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Technical Report

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**Part 11: Draft recommended production  
guidelines for sign language service**

## FOREWORD

The procedures for establishment of focus groups are defined in Recommendation ITU-T A.7. The ITU-T Focus Group on Audiovisual Media Accessibility (FG AVA) was proposed by ITU-T Study Group 16 for creation in-between TSAG meetings and it was established on 22 May 2011. The Focus Group was successfully concluded in October 2013.

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## **Summary**

This Technical Report of FG AVA was prepared by Working Group C "Visual signing and sign language". It outlines the draft recommended guidelines to produce a video programme with sign language for television or for any other audiovisual media. FG AVA had foreseen this as a future work item for ITU-T Study Group 16 (SG16) "Multimedia" and ITU-R SG6 "Broadcasting service".

## 1 Introduction

This Technical Report describes the draft guidelines to produce a video programme with sign language for television or for any other audiovisual media.

### 1.1 General features of sign languages

Sign language is a visual language that uses shapes and motion of hand and fingers, as well as non-manual expressions such as facial expressions and body motions which include lines of sight, movement of eyebrows, mouth, tongue, and leaning or nodding of the head.

Sign language is the first language for deaf people who lost their hearing from birth or at an early age. Spoken language in their country or its caption text is usually their second language, and therefore some of the members of the deaf community may be far less fluent in reading the written language. It is different with hearing impaired users who lost hearing in adulthood, whose first language is the spoken language or its caption text.

There is often confusion with the above two groups of hearing impaired people, and there is a misunderstanding in that providing captions or sign language interpretation is enough for all hearing impaired people.

Sign languages differ from country to country, independently from their spoken languages. For example, British deaf people use British Sign Language, which is different from American Sign Language used in the United States, although spoken languages in both countries are categorized as English. Even within a country, there are often regional dialects and differences in some of the signs used by different cultural groups.

Sign languages in a country generally differ in grammar from the spoken languages. Deaf people who lost hearing after birth (and therefore had used the spoken language) and learn to sign later in life, often use a mixture of the sign language and spoken language, signing words with the syntax of spoken language. Pidgin signed English (PSE) in the United States is an example of such signed language.

### 1.2 Styles and formats of sign language services

There are two types of providing sign language access to programmes:

- **Presentation:** A programme or programme segment may be presented in sign language. In such cases, a sign language presenter, narrator, or reporter will provide the main language. The signs should be interpreted into a "voice over" with the addition of subtitles for other audience, if applicable.
- **Interpretation:** Alternatively a person may interpret live or recorded programmes or programme segments. The image of such an interpreter is usually superimposed on a programme image.

Sign language may be broadcasted in two formats:

- **Open format:** The sign language interpreter is shot together with other presenters, or the video of the interpreter is mixed with the main programme at the broadcaster side, and therefore visible to all viewers.
- **Closed format:** The video of the sign language interpreter is transmitted separately from the main programme and is mixed as an option in the receiver. The size and position of the interpreter may be changed by viewers, although this depends on the design of the receivers. Closed format utilizes dual transmission streams, i.e. two streams in broadcasting, or one in broadcasting and the other on the Internet.

This format is preferable for all viewers because showing the signer's image and its size and position may be controllable at the receiving side, although these functions may be a matter of designing the TV receiver.

Programmes of presentation type inevitably use open format while those of interpretation type may use one of the formats.

The signer's video may be synthesized with the main programme in two styles:

- **Wipe style:** A small circular or rectangular window of the signer is superposed on the main programme. Part of the main video programme is covered by the window.
- **Overlay style:** The signer's video is overlaid on the video of the main programme that is usually shrunk in size (about 70% or 80%, for example). The position of the signer is usually in the right or left hand side of the screen. Generally, this format shows a larger size of the signer image and does not cover any part of the main programme, which is preferable for the audience.

## 2 Guidelines

### 2.1 Sign language interpretation of programmes

#### 2.1.1 Prioritization of programmes

Given the cost of sign language interpreting, it may not be possible to add sign language access service to all programmes. The decision on which programmes are prioritized should take into account both the benefits for viewers and the costs of sign language interpreting.

Sign language interpreting has benefits for viewers; it has an impact on the popularity and importance of programmes for deaf people. Very popular programmes to hearing people are also likely to be enjoyable for deaf people. In addition, sharing the experience helps communication among people. Programmes concerning safety and the security of people's lives are also very important.

News reports or announcement warnings of natural disasters and other vital public information notices should always include sign language interpreting.

#### 2.1.2 Selection of sign language

Selection of sign language should reflect which language is most accessible for the intended audience allowing for regional sign language variations within regional programmes.

#### 2.1.3 Interpretation equivalency

The aim of sign language interpretation is to replace the information that a hearing person receives by listening. The interpretation should therefore be equivalent to the audio programme, providing the same information and meaning, but in a different form. Equivalent information includes the information given in tones of voice, non-speech utterances and other sounds, plus information *about* the sounds, such as where the sounds come from.

- Interpretation has to be clear, especially in the viewer's speech. This can be achieved using the interpreter's eye gaze or body positioning, giving the speaker's name, or reflecting the speaker's manner, which is known as 'characterization'.
- Interpretation does not censor speech in order to remove ideas that may appear crude or offensive. This is unnecessary and condescending. If the audible content is deemed suitable

for its intended audience, it is also suitable for a deaf member of that audience. The interpreter's comfort level when interpreting the speech should not be a factor.

#### **2.1.4 Skill of sign language interpreter**

Sign language interpreters should sign with a level of competence and fluency comparable to native signers. However, during the initial years of the service, the proficiency of the service may not reach excellent levels.

For presenters, narrators and reporters, the sign language should be of native competency standard. They should also be able to communicate effectively through the medium of television.

There may be qualifications available, which are helpful to advance the skill levels of sign language interpreters and to increase their numbers.

#### **2.1.5 Translation of sign language into subtitles and speech**

Signed programmes, whether presented or interpreted in sign language, should be subtitled, to make it easier for viewers using both signing and subtitling to understand and enjoy the programmes.

If the programme is delivered in sign language by the presenters, contributors and characters, it should also be translated into speech for the benefit of hearing viewers, if appropriate.

### **2.2 Visual appearance of sign language**

#### **2.2.1 Visibility of signer**

The colours and tones of the signer's clothing and background should be such that all movements can be easily seen, for example, by means of contrasting plain colours and suitable lighting.

The visual appearance of the signer, such as choice of clothing and dress accessories, should not cause undue distraction to viewers.

#### **2.2.2 Capture space of signer**

The full signing space around the signer should be visible at all times. For most sign languages, this extends from well below the waist of the interpreters to above the head and at least an elbow width to the side.

#### **2.2.3 Size of signer on the screen**

The signer should appear on the screen at a sufficient size and resolution to enable viewers at normal viewing distances to clearly see and accurately recognize all movements and facial expressions. It is difficult, however, to quantify the size because it depends on the screen size and viewing distance. The recommendation provided by OFCOM in the UK in the standard definition television is that the signer should be no smaller than one sixth of the picture.

Closed sign language interpreting system may enable an individual viewer to control the size and position of the signer on the screen using a function of a TV receiver specially manufactured for it. This is more preferable for deaf viewers because they can select the best size of the signer suitable for their viewing condition and preference.

#### **2.2.4 Position of signer on the screen**

In the open format of sign interpretation service, the window of the signer covers a part of the main programme screen. The position of the signer in the open format therefore should be carefully selected so as not to obscure any important information shown in the main programme.

## **2.3 Synchronization**

### **2.3.1 Features of sign language interpretation**

Sign language in a country is generally different in word expressions and syntax from its spoken languages, so the timing can be difficult to be synchronized.

In the case of interpretation of live content, interpreters usually wait until a sufficiently large initial utterance has been spoken before they can start interpreting. This may cause overrun of sign language interpretation after spoken output ends although the interpreter tries to catch up with it.

The interpreter will frequently refer to the main programme or make visual clues relating to the main image. This may require tighter timing, even if the overall timing is generally more relaxed.

### **2.3.2 Synchronization for the closed signing**

As far as possible, signing should be kept with the overall programme content, though it cannot usually be tightly synchronized with speech. It is important to make sure not to cut off any overrunning signing at the end of a sequence.

The closed signing system which utilizes dual video streams of the main and signer's video may need special mechanisms in the TV receiver to adjust their synchronization, if timing and delay characteristics of the transmission lines of the two streams are different from each other.

### **2.3.3 Avoid overrunning shot changes**

It is desirable to avoid the sign language interpretation overrunning shot changes. Shot changes that take place while interpretation is being done may cause the viewer to be distracted from the signing.

## **2.4 Monitoring and feedback**

The best way to assess the quality of sign language interpreting is to run user tests with sign language users. Tests should aim to assess all of the important characteristics, including the level of understanding, accuracy, objectivity, completeness, helpfulness, timing, visual appearance, and suitability for the programme content and audience.

Broadcasters can also provide a way for viewers to give feedback on quality issues by providing a telephone number that will accept voice calls and texts along with other quick access channels such as e-mail and Twitter.

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