



WORLD FEDERATION OF THE DEAF



WFD and IFHOH Joint Statement: Automatic Speech Recognition in Telephone Relay Services and in Captioning Services

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The field of Automatic Speech Recognition (ASR) has progressed significantly with the advancement of artificial intelligence technology. As a result, more applications that utilise ASR, and AI technologies are developed and have shown a promising impact on communication and accessibility. However, this field is emerging and the World Federation of the Deaf (WFD) and International Federation of Hard of Hearing (IFHOH) are documenting a small number of user experiences and cases using ASR technology. There needs to be continuing effort in research and development with deaf and hard of hearing participation to improve the uses and applications of ASR technology.

This joint statement is to inform that ASR should not replace current communication methods, such as Telecommunication Relay Services (TRS) and Captioning services.

TRS and Captions, allows deaf and hard of hearing people, who cannot understand voices on the telephone, to access telephone services, which is part of the important social infrastructure supporting people's daily life. TRS is important for enhancing employment potential and social integration of deaf and hard of hearing people. The same applies to access to information via captioning.

ASR application to TRS and to Captions, should be carefully considered at the present time for the following reasons:

1. ASR for a telephone service has difficulty in providing consistently good recognition accuracy, due to poor sound quality of telephony in certain areas as well as to poor environmental conditions such as noise and an unspecified number of speakers.
2. In addition, some words, such as proper nouns and technical terms that are unknown to the ASR system, are hard to learn beforehand, and it is still difficult to always ensure reliable recognition.

Professional captioning services allow deaf and hard of hearing persons to enjoy equal access to meeting conversations. It also provides vital and accurate information supporting broadcasting live news.

When ASR services are used without human operator, deaf and hard of hearing people are excluded from full participation in society.

Considering the importance of TRS, especially its use in emergency situations, sufficient reliability and quality of service of TRS is essential.

[Article 9 of the UN Convention on the Rights of Persons with Disabilities](#) clearly stipulates that "States Parties shall take appropriate measures to ensure to persons with disabilities access, on an *equal basis* with others, to information and communications, including *information and communications technologies and systems*".

It is necessary for the parties concerned with the deaf and hard of hearing to appropriately participate in the discussion on the application of ASR technology with full involvement of deaf and hard of hearing stakeholders.

Although WFD and IFHOH welcome and encourage research and development on ASR to support deaf and hard of hearing persons, we believe that at the current stage, ASR technologies, are still premature for replacing human operators and more research and development needs to be done before it becomes truly useable. It is advised therefore that a TRS and captioning by human should be given a priority.

Governments of countries where public institutionalisation of telephone relay services is not yet implemented, should not use the development and introduction of ASR as an excuse to postpone the introduction of public TRS.

Although ASR in the future may improve to the point that it can replace human relay operators and captioners, this would perhaps take many years and would require verifiable evidence that ASR accuracy and service quality attains high success rate as well as significant user community support.

TRS should promptly be implemented with an operator-based telephone relay service as a public service.

Further information:

WFD and IFHOH are working with the International Telecommunication Union (ITU) to consider guidelines on ASR as well as metrics for the Key Performance Indicators for the range of relay services which includes Text Relay, Video Relay and Captioned Telephone Relay. The result of this collaboration is expected to clarify the requirements on the Quality of Service of TRS, which any ASR technology to be used for TRS is required to meet.

Until such clear requirements are set and the ASR technology is mature enough to meet these requirements, the use of ASR technology in real TRS and in public events and services, as a replacement for humans, should not be considered a possibility.

Such a proposal was reported by Japan, *ITU-D contribution document "Access to telecommunication / ICT services by persons with disabilities and other persons with specific needs" (SG1RGQ / 78-E, issued on September 3, 2018):* <http://www.itu.int/net4/ITU-D/CDS/sg/rgqlist.asp?lg=1&sp=2018&rgq=D18-SG01-RGQ07.1&stg=1>

Similar moves have been noticed in Australia, Switzerland, the USA, and some European countries.

From the viewpoint of protecting the lives and rights of deaf and hard of hearing people, WFD and IFHOH jointly express concern about any uncritical and hasty application of AI technology, in particular ASR technology, to TRS. For a deaf person whose first language is a sign language, it is to be understood that video relay service is indispensable and automatic speech recognition cannot provide an alternative means.

Moreover, as for the use of automatic recognition and generation of sign language, there does not currently exist any practical system or service at all, and it is unrealistic to expect it can replace a human sign language operator in a foreseeable future, as it is pointed out in the Joint Statement of WFD and World Association of Sign Language Interpreters *Statement on Use of Signing Avatars*: <http://wfdeaf.org/news/resources/wfd-wasli-statement-use-signing-avatars/>

About the World Federation of the Deaf

The World Federation of the Deaf (WFD) is an international non-governmental organisation representing and promoting approximately 70 million deaf people's human rights worldwide. The WFD is a federation of deaf organisations from 122 nations; its mission is to promote the human rights of deaf people and full, quality and equal access to all spheres of life, including self-determination, sign language, education, employment and community life. WFD has a consultative status in the United Nations and is a founding member of International Disability Alliance (IDA). (www.wfdeaf.org) Email: info@wfd.fi

About the International Federation of the Hard of Hearing

IFHOH is an international, non-governmental organization, registered in Germany with over 40 national member organizations from most regions of the world. IFHOH and the European Federation of Hard of Hearing People (EFHOH) work to promote greater understanding of hearing loss issues and to improve access for hard of hearing people. IFHOH has special consultative status with the United Nations Economic and Social Council (ECOSOC), affiliation with the World Health Organization (WHO) and membership in the International Disability Alliance (IDA). (www.ifhoh.org) Email: info@ifhoh.org