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Working Document

Subject: Report from the inclusive communications (INCOM) subgroup

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Please find attached the final report from the inclusive communications (Incom) subgroup for discussion at the next meeting. A first overview of the subgroup's work had already been given at the previous meeting of the Cocom.

EUROPEAN COMMISSION
Directorate-General Information Society

Emerging technologies and Infrastructures Applications
Elderly and persons with disabilities

Brussels, 22 January 2004
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INCLUSIVE COMMUNICATIONS (INCOM)

Subgroup of Communications Committee

Working Document

INCOM Report –Draft

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INCOM REPORT DRAFT 4.3

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0. EXECUTIVE SUMMARY

In 1999 the Commission launched a major review of existing EU telecommunications law[1]. In July 2000 the Commission proposed a package of measures for a new regulatory framework for electronic communications networks and services. The new regulatory framework for electronic communications was adopted by the Council and the Parliament in 2002, to be applied as of July 2003.

Under the New Regulatory Framework a committee called the Communications Committee (COCOM) with Member State representatives was established to assist the Commission in exercising its powers. In February 2003, the COCOM established a special working group to undertake a programme of work during the European Year of People with Disabilities (EYPD). The group gave itself the title of Inclusive Communications (INCOM).

INCOM has held five meetings during 2003. The group has been chaired and managed by the European Commission, Information Society Directorate-General, Unit F-5 Elderly and persons with disabilities.

Throughout its work, INCOM has focused on the user perspective, identifying the constraints and problems users with disabilities face in accessing and using electronic communications as well as potential problems and opportunities relating to new and future technologies and applications. Existing solutions and approaches have been discussed, as well as different development work and pilot projects. Information has been collected from known sources and through a widely distributed questionnaire, which resulted in 37 replies. A summary of the replies to the questionnaire is included in Annex 2.

All citizens have a right to enjoy the full benefits of new technologies. This includes persons with disabilities. Often, disabled people are excluded through lack of access to ICT but, conversely, it has been shown that they can benefit in some cases even more than their peers as ICT can: reduce domestic isolation, generate new training and employment opportunities, increase the choice of entertainment…

[1] http://europa.eu.int/information_society/topics/telecoms/index_en.htm

The new regulatory framework contains a series of rules and principles that ensure that the liberalisation of the electronic communications market does not occur at the expense of end-users, but brings benefits to them. It assumes that competition and market forces are the most effective means to satisfy user needs, but provides national regulatory authorities (NRAs) with the necessary powers to act to protect users where they need to do so.

Disabled users must enjoy the same rights arising from the Directives as any other end-user. This applies whether these rights stem from the provisions relating to universal service obligations placed on designated undertakings or from other specific provisions (e.g. number portability) which allow end-users to derive maximum benefit in terms of choice, price and quality.

This report covers topics which have been identified by INCOM as having high importance for users with disabilities, where users have encountered serious problems and with a connection to articles in the Directives, in particular the Universal Service Directive and the Framework Directive. However, some solutions go beyond the Directives. The key urgent topics identified are:

Access to national emergency services

Access to telephone services for deaf/hard of hearing/speech impaired/deaf-blind persons

Access to public pay telephones

Access to mobile telephones

Access to directory services

Access to broadcasting, digital television and related services.

Furthermore, the following conclusions have been raised in the INCOM discussions and need to be further explored and analysed.

Follow-up

- INCOM is of the view that the observations and suggestions of this report should be followed up in a concrete and measurable way .
- COCOM members should take advantage of the information in this report and an effort should be made to consider accessibility in future undertakings.
- This report should be as widely disseminated as possible.

- Member States would benefit from following the developments in other countries and from exchanging information, experience and follow up progress.
- For topics and areas where development and research is needed, the Sixth Framework Programme offers possibilities and budgetary resources.
- A new working group with a mandate to follow up and monitor in a concrete way the suggestions of INCOM and address new developments in the communications sector could be created.
- Harmonised action across Member States should be based upon the promotion of good practice so that where one Member State has established a 'lead position' it should seek to widen its application until such time as it is ripe for EU-wide implementation.
- User involvement has been a central theme of this report and should be for all actions concerning accessibility. Although representational mechanisms will vary between Member States, the Commission should issue guidelines on best practice, particularly in respect of Member State Representation in Commission bodies.

General Principles and Recommendations

The following general principles and recommendations have been brought forward in the INCOM discussions as worthy of further consideration:

a) Accessibility should be mainstreamed in the all activities in consultation with users..

b) Integration of Design For All principles into initial product design is essential for accessible products and services ensuring connectivity with assistive technology..

c) Promotion of existing good practices in Member States can improve accessibility in Europe.

d) Monitoring and benchmarking for general progress in ICT should be extended to encompass accessibility.

g) Accessibility should be regarded as a European-wide, integrated challenge.

1. INTRODUCTION AND BACKGROUND

1.1 Electronic Communications Directives

In 1999 the Commission launched a major review of existing EU telecommunications law[2]. In July 2000 the Commission proposed a package of measures for a new regulatory framework for electronic communications networks and services. The package consists of six Directives, namely the Framework[3], Access[4], Authorisation[5], Universal Service[6], e-Privacy[7] and Competition[8] Directives, and a Decision on radio spectrum policy[9]. The new regulatory framework for electronic communications was adopted by the Council and the Parliament in 2002, to be applied as of July 2003.

The new regulatory framework is intended to provide a coherent, reliable and flexible approach to the regulation of electronic communication networks and services in fast moving markets. The directives provide a lighter regulatory approach where markets have become more competitive, yet ensure that a minimum of services are available to all users at an affordable price and that the basic rights of consumers continue to be

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[2] http://europa.eu.int/information_society/topics/telecoms/index_en.htm

[3] Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services. OJ L108, 24.2.2002, p.33

[4] Directive 2002/19/EC of the European Parliament and of the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities. OJ L 108, 24.4.2002, p. 7

[5] Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services. OJ L 108, 24.4.2002, p. 21

[6] Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services. OJ L 108, 24.4.2002, p.51

[7] Directive 2002/58/EC of the European Parliament and of the Council of 12 July 2002 concerning the processing of personal data and the protection of privacy in the electronic communications sector. OJ L 201, 31.7.2002, p.37

[8] Commission Directive 2002/77/EC of 16 September 2002 on competition in the markets for electronic communications networks and services. OJ L 249, 17.09.2002, p. 21

[9] Decision 767/2002/EC of the European Parliament and of the Council of 7 March 2002 on a regulatory framework for radio spectrum policy in the European Community. OJ L108, 24.4.2002, p. 1.

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1.2 COCOM and INCOM

Under the New Regulatory Framework a committee called the Communications Committee (COCOM) with Member State representatives was established to assist the Commission in exercising its powers under the Framework.

In February 2003, COCOM established a special working group to undertake a programme of work during the European Year of People with Disabilities (EYPD). The group gave itself the title of Inclusive Communications (INCOM). According to the terms of reference of the group the group's purpose is to:

- encourage network operators and terminal equipment manufacturers to co-operate in order to facilitate access by users with disabilities to electronic communications services;
- raise and spread awareness of the constraints experienced by people with various disabilities in gaining access to and using electronic communications services;
- suggest ways of overcoming these constraints, and share experience and good practice identified at international, national, regional or local level;
- propose harmonised actions at national level across Member States to implement the objectives of the Framework Directive and related Directives.

The group should compile a final report at the end of 2003, with recommendations where appropriate.

For the complete terms of reference, see Annex 1.

In the INCOM work, a wide range of actors have participated, including the following:

- Member States

- Associated States

- National Regulatory Authorities

- AAATE, Association for the Advancement of Assistive Technology in Europe

- ANEC, European Association for the Co-ordination of Consumer Representation in Standardisation

- COST 219ter: Accessibility for All to Services and Terminals for Next Generation Networks

- DIEL, Telecommunications for the Disabled and Elderly

- EBU, European Blind Union

- ECTA, European Competitive Telecommunications Association

- EdeAN, European Design for All e-Accessibility Network

- EDF, European Disability Forum

- EFHOH, European Federation of Hard of Hearing

- EFTA, European Free Trade Association

- EHIMA, European Hearing Instruments Manufacturers Association

- EICTA, European Information, Communications and Consumer Electronics Technology Industry Associations

- EIDD, European Institute for Design and Disability

- ETNO, The European Telecommunications Network Operators' Association

- ETP, European Telecommunications Platform

- ETSI, European Telecommunications Standards Institute

- EUD, European Union of the Deaf

- GSM Europe

- ICTSB, Information and Communications Technologies Standards Board

- ITU, International Telecommunications Union

- RNIB, Royal National Institute of the Blind

- RNID, Royal National Institute for the Deaf

- W3C, World Wide Web Consortium

INCOM has held five meetings during 2003. The group has been chaired and managed by the European Commission, Information Society Directorate-General, Unit F-5 Elderly and persons with disabilities.

Throughout its work, INCOM has focused on the user perspective, identifying the constraints and problems users with disabilities face in accessing and using electronic communications as well as potential problems and opportunities in new and future technologies and applications. Existing solutions and approaches have been discussed, as well as different development work and pilot projects. Information has been collected from known sources and through a widely distributed questionnaire, which resulted in 37 replies. A summary of the replies to the questionnaire is included in Annex 2.

Although the time has been limited to ten months, INCOM has been a unique and valuable platform for discussions between all actors in the field who do not otherwise meet in this way. The work carried out should be seen as a first attempt to identify, analyse and discuss the situation, problems and solutions of users with disabilities and electronic communications in a comprehensive way. It is the hope of INCOM that it can be a starting point for future collaboration for the benefit of all involved.

1.3 e-Europe 2002/2005

The *e*Europe initiative was launched in June 2000 with the aim of accelerating Europe's transition towards a knowledge based economy and to realise the potential benefits of higher growth, more jobs and better access for all citizens to the new services of the information age.

While in the eEurope 2002 Action Plan accessibility targets primarily concentrated on specific developments for people with disabilities, the emphasis in the eEurope 2005 Action Plan will be on the integration of the needs of all citizens into mainstream goods, services and information flows. The plan, adopted by the European Council in Seville, includes eInclusion in all of its action lines. Some of the specific eInclusion actions included in the eInclusion roadmap are the continued follow-up of the accessibility of public web sites, development of a public procurement toolkit for accessibility, a European curriculum in design-for-all and eInclusion plans in the main action lines eGovernment, eHealth and eLearning.

1.4 European Year of People with Disabilities

There are over 37 million people with disabilities in the European Union (EU). The year 2003 has been designated by the European Union and the disability movement as

the European Year of People with Disabilities (EYPD) to highlight barriers and discrimination faced by this significant segment of the population. This report is one of the outcomes of EYPD.

1.5 Definition of disability and demographics

According to the WHO International Classification of Functioning, Disability and Health (ICF- May 2001) disability is not entirely an attribute of an individual, but rather a complex social and environmental construct largely imposed by societal attitudes and the limitations of the human-made environment. Consequently, any process of amelioration and inclusion requires social action, and it is the collective responsibility of society at large to make the environmental and attitudinal changes necessary for their full participation in all areas of life.

Disabled people are a widely heterogeneous group but they can be divided into the following categories for the purpose of describing difficulty with access to ICT:

People with:

- cognitive, learning and developmental difficulties
- deafness, hearing impairment;
- blindness, visual impairment or partial sight;
- deaf-blindness;
- speech and language impairments;
- physical disabilities.

Data collected by Eurostat, the Eurobarometer and some Member States permit the following generalisations to be made:

– With the ageing process, the incidence of disability increases. With an ageing population in Europe, the number of persons with disabilities will grow.
– The current estimate of prevalence of disability is 10-15%.

There is an additional significant part of the population who, without being disabled, could benefit directly from measures to improve accessibility and usability primarily designed for disabled people.

Although there is no reliable survey data, it is clear that disabled people face particular problems with ICT accessibility: Persons with major disabilities and

impairments face specific problems with human/ICT interfaces.

Persons with major disabilities and impairments face specific problems with human/ICT interfaces.

– Assistive technology which supplements mainstream ICT goods and services is often expensive or unavailable.
– The combination of assistive technology and mainstream systems reduces reliability.
– Even where ICT systems work effectively, content and information about the systems and services are frequently inaccessible because of poor design.

1.6 Non-discrimination

On 24 January 2003, the Commission adopted a Communication in which it sets out its full support to the on going discussion on the elaboration of a United Nations Convention to promote and protect the rights of people with disabilities. The emphasis on non-discrimination is fully in line with the EU rights-based approach to disability. It is also in line with the Article 13 of the Treaty on the basis of which the Council adopted the directive 2000/78/EC promoting equal treatment in the field of employment and occupation.

The Employment Equality Directive[10], adopted in November 2000, lays down a general framework for combating discrimination on the grounds of religion or belief, disability, age or sexual orientation as regards employment and occupation. The Directive requires employers to make reasonable accommodation to cater for the needs of a person with a disability who is qualified to do the job in question. This includes accessibility to ICT systems and services. The deadline for implementation in the Member States of the rules on disability and age was 2 December 2003.

1.7 Inclusion and Accessibility

All citizens have a right to enjoy the full benefits of new technologies. This includes persons with disabilities. Often, as noted, disabled people are excluded through lack of access to ICT but, conversely, it has been shown that they can benefit in some cases even more than their peers as ICT can: reduce domestic isolation; generate new training and employment opportunities; increase the choice of entertainment, particularly for older people who are the most intensive users of broadcasting. There

[10] Council Directive 2000/78/EC of 27 November 2000 establishing a general framework for equal treatment in employment and occupation. OJ L 303/16, 2.12.2000, p.16

is a special problem with inaccessible information design, particularly in respect of the Internet, even though global guidelines for basic design have been established by the World Wide Web Consortium. It is important to take into account that also people who are not able to read text on a screen will want to use the information it contains.

1.8 Design for All

The most cost effective and non-discriminatory form of access to ICT is through the Design for All Process (sometimes referred to as Universal Design, Barrier Free Design, Accessible Design etc). This concept involves the needs of the whole market, including elderly people and those with disabilities, being taken fully into account in the initial design of goods and services rather than being retro-engineered at a later date at high cost.

Design for All means designing mainstream products and services so that as many people as possible can use them easily - whatever their age and ability. The concept recognises that ability is a continuum, and the usability of products should extend towards the ends of that continuum.

This does not mean that manufacturers are expected to design every product to be usable by every consumer.

Design for All and its specific implications for elderly people and those with disabilities can be considered in three distinct but related phases:

– Firstly, the inclusion of the needs of the population as a whole in initial design
– Secondly, the inclusion of customisable, configurable or adjustable features in goods and services (e.g., the ability to alter print size on a web page)
– Thirdly, the inclusion of standardised connectivity to assistive devices (e.g. interfaces and protocols that enable the connection and use of hearing aids and screen readers, etc).

Relevant work has been done previously under the European Commission RTD programmes, in particular the IST programme, in Design for All. It is also important to mention organisations such as EIDD and EDeAN which continue to work in this area.

There are some key benefits in participating in the Design for All Process:

Legal: Anti-discrimination legislation has been adopted at the EU level in the employment area and in other areas in some Member States. Applying Design for All principles and methods would help to comply with legal requirements.

Market: As noted in 1.5, the elderly and disabled population accounts for a significant market sector and in spite of the economic data cited there are now many people in this sector with significant buying power. In addition, many design for all features do not only benefit disabled consumers, but are also appreciated by non-disabled consumers as they make products and services easier to use for the general public.

Fiscal: All citizens pay through taxation for public sector information and services and in many Member States they pay for public service broadcasting.

Employment: There is a skills shortage in ICT in the EU and many disabled people could make a substantial contribution with the appropriate access.

Autonomy and Self Determination: Good ICT design enables disabled and elderly people to be less dependent on carers and increases their autonomy and self determination.

Quality and Usability: Improving the design to include the needs of disabled people improves the design and usability overall.

(reference to standardisation work in DfA, to EdeAN, EIDD and research work)

1.9 Optimal Accessibility

The three stages of Design for All in the previous section illustrate an underlying principle. If society as a whole becomes involved in this process it will increase its market or users, decrease the cost of accessibility and enhance equality of citizenship. There is a need for that process, however, to recognise the boundary between what can be optimally provided by mainstream products and services and what needs to be provided through specialist accessibility technologies.

While the whole of society must take individual and collective responsibility for implementing Design for All, supplying special accessibility technologies should largely be a responsibility for the public sector or its agencies with some assistance from those parts of civil society specifically dedicated to working with disabled and elderly people.

The concept of optimal design takes into account the cost of implementing a feature compared with a realistic number of users likely to benefit from it. The notion of the ratio is important because it provides guidance in such areas as the regulation of different sizes of providers such as television channels. It is necessary to find a balance between the interests of disabled people and their organisations who ask that regulations ensure equal access for all citizens and the interests of providers and

suppliers who are afraid that regulation could stifle innovation and growth. A balanced approach to regulation is needed between accessibility and economic viability, particularly for new enterprises so that innovation and growth are encouraged.

1.10 Different regulatory competencies between Member States and the Commission

Because telecommunications and broadcasting require three distinct technical operations, content creation/generation, transmission and reception, they present some very difficult problems for those wishing to secure accessibility. This is also reflected in the diverse assignation of responsibilities in the Member States. While one part of a holistic process, e.g. transmission, may be regulated at EU level, other parts, e.g. content creation/generation and reception is an area of national competence and there is no harmonised requirement, for example under the current Television without Frontiers (TVWF) Directives to provide assistive services.[11] Although the issue of accessibility for people with a disability *to television* does not fall within the remit of the current TVWF Directive, the Commission will promote accessibility matters with Member States to co-ordinate and complement national actions and measures in the Contact Committee established by the TVWF Directive. In particular, enriching content with audio description, audio subtitling, subtitling and sign language will be further discussed.

This affects the economics of equipment manufacturing and incentives to build in the necessary functionality. In the UK, for example, there is legislation on the creation of accessible television content but the equipment manufacturers do not yet produce equipment with the capability to receive the enrichment streams. The economics of manufacturing mean that the availability of such services in one market does not necessarily provide a sufficient economic incentive for manufacturers and service providers to include the necessary functionality systematically in all relevant products. Frequently the decision does not even depend on consumer electronics manufacturers but another group of players, producers of silicon chips. Assistive services would need to be available in as many Member States as possible in order to provide the necessary incentive for manufacturers. This points towards a need for greater co-ordination between Member States so that assistive services become more widely available, thereby widening the market for equipment and strengthening industry's economic incentives.

[11] This issue was raised in the Perry Report on the television without Frontiers Directives on the application of Directive 89/552/EEC "Television without Frontiers"(2003/2033(INI))

2. NEW REGULATORY FRAMEWORK FOR ELECTRONIC COMMUNICATIONS : PROVISIONS RELATING TO DISABLED USERS

The new regulatory framework contains a series of rules and principles that ensure that the liberalisation of the electronic communications market does not occur at the expense of end-users, but brings benefits to them. It assumes that competition and market forces are the most effective means to satisfy user needs, but provides national regulatory authorities (NRAs) with the necessary powers to act to protect users where they need to do so.

The above-mentioned rules and principles are mainly contained in the Universal Service Directive. However, the other Directives of the new regulatory framework also contain relevant provisions. In particular, Article 8 of the Framework Directive, which sets out the policy objectives and regulatory principles that must guide NRAs in carrying out their duties, requires the latter:

- to promote competition by *inter alia* ensuring that users, including disabled users, derive maximum benefit in terms of choice, price and quality.
- to promote the interests of citizens by *inter alia* ensuring all citizens have access to universal service and addressing the needs of specific social groups, in particular disabled users.

A series of provisions in the Directives refer specifically to disabled users. However, disabled users must obviously also enjoy the same rights arising from the Directives as any other end-user. This applies whether these rights stem from the provisions relating to universal service obligations placed on designated undertakings or from other specific provisions (e.g. number portability) which allow end-users to derive maximum benefit in terms of choice, price and quality.

In addition, Article 6 of the Authorisation Directive allows NRAs to require that consumer protection rules specific to the electronic communications sector, including conditions in conformity of the Universal Service Directive, be attached as conditions to a general authorisation. Such rules may be warranted by the need to meet the specific needs of disabled users. In any event, they must comply with the requirement set out in Article 6 that conditions attached to a general authorisation be objectively justified in relation to the network or service concerned, non-discriminatory, proportionate and transparent.

2.1 The Universal Service Directive

As mentioned above, the Universal Service Directive contains most of the provisions of the new regulatory framework that promote the rights and interests of end-users, including disabled users. It is important to distinguish between:

- universal service obligations that may only be imposed on designated undertakings and whose net cost to the latter may be recovered; these obligations are included in Chapter II of the Directive; and
- other obligations placed on all or specifically defined categories of undertakings (such as consumers' right to a contract with undertakings providing connection

and/or access to the public telephone network) whose net cost may not be financed under any universal service funding scheme; these obligations are set out in Chapter IV of the Directive.

2.2 Specific measures for disabled users

Article 7 of the Universal Service Directive enshrines the obligation of Member States, where appropriate, to take specific measures for disabled users in order to ensure access to and affordability of publicly available telephone services, including access to emergency services, directory enquiry services and directories, equivalent to that enjoyed by other end-users.

In addition, Member States may take specific measures, in the light of national conditions, to ensure that disabled end-users can also take advantage of the choice of undertakings and service providers available to the majority of end-users.

The Directive does not define “equivalent access” for the purposes of this provision. Recital 13 provides examples of the type of specific measures for the disabled users that could be adopted by the Member States and mentions, for example, the making available of accessible public telephones, public text telephones or equivalent measures for deaf or speech-impaired people.

The absence of a harmonised definition of what constitutes “equivalent access” leaves a large degree of discretion to the Member States to take the measures that they deem appropriate to meet their obligations under Article 7. In doing so, they are guided by other provisions of the Directive, which provide details as to what the services referred to in Article 7 consist of.

2.3 Access to and affordability of publicly available telephone services for disabled users

The notion of access to and affordability of publicly available telephone services relates to the fundamental requirement of universal service established in Article 4 of the Directive that end-users must be provided on request with a connection at a fixed location to the public telephone network and access to publicly available telephone services, at the quality specified and at an affordable price, in the whole territory of the European Union.

It is for the Member States to define, in the light of specific national conditions, what constitutes an affordable price.

Article 9 of the Directive further provides that undertakings specifically designated with universal service obligations may be required to provide tariff options or packages to consumers which depart from those provided under normal commercial conditions, in particular to ensure that those on low incomes or with special social needs are not prevented from accessing or using the publicly available telephone service.

Member States may also, besides any provision for designated undertakings to provide special tariff options or to comply with price caps or geographical averaging or other similar schemes, ensure that support is provided to consumers identified as having low incomes or special social needs, e.g. from social expenditure financed from public funds.

Article 10 provides that Member States shall also ensure that designated undertakings provide various facilities, including itemised billing, in order that subscribers can monitor and control expenditure and avoid unwarranted disconnection of service.

Recital 13 provides that among the specific measures aimed at disabled users Member States could provide itemised bills in alternative format on request for blind and partially sighted people.

2.4 Disabled users' access to emergency services

Article 6 provides that NRAs can impose obligations on undertakings in order to ensure that public pay telephones are provided to meet the reasonable needs of end-users in terms of the geographical coverage, the number of telephones, the accessibility of such telephones to disabled users and the quality of services.

They shall also ensure that it is possible to make emergency calls from public pay telephones (and indeed from any telephone) using the single European emergency call number "112" and other national emergency numbers, all free of charge and without having to use any means of payment.

Article 26 of the Directive provides that Member States shall ensure that undertakings which operate public telephone networks make caller location information available to authorities handling emergencies, to the extent technically feasible, for all calls to the single European emergency call number "112".

Recital 13 provides that specific measures may need to be taken to enable disabled users to access emergency services '112', but does not provide any example of the kind of measures that could be adopted.

2.5 Disabled users' access to directory enquiry and directory services

Article 5 of the Universal Service Directive provides that at least one comprehensive directory is available to all end-users in a form approved by the relevant authority, whether printed or electronic, or both, and is updated on a regular basis, and at least once a year. At least one comprehensive telephone directory enquiry service must also be available to all end-users, including users of public pay phones.

Recital 13 provides that among the specific measures aimed at disabled users Member States could provide services such as directory enquiry services or equivalent measures free of charge for blind or partially sighted people.

2.6 Quality of service

Article 11 of the Universal Service Directive provides that NRAs shall ensure that all designated undertakings publish adequate and up-to-date information concerning their performance in the provision of universal service, based on the quality of service parameters, definitions and measurement methods set out in Annex III of the Directive. No compensation of any net cost which may arise from this obligation may be financed under a universal service funding scheme.

NRAs may also specify additional quality of service standards, where relevant parameters have been developed, to assess the performance of undertakings in the provision of services to disabled end-users and disabled consumers. NRAs shall ensure that information concerning the performance of undertakings in relation to

these parameters is also published and made available to the national regulatory authority.

NRAs shall also be able to set performance targets for designated undertakings and in so doing, take account of views of interested parties. They must also be able to monitor compliance with these performance targets.

Article 22 of the Directive provides that besides the designated undertaking(s), other undertakings that provide publicly available electronic communications services may be required to publish information for end-users on the quality of their services and NRAs may specify the quality of service parameters to be measured, and the content, form and manner of information to be published.

Recital 13 notes that quality of service standards do not yet exist in respect of disabled users. Performance standards and relevant parameters should be developed for disabled users, as is acknowledged in Article 11 of the Directive. NRAs should be enabled to require publication of quality of service performance data if and when such standards and parameters are developed.

2.7 Chapter IV of the Universal Service Directive: end-user interests and rights

The Directive contains several provisions aimed to secure the interests and rights of end-users beyond their access to the services falling under the scope of universal service.

These provisions are of various types: on the one hand, they evolve around the principle of providing end-users with information on the applicable prices and tariffs, standard terms and conditions and the quality of the publicly available communications services. On the other hand, they result in immediate concrete rights as from the date of application of the new regulatory framework, such as the right to fixed and mobile number portability and to the interoperability of consumer digital television equipment.

Article 31 of the Directive provides that Member States may impose reasonable must carry obligations, for the transmission of specified radio and television broadcast channels and services, on undertakings under their jurisdiction providing electronic communications networks used for the distribution of radio or television broadcasts to the public, where a significant number of end-users of such networks use them as their principal means to receive radio and television broadcasts. Such obligations shall only be imposed where they are necessary to meet clearly defined general interest objectives and shall be proportionate and transparent. They can, where appropriate, entail a provision for proportionate remuneration.

Recital 43 of the Directive specifies that such must carry obligations may include the transmission of services specifically designed to enable appropriate access by disabled users.

2.8 Standardisation

Disabled users should in principle be able to enjoy the same benefits arising from the above provisions as any other end-user. In some cases, they may however be faced

with particular problems or constraints at the level of the equipment supporting the provision of the relevant services and facilities.

The regulatory framework for electronic communications does not concern radio and telecommunications terminal equipment and the mutual recognition of conformity, which are covered by Directive 1999/5/EC. It covers consumer equipment used for digital television to the extent provided in its specific provisions.

Recital 8 of the Framework Directive notes that it is important for regulators to encourage network operators and terminal equipment manufacturers to co-operate in order to facilitate access by disabled users to electronic communications services.

2.9 Digital television

Recital 10 of the Access and Interconnection Directive notes the need to determine whether there is a justification for extending obligations currently applicable to conditional access systems to new gateways such as electronic programme guides and application programme interfaces to ensure accessibility for end-users to specified digital broadcasting services.

It further indicates that Member States may specify the digital broadcasting services to which access by end-users must be ensured by any legislative, regulatory or administrative means that they deem necessary. Also, as indicated in Article 6(4) of the Access and Interconnection Directive, the conditions applied under the said Article are without prejudice to the ability of Member States to impose obligations in relation to the presentational aspects of electronic programme guides and similar listing and navigation facilities.

3. KEY URGENT TOPICS: access to telecommunication services

Introduction

This chapter covers topics which have been identified by INCOM as having high importance for users, where users have encountered serious problems and with a connection to articles in the Directives, in particular the Universal Service Directive and the Framework Directive. However, some solutions go beyond the scope of the Directives.

Following the INCOM Terms of Reference, each topic includes:

- descriptions of the constraints experienced by people with various disabilities in gaining access to and using electronic communications services
- solutions, actions, measures, approaches in Member States and sometimes outside Europe
- suggested ways to overcome the constraints.

3.1 Access to national emergency services[12]

Constraints experienced by people with disabilities

Rapid and effective communication with emergency services can be a matter of life and death. Currently, a significant number of persons with disabilities, in particular persons with deafness, hearing impairment, speech impairment and deaf-blindness have difficulties connecting to and communicating with emergency services either directly or indirectly (e.g. through a relay service).

Given the seriousness of this issue, equal access for disabled persons to emergency services must be given top priority.

Deaf persons using text telephones in particular report problems with connecting to emergency services. The emergency centre may lack the equipment to be able to receive the call or it may not be able to identify the calling equipment as a text telephone, since certain types of text telephones are silent when calling up. For others, the operator must listen to the tone to distinguish it from a fax.

In the UK and Norway, special emergency numbers for text telephones are used. In Sweden the number is 112, and calling text telephones send a signal that is easy for an automatic system to distinguish from that of a fax, but hard for the human ear.

The text relay services described in the next section can connect to public emergency services in all eleven countries where they exist, with the exception of France, where there is a limited direct access through Minitel terminal.

Users find it unacceptable to have different emergency numbers in different countries for different types of disabled-users telephones. It is the opinion of INCOM, that the "112" number should be available to persons with disabilities with the equipment they use for telephone communication and that efforts should be made to remove existing technical difficulties, e.g. by replacing old terminals.

Deaf, hard-of-hearing and some speech-impaired persons are increasingly using mobile phones to send SMS and MMS messages as well as videophones and other messaging systems. However, these present considerable problems when trying to connect to emergency services. If the caller cannot speak intelligibly, the nature of the emergency and the location cannot be communicated quickly.

Blind persons may also have a problem to communicate their location when using a mobile phone.

The localisation problem is shared with other, non-disabled users who cannot describe their location for various reasons. It is expected that future generations of mobile telephones will be able to provide possibilities for accurate localisation.

A pilot trial of SMS for emergency calls by deaf persons in Sweden concluded that SMS can be an adequate method of communication with emergency services,

[12] See Article 7 and Article 26 of the Universal Service Directive, as referred to above in Section 2.

provided that certain technical adaptations are made. However, the user representatives in INCOM have expressed a strong concern about the reliability and dependability of such solutions. The current store and forward technique does not support an appropriate and reliable solution for emergency calls. However, given the increasing use of SMS by deaf persons, it is the only system currently available and needs major modification and movement to other, real-time interactive systems to be suitable for an emergency situation.

SMS was not designed to be used for emergency communications but as a commercial messaging service with all the inherent attributes. There needs to be more study of the use of SMS for emergency communications about its practicality both from a user and emergency services side.

As long as the emergency services do not accept these communication methods directly, gateways to text telephony should be established and used.

Users with disabilities are not considered in current mainstream standardisation work on emergency services.

Access to emergency numbers for persons with disabilities belongs naturally in the new European forum on public safety and emergency communications, to be launched in 2004.

According to the draft Commission Recommendation on the processing of caller location information[13], "Member States should require their national authorities to report to the Commission on the situation of E112 implementation by the end of 2004" (Article 13) and "When reporting on the situation of E112 implementation, national authorities should address any relevant technical feasibility issue that hinders the introduction of E112 for specific categories of end-users" (Recital 14).

Suggestions to overcome the constraints

In order to enable users with disabilities to have equal access to emergency services, INCOM suggests the following ways to contribute to overcoming the constraints described above:

- it is desirable that persons with disabilities are able to call the emergency services free of charge using their ordinary communication equipment, by using the single European emergency call number '112'; the call may be handled in text or voice or video or a combination of these media;

[13] COCOM03-03REV2 Draft Commission Recommendation on the processing of caller location information in electronic communication networks for the purpose of location-enhanced emergency call services, 14 April 2003

- that manufacturers are encouraged to include technical facilities to facilitate a dialogue with callers with disabilities in emergency situations, such as pre-programmed emergency messages with easy access;

- that new call centre equipment be defined to address accessibility by handling interaction with mobile telephones, SMS messages, videophones, Internet messages etc; call centres personnel should be appropriately trained on accessibility matters;

- that standardisation organisations are encouraged to include the requirements of callers with disabilities in mainstream standards for emergency calls and emergency call handling; the EC could issue standardisation mandates in order to address these issues;

- that the preferred set of standards defined in section 3.2 are included among the methods to access emergency services in text, voice and video;

- that working groups and co-ordination groups on emergency services, such as the new European Forum on Public Safety and Emergency Communications, should consider accessibility issues in their work and consult with representative organisations of disabled people;

- that national authorities in their reporting on the situation of E112 implementation address issues regarding users with disabilities.

3.2 Access to telephone services for persons with deafness/severe hearing impairment/speech impairment/deaf-blindness[14]

Constraints experienced by people with disabilities

Not everyone can use voice telephony. People who are deaf, have severe hearing impairment or severe speech impairment cannot make use of these everyday services that most people take for granted. According to the COST 219 group[15], the number of persons in those groups in the European Union are respectively two million, four million and two million.

For those who can read and write, text telephony can be a good way to communicate. For those who have sign language as their mode of communication, video telephony is needed to provide a conversational communication connection.

However, when text telephony was introduced in Europe there was no standardisation process in place. Consequently, there are at present at least seven different incompatible systems in different European countries. This means that the users can not make calls to other countries and sometimes not directly to other text telephones with a different standard in the same country. Text telephones are widely spread today in Europe. For example, COST 219 estimated in 2001 that the total number of text telephones in Scandinavia was 19.000[16].

An international standard for text telephones[17], which is backwards compatible with all existing equipment has been adopted by ITU, but has not yet been widely implemented.

In order to enable text telephone users to communicate with voice telephones, relay services where a person provides the link between a text call and a voice call are important. The COST 219 group reported in 2001 that Denmark, Finland, France, Greece, Netherlands, Norway, Portugal, Sweden, Switzerland and the United Kingdom provided such services. Since then, Spain and Ireland have started national services. In most of them, the user pays the same cost as for a call without relay service. Almost all can be reached via direct dialling from abroad. The volume varies between countries from a few calls to thousands of calls per week. In France, however, the wide availability of Minitel terminals has in many cases superseded the need for text relay services.

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[14] See Article 7 of the Universal Service Directive as referred to above in Section 2.

[15] Bridging the Gap? Access to telecommunications for all people. Edited by Patrick R.W. Roe. COST 219 (2001). Published by the European Commission.

[16] http://www.stakes.fi/cost219/Texttelephony.htm

[17] ITU-T V.18 Operational and interworking requirements for DCEs operating in the text telephone mode and ITU-T T. 140 Text conversation protocol for multimedia application

Two Member States provide video relay services for sign language users. In Sweden, the national regulator PTS procures the service from a county council and in The Netherlands it is provided by the TC Visinet foundation.

Speech-to-speech relay services for persons whose speech is hard to understand are available in The Netherlands and Sweden.

Guidelines for text telephony and for relay services have been issued by ETSI[18] and The Nordic Forum for Telecommunication and Disability[19].

The introduction of IP networks should take care not to introduce degradation of text telephone communication.

It should also be pointed out that a text message takes about five times as long as the same voice message. In Sweden, this is taken into account in a fixed compensation for extra costs paid by the government to persons with disabilities. France has a monthly social rental fee for persons that fulfil some appropriate conditions. Persons with disabilities can also benefit from this. In Ireland, text telephone users can get a rebate of up to 70% on text phone charges per bill. In UK there is a rebate system for text phone users. In Norway it is an obligation for the universal service provider to give deaf, hearing-impaired people and speech impaired people a reduction of their telephone costs when using text phones and this could also include video phones or related equipment.

For sign language users, the quality of video telephony is sometimes unsatisfactory, although there now exist good possibilities to meet their requirements using broadband networks.

International standards for text, voice and video communication have been established but the market has been slow to adopt them. The favoured solution is to adopt a single, IP-based set of preferred standards for all modes of accessible conversation facilitation. The set of preferred standards are IETF SIP for call control, ITU-T H.263 for video, ITU-T T.140 with transmission as specified in IETF RFC 2793 for text and ITU-T G.723.1 for audio. Nothing prevents implementations to include other coding standards, but the preferred ones should be maintained for interoperability.

By specifying this set of preferred standards within reach of mainstream implementers, the users can have their terminal design of choice, and still reach all

[18] ETSI TR 101 806, Human Factors (HF); Guidelines for Telecommunication Relay Services for Text Telephones (2000) http://www.etsi.org

[19] Nordic Guidelines for Telecommunication Relay Services for Text Telephones, NFTH 4/1998; Nordic Guide to Text Telephony, NFTH 2/2002; Nordic Guide to Video Telephony and Video Relay Service - for persons with impairments, NFTH 3/2002 http://www.nsh.se/nfth.htm

services that need to be accessible to them, such as text relay service, video relay service, speech-to-speech service, emergency service and services for interoperability with voice and text telephony in the telephone network. This is a practical response on the requirement from the European Parliament in resolution B4-0985/98 that requires us to ensure compatibility of telecommunications text and videophone equipment for deaf people across Europe.

Suggestions to overcome the constraints experienced

In order to enable users with disabilities to have equal access to telephone services, INCOM suggests the following ways to overcome the constraints described above:

- that a set of standards[20] for all modes of accessible conversation facilitation be endorsed, possibly following the procedure in Article 17 of the Framework Directive;

- that manufacturers be encouraged to provide products that comply with the preferred set of standards;

- that manufacturers be encouraged to develop and provide products that are suitable for deaf-blind persons. Member States could study how these products could be made affordable for the users;

- that active steps are taken to ensure that communication costs are as affordable for users with disabilities as for other users;

- that the need for a high speed transmission capacity (broadband) is endorsed for those disabled users who need to communicate in sign language and lip reading;

- that relay services are made available to ensure communication with voice telephones and with those services which do not have their own compatibility by text or sign language, also across Member States;

- that the development and deployment of network gateways and standardised text transmission be supported to allow interoperability of installed text telephones with new services and new transmission methods.

[20] IETF SIP for call control, ITU-T H.263 for video, ITU-T T.140 with transmission as specified in IETF RFC 2793 for text and ITU-T G.723.1 for audio

3.3 Access to public pay telephones

Constraints experienced by people with disabilities

On the topic of public pay telephones, two issues are vital: ensuring a sufficient number of payphones and accessibility of the telephones. Disabled people are hampered due to the placing of equipment in inaccessible places. Blind and partially sighted people may have difficulty reading usage instructions. People with cognitive impairments may have difficulty using public phones. These are some examples of difficulties encountered:

- Kiosk doors may be too heavy and doorways too narrow for wheelchair users
- Appliances may be at the wrong height for wheelchair users
- Instructions may be inaccessible for blind and partially sighted people
- Appropriate facilities such as sound amplification and text communication may not be available for deaf and hearing impaired people
- Operating instructions may be difficult for people with cognitive difficulties
- Poor or inconsistent design of key pads, or reliance on touch screens can render payphones inaccessible to blind and partially sighted people.

These constraints have been addressed in various ways in the Member States. For example, in the UK, it is ensured that a proportion of public call boxes have text and amplification facilities and are "wheelchair accessible". The UK regulatory framework also requires 70% of public payphones to incorporate additional receiving amplification and 75% of them to be accessible by wheelchairs.

However, mobile phone trends and the decline in the use of payphones need to be considered. Evaluations have begun with a view to assessing alternative possibilities for public pay phones (or public phones at private places like restaurant, cinema). Some countries (e.g., Denmark and Finland) suggest that mobile communications will lead to pay phones becoming less used. Following the same trend, the mobile phone base in Poland, Hungry, Slovakia and the Czech Republic exceeds the fixed line base and there is no expectation of significant fixed telephony roll-out. Some other countries, such as Norway, have stressed that small remote places where mobile coverage may be poor will require that public telephones are accessible there.

The issue of access to machine readable cards, and therefore public fix payphones, is also dealt with by standards such as CEN/TC 224/WG6 on human-machine interface. This group elaborated in particular a draft Technical Specification "Guidance on design for accessible card-activated devices" which addressed the problems of physical accessibility of machine-readable cards and their keyboard. For example, these documents recommend that the access route to the machine shall be flat, without steps, stairs or unevenness and shall not present barriers or hazards to people.

Suggestions to overcome the constraints experienced

Drawing on some known good practices, in order to enable users with disabilities to have equal access to public pay telephones, INCOM suggests the following ways to contribute to overcoming the constraints described above:

- Member States should encourage that national authorities fully exploit the possibilities for providing access by disabled persons to all publicly available telephone services, through appropriate means, such as by payphone or an alternative technological platform, such as mobile communications;
- Member States are invited to draw up a score card of measures taken, measures that will be taken together with time frame for implementation and results achieved;
- it is also desirable if Member States:
    - actively work with representatives of their national disability groups in order to identify the needs and the measures needed for achieving them
    - develop an action plan as to how these measures will be implemented
    - share best practice in relation to payphone accessibility
    - continue to review best practice in relation to alternative platform accessibility.

- the use of standardised layout of the keypad, of the area around the phone box and of the information displayed should be pursued; ensuring effective access to emergency services should facilitate free movement across Europe of disabled citizens;
- Member States should, where appropriate, consider further analysis on better design or design-for-all to improve payphone accessibility through benchmarking of best practices;
- local users with disabilities and/or representative disability organisations should be used systematically as part of the feedback process in order to assess the accessibility of publicly available telephone services;
- Member States should monitor the implementation of all relevant standardisation specifications.

3.4 Access to mobile telephones[21]

Constraints experienced by people with disabilities

Ever since the introduction of GSM-based mobile telephones, the more than ten million hearing aid users in Europe[22] have been affected by interfering noise from such telephones. This circumstance makes it impossible for some hearing aids users to use mobile phones together with their hearing aids and causes unwanted noise in the hearing aids from telephones nearby.

The European hearing aid industry has addressed the problem by increasing the immunity to such interference, which diminishes the inconvenience but does not eliminate it. According to EHIMA, the hearing aid manufacturers' association, the technical limit for such immunity in the hearing aids has been reached and it is up to the telephone manufacturers and operators to make a contribution to a solution.

The EMC Directive[23] requires apparatus to be so constructed that any disturbance it produces is at a level which allows radio, telecommunications and other apparatus to operate as intended, and to have a sufficient degree of immunity to disturbance so that it too can operate as intended, in normal environments.

Setting the limits on emissions and the immunity levels is done through the medium of standards. Standards for electrically powered equipment, including hearing aids and other active medical devices, are produced by the IEC and CENELEC while telecommunications matters are handled in the ITU and ETSI.

Hearing aids, therefore, will be designed to meet the harmonised EMC standards listed against the Medical Devices Directive[24], while mobile phones will be subject to

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[21] See Article 8(2) of the Framework Directive as referred to above in Section 2.

[22] http://www.interconnectionconsulting.com/english/marketingindex_js.html?hoergeraeteE.htm

[23] Council Directive 89/336/EEC of 3 May 1989 on the approximation of the laws of the Member States relating to electromagnetic compatibility. OJ L 139, 23.5.1989, p.19

[24] Council Directive 93/42/EEC of 14 June 1993 in relation to medical devices. OJ L 169, 12.7.1993, p.1

those cited alongside the RTTE Directive[25]. The situation that a hearing impaired person wants to listen to a mobile phone through the hearing aid has not been foreseen in the drafting of the relevant standards and it may be expected that interference problems will continue unless the standards are amended.

In the United States, the Federal Communications Commission (FCC) adopted a Report and Order in July 2003[26] requiring all operators and manufacturers of mobile telephones to provide within two years at least two models of telephones without the disturbing interference of hearing aids.

As mobile telephone services are being increasingly developed and common, the access by users with disabilities should be considered. This relates both to access to the telephone terminal and to the services provided.

Mobile platforms also have a strong potential for providing special services for disabled people. One example is the WISDOM project with participants from the United Kingdom, Sweden, Spain and Germany, aiming to realise mobile video telecommunications services for deaf people with access to a video server through text/graphic menus and directly through sign language recognition and personal communication. Other examples concern navigation, localisation and call for assistance.

Suggestions to overcome the constraints experienced

In order to enable users with disabilities to have an equal access to mobile telephone services, INCOM suggests the following ways to contribute to overcoming the constraints described above:

- voluntary or mandatory requirements on the suppliers and producers of mobile phones in Europe to provide some mobile phones with reduced interference, like

[25] Directive 1999/5/EC of the European Parliament and of the Council of 9 March 1999 on radio equipment and telecommunications terminal equipment and the mutual recognition of their conformity, OJ L 91, 7.4.1999, p.10

[26] Federal Communications Commission FCC 03-168 Report and Order adopted July 10, 2003; http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-03-168A1.pdf

the U.S. requirement, would give hearing aid users an equal opportunity with other users to use mobile services;

- manufacturers are encouraged to identify which mobile phones have reduced interference to their customers;

- continued pilot trials with new services for users with disabilities as in some Member States will show new potential ways of providing valuable services;

- when creating mobile personal communication services, interoperability should be arrange with corresponding services in fixed and wireless services. (see section 3.2);

- accessibility should always be considered in the design of new mobile terminals and services

- standardisation organisations are encouraged to consider the interference between mobile phones and hearing aids in developing the respective future standards.

3.5 Access to directory services[27]

Constraints experienced by people with disabilities

Persons who are blind or who have strongly reduced vision, as well as some persons without adequate hand function cannot use ordinary printed free telephone directories. In order to find a telephone number, they must contact the directory service call centres. As a result, these users with disabilities will have higher costs for the directory information than other users.

Some countrieshave adopted measures to provide compensation for such extra costs, for example:

- In Ireland, the universal service provider Eircom provides special directory enquiries which allows those unable to use the phone book because of a disability to use a directory enquiry service free of charge.

- In the Netherlands, KPN offers a helpdesk and a free number for people unable to use the directory.

- In Sweden, following procurement from the National Regulating Authority PTS, the operator Telia provides a free directory service for people unable to use the paper directory.

- In the United Kingdom there is an obligation on service providers to have a free directory enquiry service and through connection for customers not able to use a printed phone directory

- In Norway there is an obligation for the universal service provider to give a discount for blind and weak sighted people when using directory services.

Suggestions to overcome the constraints experienced

[27] See Article 5 and Article 7 of the Universal Service Directive as referred to above in Section 2.

In order to enable users with disabilities to have an equal access to directory services, INCOM has the following suggestions to contribute to overcoming the problems described above:

- following the examples of some Member States, a system in all Member States for compensation of extra costs caused by a personal disability for finding telephone directory information would create equality between users with and without disabilities in all of Europe.

4. KEY URGENT TOPIC: ACCESS TO BROADCASTING, DIGITAL TELEVISION AND RELATED SERVICES

Constraints experienced by people with disabilities

4.1 Introduction

Like all other citizens, people with disabilities enjoy watching television but their access to it can be restricted: deaf and hearing impaired persons have problems with the audio and blind and partially sighted people have problems with the visual material, pictures as well as text on the screen. There are more than 80 million people in Europe[28], 22 million living in the European Union[29], with a significant hearing impairment and eight million with a serious sight impairment. Furthermore an increasing number of older persons with experience of multiple disabilities, cognitive and sensory disabilities, face access barriers to television viewing.

Most deaf and hearing impaired people can benefit from subtitling but some require signing as this is their first language and they have difficulties in reading the text.

Blind and partially sighted people can benefit from audio description (an additional narration that fits between the existing dialog and that describes action, body language and facial expressions).

Both of these groups within the population face additional problems where this additional information is not in their first language. When it is a foreign language programme that uses subtitles as the medium for translation or programmes that use alternative access methods for on-screen displays e.g. on-screen navigation menu's it is possible to use 'audio-subtitling' (a voice output created by using speech synthesis technology to convert the subtitles into speech). In all these cases additional information is added to the original programme and provided to supplement the standard content.

Deaf people are assisted with their understanding of dialogue and verbal presentation and blind people learn about action, body language and facial expression.

It is important to note that audio description can also help non-disabled people enjoy

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[28] Institute of Hearing Research (IHR): people aged 18 and over with bilateral hearing impairment at 25 dB hearing level and above in EU and other European countries (as defined by UN/WHO). CENELEC TV for all report p. 5

[29] Eurostat- Behindertenstatistik,Zweite Ausgabe 1993 Office for official Publications of the European Community Brussels/luxemburg 1995 ISBN 92-826-9651-0

television while they are performing other tasks and that subtitles benefit non-disabled people for example by helping increase literacy levels.

The provision of both analogue and digital subtitles has been available for some time but audio description and 'closed' signing need further development. The manner in which these services are produced also needs consideration. A common approach is needed as recommended in the final report of the study of CENELEC 'TV for All'[30]. In the absence of European standards some countries like Spain are developing their own national standards for instance for authoring subtitles[31].

Elderly people and many viewers with cognitive problems find channel navigation and programme viewing too complex and accessible electronic programme guides (EPG), is a preliminary requirement to be able even to select a programme. High quality audio description and clear subtitling can both help in a variety of ways, for example facilitating understanding of the programme. The needs of the users should be taken into account; they should also be consulted. Media should be customisable to facilitate accessibility. These features need to be considered from the outset rather than as modifications to be implemented at a later date.

4.2 Remote controllers and EPGs

A new element of complexity has been introduced with the indispensable use of remote controllers and electronic programme guides.

Remote controllers frequently have small, near identical keys which do not conform to a common operational pattern which presents difficulties for blind and partially sighted people and those with cognitive problems. Manufacturers claim that the detailed standardisation of user interface features could be restricting the development of better solutions in the market, whilst people with disabilities claim that standardisation is essential to increase accessibility and ease of use. Some standardisation done in other ICT domains, for example the raised dot on key 5 in numerical key pads, has proven to be very useful.

An alternative would be to discuss with manufacturers the possibility of creating a specialised market for accessible remote controls. Manufacturers would need to make their remote control codes available to third parties on fair, reasonable and non-discriminatory terms.

Electronic Programme Guides (EPG) for digital television now provide programme listings up to 400 channels for seven days; but, more significantly, many EPGs are now the sole route of access to programmes and the sole source of accessibility sign posting. EPG's and navigational menus currently have a very complex user interface only available in a visual format. Therefore, they present problems for old, blind and

[30] http://www.cenelec.org/Cenelec/CENELEC+in+action/Horizontal+areas/ICT/e-Accessibility.htm

[31] "NORMA UNE 153010", on subtitling for people who are deaf or hering impaired, through teletext,

partially sighted people. Also, they do not possess signing capacity. It is difficult not only to find and select accessibility support services but also to find and select a programme. Connections to assistive devices might be a solution as might alternative voice input/output interfaces.

4.3 Other services

Tele-shopping and interactive services present an extra layer of difficulty because they combine some of the inaccessibility problems of broadcasting with those of Internet publishing. Community law makes a clear difference between television broadcasting services, submitted to the TWF directive, and services provided on individual demand, which constitute Information Society services.

4.4 Digital radio

As digital radio expands there is a strong possibility that broadcasters will increasingly use receiver screens to display information. These are typically small to reduce cost which presents difficulties to many people in addition to blind, partially sighted and older persons.

4.5 The place of television

Access to television means access to leisure, information, education among other things. It is therefore crucial for disabled and elderly people to be full and equal citizens. Unlike the use of computer-based services, many television services are directly or indirectly paid for by citizens through licence fees or taxation. In some countries this has already led to certain accessibility obligations being made conditions of licence to broadcast. In the UK and Portugal[32], for example, the accessibility obligations on subtitling are being implemented but the ones on EPGs are actually ahead of the ability of the technology to deliver. The recent study "Digital television for all"[33] completed by the DTI in the UK provides a good overview of the

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[32] http://www.aacs.pt/bd/Deliberacoes/20010328a.htm

http://www.hmso.gov.uk/acts/acts1990/Ukpga_19900042_en_1.htm The Broadcasting acts 1990

http://www.communicationsbill.gov.uk

[33] www.digitaltelevision.gov.uk/dtv_for_all.html

matter.

Making content accessible, however, is only part of the solution: the transmission channel must have the capacity to carry the enriched assistive services such as audio description, subtitling and signing and this may have to be required as a 'must carry' obligation. Finally, even if the information is accessible and transmitted, the receiver TV set or set top box may not be able to decode the enriched assistive services, if manufacturers have no economic incentive to include the relevant functionality. Furthermore recording equipment should be able to record these accessibility features. This requires a holistic strategy for equivalent service which includes stated targets for all special access services, including subtitling, signing and audio description in the context of content creation, transmission and reception. All enriched assistive services should be represented on EPGs by common symbols and all enriched assistive services should be easily accessible on standard receivers and recorders. There should be greater co-ordination between Member States in order to ensure that the equipment manufacturers have the correct incentives to include the relevant functionality.

4.6 Digital switchover

The e-Europe 2005 Action Plan[34] requires Member States to publish their plans for the switchover from analogue to digital television. This is important for disabled and elderly people in two inter-connected ways:

* Because digital information is more flexible than analogue it is cheaper to produce at every phase (excluding its creation) - collection, editing/production, re-purposing - and so accessibility targets for digital television should be radically higher than for analogue, moving towards 100% accessibility in appropriate genres

* Conversely, where EPGs are inaccessible and where they provide the only route of access to digital programmes, users may lose all access to some channels enjoyed in analogue. Access through use of an agreed set of icons would do much to resolve this.

4.7 Design for All

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[34] COM (2002) 263final, eEurope 2005: An information society for all.

Underlying all accessibility the Design for All principle should be applied in initial production so that information is created in parallel in all three primary modes, audio, text and pictorial.

Suggestions to overcome the constraints experienced

The following actions will contribute to improving the accessibility to broadcasting services:

a) Member States should be invited to set and publish targets for the provision of accessibility features for digital television for appropriate genres respectively specifying content creation, transmission and reception. Some countries like UK are already having some targets quoted in legislation;

b) On the basis of best practice accessibility/ enriched assistive services should reach a target of 80% in appropriate genres by 2015;

c) Broadcasting regulators and broadcasters should agree codes of practice or other regulatory instruments to specify accessibility requirements, notably provision of accessibility/ enriched assistive services;

d) On the basis that there is not yet a technical solution for full EPG accessibility, there needs to be an urgent, Europe-wide initiative to solve this problem before analogue switch-off and digital switchover, aiming at a common standardised solution for accessibility;

e) Strategies and measures about analogue switch-off and digital switchover should take account of the needs of older and disabled people. Public consultation with users and their organisations will contribute to this goal;

f) Accessibility to be progressively integrated into all standards, guidelines and the establishment of future deliverables for digital broadcasting in accordance with the recommendations in the CENELEC "TV For All" Report in order to promote European accessibility solutions;

g) A dialogue between manufacturers, users, broadcasters and regulators should be initiated regarding standardisation and promotion of accessibility features of remote controller devices, recorders and receivers and its impact on competitiveness and on ease of use, taking into account the need to achieve economies of scale across the Single Market in order to achieve affordable prices;

h) A closer co-operation to be established between COCOM and the Contact Committee established under the “Television Without Frontiers” Directive;

i) Studies and research should be undertaken to assess the market for additional accessibility features, easy to use products and the commercial benefits of inclusive design principles;

j) Action to be taken by broadcasters and manufacturers to raise awareness amongst consumers about the availability of assistive products and services and how access them.

5. OTHER TOPICS OF IMPORTANCE AND EMERGING TECHNOLOGIES

5.1 Electronic communications services for deaf-blind people

Deaf-blind people have a wide range of different communication needs. Like everyone else, they need access to directory and emergency services as well as normal person-to-person contact. There are, however, a number of constraints experienced by deaf-blind persons in getting access to telephone services.

INCOM carried out a special survey about the situation for deaf-blind persons and electronic communications in Europe. The responses show that terminal equipment is expensive and often obsolescent. There appears to be little uniformity in the terminal equipment used in different countries. In the UK a telephone with Braille output has recently been launched. It retails at around £3,000, which puts it beyond the reach of almost all individuals.

"Social" provision of the required equipment, i.e. funding by local or central government, seems reasonably widespread. However, where budgets are controlled locally there is inconsistent provision. There is also often a mix of state and charitable funding. In Denmark, the provision of terminal equipment and software for deaf-blind people is provided through the universal service obligation at a price equal to an ordinary telephone.

Access to a relay service is also essential if deaf-blind people are to be able to communicate with all other subscribers in real time.

The recent introduction in Sweden of a "service centre" to which deaf-blind can refer by telephone for a range of information, support and advice is of particular interest.

The use of the Internet or internet protocols as alternatives to text phones is viewed with caution by some respondents. Continuing technical problems are cited. Elsewhere, views are more positive.

The opportunity to use unified conversational services as defined in the preferred set of standards as described in section 3.2 has the power to open the inclusion of deaf-blind people in a wide communications environment.

The use of e-mail and the Internet is potentially helpful but requires high levels of spatial navigation and Braille skills.

Radio signals are used to carry emergency messages between deaf-blind people and operators and to provide vibrating alert signals but these do not have standardised frequencies.

5.2 The use of Ermes band frequencies to support accessibility services

The Commission has issued a Mandate to the European Conference of Postal and Telecommunications Administrations (CEPT) to investigate the use of the 169.4-8 MHz including possibilities for assistive listening devices and social alarms, guidance systems and audio description in public places. This is being handled in CEPT by Project Team 42 with a deadline of 31 March 2004.

This is an example of good practice on mainstream radio frequency allocation to consider support to EU policies, namely for people with disabilities and elderly people.

Attention needs to be given to the provision of equipment and services to meet the difficult and complex needs of deaf-blind persons.

5.3 Information services

Users with disabilities have repeatedly mentioned the lack of information about available products and services. It is both a question of making mainstream information systems accessible and providing special information about services for disabled users.

In Denmark, in a collaboration between the Danish Centre for Technical Aids and the National IT and Telecom Agency a special effort has been put into structuring the part of the assistive technology database which concerns telephones and aids for telephoning.

5.4 Broadband

Broadband connections offer excellent possibilities for valuable services for many users with disabilities. Examples are the kind of services provided in the Swedish broadband eAccessibility applications pilots, procured by the national regulator:

- Broadband for deaf-blind users (service centre)
- Broadband for intellectually disabled, information, communication
- Broadband for partially sighted: digital books to university students using DAISY
- Distance education for persons with mild aphasia
- Distance education in sign language (Swedish Deaf Association)
- Job guidance, consultations, training: all disabilities.

Such pilot trials could be encouraged in other Member States and access to broadband services by users with disabilities could be facilitated on the same terms as for other citizens.

Sometimes other solutions could be more appropriate than broadband like intelligent user equipment and use of CD-ROMS.

A specific need for broadband connections to provide basic telephone services is that of deaf persons with sign language as their means of communication. As pointed out in section 3.2, broadband connections are necessary to enable telephone conversations of sufficient quality in sign language between videophones .

In parallel INCOM may also continue to explore how to improve eAccessibility to broadband emerging new services and applications. Some of them were introduced and discussed in section 3.2, dealing with communications for deaf or hearing impaired people such as the example of deaf persons needing videophones for sign language.

5.5 World Wide Web

Although not directly part of this report it is worth mentioning the developments in the World Wide Web and Internet and the needs for accessibility to the content and

services provided through this mean. This issue is mainly covered at this moment as part of the eEurope initiative. In this context, Member States have adopted the WWW/W3C content accessibility guidelines version 1.0. As technology is rapidly changing it is important in the future to evolve to new versions of these guidelines that would reflect the state of the art.

5.6 Emerging technologies for accessibility

As a first principle, it is important that the potential of emerging technologies for improving the range of goods and services to elderly and disabled people is taken into account at an early stage so that potential steps towards equivalence do not become additional barriers; this is particularly important in the area of setting standards.

The following paragraphs have been written in order to launch a discussion on the potential of new technologies, to seek concrete examples of progress and good practice and to provide material for research proposals:

a) 3g Cellular Technology. This has all the advantages of broadband but with added flexibility which means that partially sighted people and wheelchair users will not have to struggle with inaccessible public telephones.

b) Location Based Services. Location based services are provided to user interfaces, such as cellular phones, through the use of satellites. They have the following beneficial applications specifically for people with disabilities:

* Location identification and information for blind and partially sighted people, those with cognitive difficulties and those who find spatial information difficult to interpret

* Automatic location information to telephone operators from people who cannot communicate verbally

* Ergonomic routing for people who find walking difficult or who are wheelchair users.

c) Intelligent Agents. Intelligent agents are applications which aggregate and analyse data on the basis of user behaviour. They therefore simplify many data searching and reporting functions. They are applicable directly to disabled people in the following areas:

* Simplification of searching and relevant reporting for people with cognitive difficulties and blind and partially sighted people

* Reduced keying for people with physical impairments

* More focused results from the widest possible searches for people who find it difficult to formulate searches

* Reduced frustration with Internet inaccessibility and poor usability for all people who are disabled or elderly.

d) Language Engineering and Simplification. In recent years there has been rapid progress in automated language translation and simplification; and although it is not yet fully reliable, it has reached the stage where the following specific applications for people with disabilities should be investigated:

* Language translation of audio description for blind and partially sighted people

* Text simplification in generating visual sub titles for deaf and hearing impaired people and those with cognitive difficulties.

e) Voice in/Voice out. Voice out technologies have been widely used in accessibility technologies for blind and partially sighted people for many years and voice-in technologies are more than a decade old but they have not yet been effectively combined in single, seamless systems. Research is required with specific reference to:

* The reliability of voice input for people with physical disabilities and poor fine motor or keyboard skills

* The assessment of the trade off between the reliability of voice-in and the size of the vocabulary which would benefit people in general but would be particularly useful for people with cognitive difficulties

* Improvement in the clarity and 'realism' of voice-out systems for blind and partially sighted people.

f) Automatically generated signing and lip movement - Avatars. Research is already under way into the automatic generation from voice and/or text input of signing and lip moving avatars and this should be taken further.

g) Wireless Connectivity and flat screens. The almost simultaneous development of wireless connectivity and flat screens means that processing can be radically separated from visual output. This means that a portable processing device can interact with a large flat screen which might form a surface such as a table. A user might therefore carry her own processor and interact with a variety of large screens such as those in railway stations or might carry her own screen and access data from a variety of processors.

h) Pattern Recognition. Pattern recognition technology, initially developed to detect pornography, can identify abnormal phenomena such as human figures prone when

they are expected to be standing. This technology could be used in voluntary surveillance to allow people with disabilities and elderly people to remain securely in their own homes instead of using special residential care.

j) Gesture/Sign Recognition. Pattern recognition technology has already been used in static environments (see k) above) but it can also be used to analyse dynamic material such as signs and gestures. This would potentially enable wheelchair users to wave at a door or those with speech impediments to make signals at security intercom systems.

k) Robotics. Robotics should be developed to enable those with physical impairments to manage physical task completion.

6. GENERAL DISCUSSIONS, COMMENTS AND RECOMMENDATIONS

6.0 Introduction

This chapter gathers together all those important elements which do not readily fit into other chapters. Particularly important is section 7.2 which assembles a vital set of general principles which should inform all matters of policy concerning ICT and elderly and disabled people.

6.1 Discussion issues

The following issues have been raised in the INCOM discussions and need to be further explored and analysed.

a) Follow-up

INCOM is of the view that the observations and suggestions of this report should be followed up in a concrete and measurable way.

Given the important role of COCOM in the implementation of the Electronic Communications Framework package and the demographic trends in Europe, COCOM should take advantage of the information in this report and an effort should be made to consider accessibility in future undertakings. This report should be as widely disseminated as possible.

Given the demographic changes in the near future, Member States would benefit from following the developments in other countries and from exchanging information, experience and follow up progress.

For topics and areas where development and research is needed, the Sixth Framework Programme offers possibilities and budgetary resources.

A new working group with a mandate to follow up and monitor in a concrete way the suggestions of INCOM and address new developments in the electronic communication sector could be created. This becomes crucial in view of the accelerated pace of technological developments.

b) Mainstreaming

The demographic trends reported in 1.5 indicate that there is a strong market case for providing goods and services for disabled people and this goes on to describe the principles of Design For All which would make this possible but so far disabled people have suffered severely in the ICT context from market failure. The reason for this may partly be connected with the degree to which ICT design is a function of lifestyle and fashion rather than utility but it is important to note that the pure demographic argument for the market case does not deliver accessibility unless it is subjected to opportunity cost analysis, i.e. what alternative uses of capital are available to the supplier?

Experience would indicate that although including the needs of disabled and elderly people in general provisions might be difficult and time-consuming it provides much greater long term benefits than seeking highly specific provisions.

There will always be a tension between mainstreaming and special provision but it is important that more work is undertaken on opportunity cost as the demographic profile of the EU moves ever more towards older people.

c) Standards

One critical area of mainstreaming is in the use of standards applied to generic technologies to make them accessible. In the area of ICT this is important for two special reasons:

* ICT is subject to detailed standards much more than many other products

* Such standards frequently apply to publicly funded and/or essential services.

As the role of legislation and regulation decreases the role of standard setting will increase and it needs to be subjected to the kind of democratic balance which applies to governmental and legislative processes. Specifically, this means that disabled people and/or their representatives should be an integral part of all standard setting that affects them.

Both industry and users benefit from such standards to be made international. Thus, participation in international standardisation with European requirements should be strongly encouraged. That creates larger markets and better interoperability.

d) Harmonised action across Member States

Harmonised action across Member States should be based upon the promotion of good practice so that where one Member State has established a 'lead position' it should seek to widen its application until such time as it naturally becomes material for EU-wide implementation.

e) User involvement

User involvement has been a central theme of this report. It is a vital element of the first general recommendation in section 6.2, reflecting a common theme across many issues and technologies. Although representational mechanisms will vary between Member States, the Commission should issue guidelines on best practice, particularly in respect of Member State Representation on Commission bodies.

6.2 General principles and recommendations

The following general principles and recommendations have been brought forward in the INCOM discussions as worthy of further consideration.

a) All ICT, broadcasting and telecommunications Directives, Regulations, Resolutions, Codes of Practice, guidelines and policy statements should take account of the needs of older and disabled people through consultations with the organisations which represent them.

b) Design for All principles should be followed in all areas of the production of goods, services and information but they should be particularly applied by the public sector and its agencies and licensees and in public procurement.

c) Following the good practice from some Member States, it is recommended to consult with users with disabilities and publish accessibility policies in respect of ICT, broadcasting and telecommunications and to monitor progress.

d) As identified in the eEurope 2002 and 2005 Action Plans, several benchmarks have been adopted for general progress in ICT and should be extended to encompass accessibility.

e) Accessibility in the context of Design for All should be integrated into initial product design; in the case of digital information this means that multimedia should be multi-modal.

f) Where general production cannot facilitate universal access, manufacturers should ensure standardised, simple connectivity between their products and assistive technologies.

g) Accessibility should be regarded as a European-wide, integrated challenge and should be based on the twin strategies of the Commission's mandate to promote production based on economies of scale, particularly important for national benchmarks which produce accessibility goods and services, and on communications interoperability across Member State borders.

h) Standards bodies should be encouraged to comply with CEN/CENELEC guide 6 in their standardisation work, to improve the likelihood that the needs of elderly people and disabled people are taken into account.

6.3 Public policy issues

The following is a list of public policy issues, with short comments, which may need to be taken forward:

a) Digital Copyright. Some multinational companies have already indicated that they wish either to charge additional royalties for the right to produce enriched, accessible programming from their original material (signing, sub-titling, audio description) or they wish to ban it on aesthetic grounds.

b) Levers for Accessibility in Deregulated Markets. This Report has frequently referred to problems of accessible hardware/user interface design in deregulated markets. This needs to be considered alongside deregulated digital production in such areas as satellite television.

c) Encryption, Privacy and Accessibility. Particular problems for people with disabilities may emerge with the growth of Registered Electronic Signatures and encrypted documents. This will become vital if Government uses encrypted systems for funds transfers for benefits payments.

d) Transatlantic Reciprocity Agreements. A good deal of information and literature on disability and accessibility originates in the United States of America. There are transatlantic problems over copyright and other instruments; these need to be studied, in particular for entertainment on demand and DVD accessibility

e) "Pay-as-you-go" Radio. The accessibility of television is of primary importance to people with disabilities but many also rely heavily upon radio. The first generation of digital radios have screens which present difficulty for partially sighted people but subscription radio, in parallel with subscription television, is already on the horizon and this will present its own problems.

f) Internet Streaming Standards. Member States may find it difficult to determine whether media streaming is publishing or broadcasting. Either way, it is important to establish that accessibility standards should apply to it.

g) e-Citizenship and Voting. This is largely a matter for Member States but common

safeguards should be developed to underpin the European Convention on Human Rights and Article 13[35] of the Treaty of Amsterdam.

h) Information for Carers. This report has largely concentrated on the needs of elderly people and those with disabilities but accessible information for carers is a necessary component of civilised living for many households.

j) Electronic Funds Transfers to Private Citizens. Transfers may be of immense use to disabled and elderly people who do not wish to leave home on a regular basis to collect funds and who cannot handle printed material. Conversely, if such systems are inaccessible they will create new barriers.

[35] Article 13; Without prejudice to other provisions of this Treaty and within the limits of the powers conferred by it upon the Community, the Council, acting unanimously on a proposal from the Commission and after consulting the European Parliament, may take appropriate action to combat discrimination based on sex, racial or ethnic origin, religion or belief, disability, age or sexual orientation.

EUROPEAN COMMISSION
Directorate-General Information Society

Emerging Technologies and Infrastructures. Applications
Elderly and persons with disabilities

Brussels, 4 April 2003
DG INFSO/F5

INCOM03-01

FOR INTERNAL USE ONLY

INCLUSIVE COMMUNICATIONS (INCOM)

Working Document

Subject: **Terms of Reference for a subgroup of the Communications Committee on users with disabilities**

This is a sub-group working document which does not necessarily reflect the official position of the Commission. No inferences should be drawn from this document as to the precise form or content of future measures to be submitted by the Commission. The Commission accepts no responsibility or liability whatsoever with regard to any information or data referred to in this document.

Terms of reference for a sub-group on users with disabilities (INCOM)

Status

The group has been set up as a working group under Article 7(1) of the Rules of Procedure of the Communications Committee to run throughout 2003: the European Year of People with Disabilities.

Purpose

The group's purpose would be to:

- encourage network operators and terminal equipment manufacturers to co-operate in order to facilitate access by users with disabilities to electronic communications services;

- raise and spread awareness of the constraints experienced by people with various disabilities in gaining access to and using electronic communications services;

- suggest ways of overcoming these constraints, and share experience and good practice identified at international, national, regional or local level;

- propose harmonised actions at national level across Member States to implement the objectives of the Framework Directive and related Directives.

Membership

The group includes representatives of European disability groups and various electronic communications industry sectors (e.g. equipment manufacturers, network operators), as well as delegates from NRAs. The Commission encourages participation from all 15 Member States.

The Commission is not in a position to reimburse travel costs.

Structure and work programme

The group would be chaired by the Commission. The overall agenda for the year should be proposed by the group and approved by the COCOM.

Reporting

After each meeting the group should report to the next COCOM meeting as stipulated in Article 7(2) of the Rules of Procedure of the Communications Committee. At the end of the year the group should compile a final report, with recommendations where appropriate.

Follow-up

The final report of the COCOM sub-group should be addressed to the COCOM, to the eEurope Steering Group and the Commission, in particular as a contribution to the mid-term review of the eEurope Action Plan 2005, scheduled for 2004. It should also be forwarded for information to the high-level group on the Employment and Social Dimension of the Information Society (ESDIS) and the High level group on disabilities.

SUMMARY OF ANSWERS TO THE INCOM QUESTIONNAIRE

Question 1: Main problems for people with disabilities?

– Information, training, support
– Access to Internet, WWW (not part of the INCOM mandate)
– Digital TV: subtitling, programme guide, remote control, audio description, sign language
– Communication for deaf/hard-of-hearing persons: lack of compatibility, relay centres, poor quality of videophones, mobile options
– Mobile telephones: interference with hearing aids, keyboards, displays, navigation
– Access to public services, including emergency services
– Access to and affordability of terminals
– Lack of standards, criteria for accessibility
– Access to payphones
– Communication for deaf-blind persons

Question 2: Legislation and regulations

2 a – Regulated national targets for accessibility?

Very few: examples from Ireland, Portugal and the UK.

2 b – Obligations on service providers?

Only a few examples from Ireland (percentage of pay phones) and the UK: free directory enquiry service, text relay centres, repair service, bills in alternative format, etc (part of licence conditions)

2 c – Obligations on manufacturers?

None reported

2 d – Enforcement mechanisms used?

Some potential mechanisms mentioned (license conditions, tax exemptions, procurement requirements) but hardly used.

Portugal: in the field of Digital TV and UMTS

UK: Disability Rights Commission can take legal action against Disability Discrimination Act infringements

2 e – Involvement of user groups?

Few formal provisions but consultation with users and user groups occurs in several countries, e.g. in connection with new legislation (DE, FI, NL, UK).

2 f – Adequately covered by national legislation or not?

Several examples of areas not covered adequately: TV, Internet, funding, separation networks-terminals, services, small groups such as deaf-blind.

Question 3: Use of the Framework Directive or other directives?

ES: Law on Information Society (2002) requires public administrations to make their web sites accessible; The General Telecommunications Law (1998) states that disabled users shall have access to the fixed telephone network under equal conditions.

UK provides more than one relay solution to promote choice according to FD Art 8.

UK: Requirement to provide a text phone facility is derived from the ONP Directive.

FR: An INCOM working only under COCOM competencies risks not being efficient.

Question 4: Consequences of current regulatory measures?

EICTA: Any proposal for regulation would stifle innovation and reduce a broad range of accessible solutions.

ES: Barrier removal through legislation is the key to equal opportunities for people with disabilities.

NL: The measures work quite well.

SE: The current regulatory measures have worked fine, users are satisfied.

UK: Too early to say.

RNID: Artificial separation between networks and terminals.

Question 5: Cooperation between users, legislators, operators, regulators etc?

ANEC: Far from satisfactory in national standards bodies.

ES: Signed agreements between ministries and CERMI, ONCE.

FI: Nordic Forum for Telecommunications and Handicap (NFTH) involves regulators, operators and experts.

UK: DIEL (standing advisory committee to Oftel on matters re disabled and elderly); cooperation between regulators, user groups and industry to develop a "Mobile Industry Code of Practice for Services to Disabled and Elderly Customers".

RNID, HumanITy: All matters concerning digital information and people with disabilities should be handled by a single body within the Information Society Directorate-General.

Several examples from other countries.

Question 6: Projects, initiatives, studies, publications, experts, etc?

Lists from many respondents.

Question 7: What role could be played by legislation, standards, public procurement etc?

ANEC: Implement Guide 6.

ES: European-wide procurement.

FI, NL and others call for more standards.

PhoneAbility: Horizontal anti-discrimination legislation is important. Specific legislation on technology becomes outdated. Standards are vital, as is public procurement.

RNID: CEN, CENELEC and ETSI should have a joint disabled users' committee.

Question 8: How to implement benchmarking?

ES: User groups, measure user satisfaction but see to the context, the whole picture. Measure levels of subtitling, audio description, web accessibility, relay services.

FI: The concept of accessibility needs to be defined first.

IR: Guidelines have been developed by the National Disability Authority.

SE cooperates with Linköping University to evaluate impact.

RNID: National action plans in Member States and annual Commission benchmarking report.

Question 9: How to assess impact?

ANEC: Set up mechanism to ensure use of Guide 6. Follow up Mandate 273.

ES: Polls, expert groups but ideally, statistical analyses.

See also question 8.

GOOD PRACTICES

The following are examples of good practices in the field of electronic communications and users with disabilities which have been submitted by the Member States and other members of INCOM, mentioned in replies to the INCOM questionnaire or are available in the public domaincollected from the following sources:

1. MOBILE SERVICES

Country: Sweden, UK, Germany, Spain

Technology: Mobile broadband based accessible conversational services: Equipment following the preferred standards: SIP, with video, text and voice is tried within the IST project for deaf people with communication through 3G mobile networks or wireless LAN networks.

Research, application or regulation: Research

Results: Deaf people can communicate in sign language and text with some level of usability through small computers with built in camera when used through an Internet connection to the 3G network. When connected to Wireless LAN networks, the signing quality is good. This seems to give deaf users new opportunities to mobility in work and leisure communication. The trial broadband sign language relay service is available and popular also among these users. One opportunity is to have small interpreted meetings anywhere, anytime, and that is a new opportunity for the user group. The project also provided mobile playing of sign language information, stored in a server.

www.mobilewisdom.org

Country: Sweden

Technology: Mobile text, SMS

Research, application or regulation: Field trial/application of SMS 112 to emergency centres.

Results: A joint project between PTS and SOS Alarm (national emergency centre) to implement a system where deaf and people with speech impairment can send SMS to the emergency centre. A pre-study (test) was performed in the beginning of 2003. For more information see (in Swedish)

http://www.pts.se/Nyheter/pressmeddelande.asp?ItemId=1777

Country: UK

Results: Co-regulation: positive outcomes

Mobile communications: Good Practice Guide on products and services for disabled people, 2003. Produced by industry/consumer working party as a result of Oftel initiative.

2. PUBLIC PAY TELEPHONES

Country: UK (Oftel)

Technology: Public pay telephones

Research, application or regulation: Regulation

Result: UK payphone regulation requirements are now set out in the General Conditions of Entitlement entering into force on 25/7/2003 in the relevant part of General Condition 6 Public pay telephones.[36]

[36] "6.3 Where the Communications Provider provides Public Call Boxes, the Communications Provider shall also:

Country: UK (British Telecom)

Technology: Public pay telephones

Research, application or regulation: Application

Result: BT has recently upgraded its base of public payphones with best practices to ensure a satisfactory outcome for both customers and the company in light of the legislative and regulatory provisions mentioned above; for standards see www.stakes.fi/cost219/payphones.htm.

Because payphone usage has declined due to the availability of mobile communication, the number of payphones is not expected to increase but they have been upgraded. The most important part of upgrading was to call upon the experience of the Payphone Disability Forum. Within the forum, expertise was available from Regulatory Affairs, Disability, Payphone Technology and Payphone Design and Procurement allowing several interests to be balanced within the process of upgrades. This forum was also in regular contact with bodies who represented the interests of people with disabilities within which representatives were invited to view and comment on proposals before they were formally accepted.

Some of the features that benefited from this approach were:

- The location of Text Payphones. These were located across the UK with particular attention to the local demographics of disabled persons.
- An improved keyboard design and layout was agreed RNIB (Tiresias font).
- Varying amplification levels allowed change to visual feedback received.
- Email, Text and payphone were incorporated into one unit.
- Screens could be back-lit for better visualisation.

(a) ensure that:

(i) where it provides Public Call Boxes anywhere in the United Kingdom except the Hull Area, at least 75% of those Public Call Boxes are accessible by reasonable means to End-Users in wheelchairs;

(ii) where it provides Public Call Boxes in the Hull Area, at least 50% of those Public Call Boxes are accessible by reasonable means to End-Users in wheelchairs; and

(iii) at least 70% of its Public Call Boxes incorporate additional receiving amplification;

(b) consult the Director from time to time on all future material changes to the design of its Public Call Boxes where the interests of disabled persons are likely to be affected to ensure that the needs and interests of disabled persons are fully taken into account in the development and provision of such telephones; consult the Director from time to time and in any event as the Director may request to ensure adequate provision, in terms of numbers and locations, of its Public Call Boxes incorporating textphone facilities. Where the Director is satisfied, following due investigation and discussions with the Communications Provider, that such provision is inadequate, he may direct a Communications Provider to provide Public Call Box textphone facilities as he deems appropriate in terms of numbers and location ... "

- Door handles were lowered to allow greater leverage without jeopardising safety.
- Side window bar adaptation allowed support and rest.
- Lighting of kiosks increased.
- Wheel chair access improved by removing some doors altogether, allowing increased physical access, but increasing background noise for the hard of hearing.
- Advertising of the Text Payphone in specialist magazines.

While the above are positive steps there are still barriers to accessibility such as the "common red telephone box". Although very popular with English Heritage (who have campaigned successfully to have a number of these retained or listed) they have been unpopular with disabled and older people. The step into the kiosk is a major obstacle; the doors are heavy and the interior is dark and difficult to keep clean.

Payphones location and footprint

Positioning is done by local planning authorities. Design implications/restrictions apply within the allowed footprint. Local communities to may have differing needs, which may lead to positioning that a not the first choice of the supplier.

Door opening, this is a function of the width of the pavement, the pedestrian flow and local environmental considerations. If requested, doors can be left off but, in a wet climate, this is not done as a matter of course. Other considerations are the generic noise and privacy issues encountered when the door is removed.

Country: Slovenia

Technology: Public pay telephones

Research, application or regulation: Application

Result: The fixed operator Telekom Slovenije offers disabled-adapted phone booths (12.5% accessible on wheelchair) and new multimedia booths that are just now being introduced. Slovenia is sponsoring also some freephone numbers for "social contact services" to provide general information to users including operational instructions for blind persons (for details see http://www.telekom.si (keywords "*teletoèka*" for the former *and* "*druzbena odgovornost*" for the later).

Best Practices Design

The present overview done by COST Telecom 219*ter* project Members (see www.stakes.fi/cost219/payphones.htm.) indicates design best practices to improve payphone accessibility to universal services.

3. BROADBAND ACCESS AND SERVICES

Country: Sweden

Technology: Broadband based accessible conversational services: Equipment following the preferred standards: SIP, with video, text and voice is available with society support for deaf and deaf-blind people, and sign language relay service compatible with these standards in all these three modes is running as a trial within the Wisdom IST project.

Research, application or regulation: Research and Application

Results: Deaf-blind people experience a hereto never experienced opportunity to communicate, and deaf people are very satisfied with the increased quality for signing and availability of text as a fallback. The relay service is experienced to be a very smooth communication link between deaf and hearing people.

Country: Sweden

Technology: Broadband based application, fixed and mobile broadband solutions. Video conferencing, Total Communication etc.

Research, application or regulation: Research (field trials) and Application

Results: PTS runs, on a mission from the government, seven different projects in order to find new possible services for the disabled using broadband applications and evaluate them in respect to user benefits and cost. The projects that will be reported to the Government in Oct 2004 are Broadband for Deaf blind persons – Service central, Broadband for Intellectually disabled, Distribution of Talking books to University students, Mobile Broadband for the disabled, Distance education for people with aphasia, Distance education in sign language, Distance Consulting with expert personnel when disabled persons apply for job.

http://www.pts.se/Sidor/sida.asp?SectionId=1320 (In Swedish)

Country: Sweden

Technology: Evaluation of broadband tests

Research, application or regulation: Research

Results: In cooperation with the university of Linköping, Center of Medical Technology Assessment, the seven broadband tests will be evaluated using the internationally recognised WHO-model ICF. The model is adjusted to each project and the disabled persons involved.
http://www.pts.se/Sidor/sida.asp?SectionId=1474 (In Swedish)

Country: Sweden, UK, Germany, Spain

Technology: Mobile broadband based accessible conversational services: Equipment following the preferred standards: SIP, with video, text and voice is tried within the IST project for deaf people with communication through 3G mobile networks or wireless LAN networks.

Research, application or regulation: Research

Results: Deaf people can communicate in sign language and text with some level of usability through small computers with built in camera when used through an Internet connection to the 3G network. When connected to Wireless LAN networks, the signing quality is good. This seems to give deaf users new opportunities to mobility in work and leisure communication. The trial broadband sign language relay service is available and popular also among these users. One opportunity is to have small meetings anywhere, anytime, and that is a new opportunity for the user group.

www.mobilewisdom.org

Country: Norway

Technology: The “eye-phone”, offering visually impaired people access to a sighted eye

Research, application or regulation: Research

Results: Interviews with blind and partially sighted people to assess their daily need for a sighted eye, revealed that some of their needs, even among different age groups, are surprisingly similar. Typical examples are to determine if clothes are clean, mobility e.g. where is the shop front, and reading post and mobile phone displays. Initial tests showed that although the participants would prefer a mobile device, a stationary videophone was useful for solving some typical problems.

The needs analysis was used as a basis for further testing. Several videophones were evaluated with regard to user interface, the important criterion being that the distant operator must be able to control the camera on the user site. The operator was at a relay centre for text telephone (a service for people with a hearing impairment) and with a personal reading assistant. The testing focused on the type of task which could be solved. As many as 85% of the tasks were solved using the eye phone.

The promising results of the pilot project led to the main project, which was begun in January 2002, and will run for a period of two years. This project is a co-operation between MediaLT, Telenor, Eterra, Tandberg, The Norwegian Blind Federation and the National Insurance Administration. The users represent different categories with respect to age, sight, additional handicaps and gender etc.

Country: Finland

At the moment, the Finnish Association of the Deaf has three training-related projects that focus on new technology and utilisation of broadband access: *Virtuopo, Sign Language Virtual School* and *Deafvoc.*

ESR-funded **www.virtuopo.net** (2000-2005) is a national study and career counselling network portal for people using sign language or Finnish. In the future, the project will also include a plain language interface for the use of such groups as immigrants and disabled people. The portal contains information on studying and employment. Presently, sign language material in video clips amounts to some 5 hours. A possibility of using sound will later be included in the plain language interface. The best way to view the net material is by means of a broadband access.

Another information network project is the **Sign Language Virtual School** (1999 -). In that project, the use of an open learning environment in information networks has been tested nationally. The network has also been used for generating and disseminating digital learning material. Distance teaching in sign language among educational institutions with the help of graphic telephone and web camera has also been tried. Dissemination and use of sign language material in information networks as well as sign language distance teaching call for high-speed telecommunications access (broadband). Results of the conducted experiments are very promising. http://www.kl-deaf.fi/virtuaali/index.html

A third project that requires broadband access is **Deafvoc** (2003-2006) of the EU's Leonardo programme. In addition to Finland, it involves Austria, Greece and the Czech Republic. For the purposes of vocational training the project produces teaching curricula and demo learning material for network use concerning the teaching of sign

language and the written language of each country. The learning material can also be used for comparison of sign languages, because it is available to everyone on the net. Home pages of the project will be opened in the beginning of December at www.deafvoc.fi .

It is the aim of the Finnish Association of the Deaf to gather all sign language projects related to information networks or net teaching under one portal of **sign language teaching,** which is currently being tested. A **sign language chat** has also been designed; the user can leave a sign language message, question or comment by means of for example a graphic phone, web camera or graphic mobile phone.

For further information on all of the above mentioned projects, please contact the Finnish Association of the Deaf: Ms Pirkko Rytkönen, pirkko.rytkonen@kl-deaf.fi or Mr Mikko Palo, mikko.palo@kl-deaf.fi or tel.+358 9 5803 423 or SMS +358 50 594 9560.

4. NEW RELAY SERVICES

Country: Sweden

Technology: Internet access to text relay service

Research, application or regulation: Application

Results: A development project will be finished in April 2004 that will give text telephone users a new additional way to contact the text relay service through an Internet portal. This will increase the users' mobility and independence since they now can contact the text relay service from any computer with an Internet connection.

Country: Luxembourg

Technology: Accessibility for hearing-impaired persons to telephones

Research, application or regulation: Application

Results: for hearing impaired persons with hearing aids the good practice has a temporary character: the availability of the earphone with included induction loop.

This earphone is a part of the telephone apparatus. With the time telephone apparatuses are changed against new telephone apparatuses where there is no guarantee that inductive loops are included in the earphone or not.

5. REGULATION OR OTHER MEANS TO SECURE SERVICES FOR CITIZENS WITH DISABILITIES

Country: Norway

Telenor's authorisation includes requirements to offer the following services for people with disabilities:

- Access to text-telephony for speech impaired people and people with hearing damage.
- Discount or refund for blind and weak sighted people as regards directory enquiry services.
- There is a general requirement to maintain the level of research and development on issues concerning disabled, elderly, and other users with special needs.
- To issue an updated catalogue on telecom equipment.
- To offer an emergency number for text-telephony.

Country: United Kingdom

The general authorisations applying to all providers of publicly available telephone services from 25 July 2003, include general conditions regarding special measures for end users with disabilities.

The obligations placed on service providers are:

- free directory enquiry service and through connection for customers not able to use a printed phone directory
- access to a text relay service with compensatory tariffs
- a priority fault repair service
- a nominated third-party scheme (equivalent to power of attorney) for bills
- bills and contract information in alternative formats

- a proportion of wheel-chair accessible call boxes
- some call boxes to have text relay facilities and receiving amplification.

The complete conditions can be found at:

www.oftel.gov.uk/publications/licensing/2002/enti0502.htm

Country: Sweden

The Swedish solution is and has been to procure services for the disabled to cost based pricing rather than putting obligations on the service providers. This is possible since the Government each year grants an allowance to the national regulator PTS. The Government gives a regulatory letter to PTS to secure this. The procurement policy has been very successful and is a good way to secure good attention and good quality of the services for the disabled.

6. COLLABORATION MODELS

The Nordic Forum for Telecommunication and Disability (NFTH)

Country: Denmark, Finland, Iceland, Norway, Sweden

Technology: Telecommunications

Research, application or regulation: Application and regulation collaboration

Results: The purpose of NFTH is to deal with relevant areas of telecommunication that concern disabled people and to support efforts in the Nordic countries to integrate disabled people into society. All the Nordic countries are represented by a representative appointed by the predominant national operator, a representative appointed by the Ministry of Social Affairs and a representative appointed by the Ministry of Telecommunication. NFTH produces recommendations and guidelines on existing problems as well as problems expected to arise in the future information society.

Web site: http://www.nsh.se/nfth.htm

OFCOM Advisory Committee on Elderly and Disabled Persons

Country: United Kingdom

Technology: Telecommunications

Research, application or regulation: Application and regulation collaboration

Results: An advisory committee will be established to advise the Board of the national regulator OFCOM and, as appropriate, the Content Board and Consumer Panel on issues concerning elderly and disabled persons.

The committee will be set up under statute, specifically Section 21(1) of the Communications Act 2003. It will also advise OFCOM in its requirement to promote equality of opportunity for disabled persons under Section 27 (3) of the Communications Act.

It will advise OFCOM on the views and concerns of citizen-consumers with disabilities and/or those who are elderly. It will provide guidance on the implications for industry of accessibility issues and provide updates and early warnings on relevant developments. The committee will also guide OFCOM on its internal policies with respect to disability.

OFCOM is currently discussing the committee's structure with those who have special knowledge and interests in these areas.

TeleFunkForum

Country: Norway

Technology: Telecommunications

Research, application or regulation: Application and regulation collaboration

Results: A forum for exchange of information that can contribute to that people with disabilities and elderly can achieve access to telecommunication equipment and services like other people in the society. Universal Design of the equipment and the services is an important perspective of the work of the forum. Participants are user organizations, ministries, the Norwegian Post and Telecommunication Authority, state councils, R&D, operators in the telecommunication sector, standardization bodies, and others.

7. BROADCASTING

Country: UK

Technology: Broadcasting

Research, application or regulation: Application and regulation

Results

The 2003 UK Communications Act contains a number of provisions which could provide good practice examples for the INCOM report. Specifically, the Act contains provisions for accessible equipment, high levels of access services across all television platforms (primarily subtitling, but also audio description and signing), accessible Electronic Programme Guides and the establishment of an OFCOM Advisory Committee on elderly and disabled people. The Act brings together all the regulators for television, radio and telecommunications under one regulator - the Office of Communications (OFCOM).

The Act confers on OFCOM functions to make provisions for the regulation of electronic communications networks and services, use of electromagnetic spectrum, broadcasting, television and radio services.

Set out below are details of the various sections of the Act relating to disabled people.

Duty to encourage availability of easily usable apparatus

Section 10 sets out a duty on OFCOM to ensure the provision of accessible and usable electronic equipment.

Code relating to provision for the deaf and partially sighted

The code for deaf and **partially sighted** people contains high targets and interim targets for access services across all television platforms and OFCOM has the option to revise these targets **upwards only** in the future.

For subtitling, the terrestrial TV Channels 3 and 4 and S4C (Wales) are to carry on much as before the Act reaching a target of 90% of programmes in 2010. Channel 5 is to reach 80% in 2008 and, under Independent Television Commission rules which will still apply, reach 60% in 2004.

There are now new requirements for cable and satellite channels to provide access services under the Act. For these channels the requirement states that the amount of subtitling is to be weighted towards the early years - instead of a single “end point” at the 10^{th} anniversary for the quotas we now have two dates: the 5^{th} and 10^{th} anniversaries. In the main these will apply to the cable and satellite services and any new digital terrestrial channels (excluding the Public Service Broadcast channels of Channels 3, 4, and 5 with the BBC). The first end point requires the relevant services

to be supplying 60% of non-excluded programmes from the 5th anniversary. From the 10th anniversary the requirement is 80%. As with the current regime though there are further interim targets on the way to reaching these two anniversaries.

As mentioned the PSB channels are to follow a different regime. Channels 3 and 4 and S4C Digital are to carry on much as before with subtitling to reach 90% of programmes in 2010. Channel 5 is to reach 80% in 2008 and, under ITC rules which will still apply, reach 60% in 2004.

The state broadcaster, BBC, is in this respect outside OFCOMs remit but they will provide 100% subtitling on their channels by 2008.

The Communications Act also sets a 5% target for sign language and 10% for audio description, but these will apply to digital services only.

Broadcasters are required to make available the information required for consumers to be able to find out what access services are available to them and how to access them.

Industry Initiatives

- Extension by BT (British Telecom, UK universal service provider) of mandatory free directory enquiry service for those unable to use paper directories to the additional provision of classified information, i.e. directory information grouped by trade or profession. Classified directories in print are just as inaccessible to some disabled people as other directories, but are not covered by regulation.

- Development by BT of TextDirect platform for text phone users to permit them to benefit from call discount packages and special offers. This also speeds up access to the relay service and streamlines rebates.

- Special handset and text message packages for deaf mobile phone customers.

- The Communications Support Directory lists lip speakers, BSL interpreters and other communications support services. Vodafone have worked with the UK Council on Deafness to make the CSD available for Vodafone's WAP users. The project aims to make information relevant for customers in a range of disability groups available on mobile. Examples: Pubs, clubs, cinemas and theatre with signing or subtitling. This was launched in October 2003.

Country: Italy

Technology: Broadcasting

Research, application or regulation: Research

Results: The VOICE Project is investigating the use of **voice recognition** systems in conversation, conferences, television broadcasts and telephone calls. It started in 1996 in the European Commission Joint Research Centre in Ispra and was then sponsored and funded by the European Commission Information Society Directorate-General.

The project has developed prototypes of user friendly interfaces allowing easier use of

commercial products in translating the spoken voice into PC **screen messages and subtitles**. This is a powerful help for people with hearing impairment, reducing the gap between them and the hearing world. More than one hundred **workshops** have been organised presenting the project to more than 6000 users. Its prototype demonstrator has been used for subtitling part of the workshops, as demonstration of feasibility and validation in the field. The subtitling system has been used in several **schools** in order to transmit to all the students of a class the same information, by the same words, at the same moment.

Another aim of the project is that of uniting, by means of an **Internet VOICE Forum**, associations, companies, universities, schools, public administrations and anyone else interested in voice recognition. In 2002 the activities addressed the harmonisation of **television subtitling**, in collaboration with the European Broadcasting Union and CENELEC. For more information, see: http://voice.jrc.it/home.htm