need to be created, and how the task will be carried out (and by whom).

One of its major recent research oriented activities was the participation in the COPRAS project (cf. below).

#### 2.2.2.2 DATSCG

The "Design for All and Assistive Technology Standardisation Co-ordination group"<sup>3</sup> was created within ICTSB as a direct response to the eEurope2002 plan. It has the following

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<sup>2</sup> Link: <http://www.ictsb.org/> and <http://www.ict.etsi.org/>

objectives:

- To ensure co-ordination of the ICT related standardisation work in the DfA and AT fields;
- To act as an overall focal point on design-for-all and assistive technology standardisation;
- To assist in organising promotional activities on design for all and assistive technologies standardisation requirements in ICT;
- To promote knowledge and awareness of existing guidelines and tools by the market-players.

Although membership is on invitation, DATSCG tries to involve as many organisations as possible in their activities, including organisations of, or for, persons with a disability. Especially the contribution of the European Disability Forum (EDF) as representative of the final users is very important. Another important player is ANEC, “the European consumer voice in standardisation”, representing the consumer organizations from the European Union Member States and the EFTA countries. Also the Association for the Advancement of Assistive Technology in Europe (AAATE) has an observer status in DATSCG.

DATSCG has proven to be an important channel for information exchange on standardisation issues as it groups the main players in this field.

#### 2.2.2.3 eAccessibility expert group

Mainly as a consequence of the eEurope actions for the promotion of ICT use in Europe, the European Commission created several working groups to keep an eye on the actions promised by the different EU countries and by the Commission itself.

The High level Group on the Employment and Social Dimension of the Information Society

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<sup>3</sup> Link: [http://www.ictsb.org/DATSCG\\_home.htm](http://www.ictsb.org/DATSCG_home.htm) and [http://www.ict.etsi.org/DATSCG\\_home.htm](http://www.ict.etsi.org/DATSCG_home.htm)

(ESDIS) was established in 1999 for supporting the European Commission in the analysis of the impact of the information society on employment and on social cohesion. The eEurope topics related to persons with disability and elderly persons were delegated by ESDIS to the **eAccessibility expert group**<sup>4</sup>.

With respect to standardization, the eAccessibility group produced an overview document<sup>5</sup> by the end of 2002 (Engelen 2003b).

After a short period of inactivity, the eAccessibility group was recreated as an expert support group for the eInclusion activities of the European Commission's Directorate General on Information Society and Media (EC-DG INFSO-H3). In 2006, it changed names and constitution into "eInclusion expert group". Its representatives are officially delegated by the governments of all old and new EU member countries.

#### 2.2.2.4 COPRAS

COPRAS (Cooperation Platform for Research and Standards)<sup>6</sup> was a support action project in the EU's 6th Framework Programme, aiming to improve the interfacing, cooperation and exchange between IST (Information Society Technologies) research projects and ICT standardization. It was initiated by several European standards organisations in cooperation with the ICTSB, the coordinating forum for ICT standardization in Europe.

COPRAS addressed the challenge of better synchronizing the continuous technological development in ICT with standardization processes, thus making the benefits of these technological developments better and earlier accessible to industry and society. Its mission therefore was to stimulate, facilitate, and ease cooperation and exchange between current as well

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<sup>4</sup> Link: [http://europa.eu.int/information\\_society/policy/accessibility/index\\_en.htm](http://europa.eu.int/information_society/policy/accessibility/index_en.htm)

<sup>5</sup> Available at: [http://ec.europa.eu/employment\\_social/knowledge\\_society/docs/eacc\\_dfastd.pdf](http://ec.europa.eu/employment_social/knowledge_society/docs/eacc_dfastd.pdf)

<sup>6</sup> <http://www.w3.org/2004/copras/>

as future IST research projects and ICT standards organisations. Its activities and deliverables supported projects in finding the relevant standards organisations to signal their output to, enabling them to upgrade their results through standardisation, and hence stimulate their dissemination and usage.

As one of its deliverables, COPRAS has developed a set of Generic Guidelines facilitating interfacing between research projects and ICT standards organisations<sup>7</sup>. Its ultimate goal was to bring IST research and standardisation closer together, and to provide research projects as well as other stakeholders in government, industry, and society, with a platform facilitating exchange between research and standardisation, and furthering Europe's leading position in ICT development.

#### 2.2.2.5 USEM

The USEM project<sup>8</sup> aims to facilitate, enhance and increase qualification and participation of disabled or elderly users and their respective organisations in the European standardisation process in IST. Furthermore, a user network will be set up to promote the exchange of experiences between user organizations involved in standardization work.

USEM supports a number of important objectives:

- To design a core curriculum for the training of end-users wanting to play a key role in standardisation work
- To make sure that more users with disabilities acquire the skills needed for the participation in the design and assessment of European standardisation.
- To improve the exchange of experiences between different user groups on a European level by user information networking

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<sup>7</sup> <http://www.w3.org/2004/copras/docu/faq/Overview.html>



- To disseminate information and encourage the uptake of new standards
- To actively involve disabled and elderly people in the process of IST standardisation
- To get users involved in European standardisation actions.

### *2.2.3 Standardisation efforts through workshops and other collaborative schemes*

As stated in section 1.3 a democratization process is taking place in the standardisation arena.

Besides formally established committees for creating formal standards, all standardising bodies now have working groups and task forces where all interested people are welcome, minimally as observers but often as contributors too.

#### 2.2.3.1 CEN Workshop agreements in the DfA field

Examples of the above are the establishment of a CEN Workshop on “Design for all in ICT”, CWA14661 “Guidelines to Standardisers of ICT products and services in the CEN ICT domain<sup>9</sup>” and, more recently, the creation of the CEN Workshops on website certification, in full “Specifications for a complete European certification scheme concerning the delivery of a Quality Mark for Web Content Accessibility - WS/WAC<sup>10</sup>” and the Workshop on "Document Processing for Accessibility" (CWA-DPA).

The WAC workshop was established to obtain a first level European agreement on a European certification scheme concerning the delivery of a Quality Mark for Web Accessibility. Such a scheme had previously been investigated by an EU IST project (Support-EAM), part of a cluster of projects (WABcluster) which is defining an overall European methodology for assessing web accessibility in conformance with W3C WAI content guidelines<sup>11</sup>. This European Quality Mark is based on the use of a methodology for assessing Web Accessibility within a European

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<sup>8</sup> <http://www.usem-net.eu/>

<sup>9</sup> Link: [www2.nen.nl/getfile?docName=198267](http://www2.nen.nl/getfile?docName=198267)

certification scheme. The final agreement (June 2006) is freely available<sup>12</sup>.

The CEN/ISSS WS DPA workshop<sup>13</sup> had three key objectives, namely:

- To bring together a very large group of players in the information provision and e-publishing chain in order to achieve a substantial increase of accessible information at a European level
- To provide guidelines on integrating accessibility components within the document management and publishing process rather than as just a specialised, additional service.
- To raise awareness and stimulate the adoption at local, regional, national and European levels of the emerging formats and standards for the provision of accessible information and to find ways of ensuring that technological protection measures do not inadvertently impede legitimate access to information by people with print impairments.

#### 2.2.3.2 ETSI STF's

Specialist task forces are typical for ETSI. An STF is a team of highly-skilled experts working together over a pre-defined period to draft an ETSI standard under the technical guidance of an ETSI Technical Body and with the support of the ETSI Secretariat<sup>14</sup>.

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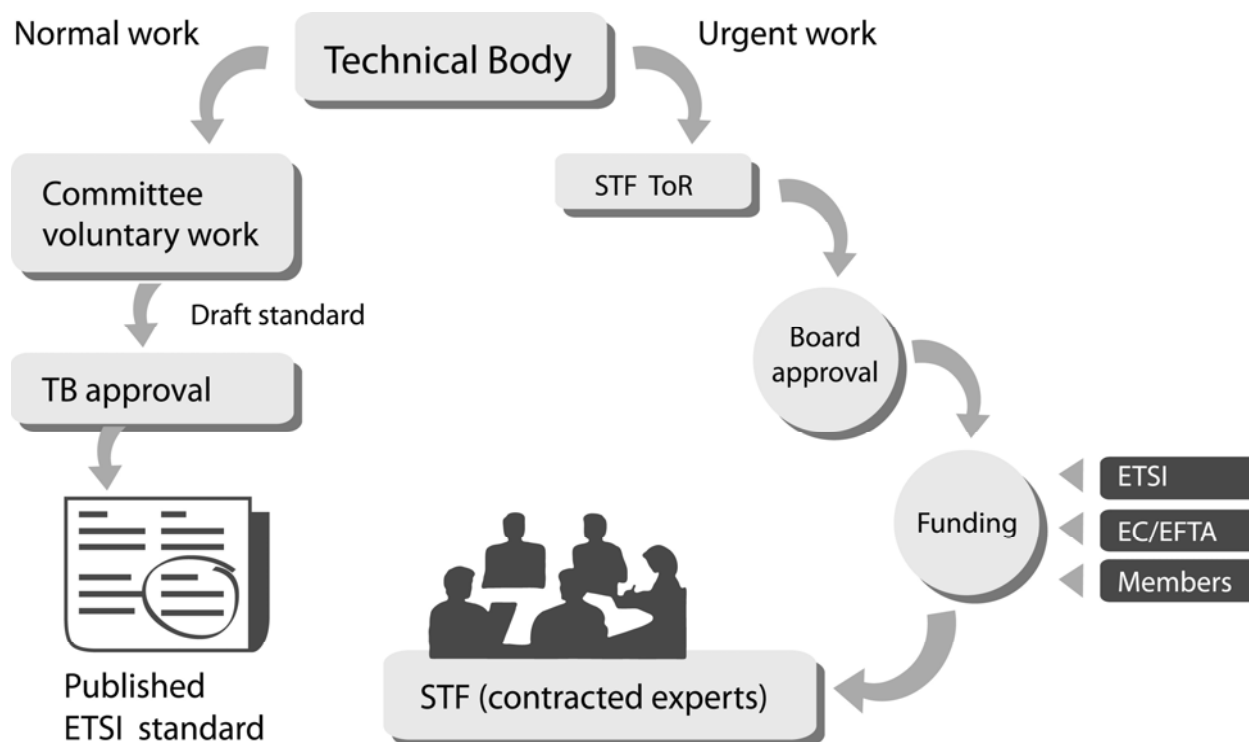
<sup>10</sup> Links: <http://www.cenorm.be/cenorm/businessdomains/businessdomains/iss/activity/ws-wac.asp> and <http://www.support-eam.org>

<sup>11</sup> Link: <http://www.wabcluster.org>

<sup>12</sup> can be downloaded from <ftp://ftp.cenorm.be/PUBLIC/CWAs/e-Europe/WAC/CWA15554-00-2006-Jun.pdf>

<sup>13</sup> <http://www.cen.eu/cenorm/businessdomains/businessdomains/iss/activity/ws-dpa.asp>

<sup>14</sup> Link: <http://portal.etsi.org/stfs/process/home.asp>



**Figure 1** How STF's (right branch) relate to "normal standardisation" work (left branch)

Some of the AT and DfA-related STF's have been focussing<sup>15</sup> on:

- Design for All: Guidelines for ICT Products and Services (STF 184)
- Duplex Universal Speech and Text (DUST) communication [e-Inclusion] (STF 267)
- Human related technical guidelines for real-time person-to-person communication services (STF 284)
- Enabling and Improving the use of Mobile e-Services (STF 285)
- Access symbols for use with video content and ICT devices (STF 286)
- User-oriented handling of multicultural issues in broadband and narrowband multimedia telecommunications (STF 287)
- AT Commands for Assistive Mobile Device Interfaces (STF 304)

- Extending e-Inclusion for Public Internet Access Points (PIAPs) (STF 342).

### 2.2.3.3 COST219ter

The main objective of this collaborative European Action, involving also members from the USA, Australia and Japan, is to increase the accessibility of next generation telecommunication network services and equipments to elderly people and people with disabilities by design or, alternatively, by adaptation when required<sup>16</sup>. Several major actions towards standardisation have been undertaken over the past years.

COST219ter members have been collaborating with the ITU-T work on "Total Conversation; Increased usability of conversational services in mobile and fixed networks" (convener: Gunnar Hellstrom, cf. 2.3.2)<sup>17</sup>.

On March 8, 2005, COST 219ter organised in Florence a specialised workshop on "eAccessibility Legislation and Policy: The role of standardisation". Specialists of W3C, ISO, ETSI, ITU-T, the D4ALL.net project, EDeAN and TEDICORE (Australia) have presented ongoing work within their organisations or countries<sup>18</sup>. In 2007, the COST219ter action also published a brochure aiming at improving user involvement in standardization (Gill, J. 2007)

Within the COST219ter action, a special working group was set up to harmonise testing for accessibility. Especially the usability and accessibility of mobile telephones was worked out thoroughly, was tested internationally and is available as a toolset (Chandler, Dixon and Tyler 2007).

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<sup>15</sup> More info about these STF's can be found by using following link: [http://portal.etsi.org/Portal\\_STF/FullSearch.asp?Param=](http://portal.etsi.org/Portal_STF/FullSearch.asp?Param=)

<sup>16</sup> Link: <http://www.tiresias.org/cost219ter/>

<sup>17</sup> Link: <http://www.tiresias.org/cost219ter/florence/hellstrom.htm>

## 2.2.4 Public discussions

One of the unique and recent developments in the standardisation field, especially in relation to design for all, is the potentially large involvement of specialists, users and user representatives in the discussions.

### 2.2.4.1 EDeAN Standardisation SIG

The European Design for All Network (EDeAN) was established in 2002 as a response to the European eEurope2002 programme for stimulation of IST use (see also Chapter ++ “Best Practice in Design for All”). One of the action lines was the “creation of a network of major expert centres in Design for All”. Another was the "Publication of Design for All standards for accessibility of information technology products, in particular to improve the employability and social inclusion of people with special needs" (already mentioned in 2.1.2.3). Although initial discussions on the latter topic also took place in the eAccessibility working group, a more open approach was established through the creation of a public discussion forum.

Electronic information exchange within the EDeAN network was set up by the D4ALLnet project (IST-2001-38833, Design for All Network of Excellence) that created the HERMES collaborative web-based platform<sup>19</sup>, developed by FORTH-ICS (Crete). D4ALLnet was a Thematic Network funded by the European Commission that supported the operation of EDeAN by providing an accessible web-based platform to enable virtual networking and cooperation, as well as information and knowledge exchange between EDeAN network members (Bühler and Stephanidis 2004). Members of the EDeAN network are exchanging information within so-called Special Interest groups, including one on *Standardization*.

The SIG Standardization group has over 100 members. Most of them are from Europe (but new

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<sup>18</sup> Link: <http://www.tiresias.org/cost219ter/florence/index.htm>

EU member states are underrepresented), a few from the USA, Australia and Hong Kong. Also several observers of the European Commission are taking part in the discussions.

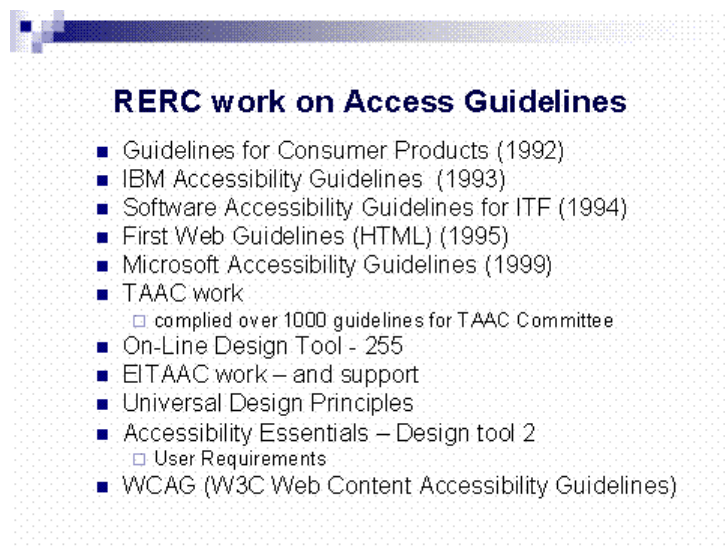
This discussion platform has been shown to provide a unique means of bringing information on ongoing standardisation activities directly to persons interested in this subject but not member of formally established standardisation task forces or working groups.

## ***2.3 Some national initiatives***

### ***2.3.1 USA***

In the USA, due to its large concentration of huge software enterprises, several official and de facto organisations are active. In a recent contribution<sup>20</sup>, Gregg Vanderheiden, director of the Trace R&D Center at the University of Wisconsin-Madison, enumerated over 40 of these standardisation groups.

Also the number of guidelines is rapidly growing (cf. below).



**Figure 2** A small excerpt of Guideline work in the US (cf. footnote 20)

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<sup>19</sup> Link: <http://www.edean.org>

In the USA several legislative actions have been undertaken, and as could be expected, they often do not refer to official formal standards (as there are still very few) but to guidelines made to specify the details of the laws.

Two of them are very famous

- American with Disabilities Act (ADA)
- Federal Rehabilitation Act (Section 508)

Although the laws themselves fall outside of the scope of this Chapter (see Chapter ++ “Policy and Legislation as a Framework of Accessibility” for a discussion of legislation issues in relation to accessibility) , especially Section 508 work is highly important for standardization<sup>21</sup>.

Outside observers (e.g., from the European Union) were welcomed to participate in the 2007 revision of the 508 Guidelines.

The revision work itself appears to be become a gargantuan task. Emerging technologies have made current 508 standards obsolete. Bluetooth and wireless mobile devices, streaming Web video and asynchronous Java and XML-enabled Web sites have become common since the original standards were set in place.

Also Section 508 has separate standards for software applications and web applications, although nowadays many applications are running via the Web. According to the original 508 rules, software applications must be accessible through keyboard shortcuts and hotkeys. On the contrary, Web 508 rules do not have this requirement.

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<sup>20</sup> Gregg Vanderheiden, “New, More Robust Models for Access to Mainstream Technologies”, presented at COST219ter conference “Extending Horizons: Accessibility to Next Generation Networks Conference”, London, BTCentre, January 2007. Transcript available at: [http://www.tiresias.org/cost219ter/extending\\_horizons/vanderheiden.htm](http://www.tiresias.org/cost219ter/extending_horizons/vanderheiden.htm)

<sup>21</sup> Link: <http://www.section508.gov/>

### 2.3.2 UK

In 1995, the Disability Discrimination Act (DDA) was passed to introduce new measures aimed at ending the discrimination which many disabled people face. It protects disabled people in the areas of:

- employment
- access to goods, facilities and services
- the management, buying or renting of land or property
- education

The Act is based on the principle that disabled people should not be discriminated against by service providers or those involved in the disposal or management of premises.

Although the use of standards is stressed, no specific guidelines are given.

### 2.3.3 Italy

In Italy the law imposing accessibility measures to ICT systems was accepted in 2004 under the name "Stanca act" (after its main promoter, the Minister of Innovation and Technologies). It refers extensively to ISO standardisation work. The Law aims at drawing up set of rules governing the criteria and requirements for guaranteeing accessibility. The guidelines intend to regulate both the operational and the organisational issues related to accessibility, as well as at introducing the Usability Principle, defined in a similar way as ISO 9126-1 and ISO 9241-11 rules.

### 2.3.4 Germany

On the background of the EU recommendation to adopt the WAI accessibility guidelines, part of the eEurope2002 plan, Germany has taken several legislative initiatives including Social book IX (SGB IX) and the Law on the equalization of opportunities for people with disabilities



(Bundesbehindertengleichstellungsgesetz - BGG). Through these actions the issue of barrier free access at the workplace and to public infrastructure has received a new emphasis in Germany.

The legislation process was performed for the first time ever with participation of organisations of end-users. The definition of barrier free access for people with disabilities to human made infrastructure highlights three characteristics: taking the usual way, without extra effort and basically without assistance. For the first time, access to information technology, particularly barrier free access to the Internet, was explicitly taken up in the BGG.

On July 24, 2002 the Decree on barrier-free information technology (Barrierefreie Informationstechnik Verordnung - BITV) according to BGG § 11 was officially published by the German Federal Government and entered into force.<sup>22</sup>

#### *2.3.5 Japan*

Article 13-2 of the Industrial Standardisation Law of Japan states that relevant ministers must enact any drafts proposed by JISC (Japanese Industrial Standards Committee) as industrial standards.

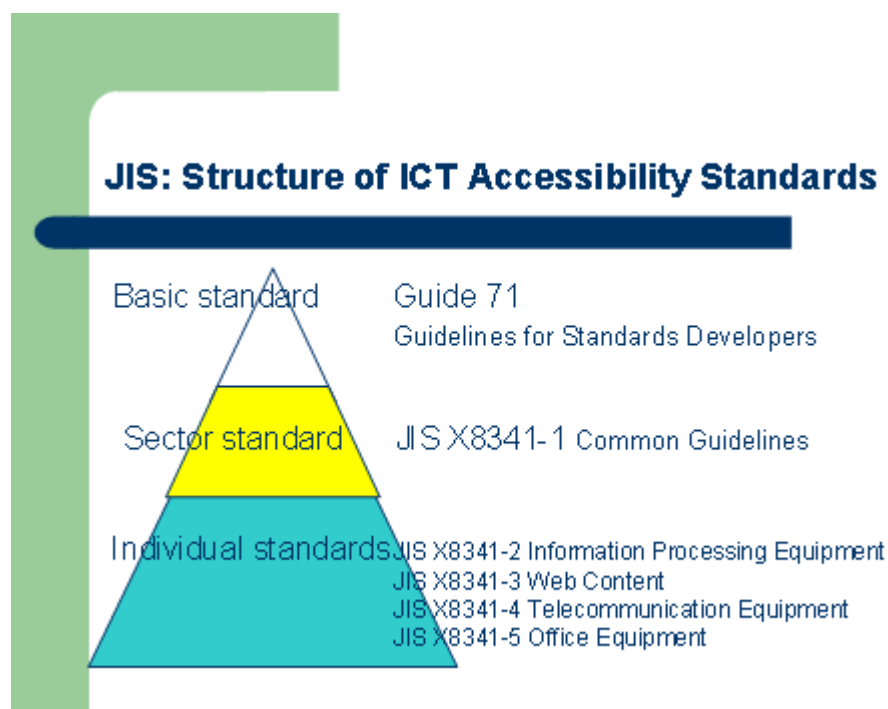
ICT accessibility is being promoted through the Accessible Design Forum. This forum ensures that committee members are aware of ageing and disability issues, and that users themselves are represented (and trained if necessary). Their activities are heavily based on ISO/IEC Guide 71 (JIS Z8071). The forum promotes the accumulation of information and know-how, information sharing and its effective use. It also contributes to raising awareness through the organisation of symposiums and the participation in exhibitions.

The development of the actual accessibility standards is performed through a hierarchical approach (cf. picture). JISX8341-1 contains the overall framework and the common guidelines.

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<sup>22</sup> Presentation by Prof. Buehler at CEN-ETSI CCE conference, Nice 2003). Proceedings available only on CD.

Standards JISX8341-2 and higher then specify the accessibility requirements for the different application domains.



**Figure 3** The Japanese scheme for building up accessibility standards in a hierarchical way (courtesy Hajime Yamada)

The Forum contributes also to Global Harmonisation efforts:

- Cooperation among Asian Countries
  - 2003 Establishment of “Japan-Korea-China Accessibility Design Committee”
  - 2005 Explanation to Relevant Organizations in Singapore, Malaysia and Thailand
- Contribution to International Standardisation bodies. The Japanese standards have been forwarded to following organisations:
  - JIS X8341-1            ISO 9241-20
  - JIS X8341-2            ISO JTC1/SC35

- JIS X8341-3            WAI's WCAG2.0
- JIS X8341-4            ITU-T SG16
- JIS X8341-5            ISO JTC1/SC28

The Forum's impact on the Japanese society consists of the following actions:

- Procurement processes must consider conformity with international and national standards
- There has been an Amendment to the Fundamental Law for the People with Disabilities
- High priority for the realisation of information barrier-free society
- Accessibility considerations now frequently taken into account for website design.

## ***2.4 International initiatives***

### ***2.4.1 ISO***

ISO (International Organization for Standardization) is the world's largest developer of standards. Although ISO's principal activity is the development of technical standards, ISO standards also have important economic and social repercussions. ISO standards make a positive difference, not just to engineers and manufacturers for whom they solve basic problems in production and distribution, but to society as a whole.

ISO has been very active, amidst a huge range of other topics, in computer usability and accessibility.

A few examples of their recent standardisation work related to e-accessibility are:

- ISO DIS 9241-20 "Ergonomics of human-system interaction - Part 20; Accessibility guidelines for information/communication technology (ICT) equipment and services"
- ISO TS 16071 " Ergonomics of human-system interaction -- Guidance on accessibility for human-computer interfaces" (Gulliksen and Harker 2004).

Other important ISO standardisation work is referenced in the documents of JTC1-SWGA (cf. below).

#### Establishment of a Special Working Group on Accessibility.

One of the major ISO initiatives in this field is the creation (2004) of a Special Working Group (SWG) on Accessibility within the existing Joint Technical Committee 1.

JTC 1 believes that the work in the area of information communication and technology standardization for accessibility is a major undertaking, encompassing many international, regional and local interests. Additionally, there are significant standards efforts taking place in ISO, IEC, ITU and the national and regional standards bodies, as well as various consortia/fora and user groups. As identified in its long term business plan, and in order to be responsive to international, regional, national, and end user requirements in the area of accessibility, JTC 1 established a Special Working Group on Accessibility to:

- gather user requirements, being mindful of the varied and unique opportunities (direct participation of user organizations, workshops, liaisons)
- make an inventory of all known accessibility standards efforts
- identify areas/technologies where voluntary standards are not being addressed and suggest an appropriate body to consider the new work
- track public laws, policies/measures and guidelines to ensure the necessary standards are available
- through wide dissemination of the SWG materials, encourage the use of globally relevant voluntary standards
- assist consortia/fora, if desired, in submitting their specifications to the formal standards process.

In order to reach these goals, the membership was kept very much open to all individuals and organisations involved in related activities. Also all documents are made public on the SWG's website<sup>23</sup>.

Currently, the work is organised in two task groups:

- Task Group 1 on User Requirements
- Task Group 2 on Accessibility Standards Inventory and Gap Analysis.

The Standards inventory is considered as almost complete. As stated above, it can be freely downloaded from the SWG's documents area.

#### 2.4.2 *ITU*

ITU, headquartered in Geneva, Switzerland, is an international organization within the United Nations System where governments and the private sector coordinate global telecom networks and services. Telecom Standardisation falls under subgroup ITU-T. Within ITU-T, Study Group 16 (ITU-T-SG16) is responsible for studies relating to multimedia service capabilities, and application capabilities (including those supported for Next Generation Networks). This encompasses multimedia terminals, systems (e.g., network signal processing equipment, multipoint conference units, gateways, gatekeepers, modems, and facsimile), protocols and signal processing (media coding).

Study Group 16 has established a subgroup on "Accessibility and Standardisation"<sup>24</sup>.

This group has published an ACCESSIBILITY CHECKLIST<sup>25</sup> for the makers of standards to ensure that they are taking into account the needs of those to whom accessibility to ICTs is restricted, the deaf or hard-of-hearing for example. Such a list will help to ensure that accessibility needs

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<sup>23</sup> Link: <http://www.jtc1access.org/>

<sup>24</sup> Link: <http://www.itu.int/ITU-T/studygroups/com16/accessibility/>

<sup>25</sup> Link: [http://www.itu.int/dms\\_pub/itu-t/opb/tut/T-TUT-FSTP-2006-TACL-MSW-E.doc](http://www.itu.int/dms_pub/itu-t/opb/tut/T-TUT-FSTP-2006-TACL-MSW-E.doc)

are taken into account at an early stage, rather than having to retrofit existing standards.

Another important issue for SG 16 is Total Conversation (TC). A Total Conversation Service is an audiovisual conversation service providing bidirectional, symmetric real-time transfer of motion video, text and voice between users in two or more locations. This real-time text differs from instant messaging systems (e.g. SMS) as a TC system provides the bidirectional transfer of one character at a time. This gives the user the feel of real-time communication, just like voice or video systems that transport streaming media over IP. The concept is aimed at providing rich media real-time conversation for all people and for varying situations. This includes, but is not limited to, people that are disabled in some way, e.g., the deaf or hard-of-hearing, blind, etc., but also people who find themselves in a situation where the complementing media – video and real-time text – together with voice fulfil the conversation needs much better than only voice.

ITU-SG 16 made sure that sections on accessibility were properly integrated in at least twenty standardisation documents<sup>26</sup>.

Recently, SG 16 started work on Recommendation F.790 for TELECOMMUNICATIONS ACCESSIBILITY GUIDELINES for the elderly and people with disabilities. Currently, it is still an internal working document.

## ***2.5 Guidelines, task force reports, working groups (informal or de facto standards)***

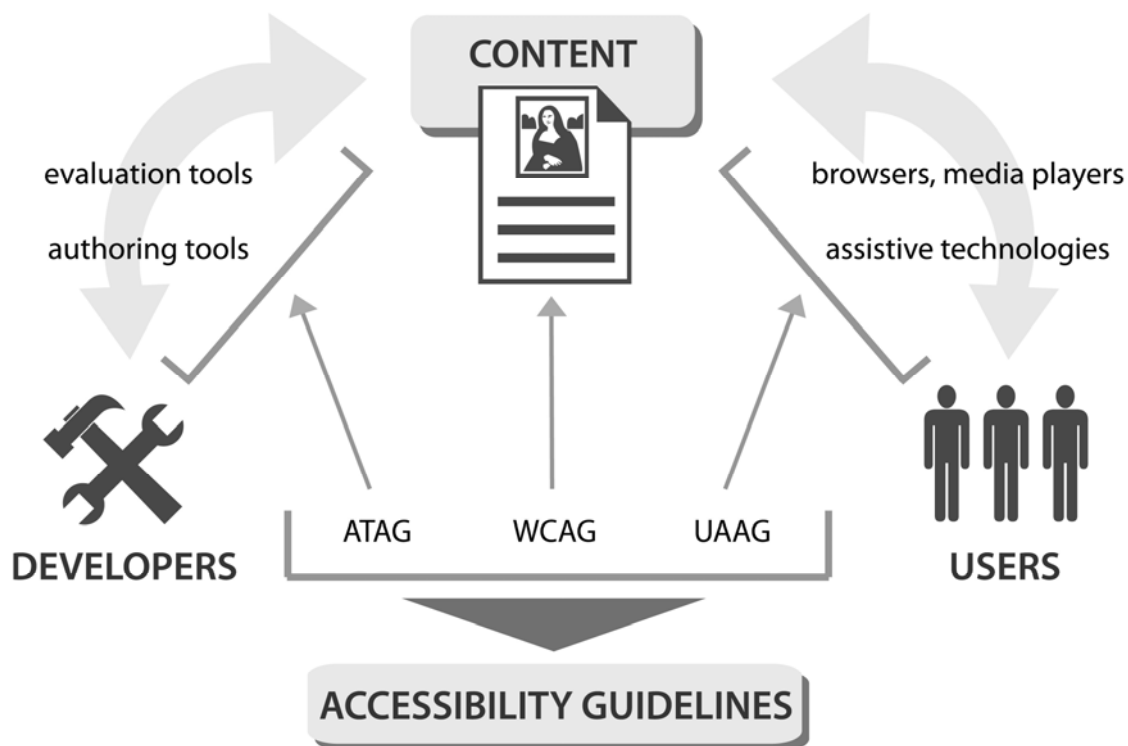
### *2.5.1 W3C Guidelines*

In relation to Design for All or Universal Design, there is one very well known example of activity: the **Web Access Initiative**<sup>27</sup> of the World Wide Web consortium, that produced several guidelines on web accessibility.

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<sup>26</sup> Detailed in: <http://www.itu.int/ITU-T/studygroups/com16/accessibility/docs/apflyer.pdf>

<sup>27</sup> Link: <http://www.w3.org/WAI/>



**Figure 4** Essential Components of Web Accessibility according to W3C-WAI

Although these guidelines are almost universally accepted as the primary reference point (de facto standard) for web accessibility matters, many countries establishing legislative actions for imposing web accessibility were not able to refer to the WAI guidelines, as the W3C cannot be considered a standardisation body in the proper sense of the word. Unfortunately, this has already led to several national variants of web accessibility guidelines.

#### 2.5.2 ICF: *International Classification of Functioning, Disability and Health*

As a new member of WHO Family of International Classifications, ICF<sup>28</sup> describes how people live with their health condition. ICF is a classification of health and health related domains that describe body functions and structures, activities and participation. The domains are classified from body, individual and societal perspectives. Since an individual's functioning and disability

occurs in a context, ICF also includes a list of environmental factors.

ICF is useful to understand and measure health outcomes. Strictly speaking, ICF is not a standard, but it is frequently used by funding organisations to quantify problems caused by impairments.

### **3. Activities bypassing formal standardization**

It has been mentioned several times that legislative processes in most countries have a strict need for referral to formal national or international standards. Especially in the domain of e-accessibility, these standards tend to be non-formal such as workshop agreements, technical specifications, guidelines, etc.

This has led to several alternative approaches.

#### ***3.1 National laws with own guidelines***

In January 2005, a very important European colloquium was held in Paris on "Policies and Legislations in favour of e-accessibility in Europe". Delegates from many countries have explained their national situation. The simple conclusion of the workshop is that almost no harmonisation seems to exist (yet). The details can be found in the colloquium's archives<sup>29</sup>.

#### ***3.2 Procurement rules as an alternative to standardisation***

As stated above, the European Union faces a serious problem about supranational legislation: it is almost impossible to achieve in the accessibility domain.

On the other hand, long term experience in the USA shows that the buying power of governments and authorities can be used to impose accessibility requirements. The principle is

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<sup>28</sup> Link: <http://www.who.int/classifications/icf/en/>

<sup>29</sup> Link: <http://www.brailletnet.org/colloques/policies/program.html>



quite simple: authorities add, in their calls for tender, special clauses on accessibility features that the products or services they want to buy will have to meet. This forces manufacturers to pay attention to the accessibility of the equipment they develop and sell.

As a consequence, many, also in Europe, see procurement strategies as a way to improve the accessibility of goods and services too.

### *3.2.1 International Workshop on Accessibility Requirements for Public Procurement - Brussels 2004*

A workshop held in October 2004 (Brussels) addressed the harmonisation of eAccessibility requirements to be used in the public procurement of ICT products and services and the requirements for policy implementation in this field. It was organised by the European Commission, the USA Access Board, and the European ICT Standards Board (ICTSB). It was supported by the European Disability Forum (EDF) with support of the eInclusion@EU project. The workshop also contributed to the USA-EU "Exchange of information regarding the planned use of ICT standards in support of Regulations and other Public policies" (in the field of eAccessibility policies).

#### 3.2.2.1 Background

The 2005 EC Communication on Accessibility<sup>30</sup> stressed again that Public Procurements in the ICT domain are an important lever for the deployment of eAccessibility, as they have the potential to play a vital role in removing barriers to participation in the Information Society by disabled or older people.

A mandate (called Mandate 376) has been given by the European Commission to the European

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<sup>30</sup> In full: The Communication from the Commission to the Council, the European Parliament, the Economic and Social Committee, and the Committee of Regions, regarding eAccessibility (adopted on 13 September 2005).  
Link: [http://ec.europa.eu/information\\_society/activities/einclusion/policy/accessibility/com\\_ea\\_2005/index\\_en.htm](http://ec.europa.eu/information_society/activities/einclusion/policy/accessibility/com_ea_2005/index_en.htm)

Standardisation Organisations (ESOs) at the end of 2005 to come with a solution for common requirements and conformance assessment.

The mandate, in full: M/376 on EUROPEAN ACCESSIBILITY REQUIREMENTS FOR PUBLIC PROCUREMENT OF PRODUCTS AND SERVICES IN THE ICT DOMAIN<sup>31</sup> requested the ESOs to come up, in Phase I, with an inventory of ICT products, existing accessibility requirements and current gaps, existing standards related to accessibility and their related testing and certification schemes. In Phase II (probably starting early 2009), real standardization work will be done, including the establishment of a European Standard (EN) and a technical report (TR). Also a toolkit, i.e. a collection of guidance and support material will be made available freely.

#### 3.2.2.2 Status

The start of this Mandate was plagued with several problems. Mainstream industry has expressed concerns in regards to some of the certification schemes that could be considered. Several ESOs have objected for procedural reasons (the free availability of the toolkit, non-standard working procedures and the requirement that the work must be followed up and judged by groups with limited experience and no formal responsibility in standardisation work).

As a consequence, the work has only started in the autumn of 2007. Within CEN, the work is attributed to a special committee, whereas within ETSI an STF (cf. 2.1.3.2) was set up<sup>32</sup>. In June 2008 both groups organised a workshop to finalise phase 1 of the Mandate work<sup>33</sup>. Members of the DATSCG group (cf 2.1.2.2) were invited to keep an eye on the integration of the work.

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<sup>31</sup> Link: [http://www.etsi.org/WebSite/document/aboutETSI/EC\\_Mandates/m376en.pdf](http://www.etsi.org/WebSite/document/aboutETSI/EC_Mandates/m376en.pdf)

<sup>32</sup> CEN BT Working Group 185, Cenelec BT Working Group 101-5 and ETSI TC/HF (Technical Committee/Human Factors) that in practice acts via STF333.

<sup>33</sup> Link: [http://www.icts.org/DATSCG\\_conference\\_public\\_procurement.htm](http://www.icts.org/DATSCG_conference_public_procurement.htm)

#### 4. Conclusion

This contribution has provided a general overview of recent progress in standardisation in relation to DfA and AT. This appears to be a very large field with many ongoing activities.

The very important changes that are currently taking place in the standardisation field have also been addressed, such as more informal work, more open discussions, public discussion fora and standardisation of procurement procedures requiring DfA solutions.

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