

# **Consultation**

**on the allocation of frequencies in the 2500 –  
2690 MHz band**

**Vienna, January 2009**

Austrian Regulatory Authority for Broadcasting and  
Telecommunications

# Table of contents

<b>1</b>	<b>Introduction .....</b>	<b>3</b>
<b>2</b>	<b>Allocation of frequencies in the 2500 – 2690 MHz band .....</b>	<b>4</b>
2.1	General information .....	4
2.2	Market overview .....	4
2.3	Responsibilities in frequency administration .....	4
2.4	Current frequency use .....	5
2.5	Intended use .....	5
2.6	Expected services .....	6
2.7	Technologies .....	6
2.8	Need for unpaired frequencies .....	6
2.9	Interest in unpaired frequencies .....	7
2.10	Need for paired frequencies .....	7
2.11	Interest in paired frequencies .....	8
2.12	Expected rollout .....	8
2.13	Subdivision of frequency band .....	9
2.14	Arrangement of frequency packages .....	9
2.15	Differences between frequency channels .....	9
2.16	Duration of use .....	10
2.17	Coverage obligations .....	10
2.18	Schedule .....	11
<b>3</b>	<b>Contact information .....</b>	<b>12</b>
<b>4</b>	<b>Request for comments .....</b>	<b>13</b>

# 1 Introduction

In 2007, the Austrian Regulatory Authority for Broadcasting and Telecommunications (RTR) carried out a consultation on the allocation of frequencies in the 2500 – 2690 MHz band.<sup>1</sup> In light of new technical and business-related developments, the regulatory authority deems it necessary to provide market participants who are interested in or affected by this allocation with another opportunity to contribute comments on the allocation of these frequencies.

In this consultation, the regulatory authority addresses the public with specific points for discussion. The consultation is also intended to help ensure that the frequencies in question are put to use as efficiently as possible and in a way which best suits the needs of the market.

The contents of this consultation are non-binding and without prejudice to the decisions of the Telekom-Control Commission.

---

<sup>1</sup> See <http://www.rtr.at/en/komp/KonsultationFqNutzung> and [http://www.rtr.at/en/komp/Konsult\\_FqNutzung\\_St](http://www.rtr.at/en/komp/Konsult_FqNutzung_St) (in German).

## **2 Allocation of frequencies in the 2500 – 2690 MHz band**

### **2.1 General information**

During the World Radio Conference 2000 (WRC 2000), the 2500 – 2690 MHz frequency band was designated for IMT 2000 systems.

The spectrum-related technical conditions for the use of frequency band were stipulated in a decision issued by the European Commission on June 13, 2008 (Commission Decision on the harmonisation of the 2 500 – 2 690 MHz frequency band for terrestrial systems capable of providing electronic communications services in the Community; 2008/477/EC<sup>2</sup>).

The Austrian Federal Ministry of Transport, Innovation and Technology (BMVIT) plans to convey the technical terms of use for the 2500 – 2690 band to the Telekom-Control Commission in March/April 2009. Given the ensuing steps in the process, in particular the required duration of the tender submission period, the frequencies could be allocated at the end of the year 2009.

The terms of use with regard to cross-border frequency coordination will be defined provisionally by the Federal Ministry of Transport, Innovation and Technology. This approach already proved successful in the allocation of frequencies from the UMTS core band in the year 2000.

Experience has shown that the period of time required until the relevant operators actually begin to use the frequencies is sufficiently long to finalize the terms of frequency use in areas near national borders.

### **2.2 Market overview**

In Austria, mobile communications services are currently offered by four network operators (Mobilkom Austria AG, T-Mobile Austria GmbH, Orange Austria Telecommunication GmbH and Hutchison 3G Austria GmbH). Hutchison uses UMTS in the 2,1 GHz band only.<sup>3</sup> The other network operators use both GSM in the 900 and 1800 MHz frequency bands as well as UMTS in the 2.1 GHz frequency band.

### **2.3 Responsibilities in frequency administration**

The regulations regarding responsibilities in the field of frequency administration are based on Art. 54 Par. 3 Telecommunications Act (TKG) 2003, which stipulates that the regulatory authority (the Telekom-Control Commission) is responsible for allocating those frequencies for which a provision pursuant to Art. 52 Par. 3 TKG 2003 has been made in the frequency usage plan (i.e., for a limited number of allocations). The telecommunications authority is responsible for allocating the other frequencies.

As for the frequencies in question, the Federal Minister of Transport, Innovation and Technology has stipulated that the number of allocations is to be limited.

As a result, the Telekom-Control Commission is responsible for the allocation of these frequencies.

---

<sup>2</sup> See [http://www.rtr.at/en/tk/Spektrum2600MHz/2008\\_477\\_EC.pdf](http://www.rtr.at/en/tk/Spektrum2600MHz/2008_477_EC.pdf)

<sup>3</sup> For details, see [http://www.rtr.at/en/tk/FRQ\\_spectrum](http://www.rtr.at/en/tk/FRQ_spectrum).

## 2.4 Current frequency use

If you currently use frequencies in the 2.1 GHz (UMTS FDD) band:

When would you expect to start using all of the frequencies (frequency packages) allocated to you in the 2.1 GHz band?

not applicable

## 2.5 Intended use

Do you intend to use frequencies in the 2.6 GHz band in the future?

Yes

When do you plan to start using such frequencies?

No

Why not?

Ericsson being infrastructure supplier has the strict policy not to become an operator or part of an operator.

## 2.6 Expected services

In your view, which services/applications would be especially well supported by the 2.6 GHz band?

eUTRAN provides support for advanced services such as High Performance Mobile Broadband, Fixed Wireless, Multi Media Telephony, High Definition Mobile TV as well as full backwards compatibility with existing Mobile Broadband, Mobile TV, Voice, SMS, MMS, Positioning and other.

The 2.6 GHz spectrum is especially suitable to further increase the offering in Mobile Broadband. The relatively high frequency suits perfectly for providing capacity in densely populated areas and in hot spots.

## 2.7 Technologies

Which technologies do you plan to use in the 2.6 GHz band (or: in your view, which technologies will be deployed in this band)?

Ericsson has the firm conviction that eUTRAN (aka LTE) is the most suitable technology to further grow the blooming Mobile Broadband business.

Ericsson strongly supports the allocation of this band in line with ECC/DEC/(06)01 Annex 1 for IMT 2000/UMTS purposes – in accordance with WRC 2000 recommendations, identifying the 2500-2690 as the “UMTS expansion band” globally. The band shall be used for eUTRAN and HSPA, being an evolution of UMTS/WCDMA, and following evolutionary technologies of the GSM/UMTS/HSPA/eUTRAN track.

## 2.8 Need for unpaired frequencies

What is your estimate of the frequency requirements of an operator planning to acquire unpaired frequencies? In your view, how much bandwidth would an operator want to acquire as an absolute minimum? How many interested parties would you expect?

TDD spectrum should be awarded in 5 MHz blocks. 10 MHz can be seen as the minimum bandwidth to offer TDD services. Operators who acquire FDD spectrum should be allowed to also acquire TDD spectrum if wished by them.

## 2.9 Interest in unpaired frequencies

Are you generally interested in unpaired frequencies?

Yes

In what amount? (minimum/maximum bandwidth in MHz)

No

Why not?

Ericsson being infrastructure supplier has the strict policy not to become an operator or part of an operator.

## 2.10 Need for paired frequencies

What is your estimate of the frequency requirements of an operator planning to acquire paired frequencies? In your view, how much bandwidth would an operator want to acquire as an absolute minimum? How many interested parties would you expect?

The full power of eUTRAN is exhibited in a multi-carrier scenario with 20 MHz bandwidth. All equipment will be designed from the very first day for multi-carrier operations with up to 20 MHz. With the rapid growth of Mobile Broadband, operators will need that bandwidth, and aiming for less would be a pre-mature self-restriction.

Ericsson expects all four existing mobile operators to be interested in the 2.6 GHz spectrum. Obviously 4 operators cannot get 20 MHz each in a 70 MHz band. It is up to the operators to decide which would be the minimum spectrum they would accept.

## 2.11 Interest in paired frequencies

Are you generally interested in paired frequencies?

Yes

In what amount? (minimum/maximum bandwidth in MHz per duplex direction)

No

Why not?

Ericsson being infrastructure supplier has the strict policy not to become an operator or part of an operator.

## 2.12 Expected rollout

What rollout scenario do you expect or plan for the 2.6 GHz band? In what regions will these frequencies primarily be used? Do you expect comprehensive network coverage or joint use with other frequency bands (e.g., at hot spots?)

Ericsson expects the roll-out to start in hotspot and high density areas. As eUTRAN evolves it will come also in many other frequency bands, and hot-spot coverage provided by high frequencies will be complemented by area coverage provided by lower frequencies (e.g. in a refarmed 900 MHz band and/or in the 790-862 MHz band of the digital dividend).

### 2.13 Subdivision of frequency band

In your view, what subdivision of the frequency band would be most reasonable? How many frequency packages (in what size) should be put up for allocation?

It is essential to implement the 2x5 MHz channelling structure while allowing operators to acquire several contiguous blocks of paired spectrum that would provide for the introduction of evolutionary IMT-2000 systems such as eUTRAN, which are capable of using wider channels than the current 5 megahertz channel bandwidth. If an operator wishes, he should be able to get 20 MHz.

Ericssons supports a frequency allocation in line with ECC/DEC/(06)01 Annex 1. Hence, 2x14 5 MHz FDD blocks should be auctioned for the evolution to HSPA and eUTRAN.

### 2.14 Arrangement of frequency packages

How important is it that the frequency packages allocated to an individual bidder are directly adjacent to one another? Why?

It is absolutely necessary that the 5 MHz channels of each successful operator are adjacent to each other. The equipment is design to operate on a 20 MHz bandwidth. In case that an operator would get e.g. 2x10 MHz with a gap of 5 MHz inbetween, this operator would need equipment which operates on 25 MHz bandwidth, which exceed the bandwidth of normal operation.

### 2.15 Differences between frequency channels

In your view, are there significant differences between the individual 5 MHz frequency channels? Does this apply to all frequency channels, or only to certain ones?

Yes

Please indicate precisely which frequency channels you mean, and please describe the differences as well as their significance.

No

Assuming that guard bands are not discounted from the FDD spectrum and that cross-border coordination does not limit the usage of the frequencies in border areas such as Salzburg or the Rhine Valley, there is no difference between the different FDD channels.

From a technical/economic perspective, are the differences between the individual frequency packages so significant that it would be absolutely necessary to account for them in the allocation procedure, even if this would involve a far more complicated auction procedure?

Yes

Why?

No

## 2.16 Duration of use

In your view, what minimum duration of use would be necessary? What should the maximum duration of use be?

## 2.17 Coverage obligations

Coverage obligations may be imposed in order to ensure the effective use of frequencies. In your view, what specific coverage obligations would be most appropriate for this purpose?

## 2.18 Schedule

As mentioned in the introduction, the frequencies could be allocated at the end of the year 2009. In your view, is that a reasonable time for allocation, or would allocation a later time (at the end of 2010) be more sensible? Please provide reasons for your response.

Auction at end of 2009

Reason(s):

It is important that operators get access to frequencies in due time before start of service. Since the introduction of eUTRAN is foreseen for 2010, end of 2009 is the latest conceivable date for awarding the frequencies in order to start a roll-out in 2010. The frequencies should be awarded as soon as possible.

Auction at end of 2010

Reason(s):

Auction at another point in time

When? Reason(s):

### 3 Contact information

Company / address:

Ericsson Austria GmbH  
Ernst-Melchior-Gasse 24  
1020 Wien

Contact person / e-mail / telephone:

Dipl.-Ing. Gerhard Fritze  
[gerhard.fritze@ericsson.com](mailto:gerhard.fritze@ericsson.com)  
+43 1 81100 5467

## 4 Request for comments

Please e-mail all comments to the following address by **February 23, 2009**:

[tkfreq@rtr.at](mailto:tkfreq@rtr.at)

RTR will publish an anonymized summary of all comments received.

In addition, your individual comments will be published if desired.

To this end, please indicate whether you are willing to allow the full publication of your comments:

- Yes, with an indication of the company's name
- Yes, but without any indication of the company's name
- No