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# **Australian Communications and Media Authority**

## **Draft Five-year Spectrum Outlook**

**2009-2014**

**Consultation**

**Submission by: Australian Mobile Telecommunications Association**

**31 July 2008**

# 1. Introduction and background

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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 this opportunity to comment on the Australian Communication and Media Authority's (**ACMA's**) draft Five year Spectrum Outlook 2009-2014 discussion paper (**the Paper**).
- 1.3 AMTA has also provided a submission to the ACMA Spectrum Management Principles paper. Our responses to that paper should be read in conjunction with comments outlined in this submission.

## ***The mobile telecommunications industry***

- 1.4 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>1</sup>.
- 1.5 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.
- 1.6 Although voice remains the primary use of mobile devices, there is increasing uptake of other services, with recent significant growth in data and mobile broadband services. This trend is set to continue with the continued uptake of 3G technology, and by 2010, it is predicted that globally mobile broadband will comprise two-thirds of all broadband subscription<sup>2</sup>.

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<sup>1</sup> *Australian Mobile Telecommunications Industry: Economic significance and contribution*, Report by Access Economics for AMTA

<sup>2</sup> IBID

- 1.7 The advancement of mobile telecommunication services and devices has led to significant indirect economic impacts, including 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>3</sup>.

## 2. Overview of AMTA's position

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- 2.1 AMTA concurs with the view of the Minister for Broadband, Communications and the Digital Economy that spectrum is a core plank of Australia's infrastructure.<sup>4</sup>
- 2.2 AMTA considers that a wholesale review of the use and management of spectrum is necessary and timely considering: spectrum's central role in delivering economy wide productivity gains; the increased demand for spectrum across sectors; the opportunities created by the digital dividend; efficiency dividends reaped from increasingly sophisticated technology; and the need for international harmonisation.
- 2.3 AMTA's submission addresses two of the most significant spectrum management issues facing Government: the choice of process that will be adopted on the expiration of incumbent spectrum licences; and the future use of digital dividend spectrum. AMTA's submission also provides commentary on ACMA's analysis of future spectrum needs with respect to the 2500-2690 MHz and 3575-3710 MHz bands.
- 2.4 In relation to spectrum licence re-issue, AMTA considers that ACMA should recommend to Government that it adopt by the end of 2008 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

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<sup>3</sup> *Australian Mobile Telecommunications Industry: Economic significance and contribution*, Report by Access Economics for AMTA

<sup>4</sup> Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, RadComs08

- (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.
- 2.5 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.
- 2.6 AMTA recommends that the process of making a determination be completed well in advance of the expiry of the first spectrum licence in 2013.
- 2.7 In relation to access charges associated with spectrum licence reissue AMTA considers that:
- (a) costs incurred in reissuing spectrum licences must be fair and reasonable and calculated in a transparent way;
  - (b) licence reissue costs should be determined with the interest of preserving the industry's incentives to invest in infrastructure and deliver future competitive telecommunications to the benefit of consumers; and
  - (c) the Government should take into consideration the premium price achieved by Government when incumbent licences were initially issued.
- 2.8 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) the broadcasting sector was provided 'digital dividend' spectrum at no charge to facilitate the simulcast of digital and analogue TV signals on the understanding that such spectrum would be handed back as the process of analogue switch off commenced;
  - (c) retaining digital dividend spectrum as a broadcasting-only band would deny Australia the economic and productivity benefits that advanced wireless broadband technology will deliver;
  - (d) spectrum should be auctioned and allocated in contiguous 2 by 20 MHz blocks that will readily support the deployment of advanced wireless broadband technologies such as 3GPP LTE operating in the Frequency Division Duplex (**FDD**) mode .

- 2.9 AMTA considers that these critical spectrum management issues cannot be adequately addressed without Government and ACMA adopting a clear and explicit timetable on the processes it intends to follow after this consultation period has concluded.
- 2.10 AMTA looks forward to continuing to engage with AMCA in the development of its approach to the broad range of spectrum management issues currently on its agenda.

### **3. Key issues**

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#### ***Spectrum demand drivers***

- 3.1 AMTA is broadly supportive of the spectrum demand driver assessment contained in the Paper. AMTA notes that the increased uptake of advanced wireless broadband services will be a key driver of demand for spectrum, as well as a key contributor to economic growth. Mobile telecommunications is, and will continue to play a significant role as, an 'enabling technology', driving productivity across all sectors of the economy.
- 3.2 Recent analysis of the current and future trends in voice and data usage over mobile devices, completed by Access Economics on behalf of AMTA, provides evidence of this trend. It found:
- (a) the direct contribution of mobile telecommunications to the Australian economy was \$6.5 billion in 2006-07, or 0.62 percent of Gross Domestic Product (**GDP**), an increase of 4 percent on 2004-05;
  - (b) the indirect, or flow-on benefit from mobile telecommunications to the broader Australian economy was \$7.7 billion in 2007;
  - (c) combining the direct and indirect contributions, the mobile telecommunications industry contributed \$14.2 billion to the Australian economy in 2007;
  - (d) the indirect benefits from mobile voice and data, as measured by impacts on GDP, are estimated to rise to \$8.1 billion in 2008 and \$9.3 billion in 2010; and
  - (e) rising mobile data traffic flowing from the increasing uptake of 3G mobile telecommunications will contribute an additional \$2.1 billion to Australia's economic output in 2010.

[A copy of the Australian Mobile Telecommunications Industry Economic Significance and Contribution 2008 is provided here.](#)

## ***Spectrum Licence Re-issue***

- 3.3 AMTA's members hold a range of 15 year spectrum licences in the 800 MHz, 1800 MHz and 2100 MHz bands that are due to expire from 2013 and as ACMA has recognised, the process the Government will ultimately engage in to facilitate the reissue of these licences is of paramount importance to industry.
- 3.4 AMTA's members have and continue to invest significant capital in their networks to deliver a broad range of new, innovative and competitive mobile telecommunications services to Australian consumers.
- 3.5 For example:
- Hutchison launched the first 3G network in Australia in early 2003 under the '3' brand. Peak funding for the establishment of this business has been \$3.3 billion.
  - Telstra launched its national 3G network in late 2006, using the lower 850 MHz spectrum band. Based on an investment of \$1.1 billion, the 850 MHz NextG™ network is geographically the world's largest national 3G network, and complements Telstra's earlier \$500 million investment (plus ongoing cost sharing) in the 2100 MHz 3G network with Hutchison.
  - Optus has invested over \$10 billion in infrastructure since commencing operations in 1992. Optus has recently announced additional investment of \$815 million to expand the reach and capacity of its 3GHSPA network to cover 98% of the Australian population by December 2009.
  - Vodafone obtained its carrier licence in 1992 and has since then invested more than \$4 billion in Australia. Vodafone is currently undertaking a national 3G mobile broadband rollout using High-Speed Packet Access (HSPA).
- 3.6 Given the significant investment made and planned by AMTA members that are reliant on this spectrum and the need to continue to make strategic business decisions, particularly regarding capital investment, AMTA recommends the Government announce a policy intention to reissue spectrum licences for the spectrum used for the supply of mobile telecommunications services by the end of 2008.
- 3.7 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.
- 3.8 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.
- 3.9 The Minister's endorsement of this path by issuing a Determination, would mean that the process for ACMA at the point of licence reissue would be more administrative in nature because the public interest elements had been previously determined by the Minister.
- 3.10 In terms of timing, AMTA recommends that the Government outline and commence the process for drafting and consulting on a Determination as soon as possible in 2009 with the objective of the Determination coming into force in sufficient time for ACMA to subsequently complete the re-issue procedures for each operator at least three years prior to the expiry of the first spectrum licence in 2013. In that context, AMTA envisages a likely target date of around mid-2009 for issue of the Ministerial Determination.
- 3.11 AMTA considers that any delay in adopting this recommended process risks creating business and shareholder uncertainty, increases investment risk and could potentially cause disruption to service. For example:
- (a) There are 21.26 million mobile phone services in operation in Australia. Any interruption – or potential suspension – of these services due to non re-issue or re-allocation of spectrum would have a significant negative impact on the Australian community; and
  - (b) The allocation of incumbent mobile telecommunications spectrum for alternative uses would result in a substantial economic cost to both individuals and the economy as a whole. As outlined above, in 2006-07, mobile telecommunications contributed \$14.2 billion to the Australian economy. If incumbent licences are not re-issued to current mobile operators, this economic contribution would be put at significant risk.

- 3.12 Further, as the first proposed Spectrum Management Principle asserts, spectrum should be allocated to the highest value use or uses. AMTA advocates that the highest value use or uses for existing mobile telecommunications spectrum is the continued operation of mobile telecommunications services and that any alternate use would not generate the same economic and social benefits to the community.

Further evidence of direct and indirect contribution of the mobile telecommunication industry makes to the Australian economy is provided in a copy of the [Australian Mobile Telecommunications Industry Economic Significance and Contribution 2008](#).

- 3.13 In relation to access charges associated with spectrum licence reissue AMTA considers that:
- (a) costs incurred in reissuing spectrum licences must be fair and reasonable and calculated in a transparent way;
  - (b) licence reissue costs should be determined with the interest of preserving the industry's incentives to invest in infrastructure and deliver future competitive telecommunications to the benefit of consumers; and
  - (c) the Government should take into consideration the premium price achieved by Government when incumbent licences were initially issued.

- 3.14 AMTA reiterates its strong recommendation that ACMA initiate urgent dialogue with existing licence holders both individually and collectively via AMTA, as appropriate, on the details of the licence re-issue process, conditions and specific timetable for actions.

### ***Digital dividend***

- 3.15 AMTA considers that digital dividend spectrum should not be retained as a broadcasting-only band post analogue switch off. Retaining digital dividend spectrum for broadcasting would deny the economic and productivity benefits that services such as advanced wireless broadband technology can deliver across the Australian economy and community.
- 3.16 AMTA notes that the Government assigned significant additional spectrum, without charge, to broadcasters within the UHF television band to facilitate the simulcast of digital and analogue TV signals, on the understanding that such spectrum would be handed back as the process of analogue switch off commenced.
- 3.17 It is AMTA's preference that spectrum should be auctioned and allocated in contiguous 2 by 20 MHz blocks that will readily support the deployment of advanced wireless broadband technologies such as 3GPP LTE operating in the FDD mode.

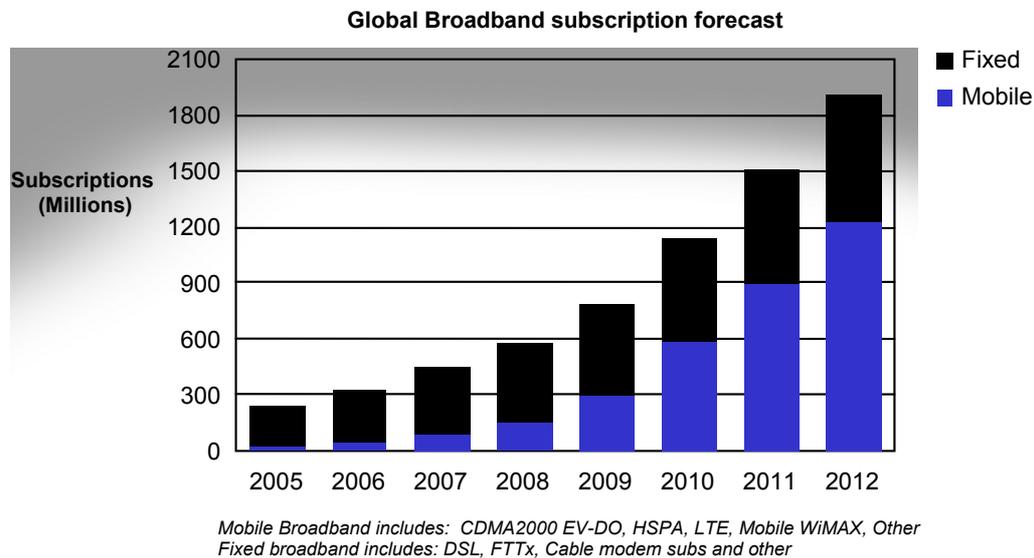
- 3.18 AMTA members are keen to secure as much UHF digital dividend spectrum as possible to support the introduction of high speed wireless broadband technologies, such as 3GPP LTE in Australia in the next few years, preferably well before 2013 in the major capital cities.
- 3.19 Another key factor ACMA must consider 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.
- 3.20 Given the importance and growth of 3G (and beyond 3G) mobile telecommunications services in Australia, the re-allocation of 700 MHz for mobile telephony and data applications will be an essential part of the mobile telecommunications industry's capacity and role in contributing to future economic growth in Australia. To this end AMTA strongly encourages the re-allocation of the UHF digital dividend spectrum in such a way that it will support internationally standardised Advanced Wireless Broadband technologies such as 3GPP LTE FDD.
- 3.21 Noting minimum viability imperatives, AMTA proposes identification of a digital dividend sufficient to accommodate multiple broadband wireless service providers, each assigned a 'paired' 20 MHz (FDD) channel, along with a mid-band gap commensurate with modern filter performance. Specifically, AMTA recommends that, within the 700 MHz band, a contiguous block of 126 MHz (694-820 MHz) be made available in Australia to support high speed wireless broadband technologies (eg LTE) as soon as possible, with a re-arrangement of UHF digital television assignments to spectrum below 694 MHz (the top of existing television channel 51) to allow that to happen.
- 3.22 As further recognition of the changing spectral landscape arising from the digital dividend, AMTA recommends the upgrade of the current secondary mobile service allocation in the 520-820 MHz band to "Primary" status in the Australian Radiofrequency Spectrum Plan.
- 3.23 AMTA notes that the Department of Broadband, Communications and the Digital Economy (DBCDE) and ACMA will be reviewing and quantifying the anticipated digital dividend from the UHF television band. AMTA would like to assist and participate in this process.

### ***Future spectrum needs (in addition to digital dividend)***

- 3.24 As already noted, the recently released study by Access Economics provides a summary of the central role played by mobile telecommunications in the Australian

economy. As a key enabling technology supporting economic growth and productivity gains, the consumer demand for mobility via convergent services is accelerating.

- 3.25 By 2010, it is predicted that globally mobile broadband will comprise two-thirds of all broadband subscription, as illustrated below:



Source: Ovum RHK & Internal Ericsson

- 3.26 AMTA expects Australia to follow global trends in demand growth for services such as mobile broadband with Access Economics predicting a spill over or indirect contribution to the Australian economy of \$9.3 billion by 2010.

## 2500-2690 MHz

- 3.27 Internationally, the frequency band 2500-2690 MHz was identified for worldwide IMT technology use eight years ago by WRC-2000 and, since then, numerous administrations in Europe, North America and the Asia-Pacific have either re-planned it, or are currently re-planning it, to support mobile broadband wireless applications.
- 3.28 Domestically, in 2004 the (then) Australian Communications Authority identified the band for possible future broadband wireless applications, and in 2006 ACMA, via two major Wireless Access Services (**WAS**) planning exercises, identified it as a suitable WAS candidate band. Importantly, most respondents to the public consultation processes after each planning exercise supported 2500-2690 MHz for WAS. AMTA understands that ACMA will be releasing its decision on this band in mid-2008.

- 3.29 AMTA's position on the 2500-2690 MHz band is simple. Noting the considerable time since the band was internationally identified for IMT, and noting the recent action by many comparable administrations to Australia to make the band available for WAS, including IMT mobile broadband, AMTA would like to see ACMA release the band, re-structured to support WAS applications, as soon as possible.
- 3.30 More specifically, AMTA would like to see the band made available in such a way that it will readily support harmonised FDD mobile broadband services (such as 3GPP LTE) which have been designed for the CEPT/ECC bandplan, described in 'ECC Decision (05)05 of 18 March 2005'.
- 3.31 AMTA particularly suggests that:
- (a) Australia should accommodate a number of high speed 3GPP LTE mobile broadband rollouts on paired 20 MHz FDD channels in the lower and upper 70 MHz band segments.
  - (b) Spectrum Licensing should be employed in this band with a price-based allocation process to decide the ultimate licensees. This should occur no later than mid-2010.
- 3.32 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 ACMA moves to quickly finalise a priority timetable to re-locate the ENG service to parts of those bands.

Indeed, AMTA also notes that, given its desire to see the fundamental structure of the band based on the European CEPT plan, it might indeed be possible for ENG to remain in the 50 MHz 'mid band gap' for a longer period than in the two end segments.

### **3575-3710 MHz**

- 3.33 AMTA believes that the 3575-3710 MHz band (most probably limited to 3575-3700 MHz) should also be made available for WAS as soon as possible, perhaps by mid-2009. This is just ahead of AMTA's recommended timetable for the 2500-2690 MHz band. However, noting the potential compatibility difficulties that could arise between WAS transmitters sited near to important FSS satellite downlink receivers in the upper adjacent band (3700-4200 MHz), particularly in high density locations, AMTA feels that it would be prudent for ACMA to limit 3575-3700 MHz WAS rollouts to regional, rural and remote locations at this time.

- 3.34 AMTA again recommends further consultation on the issues and suggests that an RCC sub-committee would be an appropriate forum for further exploration of the issues, including the pros and cons of extending WAS in this band to urban markets.
- 3.35 AMTA's preferred licensing model for WAS in the 3575-3700 MHz band is conventional apparatus licensing. This will ensure that the new services take into account existing co-frequency and adjacent frequency licensed services in the near vicinity at the frequency assignment stage.
- 3.36 AMTA also understands that the segment 3492.5~3542.5 MHz could also become available for future broadband wireless services, subject to final discussions with other government agencies. When combined with the segment 3575~3700 MHz, this additional segment would provide substantial additional capacity for mobile (and nomadic) wireless broadband services - and would usefully open up opportunities in metropolitan and regional/rural areas. AMTA understands that this additional segment could be made available at relatively short notice, if agreement can be settled. AMTA would therefore encourage ACMA to actively pursue this additional segment.

## 4. Conclusion

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- 4.1 AMTA is generally supportive of the proposed approach that ACMA is taking with regard to future management issues. However, there are a number of critical issues that must be addressed urgently if Australia is to benefit from efficient spectrum allocation and use.
- 4.2 AMTA members have invested significantly in infrastructure and services that rely on current spectrum allocations. These licences expire in five to nine years' time. In order to continue to make strategic business decisions and ensure continuity of service, AMTA members require certainty about licence renewal processes and conditions in the immediate future.

AMTA therefore recommends that:

- (a) ACMA and the Minister should invoke their powers under the *Radiocommunications Act* to re-issue spectrum licences currently held by mobile operators;
- (b) ACMA implement a policy to re-issue licences a minimum of three (3) years before they are due to expire;

- (c) ACMA initiate, as a matter of priority, dialogue with existing licence holders on the details of the licence re-issue process, including conditions and specific timetable for actions. The agreed processes should be finalised by the end of 2008.
- 4.3 AMTA strongly encourages the re-allocation of the 700 MHz band in such a way that it will support internationally standardised Advanced Wireless Broadband technologies such as 3GPP LTE FDD.
- 4.4 AMTA contests that the 694-820 MHz band be made available in Australia to support high speed wireless broadband technologies, such as LTE, preferably well before 2013. To allow this to happen, UHF digital television assignments should be moved to below the recommended 694 MHz television channel upper boundary.
- 4.5 To ensure international harmonisation, AMTA would like to see the ACMA release the 2500-2690 MHz band as soon as possible, re-structured to support WAS applications. Specifically, AMTA would like to see the band able to support services designed for the CEPT/ECC (05)05 structural arrangements.
- 4.6 The 3575-3700 MHz band should also be available for WAS as soon as possible, perhaps by 2009. However, because of potential technical difficulties, AMTA suggests that ACMA limit 3575-3700 MHz rollouts to regional, rural and remote locations initially.
- 4.7 AMTA recommends a conventional apparatus licensing model for WAS in the 3575-3700 MHz band.
- 4.8 Finally, AMTA recommends further consultation on a number of issues. To this end AMTA looks forward working with the ACMA and the Department (DBCDE) on the key issues relating to Australia's future spectrum planning and management. .