

Universal accessibility

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Universal accessibility

- Universal accessibility (US) = Design for All (Europe)

The design of products, services, and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design.

Accessibility guidelines

- **W3C (world)**
 - Web Content Accessibility Guidelines 1.0 (1999)
 - <http://www.w3.org/TR/WAI-WEBCONTENT/>
- **ETSI (Europe)**
 - Human Factors (HF): Guidelines for ICT products and services: “Design for All”, ETSI EG 202 116 (2002)
 - <http://www.etsi.org>
- **Drempels Weg (The Netherlands)**
 - Zorg dat het klikt! Richtlijnen voor het bouwen van een website voor mensen met een verstandelijke beperking (2003)
(Make sure that it clicks! Guidelines for building a website for people with a cognitive limitation)
 - <http://www.drempelsweg.nl>

World Wide Web Consortium (W3C)

- **Guidelines for accessible web sites**
 1. Provide equivalent alternatives to auditory and visual content.
 2. Don't rely on color alone.
 3. Use markup and style sheets and do so properly.
 4. Clarify natural language usage.
 5. Create tables that transform gracefully.
 6. Ensure that pages featuring new technologies transform gracefully.
 7. Ensure user control of time-sensitive content changes.
 8. Ensure direct accessibility of embedded user interfaces.
 9. Design for device-independence.
 10. Use interim solutions.
 11. Use W3C technologies and guidelines.
 12. Provide context and orientation information.
 13. Provide clear navigation mechanisms.
 14. Ensure that documents are clear and simple.

European Telecommunication Standards Institute (ETSI)

- **Human Factors Guidelines for ICT products and services: “Design for All”**
 - User characteristics
 - User-centered design
 - General guidelines
 - general design principles, dialogue styles, multimedia presentation and multimodal interaction, labels and abbreviations, national variations, security, user support
 - Input components
 - tactile, acoustic, visual, biometric and electronic components
 - Output components
 - visual, visual media contents, visual indicators, acoustic, tactile and printed components
 - Product- and service-specific guidelines
 - Mainly telecommunication-related

Drempels Weg

- **Guidelines for building a website for people with a cognitive limitation**
 1. Build the site in cooperation with people with a cognitive limitation.
 2. Ensure the content is interesting for people with a cognitive limitation.
 3. Ensure the website is usable for the specific target group.
 4. Ensure the site has one clear theme.
 5. Make the website attractive using humor and surprises.
 6. Choose a clear and consistent navigation structure.
 7. Use the same lay-out at every page.
 8. Keep the texts simple and readable, but not childish.
 9. Provide audio and image alternatives of all texts; provide text and audio with all images.
 10. Manage the site well and involve people with a cognitive disorder.

An example: Travel information for people with cognitive limitations

- **Demonstrator**
 - Desktop application
 - User profile
 - Prepare trip (public transport)
 - PDA application
 - Agenda
 - Trip step-by-step
- **Leading principles**
 - Accessible for target group
 - Involvement of target group in design and evaluation
 - Continuity of use
 - Location-based
 - Current travel information

Desktop: User profile

The screenshot shows the 'Profiel' (Profile) control panel window in Windows XP. The window title is 'Profiel' and it has a 'STOP' button in the top right corner. The window is divided into several sections, each with a set of radio buttons for configuration. The sections are: 'Leesniveau' (Reading level), 'Symbolensets' (Symbol sets), 'Voorlezen' (Read aloud), 'Lettergrootte' (Font size), 'Contrast', 'Kleurgebruik' (Color usage), 'Reactiesnelheid programma' (Program response time), and 'Klok' (Clock). A 'Toon voorbeeld:' (Show preview) section is on the right, which is currently empty. The 'Leesniveau' section has 'lezers' selected. 'Symbolensets' has 'beide' selected. 'Voorlezen' has 'aan' selected. 'Lettergrootte' has 'normaal' selected. 'Contrast' has 'normaal' selected. 'Kleurgebruik' has 'kleur' selected. 'Reactiesnelheid programma' has 'langzaam' selected. 'Klok' has 'digitaal' selected. The window also has a navigation bar at the top with buttons for 'Persoonlijk', 'Instellingen', 'Reizen', 'Agenda', and 'Contacten'.

Profiel STOP

Persoonlijk Instellingen Reizen Agenda Contacten

Leesniveau
 kijkers lezers

Symbolensets
 vijfhoek pcs beide

Voorlezen
 aan uit

Lettergrootte
 klein normaal groot

Contrast
 gematigd normaal scherp

Kleurgebruik
 zwart/wit kleur geel/blauw

Reactiesnelheid programma
 langzaam normaal snel

Klok
 analoog digitaal

Toon voorbeeld:

Desktop: Plan trip

Profiel

Persoonlijk | Instellingen | Reizen | Agenda | Contacten

Instellingen reizen | Reis plannen | Bewaarde reizen

1 | 2 | 3 | 4 | 1

Reis invoeren

Maak uw keuze:

Van ADRES STATION

Standaard uitgebreid

Staat: Huisnr:

Plaats:

Naar ADRES STATION

Station:

Datum:

Tijd: :

VERTREK AANKOMST

Naam	Adres
<input checked="" type="radio"/> Alex Janssen	Stationsplein 4 3535 HU Roermond
<input type="radio"/> Persoon a mobiel	Adres x
<input type="radio"/> Persoon b	Adres y
<input type="radio"/> Persoon c	Adres z

Geef reisadvies

Profiel

Persoonlijk | Instellingen | Reizen | Dagindeling | Contacten

Instellingen reizen | Reis plannen | Bewaarde reizen

1 | 2 | 3 | 4 | 1

Reisadvies

Datum: zaterdag, 11 september 2004

Van: stationsplein, roermond

Naar:

Vertrek	Aankomst	Reistijd	Overstappen	Erder	Later
9:34	10:05	0:48	1		
10:31	11:18	0:47	1		

Vertrek	Van	Naar	Aankomst	Hoe
10:31	stationsplein roermond	reinstation roermond	10:32	lopen 1 min
10:32	reinstation roermond spoor 1	reinstation maastricht maastricht spoor 4b	11:03	IC intercity ns richting maastricht
11:08	centraal station maastricht	balijeweg maastricht	11:15	stadsbus 18 sbm richting borgharen

Wijzig reis | Bewaar reis

Profiel

Persoonlijk | Instellingen | Reizen | Agenda | Contacten

Instellingen reizen | Reis plannen | Bewaarde reizen

1 | 2 | 3 | 4 | 1

Toevoegen contactpersonen

Zoeken:

Naam	Telefoonnummer
<input checked="" type="checkbox"/> Persoon a	0123456789
<input type="checkbox"/> Persoon a mobiel	0123456789
<input type="checkbox"/> Persoon b	0123456789
<input type="checkbox"/> Persoon c	0123456789

Toevoegen | Wissen

Profiel

Persoonlijk | Instellingen | Reizen | Agenda | Contacten

Instellingen reizen | Reis plannen | Bewaarde reizen

1 | 2 | 3 | 4 | 1

Toevoegen aan agenda

Overzicht

Reis

Van: Stationsplein, Roermond

Naar:

Contactpersonen

Naam reis: Reis Alex

Datum: 11-09-2004

Begintijd: 10:31

Eindtijd: 11:18

Alarm: aan om 10:20

Afbeelding:

Toevoegen | Wissen

PDA: Agenda



PDA: Trip step-by-step

Reizen

Loop naar NS station Roermond

Koop een kaartje aan het loket

Loop naar ...

Roermond

Als je dit bord ziet, ben je bij het station

Loop naar ...

150 meter steenstraat

Bellen

Joost wordt gebeld....

Reisschema

Reisschema van Paul Ferron

Van: Stationsplein, Roermond
Naar: Judeaweg, Maastricht

Oorspronkelijke reisschema

Vertrek: 10:31
Aankomst: 11:18
Reistijd: 0:47
Overstappen: 1

Afwijkingen

Vertraging 10 minuten

Contactpersoon

Joost Bakker, telefoon: 06-12345678

Tips

Als je iets niet weet:

- Vraag om hulp
- Laat je reisschema aan iemand zien
- Bel Joost

Jammer, je hebt de trein gemist.

Wacht op de volgende trein.

Conclusions

- **Demonstrator**
 - Evaluation in actual travel situation with positive results
 - Recommendations for improvement, e.g. route information
- **Additional guidelines**
 - User profile is important to set various personal preferences.
 - Regular feedback and confirmation of actions are important.
 - Navigation should be very simple and consistent.
 - Use audio or tactile notification when new information appears.
 - Use familiar icons.
- **Accessibility**
 - Evolving field
 - Additional guidelines for specific target groups should be formulated on the basis of empirical research involving real applications, involving representatives of the target group.