

Access to TV and Video on Demand (VOD) for people with hearing loss

Whatever we watch, however we watch it

BACKGROUND	2
TV ACCESSIBILITY	3
2. Subtitles	3
2.1. Subtitle availability	3
2.2. Quality of subtitles	6
2.3. Information for consumers	8
3. Sign language accessible programmes	8
3.1. Linear TV	8
3.2. On-demand TV and Sign Language	9
4. Clear audio	9
5. TV Licence Fees.....	9
6. Complaints procedures.....	9
RECOMMENDATIONS	10
DEFINITIONS.....	11

Action on Hearing Loss

Action on Hearing Loss is the charity formerly known as RNID. Our vision is of a world where deafness, hearing loss and tinnitus do not limit or label people and where people value and look after their hearing. We help people confronting deafness, tinnitus and hearing loss to live the life they choose. We enable them to take control of their lives and remove the barriers in their way. We give people support and care, develop technology and treatments, and campaign for equality.

We use the term 'people with hearing loss' throughout to refer to people who are deaf, deafened and hard of hearing.

Introduction

This policy statement outlines the main issues that people with hearing loss encounter when watching linear (broadcast) TV or video on demand (VOD) services. It sets out our view of the issues and suggests what actions need to be taken to improve access to television for people with hearing loss.

Access services include subtitles, sign interpretation and audio description. Definitions of key terms are available at the end of this document.

Background

Almost all households (94%) in the UK have a digital television,¹ and we use it for education, news and entertainment. It also provides an important social function. In 2017, Ofcom reported that 68% of adults and 85% of teens felt that watching TV programmes or films brings the family together.²

Viewing can also be important for individuals. Ofcom's research found that 44% of live broadcast viewers and 42% of subscription on-demand viewers use TV to de-stress, and around half of respondents used TV for 'alone time'.³

We recognise the social importance of television, and since the development of subtitles in the early 1970s, we and other organisations have campaigned extensively for an increase in subtitling, and for more promotion and easier access to the service.

1. Changing TV Landscape

In the last decade, TV has changed dramatically. There has been substantial development in the range of content as well as new ways that TV is delivered, including through on-line, on-demand, and other digital services. The fragmentation of ways to view television has resulted in the launch of new products and services that do not always have subtitles or other access services. Once launched, it is often difficult to rectify the situation quickly.

While broadcast, or linear, TV viewing remains popular, people are supplementing this traditional viewing with broadcasters' on-demand and streaming services. Recorded TV and paid-for streaming like Netflix and Amazon Prime video are increasingly used,⁴ but the public service broadcasters are

¹ [Communications Market Report 2017, Ofcom](#)

² Ibid.

³ Ibid.

⁴ Ibid.

still leading in the audience share for online on-demand and streaming services, with 67% of adults using online services from BBC, Channel 4, ITV and Channel 5.⁵

TV accessibility

2. Subtitles

2.1. Subtitle availability

2.1.1. Linear TV

Linear TV is where the viewer has to watch a scheduled TV programme at a particular time and on a particular channel, for example, BBC 1, ITV 1, Channel 4.

For most digital channels with larger audiences, the Communications Act 2003 Act says that 80% of their linear TV programmes have to have subtitles, and 5% of their programmes have to have signed interpretation. Quotas for the main channels are generally higher:

- The BBC channels (excluding BBC Parliament) are required to subtitle 100% of their programme content and sign 5%;
- ITV1 and Channel 4 have to subtitle 90% of their programmes and sign 5%; and
- Channel 5 has to subtitle 80% of its linear TV content and sign 5%.⁶

The Communications Act states that channels have 10 years to reach full access requirements of 80% subtitling and 5% signing from the time specified in the act or from the time they start broadcasting. The regulator, Ofcom, can grant exemptions to certain channels in relation to one or more of the access services. This is to ensure that their costs for providing access services are reasonable and do not cause an 'undue burden'. Exemptions are based on the following:

1. Broadcasters who are unable to afford 33% of the annual targets for subtitling (as outlined above), as well as 100% of the targets for signing and audio description, will be exempt from the provision.
2. Channels with an average audience share of less than 0.05% of all households are not required to provide subtitles.⁷

Ofcom publishes six monthly reports on how broadcasters are achieving their targets⁸, as well as a code detailing who needs to provide access services and best practice information regarding subtitles⁹. Ofcom is in the process of updating this code.

Thanks to this legislation, the majority of linear content now includes optional subtitles and some channels achieve close to 100% subtitling provision.¹⁰

⁵ Communications Market Report 2017, Ofcom

⁶ https://www.ofcom.org.uk/data/assets/pdf_file/0020/97040/Access-service-code-Jan-2017.pdf

⁷ Ibid.

⁸ <https://www.ofcom.org.uk/research-and-data/multi-sector-research/accessibility-research/tv-access-report-2017>

⁹ See footnote 5

¹⁰ Ofcom (2018), Access Services Report: 2017

2.1.2. On-demand TV

The regulations

Until recently, on-demand services were not covered by existing regulation and the provision of access services for TV watched on-demand relied on voluntary action by the industry. As a result, a significant amount of content remains inaccessible for people with hearing loss. Ofcom reported that in 2017 the percentage of providers, including subtitles, on any of their on-demand content rose from 38% to 49% of providers.¹¹ Only 8% of providers provided any signed content in 2017.

Even if a programme is available on one service with subtitles, when VOD content is displayed through other platforms, access services may not be available. How an individual watches an on-demand programme also impacts on whether subtitles are available or not. For example, subtitles may be available if watched via a website. However, subtitles may not be available if the same programme is watched through a mobile phone or tablet app. This is because the apps that allow access from a phone or tablet are often not designed with accessibility in mind, and therefore the ability to switch on subtitles has not been incorporated into the product.

Action on Hearing Loss has been working with television providers, the TV regulator Ofcom, the Royal National Institute for the Blind (RNIB), and Sense, to increase access services for people with sensory loss. As part of this work, we launched the Subtitle it! campaign, which focused on the delivery of subtitles for on-demand content. We are proud of our campaigning which led to the introduction of Clause 93 to the Digital Economy Act 2017 that gives Ofcom the power to demand access services for on-demand content and to bring greater alignment with the regulation for linear TV.

Following the Act, Ofcom released a consultation¹² to assist the government with the drafting of the secondary legislation. In December 2018 they published their recommendations following this consultation. These include recommendations on quotas that on demand programme services (ODPS) should adhere to, as summarised below:

- a) Within 4 years of the regulations coming into force, ODPS providers should offer subtitling on 80% of their catalogue, audio description on 10% and signing on 5%.
- b) There should be an interim 2-year target of 40%, 5% and 5% respectively.
- c) Exemptions from, or reductions in, these targets (or alternative arrangements) should be allowed on the basis of: i) Audience benefit ii) Affordability iii) Technical difficulty

They also recommend that ODPS providers are required to report annually to Ofcom on the extent to which they have met the requirements, and on their plans to continuously and progressively make their services more accessible. They have also stipulated that ODPS providers are required to report on measures they have taken to ensure that the required access services are of sufficient quality and can be used effectively by their intended audiences.

¹¹ <https://www.ofcom.org.uk/research-and-data/multi-sector-research/accessibility-research/tv-access-report-2017>

¹² <https://www.actiononhearingloss.org.uk/how-we-help/information-and-resources/publications/consultation-responses/broadcasting-and-telecommunications/odps-accessibility-consultation-2018/>

Services such as YouTube are not regulated by Ofcom as they do not have editorial responsibility for the content of the videos. The individuals who post the videos are responsible for the content. This also means services based outside of the UK are not regulated, such as Netflix or Apple. BBC iPlayer is also not regulated by Ofcom, only BBC Store and BBC Worldwide.¹³ The accessibility of BBC's linear TV offering is regulated via the 2006 BBC agreement but not their ODPS service (i.e. iPlayer). In their recommendations for the Digital Economy Act, Ofcom have called on government to consider whether a similar arrangement with regards BBC's linear offering should apply in relation to iPlayer. Indeed, Ofcom have indicated that they are considering the nature of these arrangements, with a view to consulting on this in 2019. **We welcome this course of action and look forward to the consultation.**

The Digital Economy Act 2017: our position regarding Ofcom's recommendations

We welcome Ofcom's recommendations regarding the secondary legislation for the Digital Economy Act 2017 and believe, if implemented, they would mark a profound improvement for people living with deafness and hearing loss. **We believe these targets are reasonable and call on broadcasters to collaborate with Action on Hearing Loss and other stakeholders to make these changes as seamless and as quick as possible.**

We will continue campaigning to ensure the government heeds these recommendations and **encourage both the government and Ofcom to resist any pressure from industry to grant unnecessary exemptions from the proposed requirements.**

2.1.3. Other video content

Videos are increasingly available on the web but many of these contain no subtitles or signing and are therefore inaccessible to many people with hearing loss. There is no legal requirement for them to provide subtitles.

Many of the videos are produced by news media organisations such as The Guardian, BBC News etc. **We urge these organisations to prepare subtitles for any video clips with audio to ensure people with hearing loss are not excluded. This should include content posted on YouTube by companies.**

YouTube has a feature to enable automatic captions but this can create highly inaccurate subtitles. **We ask people uploading video content to edit and improve any captions that are auto-generated by YouTube, or to manually add subtitles to their content.** Further information about how to do this is available from YouTube¹⁴.

Neither the Digital Economy Act 2017, nor the 2003 Communications Act, applies to adverts or continuity announcements between linear or on-demand programmes and therefore the majority of these are not subtitled. **We call on advertisers to ensure their content is subtitled.**

¹³ https://www.ofcom.org.uk/data/assets/pdf_file/0021/67710/list_of_regulated_video_on_demand_services.pdf

¹⁴ <https://support.google.com/youtube/answer/2734796?hl=en>

2.2. Quality of subtitles

Traditionally subtitles on live television were produced using a speech to text reporter (STTR), also known as a palantypist, who would type what was being said on an electronic shorthand keyboard which is then converted into longhand through a computer. However, voice recognition software (re-speaking), is now mainly used as there are not enough STTRs to meet demand. This is where a subtitler listens to the programme and records the speech, which is then converted automatically to text. The subtitler programmes words into their voice recognition system to improve accuracy, and is able to manually edit errors before broadcasting the subtitle. However, despite this, live subtitling is still subject to error and we still receive complaints from supporters to this effect.

As a result of regular complaints about the poor quality of live subtitles, in 2013 Ofcom agreed to investigate this issue further. Action on Hearing Loss carried out a piece of research with our supporters to feed into Ofcom's consultation.¹⁵ The survey found that delays between speech and subtitles were the biggest source of frustration for subtitle users, followed by the accuracy of subtitles. Following the consultation and our research, in October 2013, Ofcom launched a two year project which required broadcasters to measure the accuracy, latency and speed of subtitles at six monthly intervals for a period of two years, which resulted in a series of reports published by Ofcom.¹⁶

While the project has not led to significant improvements, it has prompted closer partnerships between broadcasters, production and subtitling companies, leading to the better use and sharing of scripts to reduce delays and improve accuracy. This means that there are now fewer pre-recorded programmes being subtitled live, and there is a greater use of pre-prepared subtitles on programmes such the news, where subtitle companies have been given greater access to scripts. Despite these improvements, some pre-recorded programmes are still supplied with 'live' subtitling when not enough time has been left between production and broadcast. This is not acceptable: **all producers should allocate time in the production schedule to enable subtitles to be added accurately.**

Where programmes are delivered late, for example due to last minute changes of a current affairs programme, the **producers should work with the subtitling companies to share as much information as possible to enable the subtitlers to prepare.**

Technology also needs to be further developed in this area in order to reduce mistakes. However, **it is also important that broadcasters and Action on Hearing Loss raise awareness among the public about the current limitations of subtitles to manage expectations.** This [video on YouTube](#) demonstrates the way in which live subtitles are produced.

Ofcom published their final report on live subtitle quality in November 2015.¹⁷ Following this, in 2017, they held a roundtable discussion between subtitlers, user groups, and Ofcom in 2017 to discuss quality. A few action points were decided at this meeting, including for Ofcom to look into continuing monitoring quality. **We urge Ofcom to expedite this action. To complement this action, we call on Ofcom to update their guidance on the quality of access services to and consult Action on Hearing Loss when drafting this.**

¹⁵ Matthews (2013), *Getting the Full Picture*. Action on Hearing Loss

¹⁶ <https://www.ofcom.org.uk/research-and-data/tv-radio-and-on-demand/tv-research/live-subtitling>

¹⁷ https://www.ofcom.org.uk/data/assets/pdf_file/0011/41114/qos_4th_report.pdf

Further details about accuracy and latency issues are detailed below.

Accuracy of subtitles

As part of Ofcom's project into the quality of subtitles, broadcasters were required to submit NER scores for a sample of their programmes. This score, developed by the University of Roehampton,¹⁸ takes into account different accuracy measures. The researchers who developed this model identified 98% as the quality threshold above which the quality of subtitling can be considered as acceptable. **We therefore recommend that live programmes should have subtitles that achieve an NER score of at least 98%.**

We are aware that some broadcasters and organisations who produce subtitles are developing automatic speech recognition (ASR) technology to produce subtitles¹⁹. Currently, most live subtitles are produced via the re-speaking technique, which requires a person to speak into ASR software which then converts their speech into subtitles (see more details above). Recently, organisations have started to remove the re-speaker from the process and use ASR to convert the programme's audio into subtitles. The advantage of this is that it reduces the cost of producing subtitles, which is why there is interest in the technology. However, although cheaper, the process provides less accurate subtitles than ones produced via re-speaking or other manual processes.²⁰

We acknowledge that ASR can be helpful when speeding up the process of producing subtitles and can reduce the cost of the process, which can ultimately mean that more content is accessible. Therefore we also believe that investment should be made in developing the technology to improve its accuracy. However, until the technology is improved, we do not want to see ASR being used to produce substandard subtitles. **We call on broadcasters to ensure that any use of ASR achieves the same accuracy rate as current manual techniques.**

Latency of subtitles

In addition to accuracy, Ofcom's reports on quality looked at the latency (delay) of subtitles appearing on the screen after it is said orally. It was found that the average delay was around 5 to 6 seconds – well above the 3 seconds recommended in Ofcom's best practice guidelines. Subtitle delays are frustrating for our supporters.

In response to the calls for improvement to the timing of subtitles, the BBC developed a new subtitling system – the Time Machine – that has reduced the delay of subtitles by 3 seconds by making use of the time taken to compress the audio and video streams for transmission. When TV is broadcast, it takes a number of seconds for the TV content (image and audio) to appear on our screens. This is due to the time it takes to compress and encode the large amount of data to be broadcast. It takes around five seconds to process High Definition (HD) TV, and two seconds to process Standard Definition (SD) TV. The Time Machine system works by taking advantage of this short time window to enable subtitles to appear earlier, and more in-sync with audio, with an initial focus on HD channels.

¹⁸ Ofcom (2014), *Measuring live subtitling quality*.

¹⁹ See <https://medium.com/bbc-news-labs/from-speech-to-text-5fff6abf4df1> and <https://www.redbeemedia.com/blog/why-automatic-speech-recognition-is-not-automatic-captioning/>

²⁰ See <https://www.redbeemedia.com/blog/why-automatic-speech-recognition-is-not-automatic-captioning/> and Kulczar, D (2018), *How Can AI Elevate Your Closed Captioning Solutions?*, IBM.

The 3 second figure was derived from running a series of tests to assess the right amount of time to delay the subtitles. The BBC found that a delay shorter than 3 seconds would not be satisfactory as subtitles would sometimes appear before the words were spoken.

The live subtitle re-timing has been deployed on BBC One HD, BBC Two HD, CBBC HD, CBeebies HD, BBC Four HD and BBC News HD on satellite - both Freesat and BskyB – and Freeview. **We welcome these changes and urge other broadcasters to follow suit.**

Currently the technology used on the standard definition BBC channels is not suitable for live subtitle re-timing but as the equipment is changed and updated, re-timing can be used on these channels as well.

Other quality issues

Our Getting the Full Picture report in 2013 found that, in addition to problems with latency and accuracy, respondents had problems with:

- the positioning of subtitles - for example subtitles covering someone's face;
- subtitles being intermittent: stopping and starting or freezing

We urge broadcasters to continue to remedy these issues.

2.3. Information for consumers

With many of the pay television channels and platforms, information is not provided up front as to the level of subtitling available. Viewers will purchase a programme or sign up to a contract without realising there are no subtitles available. We therefore believe that **services need to provide this information up front so that people can make informed decisions when choosing which programme or film to purchase.**

To help remedy this issue, Ofcom have developed an online interactive tool²¹ which outlines the percentage of programmes with subtitles on each on-demand service provider. We welcome this tool, however it is important that this information is also on the provider's website as we know that our supporters will look here first.

3. Sign language accessible programmes

3.1. Linear TV

Quotas for signing are much lower than for subtitling, generally at 5% of all programmes. Domestic channels with an audience share of between 0.05% and 1% have the option to broadcast 35 minutes of sign-presented programming each month or to contribute to the availability of sign-presented programming, namely the British Sign Language Broadcasting Trust (BSLBT), as part of an Ofcom approved alternative arrangement. The BSLBT commissions sign-presented programming and is broadcast on the Community Channel and Film4.

²¹ https://www.ofcom.org.uk/research-and-data/multi-sector-research/accessibility-research/tv-access-report-2017#accordion_target-114243

3.2. On-demand TV and Sign Language

It is our view that there should be more signed content available for the estimated 87,000 people in the UK whose first language is British Sign Language (BSL).²² **The current quota of 5% for signed content on linear TV (and that is proposed for the on-demand regulations) must be improved.** However, in recognition of the differences between audience size and need for sign language and subtitles, **we recommend further in-depth research and review of this issue.** Such a review could consider the user-need and audiences preferences, particularly with regard to establishing audience benefit.

We would welcome the opportunity to support an in-depth review of this service, and recognise that such a review could not be conducted in isolation from the Code for linear broadcast.

4. Clear audio

Speech can often be inaudible for people with mild to moderate hearing loss due to the way in which a programme is made. For example, background noise such as music, sound effects and ambient noise, can make it difficult for people with hearing loss to follow dialogue during a programme. Strong accents and poor enunciation can also affect the audibility of speech.

In 2010 we undertook research with the BBC, Voice of the Listener and Viewer (VLV), Channel 4 and thousands of viewers, to determine the main issues that prevent people from hearing or understanding programmes correctly. As a result the BBC produced guidance videos for programme makers. However, this guidance is not always followed and Ofcom does not have the power to intervene in editorial decisions. **We urge broadcasters and production companies to ensure all staff involved in making a programme watch these videos and follow the guidance.**

5. TV Licence Fees

We do not support a reduction in TV Licence fees for people with hearing loss; as we feel this may justify to broadcasters the provision of inaccessible services, instead, we are calling for television in all its forms to be made accessible for people with hearing loss through the provision of access services.

6. Complaints procedures

Our surveys of people with hearing loss in 2013 and 2017 found that some respondents, after complaining to broadcasters and ODPS providers about poor accessibility have had unsatisfactory responses. For example, people did not feel their complaint was taken seriously and, at times, people have had no response to their complaint. **Broadcasters should ensure that a complaint about access services is always responded to and that it is clear what action will take place to rectify the issue raised. Or, if the issue is not easily rectifiable, a reply should outline why this is the case.**

²² <https://bda.org.uk/help-resources/>

Recommendations

Government should:

- Bring forward, in the quickest possible timeframe, the necessary secondary legislation to give effect to Clause 93 of the Digital Economy Act 2017. Further, we would like to see Ofcom's recommendations for the regulations put into effect.

Ofcom should:

- Work with government to ensure that their recommendations for secondary legislation under the Digital Economy Act are enacted.
- Make recommendations following its review to improve the quality of live subtitling.
- Improve the current quota of 5% for signed content on linear TV and the proposed on-demand regulations.
- Consult sign language users to understand which programmes they would prefer to be signed.
- Revise their guidance for broadcasters on the quality of access services.
- Look into how they can monitor the quality of live subtitles.

Broadcasters and OPDS providers should:

- Ensure that pre-recorded sections of live television shows are subtitled in advance, so that only the truly live sections are subtitled with live subtitles. This will help produce more accurate subtitles during live TV.
- Work towards Ofcom's recommendations for the Digital Economy Act 2017.
- Raise awareness among the public about the current limitations of subtitles to manage expectations.
- Supply subtitles that achieve an NER score of at least 98%.
- Ensure that a complaint about access services is always responded to and that it is clear what action will take place to rectify the issue raised. Or, if the issue is not easily rectifiable, a reply should outline why this is the case.
- Consult sign language users to understand which programmes they would prefer to be signed.
- Increase the amount of programmes that are signed.

Producers should:

- Allocate time in the production schedule to enable subtitles to be added accurately.
- Work with the subtitling companies when programmes are delivered late by sharing as much information as possible to enable the subtitlers to prepare.
- Ensure that there is clear audio for people with hearing loss.

Creators of online videos should:

- Prepare subtitles for any video clips with audio to ensure deaf people are not excluded. This should include content posted on YouTube by companies.
- We ask people uploading video content to edit and improve any captions that are auto-generated by YouTube, or to manually add subtitles to their content.

Advertisers should:

- Ensure that their video advertisements have subtitles.

Action on Hearing Loss will:

- Raise awareness among the public about the current limitations of subtitles to manage expectations.
- Work with service providers and Ofcom to ensure that our recommendations outlined in this document are achieved.

People with hearing loss can:

- Continue to raise awareness of inaccessible TV programmes to the broadcaster or ODPS provider, in addition to Action on Hearing Loss.

Definitions

Access Services - include subtitles, sign interpretation and audio description

Audio description - commentary that describes body language, expressions and movements, making the programme clear for people with sight loss.

IPTV – Internet Protocol Television (IPTV) is where television services are delivered over the internet rather than through the TV aerial, satellite or cable.

Linear TV –Also called broadcast TV, the viewer has to watch a scheduled TV programme at a particular time and on a particular channel

Non-linear TV – The viewer can choose what they want to watch, at a time they want to watch it; for example, BBC iPlayer. It is also known as video on demand (VOD) or catch-up TV.

ODPS – on-demand programme services. This terminology is commonly used by Ofcom.

Platform – BT Vision and Sky are both examples of a platform. They are a means of hosting and delivering VOD services.

Service – this means they have editorial control over what appears; for example Channel 4oD. YouTube does not have editorial control, so it is a platform rather than a service. Some sections of Sky and BT Vision are also services, as they have editorial control.

Video on demand (VOD) – this is where programmes are made available over an electronic communications network, such as the internet or through mobile phones. It allows users to access programmes at a time of their own choosing. This does not include time-shifted programmes, such as those recorded and watched at a later date.