

**ITU-EBU Joint Workshop on Accessibility to
Broadcasting and IPTV ACCESS for ALL
(In cooperation with the EU project DTV4All)
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IEC TC 100
**Audio, video and multimedia systems and
equipment**

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Overview

- Introduction and Structure of IEC TC100
- Accessibility and usability
- Who benefits?
- What issues need to be considered?
- User needs to be considered
- How can some of these issues be addressed?
- Conclusion
- Sources of information

IEC TC 100 structure



- Technical Areas and groups
 - TA 1: Terminals for audio, video and data services and content
 - TA 2: Colour measurement and management
 - TA 4: Digital system interfaces and protocols
 - TA 5: Cable networks
 - TA 6: Storage media, data structures, equipment and systems
 - TA 7: (merged into TA6)
 - TA 8: Multimedia home server systems
 - TA 9: Audio, video and multimedia applications for end-user network

IEC TC 100 structure



- Technical Areas and groups
 - TA 10: Multimedia e-publishing and e-book
 - TA 11: Quality for multimedia systems
 - TA 12: AV energy efficiency and smart grid applications
 - TA 13: Environment for AV and multimedia equipment (to be established)
 - TA 14: Interfaces and Metrology for Personal Computing Equipment (to be established)
 - AGS: Advisory Group on Strategy
 - AGM: Advisory Group on Management
 - GMT: General Maintenance Team

Accessibility and Usability



- TC100 formed a stage 0 project to investigate accessibility and usability in audio, video and multimedia equipment
- Motivation: how accessibility may be an aspect, among others, for consideration during standards development
- Accessibility now part of guidelines and procedures as well as Strategic Business Plan of IEC TC100

Accessibility and Usability



- The TR includes
 - regulation, activities, standards and projects in various countries
 - comments about demographics
 - a checklist of accessibility and usability considerations
 - IEC TR 62678 “Audio, video and multimedia systems and equipment - Activities and considerations related to accessibility and usability” is downloadable for free now

Who Benefits?





Who Benefits?

- People in identifiable groups may have specific needs, and may have organisations to represent them and ensure such needs are addressed
- But we are all likely to suffer some degree of impairment as we age; for example failing sight, hearing, dexterity or memory, or a combination
- Sometimes we can “see” the differences, sometimes we cannot
- We will probably all benefit at some stage in our lives!

What issues need to be considered?

What issues need to be considered?

- Who will be using the equipment?
- Where will the equipment be used?
 - in sunlight or in poor illumination impact on display requirements (if any)
 - in the home, in public areas, or on public transport impact on volume of auditory input/output
 - can controls be accessed by all in its location
- How often will the equipment be used?
 - occasionally or for lengthy periods
 - may impact whether touch screens, keyboards or other input devices are appropriate
- Are specific user needs associated with the equipment?
- Will users need training in the use of the equipment?

User needs to be considered



User needs to be considered

User Needs

- in perceiving visual information
- in perceiving auditory information
- in perceiving existence and location of actionable components
- in perceiving status of controls and indicators
- in perceiving feedback from an operation
- in invoking and carrying out all actions
- in completing actions and tasks within the time allowed

How can some of these issues be addressed?



How can some of these issues be addressed?

- By educating specifiers, designers, manufacturers, implementers, procurers and suppliers of the relevant user needs
- By understanding that demographic change in many countries is increasing the market for accessible products making it cost effective to incorporate such features
- By standards developers understanding the issues when developing new standards, and consulting relevant standards, guidelines (eg ISO/IEC Guide 71)
- Two relevant checklists are produced by IEC and ITU
 - IEC TR 62678 (Clause 10 Checklist)
 - FSTP-TACL Telecommunications Accessibility Checklist 2006

Accessibility considerations

- A.1. Have the intent and meaning of terms (universal design, accessibility, usability, disability, barrier free design, user needs, design for all (DFA)) been considered?
- A.2. Has interchangeable terminology and the use of graphics, drawings, and / or images been considered?
- A.3. Has the extent to which the equipment and services will be used been considered?
- A.4. Has the scope of the disability (ies) been defined?

Universal design and usability

- B.1. Has universal design been considered?
- B.2. Has usability been considered?
- B.3. Have the completed and ongoing projects been considered?
- B.4. Has the perception of visual information been considered?
- B.5. Has the perception of auditory information been considered?
- B.6. Has the output / displayed material been considered?
- B.7. Has the ability to use assistive technology been considered?

Operations

- C.1. Has the perception of the existence and location of actionable components been considered?
- C.2. Has the perception of the status of controls and indicators been considered?
- C.3. Has the perception of feedback from an operation been considered?
- C.4. Has the ability to invoke and carry out all action including maintenance and setup been considered?
- C.5. Has the ability to complete actions and tasks within the time allowed been considered?
- C.6. Has the concept of protection from accidental activation been considered?
- C.7. Has the ability to recover from errors been considered?
- C.8. Have security and privacy based on listening and automatic protection of information been considered?
- C.9. Has the protection from personal risk been considered?
- C.10. Has the efficient operation of a product been considered?

Cross-cutting Issues

- D.1. Have new accessible technologies been considered?
- D.2. Have adjustments for built-in accessibilities been considered?
- D.3. Have access to customer service and training been considered?
- D.4. Have ways to provide feedback about improvements to accessibility been considered?
- D.5. Have accessibility functions and whether or not such functions are available at all times, without disruption, been considered?
- D.6. Have demographics been considered?
- D.7. Have public policies been considered?

Conclusion



Conclusion

- The digital revolution has led to many hi-tech gadgets becoming everyday items
 - ATMs, internet enabled devices, digital TVs, mobile phones, e-readers, digital cameras, etc
- But not everyone can benefit equally from these advances, and developers need to consider user needs in the design and implementation of equipment; particularly everyday electronics equipment where retro-fitting support for accessibility or adding AT may be very expensive
- This is not a “niche” market, demographics in many countries are changing and products that provide “access for all” help everyone including the disabled, the young, and the older person.

Sources of information - 1

- IEC TR 62678 Audio, video and multimedia systems and equipment - Activities and considerations related to accessibility and usability
(free download from IEC Webstore)
- ISO/IEC TR 29136-1 2009 Information Technology -
- Accessibility Considerations for people with disabilities
 - Part 1: User Needs Summary
 - Part 2: Standards Inventory
 - Part 3: Guidance on user needs mapping
- ISO/IEC Guide 71 (and CENELEC Guide 6)
- ISO/IEC 10779: 2008 Information Technology – Office equipment accessibility guidelines for elderly persons and persons with disabilities

Sources of information - 2

- ISO 9241-20: 2008 Ergonomics of human-system interaction -- Part 20: Accessibility guidelines for information/communication technology (ICT) equipment and services
- ISO 9241-303: 2008 Ergonomics of human-system interaction -- Part 303: Requirements for electronic visual displays
- ISO/IEC 24786:2009 Information technology -- User interfaces -- Accessible user interface for accessibility settings
- ISO/IEC 24751-1:2008 Information technology -- Individualized adaptability and accessibility in e-learning, education and training -- Part 1: Framework and reference model (and other parts)
- ISO/IEC TR 24714-1:2008 Information technology -- Biometrics -- Jurisdictional and societal considerations for commercial applications -- Part 1: General guidance

Sources of information - 3

- Government information

- <http://www.access-board.gov/508.htm>

- <http://www.direct.gov.uk/en/DisabledPeople/RightsAndObligations/DisabilityRights/index.htm>

- Standardisation activities

- <http://www.itu.int/ITU-T/jca/ahf/index.html>

- <http://www.jtc1.access.org>

- <http://www.etsi.org/website/Technologies/Accessibility.aspx>

- <http://www.w3.org/WAI/>

- Research projects

- <http://www.cardiac-eu.org/standards/>

- User organisations

- RNIB Digital Accessibility team <http://www.tiresias.org/>

- http://www.rnib.org.uk/professionals/webaccessibility/useful_links/Pages/useful_links.aspx