Standardization of e-accessibility at ITU

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Study Group 16

- ITU-T Study Group 16 (multimedia coding, systems and applications) is the lead study group on telecommunication/ICT accessibility for persons with disabilities.
- The parent group for video codes, incl. H.264 and H.265, Emmy Award Winners

Question 26/16

- specifically designated to deal with Accessibility to Multimedia Systems and Services, including telephones, for persons with disabilities (PWDs).
- responsible for developing (or assisting in the development of) multimedia technical standards addressing accessibility needs of persons with disabilities
- It also reviews accessibility features included in telecom standards developed in other groups in ITU
- Cooperation with PWD (persons with disabilities) organizations, e.g., WFD and IFHOH, and with other UN agencies e.g., WHO
  - PWD actually participate in the creation of Recommendations

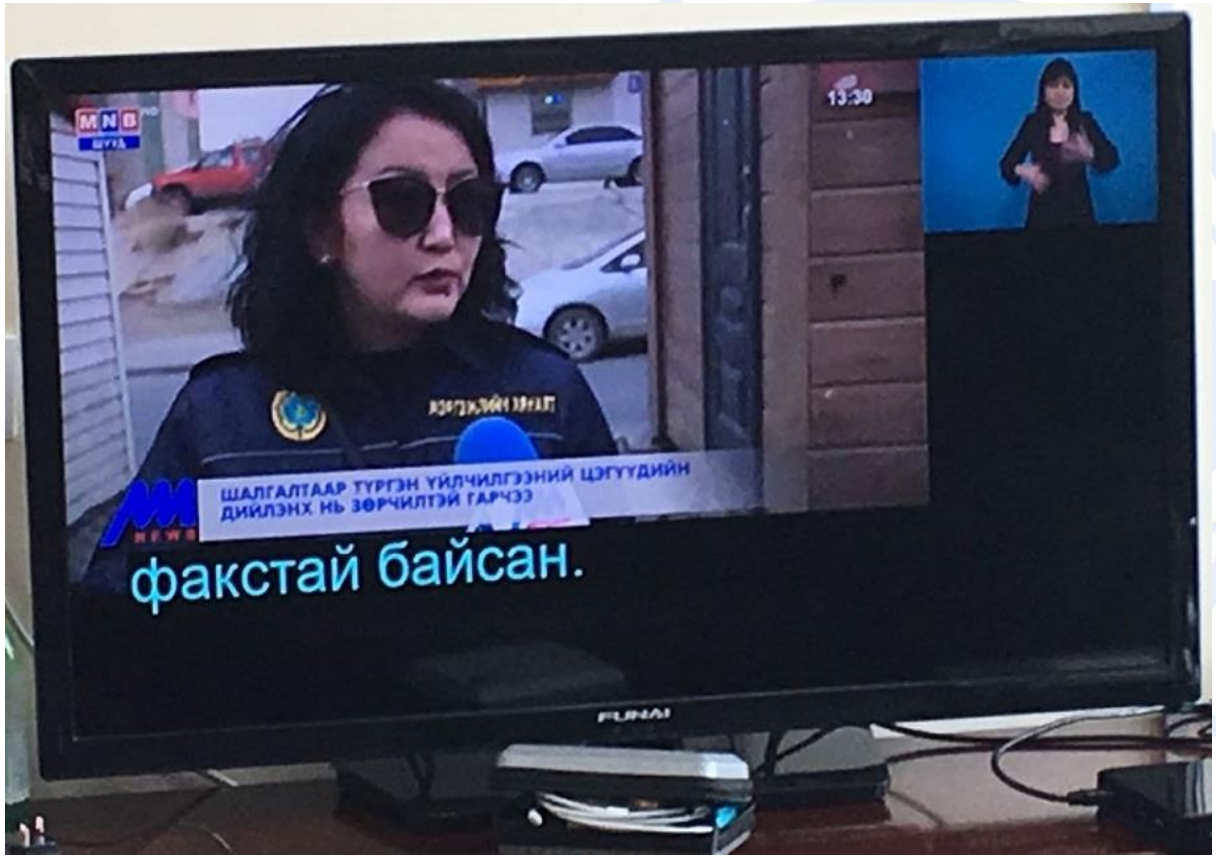
Some New Recommendations

- ITU-T F.791 (11/2015) *Accessibility terms and definitions*
- ITU-T H.702 (11/2015) *Accessibility profiles for IPTV systems*
- ITU-T F.921 (03/17)
  Audio-based network navigation system for persons with vision impairment
- ITU-T F.930 *Multimedia telecommunication relay services*

ITU-T Rec. H.702

- Defines the basic functions of accessibility services on IPTV
- Includes actual implementation examples using available ITU-T Standards
- support many Accessibility features:
  - Closed captioning in multiple languages
    - With different font size, positions and colors
  - Audio guidance (audible Electronic Program Guide)
  - Audio description
  - Accessible Emergency alert over live-channel as well as Video-On-Demand

Devices for H.702



- H.702 has already been implemented as TV sets and set-top boxes
- It has already been adopted by some governments (e.g., Mongolia, Ecuador, Japan) and is expected to be globally adopted

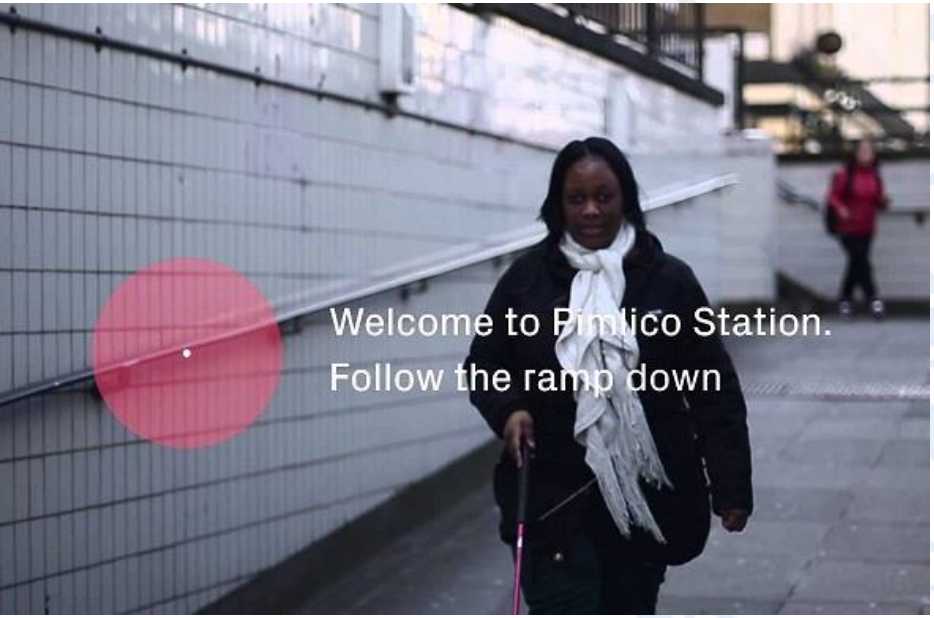
HSTP-ACC-UC “Multimedia accessible system use cases” describes use cases of implementing H.702 in actual services

ITU-T Rec. F.921

Audio-based network navigation system for persons with vision impairment

- Describes how audio-based network navigation systems can be designed to ensure that they are inclusive and meet the needs of persons with visual impairments.
- Targeted especially for indoor-navigation, which cannot depend on GPS.
- Based on contributions from *Wayfindr*, which is currently used in London underground,
- More follow up documents are expected

ITU-T Rec. F.921 (cont.)

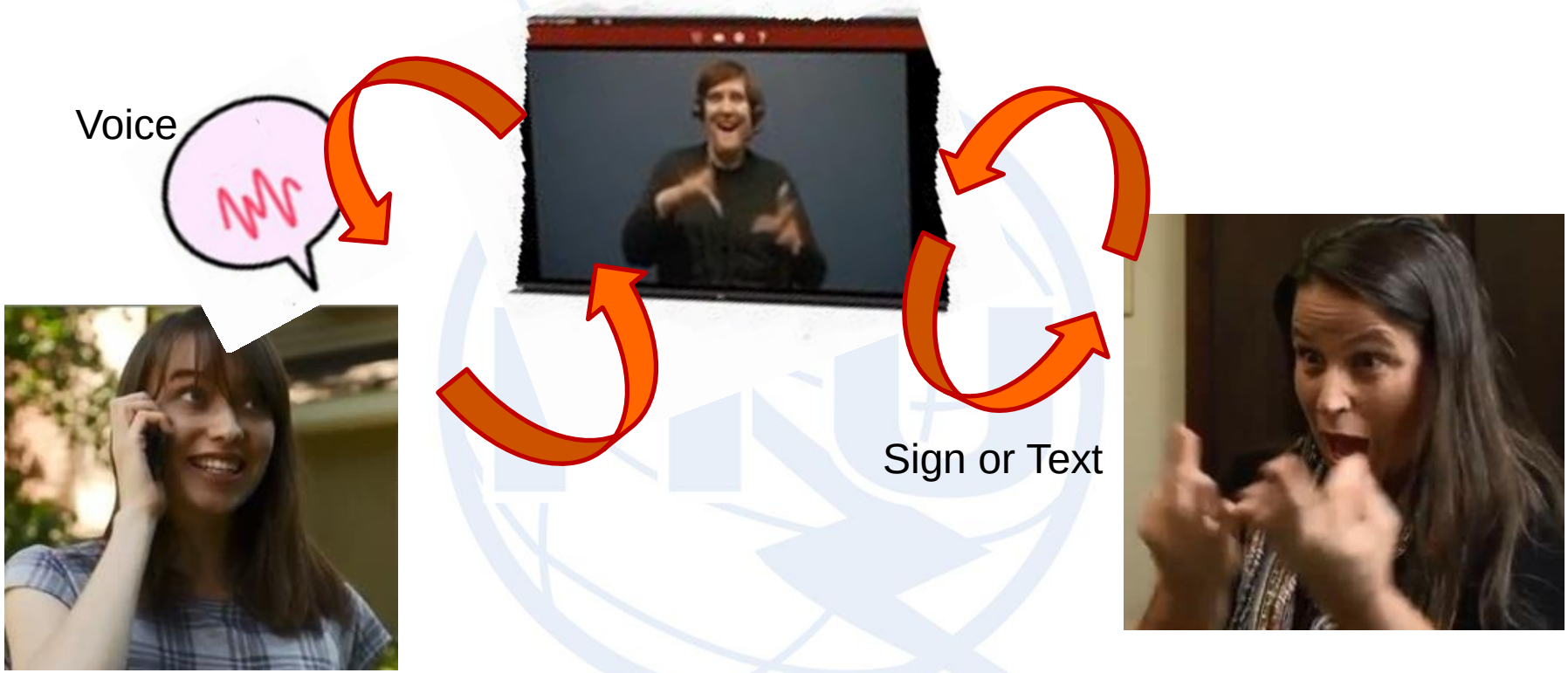


- F.921 describes the framework for giving audio navigation for the visually impaired people in an indoor situation, esp. at public places, like public transportation, museum and library, or a large super market
- It is now a US National standard ANSI/CTA-2076

ITU-T F.930
Multimedia telecommunication relay services

- provides a functional description of four common types of relay services in use today: text relay, video relay, captioned telephone service relay and speech-to-speech relay.
- lays out specific functional requirements of relay services pertaining to equipment, call set-up, call experience, emergency communications and message retrieval.

F.930: Telecom Relay Service



- A way for a Deaf and Hard-of-Hearing to communicate (using voice) with a hearing person in another location
- “Voice” is mediated by CA (Communication Assistant)

Collaboration with ISO/IEC TC1 SC35

- Q26/16 has the following Work Items, delivered from SC35:
  - H.ACC-GAD Guidance on audio descriptions (New) (twin text of ISO/IEC TS 20071-21:2015, Information technology - User interface component accessibility - Part 21)
  - H.ACC-GAP Guidance on the audio presentation of text in videos, including captions, subtitles and other on-screen text (New) (twin text of ISO/IEC 20071-25:2017, Information Technology - User interface component accessibility Part 25)
  - H.ACC-GVP Guidance on the Visual presentation of audio information, including captions and subtitles (twin text of ISO/IEC 20071-23, Information technology - User Interface component accessibility Part 23)

Other Major Work Items

- Accessible services for Visually Impaired:
  - F.ACC-AS Framework for audio sign for persons with vision impairment
  - F.ACC-ISSVReq Requirements of information service systems for visually impaired persons
- Emerging Technologies for Accessibility
  - FSTP-ACC-AI Guideline on the use of AI for ICT accessibility
  - FSTP-ACC-ALD Overview of assistive listening systems
  - HSTP-AEHH Audio enhancement for the hard-of-hearing
  - HSTP-ACC-AUD Technical Paper on Methods for improving the intelligibility of audio (or speech)

Conclusion

- ITU-T SG16 Question 26 has been creating global standards for accessibility
- Its working method is truly “inclusive”, meaning PWDs participate and lead the discussion
- Some of the ITU-T Standards for accessibility are adopted by governments and industry, available in the market
- ITU-T SG16 Question 26 is working closely with other SDOs.

- Thank you!!
  - Contact:

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Additional Slides

ITU

ITU is a Specialized agency of the United Nations

- United Nations Agency for Information Communications (including broadcasting) and Technologies
- Founded in 1865, The oldest international organization, inheriting the International Telegraph Union
- Standards making one of the ITU first activities
- 193 Member States and over 800 private sector entities
- HQ in Geneva

Some Well-Known ITU Standards

- International Telephone country code
  - (ITU-T Rec. E.164) "The international public telecommunication numbering plan"
- Data communication over telephone network
  - (ITU-T Rec. G.992/G.993) "Asymmetric digital subscriber line (**ADSL**)"
- Public-Key and Certificate
  - ITU-T Rec. **X.509** "Open Systems Interconnection – The Directory: Public-key and attribute certificate frameworks"
- Video Compression
  - ITU-T Rec. **H.264**

F.930: Functional Equivalency in TRS

- Functional Equivalency means “PWD can use a communication service with similar degree of convenience and quality that are offered to the wider group of users in a population.
- implies that the users of relay services would not be at a disadvantage compared to the calling options available to the mainstream, e.g.:
  - TRS is provided as a basic telephone service like “voice” telephone service
  - TRS can provide emergency calls
  - TRS should be provided 24/7
  - TRS allows anyone to anyone else on an equal basis

Further Work Items at ITU-T related to Telecom Relay Service

- TRS-KPI: Requirements and Key performance indicators for Telecom Relay Service
- TRS-Roaming: Framework for international roaming for Telecom Relay Service.
- F.ACC-TRequirements on Total Conversation System for Public Services
- F.CVR-PWN Framework of cyber-vulnerability CPS reduction for persons with disabilities and specific needs

FSTP-RCSO:
Overview of remote captioning services

- describes remote captioning services.
- defines reference model, requirements and functionality that facilitate, via an assistive intermediary (i.e., real time captioner or via voice recognition software),
- to enable the inclusive meeting participation of person either on site or remotely.

Other Major Work Items (2)

- Accessible Meetings
  - FSTP-RCSO Overview of remote captioning services
  - FSTP-ACC-AM Accessible meeting
  - FSTP-ACC-RemPart Remote Participation
- Accessible Content Generation
  - H.ACC-MMSIGN Abstract language for multimedia signing
  - H.ACC-RCAD Requirements for captioning and audio description for accessibility
  - HSTP-ACC-SL Production guidelines for sign language service
- H.MD-DiDRR Profile metadata for persons with specific needs as part of disability-inclusive disaster risk reduction
- HSTP-ACC-Interop Interoperability of digital audiovisual media accessibility