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| INTERNATIONAL TELECOMMUNICATION UNION | **Joint Coordination Activity  On Accessibility and Human Factors** |
| **TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2013-2016 | **Doc 295** |
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| Source: | Chairman of JCA-AHF |
| Title: | Meeting report of Joint Coordination Activity on Accessibility and Human Factors (JCA-AHF), Geneva, 20 January 2017 |

1. **Opening of the meeting**

The JCA-AHF meeting was held at 9:30 – 12:30 and 14:30 – 15:45 on 20 January 2017 collocating with the ITU-T Q24/16 and Q26/16 meeting (17 - 20 January 2017) during ITU-T Study Group 16 (16 - 27 January 2017), and chaired by Ms Andrea Saks (USA), JCA-AHF Chairman.

1. **Agenda and allocation of documents**

The Chairman introduced the draft JCA-AHF meeting agenda and document allocation as contained in JCA-AHF [document 286](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20286%20Agenda.docx). It was approved by the JCA-AHF without any change. The complete list of participants is available on JCA-AHF [Document 292](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20292_Final%20list%20of%20participants%20JCA-AHF.pdf).

1. **Approval of the last JCA-AHF meeting report**

The Chairman reminded the meeting participants that the last JCA-AHF meeting report (JCA-AHF [Document 266](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20266.docx)) had been approved by correspondence before TSAG (July 2016).

1. **Review of ITU accessibility activities**
	1. **ITU-T**

The JCA-AHF Chairman explained the revisions made to [Resolution 70](http://www.itu.int/pub/T-RES-T.70-2016) “ICT accessibility for persons with disabilities and persons with specific needs” at [WTSA2016](http://www.itu.int/en/ITU-T/wtsa16/Pages/default.aspx) (25 Oct – 3 Nov 2016), Yasmine Hammamet, Tunisia. A tracked version of the resoltuion is attached in annex 1.

Mr Christian Vogler from Gallaudet University stressed that the most fundamental question was how to convince persons with disabilities to understand the value in participating in standardization processes, as many persons with disabilities who are technical experts didn’t understand this value.

Mr Masahito Kawamori, ITU-T Q26/16 Rapporteur, reported on the Accessibility side event at WTSA2016. JCA-AHF Chairman, Mr Kawamori and Mr Akihiro Nakatani from ASTEM made a joint presentation on accessibility history and activities, and a demonstration on the accessibility features implemented in ITU-T IPTV. The demonstrated IPTV accessibility features included; open and closed captioning in multiple languages and open and closed sign language interpretation. The “closed” feature enables the end user to be able to turn on/off captioning and signing as required. The demonstration also showed that the users could change captioning positions on the screen; its font-size, color of the captioning as well as color of the background. This also applies to the position of the sign language interpreter. These accessibility features are recommended by [ITU-T Recommendation H.702](http://www.itu.int/itu-t/recommendations/rec.aspx?rec=12648) - Accessibility profiles for IPTV systems. The video of the demonstration is available at: <https://www.itu.int/en/ITU-T/wtsa16/Pages/webcast-SE-a.aspx> (see around 31:00 of this video).

In reply to questions made by the audience, Mr Kawamori explained that;

* Traditional broadcast and IPTV may co-exist together depending on the current and future planning broadcasting situation and available bandwidth of IP networks, etc.;
* There are already TV sets on the market and in the community which have already incorporated IPTV Set-Top-Box (STB) functionality;
* The STB which was demonstrated at the Accessibility side event had High-Definition Multimedia Interface (HDMI) with both *in* and *out capabilities.* It was explained that it is technically possible to overlay closed captioning on top of media contents delivered from HDMI *in*, regardless if the media content is IPTV content or not.

Mr Kawamori also reported on the meeting discussions of ITU-T Q26/16 which had been held the day before the JCA-AHF meeting. The main events were that a draft Recommendation H.ACC-ANPV was proposed for consent (it was later consented at SG16 closing plenary in the following week (ITU-T F.921), which specifies key elements of an audio-based network navigation systems for persons who are blind and or with vision impairments for navigation of public transport or other environments. Mr G Anthony Giannoumis from Oslo and Akershus University College of Applied Sciences (HiOA) submitted this draft Recommendation. The new recommendation explains how an audio-based network navigation systems can be designed to ensure that persons who are blind and vision impaired can become independent and included, and meet their needs to navigate physical environments and methods transportation, i.e., a metro system. The recommendation adopted a technology neutral approach by defining and explaining the functional characteristics of such a system. The aim is to give designers of audio-based network navigation systems the information that they need at the initial stages of development to anticipate and overcome any restrictions and barriers that presently prevent users who are blind and those with visual impairments from making full and independent use of their environment. This Recommendation explains how to accommodate the users’ needs via their experience of audio-based network navigation systems and to help ensure the interoperability of those systems. The recommendation recognizes that by meeting the user needs of persons who are blind and those with visual impairments, that audio-based network navigation systems may also benefit persons with other disabilities, as in those with age related disabilities, and those with other specific needs.

Mr Kawamori also explained discussion and the progress of other work items of Q26/16. In particular, they are: the draft Recommendation F.Relay “Telecommunication Relay Services”, draft Technical Paper FSTP.TRS-KPI “Key performance indicators for telecommunication relay services”, draft FSTP-RCSO remote captioning services, and the draft Technical Paper HSTP.AEHH “audio enhancement for hard of hearing” was progressed, which introduces technologies such as, dynamic range compression, piezoelectric-actuated speaker and speech rate conversion.

Japan’s contribution (attachment 1 of [Document 276](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20276.zip)) to the ITU-D Q7/1 Rapporteurs Group meeting was sent to ITU-T Q26/16 as a liaison statement at the request of the Chairman of the JCA-AHF as it had implied technical issues. A liaison was sent to back to Q7/1 from Q26/16 stating that these examples of accessibility technologies should not be included in the pending ITU-D SG1 Q7/1 report as the technical subjects currently described were in fact only in the trial stages and not common practice in Japan as indicated in the contribution. Q26/16 members encouraged the contributor to bring the work to the T sector as the work really belonged to the T sector and not the D sector. Unfortunately, if trials and studies for accessibility features and technologies are misrepresented, often misunderstandings can occur when it is discovered that these technologies are not really implemented and in fact unavailable for being deployed in developing countries. They must be correctly described and presented accordingly.

* 1. **ITU-D**

Ms Roxana Widmer-Iliescu from ITU-BDT presented JCA-AHF [Document 276](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20276.zip). She firstly briefed the meeting on the BDT activities regarding ICT accessibility since September 2016. They are as follows:

* [Workshop on development of an ICT-accessibility Policy for the East Africa region](http://www.itu.int/en/ITU-D/Pages/E_accessibility_EastAfrica.aspx);
* The online training on [“Public procurement of accessible ICT products and services”, conducted from 7 November to 16 December 2016](http://www.itu.int/en/ITU-D/Regional-Presence/Europe/Pages/Events/2016/PPOT/PublicProcurement.aspx)
* [Workshop on capacity building for Media Professionals in producing and distributing accessible content for Persons with Disabilities” from 9 to 10 November 2016 in Belgrade, Republic of Serbia](http://www.itu.int/en/ITU-D/Regional-Presence/Europe/Pages/Events/2016/ET/Executive-Training.aspx)
* [“Accessible Americas III – Information and Communication for All”](http://www.itu.int/en/ITU-D/Regional-Presence/Americas/Pages/EVENTS/2016/15526.aspx) from 28 to 30 November 2016 in Mexico. A final document on“*Good Practices and Achievements in ICT Accessibility in the Americas Region*” (which is available in [Spanish](http://www.itu.int/en/ITU-D/Regional-Presence/Americas/Documents/EVENTS/2016/15526-MX/AAIII-best-practices-and-guidelines-Accesible-SP.pdf) and [English](http://www.itu.int/en/ITU-D/Regional-Presence/Americas/Documents/EVENTS/2016/15526-MX/AAIII-best-practices-and-guidelines-Accesible-EN.pdf) languages in accessible format) was produced. The Rapporteurs of SG Q7/1 agreed that this document should serve as a model to be replicated in other regions too and therefore have the information included in the Final Report of Q7/1 Annex 1 to the WTDC-17. Unfortunately it was learned that the event was not captioned and only Mexican sign language was provided. The JCA-AHF chair stated that this was unacceptable and that there was a resolution PP141 (Rev. Busan) that required host countries to pay for captioning when required and that all accessibility events associated with the ITU must be captioned. The chair also stated many persons with hearing loss ( hard of hearing as well as Deaf) do not sign but require captioning and that they are an invisible group whose numbers are growing with age and misuse of Personal Music Players.
* Face to face 4 days “Web Accessibility”training course developed in Spanish and English was launched at Accessible Americas III. The training is for regulators, web developers and content providers to enable them to develop capabilities in web accessibility in line with web content accessibility guidelines WCAG 2.0.
* Ms Widmer-Iliescu also mentioned that ITU-D would have the World Telecommunication Development Conference (WTDC) 2017 in October in Buenos Aires, Argentina. Then she presented the Draft Final Report of the Study Group Q7/1 which is the produced by Members (attachment 1 of JCA-AHF [Document 276](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20276.zip)) and that it was due to be finalized and approved at the next Q7/1 meeting.
* Mr Giannoumis introduced and gave information that a [toolkit on Disability for Africa](https://www.un.org/development/desa/technical-cooperation/2016/11/18/toolkit-on-disability-for-africa/) has been developed by the United Nations Department of Economic and Social Affairs (UNDESA), Division for Social Policy and Development (DSPD) in November 2016, which may be useful input for future work at ITU-D as well as an opportunity to possibly coordinate with other UN agencies.
	1. **ITU-R**

Mr Hai Pham from ITU-BR reported recent activities made within ITU-R. Firstly, ITU-R Study Group (SG) 6 approved a new [Handbook on Digital Terrestrial Television Broadcasting networks and systems implementation 2016](http://www.itu.int/pub/R-HDB-63-2016) (to be published soon) and its chapter 14 is devoted to accessibility.

He also informed the JCA-AHF meeting that ITU-R Working Party (WP) 6B had started work to consider requirements of a closed signing system related to broadcasting applications based on an analysis of TD 116 (WP2/16) developed by ITU-T FG-AVA. In response to the questions by the JCA-AHF Chairman, it was clarified that this discussion was for terrestrial broadcasting, not for IPTV.

* 1. **General Secretariat**

Mr Jose Maria Diaz Batanero, General Secretariat of ITU, presented an circular issued by the ITU Secretary-General, titled, “ITU's support of the 2016 IDPD and call for voluntary contributions to the ITU Accessibility Fund” contained in JCA-AHF Document 278 (direct link to the circular is: <https://www.itu.int/md/S16-SG-CIR-0056/en>). It was suggested JCA-AHF to further circulate this letter to encourage more donation, to support for the participation of persons with disabilities in ITU meetings.

Mr Beat Kleeb from World Federation of the Deaf (WFD) asked how to request for resources from the Fund to organize a workshop that they have discussed at the IRG-AVA (see 4.5) meeting. Mr Diaz Batanero explained that a request should be made as a written proposal through ITU Secretariat from the sector where the activities are to be made. The proposal should include explanations of: why; objectives; goals; how the money will be used. Transparency is a basic principal of the fund, so that the contributors to the funds know how the money is being used. Then, the proposal will be presented to the ITU Inter Sectoral Coordination Task Force (ISC-TF) where the approval may be made.

* 1. [**Inter-Sector Rapporteur Group on Audio Visual Accessibility (IRG – AVA)**](http://www.itu.int/en/irg/ava/Pages/default.aspx)

Mr Kawamori briefly reported the discussion made at the IRG-AVA meeting the day before. Firstly there may be a workshop in September somewhere, as Mr Kleeb mentioned (see above 4.4). Secondly, the discussion on possibilities of having a universal single standard for “Timed Text” which is closed captioning in IP environment is ongoing and has been discussed in previous IRG-AVA meetings. As there are several incompatible technologies being used or promoted, and developed worldwide, IRG-AVA made a suggestion in the meeting the day before to attempt to have regional standards for program production and archiving. It was stated by Mr. David Wood of EBU that this goal might be more achievable. Finally, there was a discussion regarding the possibility for ITU-D sector to join the IRG-AVA (see JCA-AHF [Document 275](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20275.doc)), and decided to prepare a liaison statement to be sent to ITU-D Q7/1 (already sent as [IRG-AVA-LS 4](http://www.itu.int/net/itu-t/ls/ls.aspx?isn=17126), TIES protected) .

1. **Outside groups, events, activities**
	1. [**Dynamic Coalition on Accessibility and Disability (DCAD)**](http://www.itu.int/en/ITU-T/accessibility/dcad/Pages/default.aspx) **at** [**Internet Governance Forum (IGF)**](http://www.intgovforum.org/multilingual/)

The Chairman briefly explained that each annual session of Internet Governance Forum (IGF) was captioned, webcasted and that remote participation was available. The JCA-AHF Chairman is the coordinator of the [Dynamic Coalition on Accessibility and Disability (DCAD)](http://www.itu.int/en/ITU-T/accessibility/dcad/Pages/default.aspx) at IGF. DCAD holds a face-to-face meeting at the annual IGF meeting and DCAD workshops are organized jointly with G3ict. The latest ones are reported in JCA-AHF [Document 282](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20282.zip) .

* 1. **Accessibility for persons with mood and stressed related challenges including depression.**

Renaldo Bernard, intern at ITU-TSB, presented his work on accessibility for persons with mood and stressed related challenges, contained in JCA-AHF [Document 294](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/DRAFT-INTRODUCTION-Universal%20Access%20to%20Information%20Communications%20Technology%20Mood%20and%20stress-related%20challenges.docx). This area of accessibility has been neglected. With the increase of the use of ICTs in everyday life it becomes more difficult for those who are experiencing a disturbance in mood or are stressed to use ICTs. He concluded that as the age of automation increasingly advances and human-to-human interaction is replaced or mediated by ICTs, there is a need to reconsider the scope and improve the designs of the ICTs to minimize stress. Developing appropriate standards and policies that support and encourage the protection of ICTs users from related stress due to these disabilities during interaction with ICTs would be an important step towards improving ICT accessibility for all

* 1. **World Federation of the Deaf (WFD)**

Mr Beat Kleeb ITU representative from the of World Federation of the Deaf (WFD), presented JCA-AHF [Document 273](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20273.zip) on Swiss Government Mandates Video Relay Services VRS for the Deaf as of 2018.

Text-relay services in Switzerland have started in 1985. Following technology development, Procom, a provider for telephone relay services and for sign language interpreting services within Switzerland, applied for inclusion of video relay services (VRS) as an addition to the existing text relay services originally in 2008. Unfortunately, this request was denied by the Swiss administration. After ten years of efforts, the request was finally achieved and there was acceptance by the Swiss Government to add VRS in their bylaws on telecommunications for 2018. Mr Kleeb concluded his presentation by highlighting that it has been a bottom up process, and that persons who are deaf have been included in this process. Decision makers are not always aware of the needs of persons with disabilities, nor surprisingly of the requirements of the UNCRPD. It is therefore important to include persons with disabilities in the processes that directly impact them. Mr Kleeb added that VRS allows persons who are deaf via sign language to show their emotions, which is essential in daily life.

* 1. **Promoting the universal design of technology through education and entrepreneurship**

Mr G. Anthony Giannoumis from Oslo and Akershus University College of Applied Sciences (HiOA) introduced his university’s program on training the universal design of technologies, contained in JCA-AHF [Document 289](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20289.doc) . He explained that his university’s master’s degree in universal design of ICT, is aiming at promoting barrier free ICT solutions by dismantling barriers in existing ICT solutions thus making it usable by as many people as possible in diverse situations, on different devices, and that utilize different operating systems, software and assistive technologies. He described another program that is a summer course in universal design of new and emerging user interfaces. He explained that both programs are tuition free. He also explained that there is also an online course called MOOCAP which stands for Massive Open Online Course for Accessibility Partnership. The goal of the project is to provide education on accessible design of ICT. The course runs from 6 February till 12 March 2017.

* 1. **Suggested “DIGITAL FOR ALL” Project**

Mr Daniel Battu, an invited delegate from France, described his practical experience in organizing an introductory training sessions for der persons over 65 years on the use of ICT technologies including the Internet and SMS, so that the trainees could access social services provided through such means (JCA-AHF [Document 288](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20288.zip)). He found that many older person have been unable to send SMS messages due to the lack of training and different processes for each type of mobile device. He also discovered that they needed special training as their hands are not steady and the many of the devices are too sensitive to touch, Mr Battu stated that it was difficult for some of the older persons to a copy/paste action or cut texts because of these difficulties. As it is difficult to find an appropriate training material on the Internet, he suggested a development of an online training course on ICT technologies for older persons, which can also be beneficial for persons with disabilities.

Due to the lack of time to discuss this suggestion, no decision was taken at this JCA-AHF meeting, but it was agreed to consider it at next JCA-AHF meeting.

* 1. **Gallaudet University**

Mr Christian Vogler from Gallaudet University presented two (2) topics contained in JCA-AHF [Document 283](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20283.zip) . It was agreed to address the third topic in his presentation slides at the next JCA-AHF meeting due to the time limitation.

* + 1. **Section 508 of the Rehabilitation Act Refresh**

First topic was Section 508 of the Rehabilitation Act specifying requirements for accessibility in federal procurements which was refreshed in January 2017 by the US Access Board and compliance to the new rules will be required by January 2018. The updating was designed to harmonize with European EN 301549. Mr Vogler described some parts of the new rules by comparing them with the European counterpart EN301549. The good aspects in the new Section 508 include, but not limited to; updated functional criteria for ICT; and all software. Public-web sites & documents, and certain internal documents & sites must comply with [WCAG 2.0](http://www.w3.org/TR/WCAG20/) Level A and AA. It is also important that authoring tools must support creation of accessible content. It has been a challenge for many people to find the tools needed to make the content accessible.

Wideband audio calling is newly required by Section 508, and this means that wideband audio support must be accessible allowing those who are using hearing aids to gain volume control and to reduce interference. This requirement is optional in EN 301549.

Video calling is not required, but if supported, video quality must be good enough to support sign language, and which is a functional requirement in Section 508, while EN 301549 requires this more specifically. Then, video content must have closed captioning and audio description.

What is bad in the new ruling is that TTY (see 5.6.2) was taken off from Section 508 while the previous rules had a section on RTT, and EN 301 is also weak on RTT. Due to this situation, people who are deaf/hard of hearing are mostly left out of telecom access.

What can cause interoperability problems by new Section 508 is the limitation of the range of codes to ITU-T G.722.2 (AMR-WB) and to RFC 6716 (Opus) in the wideband audio standards, missing ITU-T G.722 (for wideband interoperability) and ITU-T G.711 (for narrowband interoperability). To avoid the problem, it is necessary to work on modifying each technical standard to make sure that they are interoperable. Mr Vogler was aware that at least two video relay services and next generation emergency services should be worked on.

* + 1. **Real-Time Text (RTT)**

 RTT allows text transmission instantly as it is typed character by character, and simultaneous typing for a conversation, with a very familiar user interface. In current emergency conversations, the response time is not acceptable. RTT can greatly improve the ability of the users to communicate quickly and accurately. Currently the modern version of RTT is applied only to wireless, thus efforts are in progress to figure out how to incorporate RTT in various state relay services which support TTY (teletypewriters developed in the late 1960s) only. It is necessary to ensure the deployments of interoperable RTT on a global level while 3GPP already has specifications on RTT. The harmonization of US Section 508/255 and European EN 301549 to rollout global RTT standards is a remaining task.

1. **Discussion by topic**
	1. **Issues related to radio frequency spectrum**
		1. **“People with a hearing disability need spectrum, and many others need it as well”**

Mr Hans E. Mülder, audiologist from Phonak Communications AG presented JCA-AHF [Document 280](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20280.zip). He and his colleague Ms Neviana Nikoloski highlighted the efforts and innovations having been made in the hearing aids industry, and spectrum needs. Firstly, he explained the complexity of hearing loss with a holistic view, describing the phenomena of sensorineural hearing loss which implicates loss of; sensitivity; dynamic range; distortion, tinnitus; time resolution; and frequency resolution. Both time and frequency resolutions get worse in the presence of background noise. It then becomes especially difficult to follow spoken voice which changes rapidly and includes a lot of different frequency components. To overcome these problems, he highlighted that Phonak felt it was important to make use of wireless systems making use of spectrum. It was his opinion that this was one of the best approaches that gave the brain the best opportunity to still communicate in noisy environments

Next, Mr Mülder explained the trend of hearing solutions and its topology. Today they already are complicated with multiple networks and different frequency bands. In the future, less components (like hubs) will be required as more devices (like hearing aids) will be wireless, but users will own and use more wireless devices, and for this reason and for the wider uptake of wireless solutions (like wireless microphones) spectrum needs will increase. Then, he explained other pathologies that can benefit from wireless communication devices; APD; autism; stroke; multiple sclerosis; traumatic brain injury; children with reading difficulties (reading is also auditory driven); unilateral hearing loss.

In terms of the proportion of R&D budgets versus revenue, the hearing aids industry’s is higher than in other major industries’. Mr Mülder concluded his presentation by emphasizing that the innovation made for very small wireless hearing aids devices working with a low voltage battery and low power consumption were much more advanced in terms of processing capacity than most consumer electronics.

* + 1. **Updates on OFCOM and JRC Testing on 2.3 – 2.4 GHz interference**

Mr Brian Copsey from Copsey Communications presented JCA-AHF [Document 274](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20274.zip) on OFCOM and JRC Testing on 2.3 – 2.4 GHz interference, which was ongoing until the end of January 2017, and of which he had been highlighting the importance over the last two years. The interim result was reported by Mr Copsey that: *“In testing no interference has been noted in both the JRC and OFCOM trials”* and *“Normal and extreme radio interference conditions have been used and to date no problems have been logged”.*

* + 1. **EFHOH in joint concern related to potential interference in relation to deploying of LTE radio frequencies (2300 – 2400 Hz) adjacent to the ISM band**

Ms Lidia Smolarek-Best, Vice-President of EFHOH, kindly accepted to postpone her presentation on JCA-AHF [Document 284](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20284.zip) to the next JCA-AHF meeting, due to the time limitation.

* 1. **Safe Listening**
		1. **“Immediately in Effect Guidance Document” published -- the US FDA in December 2016**

Ms Neviana Nikoloski from Phonak Communications AG, kindly accepted to postpone her presentation on JCA-AHF [Document 279](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20279.doc) to the next JCA-AHF meeting, due to the time limitation.

* + 1. **EFHOH Feedback on the European Commission’s “Smart Wearables: Reflection and Orientation Paper”**

Ms Smolarek-Best kindly accepted to postpone her presentation on JCA-AHF [Document 285](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20285.zip) to the next JCA-AHF meeting, due to the time limitation.

* + 1. **Make Listening Safe**

Ms Shelly Chadha from WHO presented JCA-AHF [Document 285](http://www.itu.int/en/ITU-T/jca/ahf/Documents/docs-2017/January%202017/Doc%20285.zip) on WHO’s Make Listening Safe initiative. WHO estimated that 1.1 billion young people worldwide are at risk of hearing loss due to unsafe listening practices. These risks include listening at loud volumes; for prolonged duration; and habitual exposure. Aiming at reducing such risk of hearing loss, WHO launched this initiative in October 2015 in collaboration with other stakeholders, for prevention, early identification and management of or interventions for hearing loss. The focus was on; technology, health communication; and research and risk assessment. WHO is working in collaboration with ITU-T Q28/16 and Q26/16. The work is ongoing to develop standards for hearing devices that help avoid improper use. A personal media player application (APP) is being developed and hopefully planned to be launched by June 2017, which will enable users to monitor their listening level, time and dose, so they can be informed of safe listening. Raising awareness is the key of the initiative and is being worked collaboratively with the Department of Health communications of the University of Lucerne. Finally, for the area of research and risk criteria, some research questions, including scientific assessment of hearing loss due to noise exposure are being studied.

1. **Closing of the meeting**

The Chairman closed the meeting, making her apologies for the lack of time, and thanking the meeting participants, the interpreters, the caption writer and the Secretariat for their support.

**Annex: 1**

RESOLUTION 70 (Rev. Hammamet, 2016) - Telecommunication/information and communication technology accessibility for persons with disabilities and persons with specific needs

Revisions made to the previous version

**Annex 1**

RESOLUTION 70 (Rev. Hammamet, 2016)

Telecommunication/information and communication technology accessibility
for persons with disabilities and persons with specific needs

(Johannesburg, 2008; Dubai, 2012; Hammamet, 2016)

The World Telecommunication Standardization Assembly (Hammamet, 2016),

recognizing

*a)* Resolution 175 (Rev. Busan, 2014) of the Plenipotentiary Conference, on telecommunication/information and communication technology (ICT) accessibility for persons with disabilities, including age-related disabilities and persons with specific needs;

*b)* Resolution 58 (Rev. Dubai, 2014) of the World Telecommunication Development Conference (WTDC), on telecommunication/ICT accessibility for persons with disabilities, including persons with age-related disabilities, and WTDC Resolution 17 (Rev. Dubai, 2014), on implementation of regionally approved initiatives at the national, regional, interregional and global levels;

*c)* the mandate of and work carried by the Joint Coordination Activity on Accessibility and Human Factors (JCA-AHF), and in particular ITU Telecommunication Standardization Sector (ITU‑T) actions to increase cooperation with other United Nations organizations and activities, as well as all United Nations specialized agencies, in order to raise awareness about ICT accessibility in the framework of standardization, and ITU‑T actions aimed at upholding JCA-AHF;

*d)* studies under ITU‑T Question 24/16, on human factors‑related issues for improvement of quality of life through international telecommunications, recognizing the need to inclusion of human factors in Recommendations and technical papers;

*e)* studies under ITU‑T Question 26/16, on accessibility to multimedia systems and services, including the recent Recommendation ITU‑T F.790 on telecommunication accessibility guidelines for older persons and persons with disabilities;

*f)* studies under Question 7/1 of the ITU Telecommunication Development Sector (ITU‑D), on access to telecommunication/ICT services by persons with disabilities and with specific needs;

*g)* ongoing work in the ITU Radiocommunication Sector (ITU‑R) in accordance with Resolution ITU‑R 67 (Geneva, 2015) of the Radiocommunication Assembly (RA), on telecommunication/ICT accessibility for persons with disabilities and persons with specific needs;

*h)* the publication by the Telecommunication Standardization Advisory Group (TSAG) of the guide for ITU study groups: Considering end-user needs in developing Recommendations;

*i)* the mandate of JCA-AHF for the purposes of awareness-raising, advice, assistance, collaboration, coordination and networking;

*j)* the

activity carried out by the Internet Governance Forum (IGF) Dynamic Coalition on Accessibility and Disability (DCAD) sponsored by the Director of the Telecommunication Standardization Bureau (TSB), and the partnership between ITU‑T and DCAD for the purposes of maximizing the benefits for all sectors of the global community of electronic communications and online information through the Internet;

*k)* the activity carried out by the Council Working Group on international Internet-related public policy issues (CWG-Internet) on issues related to access to the Internet for persons with disabilities and specific needs,

considering

*a)* that the World Health Organization estimates that more than one billion of the world's population live with some form of disability, of whom almost 200 million experience considerable difficulty in their daily lives, and it is to be expected that, in the future, disabilities will rise because of the increasing population of older persons and the risk that disability is greater among older persons;

*b)* that the United Nations has moved from a health and welfare perspective to an approach based on human rights, which recognizes that persons with disabilities are people first, and that society places barriers upon them as opposed to their disabilities, and which includes the goal of full participation in society by persons with disabilities (Resolution 175 (Rev. Busan, 2014));

*c)* that maximizing the accessibility and usability of telecommunication/ICT services, products and terminals through universal design will increase their uptake by all persons, including persons with disabilities and older persons, and thereby increase revenues;

*d)* that United Nations General Assembly (UNGA) Resolution 61/106 adopting the Convention on the rights of persons with disabilities requests the Secretary-General (§ 5) "… to implement progressively standards and guidelines for the accessibility of facilities and services of the United Nations system, taking into account relevant provisions of the Convention, in particular when undertaking renovations";*e)* the importance of cooperation between governments, the private sector and relevant organizations to promote affordable access possibilities;

*f)* the RA resolution on telecommunication/ICT accessibility for persons with disabilities and persons with specific needs,

recalling

*a)* § 18 of the Tunis Commitment, made at the second phase of the World Summit on the Information Society (Tunis, 2005): "We shall strive unremittingly, therefore, to promote universal, ubiquitous, equitable and affordable access to ICTs, including universal design and assistive technologies, for all people, especially those with disabilities, everywhere, to ensure that the benefits are more evenly distributed between and within societies, …"[[1]](#footnote-1)1;

*b)* the Phuket Declaration on Tsunami Preparedness for Persons with Disabilities (Phuket, 2007), which emphasizes the need for inclusive emergency warning and disaster management systems using telecommunication/ICT facilities based on open, non-proprietary, global standards;

*c)* Article 12 of the International Telecommunication Regulations,

taking into account

*a)* Resolution 44 (Rev. Hammamet, 2016) of this assembly, on bridging the standardization gap between developing and developed countries, and Resolution 18 (Rev. Hammamet, 2016) of this assembly, on strengthening coordination and cooperation among the three ITU Sectors on matters of mutual interest;

*b)* Resolution GSC-17/26 (revised), on user needs, considerations and involvement, agreed upon at the 17th Global Standards Collaboration meeting (Jeju, Republic of Korea, 2013);

*c)* publications of the Special Working Group on Accessibility (ISO/IEC JTC 1 SWG – Accessibility) of the Joint Technical Committee on Information Technology (JTC 1) of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC), as well as the Mandate 376 project teams, identifying user needs and developing a comprehensive inventory of existing standards as part of the ongoing effort to identify areas where research or new standards work is needed;

*d)* the activities of ITU‑T Study Group 16 (Multimedia coding, systems and applications), which is the lead study group on telecommunication/ICT accessibility for persons with disabilities, and ITU‑T Study Group 2 (Operational aspects of service provision and telecommunication management) for the part relating to human factors;

*e)* activities relating to the development of new standards (e.g. ISO TC 159, JTC 1 SC35, IEC TC100, ETSI TC HF, and W3C WAI), and the implementation and maintenance of existing standards (e.g. ISO 9241-171); *f)* the joint efforts of ITU and the Global Initiative for Inclusive ICTs (G3ICT), including the development of the Model ICT accessibility policy;

*g)* the Model ICT accessibility policy report (November, 2014), the release of the report "Making TV accessible", on the occasion of the International Day of Persons with Disabilities (3 December 2011), the report on "Making Mobile Phones and Services Accessible to Persons with Disabilities” (August, 2012), and the e‑Accessibility Policy Toolkit for Persons with Disabilities (February, 2010);

*h)* various international, regional and national efforts to develop or revise guidelines and standards for telecommunication/ICT accessibility, compatibility and usability by persons with disabilities,

resolves

1 that ITU‑T Study Group 16 shall continue giving high priority to work on the relevant Questions, Recommendation ITU‑T F.790, the guide for ITU‑T study groups on telecommunication accessibility guidelines for older persons and persons with disabilities, and Recommendation ITU‑T F.791, on accessibility terms and definitions;

2 that ITU‑T study groups should consider aspects of universal design in their work, including the drafting of non-discriminatory standards, service regulations and measures for all persons, including persons with disabilities and older persons, with cross-cutting user-protection actions;

3 that all ITU‑T study groups utilize the Telecommunications Accessibility Checklist, which makes it possible to incorporate the principles of universal design and accessibility;

4 that an ITU workshop be held to inform about the progress in the work and the results achieved by the study groups in charge of ICT accessibility before the next world telecommunication standardization assembly,

 instructs the Director of the Telecommunication Standardization Bureau

1 to report to the ITU Council on the implementation of this resolution;

2 to contribute to the development of an ITU‑wide internship programme for persons with disabilities who have expertise in the field of ICTs, so as to build capacity among persons with disabilities in the standards-making process and to raise awareness within ITU‑T of the needs of persons with disabilities;

3 that ITU‑T employ the technical papers FSTP-AM "Guidelines for accessible meetings" and FSTP-ACC-RemPart "Guidelines for supporting remote participation for all", as appropriate, to make it possible for persons with disabilities to be able to attend ITU meetings and events,

1 to identify and document examples of best practice for accessibility in the field of telecommunications/ICT for dissemination among ITU Member States and Sector Members;

2 to review the accessibility of ITU‑T services and facilities and consider making changes, where appropriate, pursuant to UNGA Resolution 61/106, on the Convention on the rights of persons with disabilities, and to report to the Council on these matters;

3 to work collaboratively on accessibility-related activities with the Directors of the Radiocommunication Bureau (BR) and the Telecommunication Development Bureau (BDT), in particular concerning awareness and mainstreaming of telecommunication/ICT accessibility standards, reporting findings to the Council as appropriate;

4 to work collaboratively on accessibility-related activities with ITU‑D, in particular developing programmes that enable developing countries to introduce services that allow persons with disabilities to utilize telecommunication services effectively;

5 to work collaboratively and cooperatively with other standardization organizations and entities, in particular, in the interest of ensuring that ongoing work in the field of accessibility is taken into account, in order to avoid duplication;

6 to work collaboratively and cooperatively with disability organizations in all regions to ensure that the needs of the disabled community are taken into account in all standardization matters;

7 to continue JCA-AHF, and any other accessibility coordination functions and advisory function within ITU‑T, in order to assist the Director of TSB in reporting the findings of the review of ITU‑T services and facilities;8 to consider using accessibility resources in the meetings organized by ITU‑T in order to encourage the participation of persons with disabilities in the standardization process,

instructs the Telecommunication Standardization Advisory Group

1 to revise the guide for ITU study groups: Considering end-user needs in developing Recommendations,

2 to request study groups to facilitate, in their respective work, the implementation of new software, services and proposals enabling all persons with disabilities, including persons with age-related disabilities, to effectively use telecommunication/ICT services, and relevant guidelines for end‑user needs, in order specifically to include the needs of persons with disabilities, and to update the guide on a regular basis, based on contributions from Member States and Sector Members as well as the ITU‑T study groups, as appropriate,

2 to consider introducing services or programmes, including telecommunication relay services[[2]](#footnote-3)2,to enable persons with hearing and speech disabilities to utilize telecommunication services that are functionally equivalent to telecommunication services for persons without disabilities;

3 to participate actively in accessibility-related studies in ITU‑R, ITU‑T and ITU‑D, and to encourage and promote self‑representation by persons with disabilities in the standardization process so as to ensure their experiences, views and opinions are taken into account in all the work of study groups;

4 to consider designating focal points for the implementation and monitoring of this resolution;

5 to encourage the provision of differentiated and affordable service plans for persons with disabilities in order to increase the accessibility and usability of telecommunications/ICT for these persons;

6 to encourage the development of applications for telecommunication products and terminals to increase the accessibility and usability of telecommunications/ICT for persons with visual, auditory, verbal and other physical and mental disabilities;

7 to encourage regional telecommunication organizations to contribute to the work and consider implementing the results achieved in the study groups and the workshop on this topic;

8 to encourage industry to consider accessible features when designing telecommunication devices and services.

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1. 1 Geneva Declaration of Principles §§ 13 and 30; Geneva Plan of Action §§ 9 *(e)* and *(f)*, 12 and 23; Tunis Commitment §§ 18 and 20; Tunis Agenda for the Information Society §§ 90 *(c)* and *(e)*. [↑](#footnote-ref-1)
2. 2 Telecommunication relay services enable users of different modes of communication (e.g. text, sign, speech) to interact by providing convergence between the modes of communication, usually through human operators. [↑](#footnote-ref-3)