



BROADCAST AUSTRALIA

Response to ACMA Public Discussion Paper

Digital Television – Codes and Standards

By BROADCAST AUSTRALIA

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Submission by Broadcast Australia

Digital Television – Codes and Standards

Broadcast Australia is pleased to submit its response to the ACMA Discussion paper on Digital Television Codes and Standards.

Background to Broadcast Australia

BA owns and operates an extensive broadcast transmission infrastructure network in Australia providing more than 2,000 managed transmission services from approximately 600 transmission sites across metropolitan, regional and rural areas and reaches more than 99% of the population. Figure 1.1 below indicates the location and distribution of sites.



BA is owned by ASX-listed Macquarie Communications Infrastructure Group and is the sister company of Arqiva, a UK based company.

BA's core business is providing fully managed TV and radio transmission services for the government-owned broadcasters the ABC and SBS under long-term contracts, as well as providing transmission services to commercial broadcasters, particularly in regional areas. In addition to supplying fully managed broadcast transmission services, BA owns and operates satellite downlink facilities and provides site-leasing services to broadcasters, telecommunications providers and other radio communication network operators such as public safety operators.

BA's core competencies include the design, operation and maintenance of a wide range of digital broadcast distribution and transmission services (i.e. microwave links, satellite receive

earth stations, interface equipment, headend multiplex, systems integration, transmission plant and associated peripheral equipment).

BA is continually expanding its core competencies across a broad range of digital and wireless technologies to ensure that it has the technical expertise required to meet its customers' needs. It has developed extensive experience in the emerging technologies of digital radio, mobile television and infocasting (Datacasting) services through the conduct of trials over the last 4 years.

These trials were brought to 'on-air' operation in an environment which demanded high levels of service stability and availability. BA's success in bringing these platforms to air, often in short timeframes, coupled with the complex system integration and inter-operation of multi-vendor equipment and interfacing with a broad range of program/signal interconnection technologies, demonstrates BA's experience and competency in this field.

This strong technical knowledge base and proven track record has established BA as a leader in digital broadcasting technologies – e.g. Digital Radio (Eureka 147, DAB+ and Digital Radio Mondiale - DRM); Digital Terrestrial Television (DVB-T); Mobile TV (DVB-H and MediaFLO); wireless broadband over broadcast spectrum (DVB-T with IP encapsulation); DVB-MHP based interactive television; satellite bandwidth-on-demand solutions; systems integration of complex broadcast systems; coverage planning using state-of-the-art planning software with terrain database; and operation of multi-coupled high power broadcast systems – analogue and digital TV, high power FM, high power AM.

These trials have provided us with an in-depth knowledge and understanding of these technology applications and their implementation particularly with regards to systems integration, statistical multiplexing, multiplex management and configuration and the distribution of digital content services across a variety of technology platforms.

BA is also expanding its core expertise through strategic acquisition. In October, 2007: BA acquired a majority share in Hong Kong 'confined coverage' engineering group Radio Frequency Engineering Limited (RFE) which specialises in indoor and confined space coverage solutions, with the view to delivering indoor mobile TV solutions in buildings and tunnels - these skills have particular application to mobile TV services. As a regional leader in the design and integration of confined coverage systems, RFE has the necessary skill-set to complement BA's core expertise in terrestrial broadcast networks.

On 7 December, 2007: Broadcast Australia entered into an agreement to acquire all of the shares in Hostworks Group Limited ("Hostworks") Hostworks is recognised as Australia's leading provider of managed services for on-line media and entertainment companies as well as for management and hosting of a broad range of critical applications. Its customers include ABC, SBS, News, Nine MSN, Wotif and Ticketek. More than 15% of all internet pages viewed and traded-through by 10 million Australians each month, are hosted by Hostworks. This acquisition expands BA's core competencies and is complementary to its core expertise.

1 Technical Standards (Part 9A of the Broadcasting Services Act)

In the Productivity Commission Report “*Research Report into Standard Setting and Laboratory Accreditation*” 2006 it noted that standards referenced in regulation are generally designed to address market failure and that government and the private sector tend to have different perspectives on the role of standards. It stated that:

“From industry’s perspective, standards are a means of embodying and distributing technical information, establishing compatibility between products and services, and generating credibility with consumers. In contrast, from government’s perspective, standards are a means of managing risk, particularly in situations where the operation of the market is unlikely to manage the risk appropriately”.

The report also acknowledges the central role of Standards Australia (SA) within the current standards development system.

BA believes that regulation of technical standards for the broadcasting industry is needed to satisfy both the industry and government’s requirements. It corrects evident market failure given the limited number of incumbent broadcasters, legislated barriers-to-entry for new players as well as reducing the risk and ensuring a predictable, high-quality viewing experience for the Australian consumer.

BA supports the public policy intent behind the Part 9A of the Act i.e. that a government agency, ACMA, be primarily responsible for ensuring the public interest is served in making the appropriate digital broadcasting technical standards and where appropriate, intervening to ensure relevant technical matters are dealt with on an industry-wide basis in a timely fashion. While SA has and should continue to serve an important role in this area (working with industry and consumer interlocutors), ultimately government is and ought to be accountable for the standards underpinning the effective transmission and reception of digital terrestrial television in Australia. BA, therefore, supports the use of regulation to impose and review technical standards in the broadcasting industry and believes that it is imperative that the government use these powers in the public interest and to ensure a level playing field for new entrants, in particular, Channel A and B licensees.

1.1 Which organisation(s) have the expertise and representation resources to participate in the development of technical standards relevant to digital terrestrial television broadcasting?)

In BA’s view, ACMA ought to encourage broad consultation and input from organisations with significant expertise in digital terrestrial television at all key levels of the industry value chain. This should include organisations and key industry participants involved in studio production, transmission and equipment manufacture and allow for representation by organisations such as BA which has extensive experience and significant investment in the broadcasting industry, but are not necessarily members of established industry organisations.

In this regard, we note that Standards Australia’s “A Guide for Nominating Organisations” states that:

“The basis for the composition (or **constitution**) of a technical committee is to ensure balanced participation by those interests that will be significantly affected by the resulting Standard (see *SG-011 - The Structure of Committees*)”

In general terms, there is a balance among the main classes of Standards users. These classes may include, but are not limited to:

- Consumers and community interests.
- Employer representative bodies.
- Government organizations.
- Industry, professional and technical associations.
- Manufacturers and suppliers.
- Regulatory and controlling bodies.
- Research and academic organizations.
- Testing bodies.
- Unions and employees.
- User and purchasing bodies.”

This approach by SA has clear merit in theory but in BA’s experience appears subject to distortion in practice. In particular, the composition of the most relevant Standards Australia committee, CT-002, Broadcast and Related Services, is currently in a state of change. BA has been advised that since its change of ownership (i.e. post-privatisation of the National Transmission Network) BA understands that it is unlikely to be accepted as an eligible organisation to sit on the CT-002. This is despite its unchanged role as the most significant provider of digital broadcasting transmission services in Australia (together with its role as a provider of access to broadcasting infrastructure in the case of the regional commercial radio and television broadcasters) and pioneering work in the establishment and testing of world-leading digital delivery platforms. BA appears to be now only eligible for sub-committee (working group) participation despite its key role in the delivery of digital television and radio services and unquestioned technical expertise.

An important principle in ACMA’s oversight role of digital broadcasting technical standards under Part 9A ought to be to ensure broad (but relevant) processes of industry consultation and input and as a corollary, that these processes do not inadvertently or intentionally function as a tool of exclusion and market protection. For its part, BA stands ready to participate in a regular and broad-based process of digital broadcasting standard-setting overseen by ACMA.

1.2 What is the level of interest among industry bodies and associations in the development of technical standards, and the areas of activity those standards might cover?

N/A – BA does not belong to any industry associations or bodies.

1.3 What are the most appropriate arrangements to facilitate the development of technical standards to ensure all appropriate interests are represented?

In accordance with the introduction of Part 9A and to ensure consistent and broadly-based outcomes, BA believes that ACMA should establish a Technical Standards Advisory Committee to oversight digital terrestrial television standards development and ensure that they are meeting the needs of the industry and the community. This Committee, fully representative of industry interests and with a public interest overlay, could nominate to ACMA new areas requiring the making of technical standards or existing standards requiring amendment and review and recommend new standards for determination as an ACMA

Technical Standard. In instances where ACMA is persuaded that a standard should be formulated, it could instigate its own formal standard-making processes or request SA action.

BA has no in-principle difficulty with the current arrangements under which SA develops technical standards but believes that it is important that all industry interests are comprehensively and equally represented in the process and that there are clear guidelines for standards-setting which ensure a common approach across committees and working groups. To this end, BA is seeking full eligibility to participate on Standards Australia committee CT-002 and any other relevant committees given its significant role in the industry and the lack of a relevant and representative industry association in the transmission area. BA would expect that ACMA would look critically at any standards developed by SA in the context of public interest considerations, or signal to industry participants the sorts of outcomes it is seeking which will ensure government policy objectives are not discounted.

BA opposes the use of Free TV Australia (FTVA) Operating Procedures (OPs) as de facto standards or references to them in Australian Standards given that their development has been undertaken “in house” to match the requirements of the incumbent free to air broadcasters and not based on industry-wide consensus or protect the interests of potential new entrants. We also oppose any intention by ACMA to incorporate them “uncritically” into its Technical Standards or “call them up” in any regulated standard. It is our view that ACMA should undergo a review (including expert consultation) of the FTVA OPs to determine which can be “carried-over” and which will require re-drafting or updating by ACMA to ensure that the “public interest” is being met. This is particularly true of OPs 40, 41, 44 as detailed below:

1.3.1 OP40

OP40 covers allocation of Original Network IDs and Network IDs to broadcasters. The Original Network ID provides the gateway for new industry entrants and **must** be regulated by ACMA to ensure that it is the Government not the incumbent industry which determines the operating environment for new entrant broadcasters. The reason for this is self-evident.

The information in OP40 is not representative of the Australian industry as a whole. Broadcast Australia was assigned its own Original Network ID (0x0039) before commencement of the Sydney Datacasting trial in 2003, outside of the range identified in OP40 as reserved for Australian broadcasters.

Additionally, not all broadcasters comply with OP40 in relation to the various Identifiers described in the document. For example, the Nine Network digital multiplex in Sydney operates using a Transport Stream ID of 0x0001, which is outside of the range of 0x0400 to 0x04FF identified for Nine Network transport streams. Similarly, Service IDs are different to those specified in OP40.

BA believes it would be inappropriate to adopt FTV OP40 to manage the allocation of network IDs given that it only represents a part of the industry and that not all existing services comply with it.

1.3.2 OP41

OP41 covers implementation of Logical Channel Numbers (LCNs) and allocation of LCNs to broadcasters.

The Logical Channel Descriptor syntax was defined by the Digital Terrestrial Group in the UK (DTG), and DTG holds copyright over the LCN definition. DTG has granted use of the copyright material for implementation of LCNs in Australia. Although the DTG LCN syntax is included in OP41, OP41 does represent the Australian standard for

implementation of LCNs. As the syntax for implementing the logical channel descriptor is already included in the Australian Standard, it is just the **allocation** of logical channel numbers to each service that needs to be extracted and regulated.

The power of the incumbent Broadcasters to act in their own interests by taking de-facto control of the technical standards was demonstrated in 2003 with the commencement of the DIGITAL **FORTY FOUR** Datacasting Trial in Sydney and the dispute over the use of LCN 4. BA believes it essential that a matter as critical as LCN allocation must be the subject of an agreed “numbering convention” which treats new entrants and incumbents fairly and equally. Refer further comments in Section 3.

1.3.3 OP44

OP44 relates to the transmission of EPG now and next information.

At the time of writing, the current version of OP44 incorrectly states:

“In the Australian DTTB context, only tables containing the EITpf_{actual} (EIT present/following) information, are transmitted. The EITpf_{other} and EITschedule_{actual} and other tables, are NOT transmitted at this time.”

Should this approach be adopted, it would preclude broadcasters transmitting a 7-day EPG in DVB-SI tables.

BA sees the delivery of a 7-day accurate and timely EPG as an essential driver of DTV take up. The current, voluntary introduction of a 7-day EPG provides no assurance that this facility will remain, into the future. Further, the consumer interest is not served by inaccurate or non-existent now-next information.

BA recommends that no references be made in any regulations to OP44 and instead ACMA mandate the minimum requirements for the delivery of an FTA EPG. Refer further comments in Appendix A.

Rather than each network carrying only their own EPG data the networks could be required to carry EPG data for all other multiplexes in the same market area. This would ensure that the receiver is able to access the entire EPG for that market area without the viewer having to manually tune to each multiplex in turn. There are significant costs and technical complexities associated with this solution and it is not clear that it can fully operate in all market areas.

1.4 *How effective are the two digital television standards developed by Standards Australia*

1.4.1 **AS 4599.1-2007: Digital television – Terrestrial broadcasting – Characteristics of digital terrestrial television transmissions;**

BA notes that there are many references to FTVA OPs in AS 4599.1-2007

BA believes the FTV OPs should be removed from the Standard and it should “stand alone” from FTV OPs, as FTVA is not representative of the whole industry. Further, FTVA OPs are subject to revision at any time via a process which is outside of the Standards Australia processes. Any copyright claimed by FTVA in relation to their OPs, could represent a barrier to new entrants. To avoid this situation, any material contained in the FTV OPs that is relevant to the Standard should be included directly into the standard.

Subject to the above, this standard could be incorporated within a new ACMA technical standard as it stands (i.e. without alteration).

1.4.2 AS 4933.1-2005: Digital television – Requirements for Receivers Part 1: VHF/UHF DVB-T television broadcasts;

BA supports the regulation of the minimum requirements section of AS 4933.1-2005, in particular point (f), dealing with the response to dynamic changes in the COFDM mode and available services.

BA notes that there are many references to FTVA OPs in AS 4933.1-2005.

As detailed at 1.4.1 above it is BA's view that reference to FTV OPs should be removed from all Standards which should "stand alone". Refer recommendations in 1.4.1.

BA supports the use of a Testing and Conformance Centre to ensure compliance with any mandatory Australian standards. A mandatory standard would provide the basis against which to test providing clarity for broadcasters and suppliers on the actual location of a fault should there be incompatibility between a transmission stream and receiver. For this reason, BA believes it is essential that the minimum requirements for digital receivers in Australia be mandated.

1.5 What is the current extent of compliance with the mandatory components of both Standards Australia standards?

N/A. BA is aware that there are some receivers in the market which are not compliant with the current receiver standard, in particular their ability to accommodate changes in service configuration. BA is not aware of major non-compliance with the transmission standard.

1.6 What is the extent of compliance with the optional components of both Standards Australia standards (where applicable)?

There is likely to be a high degree of varying compliance with optional components in the receiver standard, in particular hierarchical modulation, methods of dealing with LCN allocation, active format descriptor handling etc however we have no current means to quantify this non-compliance.

2 Industry codes and standards (Part 9B of the Broadcasting Services Act)

As with the underlying intent of Part 9A, BA strongly supports the policy thinking which led to the passage of Part 9B of the Act which effectively operates as a ‘graduated’ scheme of industry co-regulation. It is apparent to BA from its close involvement in Australia’s emerging digital broadcasting sector over the last decade that, in relation to a number of key industry issues, there is a pressing need for greater rigour, transparency, cross-industry input and timely resolution.

BA agrees with the desirability of avoiding “regulation for regulation’s sake” and the caution inherent in the list of factors that will prompt ACMA intervention set out on page 16 of the Issues Paper. Having said this, BA believes that there have clearly been instances in recent years where the resolution of key industry issues with significant public interest dimensions have either been co-opted by industry incumbents and/or allowed to drag on for an unacceptable period of time. To this point, the clock should not effectively start ticking on ACMA’s consideration of regulatory intervention in relation to key digital television issues from today but from the time that industry first started grappling with these issues.

As with Part 9A issues, BA believes that the public interest is served by broad industry input into industry codes (and, as necessary, standards) in relation to digital television particularly with emergent services which will be provided by non-incumbent broadcasters.

To this end BA is concerned that Appendix A prescribes the determination of “Industry Sectors” by ACMA as part of its Part 9B process. In our view, Appendix A is not representative of all broadcasting activities particularly in relation to transmission which in our view should be treated as a separate category, similar to that of suppliers of receive equipment.

2.1 Which organisation(s) have the requisite expertise and resources to participate in the development of industry codes relevant to digital terrestrial television broadcasting?

While not commenting on the capabilities of other industry organisations, BA believes that it carries on a section of activity as specified in section 130F of the BSA (and Appendix A of the Discussion Paper) and has the requisite expertise and resources to participate in the development of industry codes relevant to the delivery of digital television and radio services. BA would be pleased to make these resources available for this purpose. In Section 2.5 below, BA has detailed its view of Industry Segments based on Appendix A.

2.2 What is the current level of interest among industry bodies and associations in the development of industry codes and the areas of activity that these codes might cover?

N/A

2.3 What is the most appropriate means of facilitating the development of industry codes to ensure all appropriate interests are represented?

BA believes that the development of whole-of-industry positions is a necessary pre-requisite to the successful conversion to digital television services. For this reason, BA considers that, on behalf of government, an independent representative Industry Advisory Committee should be established to oversight Codes (and where necessary Industry Standards) development.

The committee would advise ACMA on key industry issues, the state of industry deliberations and the need for ACMA intervention. This could be the same group as required for Technical Standards management as proposed in Section 1.1 above.

In the event that a specific issue arises which may necessitate an Industry Code or Standard ACMA could consider a process which involved the preparation of an options paper for industry comment.

2.4 To what extent is it necessary for ACMA to determine particular sections of the industry for the purpose of facilitating the development of industry codes?

The BSA requires the formulation of Industry Sections as part of the process for Codes and Industry Standards making. Given our view that there are a number of areas requiring the development of a code or Industry Standard, - refer Section 3 below - it is therefore important that ACMA determine specific Industry Sections.

It is essential that all sections of the free-to-air broadcasting industry are represented: incumbent broadcasters (including new entrants as relevant), transmission providers and other key participants in the broadcasting value chain. While industry associations have traditionally been the means of securing representation, they should not be seen as exhaustively covering the field in terms of relevant participants. This pertains in BA's case as the company is not formally a member of an industry association.

BA notes that the provision of transmission services is not in itself defined as an Industry Activity in Section 130F of the BSA. It is therefore unclear whether it would be open for ACMA to include transmission service providers such as BA in Industry Activity 130F(b) relating to "providing a national television broadcasting service". An exclusion of transmission services from being nominated as an industry sector and hence from having the capacity to participate directly in codes and standards making is unacceptable and would make the Industry Sections unrepresentative of the broadcasting industry as a whole.

2.5 What are the potential combinations of industry activities (listed at Appendix A) for the determination of particular sections of the industry?

BA sees the following key sections of the industry across both Free to Air and Subscription television and radio. These sections can be further sub-divided between regional and metropolitan markets i.e.

2.5.1 Commercial Broadcasters

- Commercial broadcasters - radio and television
- National Broadcasters - radio and television
- Datacasters - radio and television
- Narrowcasters – radio and television

2.5.2 Technical Service Providers

- Transmission Infrastructure providers
- Multiplex operators
- Distribution providers

2.5.3 Not for Profit

- Community broadcasters - radio and television

2.5.4 Equipment Suppliers

- Consumer equipment suppliers - radio and television

2.5.5 Consumer Representatives

- Consumer associations e.g. ACA etc

Representation can be distorted when there is vertical integration within an industry and this possibility needs to be accommodated when sections are being determined.

2.6 *Which bodies and associations may potentially represent sections of the industry so determined?*

2.6.1 Commercial Broadcasters

- | | |
|--|------------------|
| • Commercial broadcasters - radio and television | FTV |
| • National Broadcasters - radio and television | To be determined |
| • Datacasters - radio and television | To be determined |
| • Narrowcasters | ASTRA? |

2.6.2 Technical Service Providers

- | | |
|---|---------------------|
| • Transmission Infrastructure providers | Broadcast Australia |
| • Multiplex operators | To be determined |
| • Distribution providers | To be determined |

2.6.3 Not for Profit

- | | |
|---|-----|
| • Community broadcasters - radio and television | CBA |
|---|-----|

2.6.4 Equipment Suppliers

- | | |
|---|-------------|
| • Consumer equipment suppliers - radio and television | ADSIF, CESA |
|---|-------------|

2.6.5 Consumer Representatives

- | | |
|---|-----------|
| • Representative consumer organisations | ACA, ACMA |
|---|-----------|

3 Issues of potential interest

3.1 Which other issues that should be noted as part of a preliminary consideration of the new codes and standards provisions?

ACMA has outlined a series of potential issues which may require the focus of technical standard and or industry codes and standards. These include:

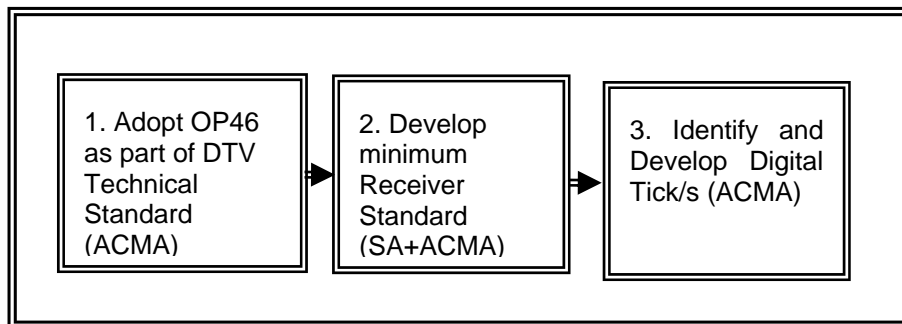
Issue	BA Comment
Labelling of domestic reception equipment	BA supports labelling of domestic reception equipment in anticipation of digital switchover in 2013 and to drive digital take up. It is BA's view that this should be broader than the current Digital HD Tick which doesn't meet the consumers need to be confident of a receiver's capability to receive a digital transmission.
EPG's	BA believes that transmission of an openly accessible, EPG data stream is essential to drive DTV take up and that a code of practice should be developed. Refer Appendix B below.
Numbering of digital services including use of LCN's	LCN's are effectively "real estate" on the remote control, or a "place on the dial" and as such should be independently regulated. BA believes a code or industry standard should be developed. Refer Appendix A below.
Application program interfaces	BA supports a requirement for an interactive application as an optional part of the receiver standard. MHP seems to be the logical choice given its endorsement by the Australian industry and inclusion in the Australian standard.
Conditional access systems	CA systems are part of the "consumer proposition" and should be left to the broadcasters and market forces.
Updating of software used in domestic reception equipment	BA supports the use of over-the-air downloads (OADs) via an accredited provider and the regulation of the method described in OP46 for systems software updates (SSU). This will need to remove the potential for litigation by broadcasters should OADs result in some receiver mal-functions.
Digital content control technologies	The issue of DRM and its position in the industry is moving very quickly and the final position is uncertain. It is BA's view that it is best left to the

	market.
Data compression	HDTV and scarcity of spectrum will result in a demand for greater spectrum efficiency. Ultimate conversion to MPEG 4 and DVB-T2 will be essential to ensure the most efficient use of spectrum. Conversion will mean simulcasting existing and new standard. Hence spectrum will need to be reserved for this purpose.

3.2 To what extent are there linkages or dependencies that span two or more issues of potential interest?

There are a number of interdependencies which will mean that certain regulatory interventions will be required before all issues can be resolved.

The labelling of domestic reception equipment will depend on the development of a minimum standard for DTV receivers to ensure that manufacturers have a clear understanding of the requirements of the Australian market.



The issues of an FTVA EPG and regulated numbering system are linked to the extent of being drivers for take up: an openly accessible 7-day EPG will encourage DTV viewing. An independent LCN numbering system will provide a more cohesive and compelling consumer offering.

The change to MPEG4 and DVBT-2 will provide the opportunity for new digital services to be offered – one of the key drivers of take-up. This is an issue for the medium term.

Government-backed action on all these matters will enhance consumer confidence in DTV and drive take up. Refer Appendix A below.

3.3 What is your assessment of those issues where regulatory intervention would, in your view:

- drive the take-up of digital services; or

BA believes that intervention in relation to EPG, minimum receiver standards and labelling of domestic receive equipment will drive take-up of DTV services. Refer Appendix A

- address market failure;

BA believes that intervention in relation to LCN’s and the setting of technical standards is required to address market failure. This is discussed in Sections 1.1 and 1.3 above

- **and where:**
 - **industry is unlikely to resolve the matter within a reasonable timeframe;**
 - **regulation will not impose unnecessary financial burdens on industry; and**

The delivery of 7-day EPGs and a numbering code for LCNs will not impose any significant costs on industry and can be easily undertaken by changes to multiplex and transmission stream settings. No new equipment or significant investment is required.

A rescan of digital receivers resulting from a new numbering system would require some “on channel” publicity be undertaken by the broadcasters. ABC recently successfully changed from channel 21 to channel 22 for ABC2.

- **the benefits of regulation are not outweighed by the costs;**

The benefit to the public in ensuring an industry code of practice relating to LCN numbering similar to that developed for telephone numbers would in BA’s view result in more certainty for potential bidders for Channel A and potentially attract a higher price for the channel. This could apply to Channel B depending on its end use. While some promotion may be required by the FTA broadcasters, during any changes to existing numbering, the result will be in the public interest by providing a level playing field for new entrants.

3.4 What possible approaches or models may be implemented by industry and/or ACMA in relation to these issues?

BA proposes a number of approaches to the issues raised above

Issue	Suggested Approach
Labelling of domestic reception equipment	Through the ACMA codes making powers, develop a series of labels for digital receivers which ensure the consumer is aware of: <ul style="list-style-type: none"> - Whether it is a DTV receiver - Capability of the DTV receiver i.e. HD/SD/ interactive (MHP)/PVR
EPG’s	ACMA should mandate the principles associated with a FTA EPG Refer Appendix A below
Numbering of digital services including use of LCNs	BA proposes that ACMA develop a new numbering system based on the UK model and regulate its application.
Application program interfaces	MHP as an optional part of the DTV receiver standard remain
Updating of software used in domestic reception equipment	Regulate the method contained in FTV OP46 and ensure that there is no potential for litigation by broadcasters in the event of some receiver

	malfunctions
Data compression	Establish a programme for conversion to MPEG 4 and DVB-T2. Reserve spectrum for the simulcasting of existing MPEG2 and new standard/s.

3.5 *Is it necessary to adopt a holistic approach where there are linkages or dependencies spanning two or more issues of potential interest?*

While a holistic approach may not be needed it will be essential for certain activities to have been completed before others can commence. For example, for OADs and Testing and Conformance to be successful, it is important that a receiver standard is mandated so that the testing is against an agreed benchmark. This also applies to the delivery of new services and the provision of an EPG to drive take up of DTV.

Appendix A Principles For Development Of An EPG For The FTA Broadcasting Industry

Broadcast Australia (BA) believes that the provision of a comprehensive electronic program guide (EPG) is a necessary building block to the digital television (DTV) conversion process in Australia. While recognising that the industry has gone some way to delivering the requirements set out below, it is our view that it is important that ACMA ensure that a fully functional EPG is provided by the FTA broadcasters to ensure a successful digital television industry.

Global experience with DTV has confirmed that key drivers for take up of digital television are:

- New services;
- Effective promotion of the new digital platform and its additional “value add” services (consumer information/understanding);

An electronic programme guide for easy navigation.

While the first digital television services were introduced into Australia in 2001 there are few additional services and no reliable, accurate and comprehensive programme guide for use by the viewer. This contrasts with the Foxtel service which provides subscribers with a sophisticated interactive programme guide which has been well-accepted.

The provision of a programme guide by the free to air (FTA) broadcasting industry that is both comprehensive and broadly available is essential to drive the consumer proposition for FTA DTV. This is particularly important in the context of the establishment of the Digital Switchover Taskforce and the proposed switch off of analogue television in 2013.

BA believes that the Australian Communications and Media Authority (ACMA) must ensure a co-ordinated approach to the provision of the EPG that does not disenfranchise any viewers i.e. through the making of an industry code. Any future industry EPG code should require the provision of an FTA EPG to the following principles:

- It must be **free** to the public and easily accessible (and not dependent on the purchase of a particular DTV receiver going forward);
- It should be provided using the existing method of EIT (Event Information Tables) as defined in the current Australian Standards for DTV transmissions i.e. (AS 4599) and DTV receivers (AS4933.1);

The inclusion of EIT tables for the *present/following* events (‘now/next’), and *event schedule information* (all other programmes) will enable all existing receivers in the market to receive the schedule information and display it according to their capability, ensuring that existing digital TV viewers are not disenfranchised;

- provide sufficient service information in the Australian Standard format of EIT to present to the user a complete schedule of programmes for the present day and the following 6 days;
- provide actual start and finishing times for programmes in the EIT present/following table which are accurate at the time of transmission of each programme to within one minute of the programme’s actual starting and finishing times; and
- not otherwise be made incompatible with operation of PVR (personal video recorders) that utilise the EIT data for user programming of recording features.

Appendix B Logical Channel Numbers (LCN's)

As you would be aware, Logical Channel Numbers (LCNs) are the means by which a viewer accesses broadcasting services. Through the use of a remote control, a viewer can select an LCN or number in order to get a particular service. For this reason, programme suppliers are keen to have access to the most valuable 'real estate on the remote' or "first tier" numbers. First tier or quality LCNs are in limited supply (i.e. LCNs 0 to 9) and all but LCN 4 are currently being utilised by the incumbent commercial and national free-to-air (FTA) broadcasters. Further, a significant number of second and third tier LCNs have been appropriated by the FTA broadcasters but not used, with the consequent potential of relegating a new entrant to the "back stalls".

BA has previously proposed that ACMA take responsibility (hitherto assumed by FTVA) for LCN management and allocation in Australia and develop an independent and systematic approach based on public interest criteria which treats all broadcasters/datacasters fairly and provides a level playing field for new entrants. This could be achieved through the development of an industry code. The weaknesses of the current system (i.e. having the FTA industry effectively act as both the regulator and consumer in relation to LCNs), was manifest in 2003 when BA's Sydney datacasting trial service was effectively forced off LCN 4 to the less-than-ideal LCN 44.

BA believes that it is essential that LCN 4 and associated numbers in the 4 series (i.e. 40-49, 400-499) be allocated to the future Channel A DTL holder. This would provide appropriate parity as between the Channel A licensee and existing FTA broadcasters and avoid the diminution in value that would flow from the assignment of an obscure or lower tier (i.e. above single digits) LCN to Channel A. This would also provide continuity of service to existing viewers, particularly in the event that existing content continues to be provided post-licence allocation.

BA contends that these allocations are a minimum requirement for a Channel A licensee and ACMA should act now to ensure that they are delivered in time for the channel allocation. BA believes that a review of the LCN allocations should be made once an industry-wide EPG has been determined as the LCN system is essential to the delivery of an EPG which provides appropriate programme/genre groupings arranged for consumer convenience. This is likely to also require ACMA intervention.