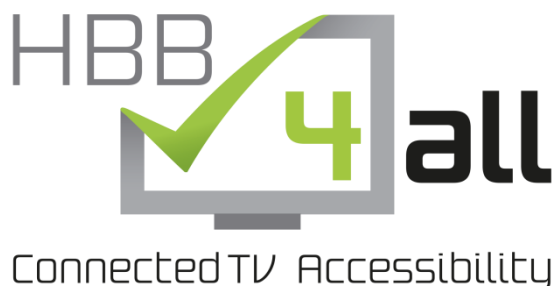


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Executive Summary

The Hybrid Broadcast Broadband for All project (HBB4ALL) investigates accessibility services in the new hybrid broadcast-broadband TV (HbbTV) environment. One of the outcomes of this project is to establish objective benchmarking for service quality.

This project will deliver objective benchmarking for accessibility services: subtitling, audio description and sign language. This document presents the intermediate results of T2.6 within the HBB4ALL project for the first project period. It includes an overview of the approach, methodology, goals, current status and progress.

1. Introduction

The Hybrid Broadcast Broadband for All project (HBB4ALL) investigates accessibility services in the new hybrid broadcast-broadband TV (HbbTV) environment. All media service providers, specifically broadcasters – both public and private – are required to increase the amount of programs supported by access services, and ensure the **quality** of the service. One of the most prominent challenges faced by all providers is to establish what is quality in order to comply with the many existing standards and guidelines.

Purpose of the document

This document presents the activities and intermediate results of the work towards defining quality of services in HbbTV. First we have tried to redefine quality in a new light, as opposed to the “one size fits all” approach. The coexistence of numerous public and private documents dealing with quality show the complexity of “access services”. This document is intended to show the structure and approach of final report, once we have gathered objective measures. The report will offer information to the many stakeholders in the accessibility service chain, and this means that often there are repetitions. This is because we have anticipated that a stakeholder will only read the information aimed to him/her. This document is dynamic and we shall adjust the scope of reporting if a better way is suggested in the first project review.

2. Quality Metrics for TV Access: Quality for All

Defining quality for all

Too many stakeholders are involved when broadcasting media accessibility content to define one quality for all:

- for all services
- for all stakeholders
- for all processes
- for all countries
- for all language conditions
- for all budgets

The project will scale quality to qualities, from a unique value for quality to the many and different qualities we shall define. While it will be impossible to do a closed taxonomy, it is important to decide on a system to gather information, and in HBB4ALL we have taken the stance of organising quality required by stakeholders. An important part of HBB4ALL effort is devoted to understanding and drafting qualities, which will be made to measure, and from where we can draft recommendations. HBB4ALL will also define quality by striving to understand what users expect and is already defined by the rest of stakeholders.

The project has as one of its objectives to identify improvements to existing access services and ways of addressing the key technical, organisational and legal obstacles to the sustainable take-up of these services throughout Europe. The issue of quality is crucial since some EU countries have now fulfilled the quotas of broadcast services required by each national agency/regulator. Since mandates require complying with both quantity and quality it is now high time to define what is quality.

In HBB4ALL we shall define quality metrics using several approaches, with the novelty of user-centric tests, some of these which began in the previous project DTV4ALL and are now continuing in HBB4ALL.

Being an ETSI standard, HbbTV is currently linked with the DVB TV system family but can, in principle, be used in conjunction with any digital TV service in the world. DVB is widely used throughout all continents. Sooner or later, all countries in the world will have completed their analogue-to-digital switch-over. As a consequence, the results of HBB4ALL can be of worldwide relevance and should, through standardisation bodies such as the ITU or ISO, also be publicised on a world-wide level.

The project will test access services in manifold pilot implementations (from the definition to the operational phase). It will also gather implicit and explicit user feedback to assess the acceptance and the achievable quality of service in the various delivery scenarios (broadcasting, hybrid, full IP) in Spain, Germany and Switzerland.

The evaluation of the pilot implementations of the HBB4ALL broadcast partners in the six months pilot phase at the different sites will bring extensive results as to user needs and potential improvements of the novel services. In addition the complementary user testing on the quality of accessibility services performed by UAB in lab tests in different European countries will bring extensive results which will enrich the pilot service validation results and vice versa.

Two different approaches....

Broadcasters have to fulfil national regulations regarding access services in two very different fields: quota of services and quality of services. User associations and national regulators across Europe have focused on the issue of quantity, which is checking that proposed quotas are achieved by broadcasters according to national laws, or directives. Checking quota is a straightforward exercise, since it has been established that the measure is by number of hours per period of time (week, month, year), whereas looking at quality is a more complex exercise. Establishing benchmarking for quality is a more complex exercise, and at present there is no holistic agreed model. Some regulators, such as OFCOM have started to look for systems to measure quality, for example in quality in accuracy in subtitling by re-speaking, and some broadcasters have developed software programmes to apply existing models (NER) to their production output. Other regulators such as Australian ACMA were given the task of developing a standard which could be used to determine whether broadcasters are fulfilling their new caption quality obligations. The ACMA held a series of meetings with the television industry, caption suppliers and community representatives and has taken “a holistic approach to considering the quality of a captioning service” and has decided “not to specify a preference for how programs should be captioned”. Instead it will “focus on the outcome for viewers, regardless of the captioning method used”. The ACMA has decided against using ‘metrics’ to gauge caption quality (such as a minimum accuracy rate or, for live captioning, a minimum time lag between the audio and captions appearing on the screen). “The use of metrics,” the ACMA states, “could create a narrow focus that would detract from considering whether a captioning error, or a particular time lag, affected whether the captioning service was meaningful to deaf and hearing-impaired viewers.”

Given the two different approaches, the HBB4ALL project proposes a quality measurement system following a bottom up approach: looking at the service provided and checking at what levels it is accepted. This approach is taken since “quality” will have different definitions to different stakeholders in the value chain. For example while users will balk at delayed subtitles produced by re-speaking for longer than 14 seconds, broadcasters may be happy with the result because the language accuracy rate is of 97%. This task will look at the proposed services for HbbTV and will check quality benchmarking for each actor in the value chain.

To complement and enrich the aforementioned metrics and quality evaluation, simpler standard metrics and Key Performance Indicators (KPIs) can be added to the data. Indicators can include basic audience

measurement data such as video views, percentage of video viewed aggregates, total viewing times, user retention, number and nature of user sessions, etc. This enrichment is particularly important when figures are analysed bearing in mind usage of HBB4ALL-specific pilot features both for service and content, such as the availability of better subtitles, multiple language support and any other features implemented within the project and are compared with existing or new applications not sporting such features.

Metrics from this task will be fed in month 34 into the pilots performed by broadcasters. In this way we shall test new Hbb services and models for quality metrics to tests the quality of services.

Our concept of of "quality" is not as a universal and unique measure, but one encompassing the many definition and metrics for quality from the perspectives of the key stakeholders in the value chain. With this in mind we have organised the deliverable in a section with the rationale behind benchmarking, and a user friendly table to allow for a quick check on the values.

We have defined the following stakeholders:

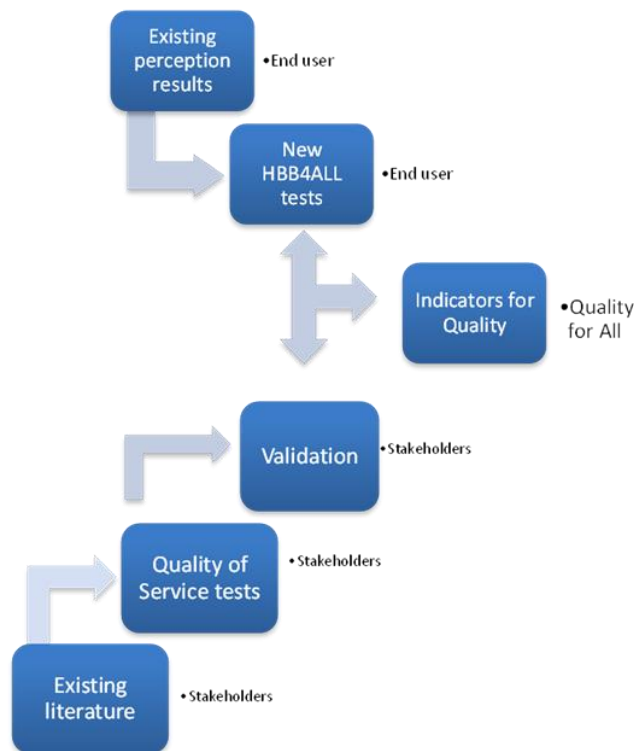
- End-user
- User association
- Content provider
- Broadcaster
- Regulator

The methodology behind quality benchmarking will be as follows.

For end users we shall work with perception measurements and also Quality of Experience (QoE) tests in order to define quality indicators. For example a certain subtitle reading speed may be identified as the best, from end user tests, while user associations or content providers may equate quality with verbatim subtitles and a faster reading speed. Quality of Service (QoS) and existing literature will be used to find indicators for other stakeholders, since they are not "human" and cannot take perception tests.

When, during the life of the project, we have found Figure quality indicators for end users, we shall validate them.

The first step, which is the content of this deliverable, is a revision of all existing literature for quality issues by standardisation organisations. In the next deliverable we shall collect information from the rest of stakeholders, we shall draft a list of indicators, which will be taken to the stakeholder to order the list taking into account priorities, and adding any indicator which may have been overlooked in the existing publications. Once we have final lists we shall validate them following the process represented in the chart below.



In this first deliverable we have attempted to organise what will be the final delivery, and rather than prepare a document to fulfil temporary requirements. We have made an effort to create a comprehensive report which gathers existing documents, and paves the path for tests and the final result. This document will be also the first attempt to cross guidelines and standards with technical standards, since there is a long history of ignoring each other, and success will be rated at comprehensive indicators. We anticipate that this document is important and relevant. While it is not issued by a regulatory EC body, it will be used for many EU countries and regulators as a reference. It is for this reason that special attention has been made when drafting indicators from existing literature, trying to gather all possible documents not only from Europe, but also across the world.

Section 1.2 looks at all documents used to draw existing definitions and indicators for quality. We list the documents since they cannot be reproduced here for copyright purposes. After describing the source and function of each document a short executive summary concludes the section, gathering as many indicators as were found.

Section 1.3 looks at existing results for user perception, and also to the user tests we are producing for this project. It is expected that while not performing all required tests, many basic experiments in lab conditions will be taken on board, and the project will also point to future tests which need to be performed.

Section 1.4 will collect documents related to quality and broadcasters and 1.5 will do the same for service providers. While the latter are private companies, and they tend to keep quality in house standards as confidential, we have gathered as much information as possible.

Section 2 of this document looks at quality by services that is in relation to subtitling, audio description, sign language, etc.

This document is dynamic and it is expected that changes may take place when work is developed.

2.1. Standards and guidelines

A unified European HbbTV standard will mean easy exchange of files, formats and content across EU. It will mean optimisation of resources and duplication will be avoided, facilitating the uptake of regulation of media accessibility, and standardization is needed in order to be able to seize the potential benefits of HbbTV.

In order to determine the metrics established in standards from different countries, we have looked at the following guidelines:

2.1.1. European guidelines and standards

In this section we have included a series of official documents created by national regulators regarding accessibility to content or services. Regulators are listed in alphabetical order: AENOR (Asociación Española de Normalización y Certificación), BAI (Broadcasting Authority of Ireland) CSA (The Conseil supérieur de l'audiovisuel) and UK's Ofcom (Office of Communications)

A separate section has been created for standards relating to technologies: ETSI (European Telecommunications Standards Institute) and EBU (European Broadcasting Union) technical standards.

2.1.1.1. AENOR - Asociación Española de Normalización (Spain)

The Spanish Association for Standardization and Certification (AENOR) is a private non-profit organization dedicated to the development of standards and certification (N + C) in all industrial and service sectors.

Documents:

- UNE 153010 on Subtitling
- UNE 153020 on Audio Description

UNE153010 Subtitling for the deaf and hard of hearing

The objectives of the standard for subtitling are, first, to establish minimum quality requirements in subtitles and, second, to help homogenisation of subtitling practice. The intended target users are content and service providers, broadcasters and regulators.

In the development of this standard AENOR has collaborated with technological institutions as well as user associations.

The document is divided in the following categories:

Visual aspects (positioning, number of lines, number of characters per line, font size and type, colour contrast), temporal aspects (speed, synchronicity, latency), character identification by means of colour, tags and hyphens, sound effects, contextual information, music and songs and editorial (breaks) and grammar and typographical criteria). It adds the parameter of verbatim transcription. No difference is recognised between live/pre-recorded content.

UNE 153020 Audio Description for the visually impaired. Requirements for the development of audio description and audio guides.

This document establishes a code of good practice for producing audio description scripts and basic requirements to be taken into account by those conducting audio description productions for visually impaired people. Access to content by audio description is described for: television, theatre or audio guides. One of its main goals is to establish minimum quality requirements in this field and a reasonable degree of consistency in the elaboration of audio description.

The following processes are defined: preliminary analysis of the work to be described, writing and proofreading the script, locution and sound mix. A section is devoted to live audio description.

The Spanish Government has regulated media accessibility in the Ley General del Audiovisual, which can be consulted here <http://www.boe.es/boe/dias/2010/04/01/pdfs/BOE-A-2010-5292.pdf>

2.1.1.2. BAI - Broadcasting Authority of Ireland (Republic of Ireland)

The Broadcasting Authority of Ireland (BAI) is the regulator of both public and commercial broadcasting sector in Ireland. In accordance with the relevant provisions of the Broadcasting Act 2001, the Broadcasting Authority of Ireland has set out the rules required under Section 19(11), to which it has given the title “Access Rules”, and which determine the levels of subtitling, sign language and audio description that broadcasters in Ireland will be required to provide in accordance with their statutory obligations. This document can be found in <http://www.bai.ie/index.php/bai-access-rules-2012/>. In order to support broadcasters in the implementation of these rules, BAI has created guidelines documents on subtitling, AD and Irish sign language.

Documents:

- Guidelines on Subtitling
- Guidelines on Audio Description
- Guidelines on Irish Sign Language

Guidelines on Subtitling

In this document, aimed at broadcasters and subtitle providers, the BAI outlines the general and technical standards required in relation to subtitling, in accordance to the relevant provisions of the Broadcasting act 2009. In its preparation, Ofcom’s Guidance On Standards for Subtitling document was used as assistance.

It establishes the key priorities for effective subtitling and the general requirements for subtitle display. It includes separate guidelines for real-time subtitling and a section on digital services.

Guidelines on Audio Description

This is a document in which the BAI outlines the general and technical standards required in relation to Audio Description in accordance with the relevant provisions of the Broadcasting act 2009. In its preparation, the work conducted by the former AUDETEL consortium and Ofcom’s Guidance On Standards for Subtitling document were used as assistance.

It aims to answer the questions What and When to describe, What not to describe and How to prioritise information as well as giving guidance on technical aspects such as sound level and recording. It includes some sections on special program types: soap operas, current affairs documentaries, sporting and live events and children's programming.

Guidelines on Irish Sign Language

Each sign language is particular to the country of origin. Irish Sign Language is the indigenous language of the deaf community in Ireland. It is a visual, spatial language with its own syntax and complex grammatical structure.

This is a document in which the BAI outlines the general and technical standards required in relation to Irish Sign Language in accordance with the relevant provisions of the Broadcasting act 2009. In its preparation, the 'Guidance On Standards for Sign Language' document produced by Ofcom was used as assistance.

It establishes the difference between two ways of providing sign language access to programmes: interpretation (inserting signing on live or recorded content) and presentation (a signer provides de main content and the signs are interpreted into a voice over with or without subtitles) and goes on to describe general requirements for signing before providing a set of guidelines specific to Irish SL interpretation including Quality of display (size and resolution), size and shape of inserts, choice of dress and background colours and speaker identification.

2.1.1.3. CSA- Conseil Supérieur de l'Audiovisuel (France)

The Conseil supérieur de l'audiovisuel (CSA) is a French independent administrative authority that was created by the Law of January 17th, 1989 to guarantee broadcasting freedom in the conditions laid down by the modified Law of September 30th, 1986. Its role is to regulate the various electronic media in France, such as radio and television, including eventual censorship.

Documents:

- Charter on the quality of captioning to deaf and hard of hearing
- Charter on Audio Description.

Charter on the quality of captioning to deaf and hard of hearing

In this document, the CSA focused on establishing measures to improve the quality of subtitling in television. Including a charter on the quality of captioning to deaf and hard of hearing following 16 criteria, differentiating between real time and recorded programs. These include linguistic and visual specifications (breaks, positioning, number of lines, colour) as well as speed, number of characters, etc. They allow a 20% tolerance of respect of some criteria in real time programs.

The legal document is here:

<http://legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000512205&fastPos=1&fastReqId=78965485&categorieLien=cid&oldAction=rechTexte>

Charter on Audio Description

Published by the French Ministry of Health and Social Affairs, this document opens with a definition of AD and identification of target audience before giving a series of answers to the main questions of what, when, where, and how elements should be described. Recommendations on the language and style, voicing and recording, and budget are also included.

The legal document is here:

<http://www.csa.fr/Espace-juridique/Lois/Loi-du-30-septembre-1986-relative-a-la-liberte-de-communication>

2.1.1.4. Ofcom- Independent regulator and competition authority for the UK communications industries (United Kingdom)

Ofcom is the government-approved communications competition regulator in the UK for the broadcasting, telecommunications and postal industries. It regulates the TV and radio sectors, fixed line telecoms, mobiles, postal services, plus the airwaves over which wireless devices operate. It has a statutory duty to further the interests of citizens and of consumers, where appropriate by promoting competition. Ofcom operates under a number of Acts of Parliament, including in particular the Communications Act 2003.

Its guidelines set out the standards that Broadcasters licensed in the United Kingdom are expected to observe in providing television access services (subtitling, signing and audio description).

Ofcom focuses on three accessibility services for DTT, cable and satellite tv: Subtitling, Audio Description and Sign Language.

Documents:

- Guidance On Standards for Subtitling
- ITC Guidance on Standards for Audio Description
- ITC Guidelines on Standards for Sign Language on Digital Terrestrial Television

Guidance on Standards for Subtitling

This document provides guidance on the technical standards which are to be attained in the production and presentation of “closed” subtitles. It does not apply to “open” or “in-vision” captions, although it mentions that it has been revised to take account of digital television services and acquired programmes.

It emphasizes the importance of taking into account the increasing size of an aged population, and not only the deaf and hard-of-hearing people. It also outlines a set of priorities for effective subtitling: Adequate reading time, reduce viewers’ frustration by attempting to match the spoken content, including sound effects and placing subtitles sensibly in time and space. Sentences should be well constructed and particular regard should be given to the reading age of the intended audience (in the case of children’s programmes).

It also provides examples of both good and bad practice. The range of metrics include colour, font, and line breaks, positioning and synchronisation, and adds some special dialogue techniques and shot changes and silence, among others.

Besides the general requirements, the document lists a series of special techniques (speaker identification, sound effects, etc.), and dedicates a section to real-time subtitling and some guidelines for digital services.

The full document is here:

http://www.ofcom.org.uk/static/archive/itc/itc_publications/codes_guidance/standards_for_subtitling/subtitling_1.asp.html

ITC Guidance on Standards for Audio Description

These notes provide guidance on standards for the production and presentation of audio description. They are presented in the form of guidelines only, with no absolute rules.

The document explains the mechanisms employed to gather the experiences used to prepare it: a questionnaire, user tests, a focus group and interviews with visually impaired viewers, which makes it a well-researched work document.

It includes an explanation on the preparation process of an audio description, from choosing suitable programmes to recording and reviewing the description and presents a series of principles of audio description using practical examples. It also gives specific advice concerning different programme categories, from musicals, documentaries, sport and live events to children's programmes.

The full document is here:

http://www.ofcom.org.uk/static/archive/itc/itc_publications/codes_guidance/audio_description/index.asp.html

ITC Guidelines on Standards for Sign Language on Digital Terrestrial Television

The main body of the intended audience uses British Sign Language (BSL) as its most accessible format. The Guidelines make reference to quality in quality of display regarding the presentation of the signer, size and shape of overlaid inserts, choice of dress and background colours, speaker identification.

The full document can be found here:
http://www.ofcom.org.uk/static/archive/itc/itc_publications/codes_guidance/sign_language_dtt/signing_2.asp.html

2.1.2. EBU and ESTI standards

In this section, we comment on the technical standards made available by official standards organizations in Europe.

2.1.2.1. EBU - European Broadcasting Union Europe

The European Broadcasting Union (EBU) is an alliance of public service media entities, comprising 72 Active Members in 56 countries, and 37 Associate Members from a further 22 countries. Members of the EBU are radio and television companies, most of which are government-owned public service broadcasters or privately owned stations with public service missions. The objective of the EBU's technical activities is simply to assist EBU Members in carrying out technological changes. The EBU places great

emphasis on the use of open standards. Widespread use of open standards (such as MPEG-2, DAB, DVB, etc.) ensures interoperability between products from different vendors, as well as facilitating the exchange of programme material between EBU Members and promoting "horizontal markets" for the benefit of all consumers.

Documents:

- ETSI TS 102 796 V1.2.1 (2012-11) Hybrid Broadcast Broadband TV

NOTE: European Telecommunication Standard (ETS) documents were produced by the Joint Technical Committee (JTC) of the European Broadcasting Union (EBU), Comité Européen de Normalisation ELECTrotechnique (CENELEC) and the European Telecommunications Standards Institute (ETSI).

ETSI - European Telecommunications Standards Institute Europe

The European Telecommunications Standards Institute (ETSI) is an official European Standards Organisation by the European Union. It produces globally-applicable standards for Information and Communication Technologies, including fixed, mobile, radio, converged, aeronautical, broadcast and Internet technologies. ETSI is officially responsible for standardisation of ICT within Europe.

Documents:

- ETSI EN 300 743 Digital Video Broadcasting (DVB): Subtitling systems
- ETSI TS 102 796 V1.2.1 (2012-11) Hybrid Broadcast Broadband TV

ETSI EN 300 743 Digital Video Broadcasting (DVB): Subtitling systems

The document specifies the method by which subtitles, logos and other graphical elements may be coded and carried in DVB bitstreams. The system applies Colour Look-Up Tables (CLUTs) to define the colours of the graphical elements. The transport of the coded graphical elements is based on the MPEG-2 system described in ISO/IEC 13818-1.

ETSI TS 102 796 Hybrid Broadcast Broadband TV

The document defines a platform for signalling, transport, and presentation of enhanced and interactive applications designed for running on hybrid terminals that include both a DVB compliant broadcast connection and a broadband connection to the internet.

It includes a section on formats and protocols that explains that signalling of audio description is defined by the appropriate specifications for each market where the terminals are to be deployed. Signalling of audio description for MPEG-2 transport streams delivered by the broadband connection shall follow the specification for the broadcast connection (if any).

As for broadcast-specific format protocols, the document does not contain any requirements for system, video, audio and subtitle formats for the broadcast channel, since these requirements are defined by the appropriate specifications for each market where the terminals are to be deployed.

As regards to terminal capabilities and functions, it mentions that terminals shall support a method for the user to enable and disable subtitles and to select at least one preferred subtitle language. Terminals shall use

this information when playing content to determine whether to present subtitles and to select between multiple subtitles when they are available.

2.1.3. Other documents

Other documents such as Best Practice Guides and unofficial standards can be found in this section. The European Audiovisual Observatory's IRIS plus, and a number of documents produced by independent organizations that appear organised by country (and ordered alphabetically): Australia, Brazil, Canada, Germany, Greece and USA.

2.1.3.1. European Audiovisual Observatory (Europe)

The European Audiovisual Observatory is a public service organisation part of the Council of Europe in Strasbourg, France.

It aims at promoting greater transparency and a clearer understanding of the ways in which the audiovisual industries in Europe function, both from an economic and legal point of view. The Observatory provides information on the various audiovisual markets in Europe and their financing. It also analyses and reports on the legal issues affecting the different sectors of the audiovisual industry.

Document:

- IRIS plus 2014-3 Enabling Access to the Media for All

IRIS plus 2014-3 Enabling Access to the Media for All

This document produced by the European Audiovisual Observatory in 2014 focuses on accessibility to audiovisual content in Europe. It defines and describes the types of barrier-free access, gives an account on the legal instruments at international and European levels (United Nations, Council of Europe and European Union), outlines the action plans in Europe and mentions the recent legal developments in the field. The publication focuses in the most important approaches to the implementation of relevant methods to ensure elimination of barriers in the German practice presented in a document produced by the broadcaster Globe tv film- und Fernsehproduktionsgesellschaft m.b.H.

The report can be downloaded from here:

<https://book.coe.int/eur/en/european-audiovisual-observatory/6159-iris-plus-2014-3-enabling-access-to-the-media-for-all.html>

2.1.3.2. ACMA - Australian Communications and media authority (Australia)

The ACMA is an Australian Government statutory authority within the Communications portfolio. It is responsible for the regulation of broadcasting, radio communications, telecommunications and online content. It contains information on the Internet, radio and TV, phones and licences for consumers and industry. It does this through various legislation, regulations, standards and codes of practice.

Documents:

- Broadcasting Services (Television Captioning) Standard 2013

Broadcasting Services (Television Captioning) Standard 2013

The object of the standard is to specify mandatory requirements for broadcasters and narrowcasters that relate to the quality of captioning services, to ensure that captioning services are meaningful to deaf and hearing impaired viewers.

It is geared to broadcasters and narrowcasters, which must, when providing a captioning service in accordance with their captioning obligations, comply with the requirements relating to quality in the Standard.

In regards of quality, it states that when determining the quality of a captioning service for a program, the captioning service must be considered in the context of the program as a whole and the cumulative effect of the following factors must be considered: the readability of the captions, the accuracy of the captions; and the comprehensibility of the captions.

The full document can be downloaded from here:

http://www.google.es/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCMQFjAA&url=http%3A%2F%2Fwww.acma.gov.au%2Fwebwr%2F_assets%2Fmain%2Flib550053%2Fifc48-2012_broadcasting_svces_tv_captioning_standard_2013.docx&ei=nYpoVM2bJdDWauGGgPgH&usg=AFQjCNE2M7c63iITekjMqbkWfQvIta2fkA&sig2=kpP4pIB3WrSwH0PI8pE7cg&bvm=bv.79142246,d.d2s

2.1.3.3. ABNT - Brazilian Association of Technical Standards (Brazil)

The Brazilian Association of Technical Standards (ABNT) is responsible for technical standardization in Brazil, providing the necessary technological development base. It is a private, non-profit, and recognized as the only National Standardization Forum through Resolution No. 07 of CONMETRO of 24.08.1992, and a founding member of the ISO (International Organization for Standardization), the COPANT (Panamericana Technical Standards Commission) and AMN (MERCOSUR Standardization Association).

Documents:

- NORMA ABNT NBR 15290

NORMA ABNT NBR 15290

The Brazilian norm (norma brasileira) “Acessibilidade em comunicação na televisão: Accessibility in tv captions” NORMA ABNT NBR 15290 was produced in 2005 by the ABNT. It aims to facilitate access to audiovisual content to the largest possible amount of users with hearing impairments emphasizing the concept of Universal Design.

The document offers a comprehensive set of guidelines on captioning, ranging from number of lines, breaks, font, number of characters, colour, positioning, synchronicity, etc, differentiating from pre-recorded to live programs, speaker identification, on-screen duration, to specifications of systems and equipment. It also outlines guidelines for the use of SAP (Secondary Audio Programming), which allows to enjoy English-language programming in several different languages, and for Brazilian sign language (LIBRAS), including specifications on the premises where the recording is done, placement of the window and dressing requirements.

The document can be downloaded from here: <http://www.ebah.com.br/content/ABAAABoBwAD/nbr15290>

2.1.3.4. CAB - Canadian Association of Broadcasters (Canada)

The CAB is the national voice of Canada's private broadcasters, representing the vast majority of Canadian programming services, including private radio and television stations, networks, specialty, pay and pay-per-view services. It advocates and lobbies on the behalf of private broadcasting community.

Documents:

- Closed Captioning Standards and Protocol for Canadian English Language Broadcasters

Closed Captioning Standards and Protocol for Canadian English Language Broadcasters

The Joint Societal Issues Committee on Closed Captioning Standards created this document in 2004. The guide is designed to establish English language closed captioning standards acceptable to key stakeholders: the caption users, the caption providers, and the broadcasters. It is intended as an authoritative guide to Canadian English language closed captioning for television and aims to promote consistency as well as to achieve the highest level of quality in Canadian English language closed captioning. It also highlights the responsibility of Caption providers to supply complete, accurate, consistent, and clear renderings of program audio elements.

It establishes the difference between pre-recorded and live programs captioning, and includes technical advice on how to handle captioning data and some production considerations. The four basic principles of captioning are Accuracy, Responsibility, Consistency and Clarity.

The full document can be downloaded from here: <http://www.dcmp.org/caai/nadh20.pdf>

2.1.3.5. BR - Bavarian Broadcasting Corporation (Bayerischer Rundfunk, Germany)

The Bavarian Broadcasting Corporation (Bayerischer Rundfunk, BR) is a public-service radio and television broadcaster, based in Bavaria in Germany. BR is a member organization of the Arbeitsgemeinschaft der öffentlich-rechtlichen Rundfunkanstalten der Bundesrepublik Deutschland (ARD) consortium of public broadcasters in Germany, a joint organization of Germany's regional public-service broadcasters. Founded in 1950 in West Germany it is now the world's second largest public broadcaster after the BBC.

Documents:

- When pictures become words. German AD guidelines.
- Report on user needs analysis

When pictures become words. German AD guidelines

These guidelines were written by Dosch, E., & Benecke, B. and published in 2004. The document starts outlining a historical background of audio description in the world and in particular in Germany and then goes on to give a series of guidelines on technical and non-technical aspects (although they are named in the opposite way as generally understood) of audio description for television, ranging from the creation of a script to voice tests and studio preparation, trying to address the usual questions of what needs to be described, how to identify the characters, which language to use, etc.

Report on user needs analysis

BR carried out extensive research on the numbers of blind and visually impaired people in several European countries, on the provision of audio description for films and television in those and on the laws and regulations concerning audio description in the EU. The research also addressed the blind public's desires, demands, likes and dislikes on the subject of audio description and on the role of the national blind organisations and others in the promotion of better audio description.

This document is not available online, but an article by Bernd Benecke can be consulted here: <http://www.erudit.org/revue/meta/2004/v49/n1/009022ar.html>

2.1.3.6. ARD - Consortium of public broadcasters in Germany (Germany)

The Consortium of public broadcasters in Germany (Arbeitsgemeinschaft der öffentlich-rechtlichen Rundfunkanstalten der Bundesrepublik Deutschland, ARD) is a joint organization of Germany's regional public-service broadcasters founded in 1950, and it is the world's second largest public broadcaster after the BBC.

Document:

- Guidelines for subtitling (ARD-Richtlinien für die Untertitelung)

Guidelines for subtitling

ARD has created a brief set of guidelines that address the main metrics for subtitling, including colours, number of lines, synchrony, speed and censorship and defined a series of technical recommendations to guarantee speech intelligibility.

The document can be consulted here:

http://www.bvkamera.org/downloads/technische_richtlinien_hdtv.pdf

2.1.3.7. German Society for the Promotion of deaf and hard of hearing (Germany)

Founded in 1962, the German Society for the Promotion of the deaf and hard of hearing (now German society of the hearing impaired) is a professional association of the umbrella organization for nationwide organizations and institutions dedicated to the welfare of the deaf, hard of hearing and blind.

Document:

- Richtlinien Gehörlosenbund (Subtitle Guidelines)

Subtitle Guidelines

This is a document produced by the Working Group "Subtitles and sign language on-screen display" of the German Society for the Promotion of deaf and hard of hearing, which goal is to achieve a barrier-free media offer. These general guidelines present an extensive list of subtitle types: open captioning, subtitles for hearing impaired and subtitles for teletext, DVB, DVD and HbbTV and offer advice on the visual design, readability and timing, plus a section dedicated to live subtitling and subtitles for children.

2.1.3.8. ECI - The European Captioning Institute (UK)

The ECI was established in 1979 as a non-profit specialised in closed captioning technology.

Document:

- Audio description guidelines for Greek - A working document.

Audio description guidelines for Greek - A working document.

This document is a set of guidelines for AD in Greek produced by ECI in 2008 that is geared to audio describers and addresses the same questions that other standards refer to: when, where, what, who and how to describe. It also gives a series of notes to the describers about pronunciation, pauses, speed, and vocabulary.

The document can be consulted here: <http://www.ecisubtitling.com>

2.1.3.9. NAD - National Association of the deaf (USA)

The NAD is the nation's premier civil rights organization of, by and for deaf and hard of hearing individuals in the United States of America, it directs the project is now known as Captioned Films and Videos and the Captioned Media Program, and it is a national non-profit organisation funded by the United States Department of Education under federal Public Law 85-905 its goal being for accessible media to be an integral tool in the teaching and learning process for all stakeholders in the educational community, including students, educators and other school personnel, parents, service providers, businesses, and agencies.

Document for the US Twenty-First Century Communications and Video Accessibility Act
<https://www.govtrack.us/congress/bills/111/hr3101/text>

Documents:

- Captioning key
- Description key

Captioning key

The document produced by the Captioned Media Program of the National Association of the deaf differences between closed captions and subtitles for the deaf and hard of hearing which is geared towards captioning service vendors, and aims to give a set of rules to help standardise a system that can benefit the 28 million people in the US with hearing problems.

The captioning philosophy is that all media should incorporate as much of the original language as possible, ideally verbatim. It mentions the improvements that digital tv offers, such as changing the font size and type, selecting background colours, and replace the black box with a translucent background.

Metrics include positioning, number of lines, breaks, font, speed, gives some recommendations on editing and on researching spelling and grammar (logs should be kept in a “research record”) as well as comprehensive information in the use of punctuation to signal emphasis, intonation, accents, speech peculiarities, etc. and guidelines on sound effects.

The documents can be downloaded from here: <http://www.dcmp.org/captioningkey/>

Description key

This document covers a range of topics from preparing to describe to determining both what information needs to be described and how to describe it. The information is also applicable to vendors and other businesses that provide description for broadcast television, movies, and other media.

The documents can be downloaded from here: <http://www.dcmp.org/descriptionkey/>

2.1.3.10. ACB - The American Council of the Blind (USA)

The American Council of the Blind is a nationwide organization in the United States mainly made up of blind and visually impaired people who want to achieve independence and equality. It concentrates on developing and maintaining policies that have substantially determined what appropriate services are for people who are blind and collaborates with the US Department of Education and is working towards the passage of The 21st Century Communications and Video Accessibility Act of 2010 (CVAA) which provides for enhanced access to cell phones, television programming menus, video description of television programming, and receiving access to emergency information displayed on television.

Document for the US Twenty-First Century Communications and Video Accessibility Act
<https://www.govtrack.us/congress/bills/111/hr3101/text>

Document:

- Audio Description Project (ADP)

Audio Description Project (ADP)

With this document, the American Council of the Blind intends to boost levels of description activity and disseminate information on that work throughout the nation. In the guidelines, it establishes a set of best practices for audio description in broad range of formats, from audiovisual to performing arts, visual art and other areas. The aim of the document is to ensure a consistent, high-quality product, developed in a professional environment. It provides a set of general guidelines applicable to all settings, genres or formats and also includes sections that provide more specific techniques for each of the areas mentioned above.

2.1.3.11. ACC - Audio Description Coalition (USA)

The Audio Description Coalition is an association of trained audio describers, administrators, and users dedicated to audio description in the USA.

Document:

- Standards for Audio Description and Code of Professional Conduct for Describers

Standards for Audio Description and Code of Professional Conduct for Describers

The Audio Description Coalition has defined standards for audio-descriptions targeted at Describers and they are based on the training and experience of audio describers and trainers from across the United States. They

include some sections dedicated uniquely to live description, dance, opera, film and video description, museum and exhibits, and computer interactive stations and video kiosks.

Summary

There are two aspects that need to be taken into account when it comes to accessibility of digital television, technical and content considerations. The technical aspect is covered in the ETSI specifications (the HbbTV specifications were approved by ETSI TS 102 796 in June 2010) and is taken as the reference guideline by most European countries, however, when it comes to content, there's no one European standard to be followed. While there seems to be a wide range of literature on subtitling, guidelines involving other services such as audio description or sign language are not as readily available. AENOR has produced guidelines on subtitling and in AD, while OFCOM and BCI also have a set of specifications for sign language.

Regarding subtitling and audio description, the Ofcom standard is seen as the reference by some countries, others have their own standards and there are some nations that don't follow specific guidelines but rely on the service providers' competence and good judgement. As a result, there are several international standards for Digital Television that address accessibility issues, in particular audio-description and subtitling.

A European standard addressing the recent digital developments is much needed since there is a growing market with fierce competition; broadcasters and service providers now have a number of choices for the provision of subtitling services. Since it seems impossible to apply all the requirements simultaneously, good services should entail selection of metrics and finding the right balance.

Basic metrics that are shared in most guidelines on subtitling include colours, font size, font type, positioning, number of characters, number of lines, breaks, synchronization, speed, accuracy, latency, sound effects and speaker identification.

2.2. User tests

In this section, we will outline the user test conducted on the subject of Subtitling, Audio Description and Clean Audio, both in previous research for DTV4ALL and the current test being carried out for HBB4ALL as well as mentioning future tests that will be conducted for this project.

2.2.1. Tests from DTV4ALL

2.2.1.1 Subtitling tests from DTV4ALL

In this section a summary has been provided, for the full report please refer to ANNEX 1.

2.2.1.1.1 RBB Mature Services Evaluation report

As a result of tests done for DTV4ALL, a set of recommendation for the design of DVB-subtitles was produced. The recommendation is based on a large scale empirical field test. In this test a representative target group of 52 hearing impaired and deaf users evaluated a large scale of different DVB-subtitle design variations with a weekly questionnaire over 36 test weeks. The evaluation was based on a method that allowed to find those solutions which found the broadest acceptance of all testers involved. (For the methodological and technical details of the test and its results please see DTV4All Deliverables D2.4 and D2.5). Based on the final results for the single design parameters font type, font size and output style (background of subtitles) “the winner” of each parameter category was combined into one look and feel:

- Font: Tiresias Screenfont
- Font size: Average, (45 points)
- Background style: normal box with average transparency 80 (FAB Subtitler XCD)



RBB's subtitle department was asked to evaluate this user vote. They recommended to use a slightly less transparent solution in order to grant optimal contrast also for subtitles overlaying writing and graphics on the TV screen. The transparency factor recommended by them was 60. Please see the respective illustrations below. This recommended solution was presented to the testers and agreed by them.

As a final recommendation we therefore suggest the following solution:

- Font: Tiresias Screenfont
- Font size: Average, (45 points)
- Background style: normal box with average transparency 60 (FAB Subtiter XCD)
- Transparency Factor 60:



2.2.1.1.2 TVC (TV3) Mature Services Evaluated

TVC embarked in a series of tests to gather information regarding user satisfaction, quality control, and ways to improve its services. To this end two questionnaires were prepared, and they aim at gathering different information. The general questionnaire aimed at learning about users' preferences, and also helped to draft a profile of the user, education, expectations, etc. by collecting quantitative data. The questionnaire was digitised by Activa Multimedia and sent to the two local Blind Associations ONCE (Organización Nacional de Ciegos de España) and ACC (Associació Catalana de Cecs). It was also sent to the users we have been keeping informed as they have been giving feedback on the AD service from the first day of films with AD.

Universities and the Mature Access Services Evaluation

UAB and Roehampton carried out a series of tests on approximate 40,000 subtitles read by hearing, hard of hearing and deaf participants, which constitutes the largest corpus of its kind (eye-tracking plus comprehension plus opinion) and a treasure trove of information for research, further projects, etc. The aim was to map out, for the first time with this size of eye-tracking and questionnaire-base data, how hearing, deaf and hard of hearing viewers read and comprehend subtitles.

2.2.1.1.3 UAB Eye Tracking Test

The study processed four different sources of information:

- Personal Information derived from questionnaires administered before the eye-tracking test
- Comprehension of issues and personal Information derived from questionnaires collected during the eye-tracking session

- Information included in the National Standards: UNE-153010 and / or extended national practices
- Eye-tracking data collected with Tobii Studio.

Following the structure of our study, participants filled in a preference questionnaire before the Eye-tracking session. Depending on their “Communication Capacity”, it took participants 10 – 30 minutes to fill the questionnaire in.

Then, participants watched 23 videos during the Eye-tracking test. There were 9 parameters to test, and 2 / 3 variables per parameter:

Identification (Colours, Tags, Displacement), Placement (Top, Bottom, Mixed), Justification (Left, Centred), Boxes (Box, No box), Borders (Border, No border), Shadows (Shadow, No shadow), Emoticons (Description, Emoticon, None), Icons (Description, Icon, None), Speed / Subtitle Type (Standard, Edited, Verbatim).

The study shed some light into some of the current subtitling practices.

It was found that many of the subtitling standards currently in use are in fact really meeting the needs of their final audiences, whereas some standards could be improved by adopting more accurate practices.

“Colour Identification” proved to be the best technique in terms of comprehension for all groups, as both “Tags” and “Displacement” - also present in the Spanish written Standards - require longer reading times and do not show better comprehension results.

Placement results revealed that although “Mixed” subtitles have good comprehension results for hard of hearing viewers, deaf and Hearing participants showed poorer comprehension levels. “Bottom” subtitling, currently in use only in DVD subtitling, is the best style in terms of viewing time + comprehension for all three groups.

Justification points in two different directions: “Centred” texts – as recommended by the UNE-153010 – are more performant among hearers and deaf participant, whereas the hard of hearing have better comprehension results with “Left”-aligned texts.

The use of “No Box” – generalised practise in DVD subtitling and possibly reconsidered in the next revision of the Spanish Standards – has been demonstrated as the most beneficial option for comprehension purposes, although it may force hard of hearing participants to read subtitles for a bit longer – taking time from “Scene Perception”.

Emoticon and Icon analysis, results seemed to reveal that the use of “Emoticons / Icons” could improve reading comprehension and reduce the Mean Reading Time among deaf and hard of hearing participants. However, given that only 30% to 50% of the information was perceived among the users with hearing impairments, “Description” is the option that best meets comprehension levels for both parameters.

The options “Borders” and “Shadows” seemed to get better results than the “No Border” / “No Shadow” option among hearers and hard of hearing participants, but in contrast to this, the deaf spend longer time reading subtitles with no borders / shadows, but they do also achieve a better comprehension result.

Finally the study of the different Subtitle Speeds (Standard, Edited, Verbatim),; prior to the test it was expected that “Adapted” –Edited- subtitles would best meet the needs of deaf participants. However, it was

found that all participants invested longer reading times in this subtitle style but that their textual comprehension was worse than with other types, including Verbatim subtitles.

Standard subtitles are therefore the option that best met the needs of all three groups in terms of comprehension.

So, then, according to the results drawn by our analysis, the “Perfect” subtitling standards would include the following parameters:

	Ident.	Place.	Justi.	Boxes	Border	Shad.	Emot.	Icons	Speed
Hearers	Colour	Bottom	Centre	No Box	Border	Shad.	Descr.	Descr.	Stand.
Deaf	Colour	Bottom	Centre	No Box	No Border	No Shad.	Descr./ (Emot.)	Descr.	Stand.
Hard of Hearing	Colour	Mixed	Left	No Box	Border	Shad.	(Emot.)	Descr.	Stand.

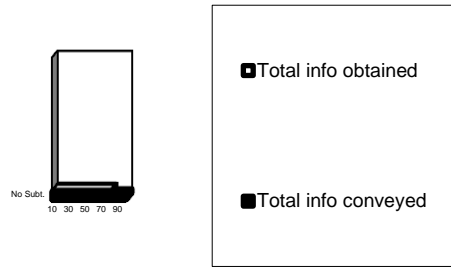
2.2.1.1.4 University of Roehampton Report

The aim of this study was to find out how much visual and verbal information hearing, hard of hearing and deaf viewers obtain from news programmes in the UK. For this purpose, four clips from the Six O’Clock News broadcast on 4 July 2007 by BBC1 were shown to 30 hearing viewers, 15 hard of hearing viewers and 15 deaf viewers.

As far as the methodology is concerned, participants were shown two clips with two news items each and were asked to answer questions about one of them. The clips were subtitled by respeaking at two different speeds, 180 wpm, the usual speed in the UK, and 220 wpm, so as to ascertain the effect of speed on comprehension.

The following graphs and tables show the results obtained in the study, firstly with hearing participants and no subtitles and then with hearing, hard-of-hearing and deaf participants and subtitles at 180wpm and 220 wpm:

- *No subtitles (hearing viewers)*



No subtitles	
Performance	
Perfect	0%
Very good	93.3%
Good	6.7%
Almost good	0%
Sufficient	0%
Less than sufficient	0%
Poor	0%
Very poor	0%

- *Subtitles at 220 wpm (hearing, hard-of-hearing and deaf viewers)*

	Hearing		Hard-of-Hearing		Deaf	
Good	0%	20%	0%	20%	0%	13.3%
Almost good	6.7 %		6.7%		6.6%	
Sufficient	13.3 %		13.3%		6.6%	
Less than sufficient	20%	80%	30%	80%	26.7%	86.7%
Poor	30%		30%		26.7%	
Very poor	30%		20%		33.3%	

- **Subtitles at 180 wpm (hearing, hard-of-hearing and deaf viewers)**

	Hearing		Hard-of-Hearing		Deaf	
Good	3.3%	46.7%	3.3%	46.7%	0%	46.7%
Almost good	6.7%		6.7%		6.7%	
Sufficient	36.7%		36.7%		40%	
Less than sufficient	20%	53.3%	20%	53.3%	13.3%	53.3%
Poor	20%		13.3%		20%	
Very poor	13.3%		20%		20%	

As may be expected, hearing viewers watching the news with no subtitles did not manage to retrieve 100% of the visual and verbal information conveyed in the clips. Short term memory plays an important factor here. Yet, their results show very good comprehension (an average of 80%), particularly of the images (90.5%, as compared to 73.2% of the verbal information), which is normal considering that no subtitles were displayed.

As far as the study with subtitles is concerned, two elements are particularly striking:

The overall poor average comprehension obtained and the similarity of the results across viewers regardless of the type hearing loss. The latter may be due to the fact that all participants taking part in the experiment were very used to watching subtitles on TV, be it because they study them or produce them (hearing) or because they use them as a means to access the news on a daily basis (deaf and hard-of-hearing). In any case, this makes the low overall score regarding comprehension even more puzzling.

As for the test with subtitles at 220 wpm, only 20% of the participants obtained sufficient information and none obtained good information. Besides, 60% could only give a poor or very poor account of the news. Although not surprising, given the high subtitle speed, these results warn against the possibility of producing verbatim subtitles for certain programmes such as debates, interviews and weather reports, which are sometimes spoken at this rate. Indeed, most viewers (76%) considered these subtitles to be too fast. Many of them also added that it caused them ‘stress’ and ‘headache’ and pointed out that the images were too fast, which, although not true (they were as fast as in the other clips), goes to show how the speed of subtitles can affect the overall perception of an audiovisual programme.

The test with subtitles displayed at 180 wpm is more significant, as respoken subtitles are often displayed at this speed in some sport programmes and many news programmes, interviews and debates. In this case, most

participants (66%) were happy with the speed of the subtitles and yet more than half of them (51%) did not obtain sufficient information. This suggests that viewers may be unaware of how much information they are losing due to the speed of respoken subtitles. Thus, although most of them regarded the speed as OK or even too slow, only 3% obtained good information and 31% got poor or very poor information. More worryingly, 1 out of 3 participants acquired incorrect information, erroneously believing, for example, that they had seen the President of Nicaragua or Tony Blair, none of whom appeared on the news.

2.2.1.2 AD tests from DTV4ALL

2.2.1.2.1 The Pear Tree Project

The Pear Tree Project (PTP) is a group of AD researchers across Europe concerned with uncovering the principles governing narrative production across the languages concerned and its two primary objectives are to answer the questions whether (1) it is possible to develop common European AD standards and guidelines, and whether (2) it is possible to translate AD scripts across languages. The methodology used in the PTP was first developed by Professor Wallace Chafe of University of California in Berkeley. In mid-1970s Chafe and his co-workers conducted a study called the Pear Stories Project (Chafe 1980), whose primary aim was to find an interrelation between knowledge and manner of thought formulation. In particular the researchers wanted to find out how people talk about events they participated in as well as how they describe them after some time. An assumption was made that human knowledge is stored in the mind in part analogically, and not only propositionally (which can be supported by the fact that sometimes it is difficult for us to express what we think and that we rarely express the same thoughts in the same manner on different occasions). In the original study the subjects were shown the film and then were asked to tell what they saw (their speeches were recorded and then transcribed). The subjects were asked to recount the film again after some time. The researchers in the DTV4ALL project assumed that its methodology could be applied in research on audio description.

To this end, a set of written instructions was developed and distributed among researchers conducting the study in their respective countries (see section 4 below). According to the instructions, the subjects were supposed to watch the film once and then write down what they saw (in longhand, so that any corrections or deletions could be identified). In the instructions there was no reference to the blind or audio description as such, so the assumption was that the subjects were to recount the film as if describing it to a person that simply has not seen it.

The Pear Tree Project aimed at finding general characteristics of describing film narratives across 12 (including 10 European) languages in order to determine whether it is possible to develop common European AD standards, and whether it is possible to translate AD scripts across languages. The analysis shows that we cannot really generalise about film descriptions in these languages because the analysed texts manifested huge variations. The general assumption was that if there are no statistically significant differences among languages, the results may be interpreted as depicting characteristics common for all of them. However, statistically significant differences were found in 10 out of 12 examined aspects.

The differences across languages in the ten remaining aspects are too huge to allow justified generalisations and, additionally, some opposing tendencies, or trends may be observed.

In general, variations disclosed in the statistical analysis of correspondence are extensive across languages. Where the texts from specific countries do not differ, the results are equally inconclusive. It appears that these differences are too huge to allow for similar recommendations and guidelines regarding audio description. However, it should be noted that the study under consideration is a reception-based study where

a lot of variation exists not only among the languages involved but also among the subjects within the same language, as reception is very individual and depends on the subject's background, personal experiences or world-view. Thus, more research is needed, especially in the form of studies involving eye-tracking methodology, which could yield objective data concerning the perception of visual stimuli. What is more, more reception studies must be done with blind and partially-sighted populations in order to determine their preferences in the respective countries.

Irrespective of the findings obtained in the present study, we could assume that common European guidelines could be developed, provided they take into account linguistic and cultural differences as well as preferences of visually challenged audiences in the countries concerned. Along similar lines, we can assume that translation of AD scripts is possible as long as translated ADs comply with the prevailing norms and preferences in the respective languages. Nonetheless, by all means more AD research is needed both at the European and national level in order to determine such norms and preferences.

2.2.2. HBB4ALL ongoing tests

2.2.2.1 Subtitling

Information is available in deliverable D3.1.

2.2.1.2 Clean audio (rbb, TVC, UAB)

2.2.1.3 Audio Description (UAB)

- Vocal Delivery by Genre
- Audio description and Second Screen Application
- Audio introductions
- Verification of AD enhancements
- Impact of Clean Audio on Audio Description

2.2.1.4 Other languages and language learning (TVC)

- Audio Description as a learning tool
- Impact of Clean Audio in language acquisition

2.2.1.5 Sign language

Focus Group with Signing Deaf Users (UAB)

Making a first contact with the end-users and taking their opinions into account was considered of utmost importance in order to determine which of the formal features would finally be considered for the first experimental test. In order to raise interest in the topic within the Catalan deaf community we contacted again the Catalan Federation of Deaf People, FESOCA. On the one hand, the group attended the 5th Catalan Sign Language Seminar, organised as a social and scientific event specially for Catalan Sign Language

teachers and other members of the deaf community. In this event we were invited to give a 40-minute presentation about the project. After the presentation, many deaf people showed interest on Hbb4all and were willing to share their opinions with us. On the other hand, a video message was recorded in Catalan Sign Language (LSC) asking for collaboration in a focus group to discuss the formal characteristics of sign language on-screen. The original video message can be retrieved at <http://youtu.be/4EJ8quEjT1A>

FESCOA sent the video message to all its associate members, which includes the vast majority of signing deaf people's associations in Catalonia. A total of 13 users answered the call and according to their availability the focus groups sessions were set on two dates in June and two more in July. Finally, one session in June and one in July with four participants each were held. The other two were cancelled because the rest of the participants could not attend. The FESCOA secretary suggested that further tests be organised in the associations to grant a bigger participation.

The focus groups were organised to discuss all the formal features of on-screen interpreting that had been previously discussed on the interviews with the professionals, taking the results from the interviews as a starting point for the group discussion. The skeletal outline of the focus group is provided in the table below.

(1) Presentation	Hbb4all Formal features of SLI on-screen (not content oriented)
(2) SLI on TV clips	To illustrate different on-screen interpreting to the Catalan or Spanish broadcasters (<i>Carlos Alberto quiere añadir algo sobre el proceso de captura de los clips?</i>)
(3) Formal features selected from the interviews	Size Colour-contrast Speed SLI, subtitling and DOG on-screen layout
(4) Other formal features	Sub-screen, split-screen Framed-screen, chroma Interpreter location: right/left; top/centre/bottom Interpreter position: sitting, standing Shot: MS, MLS, LS, MCU Interpreter gender: male, female Interpreter physical appearance ...
(5) SLI on TV screen shots	Ten screen shots showing a wide variety of formal characteristics of SLI on-screen were selected to illustrate several compositions of the above-mentioned formal features and encourage discussion with the features not yet tackled.
(6) Open questions	What features determine accessibility the most? What features are irrelevant or less important?
(7) Activity	Drawing on a piece of paper the best and the worst accessible on-screen composition

The results from the focus groups with the end-users were consistent with the feedback reported by the interpreters. The most important on-screen feature to grant accessibility was considered by all participants to

be the size of the interpreter. Most agreed that a taking about a third of a vertically split screen and using a MS/MLS would be the ideal.

Deaf users also considered colour contrast to be one of the most important characteristics. However, they did consider the possibility of interpreters wearing colours other than black a good way to prevent eye-fatigue and provide colour contrast. The participants also mentioned the fact that if programs other than news were to be accessible using SLI, clothing colours and the interpreter's dress-code would need to match the type of programs and their targeted audience. The suggested colours for the interpreter's clothing showed a wide range of preferences including light, dark, bright and the classic black. They all seemed to prefer plain colours (not patterned), though. Regarding the background colour, there was no agreement other than the fact that it had to contrast with the clothing and skin colour so that all the linguistic details could be perceived accurately and to prevent eye-fatigue. Regarding colour contrast and the screen composition, most of the participants considered that embedding the interpreter in a framed sub-screen, rather than using chroma, was a better way to guarantee contrast throughout the programmes. Some of the participants even mentioned that the contrast between the interpreter sub-screen and the screen should also be considered.

Deaf consumers also discussed about the overlaying (or even overlapping) of subtitling and DOG with interpreting on the screen. They all agreed overlapping should be completely avoided. Provided that subtitles are normally displayed at the bottom of the screen, most agreed that sign language sub-screen could be placed in a central position. However, there was no agreement regarding the right/left location. Interestingly, some said it was more comfortable to start looking the sign language on the right and then continue reading the subtitles and some argued the opposite.

When asked about the signing speed, most did not feel it was a feature possible to be changed and would not further elaborate. They seemed to accept that news had this high speech pace and it was the interpreter's job to keep up with it, regardless of those deaf who could not keep up with it. They also all seemed to agree, though, that having the possibility to slow down the speed would make the contents accessible for more people.

All the other characteristics such as sex, age, appearance or position were considered irrelevant to accessibility. However they agreed that certain aesthetics are important to appear on TV and always stressed the fact that the most important characteristic of an interpreter on TV is their linguistic and interpreting skills as well as their cultural level and background.

2.2.3. Hbb4all prospective additional tests

- Clean Audio (rbb, TVC)
- Audio Description (UAB, TVC)
- Other languages and language learning (UAB, TVC)

2.3. User organisations

Quality of service based on user needs.

2.4. Broadcasters

2.4.1. Requirements

Testing of quality: In video, whenever a new coding standard (H.264 or H.265 as) is put in place, testing needs to be done in order to calibrate in which bit rate can a particular content be encoded to achieve a subjective quality equivalent to that achieved by the previous standard for a given bit rate. For instance, raw (raw) video requires much rate, so a solution must be found to encode it with less rate. The same happens with an image in Windows Bitmap (bmp) format or encoded as JPEG or PNG. In principle, more bit rate, more quality. And the newer the standard, the more efficient it is (ie. more compressed).

Another option is to try to find out how much compression can be done while and subjective quality remains high. The more a file is compressed, the more pixelation and artifacts will appear on the screen, etc. Encoding always involves objective degradation of the video signal, but this fact can be ignored, provided that the subjective quality is good.

Subjective quality is measured by user testing following methodology proposed in ITU recommendations, especially in BT.500 and P.910, variables being distances, angles, lengths, plus several possibilities: displaying the original image in parallel ("reference test") or not, etc.

User ratings can be gathered on a questionnaire, modal (numbered), with numerical scores or Likert scale.

Given that recruiting enough users can be problematic, there are initiatives (such as VQEG) that attempt to model the results of subjective tests from objective measures.

These testings can be used to measure quality of subtitles, AD and SL metrics. Next step after measurement would be to quantify the quality of each one of them, and compare the results measures to determine what factors influence each other by assigning weights to the various factors to assess the global quality.

2.4.2. Internal quality measurements

2.5. Service providers

In house quality measurements.

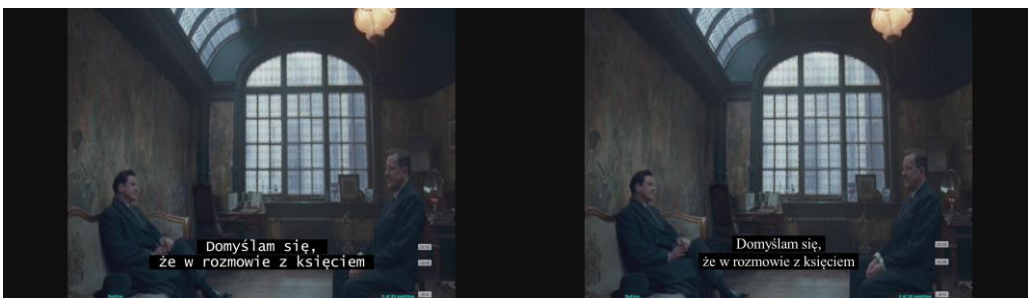
3. Quality Metrics by service

3.1. Subtitling

When determining the quality of a captioning service, the cumulative effect of the following factors must be considered:

3.1.1. Readability

- Font type: the choice of type should be based on legibility.



Lucinda Console

Times New Roman



Verdana

Arial



Courier new

Ofcom and BAI recommend Tiresias for digital tv subtitles.

US Captioning Key advises to use of sans serif font with shadow, that is proportionate and with a spacing that does not allow overlap with other characters, ascenders or descenders.

- Font size: should be used in a way that makes them legible.

Ofcom and BAI recommend no less than 20 television lines for the capital ‘V’, to include those lines at the top and bottom of each character containing pixels that are at least 50% illuminated.

US Captioning Key establishes a medium weight.

- Colours: should be used in a way that makes provides the best contrast.

Ofcom recommended colours are white, yellow, cyan and green against a solid black background as these provide the best contrast.

The Brazilian and Canadian norms recommend white on black background

BAI guidelines advice on using black, but if coloured background (white, yellow, cyan and green) is to be used a text colour should be chosen which will also remain legible on a black background. Magenta, red and blue should be avoided.

If a coloured background is used, the most legible combinations are as follows:

- Blue on white;
- White on blue;
- Red on white;
- White on red;
- Cyan on blue;
- Blue on cyan.
- The French norm has a specific system:
 - White: speaker is visible on screen;
 - Yellow: speaker is off screen;
 - Red: sound indications;
 - Magenta: music indication and song lyrics;
 - Cyan: thoughts of characters and comments off screen in documentaries;
 - Green: foreign language

UNE ads that the minimum value for colour contrast should be 4.5

- Breaks: All guidelines agree in the point that, if necessary, sentences should be broken or reformed into more than one sentence at natural linguistic breaks so that each subtitle forms an understandable segment and reflects the natural flow and punctuation of the sentence.

Line breaks within a word must be avoided.

US establishes the following rules: Do not break a modifier from the word it modifies, Do not break a prepositional phrase; Do not break a person's name nor a title from the name with which it is associated; Do not break a line after a conjunction (this is mentioned also in UNE); Do not break an auxiliary verb from the word it modifies; Never end a sentence and begin a new sentence on the same line unless they are short, related sentences containing one or two words

BAI guidelines mention that justified subtitles should balance linguistic considerations with eye movement. Therefore, when using left, right and centre justification for speaker positioning line breaks must be carefully considered. The distance between subtitles should be minimised, that is to say, causing the eye the least distance to travel from one line to the next.

- Number of lines: subtitles should normally comprise a single sentence occupying no more than two lines, unless three lines will not obscure the picture.

Most standards, such as ACMA, BAI, UNE and the Canadian guidelines allow three lines if no important picture information will be obscured.

The French norm establishes two lines for recorded programs and three for live programs.

The Brazilian norm allows up to four in recorded programs.

US also finds four lines occasionally acceptable if a one- or two-line caption would interfere with pre-existing graphics or be confusing with regard to speaker identification.

Where breaks occur, the split should be made in a way that makes clear that there is more to come. This can be achieved by ending the first subtitle with a conjunction, a colon or semi-colon as appropriate, or even a short run of dots.

- Number of characters per line: the Brazilian norm says that each line should not contain more than 32 characters. BAI guidelines say 32 or 34, while UNE allows up to 37.
- Positioning: All reviewed standards agree that subtitles should be positioned, so as to avoid obscuring other on-screen text and any other important visuals, and preferably in the bottom. It is particularly important to avoid obscuring the face, as this convey emotions and tone of voice, and in particular the mouth, since it's necessary for lip-reading.

Ofcom and BAI recommend placing them within a 'safe caption area'. Since Widescreen receivers with a screen ratio of 16:9 are now in common use, when these are used to display subtitles it is important to safeguard the text box. This consideration must include standard receivers of 4:3 aspect ratio. Safeguarding can be achieved by ensuring that subtitles are placed within the 'Safe Caption Area' of a 14:9 display and should normally occupy the bottom of the screen,

The Brazilian norm differentiates between live and recorded programs. Recommending bottom placement in live and either bottom, top or even centre in recorded programs.

The Canadian and French norms establish the use of one or two-line captions placed just above or below the essential visual element and to move the captions to the top or bottom of the screen if there is no essential visual element there.

BAI guidelines add that Subtitles should be displayed horizontally in the direction of sound effects source or, in the case where speaker identification is employed, in the direction of the speaker.

UNE establishes that subtitles should be centred at the bottom of the screen, except if they are sound effect, in which case, they should be placed in the top right corner of the screen, whenever possible. The description should be substantivized.

US also mentions that in the case where essential sound effects are used simultaneously with dialogue that is captioned, the captions that identify the sound effects should be placed at the top of the screen. It also states that captioned dialogue must be placed under the speaker as long it does not interfere with graphics or other pre-existing features. Sound effects description should be placed as close as possible to the sound source

- Punctuation: should be standard punctuation, following grammar rules

3.1.2. Accuracy

When providing a captioning service for a program, broadcasters and narrowcasters must use captions that accurately recreate the soundtrack of a program.

- Editing vs verbatim: Ofcom say that subtitling may be edited conservatively if this is necessary to avoid long delays between speech and subtitling.

Other standards, such as ACMA and UNE advocate for verbatim, so that captions reflect the actual meaning of the spoken content.

In US, the following is stated: Many educational, special interest, and theatrical media are not scripted to allow the time necessary for the process of reading captions and often have extremely rapid narration/dialogue. Therefore, minor editing may be necessary. Editing is performed only when a caption exceeds a specified presentation rate limit. Proper editing should maintain both the original meaning, content, essential vocabulary, and meet presentation rate requirements. Borrowing 15 frames before and after the audio occurs is hardly noticeable to the viewer. This “borrowing” technique can be used occasionally when presentation rate is a factor.

- Editing for children: when the intended target audience of a program is children and it is not possible for the captions of spoken content to be verbatim, it’s important to consider the extent to which the captions take into account the literacy levels of children.

BAI establishes:

Reduce the amount of text by reducing the reading speed and removing unnecessary words and sentences, represent the whole meaning, and increase the use of three-line subtitles and reduce the number of add-ons.

For children below the age of 11 years, there should be a match between the voice and subtitles as far as possible. Also, a strategy should be developed where words are omitted rather than changed to reduce the length of sentences.

- **Tone:** the manner and tone of voice of speakers should be conveyed, where practical. BAI establishes that where tone of voice is particularly critical to meaning, and facial expression and body language are inadequate to convey the tone, the use of ‘(!)’ and ‘(?)’ immediately following speech can indicate sarcasm and irony.

UNE says that contextual information should be presented in upper case and between brackets.

3.1.3. Speaker identification

Most guidelines indicate that individual speakers and off-screen and off-camera voices should be clearly identified and distinguished.

Brazilian, French and Canadian norms also establish that character identification is defined by position of captions next to the speaker.

BAI guideline says the use of colours to identify individual speakers is particularly helpful although over use is known to confuse. Alternatively, the text can be centre justified, but to aid readability it can be justified left, centre or right depending on whether speaker positioning is desired.

UNE advises the use of three techniques which are, by order of priority, colour, tags (in upper case and between brackets before the text) and hyphens. When colours are used to identify two characters, the difference in colour should have a minimum value of 255.

US gives detailed information on this point. Captioned dialogue must be placed under the speaker as long it does not interfere with graphics or other pre-existing features, when people speak simultaneously, the captions should still be placed underneath the speakers. No other speaker identification techniques, like hyphens, should be used. If this is not possible due to the length of the caption or interference with onscreen graphics, each speaker should be captioned at different time-codes.

If a speaker continuously moves from one onscreen location to another, one placement for captions of that speaker’s communication must be used. Speaker identification may be added for clarification, since confusion occurs when captions jump around the screen.

3.1.4. Speed/Time on screen

Captions should be displayed for a sufficient length of time to allow the viewer to simultaneously read them and follow the action of the program.

According to Ofcom and BAI, the speed should not normally exceed 160 to 180 words per minute for pre-recorded programmes. Dialogue which would require subtitles faster than 200 wpm would be difficult for many viewers to follow.

The Brazilian norm specifies time according to the number of lines: one line must be exposed between 2-3 s, two lines: 2 s, three lines: 4.5-5 s. Children captions: 3-4 s per line.

The French norm establishes 12 char/s, 20 char/2s, 36 char/3s, 60 char/4s, allowing an extension of 20%

The Canadian norm establishes a minimum of 1.5 seconds duration for each 32 characters of text.

Allow a minimum of two seconds duration to display the last 32 characters of text before blanking or moving captions.

Do not display any caption for less than one second.

The maximum presentation rate should be three seconds duration for each 32 characters.

UNE mentions a maximum of 15 char/s

US gives different time ranges depending on the type of content:

All lower- to middle-level educational media should be captioned at a presentation rate range not to exceed 120–130 words per minute (wpm). Upper-level educational media may be captioned slightly above the 120–130 wpm range. No caption should remain onscreen less than two seconds. (A words-per-minute generator can be found in the HTML version of the Captioning Key for Educational Media at http://captioningkey.org/presentation_rate.html.)

Special-interest media for adults require a presentation rate range not to exceed 150–160 wpm. The presentation rate can be increased if heavy editing radically changes the original meaning, content, or language structure. No caption should remain onscreen less than two seconds.

Theatrical productions for children should be captioned at a rate range not to exceed 150–160 wpm. No caption should remain onscreen less than two seconds.

Theatrical productions for adults should be captioned at a near-verbatim rate, but no caption should remain onscreen less than two seconds or exceed 235 wpm.

3.1.5. Synchronicity

There are different opinions with regards to this point. Some guidelines establish that subtitles should start slightly before, correspond exactly or start slightly after the onset of the speech.

Ofcom, ACMA, BAI, UNE, US and the Brazilian norm say that the aim should be to synchronise speech and subtitling as closely as possible. Subtitle appearance should coincide with the onset of speech of the corresponding speaker, sound effect or music and disappearance should coincide roughly with the end of the corresponding speech segment.

3.1.6. Latency (Delay)

In live programmes, the aim should be to keep the inevitable delay in subtitle presentation to the minimum (no more than 3 seconds) consistent with accurate presentation of what is being said, according to Ofcom.

The Brazilian norm allows a maximum of 4 seconds delay, while UNE mentions a maximum of 8 seconds.

Spelling: There should be no spelling mistakes or typos

Explanation for pauses: explanatory captions should be provided for long speechless pauses in the program

3.1.7. Consistency

The Canadian and US standards advocate to strive for uniformity of style, format, placement, description, speaker designation, rate of display, and so on, within each program.

3.1.8. Preparation

Ofcom says that pre-recorded and live subtitles: pre-prepared block subtitles are the best approach to providing accurate, easily legible and well-synchronised subtitles and should be used for pre-recorded programmes.

3.1.9. On-screen text

ACMA says that it is not necessary to repeat, in caption form, any information that is already on the screen (such as the name of a presenter or temperatures read out in a weather report), assuming that such information is not obscured by inappropriately positioned captions (see Positioning below)

3.1.10. Flow

Should be continuous and smooth.

3.1.11. Aliasing

Ofcom encourage broadcasters to use anti-aliasing techniques to help make the appearance of subtitles clearer.

3.1.12. Alignment

The Brazilian norm says that live cc should be left aligned, while in recorded programs it should be centred. In the Canadian standard, the centred (pyramidal) structure is the norm.

US mentions that text should be left aligned whenever possible, but it also says that Single-line captions should be centred on the bottom line.

3.1.13. Symbols

The Brazilian norm recommends the use of symbols, such as musical note to mark music.

3.1.14. Music and sound effects:

BAI guidelines establish that the presence of Sound Effects should be indicated by colour.

Ofcom says that sound not observable from the visual action, should be captioned in a way that accurately describes, where applicable, the name, mood, tone, atmosphere and action of the sound effect and/or music, in order to give them context in the program.

The Brazilian and Canadian norm says that information on genre and pace should be given and songs should be transcribed whenever possible.

The Canadian norm establishes that if spoken words or lyrics are different from a textual graphic (for example, when there is talking over end credits), full captions must be included and moved so as to interfere as little as possible with the essential visual elements.

BAI mentions that at the very minimum, the title of the music playing should be given. Where possible the words of a song should be included. Song lyrics should be subtitled verbatim; but, if the pace of the song is very rapid, whole couplets or verses may be omitted.

UNE establishes that genre, tone and title should be given, and the subtitled songs positioned as sound effect.

In US guidelines, the captions that identify the sound effects are advised to be placed at the top of the screen. Description of sound effects, in brackets, should include the source of the sound but description can be eliminated if the source of the sound can clearly be seen onscreen. Off-screen sound effects should be italicized, if italics are available (this includes background music), and the description of the sound effect should be placed as close as possible to the sound source.

For music, descriptions should be used to indicate the mood, the title of the song and the vocalist/group added, plus the verbatim lyrics if known/significant.

Onomatopoeias: The Brazilian norm gives preference to literal sounds compared to onomatopoeias, except in comedy or programs for children.

US states that if the presentation rate permits, onomatopoeia also be included. It back up this advice with a study by Gallaudet University that showed that “A combination of description and onomatopoeia was the preference of more consumers (56%) than was description alone (31%) or onomatopoeia alone (13%).”

3.1.15. *Emotion*

According to the Canadian standard, if relevant to the plot, a description may be used when emotion is strong but not conveyed by facial expression or context

(Angrily)

LET GO!

Explanatory captions (also by the Canadian standard)

Use an explanatory caption when sound is produced by an unusual source.

Unusual pronunciations should be explained if essential to the understanding of a storyline or joke.

If a character is thinking or dreaming words, an explanation is required.

Do not guess at indiscernible speech. Use an explanatory caption.

If speech is too fast for transcription, use an explanatory caption.

US prefers the use of italicized caption(s) above the speaker's head and add a description in brackets, such as the word "thinking," above the captioned thoughts.

3.1.16. *Capitalization*

The French norm establishes the use of capitals when the text is spoken by multiple speakers, while BAI mentions that text in upper case characters can indicate an increase in volume, for example shouting.

3.1.17. *Off-Screen and Off-Camera Voices*

BAI says that when the source of off-screen/off-camera speech is not obvious from the visible context, special techniques should be used.

Off-camera speakers are effectively indicated by using the 'greater than' (>) or 'less than' (<) symbols as appropriate.

When off-screen speech is employed throughout the programme, eg as in narrative documentaries, the common approach is to centre subtitles without symbols.

Other situations where the source of speech is not immediately apparent include telephone voices, radios, radio announcements, etc. It is helpful to accompany the first subtitle from these sources with a labelled caption:

UNE advocate the use of italics.

Failure of Subtitles: BAI says that losing subtitles is as frustrating for the hearing-impaired viewer as losing sound is for the hearing viewer. If subtitle insertion fails, it is important that there is a prompt transmission of an appropriately worded apology caption and, if restoration of transmission is delayed, an early explanation is to be given.

3.2. Audio description

3.2.1. *Adequacy*

UNE explains that not all content is suitable for AD, since there need to be "empty spaces in the message" where the description can be inserted.

UK Ofcom guidelines agree with this and state that "some programmes are too fast-moving, or offer little opportunity to insert AD (e.g. news), or may not be significantly enhanced by the provision of AD (e.g. quiz programmes)."

3.2.1.1. Balance

All reviewed guidelines expressed that judgement is needed in striking an appropriate balance between the amount of detail that is conveyed, and the risk of overburdening the audience with detail and detracting from the enjoyment of the programme. Also, it should avoid anxiety due to lack of on-screen information.

3.2.1.2. Accuracy

DCMP states that there must be no errors in word selection, pronunciation, diction, or enunciation.

3.2.1.3. Consistency

DCMP includes that the description content and the voicing should match the style, tone, and pace of the program.

3.2.1.4. Relevance

The French Charter mention that listeners should be allowed to hear the original sound of the program and to experience silence. This also renders it unnecessary to describe everything since they can hear the dialogue, the sound effects, and other significant sounds.

Ofcom guidelines state that description should only be given when absolutely necessary.

All guidelines advice that the description must answer the questions when, where, who and what, as well as include sounds that cannot be identified immediately, subtitled captions, signs, written messages, significant symbols, and front and/or end credits.

Ofcom elaborates that AD should describe characters, locations, time and circumstances, any sounds that are not readily identifiable, on-screen action, and on-screen information. When describing locations, time of the day/ season and date setting should be included to help establish a change in the scene.

UNE recommends to follow an order in the description, saying that the script should prioritise the action, then where it takes place, and finally the visual information contained in the image

3.2.1.5. Settings description

Ofcom states that when describing locations the following should be included, where appropriate: scene changes, the locations; the time of day/season/date; any sounds that are not readily identifiable; and on-screen information (e.g. signs, hieroglyphics, open subtitles for foreign languages, captions, and opening and closing credits).

DCMP advises to start generally, creating a context, then move to details and to include key elements in the description, such as style, setting, focus, period, dress, facial features, objects, and aesthetics.

3.2.1.6. Character identification

According to Ofcom and BAI, key features of characters should be identified as soon as practicable, except if the plot requires the character's identity to be revealed at a later date. These include dress, physical characteristics, facial expression, body language, ethnicity (if relevant to the storyline) and age.

The UK Ofcom guidelines encourage the describer to refer to the characters by their names rather than refer to them as 'he or she' from the beginning of the film. The French guidelines however suggest that a characters should only be named once their names are mentioned in the film and give a descriptive mention instead (Ej. The tall woman).

Regarding the ethnicity of the characters, Ofcom state that ethnicity/race must be identified only if it is vital to the comprehension of content. If it is, then all main characters' all skin colours (white included) must be described.

3.2.1.7. Overstatements

Description should avoid stating the obvious, for example a telephone or doorbell ringing does not need to be described, unless the actual sounds are unfamiliar.

3.2.1.8. Synchronicity

Ofcom, BAI and UNE state that wherever possible, Description of On-screen action should be done at the same time as the action occurs.

It should occur when there are breaks in dialogue. It can only encroach upon dialogue which is inconsequential or is being subtitled or captioned and only then to impart relevant information or to read the subtitle or caption. If necessary it can occur over song lyrics.

Audio description should not occur over mainstream dialogue. It should not occur over sound effects, where they complement the film or the description or over critical background music.

3.2.1.9. Foreshadowing

UNE states that information should not be given before it appears on-screen. Ofcom agrees with this and states that wherever possible, description of actions should take place at the same time as it occurs, especially in comic situations so that audience, sighted and visually impaired can laugh at the same time.

3.2.1.10. What not to describe

Ofcom mentions that the description should only provide information about what can be seen on the screen. Information unavailable to the sighted viewer should not be added though discretion is always necessary.

BAI adds that if there are mistakes in editing or continuity, these should not be replicated in the audio description.

3.2.1.11. Sound mix

BAI includes that background level of programme audio needs to be reduced, so that the description can be clearly heard but the narration sound level should not exceed that of the background.

UNE mentions that volumes, equalizations and background sound of the AD track and of the original soundtrack need to be balanced in the mix

3.2.2. Language

3.2.2.1. Style

All guidelines mentioned here agree on the idea that language should be simple, accurate and easily understood, and vocabulary should be matched to the genre and tone of the programme. UNE says that the style should be simple, avoiding convoluted construction and cacophonous devices or redundancies.

3.2.2.2. Vocabulary

Ofcom suggests that technical or ‘filmic’ terms such as camera angles should not be used but variety is important, particularly with verbs.

3.2.2.3. Verbal tense

Ofcom and BAI remark that audio description provides a real-time commentary so should generally be in the present tense, the continuous present or the present participle as appropriate.

DCMP adds that narration should be in active voice.

3.2.2.4. Adverbs and adjectives

Useful to describe emotions and actions, but should not be subjective.

The Ofcom code in contradiction suggests the describers not to shy away from using terms as pretty/handsome where relevant to the story.

UNE permits the use of adjectivization as long as it's not imprecise.

3.2.2.5. Colours

Ofcom encourages the mentioning of colours but the French Charter on audio description suggests that colours should only be mentioned if they can be completed with an adjective.

3.2.3. Delivery

3.2.3.1. Style

Both Ofcom and BAI declare that delivery should be impersonal in style. The structure ‘we see’ should be avoided.

However, it can be important to add emotion, excitement, lightness of touch at different points in different programmes to suit the mood and the plot development – the style should be matched to the genre of the programme.

The French Charter adds that, while the voice should be fairly neutral, it should must be adapted to the emotional content of the scene and the pace of action.

3.2.3.2. Describers

According to Ofcom, UNE and DCMP describers should be chosen to fit the genre, the nature of the programme and the intended audience. Ideally, the same people should be used to describe a series of programmes, both to ensure a consistent style (e.g. in terms of level of detail) and because the description forms a part of the programme for users.

The French Charter recommends the use of two voices, a man and a woman; that can be used to indicate subtitles or a change of place and time. If voice over is used in the original work, it may be preferable to only use only one voice, of the opposite sex.

UNE advises that when either male or female voices are predominant the voice-talent should be of the opposite sex, and that the locution should be standard, with neither accent nor intonation, affection should be avoided at all times.

It also mentions that the narrator must be selected according to the type of voices and the proper tone for each work.

3.2.4. Children's programmes

Ofcom, BAI, UNE and DCMP state that language and pace of delivery for children's TV need particular care. A more intimate style may be appropriate than would be the case for programmes aimed at adults.

UNE recommends that the narrator uses an intonation which can be somewhat more expressive.

To differentiate between subtitles and description the describer should do this by either the use of their voice (e.g. stating the obvious, 'He says in Russian...' or 'A caption reads...') or a second voice.

3.2.5. Apology for breakdown of service

Both Ofcom and BAI mention that where practicable an appropriate verbal apology or explanation is to be transmitted as soon as possible after the loss or breakdown in the audio description service.

3.3. Signing

3.3.1. Language

Ofcom states that British sign language (BSL) should be the default language for signed programmes. However, broadcasters may also use other forms of sign language (e.g. Makaton for children's programmes, or Sign Supported English for programmes aimed primarily at people who have gone deaf in later life).

3.3.2. Synchronicity

According to Ofcom and BAI, as far as possible, interpretation and voice-overs of signed programmes should be synchronised with the original speech / sign language.

Presentation: Ofcom states that signed programmes may be presented or interpreted into sign language. They should be subtitled, to make it easier for people using both signing and subtitling to understand and enjoy them.

3.3.3. Signers

For Ofcom and BAI the signer should use a style of interpretation and wear clothing that is appropriate to the style of the programme. It is important that signers' clothing allows them to be seen distinctly against the picture.

3.3.4. Size of image

Ofcom and BAI advise for the image to appear on the right hand of the screen and occupy a space no smaller than one sixth of the picture.

BAI adds that for programmes in the “open” format a useful technique, can be to reduce the visual image by, for example, 25 per cent and use the subsequent blank area to place the interpreter.

3.3.5. Quality of display

For BAI guidelines, the presentation of the signer on the display screen should be of sufficient size and resolution to show all movements of the full upper trunk together with arms, hands and fingers, shoulder, neck and all relevant facial movements and expressions. All important gestures that convey meaning through sign language must be easily and accurately recognised.

3.3.6. Speaker identification

For Ofcom, the signer should use appropriate techniques to indicate whose speech he or she is interpreting, and to draw attention to significant sound effects.

BAI specifies that techniques can include referencing to a person by shifts in the eye gaze and body positioning or giving the speaker’s name and reflecting his or her manner. (This technique is known as characterisation).

3.3.7. Off-screen sounds

BAI mentions that the sign language interpreter or presenter should indicate the presence of off-screen sounds where these are important to the understanding of the programme.

3.3.8. Apology for loss of service

BAI advises that, where practical, a visual caption or subtitle should be displayed when there is a breakdown in the service.