

## **Communication 219/2007**

### **Consultation on draft decision**

#### **Draft decision by the President's Chamber on the order for and choice of proceedings for the award of spectrum in the bands 1.8 GHz, 2 GHz and 2.6 GHz for digital cellular mobile communications under sections 55(9), 61(1) and (2), 132(1) and (3) TKG; Consultation in accordance with sections 55(9) second sentence and 61(1) first and second sentence TKG**

In Communication 308/2006 published on 13 September 2006 (Official Gazette 18/2006, page 2972) the Federal Network Agency announced that it would invite comments in early 2007 on its decision to award further spectrum for digital cellular mobile communications.

Under section 55(9) of the Telecommunications Act (TKG) the Agency can issue an order for frequency assignment to be preceded by award proceedings as per section 61 TKG when frequencies are not available for assignment in sufficient numbers. Such an order is based on a decision by the President's Chamber as set out in section 55(9) in conjunction with section 132(3) TKG. Also required under section 61(1) in conjunction with section 132(3) TKG is a decision by the President's Chamber on the choice of award proceedings.

The specific determinations and rules required by the TKG for an auction (award conditions) as per section 61(4) second sentence TKG and the rules for conducting it (auction rules) as per section 61(5) TKG are set by decisions published at a later date. Decisions as referred to in section 61(4) second sentence, paras 2 and 4 TKG are taken under section 132(3) third sentence TKG in consultation with the Agency's Advisory Council.

To accelerate proceedings, the decision on ordering award proceedings as per section 55(9) TKG is to be taken at the same time as the decision on the choice of proceedings as per section 61(1) TKG and the two steps thus taken simultaneously. In the same way, at a later date, the decision on award conditions as per section 61(4) TKG will be published at the same time as the decision on the auction rules as per section 61(5) TKG.

Section 55(9) second sentence and section 61(1) TKG require that persons likely to be affected should be heard prior to such decisions. Thus comments are invited on the draft decision by the President's Chamber, published in Annex 1, on the order for and choice of proceedings for the award of spectrum in the bands 1.8 GHz, 2 GHz and 2.6 GHz for digital cellular mobile communications under sections 55(9), 61(1) and (2), 132(1) and (3) TKG.

Annex 2 sets out initial considerations on the later decisions on award conditions as per section 61(4) second sentence TKG and the auction rules as per section 61(5) TKG.

## A. Re Annex 1

The draft decision in Annex 1 on which responses are requested makes, as far as possible, the entire spectrum for digital cellular mobile communications available for award. Specifically, the frequencies are as follows:

Band	Available spectrum	
1.8 GHz	2 x 5 MHz (10 MHz) 2 x 5 MHz (10 MHz)	1730.1-1735.1 MHz; 1825.1-1830.1 MHz 1758.1-1763.1 MHz; 1853.1-1858.1 MHz
2.0 GHz	2 x 9.9 MHz (19.8 MHz) 2 x 9.9 MHz (19.8 MHz) 10 MHz 9.2 MHz	1930.2-1940.1 MHz; 2120.2-2130.1 MHz 1950.0-1959.9 MHz; 2140.0-2149.9 MHz 1900.1-1910.1 MHz 2010.5-2019.7 MHz
2.6 GHz	2 x 70 MHz (140 MHz) and 50 MHz FDD downlink (external) or 50 MHz TDD	2500.0-2570 MHz /2620 – 2690 MHz  2570 – 2620 MHz

After the two E network operators turned down spectrum in the 1.8 GHz band in January 2007 under a reallocation in the 900 MHz band, two blocks of 2 x 5 MHz (paired) from the 1.8 GHz band are available for renewed award. To date, this band has not featured in the consultations on frequency requirements in the bands 2.0 GHz and 2.6 GHz.

The following considerations, in particular, favour inclusion of the 1.8 GHz band in the upcoming award proceedings.

In its Communication of 8 February 2007 "Rapid access to spectrum for wireless electronic communications services through more flexibility" (COM(2007) 50 final, page 9) the Commission asks the Member States to clarify existing authorisation conditions (technical and non-technical) as a matter of urgency and to remove restrictive conditions wherever possible in order to facilitate flexibility, rapid access to spectrum and competition, including in the area of radio infrastructure.

Accordingly, the European Commission is now drawing up a Decision on opening up spectrum currently used for GSM in the bands 900 MHz and 1800 MHz, the draft of which explicitly envisages the opening of this spectrum for technologies other than GSM. This Decision is expected to take effect before the end of 2007.

In tune with these European endeavours it is meaningful, and necessary, to put this flexibility thinking into practice promptly at national level in the award proceedings, so that the decisions at European and national level are made at the same time. Thus it is appropriate to dedicate the bands 1.8 GHz, 2 GHz and 2.6 GHz in the Frequency Usage Plan to digital cellular mobile communications, without restricting them to particular technologies or standards, and to award all the available spectrum for mobile communications, in other words the 1.8 GHz spectrum too, in the same proceedings. This applies all the more as the Member States will be required anyway to open the spectrum used for GSM to other technologies within the foreseeable future and to provide available spectrum rapidly.

In this connection it should be noted that parts of all the above-mentioned bands are in litigation (cf Annex 1, B., re I, 1). As the spectrum available at 1.8 GHz has not previously been part of this award, we are publishing the following explanatory notes so as to ensure a transparent process.

When the first set of measures was taken to implement the GSM concept (Order 88/2005, Official Gazette 23/2005, page 1852ff) this spectrum was released by the E network operators in return for the assignment of spectrum in the so-called E-GSM band (880 MHz to 890 MHz and 925 MHz to 935 MHz) (cf Communication 78/2006, Official Gazette 4/2006, page 702).

Action aimed at provision of the E-GSM spectrum for mobile communications for the railways (GSM-R) was brought against this reallocation. This action is still pending. Thus the E network operators have relinquished their rights to use the frequencies released in the 1.8 GHz band on condition that the assignment of frequencies from the so-called E-GSM band will still be valid after conclusion of the administrative court proceedings. Should, contrary to the expectations of the Federal Network Agency, the action against the reallocation be successful, the waivers would become invalid and the spectrum in the band 1.8 GHz no longer available.

In the band at 2 GHz the spectrum originally assigned to Quam GmbH of, in total, 2 x 10 MHz (paired) and 1 x 5 MHz (unpaired) has been revoked by the Federal Network Agency; action has been brought against the revocation, so that this spectrum is likewise in litigation.

In the band 2.6 GHz it must be noted that at present, up to 56 MHz is still assigned regionally for fixed service usage. Admittedly, these assignments expire at the close of 31 December 2007 and the Federal Network Agency has turned down an extension of the assignments with reference to these award proceedings. Nevertheless, the assignee has lodged an appeal against rejection of the extension. In an oral discussion of the case on 2 March 2007, at the proposal of the court, a settlement was recorded in the summary proceedings under which the current assignee could exercise the usage rights in the 2.6 GHz band beyond 31 December 2007 until proceedings on the main issue were final and absolute, but at the latest until use was begun by another assignee.

The fact that part of the spectrum is in litigation could indeed be an argument against providing this spectrum at the present time. Yet this – reasonable – view of waiting with award until the third party actions have been concluded in the last instance finally and absolutely, would mean that available spectrum might remain unused for up to ten years. But precisely this is what the lawmakers want to avoid by disallowing suspensory effect for protests and action in section 137(1) TKG). These frequencies are available within the meaning of section 55(5) first sentence, para 2 TKG as they are not occupied by assignments to third parties. Under section 52(1) TKG it is incumbent on the Federal Network Agency to assign frequencies to secure efficient and interference-free use within the meaning of section 2(2) para 7 TKG and in consideration of further regulatory aims as set out in section 2(2) TKG. If available spectrum is not offered to the market, the consequence is inevitably non-use. But non-use is incompatible with the principle of securing efficient and interference-free use, in particular. The Federal Network Agency is aware that, if disputed spectrum is released for award, the risk of legal action would probably be reflected in the proceeds from the auction, as the estimated value of spectrum in litigation is likely to be lower than that of spectrum not in litigation. The facts that have given rise to these risks have been described transparently and clearly for all interested parties and are thus equally available for individual risk appraisal.

To ensure restoration of parity, assignment of the frequencies must be made subject to revocation. Such a revocation proviso is also being included in assignment of the frequencies in litigation from the bands at 2 GHz and 2.6 GHz.

Previous consultations have shown that frequencies are not available in sufficient numbers as required by section 55(9) first sentence TKG for assignment for digital cellular mobile communications. Evaluation of the responses to the consultation of 4 May 2005 (Order 33/2005) showed demand to exceed the supply of spectrum, and a complex, divergent range of interests in the market. The 2005 registrations of demand are still regarded as stable. Thus a situation of scarcity must be assumed.

Under sections 59(9) and 61(1) TKG, frequency assignment as per section 55 TKG is to be preceded by an auction.

Further, we would like to draw attention to the following in respect of the band 2.6 GHz. In oral discussions on 2 March 2007 the court indicated that it considered use of the band 2.6 GHz for the fixed service permissible beyond 2007, provided demand here was not taken up entirely with digital cellular mobile communications applications.

The court promised to conclude proceedings on the main issue at first instance before the end of 2007 and thus before the award proceedings. We would therefore draw the attention of interested parties seeking an assignment of frequencies in the 2.6 GHz spectrum to the fact that, to safeguard their own rights, they should submit to the Federal Network Agency an account of their existing demand for this spectrum and a statement of reasons, as soon as possible and as concretely as possible. We would also like to draw attention to the possibility in section 55(3) TKG that exists at all times to make an application for frequency assignment.

## **B. Re Annex 2**

Annex 2 contains the main points for later decisions by the President's Chamber on the award conditions as per section 61(4) sentence 2 TKG and the auction rules as per section 61(5) TKG.

We consider it useful, in connection with the consultation on the draft decision on the order for and choice of award proceedings in Annex 1, to publish our initial considerations now on the further President's Chamber decisions and to invite comments in order to have a sound basis for preparing the subsequent draft decisions.

## **C. Invitation to comment**

Please send comments on the draft decision in Annex 1 and on the considerations on the award conditions in Annex 2, in German, not later than 12:00 (CET) on 4 May 2007, in writing to

Federal Network Agency  
Referat 212  
Tulpenfeld 4  
53113 Bonn

and electronically (Word or PDF file) to

E-Mail: [anhoerung.vergabeverfahren@bnetza.de](mailto:anhoerung.vergabeverfahren@bnetza.de)

We intend to publish the responses in the original on the Agency's website. For this reason we would ask you to attach a declaration of agreement to publication to your response and to submit a version for publication marked as such.

**DRAFT of a**

**General Order**

**Decisions of the President's Chamber of the Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen (BNA / Federal Network Agency for Electricity, Gas, Post and Railways) on the order for and choice of proceedings for the award of spectrum in the 1.8 GHz, 2 GHz and 2.6 GHz bands for digital cellular mobile communications in accordance with section 55(9), section 61(1) and (2), section 132(1) and (3) TKG (Telecommunications Act)**

**- File reference: BK 1- 07/003**

The Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen (BNA / Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railways) shall issue via the President's Chamber, by virtue of section 55(9), section 61(1) and (2), section 132(1) and (3) TKG dated 22 June 2004 (BGBl. I, p. 1190) (BundesGesetzBlatt / Federal Law Gazette) the following decisions on the award of frequencies for digital mobile communications in the 1.8 GHz, 2.0 GHz and 2.6 GHz bands:

**I. Order for the award proceedings**

File reference: BK 1- 07/003-1

It is ordered in accordance with Section 55(9) TKG that the award proceedings under Section 61 TKG are to precede the assignment of spectrum for digital cellular mobile communications in the 1.8 GHz, 2.0 GHz and 2.6 GHz bands.

**II. Choice of the award proceedings**

File reference: BK 1- 07/003-2

The proceedings under section 61(1) TKG shall be conducted as an auctioneering procedure in accordance with section 61(4) and (5) TKG.

**Reasons**

**A. Initial situation**

After return of frequencies in the so-called UMTS core band and European-wide harmonisation of frequency ranges for UMTS/IMT-2000 mobile communications in the so-called UMTS extension band, additional frequencies can now be provided – far beyond the award made in 2000 - for digital cellular mobile communications in the 2 GHz and 2.6 GHz bands. In addition, the opening up of the E-GSM frequencies for civilian uses has had the effect of making frequencies in the 1.8 GHz range available for assignment to digital cellular mobile communications.

The development of digital cellular mobile communications for the German public started in the early 90s. At that time it was possible to open up the market for digital cellular communications gradually using a bidding procedure. At that time too the mobile communications was the first market to be opened up to competition (so-called "peripheral competition in the monopoly") from the then monopoly of the Federal Post Office (voice telephone service monopoly and telecommunications systems monopoly).

In the early 90s, it was initially Deutsche Telekom Mobilfunk GmbH, now T-Mobile Deutschland GmbH, (D1 Network) and Mannesmann Mobilfunk GmbH, now Vodafone D2 GmbH, (D2 Network) that obtained the right by virtue of Section 2 of the Fernmeldeanlagen-gesetz (FAG/Telecommunications Systems Act) to operate mobile communications networks (cf

Communication 2007/1991, Official Gazette (OG) (Amtsblatt (ABl.)) of the Federal Minister for Post and Telecommunications 37/1991, page 1680 ff). At the time both companies were assigned a spectrum of 2 x 12.4 MHz in total from the 900 MHz band.

In 1993 E-Plus Mobilfunk GmbH (E1 Network) was licensed in accordance with Section 2 of the FAG (cf order 26/1993, OG of the Federal Ministry of Post and Telecommunications (BMPT) 11/1993, page 229 ff).

In 1997 E2 Mobilfunk GmbH & Co. KG, now O<sub>2</sub> Germany GmbH & Co. OHG, (E2 Network) was the fourth GSM mobile telephone network operator to receive a licence on the basis of the TKG – now no longer in force – dated 25 July 1996 (TKG 1996) (cf Order 128/1997, BMPT OG 14/1997, page 679 ff).

The E-network operators licensed after the D-network operators – since there was no longer any spectrum left at 900 MHz at that point – received spectrum from the 1800 MHz band that had been harmonised for GSM in the intervening time, and were each assigned 2 x 22.4 MHz.

In 1999 additional spectrum from the 1800 MHz band was made available as an extension spectrum (complementary spectrum) to the GSM network operators for existing networks (cf Order 70/1999, Reg TP OG 11/1999, page 1751 ff). As part of an auction process conducted in October 1999, these frequencies were bought at an auction by the D-network operators in roughly equal parts with the result that they now each have available a combined range of frequencies in the GSM band of 2 x 17.4 MHz, thus allowing both the 900 MHz and 1800 MHz bands to be used.

In summer 2000 licences for UMTS/IMT-2000 mobile communications were awarded. The award proceedings were based on three decisions of the President's Chamber. With the decision on the proceedings to award UMTS licences dated 10 May 1999 it was decided that the award should take place as an auction (Order 51/1999, Reg TP OG No. 9/1999, page 1519 ff). On 18 February 2000 the President's Chamber decided on the one hand on the award conditions along with the specimen licence and frequency usage conditions (order 13/2000, Reg TP OG No. 4/2000, page 516 ff) and, on the other, set the auction rules (order 14/2000, Reg TP OG No. 4/2000, page 564 ff).

A total of 2 x 60 MHz (paired) and 25 MHz (unpaired) was available in the so-called UMTS core band (in the band between 1900 MHz and 2170 MHz). Since there were not enough frequencies available given the market demand for assignments, the regulatory authority held the legally planned auction procedure. Six bidders were awarded the contract as part of the auction procedure. These were the following businesses: E-Plus 3G Luxemburg S.a.r.l., Mobilcom Multimedia GmbH, O<sub>2</sub> Germany GmbH & Co. OHG, Quam GmbH, T-Mobile Deutschland GmbH, Vodafone D2 GmbH. In accordance with their bids, the six businesses were issued licences (cf communication 597/2000, Reg TP OG 20/2000, page 3435 ff) and each assigned 2 x 10 MHz frequencies (paired) as the minimum set of frequencies required to operate a UMTS/IMT-2000 mobile communications network. E-Plus 3G Luxemburg S.a.r.l., Mobilcom Multimedia GmbH, Quam GmbH, T-Mobile Deutschland GmbH, Vodafone D2 GmbH each bought an additional 5 MHz frequency block (unpaired) at the auction.

In late 2003 Mobilcom Multimedia GmbH gave up its rights arising from the UMTS/IMT-2000 licence and the frequency assignments. In a press release dated 23 December 2003 the Reg TP announced Mobilcom Multimedia GmbH's relinquishment of its UMTS/IMT-2000 frequency usage rights and pointed out that the frequencies would be re-assigned in an open and transparent procedure.

The audit of the coverage obligation of the UMTS/IMT-2000 licences conducted in 2004 showed that only the network operators E-Plus 3G Luxemburg S.a.r.l., O<sub>2</sub> Germany GmbH & Co. OHG, T-Mobile Deutschland GmbH and Vodafone D2 GmbH were using their frequencies for UMTS/IMT-2000 mobile communications. Because of the unused UMTS/IMT-2000 frequency usage rights, the BNA brought a revocation action against Quam GmbH. Quam GmbH brought an action against this and this action is still pending.

In addition, frequencies in the 1.8 GHz band are still available for award for digital cellular mobile communications. After the Federal Ministry of Defence abandoned its military use of frequencies in the 880 MHz to 890 MHz and 925 MHz to 935 MHz bands (so-called E-GSM band), the BNA, in accordance with the concept of the award, defined further spectrum for digital cellular mobile communications below 1.9 GHz (GSM concept) dated 21 November 2005 (order 88/2005, BNA OG 23/2005, page 1852) such that a part of the frequency usages of the E network operators in the 1.8 GHz band was shifted into the E-GSM band. It was then possible to offer the spectrum that became free following abandonment by the E network operators to the market following the completed migration in accordance with requirements and in a non-discriminatory manner.

Against this background the availability of the frequencies can be illustrated in principle as follows:

After implementation of the initial raft of actions relating to the GSM concept, at 1.8 GHz 2 x 5 MHz (paired) were now available in the frequency bands 1730.1 MHz to 1735.1 MHz (lower band) and 1825.1 MHz to 1830.1 MHz (upper band) as well as in the frequency bands 1758.1 MHz to 1763.1 MHz (lower band) and 1853.1 MHz to 1858.1 MHz (upper band).

At 2.0 GHz, after revocation of the frequencies owned by Quam GmbH, frequency blocks of 2 x 9.9 MHz (paired) were available firstly in the frequency bands 1930.2 MHz to 1940.1 MHz (lower band) and 2120.2 MHz to 2130.1 MHz (upper band), and secondly, 5 MHz (unpaired) in the frequency band 1900.1 MHz to 1905.1 MHz. In addition, the frequencies of 2 x 9.9 MHz (paired) in the bands 1950.0 MHz to 1959.9 MHz (lower band) and 2140.0 MHz to 2149.9 MHz (upper band) plus 5 MHz (unpaired) in the 1905.1 MHz to 1910.1 MHz returned by Mobilcom Multimedia GmbH could now be made available.

The frequencies in the 2010.5 MHz to 2019.7 MHz band reserved originally at international level for so-called Self-Provided Applications (SPA) were no longer provided for these types of applications following the decision of the Electronic Communications Committee (ECC) of the Conférence européenne des Administrations des postes et des télécommunications (CEPT) dated 24 March 2006 (ECC/DEC/(06)01). Consequently, the frequencies were also made available for digital cellular mobile communications.

The 2500 MHz to 2690 MHz frequency band encompasses a total spectrum of 190 MHz and will be available from 01 January 2008 onwards. This band, which is currently assigned to fixed service usage until it expires on 31 December 2007, is to be dedicated to digital cellular mobile communications from 01 January 2008 onwards. But it should be pointed out that frequency bands of up to 56 MHz have already been assigned in some regions. These assignments have a time limit of 31 December 2007, but the assignee has applied for an extension of the assignments for fixed service usage. However, this was rejected by the BNA with reference to these award proceedings. Appeals were lodged against this rejection. Although a large part of the spectrum in the 2.6 GHz band is not used at present, the fact that regionally assigned frequencies are in litigation is impacting on almost all frequency blocks that can be assigned throughout Federal territory. Almost all channels that can be assigned throughout Federal territory are affected by the regional assignments.

To smooth the path for more transparency and planning security, in May 2005 the BNA opened a hearing at which the frequency requirement was outlined and opinions obtained on the initial core thinking (order 33/2005, Official Gazette BNA 8/2005, page 782 ff). At this hearing the key points were submitted for discussion, and the subject of this discussion was to provide frequencies - shared, commensurate with requirements and as early as possible - for UMTS/IMT-2000 mobile communications from the frequency bands of the so-called UMTS core band and the so-called UMTS extension band. The aim of the BNA was to avoid as far as possible regulatory induced shortages of frequencies.

The assessment of the comments on the above-mentioned key points reflected a high demand for available spectrum for an equally complex and extremely divergent positioning of interests in the market. The BNA held an informal hearing on 27 October 2005 to obtain initial views of the positioning of interests arising from the comments and to facilitate a discussion of regulatory conclusions.

After the informal hearing the BNA published a summary of the various interests (order 89/2005, BNA OG 24/2005, page 1909 (1910 ff)). The existing UMTS/IMT-2000 network operators jointly outlined a requirement for additional frequencies that includes the available capacities in the 2.0 GHz and 2.6 GHz bands. Furthermore, companies announced that they intended to set up their own mobile telephone network as new arrivals on the market and to acquire their own frequency usage rights as a result. Finally, potential BWA network operators and manufacturers of WiMAX system engineering also announced their interest in using the frequencies in the 2.6 GHz band to deploy BWA systems for mobile data transmission.

Furthermore the BNA presented its initial regulatory estimates and possible award scenarios for discussion (order 89/2005, BNA OG 24/2005, page 1909 (1919 ff)).

In communication 308/2006 dated 13 September 2006 (BNA OG 18/2006, page 2972) it was also announced in relation to the continuing procedural matters that the first decisions on the award of additional spectrum in the 2 GHz and 2.6 GHz frequency bands would be presented to a hearing.

In accordance with section 55(9) TKG, a decision of the President's Chamber on the order for the award proceedings under section 61 TKG will be issued (see more on this under B. I). Moreover, according to section 61(1) TKG, a decision on choosing the award proceedings is also required (see more on this under B. II).

The detailed findings and rules required under the TKG for the auction procedure in accordance with section 61(4) second sentence TKG and the rules on the implementation of the auction procedure in accordance with section 61(5) of the TKG shall be defined in decisions to be issued later. The decision in accordance with section 61(4) second sentence paras 2 and 4 TKG shall be taken in accordance with section 132(3) third sentence TKG in consultation with the Agency's Advisory Council.

In accordance with section 132(1) and (3) TKG the decisions shall be issued as decisions of the President's Chamber.

To accelerate proceedings, the decision on ordering award proceedings in accordance with section 55(9) TKG is to be taken at the same time as the decision on the choice of proceedings in accordance with Section 61(1) TKG, and the two steps thus taken simultaneously.

Accordingly, the decision on the award conditions in accordance with section 61(4) TKG is also to be issued later at the same time as the decision on the auction rules in accordance with section 61(5) TKG.

## **B. Justification in detail**

The decisions of the President's Chamber are based in detail on the following considerations:

the previous system of assigning at Frequency Usage Plan level is characterised by the definition and delimitation of various usage purposes in the frequency order. This means that in the mobile communications sector for instance, a difference will be made between GSM and UMTS/ITM-2000, narrow band and broadband trunking, and radio paging. In addition, there are various fixed usage service applications, such as radio relay transmission for instance.

This demarcation was done in the past using the available technologies since there was usually only one technology with which certain applications could be offered in a certain frequency band. This is no longer possible today. On the one hand, because of the continuing technical development of new technologies, various services can be used. On the other hand, the widest range of technologies can be used for one and the same service. A convergent development can also be detected in services that were different until now.

The rising number of mobile communications users, and the increased use of data and added value services resulting from this, are increasing the demand for frequency spectrum. Also, technological progress in increasingly shorter innovation cycles and the increasing convergence of technologies and uses are opening up new possibilities in terms of the use of frequencies (e.g. mobile television, interactive multimedia services). The aim is not to restrict these developments by rigid regulatory stipulations, like the previous strict separation of applications

in the respective frequency bands. The aim is rather to provide the greatest possible freedom for all those involved. Stipulating certain technologies or standards and excessively narrow definitions in terms of the use of frequencies are no longer envisaged.

To take account of these developments, the previous regulatory practice is to be re-aligned to provide a more flexible overall concept. This includes in particular a broad definition of the purpose of use of assignments in order not to prevent possible applications and service provision or their continuing development. With the wide shaping of the purpose of use of frequencies for broadband wireless network access (BWA) in the 3.5 GHz band without reference to the use of certain technologies and standards, the BNA made allowances for these developments and approaches in a first case (order 42/2006, BNA OG 20/2006, page 3051 (3085)).

These considerations are in line with international developments. The EU Commission's Radio Spectrum Policy Group (RSPG) developed a correspondingly flexible approach in 2005 with its policies on wireless access policy for electronic communications services (WAPECS). According to this concept, all frequency usages are to be offered with all technologies, provided this is technically feasible, in the frequency bands that were identified in the opinion expressed on 23 November 2005 (RSPG05-102 final) and that include the frequency bands being discussed here. The assignments of frequency bands for certain radio services that are provided by the International Telecommunication Union (ITU) and that are implemented at national level in the order governing the frequency band assignment plan are not affected by this.

The regulatory authorities are to define only the absolutely necessary usage conditions in order to ensure efficient and trouble-free frequency usage. Member States have agreed to introduce the WAPECS concept.

Communication 308/2006 (BNA OG 18/2006, page 2972) in particular, with which the BNA informed the public about the state of the hearing on 21 December 2005 on the award of additional spectrum in the 2.0 GHz and 2.6 GHz frequency bands, must be seen against the background of the WAPECS concept. This communication states the following:

“The evaluation of the comments and the conclusions to be drawn by the BNA from this will need to be based on the need for making frequency regulation flexible. On 23 November 2005 the Radio Spectrum Policy Group expressed its “Opinion on Wireless Access Policy for Electronic Communications Services (WAPECS)“. The Member States have agreed to its implementation. On this basis, in addition to other frequency bands, the UMTS bands shall also belong to the bands included in the WAPECS concept (Point 3.3 “Mobile bands“ of the opinion).“

The EU Commission also picked up on this concept in its communication (2007)50 dated 08 February 2007 on the subject of “fast access to frequencies for wireless electronic communication services through more flexibility”, and urged Member States to clarify urgently their existing (technical and non-technical) approval conditions and to remove any restrictions as far as possible in order to promote flexibility, fast access to frequencies and competition in the radio infrastructure.

In the frequency band assignment plan, the 1.8 GHz, 2.0 GHz and 2.6 GHz frequency bands that are up for award have been assigned to the mobile communications service. The current Frequency Usage Plan, which was drawn up on the basis of the frequency band assignment plan, specifies the frequency usages for mobile communications in these frequency bands. In the 1.8 GHz band, mobile communications use has been reserved for digital cellular mobile communications in accordance with the GSM standard and its further developments. In the 2.0 GHz band, the uses have been based on digital cellular mobile communications using UMTS/IMT-2000. For the 2.6 GHz band, there is a reference in the current Frequency Usage Plan that the 2500 MHz to 2690 MHz band is reserved for terrestrial IMT mobile communications applications from 01 January 2008 onwards.

Given the above mentioned considerations on a more flexible design of the frequency regulation, the BNA intends to extend these allocations and in general terms, and without

naming a standard, to define “digital cellular mobile communications” as the standard frequency usage in these frequency bands. The procedure for a corresponding modification of the Frequency Usage sub-plans in accordance with the Frequency Usage Plan establishment order (FreqNPAV) dated 26 April 2001 (BGBl I, page 827) has been set in motion.

The BNA shall put up for award the entire spectrum available for digital cellular mobile communications at one and the same time. This is intended to avoid regulatory-induced shortage of frequencies. As a result, the BNA did not immediately make the frequencies handed back by Mobilcom Multimedia GmbH in 2003 available to the market, but instead included them in the overall planning for the so-called UMTS core band and the so-called UMTS extension band as well as the so-called GSM bands (mobile communications overall plan). A reference was made to this in order 33/2005 dated 04 May 2005 (Reg TP OG 8/2005, page 782 ff.) It states the following on this subject:

“The Regulatory Authority shall also use the above mentioned regulatory criteria for the development of the UMTS concept as far as this is possible today. To provide the market with the most comprehensive overview possible and hence transparency of the possible awards of frequency spectrum in the future, it shall open up simultaneously and in the same official gazette, like the subsequent hearing on the award of mobile communications spectrum for UMTS/IMT-2000 services, a hearing on possible awards of mobile communications spectrum below 1.9 GHz. With the simultaneous hearing on possible awards in various frequency bands, the regulatory authority is trying to prevent as far as it possibly can regulatory-induced shortages of frequencies as a result of partial awards.

The regulatory authority established the following key points as a basis for the concept of a frequency award for UMTS mobile communications to be developed. The subject of the key points is the provision – in line with requirements and shared at the earliest possible moment - of frequencies for UMTS/IMT-2000 mobile communications from the frequency bands of the so-called core band and the UMTS extension band. Through its public consultation, the regulatory authority is giving interested groups the possibility of putting forward their requirements in terms of use of frequencies for UMTS/IMT-2000 mobile communications, and of expressing their opinion on the intended provision of the so-called UMTS core band and the UMTS extension band for UMTS/IMT-2000 mobile communications”.

The GSM concept also follows these considerations. In the GSM concept the following is stated on this subject (order 88/2005, BNA OG 23/2005, page 1852 ff):

“In addition to questions to do with the technical aspects of frequency regulation, the competitive aspects must also be taken into account as particular importance can be attached to them when awarding frequencies. Among other things, the amount of spectrum made available or to be made available can influence the question of shortage of frequencies (section 55(9), section 61 TKG), and hence the type of award procedure, and, last but not least, the costs of acquiring the resource called “frequency”. On the other hand, radio applications (like GSM and UMTS/IMT-2000 mobile communications for instance) can only be successful in competitive terms if they have enough spectrum and optimum technical framework conditions available. Consequently, those sub-concepts currently being discussed, like those for GSM and UMTS, as well as the future overall concept “Radio based access facilities” are to be developed with the aim of avoiding frequency shortage as much as possible and of facilitating fast, transparent and unbureaucratic procedures on frequency award.

It is planned to carry forward the GSM concept after implementation of the described raft of actions with a view to linking up later with other concepts, like the UMTS concept, in order to achieve in the final analysis a comprehensive confluence of radio markets and their regulatory framework conditions”.

The flexible approach pursued here is in line with the conclusions published by the EU Commission in its communication (2007)50 dated 08 February 2007 on the subject of “fast access to frequencies for wireless electronic communication services through more flexibility”.

This approach to (frequency) award means that only the stipulations that are absolutely necessary for an efficient and trouble-free use of frequencies shall be made. Restrictions on certain standards and technologies in particular will no longer be applied. A simple, fast and appropriate procedure is achieved, and brings with it a maximum amount of flexibility and planning security, by simultaneously awarding the total amount of spectrum that is currently available for cellular digital mobile communications.

### **On I. (Order for the award proceedings):**

In accordance with section 55(9) TKG award proceedings under section 61 TKG is to precede the assignments for digital mobile cellular communications in the 1.8 GHz, 2.0 GHz and 2.6 GHz bands.

In accordance with section 55(9) first sentence TKG, notwithstanding section 55(5) TKG, it can be ordered that award proceedings based on the conditions to be set by the BNA in accordance with section 61 TKG are to precede the assignments. Award proceedings can be ordered if there is not enough spectrum available for assignments or several applications have been submitted for certain frequencies. This order under section 55(9) TKG is at the discretion of the BNA.

There are not enough frequencies available for assignments for digital cellular mobile communications in the 1.8 GHz, 2.0 GHz and 2.6 GHz bands.

This finding is based on a forecast decision of the BNA. Under section 55(9), the Telecommunications Act (TKG) provides for this possibility of the BNA determining that a shortage exists. According to the legal justification this is then the case when the BNA is of the opinion that there are not enough frequencies available for assignments (see official justification on section 53(9) of the government draft, BR-DRs 755/03, page 109). The BNA has considerable room for assessment when performing tasks to do with the frequency order and especially when determining shortage in accordance with section 55(9) TKG since valuations and weightings have to be applied to the planning and executive decisions about the frequency order in order to compensate for some contradictory interests on the one hand and to weigh up the regulatory goals on the other. In this process, the BNA must start with assumptions that both correspond to the current level of knowledge and experience, and are also comprehensible, and that take the regulatory goals into account.

### **1. Available frequency bands**

In principle, the following frequency bands are currently available for the assignment to digital cellular mobile communications:

<b>Frequency band</b>	<b>Available frequency spectrum</b>	
1.8 GHz	2 x 5 MHz (10 MHz) 2 x 5 MHz (10 MHz)	1730.1-1735.1 MHz; 1825.1-1830.1 MHz 1758,1-1763.1 MHz; 1853.1-1858.1 MHz
2.0 GHz	2 x 9.9 MHz (19.8 MHz) 2 x 9.9 MHz (19.8 MHz) 10 MHz 9.2 MHz	1930.2-1940.1 MHz; 2120.2-2130.1 MHz 1950.0-1959.9 MHz; 2140.0-2149.9 MHz 1900.1-1910.1 MHz 2010.5-2019.7 MHz
2.6 GHz	2 x 70 MHz (140 MHz) and 50 MHz FDD downlink (external) or 50 MHz TDD	2500.0-2570 MHz / 2620- 2690 MHz  2570 – 2620 MHz

There is considerably more spectrum available to be awarded with these frequencies, that make up a frequency band of 270 MHz together, than in the previous award procedure in the mobile communications area.

The frequencies originally reserved internationally for SPA applications in the 2010.5 MHz to 2019.7 MHz band will no longer be provided for these applications following ECC decision (06)01. Consequently, the frequencies are to be made available for digital cellular mobile communications.

The above mentioned frequency bands are defined as follows in the current frequency usage plan:

Frequency band	Frequency usage	Frequency usage conditions
1.8 GHz	Digital cellular mobile communications	GSM standard and its future developments
2.0 GHz	Digital cellular mobile communications	UMTS/IMT-2000
2.6 GHz	Radio relay	Digital point-to-multipoint radio relay, time limited to 31 December 2007
2.6 GHz	Mobile communications	<i>The frequency band is planned for terrestrial IMT mobile communications applications, but it is planned to use spectrum [...] in accordance with market demands for 3<sup>rd</sup> generation terrestrial mobile communications applications from 2008 onwards.</i>

It is planned to dedicate these frequency bands uniformly to the frequency usages of digital cellular mobile communications without restricting their frequency usage conditions to certain standards. The considerations of the WAPECS concept will then be implemented in this concrete national award procedure. As a result – and in order to implement the findings of the ITU's 2003 World Radio Conference (WRC-2003), which was implemented in national law by the First Ordinance to amend the Frequency Band Assignment Plan Ordinance dated 23 August 2006 (BGBl. I, page 1977) – it is intended to update the above mentioned entries in the Frequency Usage Plan as early as this year. To do this, the BNA will put together the draft of an amended plan in accordance with the provisions of the Frequency Usage Plan establishment order, and will also submit it to interest groups among others for a hearing. The BNA is keen to implement the procedure to establish a modified Frequency Usage Plan at the same time as the current proceedings. As a result, a modified Frequency Usage Plan is to be drawn up in due course before the frequencies up for award here are assigned.

The stated frequency bands are available throughout Federal territory. As a result, the frequencies can be assigned throughout Federal territory and are also to be assigned throughout Federal territory. The design of digital cellular mobile communications is geared to international, global usability of services offered nationally. It has been demonstrated in the sphere of digital cellular mobile communications that user coverage, and especially consumer coverage, can be provided most efficiently of all by Federal-wide providers. For this reason, the allocations made to date in the sphere of digital cellular mobile communications have been made on a Federal basis. Awarding frequencies on a regional basis rather than a national basis cannot satisfy the need to ensure efficient frequency planning or use to the same extent. In view of this fact, the extent to which this should produce a specific demand for regionally limited availability cannot be identified (see order 13/2000, OG Reg TP 4/2000, page 516 ff). The experience of auctioning the frequencies in the 3.5 GHz band in December 2006 also demonstrated this fact. Despite the regionalisation implemented, the frequencies were basically assigned on a Federal basis.

The entire spectrum available will become the subject of these award proceedings. Reservations for certain users or user groups will not be made.

In the above mentioned decision dated 18 February 2000 (order 13/2000 Reg TP Official Gazette 4/2000, page 516 (552)), the President's Chamber stated the following on the question of awarding the UMTS extension spectrum:

"The forecasts or studies available on the market today assume to an overwhelming degree that the market for UMTS/IMT-2000 services will not develop in leaps and bounds from 2002 onwards but will grow successively. The actual "breakthrough" is anticipated between 2007 and 2010. [...]

If it is assumed that, on the basis of the significantly higher demand for UMTS/IMT-2000 services that is not anticipated until between 2007 and 2010, there will also be an increased frequency requirement from that time onwards among network operators/licensees, it seems appropriate if other frequencies can also be made available to the licensees within the framework of the planned availability of the UMTS/IMT-2000 extension bands (see Mandate to CEPT for the development of a common plan to identify additional frequency spectrum for a terrestrial third-generation mobile and wireless communications system (UMTS) in the community (3) dated 26 July 99 LC/99/15/Final) This is all the more so if it is expected by including forecasts from the above mentioned market studies that the growth of mobile communications sales will be based primarily on data use only after 2005.

The BNA held a hearing in 2005 to update this estimation. At this hearing, the spectrum available at that point in time was outlined and at the same time inquiries made about the probable requirement for this spectrum, with the BNA assuming even at that time that there may possibly be a shortage.

The result of this written and subsequent informal hearing was that the first considerations on possible award scenarios were developed based on the ideas of the commentators and submitted to the hearing (order 89/2005, BNA OG 24/2005, page 1909 ff). What was shown among other things was the possibility of reserving a part of the spectrum for existing UMTS network operators and newcomers in order to take adequate account of conflicting interests.

Parallel to the above mentioned developments at national level, the question of a more flexible arrangement of the frequency regulation in the meaning of the WAPECS principles was expressed at international level.

Against the background of the WAPECS concept and because of the assessment of the comments in the hearing in December 2005, the BNA considered that implementing the initially proposed facility of reserving frequency spectrum for existing UMTS network operators and for newcomers was not appropriate from the regulatory point of view. The regulatory implementation of reserving almost the entire spectrum proposed by some commentators is not compatible with the regulatory goals of section 2(2) TKG. The regulatory goal of efficient frequency usage in section 2(2) No. 7 TKG in particular requires in principle that frequencies are assigned to meet a corresponding demand if they are available. Reserving the bulk of the frequency spectrum is not compatible with this principle.

In this case too, reserving frequencies would also contradict the principle of non-discriminatory, understandable and objective proceedings in accordance with section 55(1) third sentence, section 61(5) first sentence TKG. If spectrum is reserved for certain user groups, the bidding competition might be unequally intensified for them, and, as a result, a non-discriminatory procedure might not be assured for others. For this reason, the BNA will put the available spectrum at the disposal of the market simultaneously and fully, without any reservations being taken.

This was already expressed in communication 308/2006 dated 13 September 2006 (BNA OG 18/2006, page 2972) on the facts of the hearing held on 21 December 2005 on the subject of awarding more spectrum in the 2.0 GHz and 2.6 GHz frequency bands. This communication states the following:

"The evaluation of the comments and the conclusions to be drawn by the BNA from this will need to be based on the need for making frequency regulation flexible. On 23 November 2005 the Radio Spectrum Policy Group expressed its "Opinion on Wireless Access Policy

for Electronic Communications Services (WAPECS)“. The Member States have agreed to its implementation.

On this basis, in addition to other frequency bands, the UMTS bands shall also belong to the bands included in the WAPECS concept (Point 3.3 “Mobile bands“ of the opinion).“

The following should also be pointed out:

for this reason there is a total of 2 x 10 MHz (paired) available in the 1.8 GHz frequency band to be awarded. However, these frequencies are currently in litigation. As part of the implementation of the initial raft of actions relating to the GSM concept (order 88/2005, BNA OG 23/2005, page 1852 ff) these frequencies were vacated by the E network operators in return for the assignment of frequencies in the so-called E-GSM-band (see communication 78/2006, BNA OG 4/2006, page 702). Lawsuits were brought against this reallocation, and they are still pending. For this reason, the E network operators gave up the usage rights of the frequencies vacated in the 1.8 GHz band on condition that the assignments of the frequencies from the so-called E-GSM band will continue even after the administrative court procedure. If the actions against the reallocation were successful contrary to the BNA's expectations, the dispensation declarations would be invalid and the frequencies in the 1.8 GHz band no longer available.

For this reason, there is a total of 2 x 20 MHz (paired) and 4 blocks each of 5 MHz (unpaired) available in the 2.0 GHz band. 2 x 10 MHz (paired) and 1 x 5 MHz (unpaired) are available without restriction to be re-awarded following the return of the spectrum assigned in 2000 to MobilCom Multimedia GmbH as part of the auction procedure. The frequencies originally assigned to Quam GmbH totalling 2 x 10 MHz (paired) and 1 x 5 MHz (unpaired) were revoked by the BNA; a lawsuit was brought against this revocation, with the result that these frequencies are still in litigation.

The 2.6 GHz frequency band encompasses a total spectrum of 190 MHz. This frequency band, which is assigned to fixed service usage until it expires on 31 December 2007, is to be dedicated to digital cellular mobile communications from 01 January 2008 onwards. A large part of the spectrum is not used and available as a result. But it should be pointed out that up to 56 MHz have been currently assigned regionally for fixed service usage. Admittedly, these assignments expire at the close of 31 December 2007, and the Federal Network Agency has turned down an extension of the assignments with reference to these award proceedings. Nevertheless, the assignee has lodged an appeal against the rejection of the extension. In an oral discussion of the case on 02 March 2007, within the framework of the summary proceedings, a court settlement was proposed at the initiative of the court; according to this settlement the current assignee can continue to use the frequency usage rights in the 2.6 GHz band beyond 31 December 2007 until proceedings on the main issue are final and absolute, and at most until use is made of them by a different assignee.

At present it cannot be foreseen when these court decisions will be issued.

These frequencies in litigation are also still available in the meaning of section 55(5) first sentence para. 2 TKG since they have not yet been used by other assignees (see official justification on section 53 of the government draft, BR-Drs 755/03, page 105). The TKG allows in principle for the fact that frequencies can be made available to the market if the assignments were to come with the proviso that they can be revoked. This also applies to frequencies whose usage rights were indeed valid, but that have not yet been cancelled finally and absolutely.

However, this principle can be disregarded if the regulatory goals in section 2(2) TKG contradict the provision of these frequencies or if the implementation of an objective, transparent and non-discriminatory award procedure cannot be guaranteed due to the provision of the spectrum in litigation.

The chamber fully appreciates that the stated frequency usage rights come with a risk. This must be taken into account by interested parties as economic considerations relating in particular to participation in or the bidding conduct during the auction. These fundamental facts were made transparent for all involved by the chamber. This means that all potential bidders now have the same necessary information to allow them to make an individual value judgement of the risk and to include it in their bidding conduct. The provision of the spectrum in litigation is

thus in line with the regulatory goal of ensuring an equitable competition and the promotion of sustainably competitive telecommunication markets (section 2(2) No. 2 TKG) and corresponds to the principle of holding objective, transparent and non-discriminatory procedures in accordance with section 55(1) third sentence, section 61(5) first sentence and section 61(6) fourth sentence TKG.

This approach also brings about the statutory goal of an auction process, namely to select the bidder who is most suited to using the frequencies efficiently. The following was argued on this matter in the official justification of section 61(5) TKG (section 50(5) of the government draft, BR-Dr 755/03 page 109):

“The successful bid will typically substantiate the willingness and the ability to deploy in the most optimum manner possible the frequency to be assigned in the free market competition of service provision and will strive to use the frequency economically and thriftily”. (Text highlighted here only)

It is true that the disputed frequencies are subject to greater risk that will become part of the bidding process via the bidders' individual risk assessment. But the legal nature and thus the accompanying risk are the same for all bidders with the result that in this case the highest bid that a bidder submits to win against other bidders will underpin the greatest willingness and ability to use in the most optimum manner possible the frequency that is actually to be allocated. Hence, the provision of the disputed spectrum will not result in the legal purpose of the award procedure being adversely affected.

The BNA must take account of the legal task entrusted to it by section 52(1) TKG to assign frequencies to ensure an efficient and trouble-free use in the meaning of section 2(2) No. 7 TKG and with reference to the other regulatory goals stated in section 2(2) TKG. If available frequencies were withheld from the market by regulations, the inevitable consequence would be the non-use of the frequencies and hence of a public resource. But this consequence could not be reconciled with the principle of providing an efficient frequency usage and would run contrary to the legal task.

## 2. Shortage

Because of the results of the public hearings conducted already the chamber is convinced of the fact that the demand exceeds the spectrum available and the frequencies are in short supply in the meaning of section 55(9) first sentence, 1<sup>st</sup> alternative TKG.

A hearing on UMTS/IMT-2000 was opened with the order 33/2005 dated 04 May 2005 (BNA OG 8/2005, page 782 ff) to determine the frequency requirement that can be expected from 2008 onwards in the so-called UMTS core band and the so-called UMTS extension band. This written hearing reflected a demand for frequencies to create the widest range of business models, a demand that exceeds the available spectrum. This outcome was confirmed by the informal hearing on 27 October 2005.

The existing UMTS network operators put forward an overall frequency requirement that more or less includes the available capacities in the UMTS core band and in the entire UMTS extension band. This means the interests of the UMTS network operators shall be competing with those of potential newcomers who had already announced at the hearing their application for the frequencies up for award here.

Potential BWA network operators and manufacturers of WiMAX system engineering also announced their interest in using the frequencies in the 2.6 GHz band to deploy BWA systems for mobile data transmission. In connection with the auction of frequencies for BWA in the 3.5 GHz band in December 2006 it was again pointed out by interested parties that they would not get involved in the BWA auction relating to a future award of frequencies in the 2.6 GHz band since this frequency band was better suited to mobile applications given the propagation properties. So the fact that not all frequencies were awarded as part of the auction of frequencies in the 3.5 GHz band cannot just be taken as a sign of declining interest in the market for frequencies from the spectrum up for award.

The chamber considers all statements of requirement from 2005 as stable, then as now, with the result – especially in view of the announcements made by interested parties during the BWA auction – that it must be assumed that there continues to be a shortage. On this point the chamber is of the opinion that the frequency requirement of both existing mobile communications network operators and also of potential newcomers will continue to rise in view of the increasing data traffic and increasing demand for increasingly higher transmission speeds with the result that nothing about this shortage forecast has changed due to the planned inclusion of the available frequencies from the 1.8 GHz band (2 blocks of 5 MHz each, paired) into the spectrum up for award.

The chamber regards all of the above mentioned statements of requirements in principle as fit to be included in the shortage forecast. Reasons for excluding certain interested parties from the award procedure are not obvious.

In accordance with section 61(3) first sentence TKG, an applicant can be excluded from taking part in an award procedure if it is anticipated that equal competition in the objectively and geographically relevant market for which the frequencies to be awarded may be used in accordance with the Frequency Usage Plan is at risk because of his successful bid in accordance with section 61(5) TKG.

Given the current state of affairs, there are no indications that equal opportunity in the objectively and geographically relevant market being discussed here is endangered by the successful participation of a business that has announced a requirement for the frequencies that are up for award here.

## **On II. (Choice of award proceedings):**

The award procedure for allocating frequencies for digital cellular mobile communications in the 1.8 GHz, 2.0 GHz and 2.6 GHz bands will be carried out in accordance with section 61(1) and (2) TKG as an auctioneering procedure in accordance with section 61(5) TKG.

Section 61 TKG provides for the auction and competitive bidding procedure as a suitable award procedure. As regards the up-and-coming procedure, the chamber regards the auction procedure as the appropriate selection procedure meeting regulatory goals in accordance with section 2(2) TKG. This decision on choosing the proceedings is based on the following considerations:

The auction procedure is the normal legal procedure under section 61(2) TKG. The auction procedure is to be held on this basis in principle (see order 42/2006 BNA OG 20/2006, page 3051 (3070 ff)). It is an appropriate, constitutionally permissible selection procedure. A fundamental regulatory goal, namely that of efficient frequency usage, can be achieved with this selection procedure. At the same time, the economic aspects of frequency selection criterion serve the regulatory policy goal of promoting competition (see the official justification BR-Drs 755/03, page 109 on section 59).

Exceptionally, the auction procedure is not to be held in accordance with section 61(2) first sentence TKG if it is not appropriate for guaranteeing the regulatory goals in accordance with section 2(2) TKG. This may be the case in particular in accordance with section 61(2) second sentence Var. 1 TKG if frequencies have already been assigned, without holding an auction procedure beforehand, in the objectively and geographically relevant market for which the radio frequencies may be used in accordance with the Frequency Usage Plan.

There is nothing against choosing the auction procedure for awarding frequencies in the 1.8, 2.0 and 2.6 GHz bands due to the fact that in the past frequencies were awarded for digital cellular mobile communications in the 1.8 GHz band in a competitive bidding procedure. The example given in section 61(2) second sentence TKG for the possible unsuitability of the auction procedure (... in the objectively and geographically relevant market frequencies had already been allocated without holding an auction procedure beforehand...) is an indication of the possible unsuitability of the auction procedure. The fact alone that the case given as an example exists does not automatically lead to a competitive bidding procedure being used.

The wording of the act (... this can be the case in particular if...) suggests rather that the BNA is to take a decision in each individual case in accordance with section 61(2) first sentence TKG according to its best judgement. The regulatory goals in accordance with section 2(2) TKG must be taken into account in relation to the objectively and geographically relevant market in each case.

In this case, the purpose of use was very wide, with the result that a variety of existing frequency usages is included. This applies in particular to GSM and UMTS/IMT-2000. In addition, there are substitution relationships with other frequency usages, such as BWA in the 3.5 GHz band for instance. The frequencies for these frequency usages were awarded in various ways. The UMTS/IMT-2000 frequencies in the 2.0 GHz band were auctioned, the GSM frequencies in the 1.8 GHz band were awarded using the competitive bidding and auction procedures. The BWA frequencies in the 3.5 GHz band were also auctioned.

The protective purpose, pursued with the above mentioned standard example, of preventing unacceptable competitive disadvantages by asymmetrical market access conditions requires the inclusion of all award procedures in the review of suitability of the auction procedure. Frequencies were awarded for frequency usages of digital cellular mobile communications by means of all the assignment methods provided by law. So it can be said that the market entry conditions were heterogeneous so far for digital cellular mobile communications. As a result, the holding of an auction does not contravene the protective purpose of section 61(2) second sentence Var. 1 TKG in this case.

Furthermore, the auction procedure in this case is suitable in accordance with section 61(2) second sentence TKG for ensuring the regulatory goals under section 2(2) TKG.

The choice of auction procedure is used to maintain user and, in particular, consumer interests in the sphere of telecommunications in accordance with section 2(2) No. 1 TKG. The auction procedure is an open, transparent and objective procedure that also allows a fast market entry in particular. The decision on award of contract can be made quickly with the auction procedure without needing to go through a tedious procedure to select suitable network operators.

Moreover, the auction procedure is suitable for guaranteeing the regulatory goal of ensuring efficient and trouble-free frequency usage in accordance with section 2(2) No. 7 TKG. The willingness and ability to use the frequencies in the free enterprise market of service provision as optimally and efficiently as possible are substantiated by a successful offer. To verify this presumption further, the chamber, in accordance with section 61(5) TKG, will specify stipulations and rules for the auction procedure, such as the licensing prerequisites (reliability, efficiency and expertise, business model) and usage conditions (such as coverage obligation).

The guarantee of efficient frequency usage will also not be put at risk by choosing the auction procedure in the sense that some of the frequencies from the above mentioned frequency bands are still in litigation (see I 1 above on this point). But the simple fact that the frequencies in litigation come with an additional risk does not negate holding an auction procedure. Even if the disputed frequencies are beset with risks regarding the continued existence of the right of use, the auction procedure for awarding the frequencies is suitable in this case. The fact of being in litigation will be made equally transparent for all interested parties. In addition, the risk of cancellation of the usage rights following a court decision is equally high for all interested parties.

What only the auction procedure does in fact offer in this case is adequate flexibility and, consequently, the necessary margin for decision taking for the individual bidders so that they can freely select and combine the frequency packets for which they are bidding in accordance with their own preferences. Furthermore, every bidder has the possibility, including during the auction, of switching from spectrum in litigation to spectrum not in litigation and vice versa.

The other regulatory goals of section 2(2) TKG also do not leave any doubts about the suitability of the standard legal procedure of the auction

Consequently, under section 61(2) TKG, the auction is the appropriate procedure for the award of frequencies for digital cellular mobile communications in the 1.8 GHz, 2.0 GHz and 2.6 GHz bands.

**Instructions about the right to appeal**

An action can be brought against this decision within one month after its promulgation, to the Verwaltungsgericht in Köln (Cologne Administrative Court), Appellhofplatz, 50667 Köln, in writing or to be recorded by the document clerk of the court office. The action must name the plaintiff, the defendant and the subject of litigation. It should contain a specific motion. The facts and evidence to be used as justification should also be given. In accordance with section 137(1) TKG the action has no delaying effect.

The action and attachments must be provided in as many copies as are required so that all parties involved can receive a copy.

Bundesnetzagentur für Elektrizität, Gas,  
(Federal Network Agency for Electricity, Gas,  
Telekommunikation, Post und Eisenbahnen  
Telecommunications, Post and Railways)  
The Presidential Chamber

Bonn, <Day>. <Month> 2007

Associate judge

Presiding judge

Associate judge

### **Considerations on award conditions**

The BNA must specify the conditions listed in section 61(4) second sentence TKG before holding an auction procedure. Furthermore, the rules for holding the auction procedure must be defined in detail in accordance with section 61(5) TKG before the auction is held. It is planned to combine these two decisions and then to bring them to a hearing following the decisions on the arrangement and choice of award proceedings.

Nonetheless it is appropriate, in connection with the hearing on the draft decisions on the arrangement and choice of award proceedings, to publish the initial considerations on further decisions and to urge the public to express its opinion in order to create a solid basis for writing the drafts of the subsequent decisions.

In view of the decisions taken under section 61(4) second sentence TKG and section 61(5) TKG, the following considerations have been used as the starting point:

#### **1. Objectively relevant market, section 61(4) second sentence para. 2 TKG**

**The objectively relevant market for which the frequencies to be awarded may be used in accordance with the Frequency Usage Plan should be the market for wireless network access.**

According to Section 61(4) second sentence para. 2 TKG the objectively relevant market is to be determined for the market in which the frequencies to be awarded can be used in accordance with the Frequency Usage Plan. This market is to be the market for wireless network access.

Defining the market for wireless network access as the objectively relevant market is intended to ensure that the widest range of business models can be implemented. This broad definition of the objectively relevant market is in line with the decision of the President's Chamber on awarding frequencies in the 3.5 GHz band (see order 42/2006, BNA OG 20/2006, page 305 ff) and represents an expansion in comparison to the corresponding previous stipulations reached in the decisions of the President's Chamber. In the past frequency regulation followed a specific hypothesis that took at its starting point the definition and demarcation of the purposes for which the frequencies – objectively viewed - may be used. The decisions on the award of GSM frequencies include the range of mobile communications services for the public based on the GSM standard (see point 1.1 of the GSM Licences, order 259/1994, published in the OG of the Federal Ministry of Post and Telecommunications (BMPT) No. 23 dated 05 December 1994). When defining the objectively relevant market for third generation mobile communications (UMTS/IMT-2000), the establishment of a specific standard was disregarded (see point 2.1 of the UMTS decision, order 13/2000, published in the Regulatory Authority's OG No. 4/2000 dated 23 February 2000). Instead, the objectively relevant market was defined using a catalogue of technical minimal requirements (see point 3.2 of the above mentioned decision) that could be met by various systems of the IMT-2000 family. This means that, even within the framework of UMTS, the application of a specific standard was no longer stipulated, but that network operators were allowed the choice of different technical IMT-2000 systems. But this facility to choose was limited in turn by the catalogue of technical minimum requirements (see point 3.2 of the above mentioned decision). This means that defining the objectively relevant market for third generation mobile communications goes beyond determining only one single standard and allows for the possibility of choosing from among the members of the IMT-2000 family of standards.

Technological progress with increasingly shorter innovation cycles and the increasing convergence of technologies are opening up completely new facilities relating to the objective use of frequencies. These developments must not be restricted by excessively rigid definitions. What is needed is rather to provide the greatest possible freedom for all those involved. Stipulating certain technologies or standards within the framework of defining the

objectively relevant market in relation to the use of frequencies is therefore no longer advisable.

In addition, this is in line with the policy of technology neutrality (see section 1 TKG). Even under the TKG, all options should be exploited in order to avoid unnecessary regulation. This is in line with the approach of the European legal framework of a technology-neutral regulation of communication services and networks (see Article 9(1) of the framework directive, Directive 2002/21/EU).

An increasingly greater convergence can be detected at the level of telecommunications services also. This can be seen in particular in the joint growth of mobile communications and fixed network applications. In the sphere of mobile communications, even today offers are being made that are approximately comparable with those of the fixed network in price and performance from the point of view of the end consumer. In contrast, fixed network operators are also offering their customers telecommunications services that encompass roaming and mobile applications as well as fixed applications (e.g. via hybrid terminal equipment that can work in both the WLAN and in mobile networks).

To take account of these developments and the increasing convergence of technologies and services it vital that the more flexible arrangement of frequency regulation – it has already been taken into account in the decision of the President's Chamber on the BWA – is implemented in all frequency bands. This will also include a broad definition of the objectively relevant market in order not to restrict possible applications and service provision or their development.

At EU level, systematic liberalisation of the frequency regulation is demanded by the EU Commission in order to reduce access barriers to frequencies, to improve efficiency and promote innovation in order to offer users and consumers greater flexibility and choice (on this point, see the Commission's communication on future-oriented frequency policy in the EU: Second Annual Report, KOM (2005) 411 dated 6 September 2005). This aspect is also being dealt with in the Radio Spectrum Policy Group (RSPG) under the WAPECS heading (Wireless Access Policy for Electronic Communications Services) (on this point, see in detail the Radio Spectrum Policy Group Opinion on Wireless Access Policy for Electronic Communications Services; RSPG 05-102). On this basis, all services are to be offered with all technologies on all frequencies to which the WAPECS model is applied, while only the absolutely necessary usage conditions are to be defined by the regulator to ensure efficient and trouble-free frequency usage. The Member States have agreed to introduce this model. In continuation of this liberalisation approach, the EU Commission, in its recent communication dated 8 February 2007 on "fast access to frequencies for wireless electronic communication services through more flexibility", urged Member States to clarify urgently their existing (technical and non-technical) approval conditions and to remove any restrictions as far as possible in order to promote flexibility, fast access to frequencies and competition in the radio infrastructure.

The BNA can take into account all these developments and approaches in the broad arrangement of the objectively relevant market without reference to the use of certain technologies and standards. The objectively relevant market should be consciously defined as broad in order not to exclude any business model.

The implementation of the more flexible arrangement of frequency regulation also takes for granted extended stipulations in the Frequency Usage Plan. So it is intended to devote in the Frequency Usage Plan the 1.8 GHz, 2.0 GHz and 2.6 GHz bands, that have been assigned to mobile communications service in the frequency band assignment plan – without restriction to certain standards or system technologies – to digital cellular mobile communications. As a result, the frequencies can be used on the market for wireless network access and – in accordance with the Frequency Usage Plan – for digital cellular mobile communications.

## **2. Geographically relevant market, section 61(4) second sentence para. 2 TKG**

**The geographically relevant market for which the frequencies to be awarded may be used in accordance with the Frequency Usage Plan is to be the Federal Republic of Germany.**

According to section 61(4) second sentence para. 2 TKG the relevant market for which for which the frequencies to be awarded can be used in accordance with the Frequency Usage Plan is to be defined both objectively and geographically. The geographically relevant market is to include the Federal Republic of Germany.

The stated frequency bands are available throughout Federal territory. As a result, the frequencies can be allocated throughout Federal territory and are also to be allocated throughout Federal territory. Regionalisation does not seem to be appropriate.

The frequencies to be awarded here are to be dedicated to digital cellular mobile communications as part of the change to the frequency usage plan. The design of digital cellular mobile communications is geared to international, global usability of services offered nationally. It has been demonstrated in the sphere of digital cellular mobile communications that user coverage, and especially consumer coverage, can be provided most efficiently of all by Federal-wide providers. For this reason, the allocations made to date in the sphere of digital cellular mobile communications have been made on a Federal basis. In view of this fact, to what extent a specific demand for regionally restricted availability might be anticipated cannot be identified (see order 13/2000, OG Reg TP 4/2000, page 516 ff). The experience gained when auctioning the frequencies in the 3.5 GHz band in December 2006 also demonstrated this fact. Despite the regionalisation allowed during this auction, the frequencies were basically assigned on a Federal basis.

In the public hearings in 2005 no demand for regional frequency usage was expressed.

In addition, it is not clear that regional business models would have realistic prospects of economic success in what is a Federal wide market in essence. Possible promotion of competition with reference to the interests of small and medium sized enterprises can – if at all – happen only under the proviso of economic sustainability of regional business models. But there are considerable doubts about the ability of regional networks to exist alongside Federal-based networks. In view of the design of digital cellular mobile communications in particular it is not obvious which regional demand could exist in the face of Federal-based offers.

Furthermore, awarding frequencies on a regional basis rather than a national basis cannot satisfy the need to ensure efficient frequency planning or use to the same extent.

## **3. Frequency blocks**

**The available frequencies should – as far as possible – be awarded in 5 MHz blocks. Auctioning actual frequency blocks appears to be advisable here.**

In principle, the spectrum available in all three frequency bands should be put up for award in 5 MHz blocks. If such an arrangement were not possible in some frequency bands, then a different type of division might also be advisable. For instance, there is only 9.2 MHz available in the 2010.5 to 2019.7 MHz band (former SPA frequencies) if the guard separations are retained. Making the spectrum available as one single block might be considered in this case.

When auctioning frequencies, the award of abstract frequency blocks as compared to the award of concrete frequency blocks offers advantages for bidders and the procedure. In its order 13/2000 (Reg TP OG 4/2000, page 518 (548)) this question was discussed as follows:

“With the auction of licences with abstract frequency blocks the chamber is taking account of the interest of the bidders in receiving a connected spectrum as part of a licence. The concrete frequency blocks shall be assigned subsequently from the point of view of efficient and trouble-free use of the frequencies (section 2(2) No. 5 TKG). Licence holders will be given an opportunity to express their opinion before assignment of the frequencies.

As a result of the assignment of the frequency blocks that will take place only later as part of the award proceedings, bidders will not be asked for their strategic thinking as part of the auctioning procedure. At the same time the auction procedure itself will be simplified. For this reason, it will not be necessary, given the special circumstances of this auction, for the bidders to know in advance the actual situation regarding the paired frequencies. This is particularly true because only frequency usage conditions can be applied now that are subject to change. Depending on the progress made when working out the specifications as part of standardising UMTS/IMT-2000, it may be necessary to make a series of actual stipulations on frequency usage only after licensing after hearing the licence holders. The chamber is of the opinion that there are no fundamental economic differences in the value of the individual frequency blocks in the stated conditions. Consequently, the frequency blocks will be considered to be of equal value irrespective of the position in the spectrum”.

These arguments shall be adhered to in principle. Even if the auctioning of abstract frequency blocks offers fundamental advantages, these advantages can be exploited only if and to the extent that the objects of the auction are considered of equal value and therefore interchangeable. It is only when the stipulation of abstract blocks is unsuitable because of the non-equivalence of the frequency blocks as objects of the auction that the objects of the auction must be defined in concrete terms.

In the 2.6 GHz band there is available a connected spectrum of 14 blocks each of 5 MHz paired and ten blocks each of 5 MHz unpaired. Consequently, these blocks could be defined as abstract frequency blocks. This might offer security for the respective bidders in that connected spectrum could be purchased at an auction in accordance with the relevant requirement.

But it must not be forgotten here that a part of the spectrum is currently in litigation (see the appendix on this point) since the previous assignee has brought an action against the rejection of the extension of the frequency assignments. Although a large part of the spectrum in the 2.6 GHz band is not used at present, the fact that regionally assigned frequencies are in litigation is affecting almost all frequency blocks that can be assigned throughout Federal territory. Almost all channels that can be assigned throughout Federal territory are affected by the regional assignments. This matter of litigation will have an effect on the appraisal of these frequencies. For this reason, these frequencies are not equivalent to those frequencies in litigation in this frequency band. There is therefore a need for the bidders to recognise the concrete situation of the frequencies in the 2.6 GHz band and to be able to bid for them deliberately.

There are also frequency blocks that cannot be used without restrictions because of frequency usages in adjacent bands, with the result that only an auction of the actually named blocks could be held in these cases. As an example, at the top end of the 2.6 GHz band, location coordinates of radio astronomy stations are required, including those of the receiving stations in the Netherlands. As a result, these frequencies could be auctioned only as concrete blocks.

In the 1.8 and 2.0 GHz bands there are only a few blocks available that are located between already allocated frequency blocks. The advantage linked with auctioning abstract blocks – that of buying connected spectrum by auction - cannot be gained from the outset in this case. There is also the fact that frequencies from these frequency bands are in litigation and as a result there might not be any equivalence. For these reasons, an auction of abstract

frequency blocks in the 1.8 and 2.0 GHz bands also does not appear to be suitable in this case.

#### **4. Limiting bidding rights**

##### **The number of bidding rights of each bidder is not to be limited.**

Limiting the auctionable spectrum per bidder does not seem advisable at present. If, as was illustrated in the initial thinking (see order 89/2005, BNA OG 24/2005, page 1909), it was thought that the requirement for spectrum might be limited to a total of 2 x 20 MHz (paired) per bidder, this was based on the additional requirements for spectrum stated at that time by the mobile communications network operators. The actual spectrum requirement of a network operator already involved in the market or of a new interested party is the product of his individual business model and cannot be estimated in advance.

As part of the UMTS auction in 2000 the bidding rights were limited (see order 13/2000, Reg TP OG 4/2000, page 516 ff). As a justification it was pointed out that, to ensure equal competition in the meaning of section 2(2) No. 2 TKG, the creation of extremely differing framework conditions should be avoided in the starting phase of opening up an actual market.

When it comes to providing spectrum now up for award, the difference lies in the fact that the frequencies are not to be used to open up an actual market segment, but are to be made available overall to digital cellular mobile communications. With this in mind, the frequencies can be used on the one hand by businesses already active in the market as expansion spectrum, so that both capacity bottlenecks for existing applications can be reduced, and, on the other, the development of new services can also be facilitated. Another aspect is that this spectrum might also be of great interest for interested parties coming new to the mobile communications market. The actual frequency requirement of existing network operators, but also the requirement of newcomers, will be the product of the respective varying business models and may be very different as a result.

Unlike in the UMTS initial phase, the maximum number of frequencies available cannot be set because of the very complex and heterogeneous interest situation in relation to those frequencies up for award now. A restriction of bidding rights per bidder might be considered to give space to newcomers and other investors. But this restriction cannot guarantee that potential newcomers will actually obtain spectrum. The facility of reserving appropriate spectrum would be the suitable way of ensuring possible market access for new operators. But even with the question of reserving spectrum, a newcomer's frequency requirement and the possible number of newcomers would have to be estimated and set by the BNA. As outlined above, this is not possible since the preferences for certain frequencies vary from individual to individual both in relation to the number of frequencies and also the position in the spectrum. In addition, the BNA would also have to weigh up the development opportunities of the "sitting tenants" and those of the newcomers to the market, something that is not feasible for the reasons stated above.

#### **5. Basic number of frequencies, section 61(4) second sentence para. 3 TKG**

##### **A basic number of frequencies in accordance with section 61(4) second sentence para. 3 TKG should not be defined.**

It is conceivable that newcomers in particular will want to have an individual minimum frequency requirement. For the BNA to set a standard minimum frequency requirement primarily for newcomers in the sense of the required minimum number of frequencies, especially because of the technical and economic development, cannot be considered as right. If a bidder has an individual minimum frequency requirement for his business model and states it as part of the licensing application, then it must be ensured by suitable measures that a bidder shall receive the contract only for those frequency packets if the total packets correspond at least to the stated individual minimum requirement.

## 6. No restriction on participation

**The entitlement to take part in the auction procedure should not be limited in principle as part of the specialist and objective minimum conditions, section 61(4) first sentence para. 1 TKG.**

Consideration will be given not to limiting the possible participation in the auction procedure provided an interested party fulfils the specialist and objective minimum conditions. In principle, everybody and every business should be able to submit an application for licensing to the auction procedure. This applies both to companies that are already operators of digital cellular mobile communications networks and also to other interested parties. Preferring applicants without an objective reason is prohibited in view of section 61(4) third sentence TKG. According to it, an award procedure must be open, transparent and non-discriminatory.

Restricting applicants from possible participation for parts of the spectrum to be made available by reserving these parts for other applicants is not appropriate. It should be pointed out in this context that the facility considered in order 89/2005 (BNA OG 24/2005, page 1909 ff) of reserving a part of a spectrum for existing UMTS network operators and for newcomers is not to be offered. You are referred to the considerations under Point 4 on the issue of reserving spectrum for certain applicants. But in this context the following should be pointed out:

Even if the possibility of participating in the auction procedure is not limited overall, it may be necessary to exclude certain bidders from the possibility of exercising their bidding rights to certain frequencies. With the disputed frequency blocks in mind in particular, the fact that bidders may obtain an advantage from being able to bid for spectrum in litigation without risk in contrast to their fellow bidders must be excluded. In concrete terms, there would be the danger of strategic behaviour if the risk of litigation can be removed for bidders who are commercially linked with plaintiffs. For this reason, the fact that bidders can bid on frequency blocks that are the subject of their own actions or actions of commercially linked businesses should be excluded.

## 7. Frequency usage conditions

**Frequency usage conditions must be set in accordance with international framework conditions.**

For the frequencies up for award here, there is already a series of technical reports, recommendations and decisions available in the international domain that will need to be taken into account when setting frequency usage conditions.

The 1.8 GHz band has already been assigned to mobile communications use in those countries at the initiative of some European countries at the World Administrative Radiocommunication Conference (WARC) called WARC MOB 87. This frequency band was assigned primarily to mobile communications by WARC 92. Between 1992 and 1994 these initiatives were further developed at European level. The European Telecommunications Standards Institute (ETSI) expanded the GSM-900 standard by the frequency band covering 1710 MHz to 1785 MHz and 1805 MHz to 1880 MHz. More work to avoid interference and for border coordination was done by the Conférence européenne des Administrations des postes et des télécommunications (CEPT). With decision (95)03 of the CEPT's European Radiocommunications Committee (ERC), the frequency band was identified for the DCS-1800 or GSM-1800 standard in the area of the CEPT Member States. The entire GSM frequency band along with other bands was identified for IMT-2000 by the World Radiocommunication Conference (WRC) in 2000. In the meantime, the CEPT has approved decision (06)13 in which the entire GSM frequency band is scheduled for the harmonised IMT-2000 application.

As early as the WARC in 1992, a total of 230 MHz of spectrum was identified for the third generation mobile communications (1885 to 2025 MHz and 2110 to 2200 MHz) for the 2.0

GHz band. At that point these bands were still used by the fixed service (radio relay). Radio relay was removed from this frequency band into higher frequency bands by the activities of several countries, and space created for third generation mobile communications. In 1997 the first ERC decision was approved, meaning that bands 1900 MHz to 1980 MHz, 2010 MHz to 2025 MHz and 2110 MHz to 2170 MHz were identified for UMTS, but only 2 x 40 MHz were to be made available by 01 February 2002. The technical framework conditions (guard bands, distribution of paired/unpaired, SPA spectrum) was then defined by ERC decision (99)25. ERC decision (00)01 then expanded ERC decision (97)07 in that it stated that the entire 155 MHz was to be available by 01 February 2002. With ECC decision (06)01 the reserving of the band between 2010 MHz and 2025 MHz for SPA applications was revoked. At the same time, the rules of the previous ERC decisions (97)07, (99)25 and (00)01 were incorporated into this new ECC decision. The old ERC decisions were cancelled.

For the 2.6 GHz band, the 2500 to 2690 MHz band was identified along with other bands for IMT 2000 by the WRC 2000 (the sub-bands 2500 to 2520 MHz and 2670 to 2690 MHz were assigned to mobile communications via satellite). In 2002 the frequency band 2500 to 2690 MHz was identified for IMT-2000 in the ECC decision, but only the frequency band 2520 MHz to 2670 MHz for the terrestrial components of IMT 2000. It was not until ECC decision (05)05 was approved that the remaining 2 x 20 MHz was assigned to the terrestrial components of IMT-2000. The fundamental technical framework conditions governing frequency were also set in this ECC decision. According to this decision, 2 x 70 MHz are scheduled for paired use (2500 MHz to 2570 MHz and 2620 MHz to 2690 MHz), with two options planned for the centre gap (2570 MHz to 2620 MHz), the TDD or FDD (downlink) externally paired. However, these options can be deployed only alternatively in the same area. ETSI is currently working on a solution for the external pairing that will probably pair bands 1900 MHz to 1920 MHz (uplink) and 2010 MHz to 2025 MHz (uplink) with the 2585 MHz to 2620 MHz band (downlink).

It is intended to define in detail the frequency usage conditions on the basis of these international recommendations and decisions. Concrete statements, on questions of frequency masks, guard separations in the band and on band boundaries or freedom from interference between the different duplex procedures for instance, (TDD/FDD) cannot be made at present. International and national investigations are still needed on this subject to avoid interference.

But in this context it can be pointed out already that the liberal use of the available frequencies can be limited in individual cases. This may be the case when using of TDD systems alongside FDD systems since attention must be paid to ensure proper decoupling that will restrict the liberal use of adjacent channels. Because of the GSM use, a 5 MHz channel in the 1.8 GHz range may also be subject to restrictions to achieve the necessary decoupling.

## **8. Setting a time limit for frequency assignments**

### **The frequency assignments should have a time limit of 31 December 2020.**

In accordance with section 55(8) TKG frequencies shall be allocated as a rule for a fixed term.

As part of the UMTS/IMT-2000 award in 2000 the term of the frequency assignments was set at 20 years. This meant that an appropriate redemption period was allowed for the investments needed when setting the term. It should also be ensured that, in the event of a future new possible application of the frequencies as a result of continuing technical developments, they should also be made available again to the market uniformly, i.e. at the same time for all assignees of this frequency band.

Against this background, it will also be necessary to grant the assignees of the frequencies up for award a sufficient period of time to build up the network, to implement the business model and to redeem the volume of investments.

But it should also be pointed out that frequency assignments of existing network operators in the 900 MHz / 1800 to 2016 MHz bands have had a time limit set or are to have one set, and that the frequency assignments for UMTS/IMT-2000 do have a time limit of 2020. So there are two possible points in time available for choosing as a time limit to ensure a standard regulatory framework. The setting of the term to 2020 seems appropriate and necessary in terms of a suitable period of time to redeem the investments made. This time limit applies to the entire spectrum available for award. No distinction will be made in terms of whether this spectrum is bought at auction by network operators already active in the market or by newcomers since different terms for newcomers and existing network operators in a procedure would influence in a regulatory-induced manner the values of the frequencies. Furthermore, your attention is also drawn to the possibility of extending in accordance with section 55(8) TKG for all participants.

### **9. Coverage obligation**

The frequency assignees should have imposed on them a time-staggered coverage obligation to serve initially 25% and later 50% of the population with mobile communications services.

According to section 61(4) second sentence para. 4 TKG, the BNA shall determine, prior to holding an award procedure, the frequency usage conditions including the degree of coverage of frequency usage and its implementation within a time frame. Under section 61(7) TKG this coverage obligation shall become an integral part of the frequency assignment in accordance with section 55 TKG.

The currently issued frequency usage rights for public digital cellular mobile communications are generally tied to coverage obligations. This regulatory instrument has proved its value in practice in meeting the Federal government's infrastructure guarantee contract under Article 87f sub-section 1 of the Basic Law (Grundgesetz) and in implementing the purposes of the law defined in section 1 TKG. The coverage obligation ensures that the building of the networks can begin promptly, that this can be continued without interruption and that services can be developed at the earliest possible time.

With this in mind, the usage rights for UMTS/IMT-2000 issued in 2000 came with coverage obligations (see order 13/2000, Reg TP OG 4/2000, page 516 (539 ff)). On the basis of this order, the frequency assignees are obliged to create a level of coverage for the population of no less than 25% by 31 December 2003 and no less than 50% by 31 December 2005 for the provision of UMTS/IMT-2000 mobile communications services.

With the frequencies up for award here the arrangement of such a time-staggered coverage obligation, providing a population coverage of 25% initially and 50% later, looks to be the correct and appropriate choice for achieving the goals set under the coverage obligation.

If a successful bidder is already a holder of frequency assignments for digital cellular mobile communications, his existing network infrastructures can also be used to meet his coverage obligation. Since this obligation is geared to providing the public with services, the entire digital cellular mobile communications network of an assignee is considered from the regulatory point of view to fulfil the coverage obligation, and not just the respective individual frequency blocks. Notwithstanding this coverage obligation for the population, there is also a statutory obligation to use assigned frequencies.

## 10. Service provider obligation

### **The obligation of approving service providers in a non-discriminatory way could be imposed on frequency assignees.**

The imposition of a service provider obligation might appear correct against the background that the facility of bringing mobile services to end users will also be opened up to service providers other than holders of usage rights of scarce frequencies. In accordance with this thought, all the frequency usage rights awarded so far for digital cellular mobile communications came with a service provider obligation. The mobile communications network operators active in the market entered into the obligation as part of the earlier award procedure of approving service providers in a non-discriminatory way. This obligation is an integral part of the respective licences or frequency assignments and continues to apply now as it did in the past (see section 150(4) TKG). To maintain a standard regulatory framework for the mobile communications market it would be advisable to create standard conditions for all market participants. Against this background it must be considered that all frequency assignments came with a subsidiary provision according to which service providers are to be approved in a non-discriminatory manner.

## 11. Minimum bid

### **A minimum bid per frequency packet should be set, section 61(5) second sentence TKG.**

In accordance with section 61(5) second sentence TKG, a minimum bid can be set for participation in the auction procedure.

Setting a minimum bid is already justified for reasons of procedural economy. It means that the number of individual bidder rounds is reduced and the time sequence of the auction accelerated.

As part of the UMTS auction in 2000, a minimum bid of approximately 50 million euros was set for a 5 MHz block (paired). The economic value of the frequencies was used as the basis for setting this amount. But this award procedure raises the question of whether an economic value can be ascertained and set administratively even only approximately in advance for the frequencies up for award now. The frequencies will be of interest for business models of very different types. The frequencies may be used partially as an expansion spectrum or for new mobile communications networks partially too with the result that the bidders will also allocate various values to the frequencies depending on their business model. But in particular the fact that a not inconsiderable portion of the frequencies are the subject of litigation will also impact on the individual appraisals placed on them by the bidders.

Because of the range of different business models and the fact that a not inconsiderable portion of the frequencies is subject of litigation it is not administratively possible to set in advance an economic value of the frequencies. For this reason, basing the amount of the minimum offer on the frequency assignment fee may have to be considered.

In accordance with section 142(5) TKG, the statutory assignment fee must be paid by a successful bidder in the auction procedure. The basis for setting the amount of the minimum offer is the Frequency Fee Ordinance (Frequenzgebührenverordnung) with the result that the minimum offer could be based on the amount of this fee. Following this basic line of thinking, the minimum offer was set for auctioning frequencies in the 3.5 GHz band for BWA (order 42/2006, BNA OG 20/2006, page 3051 (3111)). In this context it must be pointed out that the Frequency Fee Ordinance dated 21 May 1997 (Federal Law Gazette I, page 1226), last amended by the Fifth Ordinance to amend the Frequency Fee Ordinance dated 23 November 2006 (Federal Law Gazette I, page 2661), currently contains only a fee framework for the allocation of a frequency in a GSM network. It is intended to create the legal conditions relating to the fees for digital cellular mobile communications by means of an ordinance in due course.

**Appendix to  
Annex 2 to Official Gazette Communication**

Ser. No.	Coverage area	K1	K2	Assigned frequencies K1	Assigned frequencies K2
1	Aachen G005	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
2	Augsburg G008	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
3	Berlin G011	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
4	Bielefeld G005	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
5	Bochum G005	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
6	Bonn G005	5		2579-2593 MHz & 2653-2667 MHz	
7	Braunschweig G003	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
8	Bremen-Oldenburg G001	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
9	Chemnitz-Zwickau G001	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
10	Dortmund-Hagen G001	4	5	2565-2579 MHz & 2639-2653 MHz	2579-2593 MHz & 2653-2667 MHz
11	Dresden G007	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
12	Düsseldorf G009	5		2579-2593 MHz & 2653-2667 MHz	
13	Duisburg-Oberhausen-Gelsenkirchen	5		2579-2593 MHz & 2653-2667 MHz	
14	Frankfurt-Darmstadt G001	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
15	Halle G004	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
16	Hamburg G011	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
17	Hanover G012	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
18	Pforzheim, Karlsruhe (LK), Karlsruhe, Enzkreis, Rastatt	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
19	Kiel G007	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
20	Cologne G009	5		2579-2593 MHz & 2653-2667 MHz	
21	Krefeld-Mönchengladbach G001	5		2579-2593 MHz & 2653-2667 MHz	
22	Leipzig G010	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
23	Lübeck G006	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
24	Magdeburg G005	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
25	Mannheim, Frankental, Bad Dürkheim, Karlsruhe, Heidelberg, Rhein-Neckar-Kreis	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
26	Munich G001	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
27	Münster-Osnabrück G001	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
28	Nuremberg G007	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
29	Reutlingen, Ludwigsburg, Stuttgart, Tübingen, Böblingen, Enzkreis, Göppingen, Rems-Murr-Kreis, Esslingen	3		2551-2565 MHz & 2625-2639 MHz	
30	Wiesbaden-Mainz G001	3	4	2551-2565 MHz & 2625-2639 MHz	2565-2579 MHz & 2639-2653 MHz
31	Aachen G005	5		2579-2593 MHz & 2653-2667 MHz	
32	Bochum G005	5		2579-2593 MHz & 2653-2667 MHz	
33	Wuppertal	1		2523-2537 MHz & 2597-2611 MHz	
34	Freiburg im Breisgau, Breisgau-Hochschwarzwald	3		2551-2565 MHz & 2625-2639 MHz	
35	Heilbronn LK, Heilbronn	5		2579-2593 MHz & 2653-2667 MHz	
36	Würzburg (LK), Würzburg	3		2551-2565 MHz & 2625-2639 MHz	