

UMTS Forum response on
Strategies for Wireless Access Services

ACMA, Australia

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UMTS Forum welcomes the opportunity to respond to ongoing discussion on Strategies for Wireless Access Services in Australia.

The Forum represents a significant group of spectrum users, which are directly interested in the development of public mobile networks, including UMTS/IMT-2000 and, especially, the related spectrum topics. The UMTS Forum gathers many different players involved in third generation mobile systems, including equipment manufacturers, operators, administrations, service providers and software developers.

To place IMT-2000/UMTS public mobile communications systems in a perspective, UMTS Forum wants to mention that there are today more than 147 commercial IMT-2000/WCDMA networks with nearly 100 million subscribers, in 70 countries and more than 470 different user equipment (within different price categories) are available, and more than 80 of these devices are supporting HSDPA. Remarkably, in average 3.7 million subscribers were added every month during year 2006 in IMT-2000/UMTS networks.

The frequency bands identified by International Telecommunication Union (ITU) to IMT-2000 are 900 MHz, 1800 MHz, 2 GHz (Core band) and 2.6 GHz (Extension band) have created a predictable environment for mobile industry and have ensured the availability of equipment. Currently, the Radiocommunication sector of the ITU (ITU-R) is also considering future new mobile bands for IMT (i.e. for IMT-2000, enhancements of IMT-2000 and IMT-Advanced). Frequency bands below 5 GHz have been considered to be suitable for IMT, in the current study work of ITU the bands 410 – 430 MHz, 450 – 470 Hz, 470 – 806/862 MHz, 2300 – 2400 MHz, 2700 – 2900 MHz, 3400 – 4200 MHz and 4400 – 4990 MHz are defined as candidate bands for IMT. In the future, the difference between IMT-2000 and Broadband Wireless Access (BWA) will disappear and e.g. all IMT-Advanced technologies will support BWA type data rates.

UMTS Forum is a true supporter of global harmonization of the spectrum for public mobile communications. Globally harmonized frequency bands for public mobile communication networks facilitate the timely availability of equipment, ease of roaming, acquisition time, spectrum efficiency and reduce cost, complexity of equipment and network deployment and cross border interference. All involved stakeholders and consumers have benefited from the economy of scale, choice and competition. The usage of internationally harmonized frequency bands is crucial to the benefit of consumers, as well as to the success of the public mobile communication industry as a whole. Therefore, opening country-specific bands for BWA services would constitute an isolate solution, which would result in lower equipment volumes (of the respective variant), lower choice and higher prices and hence would make the operator using such spectrum inherently less competitive.

Based on the regulatory definitions within the ITU-R, Broadband Wireless Access (BWA) services and applications can be provided by using IMT-2000/UMTS standards, including HSPA and LTE; However, other future BWA technologies cannot provide the same level of truly and fully mobile services and applications that IMT-2000/UMTS is able to offer already today in commercial networks. When it comes to BWA, there are a number of existing and future technologies, including WCDMA/HSPA, LTE and WiMAX, which can and are expected to provide similar kind of service to the consumers. The high data rates of WCDMA/HSPA, and its evolutions, are equally capable of providing BWA services, both from a technical and market point of view; this is also true in comparison with other and more dedicated BWA systems. The HSPA and LTE standards can be integrated into existing GSM/IMT-2000/UMTS networks in terms of multimode terminals, radio and core network equipment, network operations and subscription management. Therefore, it offers a fast and low-cost approach to existing GSM/IMT-2000/UMTS operators to provide BWA services to their customer base of more than 2.2 billion users.

ACMA questions:

- 1. Should the 2500-2690 MHz band be made available (in whole or part) for WAS applications? If it were, what would be the implications (costs) be for ENG applications? (also refer to section 5 ‘Band Segmentation Options’)**

At ITU-R WRC-2000, the extension band 2500 – 2690 MHz was globally identified for IMT-2000. In Europe, through decision ECC/DEC/(05)05, this band is designated to IMT-2000/UMTS and will be made available for IMT-2000/UMTS on 1 January 2008. UMTS Forum supports the use of IMT-2000/UMTS as it is needed globally to meet the future market demand for new advanced high data rate multimedia applications of IMT-2000/UMTS and its future enhancements. This band will be the only possible extension band for operators using IMT-2000 to offer new advanced high data rate services up to about the year 2015. The 2500 – 2690 MHz band would, especially, provide for needed capacity for IMT-2000/WCDMA and its enhancement; such as HSPA and LTE. UMTS Forum supports the migration towards these new innovative developments. High Speed Packet Access (HSPA) is already commercially available in other bands, and the Long Term Evolution (LTE) is additionally

being specified and consolidated within the organization 3GPP. The expected capacity performance of LTE systems suggests that there will be a firm need to allocate wider spectrum blocks, like 20 MHz wide, per operator to achieve the highest data rates, particularly the need for extension spectrum in the downlink direction is pronounced in this band.

As said earlier in this text, based on the regulatory definitions within the ITU-R, Broadband Wireless Access (BWA) services and applications can be provided by using IMT-2000/UMTS standards, including HSPA and LTE.

2. What are the implications if the band is not made available for WAS?

Operators of public mobile networks in Australia may not be able to offer BWA services for the customers in a cost efficient way benefiting from the economies of scales and other benefits from the globally harmonized band.

3. Should the 3575-3710 MHz band be made available (in whole or part) for WAS applications? If it were, what would the implications (costs) be for fixed point-to-point links and fixed-satellite services? (also refer to section 5 ‘Band Segmentation Options’).

In order to maximize the benefits to the Australian national economy, UMTS Forum believes that the technologies to be used for Broadband Wireless Access should benefit from global economies of scale. Therefore, UMTS Forum encourages the administration to take all possible actions to make the 3.4-3.8 GHz band available for BWA. UMTS Forum supports the use of 3.4-3.8 GHz band as the appropriate frequency band for broadband wireless access, for both fixed and nomadic applications.

4. What are the implications if the band is not made available for WAS?

The band of 3575-3710 MHz band (and in general 3.4-3.8 GHz band) is not available for BWA and Australian users cannot have the benefits of the widely used band. National bands cannot provide the same benefits.

5. Which segmentation option(s) would you prefer in the band 2500 – 2690 MHz? Why?

UMTS Forum supports option 2, which includes:

- a channeling arrangement enclosing of 38 channels in a 5MHz raster starting at 2500 – 2505 MHz, 2505 – 2510 MHz, 2510 – 2515 MHz 2685 – 2690 MHz;
- a duplex arrangement of 2 x 70 MHz from the band 2500 – 2690 MHz be allocated for IMT-2000 frequency division duplex (FDD) standards, like WCDMA/HSPA/LTE, based on spectrum arrangements included in the ITU Recommendation ITU-R M.1036, and

- a national band plan where FDD duplex separation of 120 MHz can be provided for, as a common duplex separation in this band would facilitate the usage and circulation of standard IMT-2000 FDD equipment between different regions and countries.

6. What option(s) would you prefer for the management of incumbent services? Why?

If incumbent services means ENG, they can be put in the middle gap of option 2 as long as the interference conditions in the paired bands remains the same. The duplex arrangement needs to remain the same.

7. How much spectrum in the band should be made available in the band 3575 – 3710 MHz? Why?

The band is very limited and the whole should be made available for BWA.

8. What option(s) would you prefer for the management of incumbent FSS earth stations? Why? In particular, should FSS earth stations be ‘grandfathered’? If so, for how long? In general, what arrangements should be considered for the protection of earth stations?

No comment.

9. What option(s) would you prefer for the management of incumbent fixed point-to-point services? Why?

No comment.

10. Which licensing options would you prefer for WAS in the 2500-2690 MHz band? Why?

UMTS Forum recommends the ‘private spectrum’ option.

11. What areas should the licenses cover? (e.g. Australia-wide, capital cities, regional areas, state-wide)

The geographic licensing options should follow the requests of existing cellular and broadband wireless operators, as they are the experts of the business viability of different options.



12. If the 2500-2690 MHz band was allocated for WAS, and a block of spectrum in the band was preserved for ENG operation, how should the ENG spectrum be licensed? Why?

No comment.

13. Which licensing option(s) would you prefer for WAS in the 3575-3710 MHz band? Why?

No comment.

14. What areas should the licenses cover? (e.g. Australia-wide, capital cities, regional areas, state-wide)

No comment.

15. If WAS were authorized under a class licence or a private park (in either of these bands), what should be the maximum equivalent isotropically radiated power (EIRP) be? Why?

No comment.

16. Is device registration necessary under a private park? If not, what other arrangements could be used to allow coordination?

No comment.

17. Should aggregation of spectrum lots be allowed? If so, how should lots be aggregated (low, high or other)?

If an operator that has obtained a fragmented collection of frequency blocks in an auction, he should have the right to consolidate the fragments into a continuous block. The consolidation should take place in the similar way on both sides of the FDD mid gap, so that paired spectrum is preserved.

18. What other issues should ACMA consider?

Related to interference avoidance at IMT-2000 identified bands, all technologies that are expected to operate in frequency blocks adjacent to IMT-2000 blocks should do it without producing more interference or requesting more protection than IMT-2000.