



28th September 2007

For more information, contact:
Chair, Regulatory Working Group
rwg-chair@wimaxforum.org

To : Rundfunk und Telekom Regulierungs-GmbH
E-Mail: Konsultationen@rtr.at

Consultation on the allocation of frequencies in the frequency bands 2010 – 2020 MHz and 2500 – 2690 MHz

WiMAX Forum™ Response

The WiMAX Forum™¹ welcomes the opportunity to provide its views and comments concerning the issues for the 2.6GHz band identified in the above public consultation document.

The WiMAX Forum is an industry-led, non-profit corporation formed to promote and certify the compatibility and interoperability of broadband wireless products using the IEEE 802.16 and ETSI HiperMAN wireless MAN specifications. The WiMAX Forum's goal is to accelerate the introduction of these devices into the marketplace. WiMAX Forum Certified™ products will be fully interoperable and support Metropolitan Broadband Fixed, Portable and Mobile Applications. For more information about the WiMAX Forum and its activities, please visit www.WiMAXForum.org. WiMAX Forum™ and WiMAX Forum Certified™ are registered trademarks of the WiMAX Forum™.

In Annex 1 the WiMAX Forum respectfully submits responses to the consultation document identified above, as text inserted into the original document text boxes.

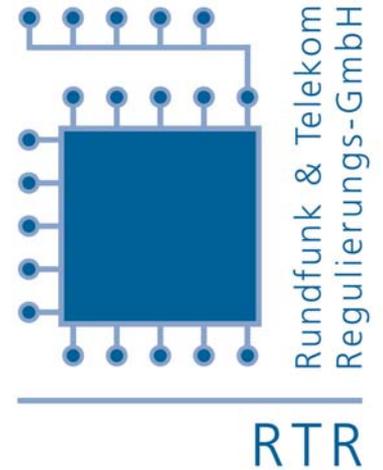
Yours Sincerely

Tim Hewitt
WiMAX Forum
Chair - Regulatory Working Group

¹

“WiMAX Forum™” and “WiMAX Forum CERTIFIED™” are trademarks of the WiMAX Forum™

Annex 1



**Consultation on the allocation of frequencies in the
frequency bands 2010 – 2020 MHz and 2500 – 2690 MHz
as well on the future use of the
frequency bands 900/1800 MHz**

Vienna, August 2007

Rundfunk und Telekom
Regulierungs-GmbH

Table of contents

1	Introduction.....	4
2	Allocation of frequencies in the frequency bands 2010 – 2020 MHz and 2500 – 2690 MHz	5
2.1	General.....	5
2.2	Market overview	5
2.3	Responsibilities in the field of frequency administration.....	5
2.4	Consultation.....	6
2.4.1	Terms and conditions of use.....	6
2.4.2	Division of the frequency band	8
2.4.3	Time schedule	10
2.4.4	Secondary provisions of frequency allocation	10
3	Future use of the frequency bands 900/1800 MHz.....	11
3.1	General.....	11
3.2	Market overview	11
3.3	Consultation.....	11
4	Participant.....	13
5	Invitation for comments	14

- **Introduction**

Rundfunk und Telekom Regulierungs-GmbH is holding a consultation on the following subject areas:

- Allocation of frequencies in the frequency bands 2010 – 2020 MHz and 2500 – 2690 MHz.
- Future use of the frequency bands 900/1800 MHz.

The consultation procedure is intended to be an initial approach to the subject areas mentioned. The specified contents are non-binding and do not prejudice the decisions of the Telekom-Control Commission.

To guarantee efficient and market conforming use of the frequencies to the greatest possible extent RTR-GmbH addresses the public with this consultation, putting individual items up for discussion.

- **Allocation of frequencies in the frequency bands 2010 – 2020 MHz and 2500 – 2690 MHz**

- ***General***

a) As to 2010 – 2020 MHz

The frequency band 2010 – 2020 MHz originally intended for so-called self-provided applications due to international requirements is now available for terrestrial digital mobile communications systems in general, according to the Decision of the Electronic Communications Committee (ECC) of the European Conference of Postal and Communications Administrations (CEPT) of 24 March 2006 (ECC/DEC/(06)01).

b) As to 2500 – 2690 MHz

The frequency band 2500 – 2690 MHz was identified in the course of the World Radio Conference 2000 (WRC 2000) for IMT-2000 systems. Mandated by the European Commission CEPT developed plans for spectrum arrangements. These are reflected in the CEPT Decision EEC/DEC/(05)05, which provides that 2 x 70 MHz can be made available for FDD and 50 MHz for TDD or FDD operation (together with frequencies from other bands). In view of the efforts regarding technology and service neutral frequency allocations, it cannot be ruled out, however, that the frequency band 2500 – 2690 MHz will be also used for applications other than the ones specified in ECC/DEC/(05)05. In Austria the frequencies at issue are now already available for allocation. These frequency bands are designated for use by terrestrial digital mobile communications systems.

- ***Market overview***

In 2000 six licences for the provision of mobile communications services using UMTS/IMT-2000 technology were allocated in Austria; each operator was assigned approx. 2 x 10 MHz from the frequency bands 1920 – 1980 MHz / 2110 – 2170 MHz (paired) or up to approx. 10 MHz from the bands 1900 – 1920 MHz and 2020 – 2025 MHz (unpaired), respectively.

At present, the situation is as follows: four operators are active in the frequency bands mentioned, each operator (Mobilkom Austria AG, T-Mobile Austria GmbH, One GmbH, Hutchison 3G Austria GmbH) having frequencies totalling approx. 2 x 15 MHz. Mobilkom Austria AG and T-Mobile Austria GmbH have additional 2 x 10 MHz from the unpaired frequency band, Hutchison 3G Austria GmbH has 5 MHz.

- ***Responsibilities in the field of frequency administration***

The provisions governing responsibility in the field of frequency administration are laid down in Art. 54 Par. 3 TKG 2003. Accordingly, the regulatory authority (Telekom-Control Commission) shall be responsible for allocation of the frequencies that have been specifically designated in the frequency usage plan pursuant to Art. 52 Par. 3 TKG (restriction in number). Responsibility for allocation of the remaining frequencies lies with the telecommunications authority.

As regards the frequencies in question, the Federal Minister of Transport, Innovation and Technology designated the frequencies in so far as the maximum number of allocated frequencies will be restricted.

This means that the Telekom-Control Commission is responsible for allocation of the frequencies at issue.

In the run-up to such planned allocation by the Telekom-Control Commission, Rundfunk und Telekom Regulierungs-GmbH is now holding a consultation.

- **Consultation**

Terms and conditions of use

- **The CEPT/ECC Decision ECC/DEC/(05)05 provides for the following channelling arrangements in the frequency band 2500 – 2690 MHz for FDD and TDD:**

2500 MHz	2505 MHz	2510 MHz	2515 MHz	2520 MHz	2525 MHz	2530 MHz	2535 MHz	2540 MHz	2545 MHz	2550 MHz	2555 MHz	2560 MHz	2565 MHz	2570 MHz	2575 MHz	2580 MHz	2585 MHz	2590 MHz	2595 MHz	2600 MHz	2605 MHz	2610 MHz	2615 MHz	2620 MHz	2625 MHz	2630 MHz	2635 MHz	2640 MHz	2645 MHz	2650 MHz	2655 MHz	2660 MHz	2665 MHz	2670 MHz	2675 MHz	2680 MHz	2685 MHz	2690 MHz	
UL 01	UL 02	UL 03	UL 04	UL 05	UL 06	UL 07	UL 08	UL 09	UL 10	UL 11	UL 12	UL 13	UL 14	TDD / FDD Downlink (External)												DL 01	DL 02	DL 03	DL 04	DL 05	DL 06	DL 07	DL 08	DL 09	DL 10	DL 11	DL 12	DL 13	DL 14
FDD Uplink Blocks																										FDD Downlink Blocks													

Do you consider these channelling arrangements useful?

Yes

Reasons:

No

Reasons, alternative proposals:

The WiMAX Forum believes that there will be strong demand for TDD spectrum that may well exceed the TDD designation resulting from adherence to the framework of ECC Decision (05)05. The WiMAX Forum therefore supports a flexible approach that can adapt in accordance with the market demand for one technique or the other. The WiMAX Forum encourages the Austrian authorities to examine the possibility of an award mechanism for the auction procedure itself that will determine the block size and the FDD/TDD apportionment in this band. Reflecting the high interest in TDD systems, the WiMAX Forum has agreed equipment certification profiles for TDD equipment based on IEEE 802.16e-2005 standard for the entire 2500-2690MHz frequency range.

- **Is it useful to allocate the frequency band 2010-2020 MHz at the same time? If so, what should the terms and conditions of use be?**

Yes

Reasons:

No

Reasons:

The WiMAX Forum has no views on the 2010-2020MHz band.

- **Do you consider it useful to use the band 2570 – 2690 MHz also as FDD downlink together with the frequency band 2010-2020 MHz not yet assigned?**

Yes

Reasons:

No

Reasons:

The WiMAX Forum has no plans to develop certification profiles for the frequency range 2010-2020MHz at the moment and does not consider it specifically linked to the 2500-2690MHz range. The WiMAX Forum notes that the regulatory authorities in the ECC have identified that FDD operation in this area of the band would effectively exclude TDD operation. Therefore the WiMAX Forum would be concerned if an assignment in the range 2570-2620MHz for FDD downlink purposes effectively excluded any TDD spectrum availability in the 2.6GHz band in Austria.

- **It cannot be ruled out the frequency bands 2500-2690 MHz and 2010-2020 MHz will be assigned according to the principle of technology and service neutrality, provided that in-band and out-of-band compatibility can be guaranteed. Which aspects do you think should be considered here?**

The WiMAX Forum encourages technology neutral licensing of the entire 2500-2690MHz band at the earliest opportunity as this should allow market demand for broadband services to be satisfied and economic benefit derived from this scarce resource.

The European Commission (EC) attempted an initiative to bring clarity to the regulatory position concerning the use of the 2500-2690MHz band by IMT-2000 and other technically compatible technologies. The WiMAX Forum also supports the view of the EC in this area that this band should be available for use in accordance with market requirements and without constraints on technology choice.

Within the ETSI BRAN Technical Committee there is a Harmonised Standard (EN302 544) under development that will identify the appropriate equipment compliance parameters to assist 2.6GHz band inter-block compatibility. In addition the 22nd meeting of ITU-R WP8F recently finalised a spectrum sharing study between Fixed /Nomadic BWA and IMT-2000. Further work continues in a separate draft report dealing with M.BWA and IMT-2000. These activities have the coexistence matters under consideration.

The WiMAX Forum also would like to highlight a published WiMAX Forum whitepaper "Service Recommendations to Support Technology Neutral Allocations FDD/TDD Coexistence" available through the WiMAX Forum website. The WiMAX Forum would be pleased to participate in future dialogue on this matter.

- **Against the background of technology neutrality, do you think it will be sufficient to define a field strength value or spectrum masks, or is advance coordination with preferred frequencies/preferred codes absolutely required?**

Yes

Reasons:

No

Reasons:

The WiMAX Forum highlights the activity taking place in ECC WG-SE project team SE42 concerning the WAPECS initiative. This activity is dealing with Block Edge Masks and other aspects associated with technology neutral licensing in the 2.6GHz band.

- **What time of use do you consider practicable for the frequencies in question?**

The WiMAX Forum has no strong opinion regarding license duration but believes it should be sufficient to enable investment opportunities which will enable further development of mobile broadband wireless.

Division of the frequency band

- **Do you consider it useful to divide the spectrum into individual abstract 5 MHz blocks (or pairs of 2x5 MHz with FDD) or shall the regulatory authority identify specific – larger – packages?**

Yes

Reasons:

The WiMAX Forum notes that individual blocks for 5 or 10MHz would be compatible with present WiMAX certification profiles and are hence supported by the WiMAX Forum. Licence bidders should have the flexibility to aggregate blocks into overall packages that reflect their business goals. The WiMAX Forum expects

that blocks of at least 30MHz per operator (excluding guard bands) will be most appropriate.

- No (What kind of spectrum division do you consider useful and why?)

Reasons:

- It is planned to restrict the maximum number of frequency packages a bidder may acquire. Which spectrum restrictions (in MHz or 5 MHz packages) do you consider appropriate?

The WiMAX Forum has no position on this topic.

- It is planned to assign the packages on a nationwide basis (i.e. not regionally). Which aspects shall be considered here?

The WiMAX Forum believes that national licensees should be awarded.

- How do you rate the demand for and the availability of equipment in these frequency bands? Which technologies and services do you want to use or provide?

The WiMAX Forum certification process will enable mobile products to be available on the market during the first half of 2008. WiMAX technology is described in detail at <http://www.wimaxforum.org/technology/>

Time schedule

- **The regulatory authority plans to start the allocation procedure in mid-2008. Do you think this time schedule is suitable to take account of the future spectrum requirements and the technological development?**

Yes

Reasons:

The WiMAX Forum supports the award of 2500-2690MHz spectrum at the earliest opportunity to give service providers the option to select mobile WiMAX technology. The time schedule mentioned above aligns well with the anticipated availability of certified products for mobile WiMAX in this frequency band.

No

Reasons:

Secondary provisions of frequency allocation

- **Do you consider a newcomer's (attempt at) market entry in connection with allocation of the frequencies at issue realistic?**

Yes

Reasons:

The WiMAX Forum has no view to express on this issue.

No

Reasons:

- **Which measures shall be taken to facilitate market entry by newcomers (see e.g. national roaming obligation as on the occasion of IMT frequency allocation in 2000)?**

The WiMAX Forum has no view to express on this issue.

- **Against the background of technology and service neutrality, what should the coverage obligations be like?**

The WiMAX Forum has no view to express on this issue.

- **Future use of the frequency bands 900/1800 MHz**

- ***General***

The European Commission is currently preparing a decision regarding harmonisation of the frequency bands 900 MHz and 1800 MHz (Decision on the harmonisation of the 900 MHz and 1800 MHz frequency bands for terrestrial systems capable of providing pan-European electronic communications services in the Community). The objective of this decision is to open the frequency bands 900 MHz and 1800 MHz, which are currently reserved for GSM technologies, for use by other mobile communications technologies. The annex to the planned decision makes explicit reference to UMTS. However, Art. 3 No. 3 of the planned decision goes even further and aims at facilitating also technologies not listed in the annex, provided that they can co-exist in the same frequency band with the systems listed.

- ***Market overview***

In Austria the frequency bands 900 MHz and 1800 MHz have been assigned for the provision of mobile communications services by means of GSM technology. The frequencies are held by Mobilkom Austria AG (approx. 32 MHz), T-Mobile Austria GmbH (approx. 38 MHz) and One GmbH (approx. 32 MHz). The frequency allocations are limited in time until the end of 2015, 2017 and 2019, respectively.

- ***Consultation***

The activities at the European level also raise questions at the national level regarding the further course of action in respect of the use of the frequency bands at issue.

- **How do you expect GSM to further develop? In your estimate, what will the lifetime of GSM be?**

The WiMAX Forum has no view to express on this issue.

- **In which of the frequency bands listed here will it be useful to use new technologies (“refarming”)?**

The WiMAX Forum has no view to express on this issue.

- **How do you rate the availability of equipment for IMT in the frequency bands 900/1800 MHz?**

The WiMAX Forum has no view to express on this issue.

- **Where do you see critical aspects of a possible refarming solution? What kind of solution could satisfy all market participants?**

The WiMAX Forum has no view to express on this issue.

- **Participant**

Name/company (address):

WiMAX Forum
15220 NW Greenbrier Pkwy
Suite 310
Beaverton, OR 97006
USA

Are you interested in 2500 – 2690 MHz spectrum use?

- Yes
 No

Are you interested in 2010 – 2020 MHz spectrum use?

- Yes
 No

Are you interested in 900 MHz and 1800 MHz spectrum refarming?

- Yes
 No

- **Invitation for comments**

Comments shall be sent no later than 28 September 2007 per e-mail to

Konsultationen@rtr.at

in a common format suitable for electronic processing (e.g. text, pdf). Unless requested otherwise, the comments will be published on the website of RTR GmbH.

I/We agree that the comment will be published in full.

- Yes, by stating the name of the company
- Yes, without stating the name of the company
- No