



Australian Government

Department of Communications and the Arts

# Audio Description Working Group—final report

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## Executive summary

Australian audiences have more viewing opportunities than ever before, choosing from a range of services including free-to-air (FTA) television, subscription television (STV), catch-up television, streaming services, subscription video on demand (SVOD) and user generated video. Australia's FTA and STV broadcasters provide access to iconic cultural and sporting events, news, current affairs and entertainment, including Australian content. The sector plays an important role in reflecting and informing Australian cultural life.

Audio description (AD) provides greater access to video content for people who are blind or vision impaired, improving their understanding and enjoyment of television. AD is socially beneficial, promoting equality and independence, and contributing to the social inclusion of AD users and encouraging greater participation in society.

Audio-described content is currently available in Australia at major cinemas, on some DVDs and Blu-rays, and on selected online services, such as iTunes and the international streaming service, Netflix. Some audio-described children's content is available via an app provided by Big Access Media (BAM). AD is also provided at some museums, galleries and theatre productions. Australian broadcasters and streaming services are not currently required to provide AD services under legislation.

There have been two government-funded AD trials conducted by the Australian Broadcasting Corporation (ABC) on ABC1 in 2012 and on iView in 2015–16. Building on the success of these trials, the Minister for Communications and the Arts and the Assistant Minister for Social Services and Disability Services announced in April 2017 the formation of an Audio Description Working Group (ADWG) to examine options for increasing the availability of AD services in Australia.

The ADWG included representatives from consumer and vision groups, the FTA and STV industry, AD service providers and media accessibility researchers. The ADWG met four times from June to October of 2017 to discuss the matters outlined in the Terms of Reference.<sup>1</sup> ADWG meetings were well attended by all stakeholder groups and a number of presentations were provided from guest speakers including representatives from Netflix and New Zealand AD provider, Able.

### AD delivery options

The ADWG identified three options for the delivery of AD: broadcast television, online platforms and a separate AD service provided by an app and landline phone. All options are achievable but will require varying levels of investment, effort to overcome technical complexities and time to implement. Each option will also have particular benefits for different groups of AD users and potential limitations for the sustainability of the service. The options are discussed in detail in sections 4, 5 and 6 of the report, with considerations that affect all three options outlined in [section 7](#). The three options are summarised below:

#### Option 1—Broadcast television

Despite changes in viewer behaviour and content distribution, broadcast television is still the most popular medium for most Australians, particularly older Australians, who currently comprise the majority of people who are blind or vision impaired. This option would provide convenient access for people who own a television or set top box capable of receiving an AD service and it would not require access to the internet or other devices, such as a computer or smart phone. Older Australians and those with disability are less likely to have access to the internet and digital technology. With this option, AD

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<sup>1</sup> See [section 1.2](#) for the full Terms of Reference for the ADWG.



users would be able to watch programs at the same time as their family and friends and in largely the same way.

This option would be the most cost and labour intensive for FTA and STV broadcasters and would involve significant technical complexity. As a result it would be a number of years before AD services can be introduced. Both FTA and STV broadcasters would need to undertake significant engineering work, extensive capital upgrades, and testing of broadcasting signals and equipment to incorporate AD into broadcasts and introduce an automated AD service. There would be a direct cost and an opportunity cost in terms of spectrum used to deliver an AD service. Significant work would also be required on the consumer receiver side. The current Australian industry standard that relates to FTA digital television receivers does not contain any specifications for AD services. This means that the functionality of Australian consumer electronics products would need to be tested, understood and resolved prior to any introduction of AD services to avoid reception issues that occurred during the ABC's 2012 AD trial where a number of consumer receivers caused reception issues that were unable to be resolved. Due to FTA retransmission arrangements and the use of FTA tuners in STV set top boxes, the introduction of AD on FTA services would need to be compatible with STV platforms.

### Option 2—Online Platforms

This option would involve providing programs with AD through online catch-up television services or SVOD services. Depending on the device used to watch the service (such as a connected television), AD users are able to watch programs with their family and friends. There may be a delay between a program's broadcast on television and the program being available online with AD (although this is not always the case as some services offer live streaming or the upload of on demand files at the time of broadcast). An online platform provides flexibility to watch programs on demand and would provide an opportunity for a back catalogue of programs with AD providing greater choice for AD users.

Some AD users may not have access to or may not engage with digital technology and it can be challenging to learn, especially for people who are new to vision loss. There may also be affordability issues for some AD users in terms of access to data, a subscription to the service (if applicable) and a suitable device. There may be privacy concerns if users have to register for an online service.

This delivery option would avoid technical issues around transmission, retransmission and receiver issues associated with [option 1](#). However, it would still require resolution of issues related to acquisition and ingest of content and compilation. Platform providers may need to upgrade software for each version of the app or online player to build in AD capability, (for example apps for Apple iOS, Android, Apple TV, FreeviewPlus, Xbox) as well as establishing new workflows. A testing period would also be required to ensure full accessibility of each player, including consultation with people who are blind or vision impaired, similar to the ABC's AD trial on iview. This option would be the second most cost and labour intensive in terms of establishing the AD service, due to the testing and upgrades to various online players but it would likely be quicker to market than [option 1](#).

### Option 3—Separate AD service

This option involves a discrete AD service which operates independently of a broadcast or online service. AD apps allow users to watch video content and receive a separate, synchronised AD track through their mobile device. Similar to an app, it is also possible for AD users to receive an AD track via a landline phone call which is synchronised to a television broadcast. This delivery option could offer considerable flexibility for AD users with a range of viewing preferences, including those who prefer broadcast television and landline phones and those who prefer online services and watching content on demand. This option would be the least cost and labour intensive option for the supply of AD, and would avoid many of the technical issues associated with options [1](#) and [2](#). It would also pose no risk of interference to other viewers, while allowing AD users to enjoy access to broadcast television.



Broadcasters and content providers would need to establish new workflows to build in the commissioning of AD into existing processes and work with a third party AD service provider to ensure the AD track matches the final version of the program, including any commercial breaks and scheduling changes.

## Sustainability of a future AD service

The report discusses ways to introduce an ongoing AD service that would continue to grow over time, including a discussion of incentives to encourage AD provision. Government funding could be provided to broadcasters to subsidise the cost of establishing an AD service or contributing towards an ongoing AD service. Establishment costs would vary significantly depending on the option selected, with broadcast television representing the most costly option, followed by online platforms and a separate AD app or phone service.

An alternative to government funding or a legislative requirement is for broadcasters to develop a sustainable way to introduce AD services on the platform of their choice and to commit to providing an ongoing service through introduction of or amendments to relevant industry codes or guidelines. Commercial FTA and STV broadcasters are not funded by government to provide captioning services, although captioning targets are required by legislation. This method would allow individual broadcasters to determine the most appropriate AD delivery option based on their operational environment and financial circumstances. It also recognises that there are more economical and innovative alternatives to the delivery of AD on broadcast television that would still provide AD services to television audiences.

## Preferred options

Broadcast television ([option 1](#)) is the preferred option for vision groups and their members, with a priority on FTA television and the national broadcasters in particular. This is because it would provide equal access to television to that of the mainstream population.

The app and landline phone solution ([option 3](#)) is supported by vision groups providing users can rely on an ongoing, sustainable service. Although this option would require AD users to access a separate service, it would enable the social inclusion of watching television with family and friends while also offering flexibility for users to listen to content on demand. This option would also benefit a range of AD users.

The representative body for commercial FTA broadcasters, Free TV Australia (Free TV), notes that separate AD services ([option 3](#)) have potential to increase accessibility to AD more quickly and more economically than either the broadcast or online options considered.

Free TV considers it is the role of the Government to fund programs that address social inequities and maximise social welfare.

The national broadcasters, ABC and SBS, have advised that they would require additional government funding to provide an AD service.

Foxtel's preferred AD delivery option is online or a companion application ([option 2](#) or [option 3](#)) which it considers to be better suited to the Foxtel subscriber base.



# 1. Introduction

## 1.1. Audio Description in Australia

Audio description (AD) is a verbal commentary that complements the underlying soundtrack of a piece of audio-visual content, such as a television program, film, DVD or live performance. During gaps in dialogue, AD describes visual elements such as scenes, settings, actions and costumes. AD is particularly beneficial to people who are blind or vision impaired as it can greatly increase the level of understanding and enjoyment of television and other content. In 2016, Vision 2020 Australia estimated that more than 453,000 Australians are blind or vision impaired.<sup>2</sup>

Audio-described content is currently available in Australia at major cinemas, on some DVDs and Blu-rays, and on selected online services, such as iTunes and the international streaming service, Netflix. Some audio-described children's content is available via an app provided by Big Access Media (BAM).<sup>3</sup> AD is also provided at some museums, galleries and theatre productions.

Australian broadcasters and streaming services are not currently required to provide AD services under legislation, but it is provided by public and/or commercial broadcasters in other countries which adopted AD at a different stage of technological development and which have different spectral impacts than Australia. These include New Zealand, the United Kingdom (UK), United States of America (USA) and Canada.

It is possible to add AD to videos on YouTube using the separate service [YouDescribe](#), however, there is currently no built in tool for the platform. Both Facebook and Twitter have launched products that provide alternative text for images to allow users who are blind or vision impaired to access content.<sup>4</sup>

The Australian Government has funded the Australian Broadcasting Corporation (ABC) to complete two AD trials. The first was a 13 week terrestrial trial on ABC1 in 2012 and the second provided content with AD on the online catch up service, iview, for 15 months during 2015–16. Key findings from the trials are discussed in [section 1.3](#).

The Government ratified the *United Nations Convention on the Rights of Persons with Disabilities* in 2008, which prohibits discrimination against people with disability in all areas of life. Article 30 of the Convention relates to participation in cultural life, recreation, leisure and sport. It states that:

*States Parties recognize the right of persons with disabilities to take part on an equal basis with others in cultural life, and shall take all appropriate measures to ensure that persons with disabilities enjoy access to television programmes, films, theatre and other cultural activities, in accessible formats.<sup>5</sup>*

The aims of the Convention are reflected in the National Disability Strategy 2010–2020 and through legislation that supports the rights of people with disability including the *Disability Discrimination Act 1992* (DDA). The DDA prohibits discrimination on the grounds of a person's disability in many areas of public life including employment, education, access to premises and access to goods, services and facilities. The DDA provides an exception if the cost or difficulties of providing access will place an unjustifiable hardship on a person or organisation, for example, if it is beyond the financial means of an organisation. The Australian Human Rights Commission (AHRC) has the power to investigate and

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<sup>2</sup> Centre for Eye Research Australia and Vision 2020 Australia, [National Eye Health Survey 2016](#), 13 October 2016.

<sup>3</sup> See [Section 6](#) of the report for more information about BAM.

<sup>4</sup> See Twitter blog, [Accessible images for everyone](#), 29 March 2016 and Facebook blog, [Under the hood: Building accessibility tools for the visually impaired on Facebook](#), 5 April 2016, (accessed 11 December 2017).

<sup>5</sup> United Nations, [Convention on the Rights of Persons with Disabilities](#), 13 December 2006.



attempt to resolve complaints of discrimination. If the resolution process is unsuccessful, the complainant may commence legal proceedings regarding complaints in the Federal Magistrates Court or the Federal Court within 60 days after the AHRC terminates a non-reconciled complaint.<sup>6</sup>

## 1.2. The Audio Description Working Group

In April 2017 the Minister for Communications and the Arts and the Assistant Minister for Social Services and Disability Services announced the formation of an Audio Description Working Group (ADWG) to examine options for increasing the availability of AD services in Australia. The ADWG was tasked with completing the Terms of Reference listed below.

The ADWG will:

- identify options to sustainably increase access to AD services for Australians who are blind or vision impaired and others who may benefit from AD
- identify any impediments to implementation of such options, including technical, financial, cultural or capability issues
- bring together industry and consumer stakeholders with relevant expertise and experience to provide advice on these options and impediments, and
- provide a report to the Minister for Communications and the Arts and the Assistant Minister for Social Services and Disability Services on its findings by 31 December 2017.

The ADWG will, in performing this role, consider:

- the benefits of AD and the impact of the provision of AD services on consumers who are blind or vision impaired
- the content best suited to AD and the content users would seek to access with AD
- the current availability of AD services in Australia
- the use of AD across different platforms (i.e. terrestrial TV, online platforms, apps)
- learnings from the two AD trials conducted by the ABC in 2012 and 2015–16
- challenges to accessing and providing AD including technical and compatibility issues, content and copyright issues, and the financial cost of implementation
- incentives to encourage future provision of AD services in Australia, and
- alternatives to legislated requirements to provide AD services.

The ADWG included representatives from consumer and vision groups, the free-to-air (FTA) and subscription television (STV) industry, AD service providers and media accessibility researchers from Curtin University. The ADWG was chaired by Kath Silleri, Assistant Secretary of the Consumer Safeguards Branch in the Department of Communications and the Arts (DoCA), with secretarial support provided by DoCA.

The ADWG met four times from June to October of 2017 at DoCA's Sydney office in Surry Hills, NSW. Additional smaller meetings and consultations were held between ADWG meetings and while finalising this report. The ADWG meetings were well attended by all stakeholder groups and a number of presentations were provided from guest speakers including representatives from Netflix, New Zealand AD provider, Able, and Government Departments discussing copyright and digital literacy. A full list of participants and guest speakers can be found at [Appendix A](#).

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<sup>6</sup> Australian Human Rights Commission, [The complaint process for complaints about sex, race, disability and age discrimination](#), AHRC website, (accessed 20 December 2017).

### 1.3. Key findings—ABC AD trials

The ABC has completed two AD trials with discrete funding provided by the Government, a 13 week technical trial broadcast on ABC1 in 2012, and a 15 month trial on the ABC's online catch-up service, iView, in 2015–16.

#### 2012 trial on ABC1

The first AD trial involved the broadcast of programs with AD on ABC1 between 5pm and midnight from 5 August to 4 November 2012. A total of 193 hours of drama, documentary, factual and arts programs with AD were broadcast, equating to 14 hours per week.

The ABC used a receiver mixed approach for the trial, whereby the additional AD track was mixed with the main audio and visual at the receiver end rather than the broadcast end (further detail about receiver mixed and broadcast mixed AD is included under [section 4.1](#)). ABC Television also adopted a manual process rather than an automated approach to incorporate AD content in its workflow, which was significantly more labour intensive. The technological complexity of developing, implementing and managing the AD service within the ABC's internal operations was far greater than initially estimated, as a result the ABC was unable to establish an automated process for the trial. The ABC's final report states that an automated process should be developed if a permanent AD service were introduced and that this would require significant capital and operational investment and a minimum 18 months lead time.<sup>7</sup>

The AD service adversely impacted upon the delivery of ABC1 to a number of viewers during the trial, including viewers who experienced problems with the main audio track or unwanted reception of AD. Despite receiver testing prior to the trial, problems caused by the AD track presented differently across different receiver brands.<sup>8</sup> Many of these issues could be addressed by resetting or reconfiguring user equipment, however, in a small number of cases it was not possible to regain sound on ABC1 or it was necessary to reset equipment every time it tuned away from ABC1. As a result, the ABC received around one thousand complaints due to reception and other issues associated with the terrestrial AD trial.

Feedback from AD users via the ABC's survey and anecdotal feedback from vision stakeholder groups indicated a strong level of support for the AD service. Vision Australia reported feedback from one member who said that the AD trial was 'life changing'. Other feedback was that many members felt 'included' for the first time in many years.<sup>9</sup>

#### 2015–16 trial on iView

The iView trial ran from 14 April 2015 to 30 June 2016 with the ABC providing 922 hours of original programs with AD, averaging 14 hours of new AD content per week. The types of content featured in the trial included children's programming (which was not included in the first trial), as well as Australian content, drama, comedy, documentary and current affairs programs. During the trial there was a total of 158,277 plays of audio-described programs on iView, representing 0.58 per cent of total program plays on iView where programs with AD were available.

During the trial, AD services were progressively made available on devices that use the Apple and Android platforms, desktop computers and through Hybrid Broadcast Broadband TV (HbbTV). The rollout of AD on Apple and Android platforms was successful with limited technical difficulties, however,

<sup>7</sup> ABC, [Final Report to the Minister for Broadband, Communications and the Digital Economy—Audio Description Trial on ABC Television](#), December 2012.

<sup>8</sup> Australian Digital Testing, [TST1 Audio Description transport stream testing](#) (Appendix 5 of ABC's Final Report 2012 AD Trial), April 2012

<sup>9</sup> Ibid.



there were some issues in implementing a universally accessible desktop platform compatible with assistive devices. This resulted in the delayed launch of the desktop computer component of the trial.

After the trial was completed, the ABC's audience survey indicated that the majority of users were positive about the selection of AD programs on iView and found the AD track of good quality.<sup>10</sup> Users also found the services to be a valuable enhancement to their media engagement and their social interactions.<sup>11</sup>

Vision groups noted that the trial could have been promoted more broadly to reach the significant number of people with vision impairment who are not members of their organisations, as well as other members of the public who may benefit from AD.<sup>12</sup> In addition, vision groups advised that a number of potential users of the iView trial were unable to participate because they did not have access to the internet, suitable data allowances, a device required to access iView or the knowledge and ability to access iView.<sup>13</sup>

## 1.4. Video viewing trends

The ADWG considered a broad range of issues when working through the practicalities of providing AD in Australia. One key consideration was the changes in viewer behaviour and consumption of content moving from traditional broadcast television towards online video content accessed through a range of devices. A 2017 report from Ericsson Consumer Lab predicts that by 2020 only 1 in 10 consumers across the world will watch television on a traditional screen, and half of all viewing will be done on a mobile screen.<sup>14</sup> The decline in traditional viewing in Australia is consistent with this trend but the speed of change in Australia appears to be slower.<sup>15</sup> The findings of the Australian Video Viewing Report indicates Australians are spending less time watching live and time-shifted television on traditional TV sets, while increasingly using mobile devices to watch video away from home and at different times during the day.<sup>16</sup>

Along with this shift towards mobile screens comes a larger use of on demand and streaming services. Close to six out of ten consumers currently use on demand and catch-up television services, with Ericsson projecting that by 2020, seven out of ten consumers will prefer on demand and catch-up services over scheduled linear television viewing. This trend toward on demand and other online streaming services is especially pronounced amongst younger consumers.<sup>17</sup> However, this is not the case for older Australians, particularly those aged over 65 years.<sup>18</sup>

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<sup>10</sup> ABC, [Final Report to the Department of Communications and the Arts—ABC iView Audio Description Trial](#), October 2016

<sup>11</sup> Ibid.

<sup>12</sup> Vision Australia et al, [Blindness Sector Report on ABC iView trial of Audio Description](#), February 2017.

<sup>13</sup> Ibid.

<sup>14</sup> Ericsson Consumer Lab, [TV and Media 2017](#), October 2017.

<sup>15</sup> See OzTAM, Regional TAM & Nielsen, Australian Multi-Screen Reports 2012-2016 and Australian Video Viewing Reports 2017, see also 'Tradition Broadcast TV trends' in ACMA, [Communications Report 2016-17](#), 8 December 2017.

<sup>16</sup> OzTAM, Regional TAM & Nielsen, [Australian Video Viewing Report](#), Quarter 2 2017.

<sup>17</sup> Ericsson Consumer Lab, [TV and Media 2017](#), October 2017.

<sup>18</sup> See 'Online viewer profile' in ACMA, [Communications Report 2016-17](#), 8 December 2017.



DoCA observes that many telecommunications companies are offering the ‘zero rating of content’, whereby any data consumed by a particular application or category does not count towards a consumer’s data cap.<sup>19</sup> Australian internet service providers are also moving towards larger and often unlimited monthly data allowances for fixed line broadband connections.<sup>20</sup> This market trend means that the large amounts of data required for streaming video is becoming less of a barrier to people accessing content online through on demand and streaming services. Similarly, AD provided via a separate app that syncs with television programming consumes significantly less data than streaming video and would provide an alternative low-data option for smartphone users. The ADWG considered these broader movements in the market, which are particularly relevant to younger Australians who are blind or vision impaired.

Despite recent trends and predictions, broadcast television is still the most popular medium for the majority of Australians, particularly older Australians. While access to high quality internet services in Australia is increasing, the Australian Digital Inclusion Index listed several key determinates of ‘digital inclusion’ including people on low incomes, senior Australians (65+) and people with disabilities, all of whom would face unique difficulties with accessing online services.<sup>21</sup> Australians who are blind or vision impaired often fit into two or more of these categories of disadvantage mentioned in the Index. While digital inclusion for Australians with disabilities is lower than the national average it has improved steadily since 2014.<sup>22</sup>

Based on data from the Australian Bureau of Statistics (ABS), Vision Australia estimates that 70 per cent of people who are blind or vision impaired are aged 65 and over and predicts an increase to this figure in the coming years. This is due to the largely age-related nature of vision loss caused by conditions such as macular disease and diabetic retinopathy.<sup>23</sup>

Older Australians are currently the most likely to watch broadcast television and least likely to use the internet. The ABS’s 2014–15 Household Use of IT in Australia report found that Australians aged 65 and over were the group with the lowest proportion of internet users at 51 per cent.<sup>24</sup> Research conducted by Vision Australia in 2014 indicates that this figure drops to 18 per cent for people who are blind or have low vision in the same age group.<sup>25</sup> It is possible these figures may change over time in line with broader trends but at this time an entirely digital approach to providing content with AD presents some challenges. These include user access to online AD services including accessibility of platforms, broadband connection and equipment costs, as well as digital literacy, and the availability of training and ongoing support.

The ADWG considered these issues relating to market trends, existing and trialled AD services in Australia and internationally, and the availability and accessibility of options for providing Australian content with AD when discussing the options outlined in this report.

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<sup>19</sup> An example is [ABC iview unmetered](#).

<sup>20</sup> Based on market research conducted by DoCA in September 2017.

<sup>21</sup> Julian Thomas et al, [Measuring Australia’s Digital Divide: Australian Digital Inclusion Index](#), 20 July 2017.

<sup>22</sup> Ibid.

<sup>23</sup> Vision Australia et al, [Blindness Sector Report on ABC iview trial of Audio Description](#), February 2017.

<sup>24</sup> ABS, [Household Use of Information Technology, Australia, 2014-15—Key Findings](#), ABS website, 18 February 2016, (accessed 27 November 2017).

<sup>25</sup> Vision Australia et al, [Blindness Sector Report on ABC iview trial of Audio Description](#), February 2017.



## 2. The benefits of AD and the impact of AD provision

Video content and media play a key role in modern Australian society, providing access to information and entertainment. In the second quarter of 2017, each Australian household had 6.6 screens and the average person watched over 100 hours of video content each month.<sup>26</sup>

Access to entertainment and information has been identified within Australian blindness organisations as one of the most significant barriers faced by people who are blind or vision impaired in Australia. The inability to access television as a primarily visual medium is seen as a major contributor to this barrier. Without AD, consumers who are blind or vision impaired must rely on a sighted companion to explain what is happening during a program in order to access television.<sup>27</sup>

### 2.1. Benefits for people who are blind or vision impaired

*“You might think that missing out on television is no great loss, but it’s about more than watching the latest episode of Days of our Lives. Like the rest of my friends and family, I want to have choice about what I watch and have the ability to be informed about what is going on in the world. I lost many things when I lost my sight, but one of the things that I lost was social inclusion.”—Lauren Henley, Blind Citizens Australia<sup>28</sup>*

Research conducted by Ofcom in 2008 found that AD was not only helpful to people who were blind and vision impaired to improve understanding and enjoyment of video content but it was also found to be socially beneficial, promoting equality and independence.<sup>29</sup> This was particularly true of those with severe or profound impairments. The Ofcom research found that consumers accessing AD services experienced the following benefits:

- a greater feeling of social inclusion with respondents able to engage in meaningful conversation about television and television programs where they had previously been excluded
- increased enjoyment of a program due to better understanding of the storyline and increased ability to imagine characters and situations, and
- enhanced independence as participants no longer have to rely on others to fill in the visual details of a program.

Benefits were also documented for those consumers who are able to see the screen but found moving information difficult to process or had difficulty reading information displayed on screen.<sup>30</sup>

Research conducted by Media Access Australia highlights the benefits of AD in terms of a child’s education, pointing out that the provision of AD may assist in the acquisition of language vocabulary and reading skills.<sup>31</sup> Ofcom research also supports the importance of social inclusion and development for children who are blind or vision impaired.

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<sup>26</sup> OzTAM, Regional TAM & Nielsen, [Australian Video Viewing Report](#), Quarter 2 2017.

<sup>27</sup> Blind Citizens Australia et al, [Blindness Sector Report on the 2012 ABC AD Trial](#), 18 December 2012.

<sup>28</sup> Lauren Henley, [How audio-described TV has changed my world](#), Australian Human Rights Commission website 2012 (accessed 15 November 2017).

<sup>29</sup> Ofcom, [Access Services Audio Description: Research into awareness levels](#), 2 July 2008.

<sup>30</sup> Ofcom, [People with visual impairments and communications services](#), 25 July 2008.

<sup>31</sup> Media Access Australia, [Audio description in education](#), Media Access Australia website (accessed 6 November 2017).



*“It would enhance the development of children to immediately participate and be included. TV is an important medium in Australia at social events where people get together. It would enhance the ability of blind children to understand the world around them—without that inclusion it would be hard to grow as a person.”—Participant in the 2012 ABC AD trial<sup>32</sup>*

## 2.2. Benefits of AD for other viewers

AD has also been found to benefit other viewers, not just those who are blind or vision impaired. A 2011 UK study found that AD can have positive impacts on consumers with disability such as autism spectrum disorder, dyslexia, learning or intellectual disabilities and colour blindness.<sup>33</sup> The objective translation of visual images to words assists with both language development and recognising emotional cues such as facial expressions. The verbal description provided can name a person or object and assist in identifying a character’s moods and temperaments where a viewer is having difficulty doing this on their own.

Feedback from consumers during both ABC AD trials suggests that AD has benefit for people who are unable to continuously keep their eyes on the screen, for example, viewers watching television while cooking. This group also benefited from an alternative way of accessing information that is primarily presented visually.<sup>34</sup> This finding is supported by other research that demonstrates how AD assists people who need to switch focus between watching television and other tasks.<sup>35</sup>

American AD provider, 3playmedia, has identified that AD can be beneficial where individuals are having difficulty processing what is happening on-screen.<sup>36</sup> In a similar way some hearing viewers may utilise captions during times of heavy dialogue, the AD can assist in bringing together all of the elements of video content for viewers, particularly content that is visually detailed. Some viewers are using AD to find out more information about the content of their favourite television shows.<sup>37</sup> A number of AD providers have also identified that an AD soundtrack can be enjoyed in a similar way to a podcast or audiobook. Depending on the format of the AD track, users can listen to a program’s soundtrack with AD at any time without the need to access the video content on screen.

## 2.3. Impact of the ABC’s AD trials

*“For me and other people who are blind or have low vision, the introduction of audio description, even on a trial basis, is the most liberating thing that has happened to television in the past 30 years.”—Bruce Maguire, Policy Advisor, Vision Australia<sup>38</sup>*

The feedback received by the blindness sector consumer groups indicated that the first AD trial on ABC1 in 2012 was the first independent experience of television for some consumers who have been blind from birth. For others who experienced a loss of vision later in life, access to AD allowed them to rediscover the medium of television.<sup>39</sup> The feedback received mirrors the findings of the research

<sup>32</sup> Blind Citizens Australia et al, [Blindness Sector Report on the 2012 ABC AD Trial](#), 18 December 2012.

<sup>33</sup> Judith Garman, [Autistic spectrum, captions and audio description](#), Mindful Research website, 29 August 2011 (accessed 6 November 2017).

<sup>34</sup> Blind Citizens Australia et al, [Blindness Sector Report on the 2012 ABC AD Trial](#), 18 December 2012.

<sup>35</sup> J.P. Udo et al, Horatio audio-describes Shakespeare’s Hamlet: Blind and low-vision theatre-goers evaluate an unconventional audio description strategy, *British Journal of Visual Impairment*, 28(2), 17 May 2010.

<sup>36</sup> Elisa Edelberg, [Benefits of Audio Description](#), 3PlayMedia website, 31 March 2017 (accessed 15 November 2017).

<sup>37</sup> Vinnie Mancuso, [The Descriptive Audio Narrator Is the Best Part of Netflix’s ‘Sense8’](#), Observer website, 9 June 2015.

<sup>38</sup> Bruce Maguire, [Making television accessible](#), ABC Ramp Up website, 20 August 2012

<sup>39</sup> Blind Citizens Australia et al, [Blindness Sector Report on the 2012 ABC AD Trial](#), 18 December 2012.



conducted by Ofcom in 2008 that AD provision significantly enhances the level of social inclusion felt by members of the blind and vision impaired community.

*"I realised the worth of television as social currency. When I catch up with the family for example, we might talk about other things as well, but a fair chunk of the conversation seems to revolve around television programs and I can finally participate in these conversations."—Participant in the 2012 ABC AD trial*<sup>40</sup>

Feedback provided by participants in the 2015–16 iview trial supports the view that access to television content for people who are blind or vision impaired provides great benefit.<sup>41</sup> Research conducted by Curtin University into disability and streaming television in Australia notes that AD content provided via on demand services can aid in preventing unintentional exclusion for people with disability. On demand streaming services can provide an experience that is instant and convenient allowing the viewing experience to be shared at a time that is suitable to all.<sup>42</sup> Despite the instant and flexible nature of on demand streaming services there were also significant accessibility barriers experienced during the iview trial for consumers who were blind or vision impaired. Some of these included a lack of access to the internet or appropriate devices to access iview, high download costs or a need for improved digital literacy.<sup>43</sup> Many consumers preferred the ease of access through broadcast television during the 2012 trial, rather than accessing programs with AD online through iview.<sup>44</sup>

Vision Australia has produced an audio compilation of feedback from consumers after the iview trial. This compilation can be found on [YouTube](#).

## 2.4 Impact of the provision of AD for users

*"Audio description means greater participation in the world in which we live and a better quality of life for those who are blind or vision impaired."—Participant in the 2015–16 ABC iview trial*<sup>45</sup>

The Australian Communications Consumer Action Network (ACCAN)'s policy position is that, without AD, people who are blind or vision impaired are unable to fully access FTA or STV or experience it with the same level of understanding and enjoyment as the rest of the community.<sup>46</sup> Blindness sector consumer groups consider that this lack of access results in those who live independently being almost completely unable to access this popular medium and source of information. This further increases social isolation and information restriction that is already a significant barrier for people who are blind or vision impaired.<sup>47</sup>

Australians are consuming increasing amounts of video content in a range of different ways. Access to this content through AD allows for greater participation in the viewing experience for people who are blind or vision impaired.<sup>48</sup> Access to AD provides an increased ability to contribute to social discussions, engage in shared experiences with family and friends and improved access to information and entertainment for people who are blind or vision impaired.

<sup>40</sup> Ibid.

<sup>41</sup> Vision Australia et al, [Blindness Sector Report on ABC iview trial of Audio Description](#), February 2017.

<sup>42</sup> Katie Ellis et al, [Accessing subscription video on demand: A study of disability and streaming television in Australia](#), 2016.

<sup>43</sup> Vision Australia et al, [Blindness Sector Report on ABC iview trial of Audio Description](#), February 2017.

<sup>44</sup> Ibid.

<sup>45</sup> Ibid.

<sup>46</sup> ACCAN, [Audio description policy position](#), ACCAN website, 6 February 2017 (accessed 8 November 2017).

<sup>47</sup> Vision Australia et al, [Blindness Sector Report on ABC iview trial of Audio Description](#), February 2017.

<sup>48</sup> Bruce Maguire, [Making television accessible](#), 20 August 2012.



### 3. Audio-described content

The ADWG discussed the content best suited to AD and the content consumers would most seek to access with AD. This discussion drew on learnings from the ABC trials, insights from industry and consumer representatives and presentations from Alison Myers, Audio Description Manager of The SubStation and Wendy Youens, Chief Executive of Able.

The popularity of programs, consumer feedback, genre-specific challenges and opportunities, timeslots and other factors were all considered by the ADWG.

Based on the ABC trials and experience in New Zealand, programming and content that was popular with a general audience was the most popular content for AD users as well. The ABC iview trial showed that AD users seek to access popular programs regardless of genre, noting that different programs are popular on different platforms (e.g. broadcast TV and catch-up TV). Wendy Youens emphasised that the initial focus of AD in New Zealand was drama, but this has since expanded to include reality TV, documentaries and docudramas. There is also an increasing focus on local content. Netflix does not disclose viewer numbers for its programs but representatives told the group it was surprised by the level of interest in its documentaries with AD.

Alison Myers helpfully listed the genres of content most suitable for AD, namely documentaries, dramas, comedies and children's content. Alison noted that different types of programming may benefit from different types of AD. For example, Australian drama, which often relies heavily on visual storytelling, may require more descriptions and more nuanced AD. For documentaries, the AD may concentrate on identifying speakers and text provided on screen. However, it is no less vital in assisting the audience to understand the program. The programming and genres that were flagged as most challenging to describe were sport, news and current affairs due to live or near-live broadcasts, their dialogue-heavy nature and unique descriptions involved. The broadcaster representatives noted that live AD would not be feasible, although it is possible and has occurred overseas for special events with significant preparation beforehand (for example, the opening and closing ceremonies of the 2012 London Olympics were audio-described live<sup>49</sup>). The consumer representatives accepted that live or near-live news and sport would not be an early priority for AD. There are also difficulties in describing content that is entirely or mainly in languages other than English or music programs.

Wendy Youens outlined two styles of AD, the British approach which is practical and neutral (favoured by Able in New Zealand) and the American style which can be more dramatic and subjective (it may, for example, include interpretation of emotions). Able receives some conflicting feedback from AD users regarding preferences for descriptions (e.g. too many or not enough) so it tries to adopt a balanced approach. It is expected that individual audience members will have particular preferences. The quality of AD during the ABC trials was well received by participants and it is clear that AD providers in Australia have good communication channels with their audience. Ongoing engagement and feedback between AD providers and audiences is important to ensure a quality service.

Additionally, the ADWG discussed different technical means of developing AD and the timeframes for generating content. Alison Myers described the steps involved for broadcasters in the process of audio-describing content and these are summarised below:

**Step 1:** The broadcaster provides the final version of a program (video and audio) to the AD provider, preferably in batches of episodes (for TV series). There are often multiple versions of the same program used by different broadcasters and in different countries so the final version is required. This would be

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<sup>49</sup> Descriptive Video Works, [An Olympic First](#), Descriptive Video Works website, 25 July 2012 (accessed 12 December 2017).



the same video that broadcasters provide for captioning services. If a broadcast mix AD file is required, then they would also provide the audio file. Scripts are also useful to AD providers (if available) to get a feel for the content.

**Step 2:** The AD provider then creates an AD file in the format requested by the broadcaster which matches the final version of the program provided, this may include descriptions planned around commercial breaks. This may involve developing an AD script, recording the descriptions and mixing the final version of the audio track (which may or may not include the AD mixed with the original soundtrack depending on the broadcaster's preference). It is also possible to source an existing AD track and edit it to match the broadcaster's version of the program.

**Step 3:** The AD provider sends the final AD file back to the broadcaster ahead of the program's transmission.

The timing of descriptions is determined by the program's soundtrack rather than the video. AD providers aim to fill in the gaps in the soundtrack so sometimes descriptions pre-empt action, as long as it doesn't interfere with the plot or any commercial breaks.

Alison Myers estimates that, on average, AD takes twice as long as captioning. As a rough guide, a TV series can take around 10–15 working days, a television hour can take 24 hours with notice and a feature film 5–7 working days to audio-describe. Turnaround times depend on the complexity of the program being audio-described, for example, Hamish and Andy's Gap year has 24–60 descriptions whereas an episode of *Cleverman* has around 200–250 descriptions. Tighter turnaround times are possible with notice and good communication between the broadcaster and the AD provider.

The cost of AD can vary depending on factors such as the type of content being described; if a new AD track is developed or if an existing AD track is edited; the turnaround time required and if the AD is supplied as a one off task or an ongoing agreement between parties. Wendy Youens noted that at Able the cost of supplying AD is around 1.3 times the cost of captioning services.

The ADWG also discussed the acceptability of using synthetic voice for AD, which is commonly used for audio-describing online videos. Ai-Media noted that synthetic voice is developing quickly and the quality of the voice has improved and will keep improving. Ai-Media also indicated that the use of synthetic voice could reduce the cost of creating an AD track by around 50 per cent and that there were circumstances in which it was acceptable, with documentary programs an area of possibility. Consumer representatives noted that the human voice provides emotion that a synthetic voice might not provide, for example, during drama programs. While a human voice is preferred by many AD users, as synthetic voice technology improves over time this may become a viable alternative for some content in the future.

## 4. Delivery option 1—Broadcast Television

Broadcast television comprises the majority of viewing time for most Australians, although this figure is gradually declining due to changes in viewer behaviour and content distribution.<sup>50</sup> In the second quarter of 2017, 19 million Australians watched some FTA and/or STV on in-home TV sets between 6pm and midnight each week.<sup>51</sup> Research conducted by the Australian Communications and Media Authority (ACMA) in June 2017 found that watching FTA television live still represents the largest share of the weekly average time spent watching video content (see Figure 1 below). As STV services require a subscription, fewer Australians access these services. For example, there are currently around

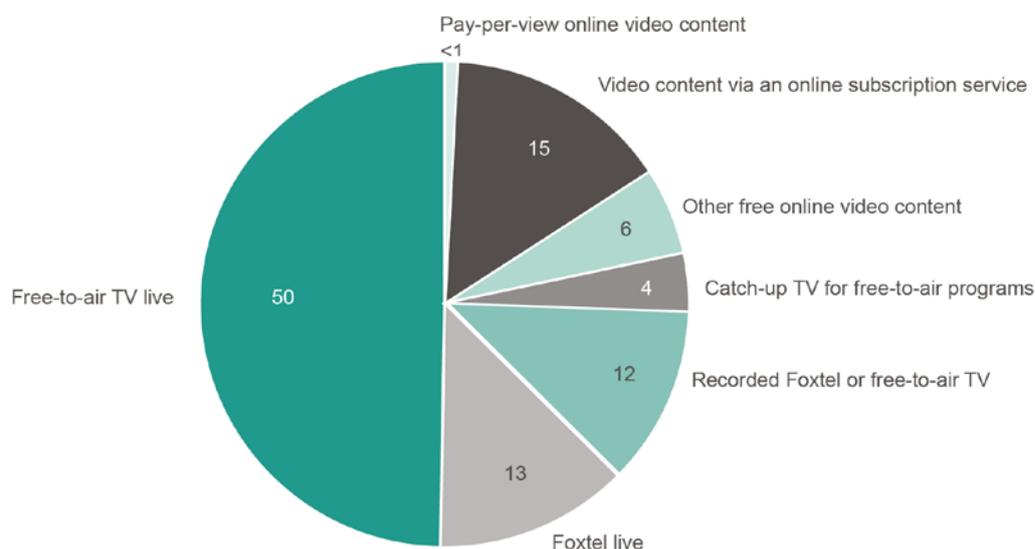
<sup>50</sup> ACMA, [Communications Report 2016-17](#), 8 December 2017.

<sup>51</sup> OzTAM, Regional TAM & Nielsen, [Australian Video Viewing Report](#), Quarter 2 2017.



2.8 million Foxtel subscribers<sup>52</sup> and around half a million Fetch TV subscribers.<sup>53</sup> Australians aged over 40 are more likely to watch broadcast television, with those aged over 65 the most likely.<sup>54</sup>

Figure 1 Share of time spent watching television (live or recorded) or professional online video content, in the last seven days (percentage)



Base: Australians aged 18 who watched any FTA TV or online video content in the last seven days (n=2,016). Note: Numbers may not add up due to rounding. 'Other free online video content' excludes user-generated content. Source: ACMA-commissioned survey, June 2017.<sup>55</sup>

This delivery option would involve broadcasting an additional AD service to televisions and set top boxes. AD users would be able to turn the AD track on or off, similar to a captioning service. There are two methods of AD transmission used: broadcast mixed and receiver mixed AD (discussed under [section 4.1](#) below).

AD is provided via broadcast television in varying amounts in a number of countries including the UK, Ireland, New Zealand, Canada, the USA, Germany, Spain, the Czech Republic and Korea. Many of these countries introduced AD at a different stage of technology development than Australia, which creates technical considerations that may not have occurred overseas. While elements of the broadcasting industry are similar to international markets, the Australian broadcasting environment is unique. For example, broadcasters in New Zealand have access to more spectrum (eight megahertz versus seven megahertz blocks for Australian broadcasters) to broadcast services and the UK uses the more efficient broadcasting technology, DVB-T2 in addition to DVB-T, which increases the capacity available for broadcasting services, including AD. While lessons can be learnt from overseas broadcasters, it is important to consider the Australian broadcasting context when discussing this delivery option.

<sup>52</sup> Mediaweek, [News Corp reports 2017 results](#), Mediaweek website, 14 August 2017 (accessed 13 December 2017).

<sup>53</sup> ChannelNews, [Fetch TV rebrands \\$10m campaign](#), ChannelNews website, 27 March 2017 (accessed 13 December 2017).

<sup>54</sup> OzTAM, Regional TAM & Nielsen, [Australian Video Viewing Report](#), Quarter 2 2017.

<sup>55</sup> ACMA, [Communications Report 2016-17](#), 8 December 2017.



## 4.1. Broadcast mixed and receiver mixed AD

As AD is an additional audio stream, it needs to be mixed into a program's existing soundtrack. This can be done on the broadcaster side or the receiver side.

When 'broadcast mixed' AD is used, two versions of a program's audio are transmitted. One is the program's regular soundtrack, while the other is a version of the soundtrack with the AD mixed in. The AD version is premixed so that the dialogue, AD, music and other audio elements are all at the correct volume. An AD user's television or set top box is tuned to pick up the AD version of the program, rather than the regular program. This type of AD is used in New Zealand.

When the AD is 'receiver mixed', the broadcast involves three transmissions. As well as the program's primary soundtrack, an audio track consisting of the describer's voice alone is transmitted. A third track contains instructions as to how the finished soundtrack should be mixed, such as when to raise and lower the volume on the primary audio to allow the AD to be clear and audible. All three tracks are picked up by an AD user's television receiver, which then mixes the primary audio with the AD. This type of AD is the standard for FTA in the UK and was used by the ABC during the 2012 AD trial.

A broadcast mixed audio track requires a higher data rate than the receiver-mixed alternative (approximately 192 versus 64 kilobits per second, respectively). Receiver mixed AD can provide additional flexibility for users as some receivers have the option of manually adjusting the volume of the AD track and some have the option of splitting the audio so that an AD user can listen with a pair of headphones while other viewers can watch the program with the original soundtrack. This function may also be available to broadcast mix receivers in some circumstances. This feature allows groups to watch TV together, without the AD disrupting the viewing experience for sighted viewers.

## 4.2. Transmission arrangements

Australians receive FTA and STV services in a number of different ways depending on where they live. For FTA television, services are divided into five metropolitan markets, 35 regional and two remote markets, which operate across three time zones in standard time and five during daylight saving time. Viewers in metropolitan areas receive terrestrial broadcasts transmitted by the major commercial television networks, the Seven Network, Nine Network and Network Ten. Their programming is also made available in regional markets through affiliation agreements with the regional broadcasters Prime, Southern Cross, WIN and Imparja. The national broadcasters, the ABC and SBS, also broadcast distinct services around Australia and in alignment with the various time zones. Around 150 unique broadcast streams are compiled and broadcast due to the different time zones and differences in content, for example, variations in programming for local audiences such as sports, state based news services, weather and other region specific general entertainment programming and commercials.

Television services are retransmitted via satellite to around 200,000 households using the Viewer Access Satellite Television (VAST) service. Additionally, FTA services are retransmitted via satellite and cable or received terrestrially by Foxtel users and can also be received through Fetch TV boxes so viewers can watch both FTA and STV services using the same equipment. FTA viewers use a range of equipment to receive broadcast signals including televisions and set top boxes of various brands and models, including the VAST set top box.

For STV services, viewers can access over 200 services through Foxtel, Fetch TV, Telstra and Optus, in partnership with a range of local and international channel providers. Users receive services largely through hybrid fibre-coaxial (HFC) cable networks and satellite, but also via ADSL or fibre. Unlike FTA services, the equipment used by STV viewers to access services is controlled by the STV provider.



Viewers currently use a range of equipment to receive STV services, for example, Foxtel customers across Australia use 35 different models of Foxtel set top boxes.

### 4.3. Advantages and disadvantages for AD users

This delivery option would provide convenient access for many people who currently watch broadcast television and are able to use their existing television or set top box to receive an AD service. As discussed above, traditional FTA broadcast television is still the main way Australians watch video content, despite the rise of other alternatives. This is not the case for STV services, which require a subscription to access.

With this option, AD users would be able to watch programs at the same time as their family and friends and in largely the same way. This option would not require AD users to have access to the internet or other devices, such as a smartphone or computer, which would be the case for AD provided via online video services or with a separate app.

This option would be particularly appealing for older Australians, who currently comprise the majority of Australians who are blind or vision impaired.<sup>56</sup> As discussed in [section 1.4](#), older Australians are currently most likely to watch broadcast television and least likely to use the internet.

Depending on the type of AD service provided, some AD users may be required to purchase a new television and/or set top box to receive AD services. This may also be the case for viewers who do not wish to access AD services.

This delivery option provides less flexibility than an online on demand service, as programs are broadcast on a fixed schedule. If an AD user misses a program or two programs with AD are scheduled for the same time then there is no flexibility to watch the program at a different time. With this option, there is also no opportunity for a back catalogue of programs with AD to be available on demand to AD users, as is the case with online services.

As this option is the most technically complex it will result in the longest delay before AD services can be introduced.

### 4.4. Technical challenges regarding this option

#### Broadcaster considerations

Both FTA and STV broadcasters would need to undertake significant engineering work, extensive capital upgrades and testing of broadcasting signals and equipment to introduce an automated AD service, unlike the manual process used by the ABC during the 2012 AD trial. If AD services were introduced on FTA broadcast television only, this would still have an impact on STV services due to FTA retransmission arrangements and the use of FTA tuners in STV set top boxes.

As discussed in [section 4.2](#), FTA broadcasters provide around 150 distinct broadcast streams across different markets and time zones. The process of compiling broadcast streams by both metropolitan and regional broadcasters is complex and the addition of an AD service to each stream would amplify these complexities and create a number of technical challenges to overcome. As such, significant changes would need to be made at each step of the process.

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<sup>56</sup> Vision Australia et al, [Blindness Sector Report on ABC iview trial of Audio Description](#), February 2017.



In order to monitor and incorporate AD content and to ensure that the various components of the feed are mixed and synchronised correctly, broadcasters' ingest suites would need to be modified. As discussed in [section 4.1](#), broadcasters could adopt a broadcast mixed or receiver mixed approach to incorporating AD. Both of these options would require replacing and/or upgrading broadcast equipment and systems, including transmission infrastructure, media asset management systems and Electronic Program Guides (EPGs). The level of upgrades required and the complexity of this process will vary from broadcaster to broadcaster depending on the age of existing equipment and the processes currently in place to compile broadcast streams. Broadcasters may also have to make upgrades to their headend or pay one-off licensing fees to transmission suppliers to enable the AD function. This would involve working with headend vendors to develop technical solutions to allow AD to be provided without negatively affecting other aspects of the broadcast stream. After adjustments to infrastructure and equipment are made and new processes are developed, there would need to be a trialling period to test for unintended effects on broadcasting services. This would ensure any errors are identified and regular services are not disrupted.

FTA broadcasters currently use all available capacity within their broadcasting spectrum allocation to provide the best video quality possible across their channels. The introduction of a permanent AD service (regardless of how many hours of AD are provided) would potentially reduce the capacity available for other services. This may result in reduced picture quality or the decision by a broadcaster to drop another service to allow for the AD service. As such, there is a direct opportunity cost involved in the introduction of an AD service.

Further use of more efficient broadcasting technologies, such as MPEG-4 video compression, would allow broadcasters to deliver more services within the same spectrum allocation. FTA broadcasters currently use MPEG-4 to provide high definition (HD) simulcasts of their main channels (ABC HD, SBS HD, SBS VICELAND HD, 7HD, 9HD, Ten HD) as well as RACING.COM on the Seven Network. The ACMA estimates that the vast majority of televisions bought after 2009 are MPEG-4 compatible, so users with older models would need to buy a new television or a new set top box that is MPEG-4 compatible in order to receive the channels.<sup>57</sup> The decision to broadcast services using MPEG-4 or other more efficient technologies is a commercial decision for each broadcaster and would involve carefully considering any potential impact on audiences.

Commercial FTA broadcasters currently use the Dolby Digital Audio Codec 3 (AC3) for their HD services, which may not be compatible with receiver mix AD available on many receivers (see 'Consumer equipment' below). They may need to use a different codec such as MPEG-1 Audio Layer II which is currently used by the ABC and SBS if receiver mixed AD is provided on these services.<sup>58</sup>

Similarly for STV providers, significant investment to design, procure and build new infrastructure and develop new processes would be required to deliver broadcast AD as existing infrastructure would not support AD provision. The introduction of a permanent AD service would have a significant direct cost and an opportunity cost in terms of spectrum used to deliver STV services via satellite and for FTA retransmissions.

Due to the availability of FTA services through STV platforms, any STV solution to provide AD would need to be compatible with the FTA method of transmission. For this reason there would need to be a coordinated approach to the introduction of AD between the FTA and STV sectors.

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<sup>57</sup> ACMA, [MPEG-4 video: Unravelling the standard](#), ACMA website, 24 June 2016, (accessed 20 November 2017).

<sup>58</sup> Advice provided to DoCA by consumer manufacturers, November 2017.



## Consumer equipment

The current Australian industry standard that relates to FTA digital television receivers does not contain any specifications for AD services.<sup>59</sup> This means that the functionality of Australian consumer electronics products would need to be tested, understood and any problems resolved prior to the introduction of AD services to avoid reception issues that occurred during the ABC's 2012 AD trial where a number of consumer receivers caused reception issues that were unable to be resolved.

While there is no Australian standard for AD, AD features are a requirement for receiver manufacturers and an obligation on broadcasters in many international markets<sup>60</sup> and consumer manufacturers seek to provide products suitable for global distribution. The consumer manufacturing bodies, the Consumer Electronics Suppliers Association (CESA) and the Australian Industry Group (Ai Group), have advised that all receivers released by the major electronics brands in the last five years in Australia meet the UK requirements for receiver mixed AD, including the appropriate software.<sup>61</sup> Manufacturers do not advertise this capability as it is not a feature that consumers can currently receive. Even if a product has AD functionality, in the absence of a standard, further investigation and a significant testing process would be required to determine if the particular form of AD service provided is compatible with receivers already in viewers' homes. The position of Free TV Australia (Free TV) is that a standard would be required before AD services could be introduced, whereas the consumer manufacturers consider that it would be possible to introduce AD without a standard, however, detailed scoping and testing of products would be necessary and a specification agreed to ensure there are no market issues.

While the majority of consumer equipment purchased in recent years has AD functionality, some smaller electronic brands and older televisions or set top boxes currently in use may not have this feature. This means they may be unable to receive an AD signal or the AD signal could interfere with the regular operation of the television. In the UK, mandated receiver requirements for AD were put in place prior to the introduction of digital television, which meant that any legacy receiver issues were dealt with at that time. As this is not the case in Australia, the introduction of AD services may result in consumers needing to replace televisions or set top boxes that are not able to correctly process AD signals. This could affect both AD users and non-AD users.

The FTA receiver market has changed since the 2012 AD trial, with the proportion of consumer equipment with AD functionality likely to have increased, due to consumers replacing equipment. However, without an Australian standard, there is no guarantee that a receiver with AD functionality will work correctly with a specific type of AD service provided. In 2010–11, at the height of the switchover to digital television almost 4 million televisions were imported into Australia. This number steadily decreased over the next four years to 2.2 million units imported in 2014–15 before increasing to 2.4 million in 2015–16.<sup>62</sup> From the import data, we can surmise that a significant number of Australians bought a new television around the digital switchover or in subsequent years, and many Australians continue to replace their equipment over time. Consistent with this pattern, data provided by the National Television and Computer Recycling Scheme (NTCRS) shows a peak in waste arising from televisions in 2012–13 followed by a gradual decline.<sup>63</sup>

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<sup>59</sup> The Australian industry standard is: AS 4933-2015—Digital television—Requirements for receivers for VHF/UHF DVB-T television broadcasts including ancillary services.

<sup>60</sup> Digital Video Broadcasting (DVB) standards for digital TV that incorporate AD signalling have been adopted in Europe, Singapore and New Zealand.

<sup>61</sup> Advice provided to DoCA by consumer manufacturers, November 2017.

<sup>62</sup> Australia and New Zealand Recycling Platform Limited, [White Paper: Review of the Product Stewardship Act and the National Television and Computer Recycling Scheme](#), 17 August 2017.

<sup>63</sup> Data provided to DoCA by the Department of the Environment and Energy, November 2017.



The introduction of new television features such as HD channels, internet connected televisions, the Freeview HbbTV platform, 3D televisions and 4K capability, have provided an incentive for many viewers to upgrade their televisions in recent years. As televisions become increasingly multi-functional, many Australians are using their television for purposes other than watching live broadcasts, including viewing television network catch-up services, watching streaming services such as Netflix or Stan, watching videos on YouTube, streaming music or gaming.<sup>64</sup>

In the second quarter of 2017, the average Australian household had 1.8 televisions.<sup>65</sup> Modelling for the NTCRS estimated in 2016 that the average service life of televisions in Australia was 6.4 years.<sup>66</sup> It is also common for many users who buy a new television to retain the previous one for use as a secondary television.<sup>67</sup> These secondary receivers are more likely to be older models without AD functionality.

In addition, the consumer manufacturers estimate that many of the early models of set top boxes used at the time of digital switchover and the ABC's AD trial are gone from the market, due to the large volume of flat panel display televisions sold since 2012.<sup>68</sup> However, Free TV does not agree with this assessment. These boxes caused many of the reception issues during the trial.<sup>69</sup>

Considering this information, it is possible to conclude that a significant number of Australians have replaced their televisions in the last five years and the current make up of receivers in use is different to that in use during the 2012 AD trial. While many of the same issues will exist due to the absence of an Australian standard, it may be beneficial to determine the capability of existing receivers in the market as a first step prior to any consideration of the form of any AD service that could be provided. The receiver standard could be updated to include AD but this would not prevent further consideration of how an AD service could be introduced in the meantime.

As with captioning, there is no consistent button placement or menu option between different brands and models of consumer equipment so AD users may require assistance to identify the AD function. As an AD service is not currently available in Australia, the feature is not advertised for products that have AD functionality but this can be resolved with notice provided to consumer manufacturers.

In terms of STV consumer equipment, currently none of Foxtel's set top box fleet could support AD provided by FTA broadcasters. Transmission of AD for both STV and FTA broadcasts on Foxtel would need to be supported through a new set top box development which could take at least two years. As discussed above, timing would be largely dependent on the compatibility of AD on FTA and STV services in terms of STV consumer equipment, and would therefore be dependent on the rollout of FTA services and technology decisions made by the FTA broadcasters as well as technology decisions made by STV broadcasters.

In addition, the set top boxes used to receive the VAST service would not support a receiver mixed or broadcast mixed AD service.<sup>70</sup> The ABC's 2012 AD trial did not include transmission of an AD service on the VAST platform.

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<sup>64</sup> OzTAM, Regional TAM & Nielsen, [Australian Video Viewing Report](#), Quarter 2 2017.

<sup>65</sup> Ibid.

<sup>66</sup> ANZRP, [White Paper: Review of the Product Stewardship Act and the NTCRS](#), 17 August 2017.

<sup>67</sup> OzTAM, Regional TAM & Nielsen, [Australian Video Viewing Report](#), Quarter 2 2017.

<sup>68</sup> Advice provided to DoCA by consumer manufacturers, November 2017.

<sup>69</sup> ABC, [Final Report to the Minister for Broadband, Communications and the Digital Economy—Audio Description Trial on ABC Television](#), December 2012.

<sup>70</sup> Presentation to ADWG provided by BroadSpectrum Consultants on 28 September 2017.



## 4.5. Case study: Audio Description on New Zealand television

The New Zealand Government provides funding for an AD service on two FTA channels provided by the broadcaster, Television New Zealand (TVNZ). The AD is provided by Able, a not-for-profit charitable trust dedicated to providing media access services for all New Zealanders. While the Government funds Able to provide the AD, the broadcaster pays for transmission costs involved in providing the service.

The AD service was launched in 2011, beginning with two hours of audio-described content per week, building to 10 hours per week after the first year and increasing to over 40 hours per week in 2017. Able determines which programs are provided with AD, with feedback from users. An emphasis is placed on prime time hours, some afternoon programming for children and a variety of content including dramas, documentaries and reality TV, across different timeslots.

The service began with a three month trial period using the inaugural program Coronation Street which was imported with AD. The initial focus was on solving technical issues before a wider rollout of the service. An automated process was developed to flag AD content in the broadcaster's media asset management system, and a failsafe workflow is used in case the AD file is not delivered within six hours of broadcast. This reduces the risk of any broadcast issues. Establishment funding of \$500,000 was available in the first year for capital costs to provide AD at TVNZ.

Broadcast mix AD was selected by TVNZ as it was estimated that more receivers in the New Zealand market were compatible with broadcast mix than receiver mix, and the sound quality was more consistent. AD was not included in the New Zealand receiver standard at the time of introduction but it has since been added. A workaround solution for non-compatible AD receivers was developed whereby a television or set top box could receive the AD track using a language track setting (Italian). This language function was included in the receiver standard prior to the introduction of AD so was consistent across all receivers.

It took a number of years to build up an audience, but now three per cent of all New Zealanders use AD regularly and 72 per cent of New Zealanders who are blind or vision impaired are regular users. Able considers it difficult to reach potential AD users who are not members of vision organisations and promoting the service is challenging as there is no accessible EPG. A list of programs with AD is available online, in a newsletter and through a phone service for AD users.

Feedback from the service has been extremely positive with the following user quote provided to the ADWG during a presentation from Wendy Youens, Chief Executive of Able:

*"Your audio description is so evocative, beginning with your verbalisation of the opening credits. As a lifelong blind person I continue to marvel at the visual world which you are helping to bring alive with your word pictures."*



## 4.6. Implementation

As discussed above, significant work would be required on the broadcaster transmission side and the consumer receiver side before an AD service could be introduced. This includes technical upgrades required by broadcasters, testing and configuration of broadcast equipment and signals, consideration of the current consumer receiver market for FTA broadcasters and upgrades to STV consumer equipment and/or software. This process is likely to take a number of years and involve a significant investment.

As a first step, a scoping study would be required to investigate potential technical challenges and determine the costs involved in the introduction of a broadcast AD service, which may vary depending on the broadcaster. The position of Free TV is that this option is not feasible. However, if this option were to be implemented, an AD standard should first be developed and a coordinated introduction of AD services should occur at the same time, rather than broadcasters introducing AD services individually.

The successful rollout of a broadcast AD service would involve a high level of coordination and collaboration between the FTA, STV and consumer manufacturing industries. Broadcasters would need to agree on the form of AD provided and consult with the consumer manufacturers to ensure the AD service is based on a specification that is compatible with the many FTA receivers already in use. It would be beneficial for broadcasters to provide a test stream for manufacturers before an AD service is publicly launched as this would allow for additional testing to ensure a smooth experience for viewers. The manufacturers would also need to ensure information and technical assistance is readily available to consumers, both those seeking to use AD and those who do not wish to use AD. A public awareness campaign and a consumer hotline at least for the initial rollout period would also help to ensure a smooth introduction of AD services. Both Free TV and the consumer manufacturers see a role for the Government to coordinate the introduction of AD services.

## 4.7. Summary

This option would be the most cost and labour intensive for broadcasters and would involve significant technical complexity. It would also take a number of years before AD services can be introduced. Establishment costs would be significant, with ongoing costs of managing the AD services less substantial. Once an AD service is established and systems and processes are in place, it would be easier to scale up the service over time, as was the case overseas. For example, broadcasters in the UK currently exceed mandated AD targets which have not been increased since the introduction of services.<sup>71</sup>

This delivery option would provide convenient access for many people who are blind or vision impaired who currently watch broadcast television and are able to use their existing television or set top box to receive an AD service. Feedback from the ABC's iView trial showed a clear preference from many people who are blind or vision impaired to be able to access FTA broadcast television with AD rather than using an online platform due to the accessibility and affordability of this delivery method and the viewing preferences of many older members of the community.<sup>72</sup> These preferences may change over time in line with broader trends. This is discussed further in [section 5](#) and [section 6](#).

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<sup>71</sup> Ofcom, [Television access services report 2016](#), 18 May 2017.

<sup>72</sup> Vision Australia et al, [Blindness Sector Report on ABC iView trial of Audio Description](#), February 2017.



## 5. Delivery option 2—Online platforms

Many Australians are now accessing video and television-like content through a range of web-based services, applications and devices. Consumers are increasingly watching catch-up television services, such as ABC's iView, SBS On Demand, 7plus, 9Now and tenplay to stream live FTA television or watch FTA programs on demand, as well as subscription video on demand (SVOD) services, such as Netflix, Stan, Amazon Prime Video and Foxtel Now. In the four months to August 2017, 6.9 million Australians watched 1.5 billion minutes of on demand and live streaming, with 5.8 million Australians watching FTA catch-up television services and 4.3 million watching SVOD services.<sup>73</sup>

In the second quarter of 2017, more than two-thirds of Australian homes had internet-capable televisions, half of Australian households had at least one tablet and eight-in-ten had one or more smartphones.<sup>74</sup> The Deloitte Media Consumer Survey 2017 also found that around 26 per cent of Australians are supplementing televisions with over-the-top (OTT) streaming boxes, such as Telstra TV and Apple TV, with 17 per cent using portal streaming devices, such as Google Chromecast.<sup>75</sup>

This AD delivery option would involve providing programs with AD through online catch-up television services or SVOD services. Similar to the ABC's iView trial in 2015–16, AD users would play programs with AD using a computer, a tablet, a smartphone or an internet connected television, such as a Smart TV or a television connected to a streaming device such as Apple TV, or through a games console, such as Xbox or PlayStation.

Some content with AD is available on the video on demand services provided by television broadcasters in the UK including the BBC's iPlayer, the ITV Hub, All4, My 5 and Sky.<sup>76</sup> In Australia, AD services are provided by the international SVOD service, Netflix, with around 2,365 hours of AD content currently available to Australian viewers. Every scripted title branded as a Netflix Original in the USA launches with AD in the original language and Netflix seeks to acquire AD where available from its content partners.<sup>77</sup>

### 5.1. Advantages and disadvantages for AD users

This delivery option would provide convenient access for many people who watch catch-up television and SVOD services, who already have an internet connection with a suitable data allowance and the equipment required to access these services.

Depending on the device used to watch the service (such as a connected television), AD users are able to watch programs with their family and friends. There is also flexibility to watch programs with AD on demand at a convenient time for the user, independent of a broadcast schedule. An online service would also provide an opportunity for a back catalogue of programs with AD, providing more choice and flexibility for AD users over time.

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<sup>73</sup> B&T online, [Aussie TV Streaming Grows 25% In Four Months: OzTAM](#), B&T website, 11 August 2017 (accessed 22 November 2017).

<sup>74</sup> OzTAM, Regional TAM & Nielsen, [Australian Video Viewing Report](#), Quarter 2 2017.

<sup>75</sup> Deloitte, [Media Consumer Survey 2017: Australian media and digital preferences—6th edition](#), August 2017.

<sup>76</sup> Ofcom, [On demand programme services: Access services report 2016](#), 6 April 2017.

<sup>77</sup> Netflix presentation provided to ADWG, June 2017.



However, depending on the content and the service, there may be a delay between a program's broadcast on television and the program being available online with AD. This would mean AD users may not be able to access this content at the same time as other viewers. This is not always the case, for example, live streaming services are available on FTA online services and the Foxtel Now service so there is no delay between content broadcast on television and becoming available online.

In addition, some AD users may have privacy concerns if they are required to register for an online service. Advice from consumer groups in the ADWG indicates that privacy issues and the sharing of personal information is a significant concern for many people with disability. While all users are required to register and pay a subscription for access to STV services, broadcast FTA services are available to all Australians without registration. There are concerns if AD users are required to provide personal information in order to access an online service providing content that is readily available to other viewers without registration.

Some AD users may not have access to or may not engage with digital technology and it can be challenging to learn, especially for people who are new to vision loss. This may be particularly challenging for older Australians as previously discussed under [option 1](#). Research conducted by the ACMA in 2017 found that there are clear generational differences in engagement with online video content. Time spent viewing catch-up television services and SVOD services decreases with age, with younger Australians watching the most online content and older Australians watching the least.<sup>78</sup>

There may also be affordability issues for some AD users in terms of accessing an internet connection with sufficient data for streaming, a subscription for the service (if applicable) and an appropriate device to access the service, such as a computer, smartphone or connected television. Australians with a disability are often on lower incomes and may not have access to the required services and equipment.<sup>79</sup> ACCAN and Vision Australia have highlighted the lack of access some people with a vision impairment have to the internet, with ACCAN citing research that the majority of this group do not have internet access.<sup>80</sup>

DoCA's Bureau of Communications and Arts Research (BCAR) has found that affordability of telecommunications services for households has improved in aggregate and for most vulnerable groups over recent years.<sup>81</sup> For fixed broadband services such as ADSL, consumers are getting better value as prices stay the same or fall, while product inclusions (such as data) have increased considerably. The current rollout of the National Broadband Network will provide broadband services to all Australian premises. Rollout is scheduled to be complete in 2020.

Most existing online video services are not fully accessible or compatible with assistive technologies, such as screen readers.<sup>82</sup> Even if content with AD were to be provided on these services, it may be difficult for AD users to find the content and easily access the AD without changes to the user interface.

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<sup>78</sup> ACMA, [Communications Report 2016-17](#), 8 December 2017.

<sup>79</sup> Julian Thomas et al, [Measuring Australia's Digital Divide: Australian Digital Inclusion Index](#), 20 July 2017.

<sup>80</sup> ACCAN, [Audio description policy position](#), ACCAN website, 6 February 2017 (accessed 8 November 2017).

<sup>81</sup> Bureau of Communications and Arts Research, [Trends and drivers in the affordability of communications services for Australian households](#), 10 July 2017.

<sup>82</sup> Katie Ellis et al, [Accessing subscription video on demand](#), 2016.



## 5.2. Digital literacy for older Australians

Digital literacy is the ability to employ technologies to find, use and disseminate information. Digital inclusion is about having the ability to use technology to improve skills, enhance quality of life and promote economic wellbeing.

Two key factors for digital exclusion in the Australian Digital Inclusion Index 2017 are people aged 65 years or older and people with disability. Older Australians are the least digitally included group, with a rating 13.6 points below the national average. This age gap has remained relatively steady since 2014. Australians with disability also have relatively low digital inclusion at 9.5 points below the national score, although this gap has reduced since 2014.<sup>83</sup>

Research conducted by National Seniors Australia identified the main barriers older people face in using the internet as lack of skills and knowledge, cost, confusion regarding technology and concerns about security.<sup>84</sup>

There are a number of initiatives available to older Australians to assist them to develop the skills and confidence needed to connect and participate in the digital world.

### Be Connected Program

The [Be Connected](#) program is an Australian Government initiative that has been implemented by the Department of Social Services, in partnership with the Office of the eSafety Commissioner, to assist older Australians with their digital literacy skills. The program is targeting those aged 50 years or over who have minimal to no engagement with digital technology.

Be Connected aims to support older Australians to learn the basics of how to connect online through a family and community centred approach. The program has two components: a dedicated website which includes information and resources for older Australians, their families, peers and the community, and a network of organisations that provide access to personalised face-to-face support. Family, friends and local community members can become Digital Mentors through the program. Any organisation looking to deliver digital literacy activities that support older Australians can join the network, including disability groups. Joining the network enables organisations to have access to supporting resources as well as the opportunity to apply for funding through the Be Connected program.

### Other Initiatives

There are a number of organisations offering programs which assist in increasing the digital literacy of older Australians. Some examples are listed below.

Telstra's [Tech Savvy Seniors](#) program is delivered in partnership with State Governments. A number of resources are offered including face to face training which is aimed at developing the confidence and skills required to use technology for socialising and accessing services.

[Go Digi](#) is a joint initiative by Australia Post and Infoxchange aimed at supporting Australians to improve their digital skills.

The [Vodafone for Seniors](#) program provided a series of workshops during 2017 in Vodafone stores across Australia to assist senior customers in taking full advantage of their mobile phone.

<sup>83</sup> Julian Thomas et al, [Measuring Australia's Digital Divide: Australian Digital Inclusion Index](#), 20 July 2017.

<sup>84</sup> National Seniors Australia, [Older Australians and the Internet: Bridging the Digital Divide](#), September 2011.



### 5.3. Technical challenges regarding this option

#### Platform provider considerations

Online video services are available on a range of devices including connected televisions, game consoles, media streaming devices, smartphones and computers. For example, tenplay can be accessed through Apple iOS, Android, Apple TV, Telstra TV, FreeviewPlus, Xbox 360, Xbox One, Windows tablet and desktop, Windows phone, Sony Bravia and Fetch TV. Platform providers may need to upgrade software for each version of the app or online player to build in AD capability, as well as establishing new workflows. Technical solutions are likely to vary with each player. Therefore, a scoping and testing period would also be required to ensure full accessibility of each player, including consultation with people who are blind or vision impaired. [Section 1.3](#) of this report notes the issues with the number of available devices and players during the iview trial. A consultation process occurred to ensure the desktop version of iview was compatible with a range of web browsers and assistive technologies.

This delivery option would avoid technical issues around transmission, retransmission and receiver issues associated with [option 1](#). However, it would still require resolution of issues related to acquisition and ingest of content and compilation.

Unlike arrangements for broadcast television, the addition of an AD service would be unlikely to interfere with other services offered (unless AD is accidentally selected by a user).

### 5.4. Implementation

Each individual broadcaster or platform provider is responsible for the design of its online players and there would be nothing to prevent multiple providers introducing AD at the same time. It may be practical to update platforms in stages similar to the ABC's iview trial which began with the rollout of AD to Apple and Android platforms followed by HbbTV and desktop players over a number of months.

### 5.5. Summary

This option would be the second most cost and labour intensive in terms of establishing the AD service, due to the extensive content (acquisition and ingest) and compilation issues that would need to be resolved, as well as the testing and upgrades to various online players. It would likely be quicker to market than [option 1](#). Free TV notes that the technical issues associated with the range of technologies could be mitigated to a degree by providing AD only on the most common platforms such as Apple iOS, Android, Apple TV and FreeView Plus. After the AD service is established, ongoing system and operational costs would be focused on commissioning the AD and managing the process, which would be largely automated. As such it would be easier to scale up the service over time.

As discussed above, there is a preference for many AD users, particularly older users, for access to AD for broadcast television rather than an online AD service due to accessibility and affordability issues.<sup>85</sup> However, online platforms provide increased flexibility in viewing and, providing any accessibility issues can be rectified, would allow many younger AD users to access content in a convenient way.

Foxtel's position is that this option would be more suited than the broadcast option to the Foxtel subscriber base, who are typically more connected and more digitally literate.

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<sup>85</sup> Vision Australia et al, [Blindness Sector Report on ABC iview trial of Audio Description](#), February 2017.



## 6. Delivery option 3—Separate AD service

This option involves a discrete AD service which operates independently of a broadcast or streaming service. One example of a separate AD service is a system used in some cinemas to deliver AD through a headset to AD users. This allows AD users to watch a film in the cinema alongside other audience members who are not receiving the AD.

As discussed under [option 2](#), many Australians are using smartphones, tablets and other devices to access online services provided by apps. There are a number of AD apps that allow users to watch video content such as broadcast television, online services or films and receive a separate, synchronised AD track through their mobile device. AD apps can ‘listen to’ a program’s audio and sync the AD track so that it matches up correctly with the program’s soundtrack. AD apps may also allow users to watch programs with AD on demand through the app or to listen to a program’s soundtrack with the AD track but without the video, similar to a podcast.

In addition, it is possible to deliver an AD service separately through a landline telephone. Similar to an app, the AD user receives the AD track via a regular phone call which is synchronised to a television broadcast. A 2017 survey found that despite the trend toward mobile phones and smartphones, 55 per cent of Australians have a landline phone and this is especially common for older Australians.<sup>86</sup> Conceptually, audio tracks could also be delivered via radio or podcasts.

### 6.1. Case study—MovieReading AD app trial in the UK

In February 2015, the Royal National Institute of Blind People (RNIB) launched a three month trial of the MovieReading AD app for cinemas in the UK. Content was made available by Disney UK, 20th Century Fox, ITV and Sky.

The MovieReading app uses microphones embedded within devices to sync with the original soundtrack. (This app is now available in Australia and allows cinema audiences access to captions or AD.)

The trial recorded the experiences of 198 people using the app. It found that the app was reviewed positively by the vast majority of users (83 per cent were satisfied, 4 per cent dissatisfied).<sup>87</sup> Much of the dissatisfaction was about a lack of available content and there were problems with accessibility on Android devices. There were also some issues with the sync function caused by slightly different versions of the same films screened by different video on demand services. All participants indicated they would use the app again and there were no participants who felt that the app failed to enhance their viewing experience.<sup>88</sup> The majority of respondents (85%) indicated that, after the initial familiarisation, no further support from another person was required.

The survey participants were volunteers who already had access to smart devices and were likely to have skewed toward those with digital confidence. It is noteworthy that accessing AD on a second device was a major shift for UK viewers, who have had integrated access to AD for some time.<sup>89</sup>

<sup>86</sup> ITWire, [Aussies still hang on to their landlines](#), ITWire website, 28 July 2017 (accessed 27 November 2017).

<sup>87</sup> Royal National Institute of Blind People, [Audio description app user trial: Report](#), September 2015.

<sup>88</sup> Ibid.

<sup>89</sup> Ibid.



Figure 2—Graphic showing how an AD app syncs with the soundtrack of a television broadcast



## 6.2. Case study: BAMDescribe

In Australia, BAM’s BAMDescribe app<sup>90</sup> can be downloaded for free through the Apple App store. It is expected to be available soon on Google Play for Android devices.

The app was launched in October 2016 with the aim of providing AD for 100 shows in 100 days in association with two channels for children available on Foxtel: Nickelodeon and Discovery Kids. It allows users to either synchronise the app with the audio track of a broadcast on the participating channels or to listen to a library of material on demand. Programs available include *All About Animals*, *Game Shakers*, *Loud House*, *Nicky, Ricky, Dicky and Dawn*, *Sanjay and Craig* and *Thundermans*.

BAM is updating and expanding the service to include content for all ages. The aim is to provide 200 hours per month in year one, 350 in year two and 500 per month in year three.

BAM considers that there are three distinct audiences for AD: digital natives; those who would like training to use new technology; and those who rely more on fixed phones for connectivity.

To address this last group, and acknowledging that it is likely to be the largest group of people currently interested in AD, BAM plans to expand a phone based AD service, where users can receive the AD through a landline phone.

AD users are able to follow three options for receiving AD over the phone:

1. If an AD user knows the name of the program they would like to watch and it starts within the next five minutes, they can call BAM, say the program name and wait to receive the AD when the program starts.
2. If an AD user knows the name of the program and it starts outside the next five minutes, they can call BAM, say the program name and receive a call with the AD when the program starts.
3. If an AD user does not know the name of the program, they can call BAM, respond to a prompt to access a TV guide, say the name of the program when it is listed and receive the AD when the program starts (either directly or via a call-back if the start is outside the next five minutes).

Since the working group commenced, BAM has made progress with voice activation, a language translator, the landline phone option and removing advertisements.

<sup>90</sup> Big Access Media, [Audio Description for people who are blind or vision impaired](#), BAM website, (accessed 4 September 2017).



### 6.3. Advantages and disadvantages for AD users

This delivery option could offer considerable flexibility for AD users with a range of viewing preferences. AD users could watch broadcast television with family and friends but receive the AD separately via an app or a telephone call. AD users could also access programs on demand through online services and receive the AD via the app. Alternatively, AD users could listen to an AD track and program audio separately without needing to sync with the video, similar to a podcast.

As with an online service discussed under [option 2](#), a separate AD app would provide an opportunity for a back catalogue of AD tracks to be made available to users, providing more choice and flexibility over time in contrast to the broadcast option.

Unlike many online video services, AD apps are designed especially for users who are blind or vision impaired. This means that apps often include useful features such as high quality voice recognition to ensure easy access to AD. Once comfortable with apps, users who are blind or vision impaired may be able to benefit from other magnification or colour recognition apps.<sup>91</sup> If one app provided AD for a range of broadcasters or services, the aggregation of material from different sources would reduce the number of interfaces an AD user has to manage.

The AD app option would be convenient for users who already have a data plan and an appropriate device, such as a smartphone. However, as discussed under [option 2](#), there may be affordability issues for an app solution for some users, while noting that an audio-only app uses a small amount of data compared to streaming video services.

As discussed under [option 2](#), many Australians who are blind or vision impaired do not have internet access.<sup>92</sup> In addition, research conducted by Vision Australia in October 2015 revealed that of approximately 500 Vision Australia clients surveyed, only 17 per cent used a smartphone.<sup>93</sup> Smartphone usage by Vision Australia's clients decreased consistently with age:

- 86 per cent of those aged 19-34 used a smartphone
- 58 per cent of those aged 35-54 used a smartphone
- 34 per cent of those aged 55-64 used a smartphone
- 25 per cent of those aged 65–74 used a smartphone
- 2.8 per cent of those aged 75+ used a smartphone.

Based on these findings, an app-based approach is likely to require additional measures such as a landline phone service for users who may not be willing or able to engage with digital technology or who find it challenging to learn, including older users and people who are new to vision loss.

While the landline phone option may be suitable for some users, there are a number of considerations regarding this option. Receiving a call with AD would tie up the phone line so users may wish to explore options such as call waiting or answering services to ensure important calls are not missed. Users may also wish to use a phone with a speaker function or a headphone jack rather than using the phone handset to receive the AD during a program.

While an AD app or phone service could provide convenient access for AD users, a separate service would require AD users to take additional steps to access content in a different way to mainstream audiences.

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<sup>91</sup> Examples of apps include ColorID, SuperVision+ Magnifier.

<sup>92</sup> ACCAN, [Audio description policy position](#), ACCAN website, 6 February 2017 (accessed 22 August 2017).

<sup>93</sup> Vision Australia et al, [Blindness Sector Report on ABC iview trial of Audio Description](#), February 2017.



## 6.4. Technical challenges regarding this option

### Broadcaster/service provider considerations

As with options [1](#) and [2](#), new workflows would need to be established to build in the commissioning of AD into existing processes. This would ensure that a separate AD service will match up with a program's broadcast on television or availability through an online catch-up service or SVOD service. It is also important that the AD track matches the final version of the program, including any commercial breaks. Broadcasters would need to factor in communication with a third party service regarding any version or scheduling changes. There may be limited opportunity for broadcasters to preview the AD service.

Given many online services are not currently accessible for users with a disability, it would be best practice for platform providers to consult with people who are blind or vision impaired and make changes to the user interface to ensure full accessibility with technologies such as screen readers, as discussed under [option 2](#).

Unlike arrangements for broadcast television under [option 1](#), an AD service provided via a separate app or phone call would pose no risk of interference to other viewers.

If one app, such as BAMDescribe, provided AD for a number of broadcasters or services, this may affect competition between AD providers, depending on individual commercial arrangements. However, it is possible for other parties including content providers, production companies, AD providers or broadcasters to provide similar AD apps or services for different content and to provide a choice of services for AD users.

## 6.5. Implementation

Each individual broadcaster or service provider could establish their own separate AD service or negotiate with an AD provider or app developer to provide access to their content and commission the AD. There would be no barriers to multiple broadcasters or platform providers exploring different options at the same time.

## 6.6. Summary

This option would be the least cost and labour intensive option for the supply of AD, as the focus for broadcasters or platform providers would be on supplying content and commissioning the AD service. Depending on whether an existing service is used or if a new service is created, establishment costs are likely to be the most significant expense with moderate ongoing costs to supply the AD.

If an existing app or service provided AD for a range of broadcasters or content providers (such as an expanded BAMDescribe) this would allow significant amounts of AD programming to be available under this option well before material could be made available under the other options. The development of new AD apps may also provide earlier access to AD than options [1](#) and [2](#) due to the separate nature of the solution.

Well-designed apps offer a relatively simple method for the provision of AD via a separate service while allowing for growth and improvement over time. Given that the ability to use apps depends on the user's access to mobile devices and suitable data plans, there will be an important role for supplementation via other methods, such as a landline telephone service, for people who do not have access or the ability to use digital options. This delivery option could offer considerable flexibility for AD users with a range of viewing preferences, including those who prefer broadcast television and landline phones and those who prefer online services and watching content on demand.



## 7. Considerations for all three delivery options

### 7.1. Compatibility of AD files

AD files are produced in a range of different formats both in Australia and internationally. There is no standard format for AD files and different broadcasters and content providers use different formats depending on their individual preferences and systems. The lack of an AD standard is not specific to Australia and has not prevented the introduction of AD services in other countries.

Under each of the delivery options discussed in the previous sections, broadcasters or platform providers would need to commission new AD files for their content or edit existing AD files for broadcast or supply on their platforms. An AD track needs to be tailored to the final version of any program so that the timing of the AD matches up with the program's main soundtrack. Given different versions of programs are used in international markets and broadcasters often edit programs to fit particular timeslots or insert their own commercial breaks, an AD track needs to be timed correctly for a specific version of a program.

Internationally, there is both interest in and opposition to standardisation of AD files. A fall-back idea to assist compatibility is for a global repository of AD content.

Earlier in 2017, RNIB in the UK convened a meeting of various stakeholders including broadcasters, AD producers, technology companies and streaming service providers, to explore the possibility of creating an AD repository and consider the barriers and opportunities.

RNIB believes a central repository would help to develop new channels for the delivery of AD to end users who are proficient in using connected devices and are keen to receive a personalised service. One of the key barriers that emerged at the initial meeting was related to versioning of content: different versions of films and programming to accommodate requirements such as watershed times or edits to meet classification requirements, as discussed above. Stakeholders at the meeting confirmed that no metadata is currently maintained for particular versions of programs which would enable identification of specific versions and allow for versions to be linked for synchronisation on a separate app. RNIB continues to investigate possible solutions.

Once a solution is found, RNIB will consider the development of a UK repository as a starting point, though it sees possible benefit in a global database.<sup>94</sup>

### 7.2. Back catalogue of AD

There is potential to access and adapt existing AD files under all three delivery options. Under options [2](#) and [3](#) in particular, there is an opportunity to make available existing AD files, including those for current television programs and a back catalogue of films and other content.

The availability of AD in other English speaking countries, means that a significant back catalogue of audio-described content exists for Australian, USA and UK television programs and films.

Popular Australian television shows such as *Doctor Doctor*, *Home and Away*, *Neighbours*, *Bondi Vet* and *Border Security* are audio-described for the UK, USA and/or New Zealand markets. All feature films funded by Screen Australia must be audio-described for cinema release and DVD.<sup>95</sup> Village Roadshow has also been a driver of AD provision for film in recent years. The SubStation alone has audio-described

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<sup>94</sup> Advice from the RNIB provided to DoCA, August 2017.

<sup>95</sup> Screen Australia, [Terms of Trade](#), 6 November 2017.



427 movies and over 100 television series. Access to existing AD tracks would be dependent on the copyright owner.

As noted in the section above, a degree of customisation is required in order to ensure an AD file matches the final version of a program. This means that there will be costs associated with making existing AD content available, but re-versioning of AD is a well understood process for AD providers across delivery formats.

### 7.3. Copyright issues

Television programs and films are copyrighted, which gives the copyright holder exclusive rights, including the right to reproduce and adapt their content. Creating an AD track or a version of a program with AD could be viewed as reproducing this content and a potential copyright infringement if permission has not been sought from the copyright holder.

Recent changes to Australia's *Copyright Act 1968* have created two new simplified and more flexible exceptions to enable people with disability access to copyright material: a fair dealing exemption for persons with a disability and anyone assisting them, and an exemption for educational institutions and other not-for-profit organisations assisting persons with a disability.<sup>96</sup> The changes put in place a consolidated, flexible exception for use by people with disabilities, and organisations that assist them to access copyright material in the required format. That means if an organisation assisting a person with a disability is unable to reasonably source and purchase accessible copyright material, it can consider making accessible copies or acquiring these copies from other international organisations. The fair dealing exception does not have an express 'commercial availability' test, although it is subject to consideration of four standard fairness factors (including, for example, the effect of the dealing upon the potential market for, or value of the material). The organisations' exception does not extend to commercial organisations. However, a commercial organisation may be able to rely on the fair dealing exception, subject to consideration of the fairness factors. Broadcaster representatives note that contractual provisions override the exceptions in the *Copyright Act 1968*.

In circumstances where contractual arrangements do not allow for fair dealing, organisations seeking to make use of copyright material for the purposes of providing AD would need to seek the rights in relation to each piece of content and/or renegotiate the relevant contractual provisions. This is likely to frequently be the case in circumstances where organisations have not anticipated use of the material for purposes of AD at the time of entering into the contract. This would create an additional step in the process.

However, initial consumer demand is for a reasonably small amount of audio-described material, increasing over time. This provides an opportunity for AD to be included in content agreements to avoid any doubt in future. There are no copyright concerns if a broadcaster or service provider is audio-describing its own content, as was the case with much of the ABC's content during the AD trials.

### 7.4. Cultural or capability issues

Under the Terms of Reference, the ADWG was asked to consider any cultural or capability issues associated with the provision of a new AD service in Australia. This provided an opportunity for discussion about non-technical logistical issues, irrespective of the platform selected to provide the service. The group considered the extent to which broadcasters have sufficient staff and/or knowledge to manage the introduction of AD online or on broadcast television. The ABC's reports on its AD trials showed that providing an AD service required additional staff to test and implement the new AD

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<sup>96</sup> Refer to sections 113E and 113F of the [Copyright Act 1968](#). The changes to disability access came into effect on 22 December 2017.



process, and involved changes to work practices such as television scheduling and the commissioning process. These were new arrangements developed by the ABC for the trials. Broadcasters did not identify any cultural or capability barriers to the introduction of AD, beyond limitations caused by technology and cost.

Similarly, on the AD supply side, there are a number of AD providers in the market currently audio-describing films, television and other content for DVDs, cinema release, online use and for international audiences. These AD suppliers are capable of scaling up operations to supply any future AD service. Each of the three options raises issues about the sustainability of any future AD service. Sustainability can be described as an ongoing AD service that continues to grow over time. The sustainability of the service is particularly important to AD users, many of whom enjoyed access to AD during the ABC's trials only to experience loss of access at the trials' conclusion.

Assurance could take the form of a commitment of ongoing funding from the Government to subsidise a service. However, any government funding may not increase over time. In New Zealand, Able noted that, after a period of growth of content due to a decreasing proportion of establishment costs and efficiencies in processes, further growth may be difficult as funding for the service is capped.

Alternatively, the Government could introduce legislation to mandate ongoing AD targets. There are concerns from some consumer representatives that without legislation requiring an ongoing AD service, any commitment may be subject to change. If access services are not a requirement, they may be reduced or viewed as an optional service during cost cutting measures. For example, the ABC recently reduced the amount of non-legislated captioning provided in response to a reduction in funding.

Assurance could also take the form of a commitment from broadcasters and a requirement to provide AD services via industry codes. Netflix has demonstrated that once it developed the capacity to provide AD, it was able to move to rapidly increase the content offering available. Broadcasters in the UK currently exceed mandated AD targets, after the initial rollout of services.<sup>97</sup> It is possible that this would be replicated in Australia, noting that the Australian broadcast environment is significantly different to overseas or SVOD models.

Foxtel notes that a sustainable service also requires that the technical and operational expenditure required to generate AD in the short term produces a service that is capable of meeting and adapting to changing audience preferences over time. This is particularly relevant to the broadcast option that could take considerable investment and a number of years to implement, when broader trends indicate consumers are shifting their viewing habits towards online delivery of content.

## 8. Incentives and alternatives to legislation

### 8.1. Government funding

#### Recent funding context

Free TV notes that FTA broadcasters are now competing directly against large foreign technology media companies whose share of Australian advertising revenue and influence is growing rapidly. Advertising revenue that was previously available to fund local content is being lost to multinational companies who are almost 1,000 times larger than the combined membership of Free TV. The share of the Australian advertising market spent online has almost doubled over the last five years to nearly 50 per cent. Commercial FTA TV's share of advertising revenue has fallen to 21 per cent in 2016.

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<sup>97</sup> Ofcom, [Television access services report 2016](#), 18 May 2017.



At the same time, the costs of producing Australian content are increasing by six per cent per annum and commercial FTA broadcasters continue to comply with a range of regulatory obligations that were put in place when broadcasting was the only source of content for most Australians.<sup>98</sup>

Free TV considers these trends are directly impacting commercial FTA broadcasters' viability, demonstrated recently when the Ten Network went into receivership.

In May 2017, the Australian Government announced a comprehensive package of reforms to improve the sustainability of Australia's commercial FTA broadcasting sector, support the creation of high quality Australian content and modernise broadcasting and content regulation.<sup>99</sup> As part of the package, the Government abolished broadcasting licence fees, saving commercial FTA broadcasters around \$130 million per year. As part of the package, FTA broadcasters accepted a number of concessions with significant revenue implications, including new restrictions on gambling advertising in live sports coverage, as well as changes to the anti-siphoning list. At the same time, the Government introduced a price for the use of radiofrequency spectrum for commercial broadcasting, which will result in the sector paying around \$40 million per year for spectrum use. The reform package acknowledges the important role the FTA sector plays in reflecting and informing Australian cultural life and the challenges faced by broadcasters due to the fragmentation of audiences and the decline in advertising revenue for traditional media outlets.

The package provides significant ongoing financial relief to enable commercial FTA broadcasters to better compete with online competitors, invest in their businesses and produce Australian content.

The provision of AD was not part of the media reform package but was debated in Parliament.<sup>100</sup> It is the position of Free TV that despite assistance provided to the commercial broadcasting industry, broadcasters are not in a position to bear the costs of AD.

As part of the reform package, the Government also allocated additional funding of \$30 million over four years to Fox Sports, an STV sports broadcaster, to increase coverage of sports that receive low or no broadcast exposure. These include women's sports, niche sports and sports that command high levels of community involvement and participation.

SBS is currently awaiting a Government decision on reinstatement of \$8.7 million to its base funding for 2018–19. This funding is required to make up a shortfall arising from withdrawal of the Communications Legislation Amendment (SBS Advertising Flexibility) Bill 2017, which would have provided it with additional flexibility to earn revenue from advertising. SBS's base funding was reduced in anticipation of the passage of the Bill. SBS considers that this funding is required in order to continue to provide its existing suite of programs and services, let alone new services such as AD.

The ABC was provided with discrete funding by the Government to run the broadcast AD and iview AD trials in 2012 and 2015–16 respectively. The government funding for these trials was exhausted at their conclusion.

More broadly, in line with the announcement by the then Minister for Communications in November 2014, ABC base funding will be reduced by \$56 million in 2017-18, as part of a total funding reduction of \$207 million over four years from 2015–16 to 2018–19.

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<sup>98</sup> Free TV Australia, [Telling Australian stories in the new media age](#), September 2017.

<sup>99</sup> Senator the Hon Mitch Fifield, Minister for Communications, [Major reforms to support Australian broadcasters](#), media release, 6 May 2017.

<sup>100</sup> Parliament of Australia, [House of Representatives Hansard](#), 21 June 2017 and [Senate Hansard](#), 13 September 2017.



The ABC continues to implement various savings initiatives to address these funding cuts, comprising efficiency savings in support functions and transmission, however, these cuts also deprive the Corporation of the ability to direct the results of such efficiencies towards new priorities.

### Additional funding to broadcasters

If government funding were to be provided, it could be allocated to broadcasters to subsidise the cost of establishing an AD service and to subsidise the costs of providing an ongoing AD service. Establishment costs would vary significantly depending on the option selected, with broadcast television representing the most costly option, followed by online platforms and a separate AD app or phone service.

Free TV considers that a further consultation process with all stakeholders on potential funding options should be undertaken if there is any recommendation to be made for an obligation to provide AD. This would allow for more detailed discussion about possible funding models, such as funding allocated to individual broadcasters or via a contestable fund.

### Funding to support AD users

There are a number of avenues for government funding to support access to an AD service provided under option [2](#) or [3](#). Digital literacy training and support for older Australians is provided under the Be Connected program as discussed in [section 5.2](#). It is possible for vision groups to join the Be Connected network, access supporting resources and apply for funding in order to deliver digital literacy activities to support older AD users to access digital services.

It may also be possible for some AD users to access government funding to purchase equipment or services, such as a smart device or a data plan, to enable access to a digital AD service. Support may be available under the National Disability Insurance Scheme, My Aged Care or through a potential expansion of existing government programs to support people who are blind or vision impaired. Telecommunications disability equipment programs are due to be reviewed shortly by the Government and the current limited scope of equipment available under them is likely to be a key issue.

## 8.2. Broadcaster commitments

An alternative to government funding or a legislative requirement, is for broadcasters to develop a sustainable way to introduce AD services via the platform of their choice and to commit to providing an ongoing service. This could then be confirmed through the introduction of or amendments to relevant industry codes or guidelines. Commercial FTA and STV broadcasters are not funded by the Government to provide captioning services, although captioning targets are required by legislation. Free TV considers that AD will be more onerous to provide than captioning and that the financial situation of broadcasters is different to that in 2005 when captioning requirements were introduced. However, this method would allow individual broadcasters to determine the most appropriate AD delivery option based on their operational environment and financial circumstances.



## 9. Way forward

### 9.1. Consumer positions

Broadcast television ([option 1](#)) is the most preferred option and is strongly supported by vision groups and their members. This is because it would provide equal access to television to that of the mainstream population. The online solution ([option 2](#)) is the least preferred as vision groups consider that it would not be accessible to a wide range of AD users.

The app and landline phone solution ([option 3](#)) is supported by vision groups providing users can rely on an ongoing, sustainable service. They consider that a legislative requirement is needed to ensure broadcasters participate. Although this option would require AD users to access a separate service to mainstream viewers, it is supported because it would still provide access to broadcast television for a range of AD users. Most importantly, it would enable the social inclusion of watching television with family and friends. The app solution would also provide greater opportunity for access to a back catalogue of AD material and the flexibility for users to listen to content on demand.

### 9.2. Broadcaster positions

Free TV notes that Australia is in a different stage of technological development to other nations which provide AD via broadcast television and that Australian broadcasters are spectrally constrained.

The FTA broadcasters consider that the implementation of AD on broadcast television would cause major structural, technical and financial disruptions to broadcasters and potentially significant disruption to viewers. This is because of the unique broadcasting environment in Australia and the timing of the introduction of AD well after the introduction of digital television. The implementation of AD on the broadcast platform would also take a considerable amount of time, by which many more people may have transitioned to online and other forms of viewing.

Free TV considers that separate AD services ([option 3](#)) have potential to increase accessibility to AD more quickly and more economically than either the broadcast or online options considered.

Free TV contends that it is the role of the Government to fund programs that address social inequities and maximise social welfare. The Australian Subscription Television and Radio Association (ASTRA) also considers it appropriate for Government to subsidise AD via funding of a separate entity (similar to Able in New Zealand) or via direct funding of the national broadcasters to deliver AD. Foxtel's preferred AD delivery option is online or a companion application ([options 2](#) or [3](#)).

Free TV and ASTRA do not support the introduction of mandatory AD targets via legislation or co-regulatory codes. Free TV does not consider that legislative or industry code requirements are an effective alternative to government funding and will not resolve the technical or cost issues involved with providing AD.

The national broadcasters, ABC and SBS, have advised that additional government funding would be essential to provide an AD service.



## Appendix A: Membership of the ADWG

### List of ADWG attendees:

Organisation	Name
Ai-Media	Tony Abrahams, Chief Executive Officer
Ai-Media	Stephen Muldoon, General Manager Platforms
Australian Blindness Forum (ABF)	Jennifer Grimwade, Executive Officer (until November 2017)
Australian Broadcasting Corporation (ABC)	Sophie Mitchell, Head of Government Relations (until October 2017)
ABC	Kevin McAlinden, Government Relations Manager
ABC	Geoff Cousins, Captioning Coordinator
Australian Communications Consumer Action Network (ACCAN)	Teresa Corbin, Chief Executive Officer
ACCAN	Wayne Hawkins, Disability Policy Advisor
Australian Subscription Television and Radio Association (ASTRA)	Holly Brimble, Policy and Regulatory Manager
Big Access Media (BAM)	Stefan Carey, Chief Executive Officer
BAM	Derek Otten, Chief Operating Officer
Blind Citizens Australia	Lauren Henley, National Policy & Advocacy Coordinator
The Captioning Studio	Alex French, Chief Executive Officer
Curtin University	Mike Kent, Associate Professor, Faculty of Humanities
Curtin University	Katie Ellis, Associate Professor, Faculty of Humanities
Ericsson Broadcast and Media Services	Victoria Hunt, Head of Operations
Foxtel	Sophie Jackson, Principal Legal Counsel
Free TV Australia	Sarah Waladan, Head of Legal and Regulatory Affairs
Media Access Australia (MAA)/ Centre for Inclusive Design	Manisha Amin, Chief Executive Officer
MAA	Chris Mikul, Advisor
Nine Entertainment Co	Irene McMonnies, Corporate Counsel
Royal Society for the Blind	Tony Starkey, Government Relations and Accessibility
Seven West Media	Justine McCarthy, Senior Counsel
Seven West Media	Michael Boland, Regulatory Affairs



Organisation	Name
Special Broadcasting Service (SBS)	Michael Coonan, Head of Regulatory Affairs
SBS	Natasha Eves, Regulatory Affairs
The SubStation	Linda Baker, Managing Director
The SubStation	Alison Myers, Audio Description Manager
Vision Australia	Bruce Maguire, Lead Policy Advisor
Vision Australia	Rowan Lee, Manager Advocacy and Government Relations

#### List of guest presenters:

Organisation	Name
Able	Wendy Youens, Chief Executive Officer
BroadSpectrum Consultants	Andrew King, Director
Department of Communications and the Arts (DoCA)	Kristi Haipola, Director, Copyright Law Section
Department of Social Services	Lynne Clune, Director, Community Programs Policy Section
Foxtel	Claire Southey, Senior Technologist, Technology Strategy and Research
Good Things Foundation	Helen Milner, Chief Executive
Netflix	Corie Wright, Director, Global Public Policy
Netflix	Brian Macken, Content Distribution Manager
Netflix	Denise Kreeger, Content Localization Manager
Netflix	Erica Kram, Content distribution Specialist
Netflix	Tracy Wright, Director, Content Operations
SBS	Clive Morton, Manager, Transmission and Regulatory Services



## Appendix B: Checklist of Terms of Reference

Terms of Reference	Report reference
Identify options to sustainably increase access to audio description (AD) services for Australians who are blind or vision impaired and others who may benefit from AD	<a href="#">Section 4</a> , <a href="#">section 5</a> , <a href="#">section 6</a>
Identify any impediments to implementation of such options, including technical, financial, cultural or capability issues	<a href="#">Section 4</a> , <a href="#">section 5</a> , <a href="#">section 6</a> , <a href="#">section 7</a>
Bring together industry and consumer stakeholders with relevant expertise and experience to provide advice on these options and impediments	<a href="#">Section 1</a>
Provide a report to the Minister for Communications and the Arts and the Assistant Minister for Social Services and Disability Services on its findings by 31 December 2017	Report provided on 22 December 2017.
Consider the benefits of AD and the impact of the provision of AD services on consumers who are blind or vision impaired	<a href="#">Section 2</a>
Consider the content best suited to AD and the content users would seek to access with AD	<a href="#">Section 3</a>
Consider the current availability of AD services in Australia	<a href="#">Section 1</a>
Consider the use of AD across different platforms (i.e. terrestrial TV, online platforms, apps)	<a href="#">Section 4</a> , <a href="#">section 5</a> , <a href="#">section 6</a>
Consider learnings from the two AD trials conducted by the ABC in 2012 and 2015–16	<a href="#">Section 1</a> , <a href="#">section 4</a> , <a href="#">section 5</a>
Consider challenges to accessing and providing AD including technical and compatibility issues, content and copyright issues, and the financial cost of implementation	<a href="#">Section 4</a> , <a href="#">section 5</a> , <a href="#">section 6</a> , <a href="#">section 7</a>
Consider incentives to encourage future provision of AD services in Australia	<a href="#">Section 8</a>
Consider alternatives to legislated requirements to provide AD services	<a href="#">Section 8</a>

