



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement n°: 761999



EasyTV: Easing the access of Europeans with disabilities to converging media and content.

Final report on identification of standardisation bodies and contribution actions

EasyTV Project

*H2020. ICT-19-2017 Media and content convergence. – IA
Innovation action*

Grant Agreement n.º: 761999

Start date of project: 1 Oct. 2017

Duration: 30 months

Document ref.: D7.4 (7.2.2)

Disclaimer

This document contains material, which is the copyright of certain EasyTV contractors, and may not be reproduced or copied without permission. All EasyTV consortium partners have agreed to the full publication of this document. The commercial use of any information contained in this document may require a license from the proprietor of that information. The reproduction of this document or of parts of it requires an agreement with the proprietor of that information. The document must be referenced if is used in a publication.

The EasyTV Consortium consists of the following partners:

	Partner Name	Short name	Country
1	Universidad Politécnica de Madrid	UPM	ES
2	Engineering Ingegneria Informatica S.P.A.	ENG	IT
3	Centre for Research and Technology Hellas/Information Technologies Institute	CERTH	GR
4	Mediavoice SRL	MV	IT
5	Universitat Autònoma Barcelona	UAB	ES
6	Corporació Catalana de Mitjans Audiovisuals SA	CCMA	ES
7	ARX.NET SA	ARX	GR
8	Fundación Confederación Nacional Sordos España para la supresión de barreras de comunicación	FCNSE	ES
9	Sezione Provinciale di Roma dell'Unione Italiana dei ciechi e degli ipovedente	UICI	IT

PROGRAMME NAME:	H2020. ICT-19-2017 Media and content convergence - IA Innovation action
PROJECT NUMBER:	761999
PROJECT TITLE:	EASYTV
RESPONSIBLE UNIT:	UAB
INVOLVED UNITS:	UAB, ENG, CERTH, MV, CCMA, UICI, FCNSE
DOCUMENT NUMBER:	D 7.2.2
DOCUMENT TITLE:	Final report on identification of standardisation bodies and contribution actions
WORK-PACKAGE:	WP7
DELIVERABLE TYPE:	Report
CONTRACTUAL DATE OF DELIVERY:	31-12-2019
LAST UPDATE:	
DISTRIBUTION LEVEL:	PU

Distribution level:

PU = *Public*,

RE = *Restricted to a group of the specified Consortium*,

PP = *Restricted to other program participants (including Commission Services)*,

CO = *Confidential, only for members of the EasyTV Consortium (including the Commission Services)*

DOCUMENT HISTORY

VERSION	DATE	STATUS	AUTHORS, REVIEWER	DESCRIPTION
v.0.1	6/7/2019	Draft	Pilar Orero UAB	Table of Contents definition and document structure
V0.2	27/11/2019	Draft with tables from partners	Pilar Orero UAB	Developed doc

DEFINITIONS, ACRONYMS AND ABBREVIATIONS

ACRONYMS / ABBREVIATIONS	DESCRIPTION
3GPP	The 3rd Generation Partnership Project
AENOR	Asociación Española de Normalización y Certificación
AFNOR	Association Française de Normalisation
API	Application Programming Interface
ARIA WG	Accessible Rich Internet Applications Working Group
AVMSD	Audiovisual Media Service Directive
BSI	British Standards Institution
CE	Conformité Européenne
CEN	Comité Européen de Normalisation
CENELEC	Comité Européen de Normalisation Electrotechnique
CSS	Cascading Style Sheets
DCAD	Dynamic Coalition on Accessibility and Disability
DECT	Digital Enhanced Cordless Telecommunications
EEA	European Economic Area
EFTA	European Free Trade Association
EG	ETSI Guide
EN	European Standard, telecommunications series
ERGA	European Regulators for Audiovisual Media
ES	ETSI Standard
ESO	European Standardisation Organisations
ETSI	European Telecommunications Standards Institute
FG AVA	Focus Group on Audiovisual Media Accessibility
GS	Group Specification
GSM	Global System for Mobile communications
ICT	Information and Communication Technology
IEC	International Electrotechnical Commission

IPC	International Paralympic Committee
IPTV	Internet Protocol TV
IRG-AVA	Intersector Rapporteur Group Audiovisual Media Accessibility
ISO	International Organization of Standardization
ISP	International Specification Groups
ITU	International Telecommunication Union
JCA-AHF	Joint Coordination Activity on Accessibility and Human Factors
LPD	Low Power Device
MPEG	Moving Picture Expert Group
NSAI	National Standards Authority of Ireland
OneM2M	One Machine to Machine
SP	Special Report
SVG	Scalable Vector Graphics
TETRA	Trans European Trunked Radio
TR	Technical Report
TS	Technical Specification
UNE	Una Norma Española
W3	World Wide Web
W3C	World Wide Web Consortium
WAI ARIA	Web Accessibility Initiative – Accessible Rich Internet Applications
WCAG	World Content Accessibility Guidelines
WOFF	Web Open Font Format
XML	Extensible Markup Language
OCR	Optical Character Recognition
UIDL	User Interface Definition Language
HbbTV	Hybrid Broadcast Broadband TV
DVB-SUB	Digital Video Broadcasting Subtitles
GUI	Graphical User Interface
SDK	Service Development Kit

AAL	Active Assisted Living
SyC	Systems Committee
WG	Working Group

TABLE OF CONTENTS

Document History	4
Definitions, Acronyms and Abbreviations	5
Table of Contents	8
List of Figures	9
List of Tables	10
Executive Summary	11
1. INTRODUCTION	12
2. EASYTV CONTRIBUTIONS TO STANDARDISATION AGENCIES	13
3. TECHNOLOGIES LEADING TO STANDARDISATION	13
3.1. UPM Image adaptation	14
3.2. UPM Ontologies	15
3.3. MEDIA VOICE	16
3.4. CERTH	18
3.5. CCMA	20
3.6. ARX	21
3.7. ENG	22
4. CONCLUSIONS	24
5. REFERENCES	24
6. ANNEXES	25
6.1. Annex A	25
6.2. Annex B	30
6.3. Annex C	67

LIST OF FIGURES

Figure 128
Figure 229
Figure 329
Figure 430

LIST OF TABLES

Table 1. Summary of the technologies liable to standardisation.....27

EXECUTIVE SUMMARY

This document is the second deliverable in WP7. It has been written by UAB, with the collaboration and the help of the other six technological partners from the project: MV, UPM, CERTH, ENG, ARX and CCMA. It builds on the first deliverable where it was presented the different standardization agencies both worldwide and in Europe, and their area of expertise. Section 2.1 describes the new contributions made from EasyTV towards standardisation, and for this deliverable we have gone further now by adding a third section which will be the core content of the next Deliverable iteration. This is Section 3 where each partner has listed by technology and service the different standards either implemented. The document finishes with three samples of the type of participation EasyTV has in a standardisation agency in the form of “contribution” to ITU IRG AVA and ISO.

1. INTRODUCTION

Standardisation plays a leading role in creating the EU Single Digital Market. Standards support market-based competition and help ensure the interoperability of complementary products and services. EasyTV is aware of the importance of working within the framework of standards since they reduce costs, improve safety, and enhance competition. The EU has an active standardisation policy that promotes standards as a way to better regulation and enhance the competitiveness of European industry.

The European Union promotes an active standardisation policy because standards are viewed as a means to improved regulation and as a way to enhance European industry competitiveness. As explained on a dedicated website on standardisation policy, standards at the European level “support market-based competition and help ensure the interoperability of complementary products and services. They reduce costs, improve safety, and enhance competition”.¹ The Joint Initiative on Standardisation² published on 13th June 2016 is a good example of such interest, as it sets out a shared vision for European standardisation. A set of actions is being drafted based on three priorities: awareness, education and understanding of the European standardisation system; coordination, cooperation, transparency and inclusiveness, and competitiveness and international dimension.

Standards are a pre-requisite for laws. Unless there is a standard to refer to, a law will be meaningless, and this has a direct implication in media accessibility. In Europe following the Audiovisual Media Service Directive (AVMSD) all countries had the obligation to pass legislation regarding accessibility services offered in public broadcasting³. Since there is no EU standard for subtitling, sign language interpretation or audio description the AVMSD could only measure the quantity of programmes to be broadcast with each service. An exception is the Spanish Standard on subtitling (UNE135020), audio description (UNE135010), and easy reading (UNE/PNE153101 EX) issued by UNE (formerly AENOR). To reflect on the EU diversity, each EU country has its standardisation agency: AFNOR in France, BSI in the UK, NSAI in Ireland, just to mention a few.

EasyTV would like to work through standardisation awareness in maintaining and improving the presence of EU industry in international markets are key to creating jobs and growth in Europe.

¹https://ec.europa.eu/growth/single-market/european-standards/policy_en [retrieved 20/12/2017]

²http://ec.europa.eu/growth/content/joint-initiative-standardisation-responding-changing-marketplace-0_en [retrieved 20/12/2017]

³To consult AVMSD transposed to each EU country, please see <http://avmsd.obs.coe.int/cgi-bin/search.php> [retrieved 20/12/2017]

2. EASYTV CONTRIBUTIONS TO STANDARDISATION AGENCIES

This section describes the new contribution in the last 12 months to complement existing Deliverable 7.2.1.

Three contributions have been made from EasyTV to standardisation agencies. One to ITU SG16Q26 and two to ISO SC35.

During the first review EasyTV was encouraged to promote a Human Factors standard for the presentation of Sign Language on TV screens, away from any SL linguistics or related to any particular Sign Language from a country. This request was taken on board and at the ISO meeting in July 2019 in Shanghai the first Preliminary Report on Sign Language Presentation for TV was presented with Canada as the convenor. The report had wide acceptance and has now become a New Item presented in October at the ITU SG16Q26. This is an important step since this standard, along the other existing three ISO 20071 (on Subtitles, Audio description, and Audio subtitling) will also be endorsed by ITU. For the ITU October 2019 meeting EasyTV presented three contributions, two were translation of existing documents on Sign Language Presentation on TV developed by the Spanish Government and the Deaf Association (See Annex B). The other contribution was related to findings from this project which had started in a previous project HBB4ALL and were finished now (see Annex A). From Easy TV also comments were provided to an existing standard on Interaction ISO20071-5 convened by Japan. The biggest contribution from EasyTV is the proposal of a New Working Item at ISO 20071-20 TS 20071-20 "Information Technology — User interface component accessibility — Part 20: Software for playing media content convened by Germany and Spain (UAB) see Annex C. This new standard should have all the information regarding interaction developed during EasyTV in the different technologies and components. Given the timeframe for a standard, it is expected this item will be finished in 2021 and the work from EasyTV will be contributed during the development, even though the project will be finished. This shows the resilience of the project.

3. TECHNOLOGIES LEADING TO STANDARDISATION

This section has been drafted to prepare the following Deliverable iteration. It is organised by the technologies developed in the EasyTV project.

Some technologies are built on existing standards, others push existing standard forward, and they will be a good case to become a contribution towards a new version of the existing standard or a new standard altogether.

Though three partners in the project don't develop any technology, they are susceptible to standardisation on Human Factors. For this reason, they have been also added in this document under Human Factors in Section 3.

This contribution to new standards will be one of the resilient features of the EasyTV project, since standards remain in time, and collaborate towards sustainability.

3.1. UPM Image adaptation

Description

This service allows three actions: (a) screen zooming, by which the user is capable of selecting a specific area to be enlarged; (b) face zooming, by which the system, based on an automated face detection algorithm, is capable of enlarging the area where a face is detected; and (c) text detection, which allows the text in the video to be detected and converted to a subtitle (or audio subtitle).

Built on existing standards

Description of technology	Standardisation Organisation / Group	Reference	Name	Related component	Any development in EasyTV?	Link to component if any	Comments
Hybrid digital TV	ETSI	HbbTV 2.0.1 (TS 102 796 V1.4.1)	Hybrid Broadcast Broadband TV	CS and TV terminal	CS application		EasyTV developments are related to the broadband delivery of the contents and they used the synchronization method proposed in the standard
Dynamic Adaptive Streaming over HTTP	MPEG	ISO/IEC 23009-1:2014	Information technology -Dynamic adaptive streaming over HTTP (DASH)		Personalization (WP4)		MPEG-DASH is used to add new access content to the delivered one.
Web Video Text Tracks	W3C	W3C WebVTT	WebVTT: The Web Video Text Tracks Format		Access services (WP2): text detection, subtitles		

					personalization, etc.		
JSON	ECMA	ECMA-404	The JSON Data Interchange Syntax		Access services (WP2)		The info obtained by the application of different deep learning techniques to the content is included in JSON documents to be later processed

Standardisation agency	Standard no.
EBU	
W3C	W3C WebVTT
ITU	
ISO	ISO/IEC 23009-1:2014
INDUSTRY FORUM	
MPEG	
UNE	
ETSI	HbbTV 2.0.1 (TS 102 796 V1.4.1)
ECMA	ECMA-404

3.2. UPM Ontologies

Built on existing standards

Description of technology	Standardisation Organisation / Group	Reference	Name	Related component	Any development in EasyTV?	Link to component if any	Comments
---------------------------	--------------------------------------	-----------	------	-------------------	----------------------------	--------------------------	----------

RDF	W3C	https://www.w3.org/TR/rdf11-primer/	RDF	Ontology and semantic repository	Ontology and semantic repository	https://w3id.org/def/easytv http://easytv.linkeddata.es/sparql	
RDFs	W3C	https://www.w3.org/TR/rdf-schema/	RDFs	Ontology and semantic repository	Ontology and semantic repository	https://w3id.org/def/easytv http://easytv.linkeddata.es/sparql	
OWL	W3C	https://www.w3.org/TR/owl-ref/	OWL	Ontology	Ontology	https://w3id.org/def/easytv	
common methods for HTTP	W3C	https://www.w3.org/Protocols/rfc2616/rfc2616-sec9.html	HTTP	Ontology web service	Web service	http://api.easytv.linkeddata.es/easytv-annotator/	

Standardisation agency	Standard no.
EBU	
W3C	
ITU	
ISO	
INDUSTRY FORUM	
MPEG	
UNE	

3.3. MEDIA VOICE

Built on existing standards

Description of technology	Standardisation Organisation / Group	Reference	Name	Related component	Any development in EasyTV?	Link to component if any	Comments
EBU-TT-D subtitles	EBU	TECH 3380	EBU-TT-D SUBTITLING DISTRIBUTION FORMAT		Converting subtitles from standard text format to audio subtitles		
Web Video Text Tracks	W3C	W3C WebVTT	WebVTT: The Web Video Text Tracks Format		Converting subtitles from standard text format to audio subtitles		

Standardisation agency	Standard no.
EBU	TECH 3380
W3C	W3C WebVTT
ITU	
ISO	
INDUSTRY FORUM	
MPEG	
UNE	
ETSI	
ECMA	

3.4. CERTH

Built on existing standards

Descripti on of technolog y	Standardizati on Organization / Group	Reference	Name	Related component	Any development in EasyTV?	Link to compone nt if any	Comments
User model	ISO	ISO_IEC_24751- 2;2008(E)	Informatio n technology — Individuali zed adaptabilit y and accessibilit y in e-learning, education and training	CS and hyper- personalizat ion	User model editor and hyper- personalizat ion		The common user preferences of the user model are based on the preferences listed in the ISO.
User model	ISO	ISO_IEC_FDIS_ 24752-8(E)	Informatio n technology — User interfaces — Universal remote console — Part 8: User	CS and hyper- personalizat ion	User model editor and hyper- personalizat ion		The user model conditional preference format are based this ISO.

			interface resource framework				
JSON	ECMA	ECMA-404	The JSON Data Interchang e Syntax	CS and hyper- personalizat ion	User model editor and hyper- personalizat ion		User model exchange format.
User model editor	W3C	WCAG 2.0	Web Content Accessibili ty Guidelines (WCAG) 2.0	User model editor	User model editor		User model editor design follows these guide lines

Standardisation agency	Standard no.
EBU	
W3C	WCAG 2.0
ITU	
ISO	ISO_IEC_24751-2;2008(E) ISO_IEC_FDIS_24752-8(E)
INDUSTRY FORUM	
MPEG	
UNE	ECMA-404

3.5. CCMA

Built on existing standards

Description of technology	Standardisation Organisation / Group	Reference	Name	Related component	Any development in EasyTV?	Link to component if any	Comments
Hybrid digital TV	ETSI	HbbTV 2.0.1 (TS 102 796 V1.4.1)	Hybrid Broadcast Broadband TV	TV terminal	Multi-lingual subtitles HBBTV And Screen reader		
EBU-TT-D subtitles	EBU	TECH 3380	EBU-TT-D SUBTITLING DISTRIBUTION FORMAT		Multi-lingual subtitles / HBBTV		
Web Video Text Tracks	W3C	W3C WebVTT	WebVTT: The Web Video Text Tracks Format		Multi-lingual subtitles / HBBTV		
JSON	ECMA	ECMA-404	The JSON Data Interchange Syntax		Multi-lingual subtitles / HBBTV		
DVB Stream Events	ETSI	ts_102809v0 10301p	Signalling and carriage of interactive applications and services in Hybrid broadcast/broadband environments		Multi-lingual subtitles / HBBTV		

Standardisation agency	Standard no.
EBU	TECH 3380

W3C	W3C WebVTT
ITU	
ISO	ISO/IEC 23009-1:2014
INDUSTRY FORUM	
MPEG	
UNE	
ETSI	HbbTV 2.0.1 (TS 102 796 V1.4.1) ; ts_102809v010301p
ECMA	ECMA-404

3.6. ARX

Built on existing standards

Description of technology	Standardisation Organisation / Group	Reference	Name	Related component	Any development in EasyTV?	Link to component if any	Comments
HbbTV 2.0.1	ETSI	TS 102 796 V1.4.1			HbbTV CS and Terminal application		
MPEG DASH	ISO/IEC	ISO/IEC 23009			HbbTV CS and Terminal application		
JSON	ECMA	ECMA-404			HbbTV CS and Terminal app, Service Manager		
WebSockets	IETF	RFC-6455			HbbTV CS and Terminal applications		

HTTP	IETF	RFC-2616			HbbTV CS and Terminal app, Service Manager		
------	------	----------	--	--	--	--	--

Standardisation agency	Standard no.
EBU	
W3C	
ITU	
ISO	ISO/IEC 23009
INDUSTRY FORUM	
MPEG	
UNE	
IETF	RFC-6455, RFC-2616
ECMA	ECMA-404
ETSI	TS 102 796 V1.4.1

3.7. ENG

Description

Built on existing standards

Description of technology	Standardisation Organisation / Group	Reference	Name	Related component	Any development in EasyTV?	Link to component if any	Comments
EasyTv Catalogue	W3C	WCAG 2.0	Web Content		No.		The EasyTv Catalogue user interface follows this guideline.

User Interface			Accessibility Guidelines (WCAG) 2.0	EasyTV Catalogue			
REST API Documentation	Linux Foundation	https://www.openapis.org/about	OpenAPI Initiative 3.0.2	All EasyTv backend components	No.		All EasyTv backend components expose REST APIs and such APIs are described following the OpenAPI Initiative implemented through the Swagger tool.

Standardisation agency	Standard no.
EBU	
W3C	
ITU	
ISO	
INDUSTRY FORUM	
MPEG	
UNE	

4. CONCLUSIONS

The document presents two new sections to the standardisation agencies panorama previously presented in the D7.2.1. Section 2 presents the contributions presented from EasyTV to two standardisation agencies: ITU and ISO. Section 3 is also new and presents the standards used by EasyTV when developing new components for their technologies. This tables have been gathered by partners. Two samples of EasyTV collaboration towards two standardisation agencies are gathered in Annex A and C. Annex B presents the work also developed towards a standard promoted by EasyTV on Sign language presentation for TV.

5. REFERENCES

CEN <<https://www.cen.eu/Pages/default.aspx>> (last accessed 26 July 2018)

CENELEC <<https://www.cenelec.eu/>> (last accessed 26 July 2018)

ETSI <<https://www.etsi.org/>> (last accessed 26 July 2018)

International Electrotechnical Commission (IEC), < <http://www.iec.ch/about/>> (last accessed 26 July 2018)

International Telecommunication Union (ITU) <<https://www.itu.int/en/about/Pages/overview.aspx>> (last accessed 26 July 2018)

ISO < <https://www.iso.org/home.html> > (last accessed 26 July 2018)

MPEG, <<https://mpeg.chiariglione.org/>> (last accessed 26 July 2018)

World Wide Web (W3) <<https://www.w3.org/standards/>> (last accessed 26 July 2018)

6. ANNEXES

6.1. Annex A



INTERNATIONAL TELECOMMUNICATION UNION
TELECOMMUNICATION
STANDARDIZATION SECTOR
STUDY PERIOD 2017-2020

SG16-C463
STUDY GROUP 16

Original: English

Question(s): 26/16		Geneva, 7-17 October 2019	
CONTRIBUTION			
Source:	Spain		
Title:	Easy TV		
Purpose:	Discussion		
Contact:	Pilar Orero	Tel:	+34 622 751 958
	UAB, Barcelona, Spain	E-mail:	pilar.orero@uab.cat
Contact:	Pedro Martín Jurado	Tel:	+34 91 346 2796
	Secretaría de Estado para el Avance Digital, Spain	E-mail:	pmartinj@mineco.es

Keywords: Media Accessibility, Interaction, TV

Abstract: Sign languages are used to make the auditory information accessible to deaf and deafblind sign language users. They can also be used not only to provide a linguistic equivalence of the spoken word but also to convey relevant audio information.

Sign language in the media should also be used to convey written information on screen. First, because a large section of the deaf and deafblind population can experience difficulty reading because of age, sight conditions or reading skills. But, secondly, also to avoid split attention.

The document presents some guidelines regarding Sign Language Interpretation for broadcasting drafted for the EU project HBB4ALL (<http://pagines.uab.cat/hbb4all/>), which can be considered for the joint work item with JTC1 SC35 on sign language production guidelines.

Types of sign language in broadcasting

Recorded sign language

For non-live broadcasting, the preferred type of service would be a sign language translation rather than a sign language interpretation. Recorded sign language can thus provide the best quality for sign language broadcasting.

In a sign language translation, several stages in the translating process could be planned. Additionally, different agents like deaf expert users, sign language linguists or sign language interpreters could be involved in the different stages of the translation processes. This would grant the best quality service. Ideally, the best practice would include mixed teams with deaf and hearing people, who would be bilinguals in both the spoken language(s) and the sign language(s) involved in the interpreting or translation process.

For example, in a text-to-sign translation, a hearing person would do a first translation into sign language and the deaf singer would adapt, re-sign and fine-tune the sign language final text. In the opposite direction, when the translation or interpreting would be from a signed text to a written or

spoken text, first, the deaf user could translate into the written form and then the hearing person would fine-tune the text or rehearse the spoken text.

Live sign language

For live programs, sign language translation is not possible and sign language interpretation is the only possible service that can grant access for broadcasting sign language.

In live sign-interpreted programs, two kinds of sign language professionals could be used: a hearing sign language interpreter or a deaf sign language interpreter. Each professional profile has advantages and disadvantages. For example, hearing interpreters can interpret directly from spoken language to sign language and can be auditorily cued, but sometimes they lack native or natural, expressive sign language, whereas deaf interpreters cannot be auditorily cued. Deaf interpreters need to be visually cued, through printed text, shadowing a hearing interpreter or through glosses, which consist of using written text to represent the structure of the SL. When no visual cues are available, the text should be memorized in advance.

Sign-presented programs

Sign-presented programs using a deaf native signer have been described to be the most effective way to include sign language on screen. Normally, sign language used by deaf native signers provide the best linguistic input. Namely, deaf people tend to be more expressive and can adapt to the register more naturally. But also, they can provide a better cultural input. For example, information organization in a spoken language and in a sign language can be different in order and/ or in quality. Additionally, sign-presented programs provide an empowered image of the deaf community and a more normalised view of the sign languages on screen.

Signing avatar

Signing avatars are virtual signers. The translation systems from spoken language to sign language combine speech-to-text conversion systems, like speech recognition systems, with a text-to-sign translation system that is implemented on a signing avatar that produces that synthesised sign language. Nowadays, more research is needed in the development of all the technologies and linguistic resources involved.

Availability and quality of synthetic sign language varies depending on the language and the country.

Types of sign language onscreen presentation

The most common presentations are:

- a. Sign language on the main screen (either sign-presented or sign-interpreted)
- b. Sign language in a box using picture-in-picture technology
- c. Sign language presented using chroma key technology

Filming the signer

First of all, when filming a signer, all broadcasting technical standards should be met. Illumination is especially important, so that the articulators can be seen clearly and there are no shadows or dark parts on or around the signer.

When filming the signer, we have to bear in mind: the signing space, the shot, and the eye-line.

The signing space is the space that is in front of the signer that is used to articulate all the signs. This is very important because sign language is a three-dimensional language that uses different active articulators such as: hands, arms, shoulders, face, lips, and tongue. All these body articulators should be in the shot all the time.

The signing space is also important and may vary from language to language, signer to signer, or even within different registers.

When filming the signer:

- a. Check the illumination

- b. Check the size of the signing space with the signer when framing the shot
- c. Use a medium long shot (MLS) to film the signer
- d. Leave some room above the signer's head and on both sides when framing the signer
- e. Use an eye-level camera angle with the signers head at the level of the focus
- e. Use a frontal or a semi-profile shot
- f. Maintain the shot

Additionally:

- g. Avoid shadows on or around the signer i. Avoid long shots or close-ups
- h. Avoid cut-offs
- i. Avoid using different shot sizes
- j. Avoid high and low camera angles

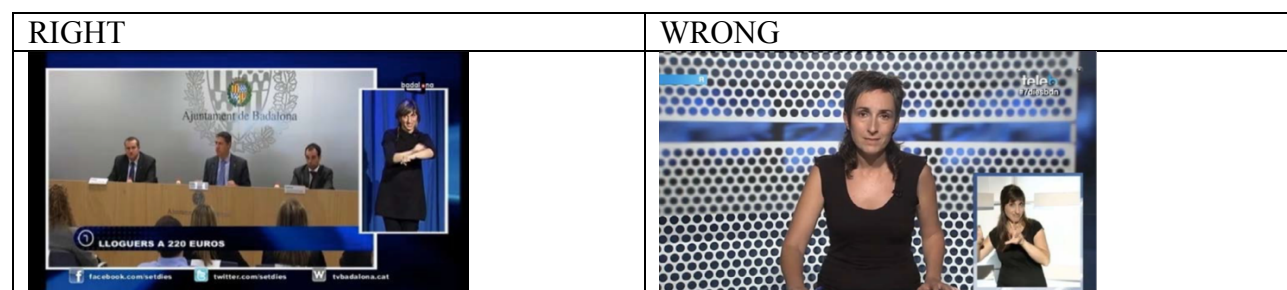


Figure 1 – Examples of correct and incorrect arrangements for filming a signer

Interacting with the visuals and screen layout

Sign language on screen implies presenting a visual language on visual media. One of the key concepts to bear in mind is split attention. Deaf signers need to attend to both the signed input and the visual media. Screen readability is fundamental. Is important to promoting positive interaction with the onscreen visual information and avoiding negative interaction. The signer creates a positive interaction when relating the signing discourse to the visual information onscreen by pointing to the visuals or incorporating the visual properties of the objects on the screen into the signed discourse. On the other hand, negative interaction is created whenever blockings or obstructions occur. In some occasions, visual information, such as the digital on-screen graphics, captions or subtitles, block the signer. It is especially important not to obstruct the facial expressions or the handshapes. On other occasions, it is the signer who blocks, completely or partially, other onscreen visual.

When designing the screen composition:

- a. Facilitate positive interaction between the signer and the onscreen visual information
- b. Provide the interpreter with all the visual information prior to the interpreting/translation service (i.e. clips, graphics, tables, ...)
- c. Let the signer know where the visual information will appear on the screen prior to the interpreting/translation service (i.e. presenters, interviewers/interviewees, clips, graphics, tables, etc.)
- d. Allow time to attend all the visual information on the screen

Additionally:

- e. Avoid any visual onscreen information blocking the signer
- f. Avoid the signer blocking any of the visual information on the screen.
- g. Avoid overlapping of the signers box, when using picture-in- picture or chroma key technology

Colour combination

Colours contrast and combination are very important. Three different aspects can impact colour interactions: background colour, the signer's clothes colour, and the signer's skin colour. The colour combination can greatly affect perception, accessibility, and thus readability. Negative colour interactions can produce eye fatigue to the deaf viewers. Colour contrast have a greater impact on accessibility for deaf-blind users. Deaf-blind people who use the sign language are deaf people who have acquired sight loss: low vision or partially-sighted.

Regarding colours:

- The signer should wear clothes that contrast the skin colour.
- The clothes should be plain (no patterns), and preferably only one color.
- Use a plain, unpattern background to contrasts with the signer skin.
- Use a dark blue plain background to grant accessibility to deaf-blind users.

Additionally:

- Avoid multi-coloured or patterned clothes
- Avoid multi-coloured or patterned background
- Avoid shadows on or around the signer

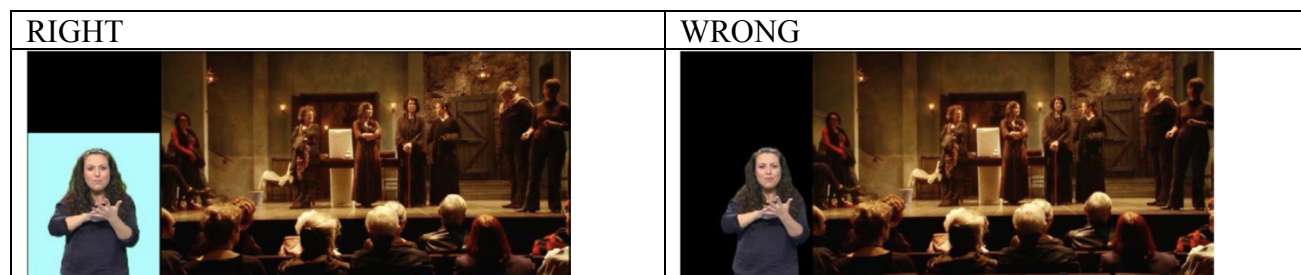


Figure 2 – Examples of correct and incorrect colour combinations

Shape and size of the sign language on screen

Deaf signers normally mention the size of the signer to be the most important feature that affects accessibility. It is especially important for older users and deaf-blind users. Size and shape of the signer also reflect the language status.

Regarding size and shape:

- Present a “human-sized” signer
- Use a rectangular-shaped signer’s box, when using picture-in-picture technology
- Provide a box which is at least 1/4th of the screen width

Additionally, you should

- Avoid miniaturised signers
- Avoid using circular or egg-shaped boxes, when using picture- in-picture technology



Figure 3 – Examples of correct and incorrect shape and size of the sign language on screen

Position of the sign language on screen

Onscreen position may be: left and right positions and also top, central and bottom positions. The most commonly used position is bottom right. Preliminary results using eye-tracker measures showed that left/right positions do not affect readability of the screen. However, it seems that there could be cultural differences regarding side preferences. For example, Spanish deaf signers prefer the signer on the left of the screen, while German signers prefer the signer on the right side. Research has shown that there is a learning effect regarding the right/left positions. That is, the more programs with the same screen

layout the users see, the easier to read the different on-screen visuals. On the other hand, central positions seem to facilitate reading the different visuals on the screen. Position choice is normally made by broadcasters using design criteria rather than accessibility criteria. Still more research is needed.

Broadcasted news are the kind of program that many broadcasters choose to make accessible in sign language. Typically, screen composition for news broadcasting includes the visual information, the hearing presenter and the sign language presenter or interpreter. Eye-tracking studies have shown that deaf people do not attend the hearing presenter. Rather they concentrate their attention on the signer and sometimes attend to the main visual information on the screen.

Regarding the screen position:

- a. Use a central position of the screen to present the sign language
- b. Contact your national association of the deaf (NAD) to know if they have a preferred position.
- c. Choose either a right or left position and use it throughout your broadcasted programs
- d. Place the visuals between the signer and the news presenter

Additionally, you should:

- e. Avoid top and bottom positions
- f. Avoid using different position configurations for different programs
- g. Avoid placing the news presenter between the visual information and the signer



Figure 4 – Examples of correct and incorrect positioning of the sign language on screen

5. Characterization of service provision and service

This chapter will review some previous implementations of the Spanish Sign Language on television, and in general the mode in which sign language appears on television, so it is possible to identify the parameters and characteristics of these implementations.

As far as the modes of incorporation in the television picture are concerned with Spanish sign language, CNLSE (2015) identifies three possibilities of Spanish sign language embedded in the image with audio and sign language as main image.

5.1. Co presentation in Spanish sign language

In accordance with the Report on the presence of Spanish sign language on television (CNLSE, 2015), this form is currently **not used** in Spain. This presentation has two presenters, with the same relevance and sharing the same physical space. One in spoken language, the other being interpreted to Spanish sign language. This form of co-presentation is appropriate given the informational nature of the programme. A clear advantage of this approach is that it provides a standardised view.

Figure 5 shows an example of how this formula of the presentation.



Figure 5.

Sample of co-presentation in Switzerland television RSI.

5.2. Sign language as an image master

In this mode, the Spanish sign language constitutes the main programme content. There is no sign language interpretation of the spoken language message. For example, the programme at the public broadcaster TVE channel La2 in figure 6.

In the image the Spanish sign language corresponds to the main image. Additionally the content -news or report images- is broadcast on a window on the right. It also offers captions (ie with embedded captions in the video signal).

Figure 6.

Spanish sign language as the main-image in the programme La 2.



In other formats we can find a few interesting cases, for example the Spanish SL parts, led by deaf actors for Internet distribution.

Web series: http://www.elspeixos.com/es_index.html

1 Web series: hidendiaf.com/el-objetivo/

Figure 7.

Internet protocol suite capture
Please Use me when you are
talking to you, where
characters are spoken in
Spanish-sign language.



As new in the television environment, the use of Sign Language in BBC children programme as main language with translation into captions as can be seen in figure 8.

Figure 8.

(BBC), where characters
only speak in sign language
translated into captions.



5.3. Spanish sign language embedded in the image master

This is the form mostly used in Spain when integrating the sign language into television and also in other countries.

Sign language embedding has a large number of implementations. On the webpage signlangu.org³⁶ hundreds of programs can be found from around the world. This gives an idea of the wide range of possible parameters that can be configured for the provision of this service.

Which may vary in different service implementations:

- The signing person is placed in a window
- Position and size on the display of the signer
- Size of the window.

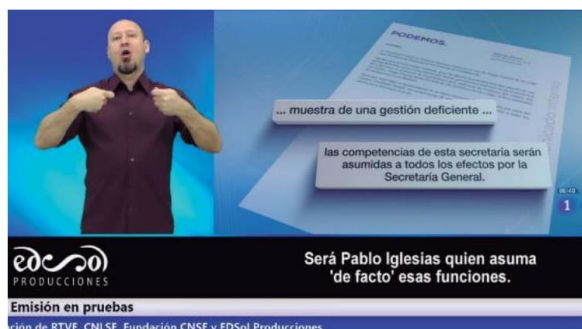
² Full website: <http://signlangpro.org/www/home.php>

It is broadcast in open mode, that is the sign language window is available to all users. The close mode is where the window is shown by user request. The close mode has further possibilities of configuration. The user can vary the parameters according to their needs or preferences. At present, there are only four possible configurations:

- Of the emission of the itself programme per two channels simultaneously, so that the user can select the channel it includes the language of the signs. Of the is Of the mode selected per of the television autonomadic and Alumium-side-channels to offer the language service of the or in all of its schedules through the latter channel.
- The pilot for the european HBB4ALL project carried out by the german RBB TV, based on technology. HbbTV. This pilot has been deployed for an already-issued programme. of the constitution and the convention of the international the simultaneous interpretation of a program has been addressed. which or not to be in the process of being processed on a linear basis. The pilot is based on in the transmission via Internet of a video stream and integrating both the image of the program and the translation. The different personalization options have been achieved by generating different video on the operator.
- The RTVE proposal for the signed emission from the Telecommute based on HbbTV, as described at the CNLSE congress in 2015. The proposal shares many features with the pilot. of the HBB4ALL project with the additional benefit of thought for live streaming content. In the figure 9 shows a capture of the emission tests of signs in HbbTV operated jointly by TVE, CNLSE, CNSE Foundation and EDSOL deliverables.

Figure 9.

Sign language sending test over HbbTV operated by RTVE, CNLSE, CNSE Foundation and EDSOL Productions.



- The Player4All Player, designed for Internet, allows a very simple and flexible configuration of the sizes and positions and others characteristics.

5.3.1 Signer profile

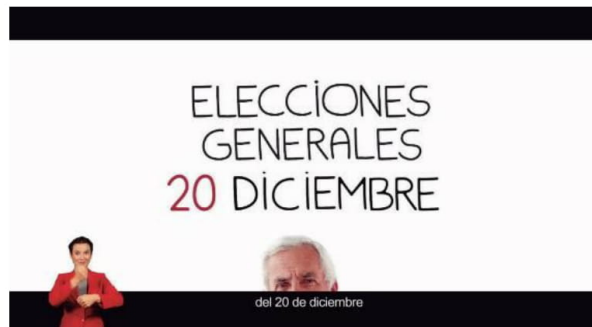
In this mode, the signing person is attached to the background of the image. It has the advantage of obstructing only the part of the programme image that corresponds to the person, unlike the introduction of a window, which occupies a larger area on the screen. The disadvantage is that if the skin colour of the signer is similar to that of the background the absence of contrast may decrease legibility. This requires the use of chroma or chroma-key technique.

In this technique, the person has a homogeneous background usually in green.

This is the modality chosen by some institutional campaigns in sign language, as shown in figure 10.

Figure 10.

Sign language is shown as a profile.



The Spanish sign language in figure 10 is of small size (which severely hampers the understanding). It is placed in the lower left corner of the screen. Another example of different placing is on figure 11. Figure 12, shows a larger size for the interpreter profile.

Figure 11.

Polish language service sample of the TVP-Info. Interpreter is shown in the profile mode.



Figure 12.

Sample of the sign language service of the Czech Republic. The interpreter is shown in the profile mode but with a larger interpreter size.



In figure 13 can also be seen the identification of the TV channel along the interpreter, in this case Spanish 6th channel.

Figure 13.

Sample of Sign language interpreter and channel logo.



Note that the above samples do not incorporate captioning. If captioning is included the image distribution should be redesign to avoid superpositions.

Figure 14 shows the profile interpreter in the Disney Channel. This has been designed for children

Note the many pictograms and icons audio subtitles, and the fact that the position of the signer does not respect the safety margin of the screen.

Figure 14.

Sample of the service In Disney Channel.



5.3.2 Sign language for a window

Spanish sign language interpretation through a window is a common way to provide this service in Spain, as shown in figure 15, captured from the channel Antenna 3 news program.

Figure 15.

Sample of interpretation service in sign language of the HD Antena 3 channel. A long window is used for the signer.



In this case, we see how the window hides a large portion of the image.
The window can be located at different positions of the screen.

Figure 16.

Sign language in the Italian television where larger window is used.



Figure 16 is intended to show that the window size need not be an impediment to sign language integration, but it is true that in this occasion the content to be interpreted is shown in another window whose dimensions are reduced.

Figure 17 from the Spanish Home Office press conference during the general elections in June 2016. In this case, the signer window is to the left bottom position. In addition, the window has the shape of rectangle, as in the previous case of figure 15. The type of plane chosen makes the signer to be small, even if the window is not. In this size it may be challenging reading face expressions.

Figure 17.

Sample the Spanish sign language service in the mode of the window on an institutional signal produced by the Home Office.



Figure 18 shows an example from public Portuguese TV RTP, which is one of the non-dedicated European channels with highest number of hours for Sign Language. The window is small size and the signer plane is so close that has little space to sign.

Figure 18.

Shows the sign language interpretation service in the RTP Portuguese television in the window mode.



To complete this revision the KBS channel, in Korea, may be mentioned. Oval shape for the signing window is shown in figure 19. This way, which is not common in Spain, can be a compromise between minimizing the area of the screen occupied by the window and keeping a sufficient room for the signer to interpret. However, in this case the signer is too small.

Figure 19.

Sign language interpretation service in Korean TV KBS. Using an oval window.

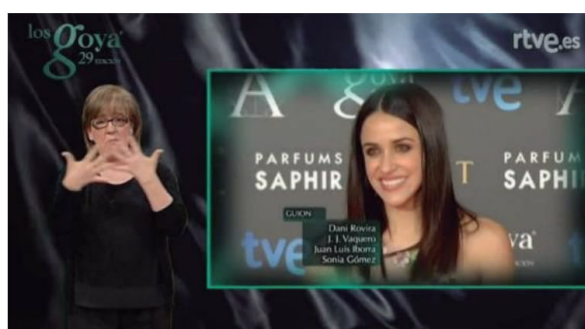


5.3.3 Programme and sign language image composition

composition This section concerns the composition as a means of spatial distribution of the image, the language, and the captioning. As well, both video signals can adopt different positions on the screen and different effects. The optimal composition will be that where sign language will not conceal any part of the programme, this is achieved by scaling as illustrated in figure 20.

Figure 20.

Sample from the Spanish RTVE Goya Awards 2015.



The following figure illustrates this aspect of the composition, with another type of distribution.

Figure 21.

Sample of Christmas message at Spanish public channel RTVE.



In figure 22 from the electoral debate with Spanish open captions and sign language.

Figure 22.

The signer window does not shadow the programme.



Note how the aspect ratio between the two dimensions of the picture.

Figure 23.

Same image as figure 22 with no SL window.



In figure 24, a capture of SL service questions the minimum conditions of the intelligibility: background homogeneous, brightness, size and framing

Figure 24.

Sample the interpretation service TVE.

In figure 25 from the BBC is a good example from the



programme *Breakfast* in the BBC NEWS channel. In this case, the composition is different: the signer is not constrained to a window and has a higher dimensions to improve intelligibility.

Figure 25.

BBC News sign language interpretation service. The interpreter becomes more relevant on the screen.



Same disposition in the Belgium TV RTBF in Figure 27. Spain is taking into account these dispositions and have implemented them in sample 26.

Figure 26.

Sign language service on South-Channel 2.



Figure 27.

Sign language interpretation service for the Belgian TV. The signer occupies the foreground



Figure 28.

Sign language interpretation service in Switzerland. The signer is to the left.



Figure 29 belongs to the sign language configurable application pilot that the German broadcaster RBB deployed in the framework of the European HBB4ALL project based on the standard technology HbbTV. In this implementation, it is possible to choose both the size of the interpreter, also the position, and the composition. For example, the signer is floating of the left and the

program window which is not rectangular, but has been altered to give a sense of perspective; and depth.

Figure 29.

Sign language service on the HbbTV standard by the German RBB operator deployed in the HBB4ALL project.



6. Recommendations

6.1. General views

There are large variability for the parameters of the interface graphic in the language of the signing, in the terms of use of the window, or profile, the size of the signer, the window of the signal of the programme; of the distribution in the screen for both signals of the video; of the plane used for the of the signer, etc.

From reports from Ofcom, 2006, CENELEC, 2003, EBU, 2004, FTDD, AENOR (2007)

- Sign language interpretation service should be configurable;

as well as activating and deactivating the service, to the extent that technological possibilities allow it.

- If a programme has been offered with sign language in linear broadcast, the sign language service should also be offered in the same programme for other formats such as on-demand web applications of the type of TV on the on-demand side TV or connected TV Applications (such as applications HbbTV).
- The provision of sign language service which requires the use of additional reception or presentation devices is harmful to the people who need the service
- For sign language, the video signal for this service and the audio signal being interpreted or translated should be approximately synchronized, although the syntax and grammar of both languages are different.
- In addition, the simultaneous interpretation is characterized by a phase offset, by the need to move from the spoken language into sign language. This recommendation needs to be taken into account specially for those implementations of the service using IP-based networks
- Captioning and sign language should also be available
- Sign language interpretation should not be restricted to translation or sign language interpretation.

- The right of all users to have a television access and the possibility of offering both subtitling and signing are not incompatible in no case one service can be replace the other.

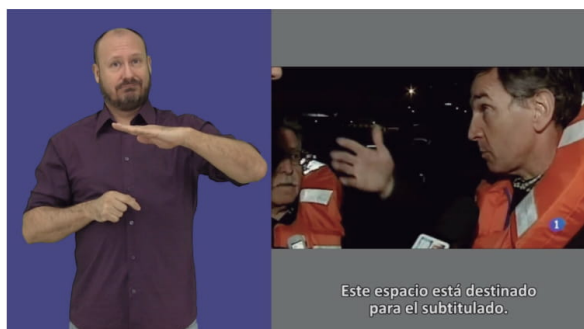
The following figures show one of the possible composition formulas which gather much of the recommendations which are set out in this guide, based not only on the different studies here.

Figure 30.

Example of composition: plane, framing, and size.

Figure 31.

An example of a composition which, unlike the one above, is closer to the needs posed by people who are deaf-blind, including completely separate spaces.



On the other hand, the provision of service should be increased by number of weekly hours, beyond the minimum stipulated in the General Law of Audiovisual Communication. And in this regard, it is recommended that:

- Diversifying its content and its own sorts that need to be considered taking into account the needs of the developing countries and at least one-half the number of vice-chairmen. signs.
- Increase year by year the number of hours of service in Spanish-sign language, taking into account technological opportunities and user needs. Subtitling is a good benchmark in this case, as several channels are now fully captioned in practice.
- Schedule delivery of service into a variety of times including extremes of audience, avoiding the concentration of signed spaces at times of lower consumption, as happened with frequency.

In order to comply with these recommendations, existing and already deployed open technologies, such as HbbTV, an European Standard for Connected TV, may be used without prejudice to any technologies that may emerge in the future.

6.2. Recommendations techniques

- Transmission of sign language should be technology-based and using open and interoperable standards (eg, MPEG-DASH for adaptive streaming in service implementations which pursuant to article 31 of the international telecommunication convention (Nairobi, Internet).
- The acquisition and processing of the video signal should preserve the contrast between the skin colour of the signer and its clothing, as well as with the background. Depending on illumination, the dynamic range to work along the chain, colour spaces and colour correction processing (etalonze).

- The transmission bit rate should be sufficient to ensure a good intelligibility of sign language, whether transmitted embedded sign language in the program video as if it is transmitted as an independent video signal. Low bit rate would cause the appearance of video effects that would make correct interpretation of facial expression and sign details. The specific bit rate to meet this recommendation is also dependent on the video coding standard chosen (in of the MPEG -2 standards are being used; H.264/AVC in video coding for broadcast television applications, although the H.265/HEVC standard can be deployed in the medium term; other formats are additionally used such as VP8 and VP9). Low bit rate (eg due to low user-rate) can result in unintelligible service, as well as altering the rate of video playback, as gaps should interrupt the fluidity of the sign on and make it difficult to understand.
- Sign language is a visual language at a rate of which may be similar to the acquisition of sporting events. In such cases the audiovisual production requires additional adjustments to ensure adequate picture quality. These adjustments are even more necessary if the chroma-key technique is used to include the person's image in the profile mode. Plus a correct illumination of the recording set with at least five points of light (two for the chroma background and three for signer) it is necessary to adjust the shutter speed of the video camera with values that eliminate the blurring effect blur of the rapid movements of the hands and arms. This defocussing effect on the use of chroma has an associated visual artefact: the occurrence of the green colour of the chroma background. Shuffling speed values less than $1/125$ s are usually appropriate; however, is recommended un value of the $1/250$ s For compensate for of the path loss of the light

due to a shorter opening time, the camera's openness of the camera can be changed.

- With the same objective of improving the definition of the vision. hands and moving arms, it is recommended to use progressive formats instead of interlaced formats.
- The composition of the programme video and sign language must take into account the usual precautions related to the safety margins around the screen to prevent part of sign language from being clipped at the receivers.

6.3. Recommendations on the a of the production and implementation of the service

6.3.1. Related to composition

This section deals with the way the television display is composed to host both the video of the programme chat window or subtitles.

According to the CENELEC (2003) report, the signer should have sufficient size and sufficient resolution to show all the movements of the talking head, the arms, the hands, shoulders, and all movements and facial expressions. Size and resolution should also allow for lip reading (CENELEC, 2003). The same report also mentions that signs must be recognized in an easy and accurate way.

- It is recommended that sign language service be added on the left side of the screen, if personalization is not possible.
- Deaf-blind people will benefit from a bigger signer size window with a circumferential rainfall rate, and of the colour dark which ensure the contrast between background and figure.
- In composition, implementations should prevail giving relevance to sign language with respect to the signal of the program.
- Some audiovisual works will require to minimize the area of the occupied screen by the sign language, while other programmes shall not have strict requirements in this regard.

- No detail or graphics obscure the reserved space for sign language. To that end, both captioning and signage should occupy different spaces.
- The signer and news speaker should be located at the same height in order to improve legibility.

6.3.2. Recommendations on the appearance of the person which signs

- The clothing of the signer must have a high contrast to its skin colour, for the sake of clarity of the movement of the hands and the final expression.
- The clothing of the signer person should have uniform colour and texture.
- The clothing of the signer should not distort the profile.
- The clothing of the signer must not have any elements which highlight or lead to unwanted effects
- The signer should not wear jewellery or other objects which can distract or cause reflections and briques.
- The signer should select their clothing in function of the genre of the TV programme (eg political debate or child program).
- The face of a person must be free of unnecessary or superfluous elements which reduces the perception of the facial expressions.

6.3.3. Recommendations on earthing in the scene and of the acquisition point

- If possible allow for background configuration. If not possible, the background should be such as to maximize the understanding of sign language.
- For deaf-blind people, a darker background is necessary (preferably dark blue) so as to ensure a contrast of the figure from the background.
- In respect of the conditions under which the signer person is to conduct its work, this should be the whole set (depends on programme) the radio-relay system, the radio-frequency spectrum, the radio-frequency spectrum and the broadcasting-satellite service, as well as the broadcasting service (sound) and some visual or sound communication system to synchronize sign language. In addition, it should be able to be contacted with technical staff before and during the interpretation. Debris-Brann (2002) provides some guidance on television interpretation. In the frequency bands allocated exclusively to the broadcasting-satellite service (sound) live sign language implementation must take into account the delay which is to be produced due to the interpretation.
- Framing should be co-sited with the panic space, space in the one that extends the sign language, and the top requires a space over the head, in the sidebands, space sufficiently for the articulation of the arms

and at the bottom the limit could be of the height in the of the which is to be sought

- Front-plane, camera-to-height of the eyes of the signing person. A semi-profile plane has sometimes been used to hold less space in screen but this type of the plane decreases intelligibility for deaf-blind people.
- Good illumination to the body of the signing person taking care also for an excess of light.
- The illumination should avoid shadows on the face of the interpreter and the hands when they cross in front of it, paying attention to the importance of the facial expression.
- Illumination should avoid shadows in the background.

6.4. Related to signalling service

Sign language should be properly identified for their audience. This identification can be done in the form of iconographies, ie of an image that would allow a clear recognition of the provision of the service. The directory recommends the following ITU icon in figure 32, as an image already known which has been used to denote the existence of sign language in different supports technology.

Figure 32.

Icon proposed for identifying Spanish sign language in television.



7. Quality aspects language

The inclusion of Spanish sign language into a medium such as television within the exercise of the language rights of the deaf y deaf-blind users of sign language. The societal value of television is indisputable, and provides political understanding, assess or evaluate the relevance of information today, share the most popular television time and above, ultimately, to participate in social and cultural life.

In interpretation, the professional can only conduct a documentation process and an overall review of the topic before the interpretation is carried out. In general, he was aware of the subject to be dealt with, but not how, which depth point. He does not have the possibility of backtrack in the run-out of his/her excellency interpretation. Unlike the translator, cannot have any words or signs changed to replace them with others. Clearly the linguistic quality (and literary, as appropriate) of the translation is always greater as long as the professional has tools for reflection and takes into consideration the most appropriate formulas for expressing the content as well as being more consistent with the communicative intent and interests of the target population of the programme. And in the case of television interpretation, the situation is complicated by somewhat lower consideration as it is not possible for the professional to provide parties in the field, obtaining no feedback from users, and not therefore with the possibility of asking for clarification or iterations of the of the information object of the interpretation.

Interpretation is a process in which a, one at a time, linguistic decisions are taken in turn. While in a translation the professional can collate, contrast or reflect any linguistic solution, the interpreter does not have time to do so, only has its professional background, his experience, its ancient knowledge and its level of expertise in both languages. Also, because of the difficulty with interpretation in a media such as television, very high-rise professionals are required at the profession and with some prior training in situations of similar complexity. By doing so, it commits the service causing serious harm to the image of the Spanish-sign language and, therefore, to that of deaf and blind people users of the sign language.

Each professional exercise conforms to the requirements and needs posed by the counterparts, gender and the audio-visual format. If the content is recorded, it is advisable to make use of professional translation with an optimum level of Spanish-sign language, who can best suit the translation of the context and target population. To that end, deaf and blind people to build a positive and real image of deaf

people and their potential as producers, implementors and translators of the contents in audiovisual teleservices in the language of the

signing up to the current underrepresentation of this collective in television. On the other hand, if the programme emission is live, simultaneous interpretation is required and the techniques and strategies to be implemented are different.

As well as linguistic resources such as the type of vocabulary used, the status of the registry closest to each situation, the subject, the direction of communication, and a long-established language with regard to linguistic and foreign language aspects as a function of context.

The details of the above-mentioned characteristics and professional requirements suggest measures to minimize the intensity and difficulty of the task. Then it is necessary to establish rest time-shifts, preparation, caution in coordinating, monitoring, spaces and tools.

As far as the professionals are concerned, qualification professional experience, extensive professional experience and television are required.

For the selection of translation and interpretation professionals in Spanish-sign language in television, it is recommended that representative entities of the user linguistic community have been consulted with the recognized prestige in the promotion and dissemination of Spanish-sign language.

Some recommendations are given below to facilitate the issue of television-programme content in Spanish-sign language:

- Distinguish parts that could be translated and not interpreted.

- To establish work plans and deadlines to secure availability of quality professionals.
- Maintain partnerships and have feedback with Sign Language communities.
- To test the quality with end users.
 - Introduce the figure of the Spanish Professional Sign Language Interpreter.
 - Interpreters should take thirty minutes rest every 30 minutes of interpretation. For a programme of more than two hours, it is recommended to use three professionals.

Especially for translation and interpretation.

- To recognize the specific terminology for each TV programme or sound broadcasting.
- To identify a priori dynamic agents for each TV space or sound broadcasting.
 - Detect errors (omission, substitution, addition, intrusion).
 - Use translation and interpretation resources (glossaries, terminology files, etc.) to resolve situations of the interpretation which affect different terminological issues (impossibility of literal translation, no mapping) ie, no sign, etc.).

- Apply the techniques and tools proper to simultaneous translation and interpretation, as appropriate correct any message bearing in mind the rules professionals.
- Make channels available for peer-to-peer coordination (production, implementation, interpretation, etc.).

6.3. Annex C



DATE:

ISO/IEC JTC 1/SC 35 User Interfaces Secretariat: AFNOR

DOC TYPE: Preliminary report
TITLE: TS 20071-20 "Information Technology — User interface component accessibility — Part 20: Software for playing media content
SOURCE: Thorsten Katzmann and Pilar Orero
PROJECT: 20071
STATUS:
ACTION ID:
DUE DATE:
DISTRIBUTION:
MEDIUM: E
NO. OF PAGES:

Secretariat of ISO/IEC JTC 1/SC 35 AFNOR —
11 rue Francis de Pressensé 93571 — La Plaine Cedex Saint-Denis - France
Telephone: +33 1 41 62 85 02; Facsimile: 33 1 49 17 90 00;
e-mail: philippe.magnabosco@afnor.org

PRELIMINARY REPORT

ISO/IEC TC JTC1/SC SC35/WG 6
Secretariat: AFNOR

Information Technology — User interface component accessibility — Part 21: Guidance on audio descriptionst

Warning

This document is not an ISO International Standard. It is distributed for review and comment. It is subject to change without notice and may not be referred to as an International Standard.

Recipients of this draft are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

Document type: Preliminary report
Document subtype:
Document stage: (30) Committee
Document language: E

Copyright notice

This ISO document is a working draft or committee draft and is copyright-protected by ISO. While the reproduction of working drafts or committee drafts in any form for use by participants in the ISO standards development process is permitted without prior permission from ISO, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from ISO.

Requests for permission to reproduce this document for the purpose of selling it should be addressed as shown below or to ISO's member body in the country of the requester:

[Indicate the full address, telephone number, fax number, telex number, and electronic mail address, as appropriate, of the Copyright Manager of the ISO member body responsible for the secretariat of the TC or SC within the framework of which the working document has been prepared.]

Reproduction for sales purposes may be subject to royalty payments or a licensing agreement.

Violators may be prosecuted.

Contents

- 1 Scope 71
- 2 Terms and definitions 71
- 2.1 General terms **Error! Bookmark not defined.**
- 2.2 Audio specific terms **Error! Bookmark not defined.**
- 2.3 Language of presentation terms **Error! Bookmark not defined.**
- 2.4 Audio description production terms **Error! Bookmark not defined.**
- 2.5 Caption or subtitle production terms **Error! Bookmark not defined.**
- 3. Access services **Error! Bookmark not defined.**
- 4. Portal **Error! Bookmark not defined.**
- 5. User interface **Error! Bookmark not defined.**
- 6. Assistive technologies **Error! Bookmark not defined.**

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

In other circumstances, particularly when there is an urgent market requirement for such documents, a technical committee may decide to publish other types of normative document:

— an ISO/IEC Publicly Available Specification (ISO/IEC PAS) represents an agreement between technical experts in an ISO working group and is accepted for publication if it is approved by more than 50 % of the members of the parent committee casting a vote;

— an ISO/IEC Technical Specification (ISO/IEC TS) represents an agreement between the members of a technical committee and is accepted for publication if it is approved by 2/3 of the members of the committee casting a vote.

An ISO/PAS or ISO/TS is reviewed after three years in order to decide whether it will be confirmed for a further three years, revised to become an International Standard, or withdrawn. If the ISO/PAS or ISO/TS is confirmed, it is reviewed again after a further three years, at which time it must either be transformed into an International Standard or be withdrawn.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO/IEC TS 20071 consists of the following parts, under the general title *Information Technology — User interface component accessibility*:

Part 11: Guidance on text alternatives for images

Part 21: Guidance on audio description

Part 23: Guidance on captions and subtitles

Part 25: Guidance on spoken subtitles or captions

Introduction

This Primarily Report - ISO/IEC TS 20071-20 provides media accessibility developers and practitioners with guidance in the different modalities towards deploying a software for playing media content with access services. The circumstances to which accessibility services applies include recorded video, broadcast and broadband television, cinema, live or recorded drama, museum and art gallery exhibits, heritage tours, news, comedies and, among others. Some of this content is static and unchanging, some is dynamic, some is expressed in a visual modality alone and some in a combination of visual and auditory modalities.

Audiovisual material is produced for people who can see and hear. It is also typically produced in a specific language for a particular audience. Translations of the original auditory content and associated audio description can be provided in different languages. Providing audio description and translating into other languages can be beneficial to diverse users in diverse contexts, including: persons with sight loss, persons with learning difficulties or cognitive impairments and, in the case of translation, persons who need the content to be in another language. Translating subtitles and other on-screen text and providing those in auditory form can also be beneficial.

Information Technology — User interface component accessibility — Part 21: Guidance on audio descriptions

Scope

ISO/IEC 20071-20 provides guidance about accessibility issues regarding players of media content. A player needs to be accessible and allow the user to personalize its use to make the content accessible. Some media players are not accessible to people with disabilities.

ISO/IEC 20071-20 describes accessibility functionality for media player. There is mandatory functionality providing a user interface that works without a mouse, through speech interface, when the page is zoomed larger, and with screen readers.

And functionality ensuring that the content can be provided accessible such as:

Changing the speed of the video

Setting how captions are displayed (e.g., text style, text size, colors, and position of the captions)

Reading the captions with a screen reader and braille device

Interactive transcripts

Normative Reference

[later]

Terms and definitions

For the purposes of this document, the following terms and definitions apply.

[later]

Accessibility considerations for media players

4.1 Labels or names for player controls

Consistency is required

Controls are clearly identified

High contrast, scalable controls that remain visible in Windows High Contrast mode, plus an easy-to-see focus indicator so keyboard users can easily tell which control currently has focus

4.2 access to media player controls

For access to the media player controls ISO/IEC 27001-5 shall apply.

4.3 User interface

The user interface shall be compliant with ISO/IEC 40500 (WCAG 2.0).

[Icons need to be defined.]

4.4 Access services (Support for captioning and audio description)

4.4.1 Supported features for Subtitles (ST):

For subtitles ISO/IEC 27001-23 shall apply.

4.4.2 Supported features for Sign Language (SL):

For subtitles ISO/IEC 27001-21 shall apply.

4.4.3 Supported features for Audio Description (AD):

For subtitles ISO/IEC 27001-25 shall apply.

4.4.4 Supported features for Audio Subtitles (AST)

For subtitles ISO/IEC 27001-23 shall apply.