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**NATIONAL BROADBAND NETWORK**  
**REGULATORY REFORM for 21<sup>st</sup> CENTURY**  
**BROADBAND**  
**Discussion Paper**

**Submission by: Australian Mobile Telecommunications Association**

**June 2009**

# 1. Introduction

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- 1.1 AMTA is the peak industry body representing Australia's mobile telecommunications industry. AMTA's mission is to promote an environmentally, socially and economically responsible and successful mobile telecommunications industry in Australia. AMTA members include mobile Carriage Service Providers (CSPs), handset manufacturers, retail outlets, network equipment suppliers and other suppliers to the industry. For more details about AMTA, see <http://www.amta.org.au>.
- 1.2 The Australian Mobile Telecommunications Association (AMTA) welcomes the opportunity to comment on the National Broadband Network (NBN) Regulatory Reform for 21<sup>st</sup> Century Broadband Discussion Paper (the NBN Paper).
- 1.3 AMTA concurs with comments made by the Minister for Broadband, Communications and the Digital Economy at the recent Radcomms Conference regarding the role of mobile telecommunications in the context of Australia's communications future including the NBN project.<sup>1</sup>

*The National Broadband Network is a transformational project for the sector and will provide the foundations for productivity and efficiency across the economy.*

*Of course, while this is a crucial project, the National Broadband Network is not the only measure necessary to underpin Australia's communications future.*

*The Government is also addressing the necessary wireless and spectrum issues that will enable our nation to move confidently into the next phase of the connected economy.*

*There is no doubt about the complementary nature of wireless and fixed line communications.*

*In fact, this is clearly demonstrated in our vision for the National Broadband Network.*

*Equally, mobile broadband offers many benefits for users to access services and applications wherever they choose.*

*Indeed, the ability to switch between fixed and wireless networks is becoming increasingly commonplace in mobile devices such as PDAs and laptop computers<sup>1</sup>.*

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<sup>1</sup> Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, RadComs09

## 2. Background

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- 2.1 The mobile telecommunications sector will play a significant role in the NBN project.
- 2.2 In responding to the specific questions raised in the NBN paper on spectrum allocation and facilities access regime AMTA has sought to also provide some context in relation to industry's spectrum needs based on demand for advanced mobile telecommunication services, particularly mobile broadband.
- 2.3 Given the complimentary relationship of mobile and fixed broadband services and the central role both will play in Australia's digital economy it is essential the NBN project take full account of the use and management of spectrum to support mobile broadband.
- 2.4 The impact of the latest generation mobile services is pervasive, contributing significantly to economic growth and productivity as a key enabling technology. As well as delivering both directly and indirectly to Australia's economy, mobile telecommunication services are also providing unprecedented connectivity with significant social benefits.
- 2.5 Mobile telecommunications have become central to Australia's capacity to compete in the global marketplace, its capacity to drive productivity via the digital economy and its capacity to meet the connectivity needs of governments, services, businesses, communities, families and individuals.
- 2.6 For example, mobile voice and broadband applications are currently helping to connect remote communities, enabling remote medical diagnosis, delivering educational benefits, facilitating logistics and personnel planning and assisting with criminal investigations. Individuals and organisations also benefit from the social and productivity benefits associated with mobile connectivity via voice and mobile broadband applications.
- 2.7 The rapid rise of mobile broadband services is strongly supported by consumers and the industry has responded by offering a range of latest generation competitive products and services and driving enhanced consumer value and choice.
- 2.8 Future spectrum allocations are critical to realising the full potential of mobile telecommunications through the convergence of two of the most influential technological developments of the digital age - the mobile phone and the internet.

### 3. The mobile telecommunications industry

- 3.1 The mobile telecommunications industry makes a substantial direct contribution to the Australian economy, contributing \$6.5 billion to Australia's Gross Domestic Product in 2006-2007 and employing over 22,000 people<sup>2</sup>.
- 3.2 The sector delivers a wide variety of mobile telecommunication services to both business and personal users in Australia, including voice services, Short Messaging Service (SMS) and Multimedia Message Service (MMS), mobile broadband, mobile TV and mobile commerce.
- 3.3 Although voice remains the primary use of mobile devices, there is increasing up-take of other services, with recent significant growth in data and mobile broadband services. This trend is set to continue with strong consumer demand for 3G technology and advanced mobile data applications including mobile broadband.
- 3.4 The number of 3G subscriptions grew by 88% in 2007-08 from 4.6 million to 8.6 million and there are now 22.12 million mobile phone services in Australia as at June 30 2008, up from 21.26 million.<sup>3</sup>
- 3.5 The welfare gained by customers (consumer surplus) from using mobile telecommunications services in 07/08 was \$3,287.80 million compared to \$317.50 million for internet services. The majority of the increase in the consumer surplus is attributable to changes in the mobile telecommunications sector as prices fell and subscriber demand grew. In estimating the consumer surplus for mobiles, the Australian Communications and Media Authority (ACMA) calculated that mobile phone calls fell in price by 21.5% and the price of SMS/MMS decreased by 41.5%.<sup>4</sup>
- 3.6 The advancement of mobile telecommunication services and devices has led to significant indirect economic impacts estimated at \$7.7 billion in 2007, including substantial productivity gains for Australian businesses, for example, some firms have reported as much as a 25 percent productivity gain from using applications on 3G phones<sup>5</sup>. Access Economics also suggests by 2010, mobile data will be contributing a further \$2.1 billion to Australia's economic performance<sup>6</sup>.

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<sup>2</sup> *Australian Mobile Telecommunications Industry: Economic significance and contribution*, Report by Access Economics for AMTA

<sup>3</sup> *Communications Report* ACMA 07/08

<sup>4</sup> IBID

<sup>5</sup> *Australian Mobile Telecommunications Industry: Economic significance and contribution*, Report by Access Economics for AMTA

<sup>6</sup> IBID

## 4. Spectrum Allocation

4.1 AMTA notes *Object 1* of the Radiocommunications Act 1992;

*The object of the Act is to provide for management of the radiofrequency spectrum in order to:*

*1. maximise, by ensuring the efficient allocation and use of the spectrum, the overall public benefit derived from using the radiofrequency spectrum*

4.2 AMTA has given in principle support to spectrum management and allocation principles articulated by the ACMA as follows;

(a) *Allocate spectrum to the highest value use or uses;*

(b) *Enable and encourage users to move spectrum to its highest value use or uses;*

(c) *Use the least cost and least restrictive approach to achieving policy objectives;*

(d) *Balance certainty and flexibility;*

(e) *Balance the cost of interference and the benefits of greater spectrum utilisation.*

4.3 In principle, AMTA supports allocating spectrum to its highest value use. Typically, the best means of determining the highest value use for new spectrum allocations is to use a market-based approach. Such an approach is also the most appropriate means of encouraging competition between different, but economically viable, technologies.

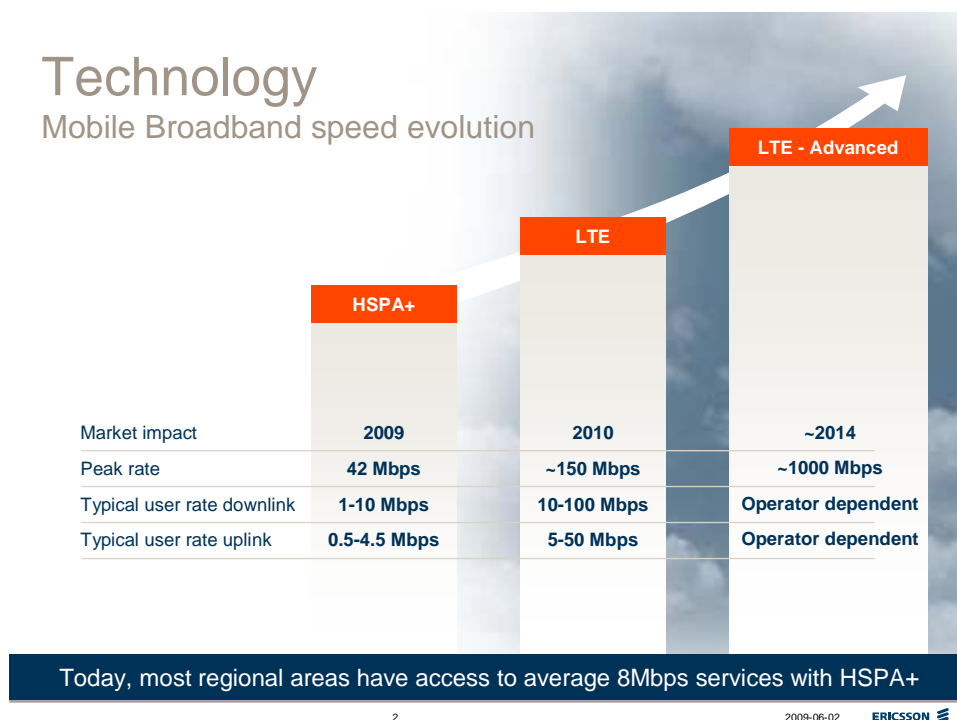
4.4 Next generation wireless networks such as Long Term Evolution (LTE) are spectrum intensive. Mobile network operators in Australia will require more spectrum if they are to deploy and optimise the capacity and use of next generation wireless technology.

4.5 The success of Australia's spectrum management policy over the last two decades has largely been attributable to a move away from 'command and control' approaches to market-based principles. Reversing this trend may adversely impact the deployment of innovative technologies or services.

4.6 Against the background of a highly competitive mobile telecommunications sector, strong demand growth driving significant investment in network infrastructure and applications, the far reaching and fast moving mobile technology pathway and spectrum scarcity, the reservation of spectrum specifically for the NBN project is not supported.

4.7 Reservation of NBN specific spectrum would be inefficient, wasteful and not in consumers' interest. High quality commercial mobile broadband services are available today and also have a clear evolutionary path to deliver even higher bandwidth services in the near future. Allocation of NBN specific spectrum would not align with the Radiocommunications Act – see 4.1.

4.8 The chart below depicts technology performance expectations for upgrades and future technologies which will deliver significant increases in speed, demonstrating that the existing industry will be well placed to meet the NBN requirements in the future, provided the necessary spectrum resources are made available in a timely manner.



## 5. Key Spectrum Issues

5.1 As noted in the NBN Paper the Government is currently considering a number spectrum allocation issues critical to the latest and future generation mobile telecommunication services in Australia.

5.2 Specifically three of the most significant spectrum management issues facing the Government are;

- (a) the confirmation of policy approach and process that will be adopted on the expiration of current 15 year spectrum licences;
- (b) the future use of digital dividend (700MHz) spectrum, and

- (c) the future spectrum needs of the mobile industry with respect to re-planning the globally harmonised band 2500-2690 MHz currently used in Australia for electronic news gathering.

## **6. Spectrum Licence Re-Issue**

6.1 AMTA believes the Government should adopt a policy position that supports the reissue of spectrum licences used for the supply of mobile telecommunications. The adoption of such an approach would:

- (a) support the existing investments in mobile networks and maintain the community benefits derived from their operations;
- (b) reduce commercial uncertainty for mobile carriers, promoting greater incentive for investment in next generation mobile networks;
- (c) secure the necessary lead time required to allocate capital for investment in spectrum; and
- (d) avoid the need for multiple decisions over the period 2013-2018 that each require a public interest test by AMCA on the merits of re-issuing specific spectrum licenses to individual mobile carriers.

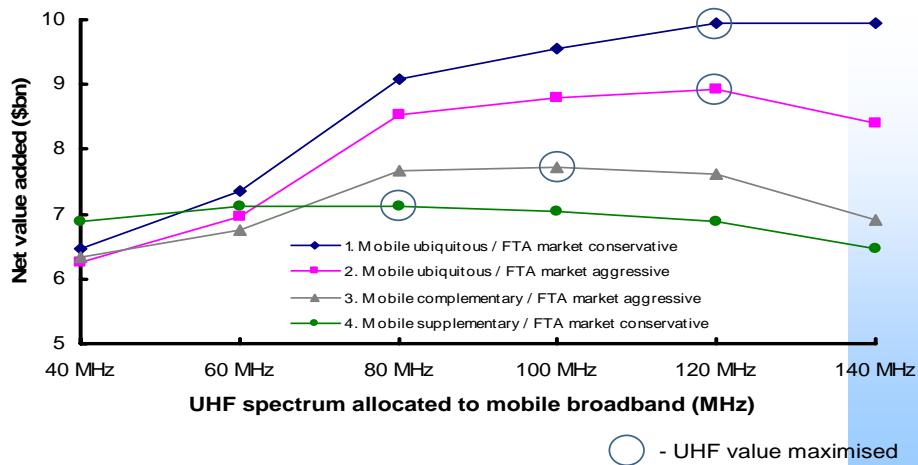
6.2 AMTA would then encourage the Minister to make a determination using existing powers under section 82(3) of the *Radiocommunications Act 1992* (the Act) that public mobile telecommunications (including future mobile broadband) services are a class of services where re-issuing of incumbent spectrum licences would be in the public interest.

6.3 AMTA recommends that the process of making a determination be completed well in advance of the expiry of the first spectrum licence in 2013.

## **7. Digital Dividend (700MHz)**

- 7.1 The spectrum to be freed as part of the digital dividend represents a once-in-a-generation opportunity for a significant reallocation of spectrum to allow the introduction of new and enhanced mobile broadband services post-analogue switch-off.
- 7.2 The spectrum released by the digital dividend in and around the 700MHz band offers an excellent balance between transmission capacity and distance coverage. These good signal propagation characteristics mean significantly fewer base stations and infrastructure are required to provide wider mobile coverage, especially throughout rural and regional areas.
- 7.3 A report by international economic consultants, Spectrum Value Partners and commissioned by AMTA, found that by modelling a number of mobile and broadcast market scenarios Australia's economy would be boosted by up to \$10 billion if at least 120MHz of useable spectrum was unlocked from the digital dividend to support mobile broadband use.
- 7.4 The report derived an 'optimal split' of digital dividend spectrum between mobile telecommunications and broadcasting use and found that spectrum allocation is 'optimal' when the net economic value generated from combined mobile and broadcasting services use is at a maximum.
- 7.5 In rural areas, where population density is lower, the propagation characteristics of digital dividend spectrum are more critical for mobile coverage. As a result, the report found that the maximum net economic benefit will be realised with an allocation to mobile of 140MHz of usable spectrum.
- 7.6 The exhibit below illustrates the net value added to the Australian economy by allocating a varied amount of the digital dividend UHF spectrum for mobile broadband services under different overall market scenarios.

## Getting the most out of the digital dividend



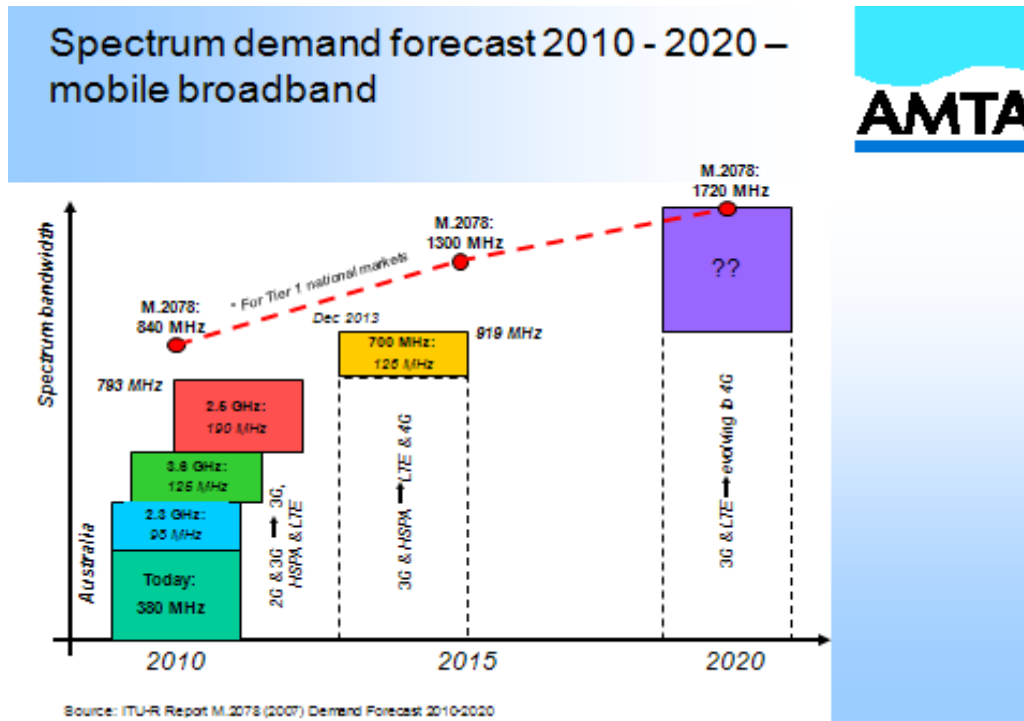
Source: Spectrum Value Partners, 2009 *Getting the most out of the Digital Dividend in Australia*

7.7 The modelling approach adopted in the report is conservative and intentionally favours the broadcast industry. Thus, the range of allocation of digital dividend spectrum to mobile operators could reasonably be taken as a minimum allocation range.

7.8 In relation to the digital dividend, AMTA considers that:

- (a) there is real demand and clear public interest in not retaining the digital dividend as a broadcasting-only band post analogue switch off;
- (b) retaining digital dividend spectrum as a broadcasting-only band would deny Australia the economic and productivity benefits that advanced wireless broadband technology will deliver;
- (c) spectrum should be allocated in contiguous 2 x 20 MHz blocks that will maximise support opportunities from the deployment of advanced wireless broadband technologies such as LTE operating in the Frequency Division Duplex (FDD) mode.

## 8. Spectrum Demand



- 8.1 The International Telecommunications Union (ITU) conducted a four year peer reviewed study of future mobile broadband spectrum needs that: considered a range of market densities and user traffic rates ; used a detailed breakdown of 20 service categories; assumed low, medium and high growth scenarios; accommodated different domestic market parameters
- 8.2 The graph's curve line is the total forecast wireless spectrum demand in dense 'Tier 1' markets (includes Australia). The key message is that ALL of the existing allocated mobile spectrum, the fixed wireless access (2.3GHz) eg WIMAX, the announced regional wireless access band (3.6GHz), plus the globally earmarked 2.5GHz/2.6GHz band and the 700MHz Digital Dividend band are required to accommodate the explosive ongoing forecast growth in mobile broadband services in the first half of this 10 year planning period.
- 8.3 In other words forecast demand for spectrum available for IMT continues to exceed current allocations globally as well as in the Australian context. Moreover, this 2006 ITU study is likely to be conservative as the actual changes in demand for advanced mobile services, particularly mobile broadband, are tending to exceed forecasts.
- 8.4 Another key aspect of spectrum allocation is the alignment of Australia's digital dividend spectrum with global trends in spectrum allocation. Internationally, spectrum arising from the digital dividend has already been identified for use by

International Mobile Telecommunications (IMT), and AMTA notes that nine administrations in our region (including New Zealand, Japan, Korea, China and India) have recently indicated that they support the use of the 700 MHz band for IMT.

## **9. Re-planning 2500-2690 MHz**

- 9.1 Internationally, the frequency band 2500-2690 MHz was identified for worldwide mobile technology use eight years ago by World Radio Conference 2000 and, since then, numerous administrations in Europe, North America and the Asia-Pacific have either re-planned, or are currently re-planning this band, to support mobile broadband wireless applications.
- 9.2 AMTA's position on the 2500-2690 MHz band is simple. Noting the considerable time since the band was internationally identified for mobile use, and noting the recent action by many comparable administrations to Australia to make the band available for mobile applications including mobile broadband, AMTA is urging the Government to replan the band as soon as possible.
- 9.3 AMTA understands that the main incumbent user in the 2500-2690 MHz band is broadcasting electronic news gathering (ENG). AMTA also notes that parts of the 2025-2110/2200-2300 MHz bands appear to be suitable and available for ENG. AMTA therefore recommends that the Government moves to quickly finalise a priority timetable to re-locate the ENG service to parts of those bands.

## **10. Schedule 3**

- 10.1 AMTA does not support any review or amendment to Schedule 3 of the *Telecommunications Act 1997, the Telecommunications (Low-impact Facilities) Determination* (the Determination) or related Deployment of Mobile Phone Infrastructure Code (the Code).
- 10.2 Any disruption to the current regime may significantly disrupt the upgrade and/or deployment of evolving telecommunications networks and jeopardise the positive outcomes the regime has helped generate.
- 10.3 Both Schedule 3 and the Determination are reasonably well understood by local government and referenced in an increasing number of State planning instruments. In conjunction with the Code, the demonstrated level of community concern and objections referable to the TIO have reduced year on year since 2006.
- 10.4 We recommend that given the unique requirements of the NBN, access to necessary facilities may require a separate (and specific) legislative provision to facilitate network deployment. We do not believe changing the existing facilities access regime under schedule 3 specifically for the NBN would provide any significant benefits for NBN deployment.

## 11. Conclusion

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- 11.1 There is no doubt that broadband is the infrastructure centrepiece of the digital age and that nations failing to invest in broadband will face an uncertain future in a world where to be global competitive will increasingly be defined by the capacity of a nation's digital economy.
- 11.2 The NBN project will be a major component of Australia's digital economy in partnership with latest generation mobile telecommunications networks and applications.
- 11.3 The core needs of the society are, and will increasingly demand the **productivity, connectivity** and **mobility** benefits to be provided by a mix of fixed and mobile broadband.
- 11.4 The highly competitive mobile telecommunications sector is experiencing strong demand for data services which is driving significant investment in network infrastructure and applications based on a far reaching and fast moving technology pathway.
- 11.5 Just as FTTH is the Government's chosen infrastructure model to support the future of fixed broadband services in Australia so the allocation of spectrum is the key infrastructure element to fully exploiting the potential of mobile broadband.
- 11.6 AMTA looks forward to working with the Government on relevant aspects of the NBN project and related implications for the mobile telecommunications sector.