

The TELSCAN Project - Supporting transport telematics projects

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TElematic Standards and Coordination of ATT systems in relationN to elderly and disabled travellers

◆ Advice to projects and collaborative testing



- ◆ Evaluation methodology (e.g. on user groups to consider, tools and protocols)
- ◆ Traveller information checklist
- ◆ Handbook and database of design guidelines for intelligent transport systems

Scale and nature of support



- ◆ Level A
 - ◆ Common evaluation and development
 - ◆ e.g. simulator trials, on-site evaluations

- ◆ Level B
 - ◆ Continuous expert monitoring and support
 - ◆ developing questionnaires, advice on increasing number of people with disabilities in their sample population

- ◆ Level C
 - ◆ Provision of expert advice on request
 - ◆ Review of a project's user requirements deliverable or evaluation plans



- EUROSCOPE / ROMANSE II - **E**fficient **UR**ban Transport **O**peration **S**ervices: **C**o-Operation of **P**ort Cities in **E**urope / **RO**ad Traffic **MAN**agement **S**ystem for **E**urope

- Collaborative evaluations with three telematic facilities:
 - ◆ the TRIPlanner pre-trip planning terminal
 - ◆ the STOPWATCH real-time bus stop information system, and
 - ◆ the provision of trip planning information on an Internet web-site.

Role of TELSCAN in TRIPPlanner Evaluation



- To evaluate the usefulness and usability of the facilities for travellers who might be elderly and/or have a disability.

- 56 Users:
 - ◆ People with mobility impairments, some using wheelchairs
 - ◆ People with dexterity impairments
 - ◆ People with visual impairments
 - ◆ Users and non-users of public transport

TRIPPlanner System

(Photo Courtesy of EUROSCOPE-
ROMANSE Project)

Barham, P. and Alexander, J.,
(Jan. 1998), Evaluation of interactive
information terminals (TRIPPlanner Mk I)
with respect to their use by the elderly
and people with disabilities
(For EUROSCOPE – ROMANSE II).



Users' main problems



- ◆ getting close enough to reach the controls
 - absence of recess for feet/knees
- ◆ seeing the screen properly
 - height of screen (lowest icons/buttons on interface were at height of 1219 mm - no operable part should be above 1200 mm from the ground)
 - text was too small, especially text that accompanied icons, and important icons near the bottom of the screen
- ◆ parallax - not only for those who had to look up at the screen from below, but also for one subject who was very tall

Main recommendations



- ◆ Lower screen height
- ◆ Knee/foot recess
- ◆ Flush display screen
- ◆ Help with parallax problem
- ◆ Audible feedback when buttons correctly located on the touchscreen
- ◆ Instructions on how to use touchscreen
- ◆ Larger text, especially on labels to icons
- ◆ Removal of red lettering on black background
- ◆ Other minor aspects to the interface

Results of the evaluation



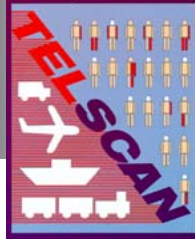
- No prospect of physical attributes of the terminal being altered, as outer casing was 'fixed'
- Mark II version was already underway
- Changes would relate to software
- Mark II showed improvements in
 - ◆ size and clarity of the text
 - ◆ had larger and clearer icons
 - ◆ instructions and advice on using the touchscreen interface were provided by means of an audio-visual feature
- BUT users still said system should provide more information that is relevant for people with disabilities

Another Level A collaboration



- **INFOTEN** – Multi-Modal **INFO**rmation and Traffic Management Systems on **Trans-European Networks**
- Developed a multi-modal travel planner that covers regions of Austria, France, Germany, Italy and Switz
- Evaluated along with 2 other German travel planners with respect to whether specific information was available for older and disabled travellers
- Users:
 - ◆ 23 elderly users
 - ◆ 23 users with mobility impairments

Results of the evaluation



- Basic information OK (e.g. departure time, arrival time, transfers, etc.)
- BUT specific information for elderly and disabled people scarcely available (e.g. accessible toilets, assistance available, etc.)
- Most valuable options that were available were:
 - ◆ information on train taxis and luggage services
 - ◆ possibility to change the number of transfers and the transfer time, and
 - ◆ maps



- ◆ Tendency for projects to overlook or underestimate the needs of older and disabled travellers
- ◆ Usually no specific provision for older and disabled users in other projects' workplans
- ◆ Design advice often sought (or offered) too late in the design process
- ◆ Few resources available
- ◆ TELSCAN had set aside up to 15% of its budget to fund other projects' inclusion of older and disabled people
- ◆ Still sometimes difficult to arrange due to project's timescales and existing workload

Issues and Conclusions



- Many transport telematics projects not aware of existing design advice for older or disabled users

- Inclusion of older and disabled people in each phase of the design process
 - ◆ User Requirements
 - ◆ Relevant travel information
 - ◆ Interface design guidelines
 - ◆ Evaluation Methodology

Issues and Conclusions



- An “Inclusive Design Watchdog” ?
 - ◆ Need to continue our efforts
 - ◆ Impact of legislation
 - e.g. Disability Discrimination Act in the UK

- Awareness-raising, training and dissemination of existing inclusive design advice
 - ◆ INCLUDE
 - <http://www.cselt.stet.it/sonah/INCLUDE>
 - ◆ TELSCAN
 - <http://hermes.civil.auth.gr/telscan/telsc.html>