Universal accessibility

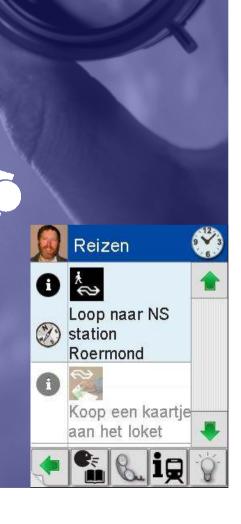
Anita Cremers

TNO Human Factors

Kampweg 5 / P.O. Box 23 3769 ZG Soesterberg, The Netherlands

E-mail: cremers@tm.tno.nl

Phone: 0346-356310



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

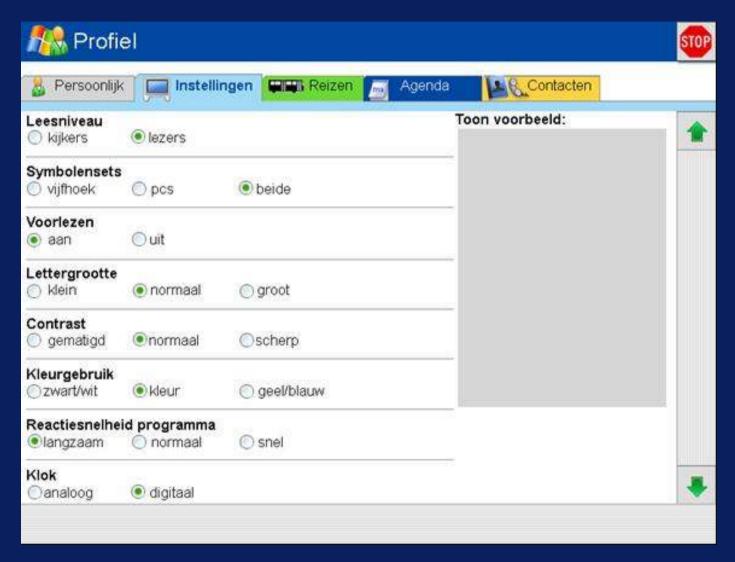
- Desktop application
 - User profile
 - Prepare trip (public transport)
- PDA application
 - Agenda
 - Trip step-by-step

Leading principles

- Accessible for target group
- Involvement of target group in design and evaluation
- Continuity of use
- Location-based
- Current travel information

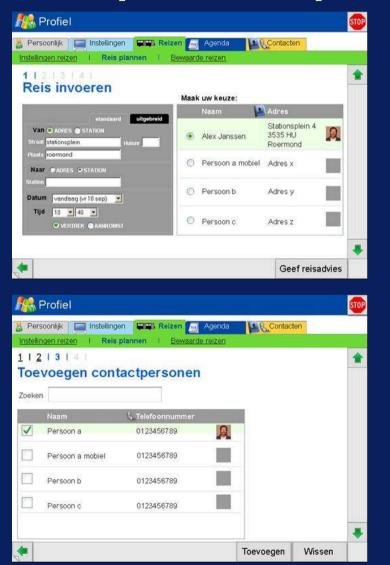


Desktop: User profile





Desktop: Plan trip









PDA: Agenda







PDA: Trip step-by-step

















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.

