

**Australian Broadcasting Corporation Submission**

**Inquiry into the Introduction of Digital Radio**

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



April 2005

# Australian Broadcasting Corporation Submission to the Inquiry into the Introduction of Digital Radio

## Executive Summary

- ❑ Australia should not adopt unique technology solutions that require the manufacturing of specialised receivers for the Australian market.
- ❑ Eureka 147 is currently the only digital radio system with widespread international support for which receivers are readily available. However, alternatives to Eureka 147 currently under development (e.g. DMB), may decrease the bit rate required for equivalent services, allowing more services in the available bandwidth.
- ❑ As it would be very costly to replicate the coverage of the ABC's existing analog AM services in remote and regional Australia using Eureka 147, the ABC is interested in exploring the potential of a hybrid Eureka 147/Digital Radio Mondiale (DRM) platform.
- ❑ VHF Band III transmission provides much better coverage than L-Band; its signal is more robust and can match existing FM coverage with a similar number of transmitters.
- ❑ Better technical quality is likely to be only one driver of digital radio take-up. Other important factors include new or enhanced content, including new audio services and ancillary data, such as multimedia content; ease of tuning; the possibility of "rewind" or audio recording; and the availability of affordable receivers.
- ❑ While a full conversion to digital radio is desirable over time, a managed introduction is likely. Maintenance of the current broadcasting sectoral diversity is important under a managed transition.
- ❑ Overseas experience suggests that digital radio requires both new services and simulcast analog services if it is to be relevant to the public.
- ❑ The ABC believes that under Eureka 147 each digital radio service needs to be allocated one-fifth of a multiplex (i.e. 256 kilobits).
- ❑ The ABC does not support Australia following the UK model of allocating separate multiplex licenses.
- ❑ Given the number of ABC radio services, it would be appropriate for the Corporation to control a complete multiplex. This would also provide the ABC with the flexibility to vary its services within the multiplex and to provide enhanced/multichannel programming from its existing services and new niche services.
- ❑ The ABC favours multi-platform distribution of its radio services; this provides audiences with a range of options, and promotes awareness and uptake of new digital services.

## Introduction

The Australian Broadcasting Corporation (ABC) has had a long-standing commitment to the development of digital radio in Australia. It convened the first industry conferences on the topic in the early 1990s, and has been an active participant in the Digital Radio Advisory Committee, the DR2000 L-Band trial in Sydney from 1999 and, more recently, the VHF Band III trials in Sydney and Melbourne.

The ABC, therefore, welcomes the commencement of a consultation process for the development of a policy and regulatory framework for the introduction of digital radio in Australia and this opportunity to contribute to that process.

The ABC supports the broad policy principles articulated by the Government in its consideration of digital radio issues, in particular:

- ❑ promotion of enhanced quality and diversity of services;
- ❑ encouragement of new services;
- ❑ availability to all Australians, regardless of where they live;
- ❑ the likelihood of a substantial period of co-existence with analog radio; and
- ❑ the important role in the introduction of digital radio of the incumbent national, commercial and community radio broadcasters.

The Corporation comes to this review in the firm belief that Australian audiences will be best served by a continuation in the digital environment of the mix of public, commercial and community broadcasting that has characterised analog radio.

The ABC also believes that the introduction of digital radio must be informed by lessons learned from the introduction of digital television in Australia and overseas. Better technical quality alone will never be a compelling reason for consumers to move to digital. It is instead one of a number of likely drivers of consumer take-up of the technology. Other important drivers include new or enhanced content, including program-associated data (text information and multimedia content); ease of tuning; the possibility of “rewind” or audio recording; and the availability of affordable receivers.

Finally, the ABC notes that decisions on technology and spectrum allocation are central to policy on the introduction of digital radio.

## Digital Radio Platform

The ABC does not believe that Australia should adopt unique technology solutions that require the manufacturing of specialised receivers for the Australian market. Australia is not a large individual market and experience in the UK has demonstrated that most radio listeners are not prepared to purchase expensive radio receivers. Australia will need to adopt a standard that allows for the adoption of receivers used and sold elsewhere in the world.

The ABC remains of the view that Eureka 147 is currently the only digital radio system with widespread international support for which receivers are readily available. The system offers spectrum efficiency as well as the potential for ancillary data (text information and multimedia) and new multi-channel audio services. If Australia is to proceed with digital radio in the immediate future, the only viable alternative is Eureka 147.

However, the ABC believes that the Eureka 147 system would be very costly to roll out in a way that delivers coverage equivalent to the wide spread of its existing analog AM services throughout remote and regional areas of Australia. At this stage in its development, the Digital Radio Mondiale (DRM) system is showing great potential for use in Australia in addressing the issue of coverage in regional and remote Australia. However, it is too early to unilaterally adopt DRM as a digital radio technology until it is more clearly accepted internationally for use on the AM band and receivers are readily available.

Eureka 147 using VHF spectrum is good for providing high-density urban coverage in the main population centres in Australia. Increasingly, the introduction of high-density housing is occurring not only in Australia's capital cities, but also in larger regional centres as well. By contrast, DRM is better suited to provide wide coverage in regional areas, as the signal will travel much further from a single transmitter. A great strength of the ABC's existing regional coverage is the ability to deliver its services, particularly ABC Local Radio on AM band, to vast tracts of the country using single, high-powered transmitters. It is important that this coverage is matched in a digital environment.

The ABC does not believe that the Eureka 147 technology can reasonably replicate the regional coverage currently achieved by its analog AM radio services. Therefore a solution that uses Eureka 147 and DRM in a complementary way may be necessary. While this complicates the receiver issue, the ABC notes that WorldDAB Forum and the DRM consortium announced in 2003 that they will cooperate in the promotion of digital radio receivers able to receive both DRM and Eureka 147 DAB signals. More recently, some receiver manufacturers have announced their intentions to develop a single cost-effective hardware platform capable of receiving DRM, Eureka 147 DAB, FM and AM broadcasts.

The ABC is interested in exploring the potential of a hybrid Eureka 147/Digital Radio Mondiale (DRM) platform. Currently there are only embryonic developments in this area but the ABC agrees with the Issues Paper's proposition that the selection of Eureka 147 technology would not rule out adoption of a hybrid Eureka 147/DRM system at a later time.

The ABC also notes that alternative technologies currently under development may alter the capacities of digital radio. The Korean DMB system uses MPEG4 video and related audio encoding standards, which allow for significantly greater bandwidth efficiency than the MPEG1 Layer II standard used currently by the Eureka 147 DAB system. Currently, DMB is being trialled in Korea and is proposed for testing in Germany. DMB is yet to become a successful platform in even its home market, but if it is adopted in Korea and other

countries, it might become an international standard supported by readily available receivers.

Similarly, DVB-H is expected to provide greater spectrum efficiency, and thus allow more higher-quality digital radio services, than Eureka 147; technical trials of DVB-H are underway in Germany (Berlin), Finland (Helsinki) and the USA (Pittsburgh), and are planned to begin in Sydney later in 2005 and France and the United Kingdom in 2006.

Equally, research currently underway into software-defined radio receivers may result in a digital radio receiver in the future that will be able to adapt to different digital radio compression systems that use the same transmission system; for example, a Eureka 147 receiver that could decode both DAB and DMB signals. However, the ABC is also mindful that this is an unproven commercial technology, with hardware yet to appear in the marketplace.

### **Summary**

Australia should not adopt unique technology solutions that require the manufacturing of specialised receivers for the Australian market.

Eureka 147 is currently the only digital radio system with widespread international support for which receivers are readily available. However, alternatives to Eureka 147 currently under development (e.g. DMB), may decrease the bit rate required for equivalent services, allowing more services in the available bandwidth.

As it would be very costly to replicate the coverage of the ABC's existing analog AM services in remote and regional Australia using Eureka 147, the ABC is interested in exploring the potential of a hybrid Eureka 147/Digital Radio Mondiale (DRM) platform.

### **Approaches to implementation**

The ABC is of the view that there will be a full conversion to digital radio over time. Unregulated, it is likely that the twin forces of the burden of maintaining dual infrastructure (for broadcasters, manufacturers and suppliers) and the rate of audience take-up of digital services would determine the ultimate timetable for existing broadcasters' conversion from analogue to digital-only services. As the Issues Paper notes, international experience suggests that the dual operation of analog and digital services is likely to continue for a significant period.

However, as the Issues Paper also notes, a full conversion approach from commencement would require sufficient spectrum to accommodate all incumbent analog broadcasters in digital. As noted elsewhere, prior to the eventual hand-back of analogue television spectrum, there are limits on available VHF Band III spectrum in Australia. Depending on the

deployment of L-Band transmission, a managed introduction approach may be required to address those current spectrum limitations and provide for future allocations as additional spectrum becomes available.

The ABC believes that there would be community expectation for the maintenance of the broadcasting sector's current diversity if that approach was taken.

The ABC would not support a market-based approach to the conversion to digital radio.

### **Summary**

While a full conversion to digital radio is desirable over time, a managed introduction is likely. Maintenance of the current broadcasting sectoral diversity is important under a managed transition.

## **Spectrum Availability and Performance**

Decisions on technology and spectrum allocation are central to policy on the introduction of digital radio.

The ABC believes that VHF Band III transmission provides much better coverage for the national broadcaster than L-Band. The Band III signal is more robust and is able to provide a level of coverage close to that of existing FM services with a similar number of transmitters. In contrast, the relatively limited coverage of L-Band requires multiple transmitters to match current FM coverage areas; this will increase the infrastructure costs of implementing digital radio using L-Band.

Additionally, there are few dual L-Band and Band III receivers currently available. Further, those receivers that are currently available are not seamless in their transition from one band to the other, are more difficult to operate and require knowledge of the different services available on each band. This seems to negate one of the appealing aspects of digital radio identified by participants in the two Band III trials currently underway in Sydney and Melbourne, namely ease of tuning.

However, the ABC acknowledges that there is limited Band III spectrum currently available in Australia: Channel 9A is the only channel available in the major metropolitan markets of Sydney, Melbourne, Brisbane, Perth and Adelaide and there is no spectrum available in the adjacent markets. Further, Channel 9A is insufficient for all current national, commercial and community broadcasters in the major metropolitan areas at satisfactory bit rates. Sufficient Band III spectrum for all radio broadcasters will only become available after the completion of the conversion to digital television and the switch-off of analog television.

**Summary**

VHF Band III transmission provides much better coverage than L-Band; its signal is more robust and can match existing FM coverage with a similar number of transmitters.

**Multiplex Operation and Regulation****Bit Rate Allocation**

The Issues Paper summarises the original planning models used for digital radio in Australia, which were based on the allocation of one-fifth of a multiplex for each existing radio service. Recent audio testing has confirmed that for music services such as ABC Classic FM, most of the 256 kbps that this allocation provides must be used for the music audio stream. In the more than ten years since the first generation of MPEG1 Layer II audio compression codecs were tested, improvements in codec technology have not resulted in significant bit rate savings. Accordingly, when delivering such programming, few bits are available for allocation to the transmission of program-associated data.

Market research in Australia to date indicates that audio quality is an important factor in the take up of digital radio. The ABC has noted with concern reports that the lower bit rates allocated to audio services in the UK have resulted in a degradation in sound quality. The Corporation believes that allocating spectrum for new services in any way that assumes data rates for content of less than CD quality should not be contemplated until after more is known about audience response.

Most ABC services incorporate some music programming. Radio National and the Local Radio networks, sometimes characterised as “talk services”, include some specialist music programs such as *Saturday Night Country* on Local Radio and *Live on Stage, Music Deli, The Music Show, Nocturne, The Planet, Quiet Space, Rhythm Divine, Singers of Renown* and *Sound Quality* on Radio National. Both of these networks have extensive FM transmitter networks in regional Australia, although they are broadcast on AM in most capital cities.

As a consequence, the ABC continues to believe that each service needs to be allocated one-fifth of a multiplex.

The ABC acknowledges that some compromises in this principle may be considered in light of the initial scarcity of Band III spectrum. There may, for example, be a public interest argument for requiring multiplexes to carry more than five services operating at lower bit rates in the interest of encouraging the rapid take-up of digital radio. The ABC would be opposed to such a solution on anything other than a short-term basis.

The ABC notes that potential emerging technologies, such as DMB and DVB-H, employ compression systems that allow much greater spectrum efficiency for digital radio services.

However, these systems are not yet successfully operating in any country, and receivers are not yet commercially available.

### **Summary**

The ABC believes that under Eureka 147 each digital radio service needs to be allocated one-fifth of a multiplex (i.e. 256 kilobits).

### **Multiplex Licensing and Spectrum Allocation**

The introduction of multiplex operators and licensees with digital radio will greatly complicate the relationship between content and carriage. The ABC does not support Australia following the UK model of allocating separate multiplex licenses. However, it also sees some difficulties in the arrangement of multiplex management.

The ABC proposes that the bit-rate capacity assigned to a service be linked to a particular frequency and multiplex. Under this model the broadcaster owns and cannot on-sell its bit rate to a third party for a fixed period while digital radio is becoming accepted by the Australian public. The broadcasters who are allocated capacity on a single frequency and multiplex effectively co-own the transmitter licence under a “body corporate” type model, which would permit new entrants to join as licences were allocated.

This model alleviates the need for a separate multiplex licence, and provides broadcasters with control over arranging transmission provision through a third party or a consortium arrangement. It also recognises that the broadcasters who are assigned capacity under the development period are existing broadcasters who will not be paying a market fee for access to the spectrum. Under these circumstances, they must carry some obligation to use the resource for the purposes intended.

Under this arrangement, there would also be complete flexibility as to who was engaged to provide multiplex services. The multiplex provider would have no powers to redistribute capacity and would be a simple service provider. Those broadcasters allocated capacity should have some flexibility as to how they use the capacity for their services within the multiplex and redistribute capacity for short-term use within the multiplex. For example, the services could all reduce bit rates to allow one service capacity to broadcast an enhanced or alternative program stream.

The ABC foresees a number of potential difficulties with the multiplex licensing model that would prevent the ABC from occupying a multiplex with commercial radio services. While spectrum allocated to the ABC is part of the Australian Broadcasting Authority’s Local Area Plan (LAP) process, which is based on geographic regions of common interests, the ABC’s services do not correspond those geographic boundaries. For example, most of the ABC’s

Local Radio stations service much larger areas in regional Australia than do regional commercial radio stations. Many regional and remote areas serviced by the ABC are not covered by any commercial radio services. The ABC regards its services as being available to all Australians, and seeks to ensure that hence Australians living in smaller regional and remote communities with populations of as few as 200 persons can reasonably expect to be able to access terrestrial free-to-air ABC Local Radio.

The Corporation thus proposes that all ABC services are carried on the same multiplex, allowing the flexibility for ABC radio networks to provide a range of enhanced or multi-channel services that may vary across the networks. The flexibility of the digital spectrum would enable the ABC to vary its services within the single multiplex and provide multi-channel programming, including 'break-out' programming from its existing services and new niche services, such as *dig* and the sport, jazz and country music channels outlined below. The fixed-spectrum-per-service model severely limits the ability to do this and largely restricts the benefits of the medium to improved sound quality and better reception.

It is also a matter of equity of access that all of the ABC's digital radio services be provided throughout the country. This means that the ABC needs to fully occupy its own multiplex in regional areas as well as in the capital cities.

The ABC also notes potential problems with some community broadcasters cohabiting multiplexes, as they may have licenses for sub-regional or sub-metropolitan areas that need to be accommodated. Community broadcasters would fit within the multiplex model if the only option was to use the same coverage as a commercial or national service. Community broadcasters might have a licence to serve only part of a commercial licence area but for spectrum management reasons need to share sites and multiplex capacity at one or more of the sites making up the commercial/national coverage of a market. This issue would have to be addressed on a case-by-case basis once technical planning options for smaller coverage units were exhausted.

### **Summary**

The ABC does not support Australia following the UK model of allocating separate multiplex licenses.

Given the number of ABC radio services, it would be appropriate for the Corporation to control a complete multiplex. This would also provide the ABC with the flexibility to vary its services within the multiplex and to provide enhanced/multichannel programming from its existing services and new niche services.

## National and Community Broadcasters

Australia has been well-served by its mix of public, commercial and community broadcasting in the analog radio environment, and the ABC and its audiences would expect to see that mix continued in the digital environment.

The ABC Charter requires it to be a comprehensive broadcaster, covering as wide a range of content areas and audience interests as possible, and to provide a balance of programs of wide appeal and specialised programs. The ABC is therefore both a mainstream broadcaster, maintaining broad community relevance, as well as a niche broadcaster.

For ABC Radio, broadly speaking, Local Radio and *triple j* are the networks which focus most on broad community relevance, although both provide specialist programming (for example, rural and Indigenous programs on Local Radio and various specialist music programs on *triple j*). Radio National is a specialist journalism and arts network, ABC Classic FM specialises in classical music and ABC NewsRadio is Australia's only continuous news and current affairs radio station.

The ABC would welcome the potential of digital radio to provide new niche services to meet the needs of audiences that are currently not adequately served. However, as a mainstream broadcaster, neither the ABC nor its audiences would expect its services to be relegated to analog while other mainstream broadcasters were to be migrated to digital. Moreover, as outlined below, much of the new programming the ABC would like the opportunity to provide via digital radio is "break-out" multi-channel programming from its existing services, which would also need to be on digital to provide benefits to audiences.

The ABC proposes that all ABC services are carried on the same multiplex, allowing flexibility for ABC radio networks to provide a range of enhanced or multi-channel services that may vary across the networks, as well as new niche services such as *dig*, sport, jazz and country music channels, as outlined below.

The cost of a national roll out of ABC services on digital radio are difficult to estimate without any clear indication of spectrum delivery – VHF Band III, L-Band or a mix of both, as well as possible DRM delivery. They would also be subject to the usual tender considerations by which the ABC is bound. Additional distribution costs are likely to be incurred in delivering multiplexed content that carries the appropriate Local Radio service for each transmitter around the country. Production and delivery of program-associated data would require some capital investment, except in areas where production and programming is highly automated, such as *dig*.

Content for break-out programming, as outlined below, already exists in most cases and would have little cost implication, apart from some additional rights costs, particularly for sport. Automated scheduling and play-out systems, particularly for music services, and

leveraging from existing content could keep costs for new services to a minimum although there would be some, relatively modest additional staffing costs.

### **Summary**

The ABC would welcome the potential to provide new niche services using digital radio. However, as a mainstream broadcaster, its services cannot be relegated to analog, if other mainstream broadcasters are to be migrated to digital.

## **Drivers of Take-up and Content Regulation**

### **Consumer interest in digital radio**

As the Issues Paper notes, the key drivers of consumer take-up appear to be the availability of services or capabilities that are unique to digital systems, the price of receivers and audio quality.

In the UK, which has had the most successful implementation of digital radio to date, the take-up of digital radio increased dramatically in the last few years with the introduction of multiple new digital-only services and lower receiver costs. Both the BBC and the national commercial operator, Digital One, offer a wide range of new services: the World Service, Sports Extra, BBC6 Music, One Extra (a black youth service), the Asian Network and BBC7 (drama, comedy and book readings) from the BBC, and 'retiree' radio, easy listening and top hits stations, light and heavy rock stations and a drama/book readings station from Digital One. Local digital stations are also proliferating, with more than 400 throughout the country.

However, it must be noted that, as well as digital-only services, the BBC also broadcasts its domestic analog services (BBC1 to 5) on digital and Digital One simulcasts Classic FM, Virgin Radio and TalkSport. These represent the most popular radio services in the UK and are an indication of the need to provide existing mainstream services on the digital platform, as well as new services, to attract large audiences and ensure take-up.

A instructive example of where this did not happen is Finland, where DAB transmissions have recently been discontinued. Finnish commercial radio had not adopted DAB and the only new services provided by the public broadcaster YLE, were niche services, such as minority language services and parliament.

Market research conducted in both the Sydney and Melbourne trials so far has indicated a relatively high awareness of digital radio and interest in purchasing a receiver. Expectations of digital radio were essentially positive, initially centring on better reception and sound quality. However, recent promotion of digital free-to-air and subscription television has also led to an expectation of a greater choice of program content. Better sound quality, clearer

reception, tuning by station name, an information screen and a 're-wind' or stored audio function were also key features for respondents.

While these features are clearly attractive, the ABC does not believe that they alone will warrant widespread consumer investment in the technology (however affordable) and drive its uptake.

The ABC is of the view that the provision of new, different and compelling content, either in the form of ancillary data – especially multimedia content – or new audio services will be key in attracting audiences and driving take-up. The ABC is well placed to provide such new services, as it currently produces a lot of content that competes for airtime on its existing stations.

As noted above, the capacity necessary to broadcast its existing five domestic services (Local Radio, Radio National, ABC Classic FM, *triple j* and ABC NewsRadio/PNN) would require the ABC to fully occupy its own multiplex in each broadcast area. The flexibility of the digital spectrum would enable the ABC to vary the bit rates of its services within that single multiplex and provide multi-channel 'break-out' programming in the form of simultaneous broadcasts. Possible examples include:

- ❑ NewsRadio's continuous news programming and Parliament;
- ❑ NewsRadio and AFL coverage;
- ❑ both Rugby League and AFL in the one market;
- ❑ local information programming and sports or rural broadcasts on Local Radio;
- ❑ specialist music programs (opera, jazz, hip-hop, heavy metal, etc) as well as general music programs on Classic FM and *triple j*.

The ABC is also keen to explore opportunities to provide services to meet the needs of audiences that are currently not adequately served.

The ABC's internet-based radio station *dig*, also broadcast on the digital television spectrum as an audio service, is a prototype of just such a service. *dig* plays a diverse range of music – rock, pop, jazz, soul, blues, country, folk and more – all with a strong Australian focus – for over-30 year olds. The ABC established *dig* because there is a considerable segment of the radio audience who want an interesting, eclectic and alternative mix of music that they cannot get from existing radio services, whether ABC, commercial or community stations, on a consistent basis.

*dig* has also recently launched specialist jazz and country music services which, along with sport, are content areas in which the ABC has expertise and an established track record both as a broadcaster and publisher. These are examples of the sorts of niche services the ABC could provide via digital radio.

In the digital media environment, program content can no longer be thought of as belonging exclusively to one platform or another, and the capacity to produce content for multiple platforms is vital for a cross-media organisation like the ABC. ABC Radio has been developing production models and a multi-skilled workforce to produce content that sits comfortably not only on radio, but also on television, the internet and a variety of other emerging platforms, such as mobile phones and MP3 players.

The Korean DMB approach, described above, may result in more sophisticated screen displays for digital radio, as may systems being trialled in the UK by a consortium of the GWR radio group and British Telecom. Digital Radio Broadcasting Australia is also exploring the development of receivers with multimedia capable screens. During the Sydney trial, the ABC has conducted experiments in delivering web pages (including text and graphics) from *dig's* "Now Playing" page to hand-held PC-based receivers; the results have been highly encouraging.

ABC Radio has been planning for the multimedia capacity of digital radio for some time and has developed some solid expertise in the area through ABC Online. ABC Online is one of the largest and most popular content sites in Australia and about half of its content is generated by ABC Radio. There are now broadcasters across all radio networks, whose work is a combination of radio and online reporting and production. These broadcasters are skilled in producing text, graphics, video and multimedia content to accompany broadcast programs. With digital radio, such content will potentially become an integral part of the whole radio experience.

### **Summary**

Overseas experience suggests that digital radio requires both new services and simulcast analog services if it is to be relevant to the public.

Better technical quality is likely to be only one driver of digital radio take-up. Other important factors include new or enhanced content, including new audio services and ancillary data, such as multimedia content; ease of tuning; the possibility of "rewind" or audio recording; and the availability of affordable receivers.

The ABC is well placed to provide enhanced/multichannel programming from its existing services and new niche services.

### **Audio services and simulcasting**

As the Issues Paper notes, most countries that have adopted the Eureka 147 technology have a mixture of simulcast and unique-to-digital services and the ABC is of the view that, if possible, this is the optimal arrangement for digital radio. As noted above, the most successful implementation of digital radio to date – the UK – has benefited greatly from the

availability of existing mainstream, popular services as well as new digital-only services simultaneously on the digital platform. In other places where digital radio appears to have been faltering, such as Finland, the focus for digital has tended to be almost exclusively on new niche services.

As noted above, in the absence of regulation, it is likely that the twin forces of the burden of maintaining dual infrastructure (for broadcasters, manufacturers and suppliers) and the rate of audience take-up of digital will determine the ultimate timetable for conversion from analog to digital-only by existing broadcasters.

While the ABC views digital radio very much as a predominantly audio service, it would be disinclined to recommend mandatory limits on non-audio data delivery via the digital spectrum. As noted above, the ABC has developed a solid expertise and track record in the delivery of multimedia content, which will potentially be an integral part of the whole radio experience in the digital environment and come to be expected by audiences. The setting of mandatory limits on non-audio data would be attempting to second-guess how the medium and its use by audiences will develop.

### **Data-only Services**

As spectrum for existing radio services is limited, it is premature to be considering and commenting on the potential for data-only service providers. Digital radio should be seen as a predominantly audio service with program and service information related data in the form of text and images.

### **Other Regulation Issues**

As this section of the Issues Paper is concerned with regulation relating to commercial, narrowcast and community broadcast licences, the ABC has no comment to make.

### **Digital Audio Services**

The ABC's responsibility to ensure the availability of its services to all Australians is particularly challenging at a time when new media developments are provoking major changes in audience behaviour. Younger audiences, in particular, are no longer wedded to traditional means of receiving their entertainment and information. Broadband internet and wireless telephony provide a growing variety of means for audiences to customise not only the content they receive but also the format in which they receive it.

However, a cross-media organisation like the ABC, with its capacity to produce content for multiple platforms, is well placed to meet the challenges and grasp the opportunities of new media developments.

The Corporation is of the view that multi-platform distribution of its radio services not only provides audiences with a range of options for accessing the national broadcaster, but will also promote awareness and uptake of new digital services.

In the UK, all national BBC and Digital One digital radio services are also available via free-to-air digital television (Freeview) and research indicates that as much as 25% of digital radio listening is via digital television. The ABC is currently broadcasting *dig* and *dig jazz* on digital television as an audio service and would like to include all its analog radio services on the platform. The legislative requirement to simulcast high definition and standard definition, and the recent launch of the ABC's second digital television channel, ABC2, currently restrict the number of radio services that can be carried in this way. All ABC Radio services are now available via satellite on FOXTEL subscription digital television and will be available on AUSTAR by mid-year.

The ABC is taking the same approach to the presence of its services on the internet. As a means of extending the value of its broadcast activities, the ABC has pioneered the provision of high-quality content to the internet in Australia and, with accelerating broadband take-up, this is increasing. Most networks are streamed live and programs on demand are now a standard feature of all networks, particularly of Radio National and *triple j*.

More recently, ABC Radio (Local Radio, Radio National, *triple j* and *dig*) has also been making content available through podcasts. Podcasting is an automated delivery of specific audio content via the internet for download to a portable digital player; it combines media streaming technology with news feed software to send audio and video files.

*triple j* also offers tailored content, such as music news, reviews and program information, to mobile phones. With 3G carriage from most telecommunications providers planned later this year, *triple j* will be offering a media-rich package, including audio and video, produced by *triple j* and re-versioned for the service.

However, when compared to the one-to-many nature of broadcasting, one-to-one internet and mobile telephony services have limitations, both in terms of availability and costs to consumers and providers. The ABC views these platforms and services as complementary extensions of its radio services rather than as replacements for the current broadcast model. As such, the ABC will continue to develop and distribute content utilising these platforms, to enhance the availability and utility of its radio services and promote awareness and take-up of new digital services.

### **Summary**

The ABC favours multi-platform distribution of its radio services; this provides audiences with a range of options, and promotes awareness and uptake of new digital services.

**Satellite radio**

To ensure reception, particularly by portable or handheld receivers, satellite digital radio requires much stronger signals than those currently used to deliver content to direct-to-home remote area audiences. This is likely to impose sizeable and ongoing costs on broadcasters. As Australia is a small market, it is doubtful that commercial digital satellite radio services would become financially viable in this country. Given its substantially greater market size, current United States experience does not provide a useful comparison.