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## 1 Executive summary

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 an impairment 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 US): main stream products built so that they can be useful for persons with impairments too, and this without adaptations. Because full design for ALL understandably is hard to achieve, many groups nowadays 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 created a lot of “wait and see” reactions within the industrial community.

In the US, Australia, Japan and in 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 “standard” users but also by others such as elderly persons or people with an impairment.

As it would be unwise to write down technical - and therefore time-bound - requirements into a law, legislative texts have to refer to (international) standards.

The **purpose** of this deliverable is double:

- to provide the EDean expert centres with a general overview of the standardisation domain. Although several basic tutorials do exist (cf. 3.1) they quite often focus heavily on the needs of their publishing organisations. In annex 1, a list of ongoing standardisation activities is given.
- to motivate the expert centres, but also user groups, to become (or stay) active in the standardisation field. Therefore attention will be paid to the USEM project about user empowerment (cf. 3.7.2.5).

In the framework of the Dfa@eInclusion project three deliverables on standardisation are scheduled.

Deliverable **2.2a**, this text, gives an overview of the domain. We sketch briefly the formal, the ad hoc, the company driven and the informal standardisation activities in Universal Design and assistive technology in general.

Future deliverables focus on the partners' participation in standardisation work (**D2.4.a**) and on the needs for setting up new standardisation activities (**D2.4b**).

## 2 List of contributors

- The basic text of this deliverable is provided by **Jan Engelen**, K.U.Leuven, in the framework of a contract with the Belgian NCC, *Toegankelijkheidsbureau*.
- Some information is taken from the documents area in the Standardisation Special Interest Group of **EDeAn**
- Recent information about ETSI STF's is based on documentation provided by **Stephen Furner** (BT) and **Bruno Von Niman** (ETSI)
- Actual information about CEN activities is provided by USEM project partners and CEN itself (**Luc Van den Berghe**)
- Pointers to the UN promotion of web site accessibility were provided by **Stephen Furner**
- The information about standardisation work in Japan was provided by **Hajime Yamada** (convener of the Japanese Accessible Design forum and COST219ter member)
- ISO/JTC1 info provided by **Kjell Age Bringsrud** (COST219ter)
- CIE Guidelines for accessibility (Comité International de l'Eclairage): info from **Janos Schanda** (Hungary) and **Ken Sagawa** (Japan)
- Information on Guide 6, Mandate 283 and Annex 2 on lessons from environmental actions in the standardisation field has been delivered by **Claes Tjäder**, **Swedish Institute of Assistive Technology** (SIAT)
- Information on the obligatory use of Open Standards in Denmark has been provided by **Søren Aalykke** (DC)

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### 3 Standardisation: general overview

In very general terms, producing a “standard” (*fr*: norme, standard; *de*: Norme; *es*: norma) is a voluntary action set up in the past, almost uniquely, by commercial partners who believe that the standardisation will permit easier exchanges of products and goods. This implied very often that the acceptance of the standards is also voluntary and triggered by expected commercial benefits. Only to a very limited extend consumer representatives do participate in standardisation.

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 standardisation initiatives are stimulated (= subsidised) by public bodies or, in Europe, directly and indirectly by the European Commission. Also many guidelines have been created by stakeholder groups.

#### 3.1 Basic documents on standards and standardisation processes

Several standardisation organisations have produced introductory webpages and brochures on standards and standardisation processes. A small overview:

- Very recently, CEN, one of the European Standardisation Organisations (cf. 3.2) produced a very systematic document about “standardisation”. Although it is focussing especially on the needs of CEN, it can be used as a tutorial to the overall standardisation field.<sup>1</sup>
- ETSI (cf. 3.2) provides starting information on their recently renewed website:
  - What are standards<sup>2</sup>
  - Why do we need standards<sup>3</sup>
- Also the organisation NORM-APME has created tutorial pages on standardisation<sup>4</sup>. The website also contains a very extensive glossary on terms related to standardisation.
- Within the USEM project (cf. 3.7.2.5) training material on standardisation is planned (available beginning of 2008)

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<sup>1</sup> CEN, “HANDS ON STANDARDIZATION” (October 2007). As it is not public yet, it can be found in the download area of the Dfa@eInclusion Standardisation WG

<sup>2</sup> Link: <http://www.etsi.org/WebSite/Standards/WhatIsAStandard.aspx>

<sup>3</sup> Link: <http://www.etsi.org/WebSite/Standards/WhyWeNeedStandards.aspx>

<sup>4</sup> Link: <http://www.normapme.com/index.html>

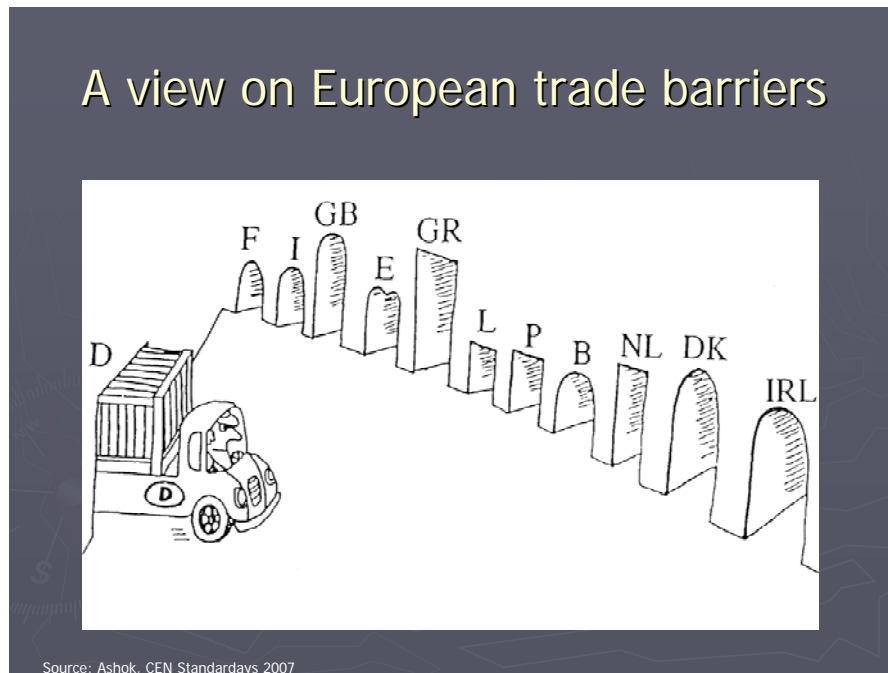


Fig. 1: A view on European trade barriers if no standardisation would be available...

### 3.2 Formal standards

Probably the best known examples of standards are the ISO standards (ISO = International Organization for Standardization). These are very formal documents created by an accepted international body after consultation with many national standardisation organisations and a rigorously established voting procedure. The immediate consequence is that producing these standards (and even updating them) takes a very long time.

In Europe, standardisation work has been delegated since many years to the 3 official standardisation groups (CEN, CENELEC and ETSI). Each of them has its own domain to cater for. Their international counterparts are respectively ISO, IEC and ITU-T<sup>5</sup>.



Fig. 2: The 3 ESOs, the European Standardisation Organisations

<sup>5</sup> IEC (<http://www.iec.ch/>) is not to be confounded with CIE ([http://www.cie.co.at/index\\_ie.html](http://www.cie.co.at/index_ie.html))

A few of these have agreements with ISO and ITU-T (International Telecommunication Union-Telecommunication Standardization Sector) so that some of their work can be shared and so that some standards are just taken over from each other.

A concrete example of such a hand-over in the field of Assistive technology and DfA is given by the development (since 2001) of several guidelines for standardisers (persons, committees) in order to come to a situation where all new standards would take accessibility and eAccessibility into account.

It started with the “*ISO/IEC Guide 71*” document that was later taken over by CEN/CENELEC/ETSI as *Guide 6*. The European Commission’s Mandate M283 to the Standards Bodies stipulated that these guidelines should be adapted for Standardisation in the field of information and communications technologies (ICT) for disabled and elderly people, a task mainly under the remit of a CEN DfA workshop (cf. 3.7.3.1 and 3.5 below).

More national and international standardization bodies are mentioned in sections 3.8 and 3.9.

### **3.3 Standardisation related work (“informal standardisation work”)**

Over the last years several of these 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 the “real” standards. E.g. ISO has developed a new range of “deliverables”, or different categories of specifications, allowing publication at an intermediate stage of development before full consensus.

Some of these standardisation related activities are given in the following table:

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>

Examples of this type of activities in relation to DfA and eAccessibility are given below.

### 3.4 Ad hoc and industry standards, conflicting standardisation procedures

Quite often some companies are able to put forward one of their developments as a standard to which others have to adhere in order to build, e.g., third party products. Well known are the technical specifications of Microsoft products and a few others.

Equally often industry groupings are working out guidelines or recommendations for standardisation of matters important to their community. Widely known examples are Open E-book, IETF, Daisy, ECMA, WAP, Bluetooth etc. Strictly spoken also the IEEE standards (e.g. the IEEE 802.11 series on WiFi) fall in this category.

Sometimes groups interested in standardisation address formal standardisation bodies, sometimes they prefer passing through industry related bodies<sup>6</sup>.

### 3.5 State of the art

There are many products and services on the market that are difficult or even dangerous to use for elderly and people with disabilities. *The standardization world recognized a number of years ago that there was no formal procedure for ensuring that the needs of elderly and disabled consumers were considered when writing standards for products other than for those specifically designed for persons with disabilities (e.g. assistive technology, technical aids, assistive devices for persons with disabilities).*

With Mandate 283 the European Commission aimed to promote the use of barrier-free design in the standardisation process, so that standards would consider and include the requirements of disabled and elderly persons and thus products, services and environments designed according to the standards could be

<sup>6</sup> This led during 2007 to a very controversial issue on the standardisation of XML based open document standards. The Open Document Standard (for texts, spreadsheets and presentations) was developed through international collaborative efforts, managed by the OASIS foundation who had the ODF standard (600 pages) finally, after five years, standardised by ISO in the summer of 2006 (ISO 26300). An alternative format, OOXML (Office Open XML) was produced in one year by Microsoft alone and was ratified as ECMA-376 (6000 pages) by ECMA, a private association that drafts standards on demand. Late 2006, Microsoft/ECMA introduced with ISO a fast track procedure for the standardisation of ECMA-376, also as an ISO standard. The fast track procedure however was not accepted.

used safely by a larger portion of the population. Mandate 283 stated that “it is essential that the principles of design for all, adaptive design and assistive technology are applied throughout the standardisation process”. A Joint Working Group with representatives of CEN and CENELEC members, ETSI, ANEC and other consumers and manufacturers organisations was formed to work out the intentions of Mandate 283. The work was jointly carried out by a working group constituted by CEN/CENELEC and ISO/IEC.

The work resulted in a number of reports and activities. The final report on Mandate 283 was sent to the European Commission in 2003. The reports and activities include:

- a guidance document which is a result of a close cooperation between ISO and European standardisation bodies (CEN/CENELEC Guide 6)<sup>7</sup> which is the basic platform for dealing with disability and elderly matters in standardisation work.
- a mechanism to ensure that the guidance document is used in the standardization process
- a review of existing standards which identifies product areas where standardization should be reviewed in relation to usability by elderly and disabled persons,
- a bibliography with reference literature that facilitates an understanding for and implementation of CEN/CENELEC Guide 6.
- Copenhagen & Brussels seminars

The prime target group for the reports and activities were the ‘standard producers’, i.e. persons (and committees, working groups etc) actively working within standard production at, firstly, European and, secondly, national and global levels.

### **Helpdesk**

At an early stage of the Mandate 283 work, there was a common understanding in the Joint Working Group that a “helpdesk” would be a powerful instrument to provide guidance to experts involved in standardisation in this context. The CEN Environmental Helpdesk (EHD) – a central body for direct consultation, information and guidance – served as a model for the work. Due to lack of funding this helpdesk has not been set up.

## **3.6 New developments in DfA related standardisation (formal standards)**

As DfA standardisation was explicitly mentioned in the eEurope2002 plan, several new actions were established over the last years in the European context (Engelen, 2003).

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 later on in this text.

## **3.7 European initiatives**

### **3.7.1 Initial steps**

Already in the middle of the nineties when ICT systems started booming, ETSI, one of the three European standardisation organisations 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 been taken on board in several EU countries:

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<sup>7</sup> The CEN/CENELEC Guide 6 can be downloaded from:  
<http://www.cen.eu/go/guide6>

- Industry is not sufficiently aware of the market potential for accessible products
- Standardisation processes should take into account the requirements of people with disabilities and these users should be more involved in standardisation work
- Need for legislation

### 3.7.2 *Coordination initiatives*

#### 3.7.2.1 **ICTSB**

The ICT Standards Board (ICTSB)<sup>8</sup> is an initiative from the three recognised European standards organisations 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).

#### 3.7.2.2 **DATSCG**

The "Design for All and Assistive Technology Standardisation Co-ordination group"<sup>9</sup> was created within ICTSB as a direct response to the eEurope2002 plan. Although it formally is a subgroup of ICTSB, it acts in a rather independent way and has the following 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 the 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)<sup>10</sup>, as representative of the final users is very important. Another important player is ANEC representing the standardisation needs of all customers and users. Also the Association for the Advancement of Assistive Technology in Europe (AAATE)<sup>11</sup> has an observer status to the DATSCG.

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

#### 3.7.2.3 **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 (**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.

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<sup>8</sup> Link: <http://www.icts.org/> and <http://www.ict.etsi.org/>

<sup>9</sup> Link: [http://www.icts.org/DATSCG\\_home.htm](http://www.icts.org/DATSCG_home.htm) and [http://www.ict.etsi.org/DATSCG\\_home.htm](http://www.ict.etsi.org/DATSCG_home.htm)

<sup>10</sup> Link: <http://www.edf-feph.org/en/welcome.htm>

<sup>11</sup> Link: <http://www.aaate.net> or <http://139.91.151.134/>

Working out the eEurope topics related to persons with a disability or elderly persons was delegated by ESDIS to the **eAccessibility expert group**<sup>12</sup>.

With respect to standardisation the eAccessibility group produced an overview document 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.

#### 3.7.2.4 COPRAS

COPRAS (Cooperation Platform for Research and Standards)<sup>13</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 as future IST research projects and ICT standards organisations. Its activities and deliverables therefore supported projects 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>14</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.

#### 3.7.2.5 USEM

The USEM project<sup>15</sup> aims to facilitate, enhance and increase qualification and participation of disabled or elderly users and their respective organisations in the European standardisation process of IST, by the Fortune concept. User information networking will improve European exchange of experiences thus disseminating information and encouraging the uptake of new IST standardisation.

USEM (April 2007 – September 2009) will support a number of important objectives:

- To design a core curriculum for the training of end-users
- To qualify more users with disabilities and elderly, which can represent formal and established user organisations, for the participation in European standardisation
- To qualify more users with disabilities for the participation in the design and assessment of European standardisation
- To improve the exchange of experiences by user information networking between
- different user groups on a European level

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<sup>12</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>13</sup> <http://www.w3.org/2004/copras/>

<sup>14</sup> <http://www.w3.org/2004/copras/docu/faq/Overview.html>

<sup>15</sup> <http://www.usem-eu.net/>

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

One of the first USEM deliverables that will be available soon is a basic presentation on standardisation: what is it, who is involved and how to get in touch with the standardisation bodies.

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

As stated before (in 3.3) a democratisation process is taking place in the standardisation arena. Besides formally established committees for creating the “real” 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.

#### 3.7.3.1 **CEN Workshop agreements in the DfA field**

Examples are the establishment of a CEN Workshop on **DfA**, “Design for all in ICT”, CWA14661 “Guidelines to Standardisers of ICT products and services in the CEN ICT domain<sup>16</sup>” and, more recently, the creation of the CEN Workshop 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>17</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>18</sup>. This European Quality Mark is based on the use of a methodology for assessing Web Accessibility within a European certification scheme. The final agreement (June 2006) is freely available<sup>19</sup>.

The CEN/ISSS WS **DPA** workshop<sup>20</sup> has three key objectives, namely:

- To bring together all the players in the information provision and e-publishing chain in order to achieve the critical mass significantly to enhance the provision 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.

The final workshop agreement is expected to be available in the beginning of 2007

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<sup>16</sup> <http://www.tiresias.org/guidelines/ceniss/>

<sup>17</sup> Links: <http://www.cenorm.be/cenorm/businessdomains/businessdomains/iss/activity/ws-wac.asp> and <http://www.support-eam.org>

<sup>18</sup> Link: <http://www.wabcluster.org>

<sup>19</sup> can be downloaded from <ftp://ftp.cenorm.be/PUBLIC/CWAs/e-Europe/WAC/CWA15554-00-2006-Jun.pdf>

<sup>20</sup> <http://www.cen.eu/cenorm/businessdomains/businessdomains/iss/activity/ws-dpa.asp>

### 3.7.3.2 ETSI STF's

Specialist task forces (STF) are typical for ETSI work. An STF is a team of highly-skilled experts working together over a pre-defined period to draft an ETSI standard (or to do its groundwork) under the technical guidance of an ETSI Technical Body and with the support of the ETSI Secretariat<sup>21</sup>.

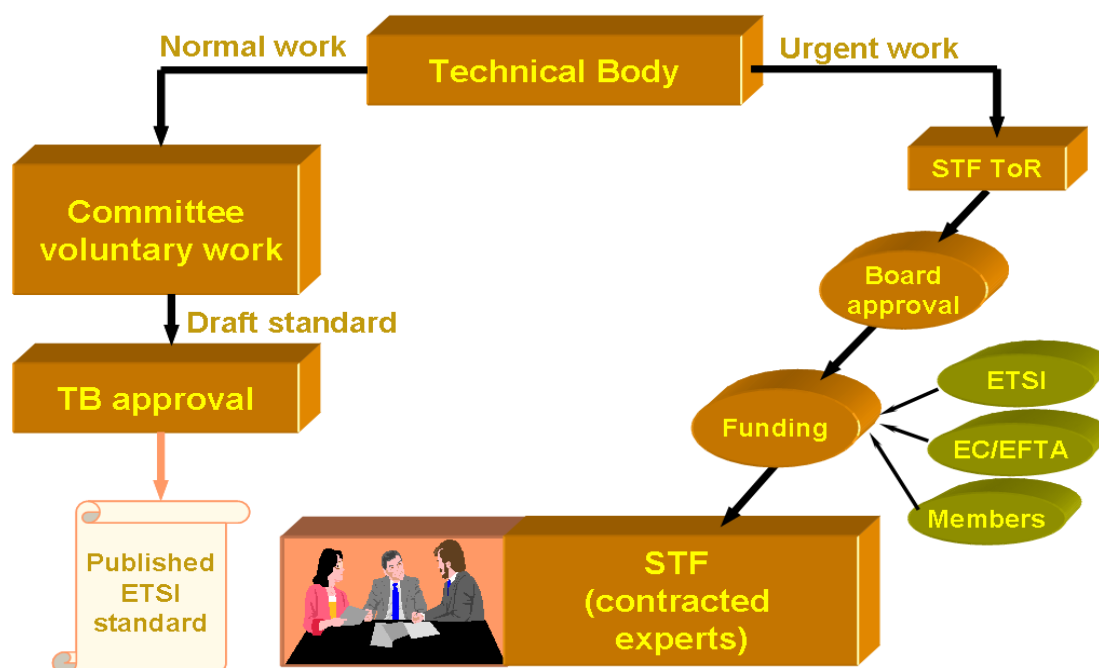


Fig. 3 How STF's (right branch) relate to "normal standardisation" work (left branch)

Some of the AT and DfA-related STF's have been focussing<sup>22</sup> on:

- Requirements of Assistive Technology Devices in ICT (STF 181)
- Speech recognition, Voice user interfaces (STF 182)
- Study on the multimodality of icons, symbols and pictograms (STF 183)
- 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)

<sup>21</sup> Link: <http://portal.etsi.org/stfs/process/home.asp>

<sup>22</sup> More info about these STF's can be found by using following link:

[http://portal.etsi.org/stfs/STF\\_HomePages/STFxxx/STFxxx.asp](http://portal.etsi.org/stfs/STF_HomePages/STFxxx/STFxxx.asp) after replacement of "xxx" by the appropriate number

- Display of public transportation information for disabled people (planned)

### 3.7.3.3 COST219ter

The main objective of this collaborative European Action (but with members from the US, 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>23</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. 3.9.2)<sup>24</sup>.

In 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 the ongoing work within their organisations or countries<sup>25</sup>.

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, 2007). COST219ter and the European Disability Forum are planning to file this work to ETSI in order to make it a formal standard.

### 3.7.4 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.

#### 3.7.4.1 EDeAN Standardisation SIG

The European Design for All Network (EDeAN) was established in 2002 as a response to the European eEurope programme for stimulation of IST use. 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 3.7.2.3. 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>26</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 & Stephanidis, 2004).

Members of the EDeAN network are exchanging information within so-called Special Interest groups. One of the discussion lines (to date there are 5 topic based ones and one for management use) is on *Standardisation*.

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<sup>23</sup> Link: <http://www.tiresias.org/cost219ter>

<sup>24</sup> Link: <http://www.tiresias.org/cost219ter/florence/hellstrom.htm>

<sup>25</sup> Link: <http://www.tiresias.org/cost219ter/florence/index.htm>

<sup>26</sup> Link: <http://www.edean.org>

The SIG Standardisation group has slightly over 100 members. Most of them come from Europe (but new 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.

Within DfA@eInclusion the SIG paradigm was used also for stimulating standardisation discussions between the project's WP2 members that have confirmed their interest<sup>27</sup>.

### ***3.7.5 Promotion of standards and guidelines: lessons from environmental actions***

DfA is a horizontal issue and promoting it is similar to the promotion of environmental concerns. DfA covers most societal sectors. Even though several initiatives have been taken when it comes to DfA in standardisation, more can be done to improve the situation. By looking into what has been done in the environmental sector to raise awareness among stakeholders and to promote environmental concerns in standardisation, lessons can be learned for the implementation of the concept of DfA in standardisation (cf. Annex 2)

## **3.8 Some national initiatives**

### **3.8.1 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>28</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. fig. 4 below).

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<sup>27</sup> On Dec. 1, 2007 the DfA@eInclusion Standardisation WG consisted of: Lis Klove Bjorklund (SE), Birgitte Dalgård Johansen (DK), Søren Aalykke (DK), Clas Tjäder (SE), Yehya Mohamad (DE), Carlos Velasco (DE), Stefan Carmien (DE), Janos Schanda (HU), Cecilia Sik Lanyi (HU), Jan Engelen (BE), Gill Whitney (UK & DATSCG chair), Erkki Kempainen (FI), and Carlos Pereira (PT).

<sup>28</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, available at:  
[http://www.tiresias.org/cost219ter/extending\\_horizons/vanderheiden.htm](http://www.tiresias.org/cost219ter/extending_horizons/vanderheiden.htm)



## RERC work on Access Guidelines

- Guidelines for Consumer Products (1992)
- IBM Accessibility Guidelines (1993)
- Software Accessibility Guidelines for ITF (1994)
- First Web Guidelines (HTML) (1995)
- Microsoft Accessibility Guidelines (1999)
- TAAC work
  - complied over 1000 guidelines for TAAC Committee
- On-Line Design Tool - 255
- EITAAC work – and support
- Universal Design Principles
- Accessibility Essentials – Design tool 2
  - User Requirements
- WCAG (W3C Web Content Accessibility Guidelines)

Fig. 4 A small excerpt of Guideline work in the US (cf. footnote 28)

In the US 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 contribution, especially Section 508 work is highly important for standardisation<sup>29</sup>.

Outside observers (e.g. 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 (Web 2.0). According to the original 508 rules, software applications must be accessible through keyboard shortcuts and hotkeys. On the contrary, Web 508 rules don't have this requirement.

### 3.8.2 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

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<sup>29</sup> Link: <http://www.section508.gov/>

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<sup>30</sup>.

### **3.8.3 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 for 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 introducing the Usability Principle, defined in a similar way as ISO 9126-1 and ISO 9241-11 rules.

### **3.8.4 Germany**

On the background of the EU recommendation to adopt WAI (part of the eEurope2002 plan), in Germany an approach has been made to match it with the requirements and circumstances of politics and legislation. With the new legislation, social book IX (SGB IX) and the law on the equalization of opportunities for people with disabilities (Bundesbehindertengleichstellungsgesetz - BGG) 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 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 was explicitly taken up in the BGG and particularly to guarantee barrier free access to the Internet.

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>31</sup>

### **3.8.5 Denmark**

In September 2007 the Danish Government signed an agreement with the Danish Regions and Local Government Denmark (the Organisation of Municipalities in Denmark) to use mandatory open standards by January 1, 2008.

This agreement means that by the beginning of 2008 all public bodies must use 7 sets of open standards for new it-solutions. It also means that all public bodies must be able to receive text documents in two open document standards<sup>32</sup>. All of these standards are XML based. More details can be found in Annex 3.

### **3.8.6 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, that users themselves are represented (and

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<sup>30</sup> Link: <http://www.tiresias.org/reports/dda.htm>

<sup>31</sup> Presentation by Prof. Buehler (Nice 2003).

Link: [http://web.archive.org/web/20031005204402/www.etsi.org/cce/proceedings/7\\_2.htm](http://web.archive.org/web/20031005204402/www.etsi.org/cce/proceedings/7_2.htm)

<sup>32</sup> Advantages and problems related to the use of Open Standard Document formats have been discussed in footnote 6. Cf. also (Engelen, 2007)

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 makes publicity through the organisation of symposiums and the participation in exhibitions

The development of the actual accessibility standards is done through a hierarchical approach (cf. picture). JISX8341-1 contains the overall framework and the common guidelines. Standards JISX8341-2 and higher then specify the accessibility requirements for the different application domains<sup>33</sup>.

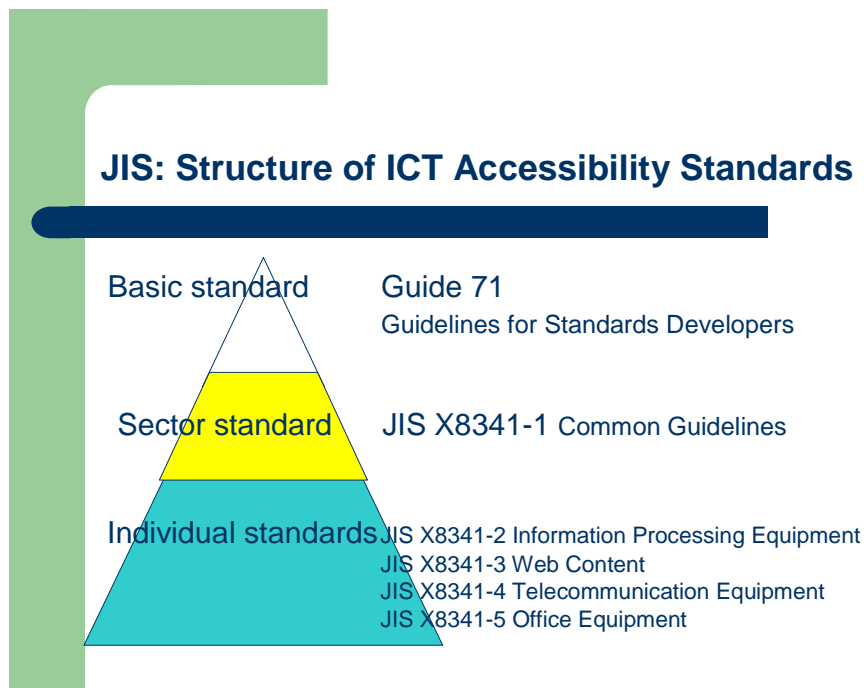


Fig. 5 The Japanese scheme for building up accessibility standards in a hierarchical way (courtesy Hajime Yamada)

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

<sup>33</sup> Most of the information in this part is based on the overview document by Hajime Yamada, “ICT accessibility standardization and its use in policy measures”, downloadable from: <http://www.ictsb.org/DATSCG/Documents/Accessibility%20standardization.pdf>

- High priority for the realisation of information barrier-free society
- Accessibility considerations now frequently taken into account for website design

## 3.9 International initiatives

### 3.9.1 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"

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 to be responsive to international, regional, national, and end user requirements in the area of accessibility, JTC 1 establishes a Special Working Group on Accessibility with the following

According to its terms of reference this SWG will, among other actions:

- 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>34</sup>.

Currently the work is done in two task groups:

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<sup>34</sup> Link: <http://www.jtc1access.org/>

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

Since September 2006 the Standards inventory is considered as almost complete. As stated above it can be freely downloaded from the SWG's documents area.

Some of the JTC1 Sub Committees (SCs) also have activities related to accessibility, in particular the following:

**ISO/TC 173; Assistive products for persons with disability.**

*Working group 7:* Provisions and means for orientation of visually impaired persons in pedestrian areas  
This group, although focused on persons with visual impairments, is working with projects that will be beneficial for all pedestrians, giving guidance for orientation and ensure safety at crosswalks and on railway station platforms.

**ISO/IEC JTC 1/SC 35; User Interfaces.**

*Working Group 6 :* User Interface Accessibility

This group is addressing user interfaces for people with special needs (including children, the elderly, the permanently or temporarily disabled and people in constrained usage environments). It shall act as a mirror group to JTC1 SWG-A within SC35 and will guide SC35 policy regarding other standards committees in the accessibility area

**ISO/IEC JTC1 /SC36; Information Technology for Learning, Education, and Training.**

*Working Group 7:* Culture, Language, and Human Functioning Activities.

This group is developing a framework for content and user interfaces to be accessible by users with disabilities – where ‘disability’ is conceived not as something a person lacks, but being instead a mismatch between learners needs and the education delivered.

### 3.9.2 ITU

ITU, headquartered in Geneva, Switzerland is an international organisation within the United Nations System<sup>35</sup> 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>36</sup>.

This group has published an ACCESSIBILITY CHECKLIST<sup>37</sup> for the makers of standards to ensure that they are taking into account the needs of those to whom accessibility to ICTs are restricted, the deaf or hard-of-hearing for example. Such a list will help to ensure that accessibility needs are taken into account at an early stage, rather than having to retrofit existing standards.

Another important issue for SG 16 is Total Conversation. Total Conversation is an ITU Service description found in ITU T Rec. F.703 and covers videophony with real-time text. A Total Conversation Service is an

<sup>35</sup> <http://www.unsystem.org/>

<sup>36</sup> Link: <http://www.itu.int/ITU-T/studygroups/com16/accessibility/>

<sup>37</sup> Link: <http://www.itu.int/ITU-T/studygroups/com16/accessibility/docs/tacl.pdf>

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 because it is the bidirectional transmission 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.

SG 16 made sure that sections on accessibility were properly integrated in F.703, but also in at least another twenty standardisation documents<sup>38</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 document.

### 3.9.3 CIE

The “Comité International de l’Eclairage/International Committee for Illumination” is an internationally oriented, highly specialised body focussing on standardisation of all applications of light<sup>39</sup>. Recently a special high level working group was established to produce guidelines for standardisers in this field, i.e. the “CIE Guidelines for Accessibility”. In 2007 a specialised guideline document was published: “Visibility and lighting Guidelines for Older Persons and Persons with Disabilities”<sup>40</sup>

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

### 3.10.1 W3C Guidelines

In relation to Design for All or Universal Design, there is one very well known example: the World Wide Web consortium and especially the **Web Access Initiative**<sup>41</sup> that produced several guidelines on web accessibility.

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<sup>38</sup> Detailed in: <http://www.itu.int/ITU-T/studygroups/com16/accessibility/docs/apflyer.pdf>

<sup>39</sup> Link: [http://www.cie.co.at/index\\_ie.html](http://www.cie.co.at/index_ie.html)

<sup>40</sup> It is based heavily on the ISO/IEC Guide 71, mentioned in 3.2. The CIE document is not yet public. Therefore it can be downloaded only from the documents area of the Dfa@eInclusion website.

<sup>41</sup> Link: <http://www.w3.org/WAI/>

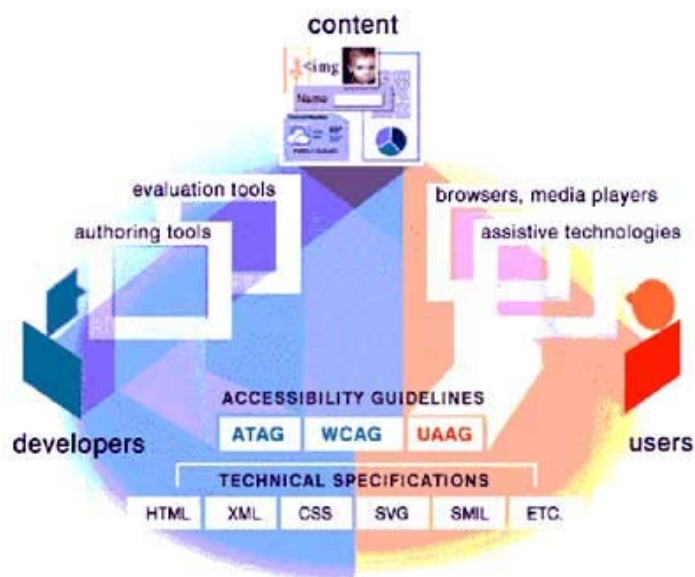


Fig. 6 Essential Components of Web Accessibility according to W3C-WAI

Although almost universally accepted as the primary reference point 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.

Following problems do remain in this area:

- web page accessibility testing, according to WCAG1.0, relies to some extent on human controls. Therefore it is important to specify the procedures for testing. Several projects and actions (including the CEN-WAC workshop – cf. 3.7.3.1 above ) tried to set up standardised certification procedures but encountered quite some opposition from industry<sup>42</sup>.
- since many years version 2 of the WCAG guidelines is in the pipeline. Testing organisations to some extent have meanwhile given up waiting for it.

### 3.10.2 Daisy

Within the domain of talking books or audiobooks (for use by persons with a visual impairment), several years ago the Daisy consortium<sup>43</sup> was created among large organisations for the Blind and Visually impaired in order to replace the (Philips) cassette tape systems by CD's. Soon afterwards this consortium has created its own Daisy 2.02 standard which is in almost universal use in this domain.

However when moving on to version 3.0 the Daisy consortium decided that the new version would stand much better chances to be accepted, also outside the world of consumers with a reading handicap, if it were created as a formal standard. In this case NISO (National Information Standards Organization, USA) became involved and Daisy 3 therefore now is formally: DAISY/NISO Z39.86.

<sup>42</sup> Recently a voluntary European Web Page accessibility certification group was established, Euracert (link: <http://www.euracert.org>)

<sup>43</sup> Link <http://www.daisy.org>

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

As a new member of World Health Organisation (WHO) Family of International Classifications, ICF<sup>44</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 spoken ICF is not a standard but it is frequently used by funding organisations to quantify problems caused by impairments.

## **4 Activities bypassing formal standardisation**

It has been mentioned already a few 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 instead of formal standards etc.

This has lead to several alternative approaches.

### **4.1 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 Proceedings<sup>45</sup>.

### **4.2 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<sup>46</sup>.

On the other hand long term experience in the US shows that the buying power of governments and authorities can be used to impose accessibility requirements. The principle is 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 to the authorities. Also other buyers/users will then benefit from these improvements.

As a consequence the European Commission stimulates to use procurement strategies as a way to improve the accessibility of goods and services.

#### **4.2.1 International Workshop on Accessibility Requirements for Public Procurement**

This October 2004 workshop (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 US Access Board, and the European ICT Standards Board (ICTSB). It was supported by the European Disability Forum (EDF) together with the eInclusion@EU project.

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<sup>44</sup> Link: <http://www.who.int/classifications/icf/en/>

<sup>45</sup> Link: <http://www.brailletnet.org/colloques/policies/program.html>

<sup>46</sup> Although that may happen in a not so far future (private communication by P. Timmers, EU eInclusion Unit, Nov. 2007)

The workshop also contributed to the US-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).

## **4.2.2 Mandate 376 on Public Procurement**

### **4.2.2.1 Background**

The 2005 EC Communication on Accessibility<sup>47</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.

The primary purpose of EU's public procurement Directives is to ensure that there is a properly functioning internal market so that suppliers from any Member State can have equal access to the public procurement markets in any Member State. Also other objectives, such as facilitating production and marketing of accessible mainstream products using the bargaining power of public procurement, are to be involved<sup>48</sup>.

End of 2005 a mandate (called Mandate 376) has been given by the European Commission to the European Standardisation Organisations (ESOs) 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>49</sup> requests:

Phase I: Inventory work

Technology products (ICT); Existing accessibility requirements & current gaps; existing standards to comply with accessibility requirements Assessment: requirements as technical specifications/ award criteria; Report on testing and certification schemes

Phase II: Standardisation

European standard (EN) "Accessibility requirements for ICT domain", to be used as technical specifications ; Technical report (TR) listing existing technical standards ; Guidelines on award criteria ; Guidance and support material & an on line freely accessible toolkit.

### **4.2.2.2 Status**

The start of this Mandate was plagued with several problems. As a consequence the work has only started in the autumn of 2007. Within CEN the work is attributed to a special committee, within ETSI an STF (cf. 3.7.3.2) was set up<sup>50</sup>. Members of the DATSCG group are invited to keep an eye on the integration of the work of both groups.

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<sup>47</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://europa.eu.int/information\\_society/policy/accessibility/policy/com-ea-2005/a\\_documents/cec\\_com\\_eacc\\_2005.html](http://europa.eu.int/information_society/policy/accessibility/policy/com-ea-2005/a_documents/cec_com_eacc_2005.html)

<sup>48</sup> Articles on technical specifications state that whenever possible these technical specifications should be defined so as to take into account accessibility criteria for people with disabilities or design for all users (Article 23, Directive 2004/18/EC on the coordination of procedures for the award of public works contracts, public supply contracts and public service contract and Article 34, Directive 2004/17/EC coordinating the procurement of entities operating in the water, energy, transport and postal services sectors).

<sup>49</sup> Link: [http://europa.eu.int/information\\_society/policy/accessibility/deploy/pubproc/eso-m376/a\\_documents/m376%20en.pdf](http://europa.eu.int/information_society/policy/accessibility/deploy/pubproc/eso-m376/a_documents/m376%20en.pdf)

<sup>50</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 an STF.

Activities in this field are regularly reported upon in the DfA@eInclusion Standardisation WG.

Early 2008, a follow-up mandate, called M440, seems to be under preparation. It would take care of the procurement process for items in the built environment. Liaison with actors of M376 is also foreseen<sup>51</sup>

## 5 Conclusion

We have focussed in this overview text on the very important changes that are taking place in the standardisation field (e.g. the informal work, more open discussions) and especially on the impact of these changes for improving the situation in the field of Design for All and Assistive Technology. Also the growing user involvement (cf. USEM project) is an important step towards guidelines and standards that are really useful.

We know that there is a low representation of consumer representatives in standardisation. Training on a national scale could be an ingredient in increasing this participation. The European Commission can also act in this field to influence Member States to do more.

From the projects side we would like to stimulate the Commission to initiate work to increase the integration of DfA aspects in the standardisation process, including follow up of the outcomes of Mandate 283 i.e. with the experiences of usage of the mechanism, the revision of present standards and the usage of CEN/CENLEC Guide 6. In addition It could be beneficial to study the experiences from the Helpdesk in the environmental sector to evaluate if it could be useful a tool to strengthen DfA-concerns in the standardisation process.

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<sup>51</sup> Communicated by Inma Placencia (EU) at the DATSCG meeting of January 17, 2008

## 6 ANNEX 1: Ongoing or forthcoming standardisation actions

The D2 Standardisation group has collected following information on important standardisation activities that have recently started or will take off in the near future:

### 6.1 CEN

- CEN/TS 15480-4: Identification card systems - European Citizen Card - Part 4: Recommendations for ECC issuance, operation and use (CEN/TC 224/WG 15, European Citizen Card);

### 6.2 ETSI

- ETSI Specialist Task Force 322: Guidelines for generic user interface elements for 3G mobile terminals, services and applications  
Deliverable: ETSI Guide;
- ETSI Specialist Task Force 324: Extending e-Inclusion to Public Internet Access Points (PIAPs)  
Deliverable: ETSI Technical Specification;
- ETSI Specialist Task Force 326: Generic spoken command vocabulary for ICT devices and services  
Deliverable: ETSI Standard.

### 6.3 ISO (International Standardization Organisation)

Work in ISO/IEC Joint Technical Committee One (JTC1).

JTC1 is a joint effort between the International Standardization Organization (ISO) and the International Electrotechnical Committee (IEC).

JTC1 has established a Special Working Group on Accessibility (JTC-1 SWG-A). This group was formed to track all global, regional and national standards related to ICT accessibility by gathering user requirements, publishing an inventory of all known accessibility standards efforts and identifying areas/technologies where accessibility issues has not yet been addressed.

[Updated versions of this document will be used during preparation of deliverables 2.4a and 2.4b]

## 7 ANNEX 2: Standardisation of DfA solutions, lessons from environmental actions

DfA is a horizontal issue and is similar to environmental concerns. DfA covers most societal sectors. Even though initiatives have been taken when it comes to DfA in standardisation more can be done to improve the situation. By looking into what has been done in the environmental sector to raise awareness among stakeholders and to promote environmental concerns in standardisation, lessons can be learned for the implementation of the concept of DfA in standardisation.

In 2004 the European Commission launched a Communication COM 2004, 130 final about integration of environmental aspects into European standardisation.

In particular, four key issues were identified in this Communication:

- raising awareness and environmental thinking;
- setting priorities;
- enhancing stakeholder participation and finally
- using tools and offering incentives.

The results from the Commission work when dealing with environment was that nearly all stakeholders felt that a Communication would be a useful contribution which would help them in their work.

As was stated above in Mandate 283 one starting point for standards for DfA is related to problems with usability or lack of usability.

Under section 5 Key issues, the following can be read in the Communication on environmental aspects into European standardisation:

”Care for the environment, optimal use of resources and efficient energy consumption have grown in importance amongst economic operators, customers and public authorities. Standardisation as a vehicle to implement business activities should be receptive to the need for environmental thinking, even though it is never the standards themselves that have an impact on the environment, but rather the products, processes and services covered by those standards. Depending on the way a standard is written, the provisions included and those omitted, the environmental impact of the issue to be standardised is to a large extent determined. Consequently, the experts writing or revising the standards need to be aware of environmental considerations and possible environmental impact. A lot will depend on the environmental expertise available in the standards development process, and the willingness to take environmental issues systematically into account. The aim of this Communication is to promote awareness-raising activities and an exchange of expert knowledge and good practice, so that standards can contribute to a better environment and hence to sustainable development. Efforts at European level will need to be complemented at national level.”

“Taking the environment into account must become a Commitment for all stakeholders and technical experts involved in the process of creating standards.”

“There is no single or simple answer to the question of how to proceed in order to take the environment into account in European standardisation. The first step, naturally, should be to find out how the standard may impact on the environment. Consideration of the possible environmental impact of standards does not necessarily trigger complicated and time-consuming research or study activity, nor does it mean that a life-cycle assessment needs to be carried out to come to a satisfactory assessment. Obviously, it is better to take the environmental dimension into account from the very first stage than to revise a standard later on.

Therefore, what matters is a systematic approach to increase environmental thinking at all stages of the standardisation process, which should then lead to concrete improvements.”

Under section 7 Conclusions in the above mentioned Communication the following can be seen.

“The Commission intends this Communication to raise awareness for the need to integrate environmental aspects into European standardisation, a voluntary, stakeholder-driven process.”

“The Commission hereby acknowledges that environmental aspects need to be integrated into European standards.”

“Training has been identified as a key issue to ensure that environmental stakeholders can effectively voice their views in the European standardisation process.”

“The systematic use of tools for the integration of environmental aspects into standardisation needs to be put into practice. Stakeholders are encouraged to use the tools that have been developed for dealing with environmental considerations in standardisation. Increased use of such tools will enhance experience and it will increase the number of standards with an environmental dimension. This in turn will further increase the attractiveness of European standards for the purposes of policy support and legislation, including in the environmental field.”

Several of these actions could, *mutatis mutandis*, be set up to promote the standardisation of DfA solutions.

(CT)

## 8 ANNEX 3: Mandatory use of Open Standards, the example of Denmark

In September 2007 the Danish Government signed an agreement with the Danish Regions and Local Government Denmark (the Organisation of Municipalities in Denmark) to use mandatory open standards by January 1, 2008<sup>52</sup>.

This agreement means that by the beginning of 2008 all public bodies must use 7 sets of open standards for new it-solutions. It also means that all public bodies must be able to receive text documents in two open document standards.

The mandatory open standards have been divided into 7 subsets:

- 1) Standards for data exchange between public authorities
- 2) Standards for electronic case and document management
- 3) Standards for electronic public procurement (e-business)
- 4) Standards for digital signature
- 5) Standards for public web sites and accessibility
- 6) Standards for it security (only State authorities)
- 7) Standards for document exchange

### Details:

#### ad. 1:

OIOXML refers to a common public language in the XML format providing the basis for creating coherence between the IT system of public authorities, as OIOXML ensures that information can be exchanged in a uniform and intelligible way.

#### Naming and Design Rules

The entire basis for developing OIOXML through OIO data definitions is expressed via the set of rules known as OIO Naming and Design Rules (NDR).

OIOXML is a nationally developed XML dialect. Each data definition in OIOXML consists of two elements: a semantic definition and a syntax definition. All OIOXML information can be found on the InfoStructureBase, a database maintained by the .

#### A common language for exchanging public data

In future, public authorities need not establish special 'translators' for each individual purpose in order to exchange data with each other. When the entire public sector is using OIOXML, data can be exchanged and understood right away. Interoperability between IT solutions across the public sector is ensured by agreeing both on syntax and semantics for each individual concept in the exchange.

#### OIO data definitions - semantics and syntax

OIOXML, like any other language, consists of a number of 'terms', each of which describes a concept, and which, taken together, can be combined to sentences or messages. A term describes a specific concept and is designated in OIOXML as an OIO data definition.

An OIO data definition consists of two elements:

- An OIO semantic definition, describing the signification or meaning of the concept represented by the data definition.
- An OIO syntax definition, describing the physical XML format used to represent the concept in a specific OIOXML message. The syntax definition is specified in an OIOXML schema, i.e. an XML schema complying with the XML Schema recommendation as well as the nationally developed set of rules, known as OIO Naming and Design Rules (NDR).

It is essential to a meaningful exchange of information that semantics and syntax are closely linked together in a data definition. As a consequence, a syntax definition (an OIOXML schema) cannot stand alone. It must exist together with a semantic definition in order to form a data definition.

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<sup>52</sup> More details can be found at:

<http://en.itst.dk> and

[http://en.itst.dk/the-governments-it-and-telecommunications-policy/open-standards/Mandatory\\_Standards\\_English\\_summary.pdf/view](http://en.itst.dk/the-governments-it-and-telecommunications-policy/open-standards/Mandatory_Standards_English_summary.pdf/view)

**Upgrading to OIO data standard**

In addition, an OIO data definition may be upgraded to the status of an OIO data standard if recognised by the Core Component Working Group or by a Sector Standardisation Committee (SSC) as particularly suitable for reuse. If a data definition has been upgraded to a data standard, it is always required to be reused and no other data definitions describing the same information may be established.

**OIO working model for data standardisation in the sectors**

In the OIO working model, the National IT and Telecom Agency gives a number of recommendations on how to proceed with data standardisation in the best possible way in a sector with a special need of sharing and exchanging data.

**ad. 2:**

Targeted efforts are being made to implement common standards for electronic case and document management - known as the FESD standard. The aim of these standardisation activities is to promote e-government in the public sector.

**More on FESD**

The public sector's IT systems at government, local and regional level must be able to play together in a secure and efficient manner. Targeted efforts are therefore being made to implement common standards for electronic case and document management - known as the FESD standard. The aim of these standardisation activities is to promote e-government in the public sector, and the means is to ensure that the various electronic case and documentation management systems (Electronic Record Management (ERM) systems - elektronisk sag og dokumentations håndtering (ESDH) in Danish) get a common core functionality, also ensuring that this core is further developed in a uniform manner. A common core functionality is to ensure:

- that cases can be handled across several organisations
- that authorities working with open cases can be joined together
- that tasks can be transferred between different authorities.

A number of common standards for electronic case and document management will thus be prepared. The specific aim of this technical standardisation is to establish:

- a common data model for electronic case and data management
- models for uniform modules for the systems
- uniform interfaces to other IT systems.

Management of the FESD standardisation is undertaken by the Data Standardisation Division under the National IT and Telecom Agency. This placement is to ensure that a synergy effect is achieved, and that there is coordination between general IT architecture and standardisation initiatives and the specific initiatives in the ERM area. An FESD Standardisation Group has been appointed to prepare drafts for the various standards. The drafts are subjected to public consultation under the normal procedure and must be finally approved by the OIO Data Standardisation Committee and/or the OIO IT Architecture Committee. Parts of the data model have been circulated for consultation and subsequently approved by the OIO Data Standardisation Committee (the former XML Committee) and the OIO IT Architecture Committee (the former Architecture Committee).

**What is a logical data model?**

In this context, a logical data model is an information architecture describing the enterprise's requirements for the information to be organised into classes, both at the primary level and as more specific attributes or data descriptions. In FESD standardisation, UML is used for describing the logical data model.

**What is a module?**

A module - or functional module- in FESD standardisation is basically regarded as a "a well-defined task with a fixed defined set of functions and interfaces".

A module is either programmed as an independent part of the solution - which may function independently and/or together with the other parts of the solution - or it is a well-defined set of functions that may be disengaged (isolated) and whose functions can be taken over by external systems using well-defined interfaces.

**What is an interface?**

To ensure interoperability, future information models regarding ERM are to standardise certain information elements and combinations of these in interface descriptions. Such interfaces are formulated as OIOXML and thus indicate semantics and syntax for transport of data between ERM systems and other systems. An interface may express both one-way and two-way communication between systems.

**ad. 3:****OIOUBL - common standards for e-business documents****OIOXML Electronic invoicing**

The work to standardise e-business is carried out within the framework of the Sector Standardisation Committee for e-Business, appointed by the OIO Data Standardisation Committee. Under the Sector Standardisation Committee for e-Business, there is a permanent working group - known as the e-Business Group - to advise the Agency on concrete technical standardisation work.

So far, the work has resulted in OIOXML electronic invoicing, which was introduced as mandatory on 1 February 2005 for all public authorities in Denmark. The current rules about OIOXML electronic invoicing have been incorporated in an Executive Order. For handling the format, a number of tools and guidelines have been developed.

In 2007 and 2008, the Agency's work will be focused on providing a Danish version of the international UBL 2.0 standard, which contains documents for the entire procurement process from catalogue to invoice. The first documents in OIOUBL, covering the basic procurement process, have already been published.

**(SA)**

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