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**Re: Consultazione pubblica sull'utilizzo della banda di frequenze
a 2.6 GHz**

Ref: 559/08/CONS,

Official gazette of the Italian Republic n. 244 of 17 October 2008

WiMAX Forum[®] Response

The WiMAX Forum[®] welcomes the opportunity to provide its views and comments concerning the issues raised in the public consultation document on the topic above.

The WiMAX Forum¹ is an industry-led, not-for-profit organisation formed to certify and promote the compatibility and interoperability of broadband wireless products based upon the harmonized IEEE 802.16/ETSI HiperMAN specifications. A WiMAX Forum goal is to accelerate the introduction of these systems into the marketplace. WiMAX Forum Certified[™] products are interoperable and support Metropolitan Broadband Fixed, Nomadic and Mobile Applications. Along these lines, the WiMAX Forum works closely with service providers and regulators to ensure that WiMAX Forum Certified systems meet customer and government requirements. For more information about the WiMAX Forum and its activities, please visit www.WiMAXForum.org.

The WiMAX Forum responses to this consultation can be seen in Annex 1.

¹ "WiMAX," "Mobile WiMAX," "Fixed WiMAX," "WiMAX Forum," the WiMAX Forum logo, "WiMAX Forum Certified," and the WiMAX Forum Certified logo are trademarks of the WiMAX Forum.

Annex 1

WiMAX Forum responses to the individual questions are given below:

1.1) Quali sono gli standard e le tecnologie che il rispondente prevede possano essere introdotti per l'utilizzo nella banda 2.6 GHz ? Che tipo di architetture di rete si prevedono ? Che modalità di gestione dello spettro adopereranno ?

1.2) Quando saranno disponibili i terminali e gli apparati di rete ? Che costi sono ipotizzabili ?

1.3) Quali servizi potrebbero essere offerti nella banda di frequenze in argomento ?

WiMAX Forum Responses:

Questions 1.1 and 1.2: The WiMAX Forum supports the award of the 2500 – 2 690 MHz spectrum for broadband mobile communications at the earliest opportunity. The WiMAX Forum considers this range of frequencies a key global band for mobile WiMAX.

Reflecting the high interest, the WiMAX Forum has agreed equipment certification profiles for TDD equipment based on the IEEE 802.16e-2005 standard for the entire 2500-2690MHz frequency range (see Table 1). Equipment aligned with this profile is included in the IMT air interface family as OFDMA-TDD-WMAN identified in ITU-R Recommendation M.1457-7.

SYSTEM PROFILES	CERTIFICATION PROFILES		
	Spectrum	Duplexing	Channel Width
Mobile WiMAX (IEEE 802.16e-2005, OFDMA)	2.496 - 2.690GHz	TDD	5, 10 MHz (dual)

Table 1

The first 2.6GHz Mobile WiMAX products achieved WiMAX Forum Certification in Q2/3 2008.

WiMAX Certification is underway or in development for other frequency ranges too and the following document provides helpful information on the programme:

http://www.wimaxforum.org/news/wf_certification_public_qa_06_02_08.pdf

Currently **30 products** have been certified against the MP05 profile for the 2.6GHz band and are available today.

In addition, the WiMAX Forum forecasts that more than 950 products will undergo Mobile WiMAX certification testing by 2011, representing an influx of new consumer devices and infrastructure equipment to support continued rapid WiMAX user adoption in the 2.3 GHz, 2.5 GHz, and 3.5 GHz frequency bands. The WiMAX Forum's current network of six labs in China, Korea, Spain, U.S. and two in Taiwan will expand to nine with additions in Brazil, India and Japan to handle the anticipated certification demand.

Question 1.3: Mobile WiMAX devices and networks will support a full range of mobile broadband services

2.1) Il rispondente indichi se condivide l'approccio suggerito di utilizzare la canalizzazione e le regole di coesistenza previste dalla CEPT e dalla Decisione della Commissione, ivi inclusa l'imposizione dell'utilizzo del blocco ristretto TDD nella parte bassa di ciascuna assegnazione contigua TDD. In particolare ritiene che occorra lasciare variabile, in base alla domanda, il numero complessivo di blocchi TDD (opzione A), oppure ritiene che occorra attenersi strettamente alla canalizzazione CEPT (opzione B) ?. In caso non ritenga appropriate entrambe le opzioni il rispondente fornisca le ragioni per procedere diversamente.

2.2) Sono sufficienti, a parere del rispondente, le norme contenute nella Decisione della Commissione riprese dal Report 19 CEPT, per prevenire le interferenze nocive nei vari casi possibili ? Che tipo di ulteriore coordinamento dovrebbe essere necessario fra operatori (sia a livello intra-service che inter-service), sia tra bande adiacenti che fra aree adiacenti ? Che tipo di ulteriore coordinamento dovrebbe essere necessario a livello internazionale ? Esistono altri studi in corso di definizione a riguardo ?

WiMAX Forum Responses:

Question 2.1: The WiMAX Forum fully supports the EC Decision 2008/477/EC² and the flexibility this introduces in terms of FDD/TDD apportionment. Generally the WiMAX Forum supports procedures that allow this flexibility to be exercised as a part of the award itself rather than attempting a priori decisions which may not reflect the true market demand for one duplex technique or another. The identification of “guard frequencies” as “restricted channels” strikes the right balance between flexibility and efficient spectrum utilization. Therefore the WiMAX Forum fully supports Option A.

Regarding Option B, the WiMAX Forum recognizes the interest in following the ECC Decision (05)05 but remains concerned that the amount of spectrum for TDD (and therefore OFDMA-TDD-WMAN applications) could remain artificially constrained.

² http://www.wimaxforum.org/news/pr/view?item_key=f566907f289c3fc8df5c8ee158a20e37a36804a7

Question 2.2: The WiMAX Forum believes that the measures examined in CEPT Report 019 and transposed into the EC Decision 2008/477/EC provide a good framework for the flexibility encouraged by the European Commission. The WiMAX Forum is also of the view that in order to facilitate implementation of the EC Decision it is important that national regulations encourage coordination between the licensees. Specifically, the burden for any required guard frequencies must be shared equally by licensees of both duplex technologies to encourage active participation and ensure growth.

The WiMAX Forum has sponsored an independent study³ into flexible use of the 2.6GHz band that examines many of the perceived difficulties from the regulators' perspective. This concludes that these challenges are not insurmountable and that they are not new issues for regulatory authorities. This report is available on the WiMAX Forum Regulatory Portal⁴ on the WiMAX Forum web site.

The report examines many of the perceived difficulties surrounding band plan flexibility and concludes that many of these are manageable and that they do not present any new challenges for administrations.

3.1) Si è d'accordo nel prevedere, per le procedure di assegnazione, un minimo ed un massimo per ciascun soggetto di banda assegnabile in multipli di 5 MHz, con un minimo di 10 ed un massimo di 50 MHz ?

3.2) Fatto salvo il cap di cui sopra, quanti blocchi (numero dei diritti d'uso) dovrebbero essere idealmente aggiudicati per area di servizio al fine di offrire servizi commercialmente remunerativi ed allo stesso tempo prevedere una effettiva concorrenza, sia nel caso TDD che FDD ?

3.3) Si è d'accordo con la procedura selettiva generale proposta dall'Autorità (asta a due fasi, con clock auction nella prima fase per lotti generici seguita da graduatoria mediante offerta libera in busta chiusa per l'attribuzione nella seconda fase) ? Il rispondente può proporre delle alternative, specificando esattamente quali sarebbero i vantaggi dell'alternativa ?

³ Flexible use of the 2.6 GHz band in Europe – A report by PA Consultants.
http://www.wimaxforum.org/regulators/spectrum_policy/tdd_fdd_flexibility

⁴ Regulators and Government agencies can register as Regulator Observers to gain free access to the WiMAX Forum regulatory portal through a link on the WiMAX Forum home
<http://www.wimaxforum.org/home> .

WiMAX Forum Responses:

Questions 3.1 and 3.2: The WiMAX Forum agrees that the proposed minimum block size of 10MHz provides an appropriate basis for assignments and is the most consistent with the flexible objectives of the EC Decision 2008/477/EC. However it should be noted that a typical base station may operate with three sectors, suggesting likely interest in a minimum allocation of three channels based on a single base station.

The WiMAX Forum has published an assessment of the spectrum requirements for widespread deployment of Mobile WiMAX systems in the WiMAX Forum white paper titled “A Review of Spectrum Requirements for Mobile WiMAX™ Equipment to Support Wireless Personal Broadband Services” from September 2007⁵.

The white paper concludes that around 30 MHz of usable spectrum per operator is about right for urban areas but highlights that this is not a unique answer. A range of scenarios needs to be considered and certain operators may require additional spectrum to establish a viable business case.

Therefore the WiMAX Forum could support a maximum of 50MHz if demand imposes a constraint on the upper bound.

Question 3.3: The WiMAX Forum does not comment on the detailed design of the award procedures but supports processes that facilitate a market based mechanism for the award.

3.4) Si è d'accordo con una pianificazione dei diritti d'uso su base geografica nazionale ?

3.5) Si è d'accordo con i criteri di fissazione del valore minimo di partenza dell'asta per blocco accoppiato da 5 MHz proposto ?

WiMAX Forum Responses:

Question 3.4: The WiMAX Forum has no strong position on this topic but has a preference for national networks in order to support economies of scale. However, it is noted that population density and income distribution, vary widely over the territory of Italy. Therefore operators that operate on a nation-wide scale may be faced with pockets of low revenue. This should be taken into account in any roll-out obligations as well as in the pricing.

Question 3.5: See the responses to Questions 3.1 and 3.2 above.

⁵http://www.wimaxforum.org/documents/downloads/Spectrum_Requirements_for_Mobile_WiMAX_Sept2007.pdf

4.1) Il rispondente è d'accordo con la proposta dell'Autorità circa gli obblighi a carico degli aggiudicatari dei diritti d'uso delle frequenze ? Quali altre condizioni tecniche ed obblighi occorrerebbe introdurre a carico degli assegnatari ?

4.2) Si concorda con la proposta dell'Autorità in merito agli obblighi di copertura ?

4.3) Si è d'accordo con la durata proposta per i diritti d'uso delle frequenze in questione ?

4.4) Quale tempistica si ritiene opportuna per il rilascio dei diritti d'uso delle frequenze in questione ?

4.5) Il rispondente ritiene che occorra introdurre delle specifiche riserve di banda a favore di alcune categorie di soggetti, ad esempio nuovi entranti ? In caso affermativo, come potrebbe essere definito, a parere del rispondente, un operatore nuovo entrante nel contesto del rilascio dei diritti d'uso delle frequenze in questione ? Quali potrebbero essere le riserve a favore del nuovo entrante ? Nel caso si potesse prevedere la riserva di una specifica porzione di banda, come dovrebbe essere individuata tale porzione ed attuata una procedura ristretta, nel caso delle opzioni A e B ?

WiMAX Forum Responses:

Question 4.2: The WiMAX Forum has no additional comment on this topic given the response to question 3.4 above.

Question 4.4: The WiMAX Forum believes that the mobile broadband market need for this spectrum exists today and therefore encourages the Italian administration to start the award process as soon as possible.

Questions 4.1, 4.3, 4.5, 5.1 to 5.3 and A.1 to A.2:

The WiMAX Forum has no comments on the topics raised in these questions.