Appendix I

Scenarios for people who are not able to see

1. Maria

The environment is assumed to be totally unknown to Maria.

Being a blind person, Maria has a foldable tactile presentation system. Even if tactile presentations are in principle available for all users, she prefers to carry her own device so as to avoid potential problems during her trip.

Original scenario

After a tiring long haul flight Maria passes through the arrivals hall of an airport in a Far Eastern country. She is travelling light, hand baggage only. When she comes to this particular country she knows that she can travel much lighter than a decade ago, when she had to carry a collection of different so-called personal computing devices (laptop PC, mobile phone, electronic organisers and sometimes beamers and printers). Her computing system for this trip is reduced to one highly personalised communications device, her 'P–Com' that she wears on her wrist.

AmI opportunities

Maria's P-com can be equipped with specialised interfaces (e.g., a foldable tactile interface). When necessary, the P-com can communicate with sophisticated peripherals (e.g., a tactile 3-D system) available in the environment.

Maria calls the P-Com her 'key of keys' because it almost invisibly unlocks the doors she meets on her trip. It allows her to move around in an ambience that is shaped according to her needs and preferences. In the past travelling involved many different and complicated transactions with all sorts of different service vendors, often with gaps and incompatibilities between the different services. In the past few years, a series of multi-service vendors (MSVs) have emerged offering complete packages of services linked to the P-Com that tailor the user's environment according to their preferences. User preferences are set up during an 'initiation period' during which personal agents (personal-servants or perservs) are instructed or learn how to obey their master's wishes. These agents are in continual negotiation with those of participating service providers (such as shops, rental companies, hotels and so on).

AmI opportunities

This new situation, of interest for all people, can be particularly interesting for blind people, who may presently have problems in accessing complex information services.

A particular feature of this trip is that the country that Maria is visiting has since the previous year embarked on an ambitious ambient intelligence infrastructure programme. Thus her visa for the trip was self-arranged and she is able to stroll through immigration without stopping because her P-Com is dealing with the ID checks as she walks.

Problems

Navigating the environment.

Possible solutions

The P-Com in communication with AmI guides Maria through the airport (e.g., by voice, or using haptic cues).

This requires:

- The knowledge of her position in the airport (granted by AmI);
- The possibility of controlling the presence of unpredictable obstacles (people, baggage, etc.).

The second prerequisite can be addressed through two approaches:

- The first is based on the features of the AmI itself, which could contain a control system able to monitor tagged objects in real time and communicate with the P-com of passengers;
- The second is based on a personal system (artificial virtual guide dog), that is a set of sensors (e.g., a worn T.V. camera, or some type of ultrasound or laser) able to spot possible obstacles. RFID on objects can be used for signalling the presence of obstacles to the virtual guide dog.

AmI opportunities

Navigation in the environment is considered as a problem for a blind person. Instead of creating new obstacles, AmI has the potentiality of offering a solution to the mobility of blind people in all environments where its facilities are deployed.

Tracking people and offering context related information is supposed to be one of the standard features of AmI.

A rented car has been reserved for her and is waiting in an earmarked bay. The car opens as she approaches. It starts at the press of a button: she doesn't need a key. She still has to drive the car but she is supported in her journey downtown to the conference centre-hotel by the traffic guidance system that had been launched by the city government as part of the 'AmI-Nation' initiative two years earlier.

Problems

Maria cannot drive.

Possible solutions

She uses a taxi.

a) Her P-Com can guide her to the taxi rank or

b) The taxi driver was informed from Maria's arrival beforehand and he picks her up at the door of the arrival lounge.

The taxi driver's and Maria's P-Coms can communicate so that the driver can locate Maria.

AmI opportunities

See previous point.

Downtown traffic has been a legendary nightmare in this city for many years, and draconian steps were taken to limit access to the city. But Maria has priority access rights into the central cordon because she has a reservation in the car park of the hotel. Central access however comes at a premium price, in Maria's case it is embedded in a deal negotiated between her personal agent and the transaction agents of the car-rental and hotel chains. Her firm operates centralised billing for these expenses and uses its purchasing power to gain access at attractive rates. Such preferential treatment for affluent foreigners was highly contentious at the time of the introduction of the route pricing system and the government was forced to hypothecate funds from the tolling system to the public transport infrastructure in return.

In the car Maria's teenage daughter comes through on the audio system. Amanda has detected from 'En Casa' system at home that her mother is in a place that supports direct voice contact. However, even with all the route guidance support Maria wants to concentrate on her driving and says that she will call back from the hotel.

AmI opportunities

Maria has the advantage of being able to speak immediately with her daughter.

Maria is directed to a parking slot in the underground garage of the newly constructed building of the Smar-tel Chain. She is met in the garage by the porter – the first contact with a real human in our story so far! He helps her with her luggage to her room.

Her room adopts her 'personality' as she enters. The room temperature, default lighting and a range of video and music choices are displayed on the video wall.

Problems

The traditional remote control is not accessible.

Possible solutions

Maria can use the P-Com. Alternatively, AmI can describe to her the layout and the functionalities of the remote control.

AmI opportunities

AmI knows itself and its components. If necessary, it is able to describe the layout and the functionalities of the remote control and of the entire room.

She needs to make some changes to her presentation – a sales pitch that will be used as the basis for a negotiation later in the day.

Using voice commands she adjusts the light levels and commands a bath.

Problems

Maria cannot do two acoustic activities simultaneously.

Possible solutions

The actions must be sequenced, or an alternative interfaces (Braille) addressing a different modality may be used.

AmI opportunities

AmI is able to organize sequentially the flow of information and the performance of the necessary tasks, allocating the necessary time.

Then she calls up her daughter on the video wall, while talking she uses a traditional remote control system to browse through a set of webcast local news bulletins from back home that her daughter tells her about. They watch them together.

Problems

She can not watch the news, she can listen to the news.

Possible solutions

Listening to the news and communicating with her daughter must be sequenced in some way.

AmI opportunities

The possibility of watching the news together and being able to comment them adds a very important social dimension to the interaction.

Later on she 'localises' her presentation with the help of an agent that is specialised in advising on local preferences (colour schemes, the use of language). She stores the presentation on the secure server at headquarters back in Europe. In the hotel's seminar room where the sales pitch is to take place, she will be able to call down an encrypted version of the presentation and give it a post presentation decrypt life of 1.5 minutes.

Problems

Maria cannot see her presentation (neither the colour scheme).

Possible solutions

The agent that advises on preferred colour schemes should be reliable enough to detect and correct eventual contrast and related problems. Alternatively, a connection with the office is established through the broadband network, in order to allow a visual inspection of the results.

If Maria had not been born blind and knew colours, she can be informed vocally of the colour scheme.

AmI opportunities

The additional opportunities offered by AmI are related to the availability of broadband communication facilities. Maria can be helped by colleagues, who can work cooperatively across the network. In many situations human support can be more effective and acceptable than technological support.

The hotel offers neutral third part hosting of presentations but Maria wants to be sure for her own peace of mind that some of the sensitive material in the presentation will not sit around on a 3rd party server for prying eyes to see. To do this work, Maria is using hardware provided by the hotel, but with security clearance and access to her personal home workspace guaranteed by her P-Com.

AmI opportunities

Security is built in the system.

She goes downstairs to make her presentation…this for her is a high stress event. Not only is she performing alone for the first time, the clients concerned are well known to be tough players. Still, she doesn't actually have to close the deal this time. As she enters the meeting she raises communications access thresholds to block out anything but red-level 'emergency' messages.

Problems

Maria needs to know who is in the room.

Maria needs to know when she can start her presentation.

Maria needs to control the pace of the presentation.

Possible solutions

The P-Coms communicate and exchange the information on who is attending the meeting.

She gets a multi-modal confirmation (voice through earphone plus vibrator) that the presentation is ready for display.

There is a tactile display in the room or she can use the personal tactile display. The tactile display has a copy of the presentation plus additional control functions (active functions), pointing facilities and slide content details.

AmI opportunities

Probably a normal handshake could be as efficient and more pleasant.

In AmI the wide availability of tactile displays is part of the built in virtual reality interfaces.

The meeting is rough, but she feels it was a success. Coming out of the meeting she lowers the communication barriers again and picks up a number of amber level communications including one from her cardio-monitor warning her to take some rest now.

The day has been long and stressing. She needs to chill out with a little meditation and medication. For Maria the meditation is a concert on the video wall and the medication….a large gin and tonic from her room's minibar.

2. Dimitrios

Original scenario

It is four o'clock in the afternoon. Dimitrios, a 32 year-old person working in a food - multinational, is taking a coffee at his office's cafeteria, together with his boss and some colleagues. He doesn't want to be excessively bothered during this pause. Nevertheless, all the time he is receiving and dealing with incoming calls and mails.

He is proud of 'being in communication with mankind': as are many of his friends and some colleagues. Dimitrios is wearing, embedded in his clothes, a 'gateway' or digital avatar of himself, familiarly known as 'Digital Me' or 'D-Me'. A D-Me is both a learning device, learning about Dimitrios from his interactions with his environment, and an acting device offering communication, processing and decision-making functionality. Dimitrios has partly 'programmed' the D-Me himself, at a very initial stage: it was, he says, a great personal experience to formalise somehow his identity and the way he envisaged his relations. At the time, he thought he would 'upgrade' this initial data periodically. But he didn't. He feels quite confident with his D-Me and relies upon its 'intelligent PDA-like' reactions.

AmI opportunities

Even if blind people do not normally have problems in interpersonal communication help in processing of the complex flow of communications and decision making can be very interesting.

Dimitrios has a '3P/3CAG D-Me'-it allows him to specify three privacy levels (3P) for personal data matched to three separate 'closed access group' (3CAG) memberships.

AmI opportunities

Privacy is a built in facility of AmI.

At 4:10 p.m. following other calls of secondary importance - answered formally in a smoothly multilingual reproduction of Dimitrios' voice and typical accent, a call from his wife is further analysed by his D-Me. The D-Me confronts available data registered from Dimitrios' environment (voices, themes, location, other 'patched' objects) to match the situation with this private call (Dimitrios' wife's voice, theme, emotional level). In a first attempt, Dimitrios' 'avatar-like' voice runs a brief conversation with Dimitrios' wife, with the intention of negotiating a delay while explaining his current situation.

Simultaneously, Dimitrios' D-Me has caught a message from an older person's D-Me, located in the nearby metro station. This senior has left his home without his medicine and would feel at ease knowing where and how to access similar drugs in an easy way. He has addressed his query in natural speech to his D-Me. Dimitrios happens to suffer from similar health problems and uses the same drugs. Dimitrios' D-Me processes the data available to offer information to the senior. It 'decides' neither to reveal Dimitrios' identity (privacy level), nor to offer Dimitrios' direct help (lack of availability), but to list the closest drug shops, alternative drugs and contacts to a self-help group and medical contacts nearby in case of emergency. This information is shared with the senior's D-Me, rather than with the senior himself, to avoid useless information overload.

The D-Me is equipped with voice, pattern and patch recognition capacity. It has to identify places and people, but also to register enough data to record the relevant events of Dimitrios' life to process it in its DMe profile and offer it to other DMe's.

AmI opportunities

Functions of pattern and patch recognition can have an important impact on access to information by blind people.

Meanwhile his wife's call is now interpreted by his D-Me as sufficiently pressing to mobilise Dimitrios. It 'rings' him using a pre-arranged call tone. Dimitrios takes up the call with one of the available 'Displayphones' in the cafeteria. Since the diffusion of D-Me, fewer people run around with mobile terminals. Public and private spaces have display terminals and your D-Me can point at the closest….functioning one!

Problems

Possible problems in localising the displayphone.

Possible solutions

The P-com can communicate with the displayphone and, in cooperation with AmI, helps navigation to it.

Alternatively Dimitrios can wear a special P-com that allows him to communicate directly with his wife.

AmI opportunities

The selection of different telecommunication facilities is available.

Dimitrios' wife hates his D-Me. She suspects him living parallel lives and whatever the practical aspects, she definitely would prefer having himright away on the phone. It has been a source of conflict from the start.

The 'emergency' is about their child's homework. While doing his homework their 9 year-old son is meant to offer some insights on everyday life in Egypt. In a brief 3-way telephone conference, Dimitrios offers to pass over the query to the D-Me to search for an available direct contact with a child in Egypt. Ten minutes later, his son is videoconferencing at home with a girl of his own age, and recording this real-time translated conversation as part of his homework. All communicating facilities have been managed by Dimitrios' D-Me, even while it is still registering new data and managing other queries. The Egyptian correspondent is the daughter of a local businessman, well off and quite keen on technologies. Some luck (and income…) had to play a part in what might become a long lasting new relationship.

AmI opportunities

For a blind person, normally communicating by voice an automatic translated conversation could be particularly useful.

Managing a service while choosing the best telecommunication means for the videoconference forms part of the role of the D-Me.

3. Carmen

Original scenario

The driver is part of a carpooling scheme of the transport management systems in the urban area where Carmen lives. Advanced payment and transactions systems are in place, which are able to calculate the amount of money that goes to the driver and the amount that goes to the transport operators.

It is a normal weekday morning. Carmen wakes and plans her travel for the day. She wants to leave for work in half an hour and asks AmI, by means of a voice command, to find a vehicle to share with somebody on her route to work. AmI starts searching the trip database and, after checking the willingness of the driver, finds someone that will pass by in 40 minutes. The in-vehicle biosensor has recognised that this driver is a non-smoker – one of Carmen requirements for trip sharing. From that moment on, Carmen and her driver are in permanent contact if wanted (e.g. to allow the driver to alert Carmen if he/she will be late). Both wear their personal area networks (PAN) allowing seamless and intuitive contacts.

Problems

Need of special arrangements for travelling and meeting.

Possible solutions

For the trip sharing, the Carmen's AmI informs the driver of her profile's data related to her disability, the destination and time details of the desire route, the way that he or she will recognise her at a meeting point, and the parameters for establishing (PAN) connection from the moment that they will agree.

The driver is notified of Carmen's disability as this may have certain implications, for example in arranging the meeting point.

AmI opportunities

AmI knows the abilities/disabilities of Carmen and, if authorised by her, can use this information for helping in arranging her travelling to work.

Objects can be tracked through radio-frequency identification tags. These e-tags are very small, maximum of the size of a grain of rice and can be embedded in everyday objects. Everyone carrying a device equipped with a reader could access additional information and services relating to the tagged item.

AmI opportunities

Tags can be very useful for blind people. They can offer information to the blind persons or can be interrogated by them.

While taking her breakfast coffee Carmen lists her shopping since she will have guests for dinner tonight. She would like also to cook a cake and the e-fridge flashes the recipe. It highlights the ingredients that are missing: milk and eggs. She completes the shopping on the e-fridge screen and asks for it to be delivered to the closest distribution point in her neighbourhood. This can be a shop, the postal office or a franchised nodal point for the neighbourhood where Carmen lives. All goods are smart tagged, so that Carmen can check the progress of her virtual shopping expedition, from any enabled device at home, the office or from a kiosk in the street. All goods are smart tagged, so that Carmen can check the progress of her virtual shopping expedition, from any enabled device at home, the office or from a kiosk in the street. She can be informed during the day on her shopping, agree with what has been found, ask for alternatives, where they are and when they will be delivered.

Problems

Need of alternative communication with the environment.

Possible solutions

Carmen's P-com in communication with her e-fridge voices the recipe.

The system concludes by listing the missing ingredients.

Carmen completes the shopping list through brief voice commands.

When Carmen is connected to the shop, all the information stored in tags is translated in a properly encoded format for her to receive. Carmen may choose to hear or read (e.g., in Braille) brief descriptions of the goods, or to have a full presentation of a particular product or store shelf. Presentations may contain information for the product characteristics (size, colour, and weight), the packing, the price, potential offers or alternative selections and other information that will help her to make her choice. Carmen's P-workstation enables her to explore and manipulate 3D models and artefacts by means of tactile interaction.

AmI opportunities

The wide availability of speech interfaces is very important for blind people.

Tags in connection with telecommunication networks can help in exploring the local and remote environment.

Tactile displays are supposed to be widely available.

In this scenario the environmental management system is not only connected to sensors that control vehicle engines or the police, which in case of accidents can transfer information to the traffic control network to re-route traffic. The system is also able to alert individuals with allergies to certain types of pollutants when a dangerous threshold is reached. Individuals will be informed of the unhealthy atmosphere and can decide whether to go out or stay home.

Forty minutes later Carmen goes downstairs onto the street, as her driver arrives. When Carmen gets into the car, the VAN system (Vehicle Area Network) registers her and by doing that she sanctions the payment systems to start counting.

Problems

Difficulties in reaching the meeting point (navigation).

Possible solutions

A sound notification from AmI informs Carmen that she should leave her flat, as her driver is arriving. While moving towards the meeting point, her "e-guide dog" (see Maria scenario), plugged-in to the P-com, informs her about any non-familiar physical obstacles that are on her way as her neighbours are moving out and the corridor is full of obstacles such as furniture and boxes. Carmen's "e-dog" voices proper directional instructions and guides her safely to the meeting point arranged with the driver.

AmI opportunities

AmI offers new and efficient support for navigating the environment, relying on information available in AmI and in personal support systems (e-guide dog).

A micro-payment system will automatically transfer the amount into the e-purse of the driver when she gets out of the car.

In the car, the dynamic route guidance system warned the driver of long traffic jams up ahead due to an accident. The system dynamically calculates alternatives together with trip times. One suggestion is to leave the car at a nearby 'park and ride' metro stop. Carmen and her driver park the car and continue the journey by metro. On leaving the car Carmen's payment is deducted according to duration and distance.

Problems

Possible navigation problems.

Possible solutions

The UAN (Underground Network Area) registers Carmen as a blind client and suggests routes and paths that are not too busy at that point, so she could manage to be at work on time. Her "e-guide dog" is waiting for her to decide about the way they will follow. A sound alert from the e-dog indicates that time is passing, so she has to quickly decide the direction to take.

AmI opportunities

AmI can support the mobility of Carmen in the city and give her context relevant information. The "e-guide dog", integrated in AmI, increases her autonomy in the environment.

Out of the metro station and whilst walking the minutes to her job, Carmen is alerted by her PAN that a Chardonnay wine that she has previously identified as a preferred choice is on promotion that day. She decides to add it to her shopping list and uses the opportunity to tell her wearable when she plans to leave work and where she wants to go. Carmen arrives at her job on time.

On the way home the shared car system senses a bike on a dedicated lane approaching an intersection on their route. The driver is alerted and the system anyway gives preference to bikes, so a potential accident is avoided.

AmI opportunities

The system adds security to a blind person walking through the city.

A persistent high pressure for the last ten days has given fine weather but rising atmospheric pollutants. It is rush hour and the traffic density has caused pollution levels to rise above a control threshold. The city-wide engine control systems automatically lower the maximum speeds (for all motorised vehicles) and when the car enters a specific urban ring toll will be deducted via the Automatic Debiting System (ADS).

Carmen arrives at the local distribution node (actually her neighbourhood corner shop) where she picks-up her goods. The shop has already closed. But the goods await Carmen in a smart delivery box. By getting them out, the system registers payment, and deletes the items from her shopping list. The list is complete. At home, her smart fridge screen will be blank.

Problems

Possible problems in accessing the smart delivery box.

Possible solutions

The distribution point offers tactile accessibility features for the blind. However, Carmen prefers to interact with the delivery system through her P-com.

Coming home, AmI welcomes Carmen and suggests to telework the next day: a big demonstration is announced downtown.

4. Annette and Solomon

Original scenario (Annette and Solomon)

It is the plenary meeting of an environmental studies group in a local 'Environment for Social Learning'. The group ranges from 10 to 75 years old. They share a common desire to understand the environment and environmental management. It is led by a mentor whose role it is to guide and facilitate the group's operation, but who is not necessarily very knowledgeable about environmental management. The plenary takes place in a room looking much like a hotel foyer with comfortable furniture pleasantly arranged. The meeting is open from 7.00-23.00 hours. Most participants are there for 4-6 hours. A large group arrives around 9.30 a.m. Some are scheduled to work together in real time and space and thus were requested to be present together (the environment accesses their agendas to do the scheduling).

A member is arriving: as she enters the room and finds herself a place to work, she hears a familiar voice asking "Hello Annette, I got the assignment you did last night from home: are you satisfied

with the results?" Annette answers that she was happy with her strategy for managing forests provided that she had got the climatic model right: she was less sure of this.

Problems

Navigation in the environment.

Possible solutions

Simplified version of Maria navigation scenario (the room is simpler than the airport).

AmI opportunities

AmI knows the individuals in the learning environment and can adapt itself to their needs.

Annette is an active and advanced student so the environment says it might be useful if Annette spends some time today trying to pin down the problem with the model using enhanced interactive simulation and projection facilities. It then asks if Annette would give a brief presentation to the group. The environment goes briefly through its understanding of Annette's availability and references for the day's work. Finally, Annette agrees on her work programme for the day.

Problems

Problems with interactive simulation and projection facilities.

Possible solutions

Nowadays, interactive simulation systems are inherently based on interaction paradigms using direct manipulation of objects and on complex (also three-dimensional) visual presentations. In this future environment the system will have evolved to be multimedia and multimodal. A possible solution for a blind person could be the evolution toward a virtual reality system based on sound and tactile interactions (tactile exploration of virtual objects both for input and output of data).

AmI opportunities

The new technology developed for the implementation of the intelligent environment (e.g. tactile display technology, virtual reality, tactile input technology) is contributing to easier access to information by blind people.

One particularly long conversation takes place with Solomon who has just moved to the area and joined the group. The environment establishes Solomon's identity; asks Solomon for the name of an ambient that 'knows' Solomon; gets permission from Solomon to acquire information about Solomon's background and experience in Environmental Studies. The environment then suggests Solomon to join the meeting and to introduce himself to the group.

In these private conversations the mental states of the group are synchronised with the environment, individual and collective work plans are agreed and in most cases checked with the mentor through the environment. In some cases the assistance of the mentor is requested. A scheduled plenary meeting begins with those who are present. Solomon introduces himself.

Annette gives a 3-D presentation of her assignment. A group member asks questions about one of Annette's decisions and alternative visualisations are projected.

Problems

Annette needs to know who is in the environment.

Annette needs to know when she can start her presentation.

Annette needs to control the pace of the presentation.

Possible solutions

The P-Coms communicate and exchange the information on who is attending the meeting.

She gets a multi-modal confirmation (voice through earphone plus vibrator) that the presentation is ready for display.

There is a tactile display in the room. The tactile display has a copy of the presentation plus additional control functions (active functions), pointing facilities and slide content details.

AmI opportunities

In AmI the wide availability of tactile displays is part of the built in virtual reality interfaces.

During the presentation the mentor is feeding observations and questions to the environment, together with William, an expert who was asked to join the meeting. William, although several thousand miles away, joins to make a comment and answer some questions. The session ends with a discussion of how Annette's work contributes to that of the others and the proposal of schedules for the remainder of the day. The environment suggests a schedule involving both shared and individual sessions.

During the day individuals and sub-groups locate in appropriate spaces in the environment to pursue appropriate learning experiences at a pace that suits them. The environment negotiates its degree of participation in these experiences with the aid of the mentor. During the day the mentor and environment converse frequently, establishing where the mentor might most usefully spend his time, and in some cases altering the schedule. The environment and the mentor will spend some time negotiating shared experiences with other environments – for example mounting a single musical concert with players from two or more distant sites. They will also deal with requests for references / profiles of individuals. Time spent in the environment ends by negotiating a homework assignment with each individual, but only after they have been informed about what the environment expects to happen for the rest of the day and making appointments for next day or next time.

AmI opportunities

The knowledge of the user profiles and the availability of technologies addressing different modalities allow the structuring of the space(s) in a way that is suitable for the different users.

Appendix II. Glossary of acronyms used in book

3G:	3rd Generation network
AAMI:	Age-Associated Memory Impairment
ACCS:	Aural Cascading Style Sheet
ACD:	Automatic Call Distribution
ACIF:	Australian Communications Industry Forum
ADA:	Americans with Disabilities Act
AGPS:	Assisted Global Positioning System
AmI:	Ambient Intelligence
ANEC:	European Association for the coordination of Consumer Requirements in Standardisation
ASCII:	American Standard for Coding Information Interchange
ASL:	American Sign Language
ATAG:	Authoring Tool Accessibility Guidelines
ATM:	Automatic Teller Machine
AUI:	Aural User Interface
BAOC:	Barring of All Outgoing Calls
CCTV:	Closed Circuit Television
CD-ROM:	Compact Disk-Read Only Memory
CEN:	European Committee of Standardisation
CENELEC:	European Committee for Electrotechnical Standardisation
CIF:	Common Intermediate Format
CLI:	Command Line Interface
CLI:	Calling-Line Identification
COCOM:	Communications Committee
COST:	European Cooperation in the field of Scientific and Technical Research
COST 219:	Future telecommunications and teleinformatics facilities for disabled people and elderly
COST 219bis:	Telecommunications: Access for Disabled and Elderly People
CSS:	Cascading Style Sheet
DAISY:	Digital Accessible Information System
DDA:	Disability Discrimination Act
D-Me:	Digital Me
DTMF:	Dual Tone Multiple Frequencies
EDeAN:	European Design for All eAccessibility Network
EDT:	European Deaf Telephone
EMC:	Electromagnetic Compatibility
EIB:	European Installation Bus
ETSI:	European Telecommunications Standards Institute
EU:	European Union
GDP:	Gross Domestic Product
GPRS:	General Packet Radio Service
GPS:	Global Positioning System
GSM:	Global System for Mobile Communications (originally: Groupe Spécial Mobile)
GUI:	Graphical User Interface
HAVi:	Home Audio Video Interoperability
HCO:	Hear Carry Over
HF:	Human Factors
HTML:	Hypertext Markup Language
ICF:	International Classification of Disability, Functioning and Health
ICT:	Information and Communications Technologies
IEEE:	Institute of Electrical and Electronics Engineers
IEC:	International Electrotechnical Commission
IM:	Interactive Management
INCOM:	Inclusive Communications Committee
IM:	Instant Messaging services
IR:	Infrared
IP:	Internet Protocol
ISDN:	Integrated Services Digital Network
ISM:	Interpretive Modelling Structure
ISO:	International Standards Organisation

Appendix II. Glossary of acronyms used in book

IST:	Information Society Technologies
ISTAG:	IST Advisory Group
ITU:	International Telecommunication Union
JIS:	Japan Industrial Standard
LON:	Local Operating Network
MCI:	Mild Cognitive Impairment
MIDP:	Mobile Information Device Profile
NFTH:	Nordic Forum for Telecommunications and Disability
NGT:	Nominal Group Technique
NRA:	National Regulatory Authority
NTP:	Network Terminal Point
OBO:	Operator determined of Barring of Outgoing calls
OCR:	Optical Character Recognition
PATS:	Publicly Available Telephone Services
P-Com:	Personal Communicator
PDA:	Personal Digital Assistant
PDF:	Page Description File
PPCPE:	Pocket PC Phone Edition
PSTN:	Public Switched Telephone Network
RF:	Radio Frequency
RFID:	Radio Frequency Identification
RTTE:	Radio and Telecommunications Terminal Equipment
SD:	Secure Digital
SIBS:	Interbank Services Company
SIP:	Session Initiation Protocol
SMP:	Significant Market Power
SMS:	Short Message Service
SOAP:	Simple Object Access Protocol
STF:	Special Task Force
STS:	Standard Telephone Service
SWAMI:	Safeguards in a World of Ambient Intelligence
SWOT:	Strengths, Weaknesses, Opportunities, Threats
TCAM:	Telecommunications Conformity Assessment and Market surveillance committee
TC HF:	Technical Committee Human Factors (ETSI)
UAN:	Underground Network Area
UMTS:	Universal Mobile Telecommunications System
UPnP:	Universal Plug and Play
VoIP:	Voice over Internet Protocol
VCO:	Voice Carry Over
W3C:	World Wide Web Consortium
WAI:	Web Accessibility Initiative
WAN:	Wide Area Network
WCAG:	Web Contents Accessibility Guidelines
WER:	Word Error Rate
WHO:	World Health Organisation
WiFi:	Wireless Fidelity (IEEE 802.11b/g)
WLAN:	Wireless Local Area Network
WPAN:	Wireless Personal Area Network
WSIS:	World Summit on Information Society
XML:	Extensible Markup Language

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COST

COST is an intergovernmental European framework for international cooperation between nationally funded research activities. COST creates scientific networks and enables scientists to collaborate in a wide spectrum of activities in research and technology. COST activities are administered by the COST Office.

Further information: http://www.cost.esf.org

COST 219ter

The main objective of COST 219ter is to increase the accessibility of next generation telecommunication network services and equipment to elderly people and people with disabilities by design or by adaptation when required. In cases where this cannot be achieved, the Action will promote the establishment of appropriate supplementary assistive services and equipment. Taking always into account inclusive design in telecommunications, especially in the mobile field, the objectives are to:

- *Extend the existing COST 219 website for designers to better understand consumers and their requirements, so that many more people with disabilities and elderly people can be catered for in mainstream design*
- *Support the exchange of information on inclusion and accessibility issues so that these can be freely explored with developers, researchers and representatives of the telecommunications industries and service providers*

so that

- *People with disabilities and elderly people can share in the benefits of new mobile communication systems.*

The signatory countries of the COST 219ter Action are:

Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Israel, Italy, Malta, Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland and the United Kingdom. Australia, Japan and the USA participate as non-COST members.

Further information: www.cost219.org