



**Australian Government**

---

**Department of Communications,  
Information Technology and the Arts**

**Submission to the House of Representatives Communications, Information  
Technology and the Arts Committee Inquiry into the uptake of digital television in  
Australia**

**May 2005**

## Introduction

This submission responds to the Committee's terms of reference by outlining the Department of Communication, Information Technology and the Arts' understanding of developments in Australia and overseas in relation to the introduction of digital television. The submission also includes information on a series of statutory reviews being undertaken of the regulatory regime applying to digital television broadcasting.

Note A new communications regulator, the Australian Communications and Media Authority, will come into being on 1 July 2005, from the merger of the Australian Broadcasting Authority (ABA) and Australian Communications Authority (ACA). This submission continues to refer to the current regulator.

### • The rollout process for digital television, including progress to date and future plans

#### Legislative framework

The Australian Government legislated for the introduction of digital terrestrial television broadcasting in Australia by enacting the *Television Broadcasting Services (Digital Conversion) Act 1998* as an amendment to the *Broadcasting Services Act 1992* (the BSA). This framework was further built upon by the *Broadcasting Services Amendment (Digital Television and Datacasting) Act 2000* and some subsequent amendments. Schedule 4 of the BSA relates to digital television broadcasting. Schedule 6 relates to datacasting services.

Key features of the digital television regulatory framework include:

- a requirement on the existing commercial and national free-to-air broadcasters to commence digital terrestrial television broadcasts on 1 January 2001 in capital cities, and in regional areas between 1 January 2001 and 1 January 2004. (This provision refers to the commencement of digital services in each licence area, not the roll-out of full digital coverage.);
- a simulcast period of at least 8 years from the required commencement date in each area. The simulcast will last until at least the end of 2008 in metropolitan areas and until a series of later dates in regional areas depending on the timing of commencement. The simulcast period was intended to provide consumers with a range of equipment choices and time to convert to digital. (The length of the simulcast period is the subject of a statutory review scheduled to be conducted by 1 January 2006);
- requirements during the simulcast period to provide a simulcast of analogue services and digital standard definition television (SDTV), and a minimum amount of high definition TV (HDTV) transmissions;

- the loan of sufficient spectrum to each existing commercial and national broadcaster to enable them to provide all digital services required under the digital framework and to facilitate equivalent coverage between analogue and digital services:
  - 7 MHz of spectrum enables a broadcaster operating in digital mode to transmit data at a rate of up to around 23 megabits per second (Mbit/s). An SDTV service typically requires 4 to 8 mbps. An HDTV version of that service requires between about 8 and 19 mbps depending on content, quality requirements and scanning parameters. Associated sound and service information data to operate the service requires around 1 to 2 mbps. Broadcasters have considerable technical flexibility to manage data within their channel;
  - analogue spectrum is to be resumed by the ABA from each broadcaster at the end of the simulcast period, having regard to its most efficient use;
- a requirement that broadcasters fill an HDTV quota of 1040 hours per calendar year (an average of around 20 hours per week), commencing July 2003 in state capitals. Commercial broadcasters are required to fill their quotas by transmitting ‘true’ HDTV programming whereas national broadcasters can fill their similar HDTV quota with ‘upconverted’ material;<sup>1</sup>
- a prohibition on multichannelling by commercial television broadcasters and limits on multichannelling by national broadcasters, designed to minimise the initial impact of new digital free to air (FTA) services on the pay TV sector;
- a moratorium on the issue of new commercial television broadcasting licences until after 31 December 2006 (except in single and two-licence areas):
  - the moratorium recognised that commercial broadcasters would need to spend approximately \$1 billion on digital conversion while being required to maintain high quality television services, including local content, during the conversion period;
- provisions for the potential introduction of ‘datacasting services’ - new, digital-only services that are different to traditional broadcasting services. Content restrictions apply to these services. The regime provides for the allocation of datacasting licences to both new players and existing broadcasters, and spectrum has been reserved for potential new datacasters (there are, as yet, no standalone datacasting services, although a trial is currently underway in Sydney):
  - the main restrictions on datacasting content relate to the provision of certain genres of programs commonly provided on FTA television, for example, drama, sporting programs and events, music programs, infotainment and lifestyle programs, light entertainment and variety programs, ‘reality’ television, quiz programs and game shows. There are also restrictions on the provision of audio content;

---

<sup>1</sup> A distinction exists between material produced using HDTV cameras, or derived from 35 mm film (referred to as HDTV-originated, or ‘native’, material), and analogue or standard definition programming, which is produced in analogue or SDTV format and ‘upconverted’ or enhanced using various techniques before it is transmitted as an HDTV product.

- datacasting licensees are allowed to provide information-only programs (including matter that enables people to carry out transactions, educational programs, interactive computer games, content in the form of text or still visual images, Parliamentary broadcasts, ordinary electronic mail, Internet access, news, financial information or weather bulletins, and short extracts of television programs;
- FTA broadcasters may use spare digital capacity on their allocated digital channels to provide datacasting services, subject to obtaining a datacasting licence, but cannot obtain a datacasting licence in other spectrum set aside for datacasting services; and
- from 1 January 2007, the range of services which could be provided by datacasters may broaden to include certain types of broadcasting services e.g. pay TV services, narrowcast services;

In addition, the conversion framework includes:

- the provision of financial assistance (around \$250 million over 13 years) under the Regional Equalisation Program. This assistance takes the form of rebates on licence fees and grants to assist regional and remote commercial broadcasters to undertake the conversion process. It is intended to meet half the broadcasters' costs for non-content aspects of their digitisation during the simulcast period; and
- funding for the full costs of the ABC's and SBS's digital transmission and distribution services.

The framework adopted by Government recognises the high conversion costs of digital television to industry and consumers. It is intended to provide for a managed transition to digital broadcasting by ensuring that consumers can continue to access high quality broadcasting services, and by providing ongoing regulatory certainty for broadcasters who have to make significant capital investments in digital technology. The simulcast period was intended to provide consumers with time to consider their options and choose how and when to convert to digital television.

Various aspects of this regulatory framework are under review. The review process is outlined towards the end of this submission.

### **Planning and rollout of digital television transmission**

The ABA is responsible for managing the conversion of television transmissions from analogue to digital mode. As part of this, the ABA has developed digital channel plans (DCPs) to determine the radiofrequency channels to be allotted in each area and assigned to each broadcaster as well as the technical limitations and characteristics of those channels.

- In 1999-2000 the ABA finalised the first stage of DCPs for metropolitan and some major regional areas.
- The second stage – planning for additional digital services and digital repeaters – commenced in July 2000 and is substantially complete.

- DCPs have been completed for national television services in Remote and Regional Western Australia and Remote and Central Eastern Australia and draft digital channel plans have been released for commercial television services in these areas.

Significant progress has been made in the rollout of digital free-to-air television transmissions in Australia. Commercial and national digital services commenced in Sydney, Melbourne, Brisbane, Adelaide and Perth on 1 January 2001. Digital services have also commenced in all regional licence areas. According to the Australian Broadcasting Authority (ABA), an estimated 84% of the Australian population now has access to digital services from all their local free-to-air broadcasters, and around 96% of the population (or 95% of households) has access to at least 1 digital television service. According to the ABA Annual Report 2003-2004, by June 2004, 315 digital transmitters had commenced operation at 106 transmission sites covering a number of metropolitan areas and major regional centres across Australia. In relation to national broadcasters, by the end of March 2005, implementation plans have been approved for 154 ABC digital television services and 117 SBS digital television services. It is estimated that ABC and SBS have around 440 and 230 analogue sites respectively.

The Digital Broadcasting Australia (DBA) newsletter for February-March 2005 (<http://www.dba.org.au/newsletter/ib-FebMar05-full.asp>) provides a listing of the markets which, at that time, had digital television. Broadcasters are continuing to establish digital transmitters in some areas, particularly smaller regional areas. The BSA requires broadcasters to achieve equivalent coverage with their digital television services as is currently achieved by analogue services as soon as practicable and by the end of the eight year simulcast period.

There is no deadline for the commencement of digital services in remote areas. However, arrangements have recently been approved for the introduction of digital commercial television services in remote WA, expected to commence in 2006, subject to passage of legislation. It is intended that the existing commercial television services will be available in digital as well as analogue mode and that an additional commercial channel, jointly run by existing commercial broadcasters, will be broadcast in digital-only format. Negotiations are continuing with the commercial licensees in the remote Central and Eastern Australia licence area, Southern Cross and Imparja, regarding the development of a digital conversion model.

### **Receiver Equipment**

The range of digital receiver equipment available in the Australian market is increasing. According to DBA's website ([www.dba.org.au](http://www.dba.org.au)) there are now over 60 digital set top box models and at least 12 models of integrated digital television sets (TVs with an inbuilt digital receiver) currently available in Australia.

SDTV set top boxes now retail from around \$129 to around \$1,199, with some special offers being under \$100. The more expensive units contain features such as a hard-drive for recording purposes, and twin tuners which enable the user to record one program whilst watching another. HD digital set top boxes retail from around \$499 to around \$1,599. DBA also reports that integrated digital televisions with an SD tuner on the market retail from around \$2,699 to around \$4,179. SD sets are normally traditional

cathode ray tube (CRT) “glass-type” televisions. Integrated digital televisions with HD tuners retail from around \$5,999 and are generally rear projection, liquid crystal display (LCD) and plasma units.

This compares with October 2001 when there were three set top boxes on the market (two SD boxes each retailing for \$699 and one HD box retailing for \$899).

### **Digital Programming**

Digital television allows broadcasters to provide other digital material in addition to their traditional analogue programming, although there are some regulatory restrictions on the degree to which additional material can be offered (as outlined above).

Broadcasters have experimented with a number of program enhancements, such as statistical information provided in the Seven Network’s coverage of the Australian Open Tennis and some are providing electronic program guides.

The national broadcasters have used their multichannelling capacity to provide extra digital programming. SBS provides a second digital channel in the form of a World News Channel. In March 2005, the ABC’s second digital channel, ABC2, was launched. ABC2 is a complementary channel to the main service, showing a combination of time-shifted and original programming. Both the ABC and SBS provide radio programs as part of their digital TV service.

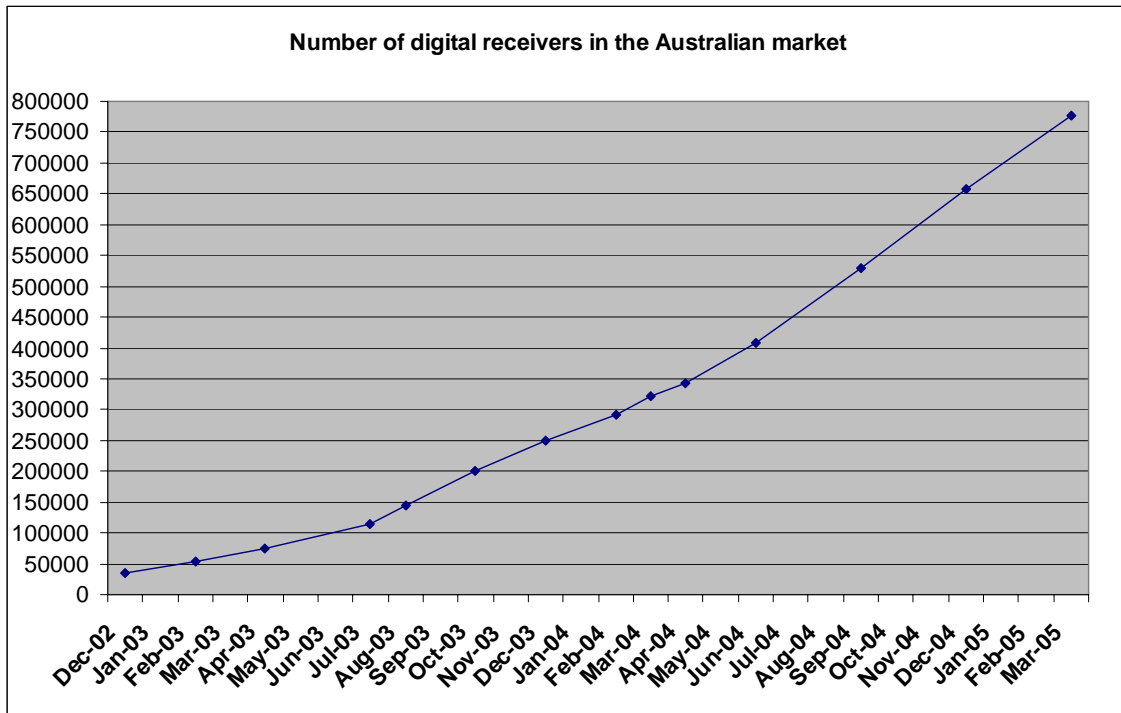
HDTV services commenced in mainland state capitals on 1 July 2003. In regional areas the obligation starts two years after digital services were required to commence. For the regional licence areas of Darwin, Eastern Victoria, Northern NSW, Regional Queensland, Regional Victoria, Southern NSW, Tasmania and Western Victoria the HDTV quota obligations began from 31 March 2005. For Mildura/Sunraysia the obligations begin on 31 December 2005. The ABA monitors broadcaster compliance with the HDTV quota requirements and has reported that all broadcasters have met the targets so far.

Digital broadcasting also provides opportunities for the provision of other types of services, including datacasting and broadcasting to portable handheld devices. The Australian Government has encouraged the use of datacasting spectrum for time-limited trials to help industry to develop technical and business models for potential new and innovative digital services. Broadcast Australia launched a datacasting trial in Sydney on 17 March 2004. The trial offers a range of new and innovative digital services, including electronic program guides for the free-to-air broadcasters’ digital television services, sports, weather and financial information, home shopping and other specialist programs.

Furthermore, a trial of digital video broadcasting to handheld devices was recently announced and this is expected to commence in Sydney during 2005.

## Consumer Takeup

Consumer takeup of digital television was initially modest but has grown rapidly, particularly over the past year. DBA estimates that the delivery of free-to-air digital receivers to retailers and installers had reached around 777,000 at the end of March 2005. Monthly average sales of digital receivers for the March quarter March 2005 are estimated at 40,000 compared to 24,000 for the March quarter in 2004.



Source: Digital Broadcasting Australia

However, raw figures of set top box and integrated digital television purchases should not be viewed as an exact indicator of the number of households accessing digital television, since there are likely to be a number of households with multiple set top boxes and some receivers would be sold to businesses. The Office of Communications (Ofcom) in the United Kingdom calculates digital TV penetration adjusted to incorporate the number of households with more than one digital set and estimates that around 25% of sales in the last quarter of 2004 were for second sets. The Department is not aware of any records on the percentage of sales which are second sets in the Australian market. However the penetration of second digital sets would be expected to be lower than in the UK since Australia is at an earlier stage of conversion.

It is estimated that there are around 7.8 million households in Australia and around 99% of these contain television sets. Based on industry estimates of digital receiver penetration in Australia, around 5–10% of households have converted to digital free-to-air TV.

DBA reported in its bulletin for December-January 2003 that Infomark data shows 40% of digital television sales are in NSW/ACT, 27% in Victoria/Tasmania, 15% in

Queensland, 10% in South Australia and 8% in Western Australia. However, apart from this information, the Department is not aware of any figures available in Australia which indicate whether there is a takeup differential between metropolitan and regional areas.

DBA's website provides a chart of sales of digital free-to-air receivers. The chart included separate data for standard definition receivers and receivers capable of decoding high definition signals. It would appear from the chart that around 30% of sales are HD capable receivers. DBA's February-March 2005 bulletin includes anecdotal evidence that suggests the introduction of a third digital-only channel in Tasmania increased sales of digital television receivers. Anecdotal evidence also suggests that the ABC's ABC2 digital multichannel service has increased interest in digital television.

### **Digital Pay TV**

Foxtel recently made major investments in digital cable and satellite pay TV services, commencing the new services in March 2004. Foxtel has reported that its digital service carries over 100 channels, some of which are time-shifted repeats of other channels. In February 2005, Foxtel was reported as having over 1 million subscribers, around 60% of which are understood to subscribe to its digital service.

Austar has also launched a new digital satellite pay TV service. Austar has reported that it had over 493,000 subscribers at the end of 2004 and by the end of February 2005, it was reporting that over 300,000 of these subscribers were connected to its digital service. Both Foxtel and Austar offer interactive services to their digital subscribers. Optus is reported to have around 165,000 subscribers. Optus announced on 7 April 2005 that it has reached an agreement with Foxtel to resell the Foxtel digital service. It is understood that Optus will commence digitising its network by the last quarter of 2005, with full conversion expected within 2-3 years. There is no legislative obligation on the pay television industry to convert to digital mode.

Some other smaller operators such as TransACT, in the ACT, also provide digital pay TV services.

According to the pay TV industry, there are around 1.6 million pay TV households in Australia, both digital and analogue. Based on an estimated 7.8 million households in Australia, this amounts to a household penetration rate for pay TV of around 20.5%.

The national broadcasters' digital services are retransmitted nationally on digital pay TV networks. Due to the requirement that commercial services may only be broadcast within the area for which they are licensed, digital pay TV operators and commercial broadcasters negotiate retransmission on an area-by-area basis and ensure that viewers are not able to view out-of-area broadcasts. Due to capacity and cost constraints, digital satellite pay TV operators do not currently retransmit the regional commercial broadcasters' services. Foxtel retransmits the digital services of the Nine Network in the metropolitan markets of Sydney, Melbourne and Brisbane. As yet, the Seven and Ten Networks have not entered into agreements for the retransmission of their services via the digital satellite pay TV platforms. However, local cable pay TV providers,



Transact and Neighbourhood Cable provide all of the relevant free to air commercial services for their areas, including the national broadcaster's services and the ABC's digital multichannel, ABC2. Retransmission agreements are a commercial matter.

### **Industry co-operation in implementing digital television**

DBA is an industry based organisation which was formed to help make the transition from analogue to digital television as seamless as possible for the consumer. DBA provides its members and consumers with information about digital TV commencement dates and coverage, the functionality and availability of equipment, retailer locations and the range of digital television programs and enhancements to be broadcast. DBA also encourages training programs for sales staff, service technicians and antenna installers. DBA provides and coordinates information on the digital transition to the wider industry, including software developers, content creators and hardware designers.

DBA supplies its information largely through its website ([www.dba.org.au](http://www.dba.org.au)) which provides information as outlined above. It provides regular bulletins which provide timely and useful information, including the only publicly available source of statistics on the takeup of digital television receiver equipment. DBA also provides information through seminars and sessions with industry members in a range of locations. DBA provides some promotional material in the context of its activities e.g. posters and information flyers. However, its functions do not include large scale promotional activities.

Broadcasters have also conducted promotional campaigns, running advertisements for digital television to promote its benefits. In addition, equipment suppliers have developed an industry code of practice for describing and marketing digital receivers.

Standards Australia is responsible for developing receiver and transmission standards (see 'Transmission and Receiver Standards', below).

An interference management scheme was established and funded by the broadcasting industry to minimise any effects on consumers of interference to analogue transmissions caused by digital transmissions. The scheme has operated since the commencement of the digital television rollout. The Australian Government makes a financial contribution to the running of the scheme on behalf of the ABC and SBS. The scheme was designed to protect viewers' analogue services and to ensure that if interference occurs, the problem is resolved quickly. As part of the scheme, an interference hotline was established, which gives viewers advice on, and assistance with, interference issues - particularly with interference to video cassette recorders, with poor reception of analogue services, and information on rollouts, where necessary. The hotline operates when required - for example, when the commencement of digital services in an area is anticipated to cause interference for some analogue viewers. However, interference has been effectively managed through the scheme and has not caused significant disruption to viewers' television reception in affected areas.

## Links with other technologies

There are links between the takeup of digital television receivers and takeup of other consumer electronic equipment. As digital television provides widescreen programming, the increasing takeup of widescreen televisions may provide an incentive for consumers to purchase digital television reception equipment. DBA has reported that many retailers bundle set-top boxes with widescreen displays. The increasing trend toward the purchase of widescreen televisions has been linked to consumer demand for DVDs, given that many films and other programs on DVDs are displayed in a wide format as compared the traditional '4 x 3' television screen format. Such equipment is seen as producing better quality viewing with digital television programming than with analogue programming. Future developments such as high definition DVDs may also encourage the growth of HDTV.

- **Options for further encouraging consumer interest in the uptake of digital television.**

The following sections provide a short summary of examples of initiatives which have been adopted or considered internationally to encourage consumer interest and to facilitate a smooth transition to digital TV. In noting these initiatives the Department does not comment on their merit or appropriateness in the Australian context.

## UK

In the UK, the takeup of digital television is more advanced than in Australia and the focus has now shifted somewhat from driving takeup to coordinating the process for actual switchover.

A switchover trial has taken place in a small area of Wales. Digital transmissions in the region began in November 2004. Three months after the commencement of the trial, residents voted overwhelmingly to abandon analogue TV. Switchover subsequently took place on 30 March 2005. The trial was not intended to be a rehearsal for national switchover but to provide a better understanding of technical issues and problems (such as aerials and cabling) and consumer issues. It is expected that a full report on the trial will be published later in 2005.

The Consumer Expert Group (CEG), which is part of the UK Digital Television Project, released a report to the UK Broadcasting Minister in 2004 entitled *Persuasion or Compulsion? Consumers and analog switch-off*. This report argues that, although the government's current policy of achieving switchover has been successful in attracting viewers to digital TV, there is a range of issues which need to be addressed before switchover. These include signal coverage, affordability of equipment, takeup, accessibility, protection for vulnerable groups, and consumer support and information<sup>2</sup>.

---

<sup>2</sup> 'Vulnerable' groups - while price is a barrier to conversion for some households, particularly if they have multiple TV sets or require an antenna upgrade, this is not considered a major barrier given the low price of set top boxes. Of greater concern to the CEG are the groups of consumers who will potentially be disadvantaged or left behind by switchover. These people do not have the ability to manage their own conversion to digital television and may be unable to call on friends, relatives or carers for help.

The group's report is available from:

[http://www.digitaltelevision.gov.uk/pdf\\_documents/publications/Consumer\\_Expert\\_Group\\_report.pdf](http://www.digitaltelevision.gov.uk/pdf_documents/publications/Consumer_Expert_Group_report.pdf)

These issues have also been examined by Ofcom's Consumer Panel. Its report, *Supporting the Most Vulnerable Consumers Through Digital Switchover*, is available from: <http://www.ofcomconsumerpanel.org.uk/dso.htm>

Landlords and tenants, particularly those in multi-unit dwellings such as apartment buildings, face particular issues in preparing for switchover. In 2002 the UK Department of Culture, Media and Sport published advice for landlords on upgrading to digital TV. This advice was updated in 2004 and is available from: [http://www.digitaltelevision.gov.uk/publications/pub\\_landlord\\_leaflet.html](http://www.digitaltelevision.gov.uk/publications/pub_landlord_leaflet.html).

SwitchCo, an industry group formed at the request of the UK Government to manage digital switchover in the UK, was launched on 13 April 2005.

SwitchCo's three major tasks are<sup>3</sup>:

- "To co-ordinate the technical roll out of digital terrestrial television across the UK, region by region, to a timetable agreed by the UK Government.
- To communicate with the public about digital switchover to ensure everyone knows what is happening, what they need to do, and when.
- To liaise with TV equipment manufacturers, retailers, digital platform operators and consumer groups to ensure understanding of and support for the switchover programme."

The SwitchCo board consists of representatives from the main terrestrial broadcasters, Teletext, and the digital terrestrial television multiplex operators<sup>4</sup>, all of whom are funding the organisation. Two positions on the board are reserved for representatives of the supply chain (i.e. television equipment manufacturers, retailers, aerial manufacturers and installers).

The BBC has played an important role in the development of digital terrestrial television in the UK. It is one of three shareholders in Freeview, the UK's digital terrestrial television (DTT) platform. The BBC's services occupy two multiplexes on Freeview. On these multiplexes the BBC provides a digital version of both its analogue television channels, BBC1 and BBC2, as well as six more digital-only television channels (two channels for children, a youth channel, an arts/culture oriented channel, a news channel and a parliamentary channel), and an interactive channel. Eleven BBC digital radio services are also available on Freeview. The BBC's digital television services are also available on digital pay TV platforms and are broadcast unencrypted to satellite viewers without a pay TV subscription. Some of these digital-only services are very popular and are likely to have contributed a great deal to digital takeup in the UK.

---

<sup>3</sup> *SwitchCo Launches Today*. Press Release 13 April 2005. [www.switchco.co.uk](http://www.switchco.co.uk)

<sup>4</sup> Digital television services in the UK are organised into six spectrum channels known as multiplexes. Content providers access the platform by arrangement with the multiplex operators (who are the BBC, Crown Castle, Digital 3 & 4 Ltd, and ITV).

The popularity of the pay TV service, BSkyB, which has been a digital service since 1998, has also contributed a great deal to digital takeup in the UK. BSkyB's success has been significantly boosted by its acquisition of premier grade football broadcast rights. BSkyB and other pay TV services in Britain retransmit the digital free-to-view services on their platforms, including the BBC's digital services as noted above. As a result, the statistics relating to the penetration of free-to-air digital receivers in the UK includes sales of free-to-air TV as well as subscribers to pay television.

## US

The United States has mandated that digital tuners be progressively integrated into all newly manufactured TV sets and TV interface devices. Under this policy, TV manufacturers have the option of building monitors without any receivers in them. They can then bundle the monitor with a set top box or require the customer to purchase one separately. The mandate is operating on a five year roll-out schedule and starts with large screen TVs:

*36 inches and larger (91 cm and larger)*

- 50% of a responsible party's units must include DTV tuners by 1 July 2004 and 100% by 1 July 2005;

*25 – 35 inches (63.5 – 89 cm)*

- 50% of a responsible party's units must include DTV tuners by 1 July 2005 and 100% by 1 July 2006;

*13 – 24 inches (33- 61 cm)*

- 100% of all units must include DTV tuners by 1 July 2007;

*TV interface devices*

- VCRs, DVD players/recorders etc that receive broadcast signals – 100% of all units must include DTV tuners by 1 July 2007.

Data is not yet available on the effect this mandate is having on digital television takeup in the US. The situation in the US is particularly difficult to analyse given the very high level of pay TV penetration and the inconsistent labelling of digital equipment. The USA's communications regulator, the Federal Communications Commission (FCC) estimates that up to 15% of television households rely solely on terrestrial signals.<sup>5</sup> The remaining 85% subscribe to pay TV service, almost all of which have been digitised.

Digital switchover in the US is scheduled for the end of 2006 (with a caveat that 85% of viewers must be able to receive their local broadcast services in digital – either terrestrially or through a pay TV service). Given the very high number of digital pay TV viewers, the FCC has undertaken some research on the remaining, terrestrial viewers.

---

<sup>5</sup> Federal Communications Commission. 2004. *Media Bureau Seeks Comment on Over-the-air Broadcast Television Viewers*. Media Bureau Docket No. 04-210. 27 May 2004.

The FCC's report contains an analysis of switchover options and is available from: [http://hraunfoss.fcc.gov/edocs\\_public/attachmatch/DOC-257073A1.pdf](http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-257073A1.pdf).

There is considerable pressure in the US to bring analogue television broadcasting to an end so as to reclaim spectrum for the use of emergency services. The US House of Representatives Energy and Commerce Committee has conducted hearings into "preparing consumers for the end of the digital television transition". As part of these hearings, the Government Accountability Office provided testimony on the "estimated cost of supporting set-top boxes to help advance the DTV transition." The study that formed the basis of this is available from: <http://www.gao.gov/new.items/d05258t.pdf>.

## Germany

In Germany, digital conversion is being managed by state media regulators. The Berlin-Brandenburg region was the first area in Germany to be converted from analogue to digital and this took place during 2002-2003. Due to spectrum shortages, it was not possible to provide a lengthy simulcast of both analogue and digital services in the Berlin-Brandenburg area. The technical plan for switchover was developed on the basis of achieving robust reception via a portable aerial.

The analogue signals of the most popular commercial channels were switched off first so as to communicate to viewers the need to take action and convert to digital. Due to the high penetration of non-terrestrial television (cable and satellite) in the region, only 6% of the population (an estimated 160,000 people) relied solely on terrestrial reception for access to TV. Around 90,000 homes relied on analogue terrestrial reception for second and third sets.

The process began when suitable digital converter boxes were available for less than €200 (equivalent to around AUD\$330). Many retailers offered an installation service which included a tutorial on using the equipment and a money-back guarantee if the equipment proved unsuitable.

A hotline was set-up to handle consumer enquiries, which received 26,000 calls and generated 600 visits to households to resolve problems. Six thousand cases received financial assistance through local state social security and 90 cases received help through a broadcast assistance charity. Of these 6,000 cases, only 5% (or around 300) required assistance with installation. Those eligible for financial assistance were issued with a voucher which could be redeemed for a particular receiver chosen by the regulator on the basis of technical requirements and value. The communication campaign for switchover, including the hotline which ran for nine months, cost around €1 million. The cost of funding the 6,000 cases eligible for assistance was around €0.5 million.

A more detailed description of the Berlin-Brandenburg process can be found in annex two of the Ofcom Consumer Panel's *Supporting the Most Vulnerable Consumers Through Digital Switchover* (URL provided above).

- **Technological issues relevant to the uptake of digital television**

### **Transmission and Receiver standards**

The BSA does not include a precise technical definition of the standard and high definition television formats. Whilst there is a power under the BSA to make regulations which determine technical standards for transmission of commercial television and national broadcasting services, the Government has, to date, generally taken the view that this definition should be a matter for industry, through the normal standards-setting process.

The technical standards for digital terrestrial television transmissions and digital television receivers are contained in Australian Standards. These standards are based in part on the digital video broadcasting specifications contained in the relevant European Telecommunications Standards Institute publications. The Australian system also takes into account picture format standards used in the USA. The standards are designed to facilitate interoperability in digital terrestrial television broadcasting transmission and reception. Standards Australia keeps these standards under review and has a consultative process by which it can make changes to the standards as technologies and circumstances evolve.

### **Technological developments**

Digital television is more complex than analogue television. Digital television relies on the operation and updating of software in consumer equipment, and the successful interaction of this software with transmissions by broadcasters. This means that there needs to be a degree of co-operation between broadcasters and equipment suppliers to facilitate the smooth operation of consumers' receivers. It also means that with technological developments, there may be a need to update software in receivers in line with these developments. One option for updating software is a process known as over-the-air downloads, where the update is provided as part of the broadcasting transmission. The Department understands that industry has been considering its approach to this issue.

### **Testing and conformance**

The Government made a commitment during the 2004 election campaign to work with industry in establishing a testing and conformance centre for digital television technology<sup>6</sup>.

The development of a mechanism whereby new equipment or new broadcasting features can be tested will reduce the potential for problems for consumers caused by the introduction of new technologies.

---

<sup>6</sup> Liberal Party of Australia. 2004. *The Howard Government Election 2004 Policy: 21<sup>st</sup> Century Broadcasting*. p13

The Department is currently consulting with the industry on this matter. Following these consultations, the Department will report to the Minister about industry's views on the options for testing and conformance.

### **Interactive digital terrestrial television**

Digital television allows more use of interactive programming features. Interactive services can take several forms, including:

- a backchannel via the mobile phone network (for instance, using short message services) or the terrestrial telephone network; or
- a one-way service that enables the viewer to 'drill down' through various on-screen menus to access information but without the ability to communicate with the broadcaster i.e. no 'back-channel'.

Because interactivity brings with it a range of complexities, in a free to air environment, it is desirable to have a common approach between broadcasters on some issues.

Free to air broadcasters, as a group, have committed to introducing the MHP interactive television standard to enable Australian households to access interactive services of all five free to air networks from a single set top box. In early 2004, the Nine Network launched a free-to-air interactive digital TV service using an HTML (hypertext markup language) application; however, this has recently been discontinued.

### **Advances in technology**

Internationally, there are advances in technology and standards being developed which may have relevance for Australia. For example, advances in compression technology (such as MPEG-4) may enable more data to be transmitted in existing spectrum, thus enabling more programs or higher quality programming to be provided. Any adoption of a new standard would raise significant issues given the number of receivers currently in the market based on existing standards.

#### **• Future options**

The Government does not yet have a position on future options. Future options will be developed in the context of the Government's consideration of the issues raised in the series of policy reviews it is currently undertaking.

Schedule 4 of the BSA required a number of digital policy reviews to be conducted by 1 January 2005. Several of the specific statutory reviews were grouped into four broad thematic reviews, each of which was launched in 2004 with the release of an issues paper and call for submissions in response. Issues papers and submissions are available on the Department's website ([http://www.dcita.gov.au/broad/policy\\_reviews/digital\\_broadcasting\\_policy\\_reviews](http://www.dcita.gov.au/broad/policy_reviews/digital_broadcasting_policy_reviews)).

The first thematic review examined whether restrictions on additional programming provided by free to air broadcasters, including multichannelling and other types of services such as pay television channels, should be modified. Submissions to this

review were sought by 30 July 2004. The department received 38 submissions and one supplementary submission.

The second review covered matters relating to the end of the moratorium on the issuing of new commercial television licences, which concludes on 31 December 2006. In 2004 the Government announced its intention to amend the current legislative arrangements so that the power to allocate new commercial television broadcasting licences is vested in the Government rather than the ABA. This review provides an opportunity to consider how this change should be implemented.

This second review also examined the arrangements for the conversion of any datacasting licences to other types of broadcasting licence as well as the licence conditions that should apply to any new commercial television licences. Submissions to this review were sought by 24 September 2004. The department received 17 submissions.

A third review examined the efficient allocation of spectrum for television and datacasting services, while the fourth review examined the operation of legislation related to markets with only one or two commercial television broadcasters. Issues papers for both these reviews were released on 1 December 2004 and submissions have been received.

There is a statutory obligation to report to Parliament on the outcome of these reviews. The Government will consider these four thematic reviews and will respond as appropriate.

A review of the viability of establishing an indigenous television broadcasting service and the regulatory arrangements that should apply to the digital transmission of such a service was also launched on 10 May 2004. Submissions closed on 30 September 2004. Forty-nine submissions have been received. In addition to releasing an issues paper for public comment, the Department conducted public consultation around Australia for this review.

A review of the HDTV quotas is required to be conducted by 1 July 2005. This review is examining the regulatory arrangements that should apply to HDTV transmissions in metropolitan, regional and remote areas of Australia. An issues paper for this review is available from the Department's website ([www.dcita.gov.au](http://www.dcita.gov.au)) and submissions are sought by 24 June 2005.

A review of the duration of the simulcast period is required to be conducted by 1 January 2006. This review will examine the process for the transition to full digitisation and the cessation of analogue broadcasting.

In its policy document, *21<sup>st</sup> Century Broadcasting*, the Australian Government made a commitment to work "in partnership with industry to develop a Digital Action Plan to further promote and encourage takeup of digital television<sup>7</sup>." The outcomes of the

---

<sup>7</sup> Liberal Party of Australia. 2004. *The Howard Government Election 2004 Policy: 21<sup>st</sup> Century Broadcasting*. p13



review of the duration of the simulcast period as well as this Inquiry could feed into this plan.