AUSTAR's Submission to the Productivity Commission's Broadcasting Inquiry Draft Report

AUSTAR welcomes the Productivity Commission's Draft Report into Broadcasting ("Draft Report") and supports the large majority of the Report's recommendations. It is most refreshing that an independent body has finally conducted a detailed examination exposing the many anti-competitive and anti-consumer aspects of the broadcasting legislation and advocating a better and fairer approach.

AUSTAR would be very pleased to see the commercial free-to-air (FTA) broadcasters removed from the uniquely protected position they have occupied for the last 40 years and forced to compete on equal terms with all other members of the convergent digital marketplace.

However, AUSTAR is also pragmatic and realises that 40 years of privileged status will not be swept away all at once and it may take a number of years for the most entrenched FTA protections to be removed. Because of this, it is crucial that the Productivity Commission ("Commission") recognise that sequencing of reform is critical, not just in relation to ownership restrictions, but also in other areas, including the small degree of protection that the fledgling pay TV industry has secured from FTA competition in relation to multi-channelling in the digital environment.

If the Productivity Commission's recommendations are implemented in the correct sequence Australia will finally be free of the anti-competitive influences that have constrain efficiency, diversity of voice and consumer choice. If not, there is a great risk that the worst aspects of the current regime will be perpetuated.

1 AUSTAR Background

AUSTAR is the second largest pay TV provider in Australia. Over the last five years, AUSTAR has invested $600m in establishing a pay TV business in rural and regional Australia.

AUSTAR provides its pay TV services by way of multipoint microwave distribution system (MMDS), satellite and by a cable network in Darwin. AUSTAR services cover the Northern Territory, Queensland (excluding Brisbane), New South Wales (excluding Newcastle and Sydney), Victoria (excluding Melbourne and Geelong), South Australia (excluding Adelaide) and Tasmania (excluding Hobart).

The AUSTAR business commenced in 1995. Although the business is still in its early stages of development, we have established a robust foothold in our market place from which we are planning the introduction of a range of additional services. These services include the delivery of internet and high speed internet to our customer base, in addition to a range of potential telecommunications services.

AUSTAR has over 370,000 subscribers in a total service area of 2.1 million homes, meaning an average penetration of 18%.

AUSTAR's parent company is UnitedGlobalCom, Inc ("United"). United is a media investment company based in Denver, USA, which has investments in pay TV and communications businesses in 22 countries around the world. United's support has enabled AUSTAR to be independent from the existing interests that dominate Australia's

media and communications industries, and yet still grow its business. Without the technical expertise and financial support that UIH has provided, AUSTAR would have found it far more difficult to make a success of its business in regional Australia.

2 Anti-Siphoning

The anti-siphoning regime is one of the most prominent examples of a provision of the Broadcasting Services Act 1992 (BSA) whose anti-competitive effect far outweighs any social benefit and whose social aims could be achieved without harming competition.

Originally introduced in 1994 to protect consumers from the possibility that loss-making, new entrant pay TV operators would outbid the powerful and highly profitable FTA stations for broadcast rights to popular sporting events (and thus prevent them being shown on FTA television), the regime has reduced television coverage of popular sporting events and has created an uncertain business environment.

Even if the Commission finds that the anti-siphoning regime has social benefits which outweigh its social costs, the social aims of anti-siphoning would be well addressed, as suggested in the Draft Report, by simply preventing both FTA broadcasters and pay TV operators obtaining, for events on the list, broadcasting rights which exclude the other form of broadcasting. This would be competitively neutral and eliminate the anti-competitive and anti-consumer aspects of the current regime.

In addition in a convergent environment it is unfair for the tv and pay tv industries to have this restriction where the anti-siphoning regime does not apply to on-line rights. If the regime is to apply it should apply to all rights and require separate purchase.

The anti-siphoning list should be limited to those sporting events which are actually of national significance, rather than the “wish list” which is currently in place. The list should be limited to events which have actually been shown on FTA television in the past and whose FTA ratings indicate that they are popular enough to be considered a “major” sporting event. Events should be specified more precisely to focus on the parts of a tournament (ie Wimbledon finals) which are actually major events rather than those which are non events (ie Wimbledon heats between unseeded players).

2.1 Anti-competitive effects

The anti-competitive effects of the anti-siphoning regime are profound and impact not only on pay TV operators but on sports rights holders, advertisers and consumers.

(a) Market for sports rights

The first market where these effects are felt is the market for sports rights. By preventing pay TV operators acquiring broadcast rights for a sports event unless and until FTA broadcasters (with coverage of 50% of the Australian population) have obtained such rights, the anti-siphoning regime eliminates at least 3 potentially significant competitors (FOXTEL, Optus Vision and AUSTAR) from the market for sports rights.

Given there are at most 5 other competitors, and often only the 3 capital city commercial FTAs in the market for Australian broadcast rights to major sporting events, the anti-competitive effect of the elimination of 3 competitors is likely to be very substantial. In addition to the obvious statement that the reduction in the number of competitors in a market by more than a third is a substantial reduction in competition, it is well established

that a "reduction in the number of firms operating in a market increases the scope for coordinated conduct, including both overt and tacit collusion."[1]

In particular, the economist Selten (1973) in his paper entitled "A simple model of imperfect competition where four are few and six are many" showed that "If there are less than five competitors, they will *all* find it profitable to collude explicitly; if there are more than five competitors, it becomes more advantageous to stay out of a cartel . . ."[2] It is for this reason and others that competition regulators worldwide have regularly found a substantial reduction in the number of competitors in a market to be a substantial lessening of competition. This analysis is especially persuasive where the market is not contestable because of regulatory prohibitions on new entry, such as exist in relation to FTA television.

(b) Market for viewers

The second market where anti-competitive effects are felt is in the market for viewers of television broadcasting services. FTA stations and pay TV operators compete for viewers of their services because the number of viewers directly affects revenue, for FTA stations, through advertising, and for pay TV operators through subscription fees and advertising.

Because many of the events on the anti-siphoning list are popular with viewers the anti-siphoning regime decreases competition for viewers and reduces the ability of pay TV operators to obtain subscribers. This anti-competitive protectionism of the FTA industry benefits the well established incumbents at the expense of new entrants and discourages further new entry into pay TV markets by reducing the carrying capacity of the market.

(c) Market for advertising

The market for television advertising also suffers from the anti-competitive nature of the anti-siphoning regime. By disadvantaging pay TV operators and reducing the number of subscribers that they would have if they were able to obtain broadcast rights to sports events on the anti-siphoning list, the anti-siphoning regime harms competition for advertising.

Although pay TV operators are required to obtain a majority of their revenue from subscription fees (another anti-competitive restriction) they can and do show advertising on their services and thus compete with FTA stations for advertising dollars. However because of the anti-siphoning regime pay TV operators are less effective competitors in relation to securing advertising and advertisers have less choice in where to place their TV advertising.

2.2 Anti-consumer effects

In addition to the anti-competitive effects outlined above, the anti-siphoning regime harms consumers directly by reducing the amount of sports coverage on television. The anti-siphoning list covers far more events than could possibly be covered on FTA television. For example, it includes every tennis match at Wimbledon (some 650 hours worth or 90 hours per day) as well as every tennis match in the Australian, US and French Opens and 3

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[1] ACCC decision in the Wattyl application for authorisation under section 88(9) of the Trade Practices Act (1996) ATPR (Com) 50-232; See also a similar application in relation to Bristle Holdings.

[2] Louis Phlips, Competition policy: a game theory perspective, Cambridge University Press,, Chapter 2 "Four are few and six are many", pages 23-24.

other tournaments. It also covers every game of every round of NRL (rugby league) and AFL (Australian Rules) competitions (over 26 hours a weekend).

The FTA networks cannot and do not show all the events on the anti-siphoning list. Indeed investigations by ASTRA members suggest that less than a third of all events on the anti-siphoning list are covered live on FTA television. The end result of this regime is that consumers miss out on coverage of sporting events because they are not shown on FTA TV or pay TV.

This is the exact opposite of the social objective the regime is designed to achieve - the protection of consumers' access to coverage of high profile events.

2.3 Regime is directed at non-existent problem

The anti-siphoning regime is directed at solving a problem that does not exist. The assumption behind the anti-siphoning regime is that loss-making, new entrant pay TV operators will outbid the powerful and highly profitable FTA stations for broadcast rights to popular (high rating) sporting events and thus prevent them being shown on FTA television.

(a) There is no basis to assume siphoning will occur

The falsity of the assumption behind the anti-siphoning regime is supported by empirical evidence from the US, which has FTA broadcasters which are similarly placed to those in Australia, and a pay TV industry which is much stronger than Australia's. Even in this environment, where pay TV operators have a much greater financial capacity to obtain exclusive rights to premier sporting events, the Federal Communications Commission (FCC) found and reported to Congress in 1994 that there had been no migration of sports coverage from FTA to pay TV.

(b) Analogy from the UK is false

The contrary example of the UK migration of a premium football competition from FTA to pay TV occurred in a market with very different characteristics from that of Australia or the US. Firstly, in the UK, despite it being a much larger market than Australia, there were (until the introduction of digital TV) only 2 commercial FTA broadcasters (ITV and Channel 4). Secondly there are twice as many advertising funded FTA broadcasters in Australia (Nine, Seven, Ten and SBS in part) as in the UK. These differences create far less incentive for FTA stations to retain popular sporting coverage in the UK than in Australia.

Thirdly, the UK FTA broadcasting industry is far more government dominated than Australia or the US, with BBC 1 being the highest rating television channel and BBC services (television and radio) accounting for 43% of the total weekly listening and viewing time of audiences. As the BBC is funded by television licence fees levied on consumers rather than by advertising and has public interest rather than commercial goals, it does not have the same incentive as Australian commercial FTAs to retain highly popular sporting programs at any cost. "Licence payers would not be well served if the BBC poured unlimited money into sport in order to retain rights regardless of cost." [BBC Annual Report 1999].

Thus any suggestion that the anti-siphoning regime is needed to prevent the siphoning that has occurred in the UK is based on a false analogy that ignores the very different market conditions in the UK.

2.4 Social aims can be achieved in better ways

The Competition Principles Agreement specifies that any legislation which restricts competition should be retained only if the benefits to the community as a whole outweigh the costs and if the objectives can be met only through restricting competition. The above analysis shows that the anti-siphoning regime restricts competition and imposes numerous costs on pay TV operators, advertisers, sporting organisations and, most significantly, the community as a whole, through reduced sports coverage.

Because the anti-siphoning regime is directed at a problem which does not exist and would not exist if the regime was removed, it is doubtful as to whether there is *any* public benefit to balance these manifold costs. The anti-siphoning regime should thus be scrapped immediately, as it is among the least entrenched of the FTA protections and its stated policy aim is to protect consumers, not the FTA broadcasters.

Even if some public benefit can be found which would justify the retention of some form of anti-siphoning regime, it is quite apparent that anti-siphoning can be achieved in a way that is far less restrictive of competition than the current regime. This can be achieved by reforming the anti-siphoning list and replacing the current regime with a regime which prevents both FTA broadcasters, pay TV operators and on-line content producers obtaining broadcast rights, to events on the list, which exclude the other forms of broadcasting.

3 Digital Television

AUSTAR supports the Productivity Commission's recommendations with regard to digital television but has some concerns in relation to the sequencing of the reforms. In particular, prohibitions on multi-channelling by FTA broadcasters should not be removed until after the prohibitions on the issue of new FTA broadcasting licences are removed and FTA broadcasters compete in an open market and pay market prices for all spectrum they use.

3.1 Background

AUSTAR considers that the Productivity Commission has presented how digital TV should be implemented in an ideal world with the removal of anti-competitive restrictions, the adoption of standard definition digital transmission, multiplexing and market based spectrum allocation allowing the provision of new channels and interactive services by both new entrant and existing FTA broadcasters and datacasters (under a liberal definition). This is the sort of environment advocated by AUSTAR (through ASTRA) and many others when the initial digital television decisions were being made by government in mid 1998.

Unfortunately however, the government chose a flawed policy model which prohibited new entrant FTA broadcasters until 2007 and gave FTA broadcasters free use of 7MHz (or more) of valuable spectrum for the purpose of transmitting high definition television (HDTV). These two decisions, to prohibit new competition in FTA broadcasting and to give away valuable public resources to corporate favourites, required a number of tradeoff restrictions on FTA broadcasters in order to partly redress the balance between FTA broadcasters and other players.

As a small compensation for this anti-competitive favouritism of the incumbent FTA broadcasters, the government agreed to prohibit FTA broadcasters from providing

multiple channels using their free spectrum. This prohibition is subject to change following reviews to be conducted by 1/1/2000 in relation to the ABC and SBS, and by 31/12/2005 in relation to commercial FTA broadcasters.

In order to keep the FTA broadcasters to their word that 7MHz of spectrum was needed for HDTV, the government also mandated that broadcasters transmit a certain amount of programming in one or more high definition formats. The details of both the amount of HDTV and the mandated formats are yet to be determined.

To provide some degree of competitive neutrality between new entrant datacasters and datacasting by FTA broadcasters using their free spectrum, the government required that the ABA impose a fee on FTAs who datacast. The amount and method of calculation of this fee is also yet to be determined.

This intricate web of FTA policy favouritism and attempt at balancing restriction cannot be undone piecemeal. It must be wound back in a carefully sequenced and structured manner which does not worsen FTA favouritism along the way, and some temporary compromises will have to be made. AUSTAR considers that the Commission should address not only the ideal world which is the end result of its recommendations but also the manner and sequence in which we move from the current situation to a better one.

3.2 Multi-channelling

While AUSTAR agrees that multi-channelling, by both new entrant and existing FTA broadcasters is ultimately a sensible, economically rational and spectrum efficient use of the new technology of digital broadcasting, FTA broadcasters must not be allowed to engage in it until all their protections are removed. There are a number of reasons for this, many of which the government recognised in its original decision to prohibit FTA multi-channelling.

(a) FTA broadcasters have not paid for their transmission medium

Perhaps the most basic reason the ban on FTA multi-channelling must remain in place until all other FTA protections are removed is that the transmission medium (7MHz of digital spectrum) which FTA broadcasters would use for multi-channelling has been given to them free of charge.

In contrast, AUSTAR and the other pay TV operators have spent hundreds of millions, and in some cases, billions of dollars on the transmission medium for their services. The FOXTEL and Optus Vision parallel cable rollout is the most well known example, but whatever the transmission medium, be it MMDS, satellite or cable, pay TV operators have invested massive amounts of money to build the infrastructure and/or buy the spectrum used to broadcast their services to consumers.

This is the main reason that none of the pay TV operators is currently profitable, and have huge losses, while FTA broadcasters are highly profitable. It would seriously endanger the very existence of the pay TV industry if FTA broadcasters were allowed to offer multi-channel services without having paid the high cost of entry imposed by the need to secure a transmission medium.

(b) FTA broadcasters promised to use the spectrum for HDTV not multi-channelling

The stated basis on which the FTA broadcasters were allocated an additional 7MHz of spectrum each, without charge, for digital broadcasting, rather than all 5 FTAs being

multiplexed into a single 7MHz digital channel, is that the FTA broadcasters had convinced the government to adopt HDTV. It was the presumed social good of HDTV that justified giving away 7MHz of valuable broadcasting spectrum.

Having been given away for the presumed social good of HDTV, the digital spectrum cannot be now used for another purpose, especially when that purpose is the commercial good of the FTA broadcasters at the expense of pay TV operators.

(c) FTA broadcasters are protected from competition in their home market

FTA broadcasters are artificially protected from competition by new entrants in their home market of traditional single channel free-to-air television. This barrier to entry and the concentrated nature of the market creates significant oligopoly power and profits. If FTA broadcasters are allowed to leverage that market power into new markets such as multi-channel television without competing on a level playing field, it will have significant anti-competitive effects. These competitive evils include cross subsidisation, predatory pricing, anti-competitive bundling and the other competitive problems which have beset convergent industries where this leverage of market power has been allowed to occur.

Thus FTA broadcasters should not be allowed to multi-channel until all of these problems has been eliminated. This means that almost all of the Productivity Commission's recommendations regarding digital TV and market entry will need to be implemented prior to any removal of the ban on FTA broadcaster multi-channelling, predominantly to make FTA broadcasters compete for and pay market price for the spectrum they use.

3.3 Solution to the HDTV problem

(a) The problem

AUSTAR agrees with the Commission's view that HDTV only transmission is a poor policy choice for Australia. As the Commission has convincingly argued, HDTV only transmission will make digital TV much more expensive for all consumers, while only the rich few who are able and willing to spend tens of thousands of dollars on very large screen HDTV displays and 5 channel amplifiers and speakers will gain any benefit. As a result, HDTV only transmission will stunt the takeup of digital television and lead to the analog spectrum handback date being significantly delayed. HDTV only transmission will also limit Australia's ability to use mobile devices developed overseas and impose additional costs for subscription broadcasters who choose to retransmit the digital FTA signals.[3]

However, as noted above, the government's decision to mandate HDTV transmission is inextricably linked to its decision to grant FTA broadcasters 7MHz of free spectrum and to protect them from competition for a further 8 years. Until these decisions are also undone, FTA broadcasters must fulfil their commitment to broadcast HDTV. To do otherwise would hugely advantage FTA broadcasters at the expense of both pay TV operators and datacasters and would completely undermine any sense of balance in government policy making.

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[3] AUSTAR is prevented from retransmitting capital city FTA signals to its regional and rural customer base under the retransmission regime in the BSA.

(b) The solution

There is, however, a solution which both preserves the government's mandate of HDTV and provides a workable consumer proposition for digital TV. This is the simulcasting, within the 7MHz digital channel allocated to FTA broadcasters, of a standard definition (SD) signal whenever a high definition (HD) signal is broadcast.

The Draft Report stated that the Commission had received conflicting views about the feasibility of this option within available spectrum and current technology. It is unfortunate that the Commission did not have the technical information or guidance at the time of the Draft Report to distinguish between these various arguments. However, it is now quite clear that simulcast, within a single 7MHz channel, of SD whenever HD is broadcast is a technically feasible option.

(c) HD/SD simulcast is technically feasible

In order to be able to transmit both HDTV and SDTV within the same 7MHz channel, broadcasters would not be able to adopt the very highest resolution within MP@HL[4] (1920 x 1080 at 50Hz interlaced) but would be able to adopt any of the middle and lower range formats within MP@HL. While FTA broadcasters may protest at this, the reality is that 1920 x 1080i is a production standard which even the best HDTV consumer television sets are not capable of displaying. It is for this reason that only a small percentage of US broadcasters are transmitting HDTV in this format while the other digital broadcasters have adopted the 720p or 480p formats. SBS recognised this trend in its initial submission to the Department of Communications Information Technology and Arts HDTV Formats Review when it stated that "SBS would use 720x576x50P [576p] in 16:9 format as our normal HDTV format."

The transmission of a SDTV signal in addition to a HDTV signal within the same 7MHz channel is not only technically achievable but it is the method of HDTV implementation advocated by the chairman of the relevant DVB committee - Ken McCann.[5] He states: "[t]his enables a simulcast approach to SDTV and HDTV to be adopted, with each version of the program independently optimized to provide optimum quality at the minimum total bit rate" and "HDTV can be efficiently added to DVB transmissions in a way that does not disadvantage the owners of standard definition IRDs or prejudice the rapid and successful implementation of digital television at standard definition."[6].

(d) This issue cannot be left to market forces

While AUSTAR generally supports allowing market forces to decide technical issues, the issue of SD / HD simulcast cannot be left to the exercise of the FTA broadcasters' commercial judgement. There are a number of reasons for this.

FTA broadcasters' commercial interests are served by digital TV being unaffordable to the average consumer thus making digital TV takeup as slow as possible. The longer the digital conversion process takes, the longer FTA broadcasters retain the vast amounts of

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[4] Main Profile @ High Level (MP@HL) is the set of transmission formats within the DVB standard which is generally accepted to constitute HDTV. Main Profile @ Main Level (MP@ML) is the set of transmission formats within the DVB standard which is generally accepted to constitute SDTV.

[5] Chairman of the MPEG Implementation Guidelines Group within the DVB Technical Module.

[6] Ken McCann, "DVB and MPEG - Devising HDTV Guidelines" *Supplement to World Broadcast News*, November 1998 pages 12-14. This article is attached as Annexure A.

spectrum used for analogue broadcasting and the longer new competitors are prevented from entering their market.

Also, it is not in the FTA's interests to make digital set top boxes affordable to encourage consumers to adopt them rapidly because this gives datacasters a much greater market to sell their services to. FTA broadcasters see datacasters as a competitive threat and thus are trying to limit this threat as much as possible by proposing restrictive definitions and attempting to undermine technical solutions which will make more spectrum available to datacasters (eg single frequency networks - SFNs).

FTA broadcasters realise that if consumers purchase standard definition set top boxes which are broadly compatible[7] with digital pay TV set top boxes this facilitates the transition to pay TV, in both a technical[8] and psychological[9] sense, and may reduce the costs of pay TV operators, thus making them more competitive with FTA broadcasters.

Finally, because the spectrum was ostensibly given to FTA broadcasters for public welfare reasons (because the government thought HDTV would be a good idea) and the public has received no monetary compensation for its use, it is appropriate that public interest considerations, not market forces, determine how it is used.

3.4 Datacasting and Enhanced Programming

(a) Datacasting

AUSTAR supports the Draft Report's recommendation of a liberal definition of datacasting. It would be foolish to narrowly restrict a new technology with much potential to provide innovative new services to all Australians, especially before these services are fully understood.

The licensing and definition of datacasting should cover, as does now, only services using the broadcasting services bands. The concept of a regulatory category of datacasting is an artefact of the decision to protect FTA broadcasters from competition. Indeed, if the ban on new FTA broadcasters was lifted and spectrum allocated as proposed by the Draft Report there would be no need for a datacasting definition or licensing at all. It would severely endanger Australia's online future if broadcasting like licensing conditions and artificial restrictions were applied to the internet and other emerging interactive services under the rubric of datacasting.

(b) "Incidental and directly linked" programming

AUSTAR is more concerned about the issue of "incidental and directly linked" programming. The purpose of this category, which as yet has no basis in the BSA (other than a review into whether it should be created or not), seems to be to provide a loophole

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[7] Standard definition DVB terrestrial television set top boxes (STBs) have a different receiver component ("front end") from DVB satellite STBs and from DVB cable STBs. However the "back end" of all of these STBs, which decodes the DVB signal, is the same, although conditional access systems used may be different.

[8] In addition to a front end able to receive terrestrial, satellite and cable signals, there are a number of other technical issues which must be addressed to allow consumers to use a single set top box for receiving terrestrial digital TV as well as satellite or cable digital TV. These issues include having a common or compatible conditional access system, downloading of software (which controls the operation of the STB) to different brands of STB and who controls the operating system in the STB.

[9] If consumers need to buy a STB to receive FTA television, the paying of a subscription, which includes a STB, for pay TV becomes less of a issue.

for FTA broadcasters to do things which are neither single channel broadcasting nor datacasting.

If a liberal definition of datacasting is adopted, it seems to AUSTAR that the only reason for the existence of this "incidental and directly linked" category is to ostensibly allow FTA broadcasters to multi-channel. For the reasons outlined in great detail in section 3.2, this cannot be allowed to happen until all the FTA protections are removed.

AUSTAR considers that, until such time as the ban on new entrants into FTA broadcasting is removed and FTA broadcasters compete for and pay market price for the spectrum they use, there should be no category of "incidental and directly linked" programming. AUSTAR envisages that after these FTA protections are removed there will be no need for such a category because artificial distinctions between services will have no purpose.

4 Reform of spectrum planning and allocation

As should be clear from the above discussions, AUSTAR fully supports the Productivity Commission's proposals to reform the way broadcasting spectrum is allocated and FTA broadcasting licences issued.

4.1 Spectrum planning and allocation

AUSTAR considers that FTA broadcasting spectrum should be planned and allocated in the same way as spectrum used for subscription broadcasting, telecommunications and all other uses. It should be planned and allocated by the Australian Communications Authority (ACA) according their standard practices. Where particular spectrum, such as the broadcasting spectrum, is a valuable commercial resource, it should be licensed under tradeable spectrum licences to the highest bidder at a public auction. There should be no conditions restricting the spectrum to a particular use.

AUSTAR agrees with the Commission that FTA broadcasting "content" licences should be issued by the ABA, in the same way as subscription television licences. There should be no limit on the number of FTA broadcasting "content" licences. Licensees would be responsible for securing the transmission medium they wish to use to provide their service in the same way as pay TV operators are.

These reforms, combined with the market valuation and payments for broadcasting spectrum (see below) would considerably level the playing field between FTA broadcasters and pay TV operators and lead to a more competitive market which was better for consumers.

4.2 Valuing FTA spectrum

The Draft Report recommended that the value of spectrum held by FTA broadcasters be reflected in its price and that FTA commercial TV and radio licence fees be converted to fees reflecting the value of the spectrum held. The Commission invited further comment on the mechanisms for achieving this conversion.

AUSTAR considers that the best way to ensure FTA broadcasters pay fees which reflect the value of the spectrum held is to determine that value in a public auction. To ensure the proper value is assigned to the spectrum, the ban on new FTA broadcasting licences would have to be lifted and any restrictions on the use of the spectrum removed. Market

forces would then be able to properly determine the value of the spectrum. Any mechanism which attempts to estimate the value of the spectrum, particularly while its use is limited by a range of anti-competitive restrictions, is bound to derive an inaccurate figure which will distort market outcomes.

AUSTAR notes with interest that Fairfax's recent submission to the Commission has valued the analogue spectrum at $4.3 billion dollars. If this is the case FTA broadcasters would rapidly move all consumers to digital technology so that they could minimise the amount of spectrum needed to provide their services. This would accomplish the goals of a rapid transition to digital television and the freeing up of spectrum for greater competition and other uses in one step.

5 Foreign and cross ownership restrictions

AUSTAR agrees with the Draft Report's recommendations regarding foreign and cross media ownership restrictions and supports the sequencing proposed by the Commission.

5.1 Foreign ownership restrictions

AUSTAR considers that the foreign ownership restrictions in the BSA increase media concentration at the expense of diversity of voice and are outmoded in the age of global communication. These restrictions should be removed immediately and need not be dependent on any other reforms.

As noted earlier, AUSTAR's parent company is United, a media investment company based in Denver, USA. The investment of United in AUSTAR is an excellent example of the benefits that the removal of foreign ownership restrictions would bring. United's support of AUSTAR has allowed AUSTAR to have the benefit of foreign experience in the building of its pay tv business. It also allowed AUSTAR to be independent of the existing interests that dominate Australia's media and communications industries. United's support has also allowed AUSTAR to focus on rural and regional Australia, providing multi-channel pay television and broadband internet services to consumers generally neglected by traditional media interests.

The benefits brought by removing foreign ownership restrictions are not merely financial, although foreign investment and control is crucial to introduce diversity into Australia's concentrated media industry. United has also provided invaluable technical and operational support and experience in establishing a business which was new to Australia namely satellite, MMDS and cable pay television.

5.2 Cross media restrictions

AUSTAR agrees with the Commission's recommendations regarding cross media ownership restrictions. While these restrictions should ultimately be removed to create a free and open market for capital in the media industry, there is much reform that needs to occur before this can be done without causing an increase in media concentration and consequent reduction of diversity of voice.

AUSTAR agrees with the specific conditions precedent to the removal of the cross media restrictions listed by the Commission but would add a clarification to the first condition[10]. AUSTAR considers that the implementation of recommendations 4.2 and 4.3, which require FTA broadcasters to pay market price for all spectrum they are using, should be included in this pre-condition. FTA broadcasters should not move into a post cross media rules environment with their financial strength artificially enhanced by having the use of large amounts of public spectrum at less than market rates. All FTA protections should be removed before cross-media restrictions are lifted.

6 Content rules

AUSTAR agrees with the Commission's tentative view that Australian programming and other content regulation should not apply to subscription television. Australian content requirements are counterproductive in a multi-channel pay TV environment.

Subscription television provides multiple channels each catering to a different niche. In some of these niches, consumers will demand Australian content, in others they will not. It is inappropriate to impose Australian content restrictions in this environment because the market will determine the appropriate level of Australian content for the particular niche in question. Some AUSTAR channels have a high percentage of Australian content where there is no quota while others with a voluntary quota may not.

In addition, the current pay TV Australian content requirements operate simply as a privately funded industry assistance scheme. If the government wishes to provide assistance to the Australian television production industry the appropriate mechanisms are grants from general revenue or taxation incentives. Requiring another industry to provide a subsidy is unfair and creates market distortions.

7 Sequencing of reforms

AUSTAR has emphasised in this submission the need for the Commission's proposed reforms to broadcasting industry regulation to be correctly sequenced to avoid further favouring incumbent interests or decreasing diversity of voice during transition periods. AUSTAR has also emphasised the need to recognise the pragmatic reality that the most entrenched protections of FTA broadcasters will take some time to remove.

In light of these issues and to summarise the numerous reforms necessary to make the broadcasting industry fully competitive, AUSTAR has set in Schedule 1 an indicative timetable of reforms. AUSTAR considers that such a timetable, or ordering of reforms, would be a useful addition to the Commission's final report.

8 New Technologies

Technological developments are progressing and new services will be offered to consumers. An example of this are the interactive tv products that AUSTAR is proposing

[10] "removal of regulatory barriers to entry in broadcasting (see recommendations 4.4 and 7.1), together with the availability of spectrum for new broadcasters"

to launch commercially using its digital satellite platform, which will include data and ecommerce applications. These services together with internet services raise the issue of what is encompassed by the definition of "broadcasting" in the BSA, and whether internet services that contain video streaming will be caught within the definition. To remove or to include these services from regulation purely because a tv or a computer is used for reception does not seem to be equitable.

In AUSTAR's view internet services do not need to be licensed or overly regulated. However, as noted above in relation to anti-siphoning, it will create an uneven playing field if restrictions are maintained on the providers of traditional media (meaning pay tv and FTA) where there are no restrictions on the new technologies such as internet.

Similarly AUSTAR does not think that interactive tv services need to be licensed as they will be either ancillary to a pay tv channel, or will be ecommerce services that should be regulated by the nature of the transaction, not by the mere fact that it occurs through a particular technology. If, however, there is a perceived need to regulate interactive tv services then AUSTAR would recommend a class licensing regime, with all competition and ownership issues regulated under the Trade Practices Act and FIRB.

9 Indigenous broadcasting

AUSTAR supports the existence of indigenous broadcasting, but does not otherwise wish to comment in this submission.

Schedule 1 - Sequencing of Reforms

Reform / Decision	Order	Timing
1. Removal of foreign ownership restrictions.	1	Immediate.
2. Removal of anti-siphoning rules.	1	Immediate.
3. Removal of pay TV Australian content quota.	1	Immediate.
4. Mandating of digital simulcast of standard definition with all high definition broadcasts.	1	Immediate.
5. Liberal definition of Datacasting.	1	Immediate.
6. No 'incidental and directly linked" programming category.	1	Immediate.
7. Transfer of broadcast spectrum planning and allocation responsibility from ABA to ACA.	2	Between 2000 and 2002.
8. Split of FTA broadcast licences into spectrum licences and content licences.	2	Between 2000 and 2002.
9. Auctions of low efficiency broadcasting spectrum on the basis of clearance by owner.	2	Between 2000 and 2002.
10. Removal of restrictions on the issue of new FTA television licences.	3	Between 2000 and 2007.
11. Auctions held for remainder of broadcasting spectrum currently held by FTA broadcasters.	3	At same time as reform 10.
12. Removal of mandate for HDTV.	3	At same time as reform 10.
13. Removal of prohibition on FTA broadcaster multi-channelling.	4	3 months after completion of reforms 10 and 11.
14. Amendment to the Trade Practices Act 1974 to provide for a media specific public interest test.	4	3 months after completion of reforms 10 and 11.
15. Removal of cross media restrictions.	5	12 months after reform 14.

Annexure A - Ken McCann Article

PRODUCTIVITY COMMISSION BROADCASTING INQUIRY

DRAFT REPORT

SUBMISSION BY AUSTAR ENTERTAINMENT PTY LTD

DVB and MPEG:

Devising HDTV guidelines

BY KEN McCANN

The initial emphasis of the DVB standardization work was on standard-definition television (SDTV), because it was seen as the most pressing market need. However, the ability to support high-definition television (HDTV) was an agreed requirement from the very beginning of the DVB Project. Work to devise HD guidelines has proceeded within the Technical Module.

When the DVB Project revised its "MPEG Implementation Guidelines" in July 1997, it added explicit guidelines for HDTV and also for countries using a 30Hz video frame rate. The flexibility of the data-containers concept of the MPEG-2 transport stream allows different video resolutions to be mixed in the one transmission. This enables a simulcast approach to SDTV and HDTV to be adopted, with each version of the program independently optimized to provide optimum quality at a minimum total bit rate. (See Figure 1.)

Experiments were conducted using hierarchical coding, in which the HDTV signal uses the SDTV information as a base layer, an alternative to simulcast. However, the results showed that the self-contained simulcast approach was more effective unless the SDTV was either encoded at an unusually high bit rate or heavily filtered to make the SDTV picture deliberately soft.

MPEG profiles and levels

The MPEG-2 video coding standard was deliberately designed to be generic, that is, application independent. The goal was to achieve economies of scale and encourage interworking across as wide a range of different delivery mechanisms and quality requirements as possible. However, a consequence of this approach is that it is not practical to implement the full capability of the MPEG-2 standard with today's technology. For example, it would not be economically practical to

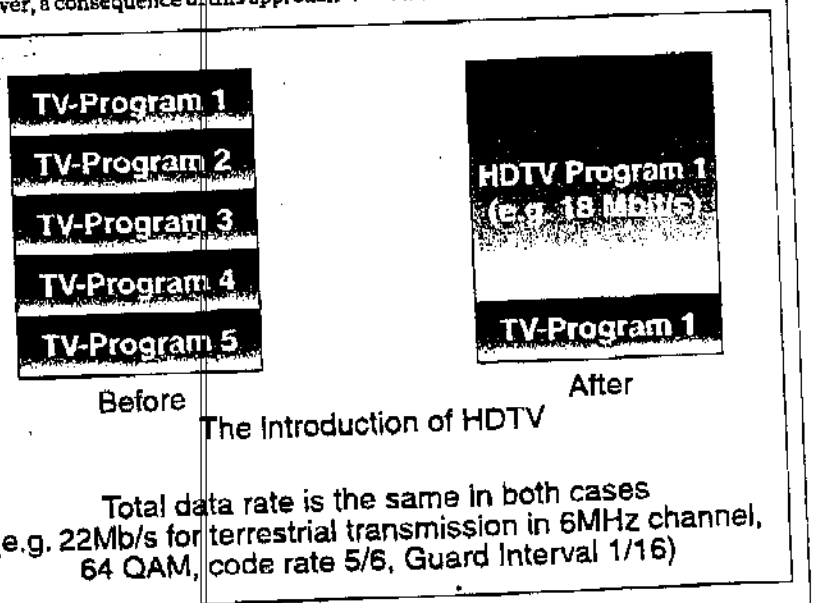

Fig. 1. HDTV in DVB Data Containers

implement a decoder that would be capable of decoding pictures at the maximum resolution that is supported by the standard (16,384 pixels by 16,384 lines). The MPEG-2 video standard has, therefore, defined a limited number of subsets of the standard that specify conformance points by means of profiles and levels. (See Figure 2.)

A profile defines a subset of the syntax, which may be used in the bitstream. For example, the Main Profile, which has been adopted by DVB for all distribution applications, includes the syntax for bi-directional prediction but excludes that for hierarchical coding. A level defines constraints on the values of parameters that may be used within the bitstream for a particular profile. For example, a Main Profile bitstream may have up to 720 pixels per line at Main Level but may have up to 1920 pixels per line at High Level.

DVB contribution applications may optionally use the 4:2:2 Profile, which supports 4:2:2 in addition to 4:2:0 video formats. It also allows significantly higher bit rates to be used, as is appropriate for signals intended to be edited or processed, especially if using special effects, such as chroma-key.

The simulcast approach of the DVB system has enabled the early launch, from 1995 onward, of digital services at standard definition by satellite, cable, terrestrial transmission and multipoint distribution systems (MDS) using microwaves. A common baseband format, based on MPEG Main Profile at Main Level (MP@ML) video, MPEG audio and the MPEG Transport Stream, is used across all delivery media. A relatively low-cost SDTV set-top box or integrated receiver-decoder (IRD) can decode the MP@ML video while an existing TV set can act as the display device.

In a subsequent simulcast SDTV+HDTV transmission, the SDTV IRD would continue to decode the MP@ML video stream from the transport stream while the more complex HDTV IRD or integrated HDTV set would decode the MP@HL signal. The simulcast components do not necessarily have to be in the same transport stream, but the DVB system provides the flexibility to allow a single transport stream to contain program material intended for different types of receivers.

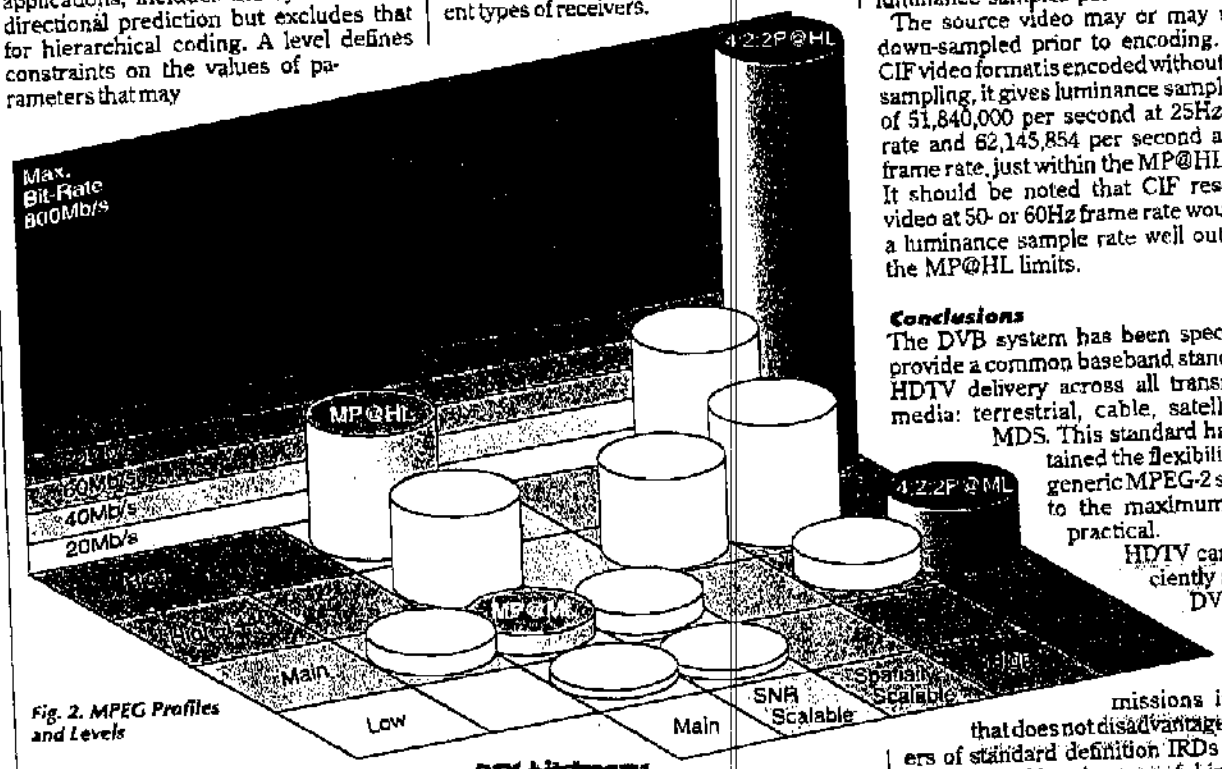

Fig. 2. MPEG Profiles and Levels

DTV bitstreams and IRDs

DVB SDTV bitstreams are required to comply with the restrictions of MPEG-2 Main Profile at Main Level, which sets upper limits of 576 lines per frame, 720 luminance samples per line and 10,368,000 luminance samples per second.

DVB has further restricted the possible number of luminance samples per line to one of the following sets: 720, 544, 480 or 352 (plus 640 at 30Hz frame rate). This was done to reduce the cost of the up-sampling process in the IRD needed to convert between the transmission format and the display format. Requiring the IRD to support only a small number of fixed up-sampling ratios was less onerous than requiring flexible up sampling to convert between any encoded format and the display format. Within the time-scale and cost targets for the SDTV IRD, the simplification was judged to be worth the loss of flexibility.

In the case of the HDTV IRD, different time scale and cost targets applied. This has led DVB to conclude that the HDTV IRD should be required to be capable of decoding all allowed formats within the constraint of MP@HL, which sets upper limits of 1152 lines per frame, 1920 luminance samples per line and 62,668,800 luminance samples per second.

There is no direct equivalent of ATSC's Table 3 of video formats. However, in line with the recent decisions by the ITU and DAVIC to endorse the Common Image Format (CIF), the single recommended source format for both 25- and 30Hz frame rates is 1080 lines per frame and 1920 luminance samples per line.

The source video may or may not be down-sampled prior to encoding. If the CIF video format is encoded without down-sampling, it gives luminance sample rates of 51,840,000 per second at 25Hz frame rate and 62,145,854 per second at 30Hz frame rate, just within the MP@HL limits. It should be noted that CIF resolution video at 50- or 60Hz frame rate would give a luminance sample rate well outside of the MP@HL limits.

Conclusions

The DVB system has been specified to provide a common baseband standard for HDTV delivery across all transmission media: terrestrial, cable, satellite and MDS. This standard has maintained the flexibility of the generic MPEG-2 standard to the maximum extent practical.

HDTV can be efficiently added to DVB transmissions in a way that does not disadvantage the owners of standard definition IRDs or prejudice the rapid and successful implementation of digital television at standard definition. Different parts of the world will proceed down the HDTV path at different rates, depending on the local broadcasting environments and legislative pressures. At the time of this writing, it looks likely that Australia will lead the way to operational HDTV transmissions in the DVB world. P21

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