



AUSTRALIAN INDUSTRY

GROUP

AUSTRALIAN INDUSTRY GROUP SUBMISSION

to

**AUSTRALIAN COMMUNICATIONS AND MEDIA AUTHORITY,
BEYOND SWITCHOVER -THE FUTURE TECHNICAL EVOLUTION OF
DIGITAL TERRESTRIAL TELEVISION IN AUSTRALIA DISCUSSION PAPER**

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**SUBMISSION TO BEYOND SWITCHOVER - THE FUTURE TECHNICAL EVOLUTION OF
DIGITAL TERRESTRIAL TELEVISION IN AUSTRALIA DISCUSSION PAPER**

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Executive Summary

- The Australian Industry Group (Ai Group) welcomes the release of the *Beyond switchover- the future evolution of digital terrestrial television in Australia* discussion paper.
- Managing the transition to new technologies requires careful planning and coordination in the terrestrial broadcasting environment. These transitions should be designed to minimise disruption to consumers and industry while also maximising the benefits that flow from these transitions, such as the provision of new and higher quality services.
- The next few years will be a period of change for consumers, broadcasters and consumer electronics suppliers with the digital switchover followed by the restack of broadcasting services. Ai Group agrees it is important to minimise disruption to consumers over this period.
- However, these existing transitions should not be seen as an obstacle to commencing planning work on future transitions. On the contrary, failing to establish a process to coordinate and plan for transitions to new technologies and standards presents a greater risk of confusion and consumer disruption in the longer term.
- There are a number of consumer and industry benefits of moving to new platform and service standards. Delaying technology transitions means delaying these benefits to consumer and industry. This needs to be accounted for in any cost / benefit analysis of the optimal timing and process for technology migrations.
- Any move to new platform or service technologies needs to be a collaborative process involving the consumer electronics industry, broadcasters and Government.
- The ACMA has a facilitative role to play in convening an industry working group to look at these issues. The working group could develop a blueprint for technology transitions covering the migration process, timing and testing regimes. The group could also agree on principles to guide decisions on the evolution to new technologies. It is important that discussions on these transitions commence in the short-term to enable work to progress in a timely and coordinated manner.
- Priority should be given to working out a transition path to MPEG-4 as this is the platform standard for which there is the greatest maturity from a standards perspective and also the greatest market readiness in terms of consumer equipment penetration.
- The improved spectrum efficiency enabled by MPEG-4 may also assist the introduction of new services, such as 3D and audio description, which will in turn ensure consumers benefit from technology transitions.
- An immediate issue is the lack of a standard for MPEG-4 in Australia. Ai Group supports an industry led approach to developing technical standards via Standards Australia. Ai Group members are involved in work to progress this issue.
- Any consideration of future standards needs to take a holistic view of the television platform and device ecosystem, noting that consumer demand will be shared across many platforms and devices in the future. It needs to take account of broadband and mobile environments, and the reality that viewing devices are becoming more flexible and are no longer associated with a single platform or service.

Background

Ai Group welcomes the opportunity to provide a submission to the ACMA's *Beyond switchover- the future evolution of digital terrestrial television in Australia* discussion paper.

Ai Group is a peak industry association in Australia which along with its affiliates represents the interests of more than 60,000 businesses in an expanding range of sectors including: manufacturing; engineering; construction; automotive; food; transport; information technology; telecommunications; call centres; labour hire; printing; defence; mining equipment and supplies; airlines; and other industries. The businesses we represent employ more than 1 million employees.

Ai Group's interest in this issue reflects its high number of members in the consumer electronics and communications sectors. Ai Group also plays an important facilitative role in standards development in Australia and is the largest industry nominating organisation to Standards Australia.

Ai Group commends the ACMA on the release of the *Beyond Switchover* discussion paper. The paper raises important issues around the transition to new platform and service standards. Careful planning and coordination will be required to manage these technological transitions in a way that minimises disruption to consumers and industry while maximising the benefits from adopting more efficient technologies. It is important that work on these transitions commences in the short-term to enable this work to progress in a timely and coordinated manner.

Section one of this submission outlines the pressures to migrate to new technologies and standards. Section two discusses key considerations in managing the transition to new technologies and standards, including the need for principles and the roles of different stakeholders. Section three discusses the maturity of different standards cited by the *Beyond Switchover* paper and the implications of this for planning priorities for technological evolution. Section four discusses technological migration paths.

Section one: Pressures for technological evolution

The *Beyond Switchover* paper asks stakeholders to comment on whether there are pressures to evolve to new technologies in Australia. Ai Group's view is that pressures do exist and that they arise from multiple sources.

1.1 Standards Development

The adoption of international and Australian technical standards will be a key factor in technology transitions. Adopting a standard does not mean that a particular technology will ultimately be widely adopted, but it is often a first and critical step in technology diffusion. As a smaller consumer market, Australia's approach to standards needs to be informed by international standards development and the adoption of technologies or technical standards in other markets. When Australian standards harmonise with international standards they allow for greater economies of scale in production by enabling common parts and specifications. This in turn affects the price and range of products available in Australia.

If new platform or service standards are adopted in other markets before they are adopted in Australia, manufacturers may still incorporate these features into product sold in the Australian market which may create pressure to adopt standards or technologies in Australia. This has been the case with MPEG-4 as most receivers supplied in the Australian market are now MPEG-4 compliant even though MPEG-4 is not yet incorporated into the Australian receiver standard.

It is also important that Australia adopts standards in its own right. This allows global manufacturing companies to understand the direction being taken in Australia and to compare this approach to standards being adopted in other regions. New Australian standards or variations to existing standards that differ from international standards should only be considered in situations where suitable existing international standards do not exist.

1.2 Product availability and consumer demand

The maturity of technologies and the availability of consumer product will impact on Australian consumers' readiness and ability to transition to new standards. As the *Beyond Switchover* paper notes, platform standards such as MPEG-4 and DVB-T2 have the potential to substantially increase the efficiency with which spectrum is utilised. This will enhance the value that is extracted from existing spectrum allocations by enabling a greater variety and quality of services to be offered to consumers. As the penetration of equipment able to receive new types of services increases, and as these services become common in other markets, there will be growing pressure to make them available in Australia.

1.3 Spectrum efficiency

The growth in demand for mobile and wireless applications has led to a large increase in the demand for spectrum over the last decade and this trend will only increase. This creates pressure on incumbent users, such as broadcasters, to demonstrate that they are using spectrum efficiently and delivering high value services to end users.

As the *Beyond Switchover* paper observes, broadcasters' current utilisation of spectrum has limited their ability to deliver new or higher quality services. This has implications for the availability of new types of services or service enhancements, such as 3D and audio description, the ability to offer new content or channels and broadcasters' capacity to maintain service standards such as HD.

Increasingly, terrestrial broadcasters will be competing with other platforms, such as broadband, which face fewer capacity constraints. This may affect consumer expectations about the volume and quality of services they wish to receive. Delaying the transition to new technical standards in a terrestrial television platform risks disadvantaging that platform as it will not be able to compete with the volume or quality of services available elsewhere. It may also result in inefficient use of spectrum allocations.

1.4 Cost efficiency

The increased spectrum efficiency afforded by new platform standards such as MPEG-4 has the potential to reduce the cost of delivering television services on the terrestrial platform. This will be a driver for broadcasters or organisations retransmitting terrestrial services to move to MPEG-4 transmissions.

Section Two: Managing technological evolutions

The *Beyond Switchover* paper requests comment on whether Australia should be planning to introduce upgraded platform or service standards, and if so, what approach should be taken to the migration to new standards and technologies.

2.1 Managing technological evolutions

As the previous section outlined, in Ai Group's view Australia already faces pressures to upgrade to new platform and service standards and these pressures will only grow over time.

Managing these technological transitions will require careful planning and coordination to minimise disruption to consumers and industry while maximising the benefits enabled by new technologies. It is important that planning for these transitions commences in the short-term to enable this work to progress in a timely and coordinated manner.

There are a number of different elements that need to be in place before any transition can occur. This includes the development of Australian standards, the availability and penetration of equipment, the commencement of transmissions and consumer information and education campaigns. Successful transitions require coordination of all of these elements amongst the relevant stakeholders.

It is important that planning for technological transitions is undertaken in a coordinated and informed way. Effective collaboration across industry will be a critical factor in the success of future technology transitions. The horizontal nature of the terrestrial television market, the pervasiveness of consumer equipment and television services, and the wide range and availability of consumer equipment means that technology transitions require coordinated efforts from a range of stakeholders.

Ai Group believes that the ACMA has a facilitative role to play in convening an industry working group to look at issues related to technological evolutions in the digital terrestrial platform. The working group could develop a blueprint for technology transitions covering the migration process, timing and testing regimes. The group could also agree on principles to guide decisions on the evolution to new technologies, identify barriers to transitions and advise on research priorities. It is important that discussions on these transitions commence in the short-term to enable work to progress in a timely and coordinated manner. The experience of the digital switchover suggests that setting a timetable for transitions is critical because it provides certainty to industry and consumers and allows them to make informed investment decisions. This could be an issue addressed in the industry blueprint.

Ai Group acknowledges that the next few years will be a period of change for consumers, broadcasters and consumer electronics suppliers due to the digital switchover and the restack of broadcasting services. Ai Group agrees that it is important to minimise disruption to consumers and existing services and minimise cost impacts on industry over this period.

However, these existing transitions should not be seen as an obstacle to commencing work on planning for future transitions. A failure to start the process of planning for transitions to new standards will result in a greater risk of confusion and consumer disruption overall.

It is also important to recognise that there are a number of consumer and industry benefits of moving to new platform and service standards. In particular, the significantly improved spectrum efficiency enabled by MPEG-4 means that a greater number and range of services can be offered and transmission costs can be reduced. Delaying the planning work for these technology transitions will delay the benefits to consumer and industry from these transitions. This needs to be considered in any cost / benefits analysis of the optimal timing and process for technology migrations.

2.2 Guiding Principles for Technological Migrations

Ai Group supports the development of principles to guide the ACMA and industry in making decisions related to the transition to new standards. Developing principles will provide clarity and certainty to all stakeholders as to the objectives of transitions and can guide decisions on process and timing. It will also provide a basis for evaluating different migration options and determining the optimal one. Ai Group recommends that the ACMA adopt the following principles to guide its approach to technological migration:

Planning for technological migrations should aim to:

- Minimise disruption to consumers and existing services
- Provide certainty about technology transitions
- Encourage the development and availability of new technologies and services
- Maximise the efficient use of spectrum
- Ensure regulatory settings readily accommodate technological change
- Facilitate a cooperative and collaborative approach to technology transitions
- Support a light touch approach to regulation

2.3 Role of the ACMA

The ACMA has an important facilitative role to play in the transition to new standards for the digital terrestrial platform. Ai Group recommends that the ACMA establish an industry working group to begin work on a blueprint for technological transitions and to advise on issues related to these transitions. The industry working group should be established in the short-term given the significant amount of planning that is generally required to effect a successful technology transition in a horizontal market.

Ai Group members do not believe there is an immediate role for the ACMA in mandating technical standards. However, Ai Group members are aware that if the development of an industry standard fails to proceed in a timely manner, then the ACMA may need to mandate a standard.

2.4 Role of Industry

The consumer electronics and broadcasting industries have an important role to play in ensuring a smooth and successful transition to new standards. It is particularly important that these industries work together with the ACMA to ensure that their actions are coordinated.

In the short-term, the most immediate role for industry is resolving the question of an Australian standard for MPEG-4. Ai Group also considers that different sectors industry should engage in consultation with the regulator and each other via an industry working group.

Section Three: Platform and Service Standards

The *Beyond Switchover* paper cites a number of different platform and service standards that may be adopted in Australia in the future. The paper requests feedback on the maturity of these standards and when and if they should be adopted in Australia.

3.1 Timing of evolution to new standards and technologies

Platform and service standards, and the technologies based on them, are at very different stages of development and deployment. For this reason Australian should adopt a phased approach to technological evolution.

Ai Group strongly recommends that the first priority in any transition should be a migration to MPEG -4 (H.264 /AVC). This is the most mature of the platform standards discussed in the *Beyond Switchover* paper and the standard for which there is the greatest market readiness from a consumer perspective. The improved spectrum efficiency of MPEG-4 will also have a positive impact on the ability of industry to rollout new services and technologies and to ensure spectrum is used efficiently. Provided that the transition is managed in a planned and coordinated manner, the transition to MPEG-4 can be undertaken in a way that minimises disruption to the consumers and to the industry.

The transition to other platform standards, such as DVB-T2, has the potential to be more disruptive and require a greater level of planning. For this reason, Ai Group members consider that an industry blueprint should be developed which allows for different phases of technology transitions and acknowledges that there may be significant variation in the timing of these phases depending on the maturity of technology and standards, the cost of the transitions, and the state of the market for services and equipment based on these standards.

3.2 Process for standards development

An important early step in the transition to new technologies will be developing Australian standards, or incorporating platform and service standards into Australian receiver and transmission standards. In general, Ai Group members' preference is for standards to be developed by industry and other stakeholders under the auspices of Standards Australia. The Standards Australia route may produce an outcome more quickly than an ACMA mandated standard. Furthermore, as technologies evolve standards will need to be updated. It may be costly and inefficient for the ACMA to develop and maintain a standard that duplicates or sits on top of the existing industry standard, and there would be a danger that technological evolutions could lead to inconsistencies between the two standards if they were not updated in parallel.

However, Ai Group members are aware that if the development of industry standards fails to proceed in a timely manner, then the ACMA may need to consider mandating a standard.

3.3 Status of Platform Standards

MPEG-4

Incorporating MPEG-4 specifications into the Australian receiver and transmission standards would assist with the transition to MPEG-4 in Australia. The receiver and transmission standards fall within the responsibility of the Standards Australia *CT-002 Broadcasting and Related Services Committee*. With respect to the receiver standard (AS 4933.1-2010 -Digital television—Requirements for receivers - VHF/UHF DVB-T television broadcasts), the CT-002 receiver sub-Committee and the broader consumer electronics industry are committed to progressing this issue as a matter of priority. Preparatory work is already underway to revise or amend *AS 4933.1-2010 Digital television—Requirements for receivers - VHF/UHF DVB-T television broadcasts*. CT-002 intends to put a resourcing proposal to Standards Australia under the Project Prioritisation August round. The ACMA and Government could assist by providing support for that proposal to underscore that the standard has a positive Net Benefit for the Australian community.

Any revisions or amendments to the receiver standard will need to be undertaken in conjunction with any revisions or amendments to the transmission standard to ensure consistency between the two standards. This can be done via CT-002 and also through more informal exchanges of information between the consumer electronics and broadcasting industry. Both standards will need to cover audio and video components.

A second Standards Australia Committee, *IT-029 Coded Representation of Picture, Audio and Multimedia/Hypermedia Information* (IT-029), is also relevant to the issue of MPEG-4 standards development. MPEG-4 is effectively a standard for a group of audio and video coding formats and related technology. Internationally, it is developed by the ISO/IEC Moving Picture Experts Group (MPEG) (ISO/IEC JTC1/SC29/WG11) under the formal standard ISO/IEC 14496 – Coding of audio-visual objects. The Standards Australia National Mirror Committee that looks after JTC1/SC29 is *IT-029 – Coded Representation of Picture, Audio and Multimedia/Hypermedia Information*. This Committee has not recently been active in national standardisation work although it has been active at an international level. Ai Group has recently been invited to nominate a representative to IT-029.

While the adoption of a standard for MPEG-4 by IT-029 is not a prerequisite for incorporating MPEG-4 within the Australia digital receiver standard, it is important that the approach taken by the committees is consistent. Ai Group has been working with the Chairs of IT-029 and CT-002 and Standards Australia to identify if there are opportunities for greater coordination and collaboration of the Committees' work.

The work currently underway by the industry should address the issue of an Australian standard for MPEG-4. However, if this work is not successful or timely then industry members recognise that the ACMA may decide to intervene to mandate a standard.

Work is also underway internationally to finalise a more efficient MPEG-4 codec called H.265 or High Efficiency Video Codec (HEVC). HEVC is currently being developed by ISO/IEC MPEG and ITU-T VCEG, whose previous collaboration developed MPEG-2 and MPEG-4. Ai Group understands that this work is intended to be finalised in 2013 and that product supporting this standard may be available in Australia in 2015. However, the HEVC codec will not be compatible with either MPEG-2 or current version MPEG-4 equipment. While this may be a standard that Australia and international markets transition to eventually, it is not a reason to defer a transition to MPEG-4 given the efficiency benefits MPEG-4 would offer and the relatively high level of penetration of MPEG-4 product in the Australian market.

DVB-T2

DVB-T2 is at a less developed stage than MPEG-4, from both a standards and consumer product perspective. Ai Group recommends that a migration to DVB-T2 is addressed separately from the transition to MPEG-4.

Status of other standards

Ai Group members support the provision of audio description services and the adoption of audio description within relevant Australian standards.

There is no endorsed international standard for 3D services at present. However, work is underway and this is likely to become an area of greater activity in Australia in the near future.

Ai Group members agree that online connectivity and IPTV standards will increasingly shape receiver design. Any consideration of future standards needs to take a holistic view of the television platform and device ecosystem, noting that consumer demand will be shared across many platforms and devices in the future. It needs to take account of broadband and mobile environments, and the reality that viewing devices are becoming more flexible and are no longer associated with a single platform or service.

Equipment designed to receive terrestrial broadcasting transmissions may need to conform to a broader range of standards than has traditionally been the case to enable the seamless delivery of additional content and services, such as catch-up TV, over the terrestrial platform and other platforms such as broadband. While the market for these services, and the standards to support the delivery services, is still emerging, the industry working group could play a role in informing the ACMA about commercial and technical developments in this area.

3.4 Receiver Penetration

The *Beyond Switchover* paper requests information on the availability and penetration of receivers that are compliant with new platform and service standards. Ai Group understands that MPEG-4 compliant product has been available in Australia since 2005 and that the vast majority of receivers

now sold are MPEG-4 compliant. However, Ai Group members do not officially collate data on the penetration of particular receiver capabilities, such as MPEG-4 or audio description. Members do have information on the point in time when their products began to incorporate these capabilities and this information could be provided to the ACMA to assist with an estimation of penetration, including by reference to industry sales data such as that collected by GfK.

Reaching agreement on the incorporation of MPEG-4 into transmission and receiver standards would assist with estimating the level of receiver compliance with new technical standards. This is because it is difficult to say conclusively whether receivers will comply with a technical standard unless there is a specific standard to compare them against.

Section Four: Technological migration paths

Any decisions on specific migration paths should be informed by guiding principles for technological migration published by the ACMA. Successful migration paths will have to balance minimising disruption to consumers and ensuring continuity of existing services with the provision of new services to provide an incentive to consumers to upgrade. It will also be important to consider the spectrum efficiency of any transitions.

Developing an industry blueprint for technological transitions would assist the industry and the ACMA to determine and evaluate options for migration paths for particular technical standards. This is one reason why Ai Group recommends that the ACMA establish an industry working group as a priority.

Ai Group understands that MPEG-2 technology has improved considerably since its initial implementation in 2000. Lower bit rates can be now used without compromising picture quality and in fact the UK already uses significantly lower bit rates compared to Australia. This may be an important consideration in developing migration paths that limit impacts on consumers, are spectrum efficient, but also allow for new services to commence that give consumers a strong incentive to upgrade.

Decisions on the optimal migration path for transitions may be affected by other technical and regulatory factors, such as spectrum availability and the review of the uses for the so-called sixth channel which the Government is required to commence by 1 January 2013. The timing and manner of transitions to new platform and service standards may well be a factor in deciding how this spectrum is best utilised. This includes whether it would be more efficient to allocate it for new or non-broadcasting purposes and rely on existing spectrum allocations for the transition to new platform standards or services or whether the sixth channel spectrum may be utilised for a simulcast period or to enable the provision of additional or higher quality services to provide an incentive to consumers upgrade.

As a general rule, Ai Group considers that Government decisions on spectrum planning should not pre-empt commercial decisions about the viability of services or consumer preferences for those services. It should not be presumed, for example, that the lapse in the HD quota will mean the end of HD services in Australia as in overseas markets the introduction of MPEG-4 has often coincided with the provision of HD services.