Bundesnetzagentur

Draft Decision

of the President's Chamber

of the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway

on the definitions and rules for the award of spectrum in the 1.8 GHz, 2 GHz und 2.6 GHz bands for digital cellular mobile communications

Published as Communication 664/2007
in the Official Journal of the
Federal Network Agency No 19/2007
as of 26 September 2007

Communication 664/2007

Consultation on draft decision

Draft of a decision of the President's Chamber of the Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen (BNA / Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway) on the definitions and rules in detail 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 61(1), (4) and (5) sentence 2, section 132(1) and (3) of the TKG (Telecommunications Act)

Hearing in accordance with section 61 (1) and (4) TKG

File reference: BK 1- 07/003-3

In communication 219/2007 (Official Gazette (OG/ABl.) of the BNA 7/2007, p. 1113 ff.) the draft decisions of the President's Chamber, along with the initial considerations on the award conditions, were published for consultation on the arrangement and choice of proceedings for the award of spectrum for digital cellular mobile communications in the 1.8 GHz, 2 GHz and 2.6 GHz bands.

After evaluation of the received views, the President's Chamber of the BNA decided on 19.06.2007 (Order 34/2007 OG BNA No. 14/2007, p. 3115 ff.) on the arrangement and choice of proceedings for the award of frequencies for digital cellular mobile communications in the 1.8 GHz, 2 GHz and 2.6 GHz bands. In accordance with this decision, the award procedure under section 61 (1) TKG shall be conducted as an auction procedure in accordance with section 61 (4) and (5) TKG.

In accordance with section 61 (4) sentence 2 TKG, the rules that are to be used as the basis for the procedure for auctioning spectrum in the 1.8 GHz, 2 GHz and 2.6 GHz bands for digital cellular mobile communications are to be defined in detail in accordance with 61 (4) sentence 2 Nos. 1 to 4, 61 (5) TKG (award conditions) before the award procedure is held.

In accordance with section 61 (1) sentence 1 TKG the groups concerned are to be consulted initially prior to the decision by the President's Chamber. For this reason, the draft decision of the President's Chamber published in the appendix on the award conditions in accordance with section 61 (1), (4) and (5) sentence 2, section 132 (1) and (3) TKG is published here for comment.

If, as part of the consultation on the decisions of the President's Chamber on the arrangement and choice of award proceedings for the award of spectrum for digital cellular mobile communications, opinions have already been submitted that referred to the considerations on the award conditions, they have been included in the draft decision on the award conditions.

The President's Chamber will make its decision after evaluating the comments on the draft award conditions published here on the award conditions. Consultation with the Council is to be initiated in accordance with section 137(3) sentence 3 TKG for the decision in accordance with section 61(4) Nos. 2 and 4 TKG.

In an additional step, the draft decision of the President's Chamber on the auction rules in accordance with section 61 (5) sentence 1 TKG will be worked out and made available for comment. The auction rules shall be based on the definitions of the decision on the award conditions with the result that the auction rules will not be worked out until later.

The licensing procedure for the auction shall be opened after publication of the decision on the auction rules.

A. On the appendix

The draft decision on the award conditions basically contains the definitions of the technical and objective minimum requirements to be met by an applicant to be licensed to take part in the award procedure in accordance with section 61 (4) sentence 2 No. 1 TKG, the provision of the objectively and geographically relevant market in accordance with section 61 (4) sentence 2 No. 2 TKG and the

frequency usage provisions including the degree of coverage during frequency use and its implementation in time in accordance with section 61 (4) sentence 2 No. 4 TKG.

To ensure a transparent award procedure the following is pointed out:

In the 1.8 GHZ band, all frequencies available are in litigation following actions brought by the DB AG against the shifting of the E-network operators as part of the GSM concept (Order 88/2005, OG BNA 23/2005, p. 1852 ff).

In the 2 GHz band, the frequencies originally allocated to Quam GmbH totalling 2 x 10 MHz (paired) and 1 x 5 MHz (unpaired) are in litigation since the Quam GmbH brought an action against the revocation of the frequency usage rights that was rejected in a first legal process by the Cologne administrative court in a ruling on 25.04.2007 (File ref. 21 K 3675/05). However, this ruling is not yet final and conclusive since an appeal has been lodged by the plaintiff.

In the 2.6 GHz band, almost all blocks are partially in litigation due to regional allocations. The frequency allocations for the fixed radio service have a time limit of 31.12.2007 and the BNA has rejected the requested extension. The frequency allocation holder has lodged an appeal against the rejection of the extension. In an informal 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 frequency allocation holder can continue to use the frequency usage rights in the 2.6 GHz band beyond 31 December 2007until proceedings on the main issue are final and conclusive, and at most until use is made of them by a different allocation holder. As a result of the informal hearing on 15.06.2007, the Cologne administrative court rightly recognised that the BNA is obliged to extend the current frequency allocations for fixed radio service uses in the 2.6 GHz band for the period from 01.01.2008 to 31.12.2016. The decisions (file ref. 11 K 572/07 and file ref. 11 K 573/07) are not final and conclusive. The BNA has appealed against the decisions.

To ensure efficient and interference-free usage in the meaning of section 2 (2) No. 7 TKG it is planned to combine the frequency usage rights of the fixed radio service in the 2.6 GHz band ex officio into the unpaired band from 2570 MHz to 2620 MHz. Combining the spectrum may ensure that Federal-wide usage is not encumbered by existing regional uses in the event that the frequency allocation holder wins the case in the administrative legal proceedings. The effects of the matters in litigation on the spectrum in the 2.6 GHz band for award will also be reduced by this procedure and consequently legal and investment security created for the paired frequency coverage in the 2.6 GHz band will be provided.

It is also intended to shift E-Plus Mobilfunk GmbH & Co. KG’s frequency usage rights in the 2019.7 – 2024.7 MHz band into the 1905.1 – 1910.1 MHz band even before the award procedure for awarding spectrum for digital cellular mobile communications takes place in order to make the largest possible amount of connected unpaired spectrum available.

B. Invitation to comment

Comments on the draft decision relating to the award conditions are to be submitted in German in writing to

Federal Network Agency
Referat 212
Tulpenfeld 4
53113 Bonn

and electronically (Word or PDF file) to

Email: anhoerung.vergabeverfahren@bnetza.de

by 23.11.2007.

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

Appendix

DRAFT of a

General Order

Decision of the President's Chamber of the Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen (BNA / Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway) on the definitions and rules in detail 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 61(1), (4) and (5) sentence 2, section 132(1) and (3) of the TKG (Telecommunications Act)

- File reference: BK 1- 07/003-3

The Bundesnetzagentur für Elektrizität, Gas, Telekommunikation, Post und Eisenbahnen (BNA / Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway) shall issue via the President's Chamber, by virtue of section 55(9), section 61(1) and (4) and (5) sentence 2, section 132 (1) and (3) of the 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:

1. Conditions for being admitted to the auction procedure in accordance with section 61(4) sentence 2 No. 1 TKG

1.1 The entitlement to take part in the auction procedure is not limited as part of the specialist and objective minimum conditions, section 61(4) sentence 2 No. 1 TKG.

1.2 Each business can be admitted only once. This also applies to admission to the auction procedure as part of consortia. Businesses that have been amalgamated in accordance with section 37 of the restraint of competition act (GWB) count as one business. If businesses amalgamate for the purpose of applying, the applicant is to prove by a certificate from the Federal Cartel Office that there are no misgivings about this organisational form in terms of the GWB.

1.3 In the application it must be shown that the conditions for admission to the auction procedure have been met in accordance with section 61(4) sentence 2 No. 1 TKG (cf. the application conditions in detail in annex 1).

2. Determination of the objectively and geographically relevant market in which the frequencies to be awarded can be used in accordance with section 61(4) sentence 2 No. 2 TKG

2.1 The objectively relevant market in which the frequencies to be awarded may be used in accordance with the frequency usage plan is the market for wireless network access.

2.2 The geographically relevant market in which the frequencies to be awarded may be used in accordance with the frequency usage plan is the Federal Republic of Germany.

3. Basic number of frequencies, section 61(4) sentence 2 No. 3 TKG

A basic number of frequencies in accordance with section 61(4) sentence 2 No. 3 TKG is not defined.

4. Frequency usage regulations including the degree of coverage when using the frequency, see section 61(4) sentence 2 No. 4 TKG

4.1 The purpose of use of the frequencies to be awarded in the 1.8 GHz, 2 GHz and 2.6 GHz bands is digital cellular mobile communications. There will be no restriction on the use of specific technologies. All available technologies can be used, with the usage conditions serving as the basis.

The available frequencies shall be put up for award as follows:

Frequency band	Available frequency spectrum	Award
1.8 GHz	1730.1-1735.1 MHz and 1825.1-1830.1 MHz 1758.1-1763.1 MHz and 1853.1-1858.1 MHz	2 x 5 MHz (paired) 2 x 5 MHz (paired)
2 GHz	1900.1-1905.1 MHz 1930.2-1935.15 MHz and 2120.2-2125.15 MHz 1935.15-1940.1 MHz and 2125.15-2130.1 MHz 1950.0-1954.95 MHz and 2140.0-2144.95 MHz 1954.95-1959.9 MHz and 2144.95-2149.9 MHz 2010.5-2024.7 MHz	5 MHz (unpaired) 2 x 4.95 MHz (paired) 2 x 4.95 MHz (paired) 2 x 4.95 MHz (paired) 2 x 4.95 MHz (paired) 14.2 MHz (unpaired)
2.6 GHz	2500-2570 MHz and 2620-2690 MHz 2570-2620 MHz	14 blocks each of 2 x 5 MHz (paired) 1 block of 50 MHz (unpaired)

4.2 The frequency usage provisions contained in appendix 2 apply to the frequency usages.

The frequency allocation holders may deviate from these provisions if they have made the appropriate mutual agreements and the frequency usage rights of third parts are not impaired. The BNA is to be informed in advance in writing of this.

The frequency usage provisions can be amended later, especially if this becomes necessary to secure efficient and interference-free usage or because of international harmonisation agreements.

4.3 The frequency allocations have a time limit of 31.12.2025.

4.4 A frequency allocation holder is obliged to achieve a degree of population coverage of no less than 25% from 01.01.2013 onwards and no less than 50% from 01.01.2015 onwards when using the frequency for his digital cellular mobile communications network. The parameters to be fulfilled in this process will be defined later taking into account the technology used.

The frequency allocation holder is to inform the BNA on the 31st of December of each year after allocation of the status of the frequency usages and of the network structure as well as the expansion of the network.

The obligation under paragraph 1 applies to frequencies that were the subject of administrative legal proceedings on 19.06.2007 provided that the stipulated degrees of coverage can be achieved within three or five years after expiry of the year in which the legal force becomes valid. This applies in the event that the respective administrative legal proceedings are concluded as final and conclusive after the time when the respective frequency allocation is announced.

4.5 The allocations of frequencies that were, on 19.06.2007, the subject of pending administrative legal proceedings at the time of the allocation will have a condition subsequent added, meaning that the frequency allocation becomes void if the legal allocation conditions can be regarded as not valid at the time of the allocation because of the final and conclusive decision of a court. The formulation of this subsidiary provision is reserved for the respective frequency allocation ruling.

4.6 Frequency allocation holders shall not have any obligations imposed to offer service providers non-discriminatory access to services.

5. Minimum bid in accordance with section 61 (5) sentence 2 TKG

5.1 The minimum bid for a frequency block of 2 x 5 MHz (paired) and a frequency block of 2 x 4.95 MHz (paired) will be set at 2,500,000 euros.

5.2 The minimum bid for the frequency block of 1 x 5 MHz (unpaired) is 1,250,000 euros.

5.3 The minimum bid for the frequency block of 1 x 14.2 MHz (unpaired) (2010.5 MHz to 2024.7 MHz) will be set at 3,550,000 euros.

5.4 The minimum bid for the frequency block of 1 x 50 MHz (unpaired) (2570 MHz to 2620 MHz) will be set at 10,000,000 euros.

Reasons

In the 1.8 GHz, 2 GHz and 2.6 GHz bands there is a total of 270 MHz available for award.

This means 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, OG BNA 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, OG BNA 4/2006, page 702). Proceedings were initiated against this reallocation, and they are still pending. Therefore 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 to exist even after the administrative court proceedings. If the proceedings against the reallocations are 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 allocated to Quam GmbH totalling 2 x 10 MHz (paired) and 1 x 5 MHz (unpaired) were revoked by the BNA; proceedings were initiated against this revocation, which was rejected in a first legal process by the Cologne administrative court in a ruling on 25.04.2007. However, this decision is not yet final and conclusive since an appeal has been lodged against it by the plaintiff with the result that the frequencies are still in litigation at the time of this decision.

The 2.6 GHz frequency band encompasses a total spectrum of 190 MHz. This frequency band, which is assigned to the fixed radio service until it expires on 31.12.2007, is to be allocated to digital cellular mobile communications from 01.01.2008 onwards. A large part of the spectrum is currently not used and available as a result. But it should be pointed out that up to 56 MHz have been currently assigned regionally to the fixed radio service. These frequency allocations have a time limit of 31.12.2007, and the BNA has rejected the requested extension of the frequency allocations, although the holder of the frequency allocations has lodged an appeal against the rejection of the extension. In an informal 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 frequency allocation holder 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 conclusive, and at most until use is made of them by a different frequency allocation holder. As a result of the informal hearing on 15.06.2007, the Cologne administrative court rightly recognised that the BNA is obliged to extend the current frequency allocations for fixed radio service uses in the 2.6 GHz band for the period from 01.01.08 to 31.12.16. The decisions are not yet final and conclusive. The BNA has appealed against the decisions.

At present it cannot be foreseen when these court decisions on all the above mentioned legal disputes will be issued or will become final and conclusive. If it has been requested by some parties to wait for the outcome of the court proceedings as the first legal process, the chamber points out that waiting for the ruling of the court of first instance will not necessarily bring about legal force and also not the legal and investment certainty demanded by some commentators. This can be done only by a final and conclusive decision that concludes the court proceedings, a fact also advanced by some commentators.

The fact that individual frequency blocks are in litigation will be shown in concrete terms for the decision by means of an abstract or concrete award of the frequencies within the framework of the decision taken later in time on the rules for the implementation of the auction procedure in detail (auction rules) in accordance with section 61(5) TKG.

On 19.06.2007 the Chamber decided that an award procedure in accordance with section 61 TKG is to precede the allocation of spectrum for digital cellular mobile communications in the 1.8 GHz, 2.0 GHz and 2.6 GHz bands. It also decided that the procedure under section 61 (1) TKG shall be conducted as an auction procedure in accordance with section 61 (4) and (5) TKG.

The Chamber's decisions have been published as order 34/2007 in the Federal Network Agency's Official Gazette No. 14/2007 dated 18 July 2007 and also on the BNA's homepage (www.bundesnetzagentur.de).

Following on from these decisions, the Chamber now has to decide which definitions and rules in detail are to be used in the meaning of section 61(4) sentence 2 Nos. 1 to 4, section 61(5) TKG as the basis for the procedure for auctioning frequencies in the 1.8 GHz, 2 GHz and 2.6 GHz bands for digital cellular mobile communications (award conditions). The decisions in accordance with section 61(4) sentence 2 Nos. 2 and 4 TKG shall be taken in consultation with the Agency's Advisory Council.

The decision on the rules for implementing the auction procedure in detail (auction rules) in accordance with section 61(5) TKG will be issued later after consultation with the groups involved. The admission procedure for the auction shall be opened after publication of the decision on the auction rules.

The decisions are based in detail on the following considerations:

On 1. Conditions for being admitted to the auction procedure in accordance with section 61(4) sentence 2 No. 1 TKG

On 1.1 No restriction on participation

In principle, everybody and every business should be able to submit an application for admission to the auction procedure. This applies to the applicants who have already submitted applications as part of the consultation on the draft decisions on the arrangement and choice of the award procedure for awarding frequencies in the 1.8 GHz, 2 GHz and 2.6 GHz bands for digital cellular mobile communications (comm. 219/2007, OG BNA 7/2007, p. 1113) and also to new interested parties.

Exclusion of applicants from participation in the auction procedure in accordance with section 61(3) TKG to ensure equal competition on the objectively and geographically relevant market is not advisable.

Furthermore, your attention is drawn to the following:

even if the possibility of participating in the auction procedure is not limited overall, consideration may be given, on a case-by-case basis, to excluding certain bidders from the possibility of exercising their bidding rights to certain frequencies. Especially with regard to the frequency blocks in litigation, the question as to whether this represents an inappropriate advantage for bidders in that they can bid on spectrum in litigation with a possibly lower risk than their co-bidders would have to be checked on a case-by-case basis.

Restricting the exercise of bidding rights assumes that, in an individual case, this represents an inappropriate advantage for a bidder if he can bid on spectrum in litigation and he is given the facility of risk-free bidding by doing so. But restricting the bidding rights of a specific bidder can only be considered if the non-discriminatory nature of the procedure is endangered by this. This can be checked only by using an individual application for admission to the auction procedure.

But the Chamber points out that the allocation of spectrum in litigation shall be placed under a condition subsequent. The risks of the substantiated facts are transparent and open for all bidders and are thus equally available for individual risk assessments.

On 1.2 Competitive independence

If there are not enough frequencies available for the allocations, then, in accordance with previous regulatory practice, the allocation shall be made to companies that are independent of each other in terms of competition. The regulatory goal of ensuring equal and functioning competition (section 2 (2)

No. 2 TKG) demands the competitive independence of the allocation holders or network operators. For this reason, multiple applications are excluded. As part of the licensing application, the applicant must present a certificate of non-impediment under cartel law if the conditions below apply:

If, for the purpose of applying, businesses merge that had not been merged beforehand with the applicant or with each other in the meaning of section 37(1), (2) of the act on restraint of competition (GWB), or are considered as merged, the applicant must prove by means of a certificate from the relevant cartel authority that there are no misgivings about this organisational form in accordance with the GWB. The proof is not required if the factual conditions of section 35(1) GWB do not exist.

The fact that a state of merger exists or not can be checked in accordance with the criteria described in detail in section 37(1) GWB. Merger means primarily the acquisition of assets or the controlling acquisition and acquisition of the shares in a business of a certain order of magnitude and other business links by means of which one or more businesses can directly or indirectly exercise considerable influence in terms of competition on another business.

The same applies if there is between applicants a business link below the merger boundary of section 37 GWB that can influence the competitive independence of the applicants in the award procedure and can negatively affect the secret bidding competition in particular.

In this process it is irrelevant whether the merger exists with native or foreign businesses. The ownership conditions of the applicant's business are to be shown in the application (cf annex 1, point 3.B on this subject).

On 1.3 Showing the application conditions

According to item 1.1 of this decision, entitlement to take part in the auction procedure is not limited. But the entitlement to apply only provides the facility to take part in abstract terms. Participation in the auction procedure assumes that individual permission to take part has been granted by the BNA. This will be issued in a separate decision (licensing ruling). Permission to take part assumes that bidders meet certain technical and objective minimum conditions that will be checked. Consequently, a an auction procedure must be preceded by a procedure in which the existence of the statutory conditions for admission to the auction procedure is established.

The applicants that have already submitted applications for frequency allocations as part of the comments on the previous draft decisions on the arrangement and choice of the award procedure must in accordance with section 61 (4) No. 1 TKG also submit applications for admission to the auction procedure and provide appropriate illustrations and evidence that they meet the above mentioned criteria.

To fulfil the technical and objective minimum requirements for admission to the auction procedure in the meaning of section 61 (4) sentence 2 No. 1 TKG, an applicant must illustrate and prove (see appendix 1 on this subject in detail)

- that he fulfils the statutory admission conditions in the meaning of section 55(4), (5) TKG,
- that he has the funding to buy the available frequencies at auction,
- that he has a serious intention to bid and
- how the equity structure and ownership relationships are set up in his business.

This is in line with deliberation reason 13 of the approval directive that gives Member States explicitly the option of a personal aptitude test. The technical and objective minimum conditions to be set in accordance with section 61(4) sentence 2 No. 1 TKG for admission to the auction procedure are aimed at the statutory frequency allocation conditions. According to section 55(4) TKG, a frequency allocation assumes that compliance with the subjective conditions in terms of an efficient and interference-free frequency usage has been shown. Consequently, meeting the subjective conditions of reliability, efficiency and expertise must be shown in the applications for admission to the auction procedure – just as it is in the applications for frequency allocation.

In this case, reliability is aimed at compliance with the relevant legal regulations. The subject of efficiency is in particular the availability of the necessary technical and financial assets for the setting up and expansion and operation of a mobile communications network. In addition, it must be shown in terms of efficiency that the financial assets for purchasing the relevant frequency usage rights at auction are available. Expertise demands the knowledge, experience and skills required for the planning, setting up and operation of a mobile communications network.

Compliance with these subjective conditions must be demonstrated and proved by applicants within the framework of the application for admission to the auction procedure. According to section 55(4) sentence 2 TKG, the applicant must regularly demonstrate the subjective conditions in view of efficient and interference-free frequency usage and other conditions under Annex B of the approval directive. Frequency allocation to the applicant is done on the basis of section 55 (5) sentence 1 No. 4 TKG only if efficient and interference-free frequency usage is guaranteed by the applicant. The details that are required in this context are suitably and objectively justified and are thus in line with the provisions of the TKG, but are also in line with Article 11 paragraph 1 sub-para 1 letter c. of the approval directive.

The guarantee of funding must be shown by supporting documents, such as written financial declarations from the parent company, from other associated businesses or from banks to prove efficiency. Simple declarations of intent or promises of effort will not be recognised as proof of guarantee. If funding promises are given by the parent company or other associated businesses, then they are to be submitted in the form of “hard letters of awareness”. The choice of the form of proof of efficiency is left to the applicant. Simply presenting a balance sheet does not release the applicant from his obligation to show proof. Applicants must submit complete admission applications that must contain all the details on the subjective allocation conditions as well.

The obligation to show proof goes beyond the subjective conditions in the narrower meaning, i.e. the person-related characteristics of reliability, efficiency and expertise. According to section 55 (5) sentence 1 No. 4 TKG, the fact that actual use will be made of the frequencies by the applicant must also be guaranteed in the meaning of the allocation condition. For this reason, a separate, convincing frequency usage plan has to be submitted in addition. Digital cellular mobile communication networks are characterised by a medium to long-term setting up and expansion process. A frequency usage plan is required to obtain information on current and future frequency requirement (cf. appendix 1 for detail on this point).

Applicants must show as part of the frequency usage plan that they really need the frequencies in order to realise certain business models and how they intend to meet the coverage obligations bundled with the allocation (cf. section 61(4) sentence 2 No. 4 TKG). The business plan, the network planning for the setting up and expansion of a mobile communication network, plus the number of anticipated subscribers, with reference to theoretical factors on traffic, must be shown in particular (cf. appendix 1 for details on this point).

In addition, the ownership relationships – even indirect ones – of the applicant’s business must also be shown in the application. The regulatory goal of ensuring an equal and functioning competition under section 2(2) No. 2 TKG requires network operators that are independent of one another in terms of competition. For this reason multiple applications are excluded.

Furthermore, an applicant must declare in his application that he agrees with the public announcement of his admission to the auction procedure and with the publication of any subsequent decision on award of contract to him.

Furthermore, your attention is drawn to the following:

prior to the start of the auction, a deposit is to be paid to document the seriousness of the desire to take part in the auction. The details on this point will be set out in the decision on the rules for conducting an auction procedure for digital cellular mobile communications.

As regards the submission of applications for admission to the auction procedure, details will be requested separately in accordance with section 61(5) TKG in conjunction with the decision of the President’s Chamber on the auction rules.

On 2. Determination of the objectively and geographically relevant market in which the frequencies can be used in accordance with section 61(4) sentence 2 No. 2 TKG

On 2.1 Objectively relevant market

According to Section 61 sub-section 4 sentence 2 No. 2 of the 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.

In the frequency usage plan it is intended to devote 1.8 GHz, 2.0 GHz and 2.6 GHz bands, that were assigned to mobile communications service in the frequency band assignment plan, to digital cellular mobile communications. Digital cellular mobile communications are to be used to connect predominantly mobile terminal equipment to digital communication networks via static base stations

that cover one or more communication cells (sectors). The switch to other communication cells will be done on a regular basis without interrupting the communication links.

It is intended not to impose any restriction on certain mobile communication standards and system technologies and to allow a largely technology-neutral use of the frequencies. It is neither necessary nor appropriate to name explicitly specified technologies with which a mobile communication network can be operated, or to exclude other technologies. So a mobile communication network operator will be able in principle to provide to his customers, in line with demand, all services that can be provided on the basis of the mobile communications technology chosen by him. So offers will not be restricted to mobile applications.

The objective market has been made very wide as a result. The objectively relevant market is the market for wireless network access, i.e. mainly for the wireless connection of subscribers. Other applications are ruled out in principle as a result. As part of this broad structuring of the objectively relevant market, mobile communication network operators can offer to customers, in line with demand, all offers based on the mobile communication technology used in each case.

On 2.2 Geographically relevant market

According to section 61(4) sentence 2 No. 2 TKG the relevant market 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 encompasses the territory of 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 should be dedicated to digital cellular mobile communications as part of the change to the frequency usage plan. 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 (521 ff)). The experience gained when auctioning the frequencies in the 3.5 GHz band in December 2006 also demonstrated this fact. Despite the regionalisation undertaken, frequencies will be allocated to operators with Federal-wide business models.

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. A regional award of frequencies would mean in the final analysis that other guard channels and guard separations would have to be set up or a correspondingly increased coordination effort would be needed.

Moreover, it must be pointed out that businesses with an interest in regional frequency usage will not be prevented from obtaining the appropriate frequency spectrum as part of a frequency transfer or frequency leasing from the holder of a Federal-wide frequency allocation. In addition, other frequency bands areas are available for implementing regional business models, e.g. in the 3.4 GHz to 3.8 GHz or 5.8 GHz bands.

On 3. Basic number of frequencies, section 61(4) sentence 2 No. 3 TKG

It cannot be considered as right 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. 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 in detail by suitable measures in the future decision on the rules about the implementation of the auction procedure in accordance with section 61(5) TKG 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.

The Chamber points out the following on the partial requested limitation of bidding rights, about which the Chamber still has to take a decision in detail on the auction rules in accordance with section 61(5) TKG:

the Chamber is thinking of not imposing a limit for each bidder on the spectrum cap to be sold at auction.

If, as was illustrated in the initial thinking (see order 89/2005, BNA OG 24/2005, page 1909 ff.), 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 active in the market or of a new interested party is the product of his individual business model and cannot be estimated in advance by the BNA.

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 from the UMTS auction in 2000 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.

Nevertheless, restricting the bidding rights of each bidder could be considered in order to make entry to the market easier for potential interested parties. Since an excessively small dimensioned spectrum cap brings with it the risk of excluding business models with a higher spectrum requirement, it would be necessary for the BNA to estimate the spectrum requirement of the individual interested parties.

For businesses already active in the market, the frequencies will be used as expansion spectrum in order to offset capacity bottlenecks for existing applications and also to make possible the development of new services. A newcomer will require frequencies to start the business and for the sustainable implementation of the business model. Depending on the business planning or objectives on which the acquisition of spectrum is based, the frequency requirement can be relatively small or high. In view of the many possibilities for using the spectrum and of the different business strategies, the Chamber is not able to assess in abstract terms which spectrum requirement is suitable as an upper limit. If the spectrum cap is dimensioned such that it is too small, then the spectrum would be artificially reduced in the view of the individual bidders with the result that their business models could not be implemented.

In addition, a spectrum cap could also mean that spectrum is not awarded as part of the auction although individual bidders have an additional spectrum requirement. A second auction stage could indeed be arranged for this event, but with a non-simultaneous award of the same types of auction objects there is the danger that very inhomogeneous prices may well have to be paid for the same types of frequency blocks.

A spectrum cap to ease the market entry of potential interested parties also hides the danger of a distortion of the competition. Granting preferential treatment to potential newcomers automatically puts existing network operators at a disadvantage due to the effect of the spectrum cap in that they cannot satisfy their actual spectrum requirement because of the restriction imposed.

In addition, the Chamber assumes that the spectrum to be awarded here of 270 MHz offers enough space to allow newcomers to acquire spectrum. The probability of strategic bidding behaviour to prevent newcomers from acquiring spectrum is also regarded as low. Assuming that the frequency blocks are awarded in an auction over several rounds, the price increase of one block will lead to the increase in the price of the other (same types of) blocks. For a bidder with an interest in preventing others from acquiring spectrum, this would mean that he would automatically increase the price of the absolutely required spectrum by his strategic “price driving”. To this can be added the fact that he would have to acquire the not absolutely necessary spectrum at correspondingly high prices if he intends to successfully prevent other bidders from acquiring spectrum or from entering the market. The envisaged very high costs for this strategic bidding behaviour should reduce the incentives for this type of behaviour. Moreover, the frequency allocation holders are covered by a coverage obligation that they must meet with the newly acquired spectrum, and also by a half-yearly reporting obligation on the status of the frequency usage and the network structure and expansion. These qualifications are intended to ensure that the frequencies acquired as part of the auction are actually being used, and should also work against strategic bidding behaviour.

Against this background the Chamber estimates the opportunities arising directly from the auction as an award procedure for the acquisition of spectrum to be awarded as equal for both existing network operators and possible newcomers with the result that a special regulatory protection for possible

newcomers to ensure equal opportunity with existing frequency allocation holders does not appear pertinent.

Notwithstanding this fact, there is the extremely unlikely possibility, especially against the background of the amount of spectrum coming up for award, that one bidder buys all the spectrum at the auction if the bidding rights are not restricted. This outcome would conflict in particular with the regulatory goal of permanently promoting competition oriented telecommunication markets in accordance with section 2(2) No. 2 TKG. Although the Chamber estimates this outcome as extremely unlikely, the consequences would be serious for the competition and hence also for the end consumer.

For this reason, consideration might be given to setting a limit to bidding rights for each bidder in the meaning of a “safety cap”, but one that would have to be high enough not to prevent the frequency efficient provision of different services. This is why the British regulatory authority (Office of Communications / Ofcom) for the planned award of frequencies at 2 GHz and 2.6 GHz is considering imposing a “safety cap” of 90 MHz per bidder in order to prevent only one bidder from being successful.

From the Chamber’s point of view, the setting of such a “safety cap” is not necessary since it is not obvious that an interested party can enforce the requirement for the entire spectrum or a large part of it. No such requirements have been presented to the Chamber so far. The only interest expressed to date was in the comments on the imminent award, which was for a maximum of 2 x 40 MHz (paired). Against this background the chamber does not currently anticipate that a much larger frequency requirement will be brought by individual interested parties. In addition, it should be pointed out that the bidding rights must be applied for by the individual interested parties within the framework of the admission to the auction. A usage plan, which will be checked by the Federal Network Agency, must be submitted in order to verify the frequency requirement put forward.

On 4. Frequency usage provisions in accordance with section 61 (4) sentence 2 No. 4 TKG

In accordance with section 61(4) sentence 2 No. 4 TKG, the Chamber shall determine the frequency usage conditions including the degree of coverage of frequency usage and its implementation within a time frame before an auction procedure is held. Frequency usage conditions in this sense are details on the type and volume (e.g. position in the frequency band, block size) of the frequencies to be awarded, in addition to the technical specifications.

On 4.1 Purpose of use

The purpose of use of the frequencies to be awarded in the 1.8 GHz, 2 GHz and 2.6 GHz bands is digital cellular mobile communications. There will be no restriction on the use of specific technologies. All available technologies can be used, with the usage conditions serving as the basis.

Frequency usage conditions shall 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 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 Radiocommunications Conference (WARC) 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 Radiocommunications Conference (WRC) in 2000. In the meantime, the CEPT has approved the ECC 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 in time, these bands were still used by the fixed radio service (radio relay). Radio relay was removed from this frequency band into higher frequency bands by the activities of several countries,

thus creating space 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. The ERC decision (00)01 then expanded the ERC decision (97)07 in that it stated that the entire 155 MHz was to be available by 01.02.2002. 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 2500 to 2690 MHz frequency band was identified for IMT 2000 in the ECC decision, but only the 2520 MHz to 2670 MHz frequency band 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 allocated to the terrestrial component 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): 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).

Accordingly, the available frequencies shall be put up for award as follows:

Frequency band	**Available frequency spectrum**	**Award**
1.8 GHz	1730.1-1735.1 MHz and 1825.1-1830.1 MHz 1758.1-1763.1 MHz and 1853.1-1858.1 MHz	2 x 5 MHz (paired) 2 x 5 MHz (paired)
2 GHz	1900.1-1905.1 MHz 1930.2-1935.15 MHz and 2120.2-2125.15 MHz 1935.15-1940.1 MHz and 2125.15-2130.1 MHz 1950.0-1954.95 MHz and 2140.0-2144.95 MHz 1954.95-1959.9 MHz and 2144.95-2149.9 MHz 2010.5-2024.7 MHz	5 MHz (unpaired) 2 x 4.95 MHz (paired) 2 x 4.95 MHz (paired) 2 x 4.95 MHz (paired) 2 x 4.95 MHz (paired) 14.2 MHz (unpaired)
2.6 GHz	2500-2570 MHz and 2620-2690 MHz 2570-2620 MHz	14 blocks each of 2 x 5 MHz (paired) 1 block of 50 MHz (unpaired)

In principle, the spectrum available in all three frequency bands will be put up for award in 5 MHz blocks. The award is in line with the international channel plan that provides a rasterisation of 5 MHz. With the award of 5 MHz blocks, the greatest possible flexibility is also ensured for bidders to allow them to realise their various planned business models. This arrangement also allows bidders to acquire quantities of spectrum of 5 MHz and any multiples thereof. Against this background, the award of larger blocks, such as a 10 MHz block, does not appear appropriate since bidders with a demand for 5 MHz or 15 MHz for instance cannot have their requirement met. The need by bidders for connected spectrum will be taken into account by the Chamber when it compiles the auction rules.

Moreover, there is also the possibility of transferring frequency usage rights totally or partially in accordance with the rules of the TKG on completion of the auction (cf. communication 152/2005, OG Reg TP 12/2005, p. 1021 ff for details on this point).

The paired spectrum to be awarded in the 2 GHz band will be provided in 2 blocks of 2 x 9.9 MHz (paired) (used to belong to Quam or MobilCom spectrum) in blocks of 2 x 4.95 MHz (paired).

If this type of cut is not appropriate in certain frequency bands, then a different block size will be set.

This applies in particular to the 2010.5 – 2024.7 MHZ and 2570.0 – 2620.0 MHz frequency bands.

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 of 9.2 MHz are retained. The adjacent frequency block (2019.7 – 2024.7 MHz) is currently allocated to E-Plus Mobilfunk GmbH & Co. KG (hereafter known as E-Plus). It is planned to shift E-Plus' frequency usage rights into the 1905.1 – 1910.1 MHz frequency band (used to be MobilCom GmbH spectrum). The 2019.7 – 2024.7 MHz frequency block that then becomes free following this shift is to be put up for award as part of the approaching auction together with the 2010.5 – 2019.7 MHz as one block. This will mean that one block totalling 14.2 MHz (unpaired) can be made available.

In the 2.6 GHz band, the unpaired 2570.0 – 2620.0 MHz frequency band is to be put up for award as one connected 50 MHz block. Because of international standards, in this case ECC decision (05)05, the necessary guard bands between FDD and TDD applications must be provided in the unpaired band. Splitting this frequency band into individual blocks would demand additional guard bands if several network operators were to use it. This is particularly true if this spectrum is to be used for TDD applications. So splitting this band up into 5 MHz blocks does not seem appropriate for reasons of efficient frequency usage. A stipulation by the BNA in the sense of limiting it to TDD applications cannot be done even if this spectrum is particularly suitable for this type of application. The BNA is pursuing the goal of allowing different technologies to be used.

But it must be pointed out that the frequency usages in the paired 2.6 GHz band are subject to restrictions at the upper band limit.

If blocks 13 and 14 in the 2680 – 2690 MHz band are used, it must be borne in mind that the radio-astronomy stations in Effelsberg (Eifel, Germany) and Westerbork (Netherlands) must be protected.

The BNA shall take into account this fact when it later comes to actually allocating the blocks purchased at auction from the 2.6 GHz band – if the successful bidders do not agree by themselves – in that these blocks will be allocated to the successful bidder with the biggest number of frequencies in the paired 2.6 GHz band. If there are several numbers of frequencies of equal size, the decision will be made by drawing lots.

Furthermore, your attention is drawn to the following:

It is planned to shift the frequency usage rights in litigation in the 2.6 GHz band into the unpaired band and, by doing so, to restrict the litigation to this band.

In the 2.6 GHz band, the paired spectrum (2500 – 2570 MHz and 2620 – 2690 MHz) is to be awarded abstractly, if possible. In contrast to awarding concrete frequency blocks, awarding abstract frequency blocks offers advantages for the bidders and the procedure in that the sale of connected spectrum by auction is made easier. For this reason, the BNA is keen to make as many frequencies as possible available for an abstract award.

The decision to award individual frequency blocks in the meaning of an abstract or concrete award is the subject of the decision of the President's Chamber on the rules for holding the auction procedure in accordance with section 61(5) TKG; this decision will be issued later. The fact that some frequencies are in litigation will also be taken into account when deciding on the abstract or concrete award of individual frequency blocks. The fact of being in litigation will also affect the estimated value of the individual frequency blocks with the result that it will be necessary for the bidders to know the physical position of these frequencies.

On 4.2 Frequency usage conditions

The frequency usage conditions shall be set in detail on the basis of international recommendations and decisions.

The frequency usage conditions for digital cellular mobile communications shall be based on the framework conditions and channel plans laid down in the CEPT decisions ERC/DEC/(95)03, ECC/DEC/(06)13, ECC/DEC/(06)01 and ECC/DEC/(05)05.

The use of the fundamental framework conditions of the relevant CEPT decisions shall also form the necessary basis for an international efficient and interference-free use of the available spectrum. Efforts shall be made to reach a European standard regulation, the basis of which are the standard framework conditions used, in the meaning of a user-friendly Europe-wide availability of digital cellular mobile communication networks.

The frequency usage conditions listed in appendix 2 should ensure the interference-free coexistence of different applications in the adjacent frequency bands. In principle, the usage provisions, such as spectrum masks, enclosed at Annex 2 / enclosure 1 to ensure interference-free coexistence, must be complied with. In addition, specific regulations apply to the 1710-1785 MHz / 1805-1880 MHz bands (appendix 2/enclosure 2) to ensure the radio compatibility with existing GSM mobile communication networks that are to be protected (cf. ECC Report 82 on this point).

The frequency allocation holders may deviate from these provisions if they have made the appropriate mutual agreements and the frequency usage rights of third parts are not impaired. The frequency allocation holders shall receive great flexibility during actual frequency use. The BNA is to be informed in writing about this in order to deal promptly and properly with fault messages.

To ensure efficient and interference-free usage, the frequency usage conditions can be changed at a later date, e.g. by adopting other frequency masks or by setting the required guard bands in the band and at the band limits. Some additional international and national investigations are 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. In accordance with ECC/DEC(05)05, the guaranteed protection of the FDD usages is to be provided, in their own spectrum, by the allocation holders who use TDD systems. The facility to use a 5 MHz channel in the 1.8 GHz band because of the GSM use of the adjacent channels, which is to be protected, may also be subject to restrictions to achieve the necessary decoupling.

The frequency usage provisions can be amended later, if this becomes necessary to secure efficient and interference-free usage or because of international harmonisation agreements. The adoption of a right of amendment is necessary since radio compatibility studies have not been completed to date and consequently it may become necessary to modify or supplement the provisional boundary values for out-of-block emissions and, if necessary, also other elements of the frequency usage conditions. A standard European regulation is what is being sought.

On 4.3 Setting a time limit for usage rights

In accordance with section 55(8) TKG frequencies shall be allocated as a rule for a fixed term. The time limit must be appropriate to the service concerned in accordance with section 55(8) sentence 2 TKG.

The Chamber took into account here that an appropriate redemption period is to be allowed for the investments to be made when setting the term. It should also be taken into account that the introduction of new, frequency efficient technologies and the frequency planning of the BNA may not be impeded or unreasonably disrupted, with the result that the fixed term in the meaning of a control function should not exceed a specific period.

In the mobile communication sector terms of between 15 and 20 years have been set to date. In 2000, the terms of the UMTS/IMT-2000 licences were set at about 20 years. In addition, in 2006 the term of the frequency allocation for BWA was set at 15 years.

In view of the consideration of a suitable period of time to redeem the investments to be made, the setting of the term in this procedure to the end of 2025 seems appropriate and necessary. In this process the Chamber took account of the fact that the fixed term does not start running until the frequency is allocated, a fact that cannot yet be determined unambiguously at this point in time. Frequency allocation holders – especially also potential network operators coming new to the market – are to be granted an adequate period of time to set up the network, to implement the business model and to redeem the investments made for the frequencies that are up for award here. The term of about 17 years resulting from this time limit until 31.12.2025 appears adequate against this background. A longer term does not seem advisable in view of the fast technological change and future developments that cannot be foreseen at present. This applies in particular against the background of the option provided under the law of an extension in accordance with section 55 (8) TKG.

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.

On 4.4 Coverage obligation

According to section 61(4) sentence 2 No. 4 TKG, the BNA shall determine, prior to holding an award procedure, the frequency usage conditions including the degree of coverage during frequency usage and its implementation within a time frame. In accordance with section 61(7) TKG the imposed coverage obligation shall become an integral part of the frequency allocation.

The imposition of the coverage obligation is based on the following considerations:

The imposition of a coverage obligation is used to realise the other regulatory goals arising from the infrastructure guarantee mandate of the Federal government in the telecommunications sector (Art. 87f of the Basic Law), such as the protection of users' interests (section 2(2) No. 1 TKG), the promotion of permanently competition oriented telecommunication markets in the telecommunications services and networks sector and the associated equipment and services (section 2(2) No. 2 TKG) and the promotion of efficient infrastructure investments (section 2(2) No. 3 TKG).

Since frequencies are a tight, economically valuable resource, the BNA is also pursuing the goal of ensuring that these frequencies are used interference-free and efficiently when they are allocated. This principle is reflected in the regulatory goal of section 2 (2) No. 7 TKG. At the same time the regulation pursues the goal of promoting competition in the telecommunications sector and efficient infrastructures, and in guaranteeing comprehensively appropriate and adequate provision of services.

Optimum allocation of the resources is achieved primarily using the auction tool as a market instrument, i.e. frequencies are distributed to bidders with the greatest willingness to pay. The successful bid will typically substantiate the willingness and the ability to deploy in the most optimum manner possible the frequency to be allocated in the free market competition of service provision and will strive to use the frequency economically and thriftily, since the Federal government has already stated this in the legal justification, but the Chamber fully appreciates that it may be of interest for market players to hoard frequency resources in order to exclude competitors from the market for instance.

For these cases the law does offer the option of revocation in accordance with section 63(1) TKG if the frequencies are not being used for the purpose stated when allocated. However, revocation can only mean that unused frequencies are either re-allocated or re-awarded. So the option of revocation is not enough by itself to ensure the realisation of the other regulatory goals arising from the infrastructure guarantee mandate of the Federal government in the telecommunications sector (Art. 87f of the Basic Law), such as the protection of users' interests – especially consumers' interests (section 2(2) No. 1 TKG), the promotion of permanently competition oriented telecommunication markets in the telecommunications services and networks sector and the associated equipment and services (section 2(2) No. 2 TKG) and the promotion of efficient infrastructure investments (section 2(2) No. 3 TKG).

These regulatory goals can be achieved by imposing an appropriate coverage obligation with the result that it cannot be omitted here. This was implemented by the legislator with section 61(4) sentence 2 No. 4 TKG according to which the BNA is to determine not only the frequency usage conditions, but also explicitly the degree of coverage during frequency usage and its implementation in time before an auction procedure is held. Under section 61(7) TKG this coverage obligation shall become an integral part of the frequency assignment in accordance with section 55 TKG.

Accordingly the currently issued frequency usage rights for public digital cellular mobile communications are generally tied to coverage obligations. This was how it could be ensured that the building of the networks was started promptly and will be continued without interruption and that services will be developed at the earliest possible time.

The usage rights for UMTS/IMT-2000 issued in 2000 came with coverage obligations (cf. order 13/2000, Reg TP OG 4/2000, page 516 (539 ff)): frequency allocation holders 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 Chamber also considers the arrangement of such a time-staggered coverage obligation, providing a population coverage of 25% initially and 50% later, to be the correct and appropriate choice for achieving the goals set under the coverage obligation.

If the BNA's arguments were understood in its initial considerations in the sense that existing network operators are excluded from the imposition of a coverage obligation, then it is explicitly pointed out that this is not the case.

In accordance with section 61(4) sentence 2 No. 4 TKG, the coverage obligation is imposed when the frequencies are awarded and linked to the awarded usage rights. This coverage obligation becomes a component of the relevant frequency allocation and applies without restriction to each frequency allocation holder. To this extent it is irrelevant if the frequency allocation holder is already a mobile communication network operator or not.

But the imposition of the coverage obligation in the respective frequency allocations does not mean that the coverage obligation would have to be met with every single one of the frequency blocks acquired. The frequency allocation holder would of course have to use all the allocated frequencies in principle, but all that is necessary is for the stipulated degree of coverage to be achieved with the overall newly acquired spectrum, and not with every single frequency block. Existing network infrastructures can also be used to use the acquired spectrum and hence to fulfil the coverage obligation.

The parameters to be fulfilled in terms of coverage obligation will be defined later taking into account the technology used. The frequency allocation holders will be consulted accordingly on this matter.

The imposition of a reporting obligation is to ensure efficient frequency usage in the meaning of the regulatory goal of section 2(2) No. 7 TKG. Even if the coverage obligations do not have to be met until 01.01.2013 or 01.01.2015 onwards, it is appropriate for the BNA to be continually informed about the status of frequency usage.

As regards the frequencies in litigation, the Chamber is aware that the existing legal uncertainty, and the accompanying risk that the frequency allocations may be quashed following the appropriate court rulings, represents an obstacle to investments in the infrastructure. This is especially true for the frequency allocation holders who do not yet have any appropriate network infrastructure. If the coverage obligation were also to apply equally to these frequencies, this would then mean that the frequency allocation holders would be obliged to make these – in some cases futile – investments. So the Chamber regards it as correct that the stipulated deadline for meeting the coverage obligation (3 or 5 years after allocation) for frequencies that were in litigation on the day the auction procedure was arranged (19.06.2007), does not start until after a legally binding conclusion of the court proceedings in question has been reached. In accordance with the regular coverage obligation, the expiry of the year in which the legal force comes into being is also critical here.

On 4.5 Condition subsequent for frequencies in litigation

The allocations of the frequencies in litigation have had a condition subsequent added in the event that the BNA is obliged by a court decision to extend or to re-award the usage rights to other businesses. These subsidiary provisions are indispensable for compliance with the court's decisions.

In the justification of the decisions of the President's Chamber dated 19.06.2007, the following was argued (Order 34/2007, OG BNA No. 14/2007, p. 3115):

> "Firstly, it must be noted that these disputed frequencies are also still available in the meaning of section 55(5) sentence 1 No. 2 TKG since they have not yet been used by other frequency allocation holders (see official justification on section 53 of the government draft, BR-Drs 755/03, page 105). The TKG allows in principle for available frequencies to be made available to the market if the allocations 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. […]
>
> 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 interference-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".

The Chamber is sticking to these arguments. It also came to the option that a condition subsequent in accordance with section 36(2) No. 2 VwVfg (administrative order) for the (re-)granting imposed by a court of frequency usage rights of former frequency holders is the more appropriate legal instrument. The imposition of a condition subsequent can mean that, when the condition comes into force, the frequency allocation expires without any additional administrative action, whereas additional administrative action, which can be attacked by legal instruments, is needed to exercise a reserved right of revocation. Consequently, for reasons of legal certainty, it is advisable to add a condition

subsequent to the frequency allocation. The actual arrangement of the condition subsequent will be done as part of the allocation.

On 4.6 No service provider obligation

The Chamber is not legally empowered in the procedure in accordance with section 61 TKG to impose obligations under which the frequency allocation holders have to offer access to services to service providers in a non-discriminatory manner.

Until now, 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 consideration was given to creating standard conditions for all market participants.

Section 61(4) sentence 2 No. 4 TKG is not an adequate authorisation basis for this type of obligation. Before holding an auction procedure, the BNA shall determine the frequency usage conditions, including the degree of coverage during frequency usage and its implementation in time. Frequency usage provisions in this sense are not just technical standard to ensure efficient and interference-free usage, but can also be regulations to bring about other regulatory goals in accordance with section 2(2) TKG. But the Chamber is of the opinion that an interpretation of section 60(4) sentence 2 No. 4 TKG does not provide the authority to issue a service provider obligation.

Firstly it must be stated that section 21(2) No. 3 of the Telecommunications Act (TKG) contains an explicit authorisation basis for the legal consequence being discussed here. But this legal consequence cannot be pronounced because of this form of authorisation since the condition of the considerable market power has not been met. This was laid down in the market definition and analysis proceedings BK1-06/001 on the considerable market 15 in accordance with the annex of the Commission’s recommendation dated 11 February 2003 on the relevant product and service markets of the electronic communication sector that were to be considered on the basis of the European Parliament’s and Council’s directive 2002/21/EU on a common legal framework for electronic communication networks and services as a preliminary regulation.

It cannot be objectively recognised that the legislator intended to empower the BNA in excess of section 21(2) No. 3 TKG to impose a market independent service provider obligation. What must be borne in mind here is that the service provider obligation represents an intrusion into the private autonomy of the frequency allocation holder that is protected by constitutional rights. According to the legal system, the private autonomy can be restricted in accordance with section 21(2) No. 3 TKG if the network operator dominates the relevant market. The right to use a scarce public resource such as frequencies might be considered as further justification for encroaching on private autonomy since the holder of the scarce right was granted an advantage vis-à-vis the public, and this advantage could be offset in the meaning of public benefit by the fact that the network operator is subject to a special obligation in the public interest.

Something else to be considered in this context is the evaluation of the legislator expressed in section 19(4) No. 4 of the restraint on competition act (GWB) that a business that controls access to fundamental network or other infrastructure facilities can have access obligations imposed on it if it misuses its market dominating position. This legal thinking looks into the interpretation of the provisions of the Telecommunications Act – if not directly by means of section 2 (3) TKG – then at least indirectly via the thinking on the uniformity of the legal system. If after evaluation of the GWB legislator the legal institute of the “essential facility” cannot be decoupled from the condition of the market domination position, it cannot be deduced from this that the TKG legislator intended to make a regulation deviating from this. In the view of the Chamber, an understanding that differs from this contradicts with the far-reaching misgivings under legal method (rules and limits of legislation) and under constitutional law (reservation of the law; theory of essentialness).

For these reasons, the Chamber does not recognise any adequate authorisation basis for service provider obligations in section 61(4) sentence 2 No. 4 TKG.

Section 60(2) sentence 1 TKG can also not be considered as a basis for authorisation for the same reasons.

In this context the Chamber points out that the GSM and UMTS/IMT-2000 licences contain service provider obligations that are valid both now and in the past. This follows in particular from section

150(4) TKG. Since these service provider obligations are a component of person-based licences, whose regulations create legal effects now and in the past, they continue to be valid irrespective of the frequencies allocated in each case.

On 5. Minimum bid, section 61 (5) TKG

In accordance with section 61(5) sentence 2 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 bidding 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 determined 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 the fact in particular that a not inconsiderable portion of the frequencies are in litigation will also impact on the individual estimated values 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 in litigation, it is not administratively possible to set in advance an economic value of the frequencies.

For this reason, the level of the minimum bid is tied to the statutory allocation fee. Determining the amount will not be influenced by differences for each frequency band.

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 is based on the amount set by this fee.

Following this basic line of thinking, the Chamber also set the minimum offers for the frequency auction in the 3.5 GHz band for BWA (order 42/2006, BNA OG 20/2006, page 3051 (3111)).

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 23.11. 2006 (Federal Law Gazette I, page 2661), currently contains only a fee framework for the allocation of a frequency in a GSM network. Fee position B.1.1 of the Frequency Fee Ordinance and evaluation of the legislator on which it is based has been included as a reference size for determining the minimum bid. This fee position provides a fee framework of 100,000 to 2,000,000 Euros for the allocation of a frequency in a GSM network (reference bandwidth up to 200 kHz). From this it can be calculated that a fee framework of 2,500,000 to 50,000,000 Euros can be set for a frequency block of 2 x 5MHz (paired).

When setting the minimum bids, the Chamber was guided by the lower benchmark figure of the fee framework in order to set only a price for entry to the auction procedure.

The individual concrete amounts of the minimum bids will be set as follows:

the minimum bid for a 5 MHz duplex block or a 4.95 MHz duplex block is set at 2,500,000 Euros. The minimum bid for the frequency block of 1 x 5 MHz (unpaired) is 1,250,000 euros.

The minimum bid for the frequency block from 2010.5 MHz to 2024.7 MHz (14.2 MHz) will be set at 3,550,000 euros

The minimum bid for the frequency block from 2570 MHz to 2620 MHz (50 MHz unpaired) will be set at 10,000,000 euros. A 20 percent discount was deducted from the total amount of 12,500,000 Euros for this 50 MHz block calculated on the basis of the above mentioned minimum bid of 1,250,000 Euros for a 5 MHz block (unpaired). Against the background that the necessary guard channels can be implemented in the unpaired spectrum to protect the usages in the paired spectrum, a reduction of the minimum bid for this block can be allowed here because of the frequency blocks that will then not be fully used. A 20 percent reduction appears appropriate in these circumstances.

The same minimum bids were allowed for the frequencies in litigation since the contract amount will be reimbursed in the event that the spectrum has to be handed back following a court decision.

Instructions about the right to appeal

Proceedings can be initiated 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 proceedings 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 proceedings have no delaying effect.

An adequate number of copies of the proceedings and attachments must be provided so that all parties involved can receive a copy.

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

Bonn, <Day>. <Month> 2007

Associate judge | Presiding judge | Associate judge

Appendix 1

1. Application for admission to the auction procedure

Participation in the auction procedure assumes that individual permission to take part has been granted by the BNA.

To fulfil the technical and objective minimum requirements for admission to the auction procedure in the meaning of section 61 (4) sentence 2 No. 1 TKG, an applicant must illustrate and prove

- that he fulfils the statutory admission conditions in the meaning of section 55(4), (5) TKG,
- that he has the funding to buy the available frequencies at auction,
- that he has a serious intention to bid and
- how the equity structure and ownership relationships are set up in his business.

2. Formalities

The application documents for admission to the auction procedure are to be submitted in German, in 7 copies plus a soft copy also (word or pdf format).

3. Details and layout of an application for admission to the auction procedure

Before the auction is held, an application for admission to the auction procedure is to be submitted. The application is to be laid out in accordance with the format:

A. Details of the applicant

a. Company name and address

b. Legal form of the company

c. Company headquarters

d Extract from the commercial register

e. Equity structure of the applicant

f. Particulars of an authorised representative contact including telephone and fax number

g. Particulars of the registered agent for service of process

B. Equity structure of the applicant / certificate of non-impediment from the cartel authority

In addition, the ownership relationships – even indirect ones – of the applicant's business must also be shown in the application. In the event of an application by a consortium, this applies to all consortia. The presentation is to be expanded with the shares in the consortium.

If there are companies who have acquired an interest in the applicant and who are not considered as merged beforehand with him or with one another in the meaning of section 37 GWB, the applicant must prove by means of a certificate from the cartel authorities that there are no misgivings about this organisational form in accordance with the GWB. If no certificate from the cartel authorities can be presented at the time when the application is made, the applicant must provide proof of his corresponding application to the cartel authorities. Admission to the auction requires at least one declaration from the cartel authorities that there are no misgivings against this merger. The certificate from the cartel authorities is to be submitted immediately afterwards in this case.

C. Details of reliability

The applicant is to show if

- a frequency allocation was withdrawn from him in the past,
- conditions were imposed due to non-compliance with obligations arising from a licence or frequency allocations,
- legal action was taken against him because of an infringement of the telecommunication or data protection law, or
- an action is pending against him on matters to do with the above mentioned cases.

D. Details of efficiency

The applicant is to prove that he has the funding to buy the available frequencies at auction,

In addition, the applicant must show and prove that he has the necessary funds for setting up and operating of the network, and how the funding is to be provided.

Security of funding must be shown by supporting documents, such as written financial declarations from the parent company, from other associated businesses or from banks. Simple declarations of intent or promises of effort will not be recognised as proof of guarantee. If funding promises are given by the parent company or other associated businesses, then they are to be submitted in the form of "hard letters of awareness". Presenting a balance sheet does not release the applicant from his obligation to show proof.

The applicant must show his efficiency logically and comprehensibly in relation to his business project (medium-term planning). The proof of the required funds for setting up the network is to be based on the planning and setting up costs, taking the coverage obligation and its time frames as its basis, and on the costs for keeping the operation running.

Furthermore, your attention is drawn to the following:

The applicant must pay a deposit to cover his intended purchase at auction of frequency usage rights into an account **still to be determined** by the BNA no later than 14 days before the start of the auction. The deposit will be counted towards the successful bid, or paid back otherwise. The paying of a deposit is intended to record the seriousness of the desire to take part in the auction.

E. Details of expertise

It must be demonstrated that the persons involved in the setting up and operation of the mobile communications network have the necessary knowledge, experience and skills. The applicant must demonstrate the expertise logically and comprehensibly.

As part of doing so, curriculum vitae with certificates and final examination certificates or records of previous employment (references) in the telecommunications sector (setting up or operating similar systems) can be provided. As regards the planned technology, the applicant must show the knowledge, experience and skills the persons scheduled to run the transmission paths possess.

If a consortium submits an application, the appropriate details about the consortia supplying the respective expertise are to be given. In addition, it must be shown how the expertise of the consortia is transferred to the applicant.

E.1. Expertise in the mobile communications sector

The applicant must show the knowledge, experience and skills that are required to set up and operate his mobile communications network and to market the corresponding services, or are advantageous, and that qualify him to exercise the frequency usage rights.

E.2. Expertise in other telecommunications areas

The experiences in terms of planning and the setting up of networks and services in other telecommunications networks must be shown here.

E.3. Coverage obligation and degree of coverage

The applicant must describe the degree of coverage that he is contemplating providing to the population.

In addition, he must state the planned coverage focal points and locations. The degrees of population coverage stipulated in the procedural regulations on the award of frequencies for digital cellular mobile communications must be provided in the time frames laid down for this at least.

F. Frequency usage concept

The applicant must show, in the form of a frequency usage concept how he intends to ensure an efficient and interference-free frequency usage. The frequency usage concept must be logical and comprehensible. Assumptions and forecasts must be based on auditable facts.

F.1. Approach during technical planning

The details on technical planning should show that the applicant controls the planned approach and is able to use the planning instruments available to him. The applicant must provide details

- on the concrete approach (e.g. system concept, network structure)
- on the planning instruments (individual design of the mobile communications network expansion plan, representation in time of the network expansion)
- on area and population coverage
- on optimising the network
- on the subscriber and traffic forecast
- on the operating and maintenance concept (e.g. efficiency of the network, fail-safety, network and fault management)

in this approach. The assumptions on which the technical planning is based must be logical and comprehensible.

The forecast of the increase in subscribers is to be shown in the form of a time differentiated representation of the next five years. Theoretical traffic assumptions and the planned traffic handling are to be shown as part of the traffic forecast.

F.2. Representation of the frequency requirement taking the business model into account

As part of the licensing application, the applicant must show that he actually requires the frequencies applied for in order to create his business models. This applies in particular in the cases where the

applicants already have suitable spectrum available. The applicant must show the intended frequency usage in terms of the planned technology.

F.3. Planned services concept

The applicant must show what type of services he plans to offer on the basis of the mobile communications technology chosen by him and the time frame in which he is intending to implement this range of services.

F.4. Business planning and its implementation

The business planning is to be outlined in an investment plan for the next five years. The applicant should indicate the target group and the market potential he is anticipating for the competing radio networks. An applicant must also indicate the market strategy to be used to exploit the existing market potential.

G. Declaration of agreement on publication

Furthermore, an applicant must declare in his application that he agrees with the public announcement of his admission to the auction procedure and with the publication of any subsequent decision on award of contract to him.

Appendix 2

Technical information:

0 Overview

The usage provisions of this annex are intended to ensure the interference-free coexistence of different applications in the frequency bands listed below and those adjacent to them. In principle, the spectrum masks enclosed at Annex 2 / enclosure 1 must be complied with to ensure interference-free coexistence. In addition, tighter regulations apply to the 1710 – 1785 MHz / 1805 – 1880 MHz band to ensure radio compatibility with existing GSM applications and to preserve their rights (See appendix 2 enclosure 2). Moreover, the above listed regulations can be replaced by additional operating arrangements (in the form of agreements between the variously affected operators that have been approved by the relevant regulatory authorities) for the term of this operator arrangement.

1 Frequency usage conditions

The following frequency bands are available for award for digital cellular mobile communications:

Frequency band	Available frequency spectrum	Award
1.8 GHz	1730.1-1735.1 MHz and 1825.1-1830.1 MHz	2 x 5 MHz (paired)
	1758.1-1763.1 MHz and 1853.1-1858.1 MHz	2 x 5 MHz (paired)
2 GHz	1900.1-1905.1 MHz	5 MHz (unpaired)
	1930.2-1935.15 MHz and 2120.2-2125.15 MHz	2 x 4.95 MHz (paired)
	1935.15-1940.1 MHz and 2125.15-2130.1 MHz	2 x 4.95 MHz (paired)
	1950.0-1954.95 MHz and 2140.0-2144.95 MHz	2 x 4.95 MHz (paired)
	1954.95-1959.9 MHz and 2144.95-2149.9 MHz	2 x 4.95 MHz (paired)
	2010.5-2024.7 MHz	14.2 MHz (unpaired)

2.6 GHz	2500-2570 MHz and 2620-2690 MHz 2570-2620 MHz	14 blocks each of 2 x 5 MHz (paired) 1 block of 50 MHz (unpaired)

The provisions listed below and set out in the enclosed channel plans are to form the basis for the use of these frequencies for digital cellular mobile communications. The channel plans are in line with the relevant ECC decisions and should ensure efficient use of the available spectrum. The use of different radio systems and access procedures is possible
provided the channel plan and the associated frequency usage provisions are complied with.

The use of the fundamental framework conditions of the relevant ECC decisions shall also form the necessary basis for an international and efficient use of the available spectrum. Efforts shall be made to reach a European standard regulation, the basis of which are the standard framework conditions used, in the meaning of a user-friendly Europe-wide availability of digital cellular mobile communication networks.

2 Channel plans for the three frequency bands

The channel plans for the three bands (1800 MHz, 2 GHz and 2.6 GHz) are attached at appendix 2 / enclosure 1.

3 Explanations of the channel plans

Guard bands required:

1930.2 – 1940.1 MHz; 2120.2 – 2130.1 MHz and 1950.0 – 1959.9 MHz; 2140.0 – 2149.9 MHz:

These sub-bands are not located at the band limits. For this reason, only the peripheral conditions on coexistence with GSM (GSM spectrum mask) need to be complied with in these bands.

1900.1 – 1905.1 MHz

The DECT guard band has been established (1900.0 – 1900.1 MHz), i.e. there is no restriction below it. The fact that the spectrum mask attached at appendix 2 / enclosure 1 must be complied with applies to TDD in the 1900.1 – 1905.1 MHz band.

2010.5 – 2024.7 MHz

The fact that the spectrum mask attached at appendix 2 / enclosure 1 must be complied with applies to TDD in the 2010.5 – 2024.7 MHz band.

2500 – 2690 MHz

All blocks are defined with a channel width of 5 MHz. The bottom band limit is at 2500.0 MHz. Additional conditions apply to blocks 13 and 14 in the upper band limit (2690.0 MHz) to protect the radio-astronomy facilities adjacent to this band in Effelsberg (Eifel) and Westerbork (Netherlands, south of Groningen) in compliance with the definitions of the ITU recommendations RA.769-2 and the ECC Report 045.

Frequency bands in Germany:

Transmit frequency for mobile stations (FDD):	1710.0 – 1785.0 MHz; 1920.0 – 1980.0 MHz;

	2500.0 – 2570.0 MHz
Transmit frequency for base stations (FDD):	1805.0 – 1880.0 MHz, 2110.0 – 2170.0 MHz; 2620.0 – 2690.0 MHz
Transmit frequency for mobile and base stations (TDD):	1900.0 – 1920.0 MHz; 2010.0 – 2025.0 MHz; 2570.0 – 2620.0 MHz
Frequency block width:	5 MHz (partial overlapping with adjacent frequency blocks)

4 Other provisions

4.1 Permissible out-of-block emissions

The definitions (spectrum mask) laid down in the enclosed appendix 2 / enclosure 1 for the out-of-block emissions are to be set as binding for the use of the spectrum by FDD/TDD mobile and base stations.

4.2 Allocation of the abstractly awarded frequency blocks in the 2500 – 2570 MHz and 2620 – 2690 MHz bands to an actual frequency band

The abstractly awarded frequency blocks in the 2500 – 2570 MHz and 2620 – 2690 MHz bands will be allocated to an actual frequency band on completion of the actual award. The blocks will be allocated in descending order to the bidder who has acquired the largest number of paired frequency blocks (bidder 1), starting with block 14 (2565.0 – 2570.0 MHz / 2685.0 – 2690.0 MHz). All other bidders shall be given the blocks adjacent to bidder 1, in descending order. Additional conditions apply to blocks 13 and 14 to protect the radio-astronomy facilities in Effelsberg (Eifel) and Westerbork (Netherlands, south of Groningen) in compliance with the definitions of the ITU recommendations RA.769-2 and the ECC Report 045.

4.3 HAPS platform as location of the base stations

The use of High Altitude Platform Systems (HAPS) as a location for digital cellular mobile communication base stations is only possible if radio compatibility with the adjacent mobile communication networks and radio services in the spectrum has been clearly demonstrated and requires a preliminary amendment of the frequency usage conditions and location-based frequency allocations that are based on the frequency usage conditions.

Note: HAPS platforms are recommended in ITU-R recommendation M.1456 entitled ”Minimum performance characteristics and operational conditions for high altitude platform stations providing IMT-2000 in the bands 1 885-1 980 MHz, 2 010-2 025 MHz and 2 110-2 170 MHz in Regions 1 and 3 and 1 885-1 980 MHz and 2 110-2 160 MHz in Region 2” as a possible location for base stations. Also, information on HAPS is given in the ITU-R recommendation M.1641 entitled “A methodology for co-channel interference evaluation to determine separation distance from a system using high-altitude platform stations to a cellular system to provide IMT-2000 service”.

4.4 Frequency coordination for radio sites in border areas

Frequencies are available only to a limited degree for digital cellular mobile communications because of the need for frequency coordination with the neighbouring countries in border areas and some other geographical areas of the Federal Republic of Germany.

Restrictions vary in terms of frequency and numbers from area to area, depending on whether two, three or four countries need to be involved in the coordination process. Moreover, the restrictions still depend on the transmission procedures facing each other at the borders.

Prior to the auction, it will not be possible to clarify how the detailed availability of the individual frequency blocks is composed in the border area and which concrete usage options can be deduced from this in the border area.

4.5 Protection of stationary reception facilities of the BNA's test and measuring service

The location-based technical parameters used during frequency allocation will be defined on the basis of the following points (protection concept). The protection concept refers to the protection of the BNA's reception facilities against desensitisation and overmodulation effects:

- To protect the radio reception facilities of the BNA's Test and Measuring Service (PMD) operated and planned in Germany, the field strength generated by emissions in the 1800 – 2700 MHz frequency band must not exceed a maximum value of 90 dBµV/m at PMD locations.

- This applies in particular to the PMD's antenna locations that are to be used jointly with the PMD by GSM 1800 and UMTS/IMT-2000 operators or radio applications up to 2700 MHz.

- As regards the PMD reception stations that were coordinated as part of the frequency allocation for GSM 1800 and UMTS/IMT 2000 with 96 dBµV/m, the existing protection applies.

4.6 Influence of satellite systems on terrestrial radio networks in the 2500 – 2690 MHz band

The 2500 – 2690 MHz frequency band is used by various satellite systems in some regions of the world. The 2605 – 2655 MHz frequency band is used primarily in the ITU region 3 (Asia) by orbiting broadcasting satellites (Broadcasting Satellite Service = BSS), but they also transmit their signals to earth when overflying other regions (including Europe).

The values for maximum emissions for non-geostationary broadcasting satellite systems (BSS (sound) in the 2605 – 2655 MHz band) can be found in ITU Resolution 539 (WRC-03). Since the additional expenditure for the expansion of the terrestrial IMT infrastructure depends on the agreed limit values for the maximum permissible interference signals, in Europe these limit values are linked with maximum possible additional costs for an extra 5% for base stations on the mobile communications side.

Possible new limit values for other satellite systems are currently being discussed at international level (TOP 1.9 of WRC-07). Several countries from ITU region 3 are even aiming for indoor coverage with satellite signals for the satellite systems. For this reason, these countries support satellite systems at international level and are more interested in a relaxation of the existing limit values.

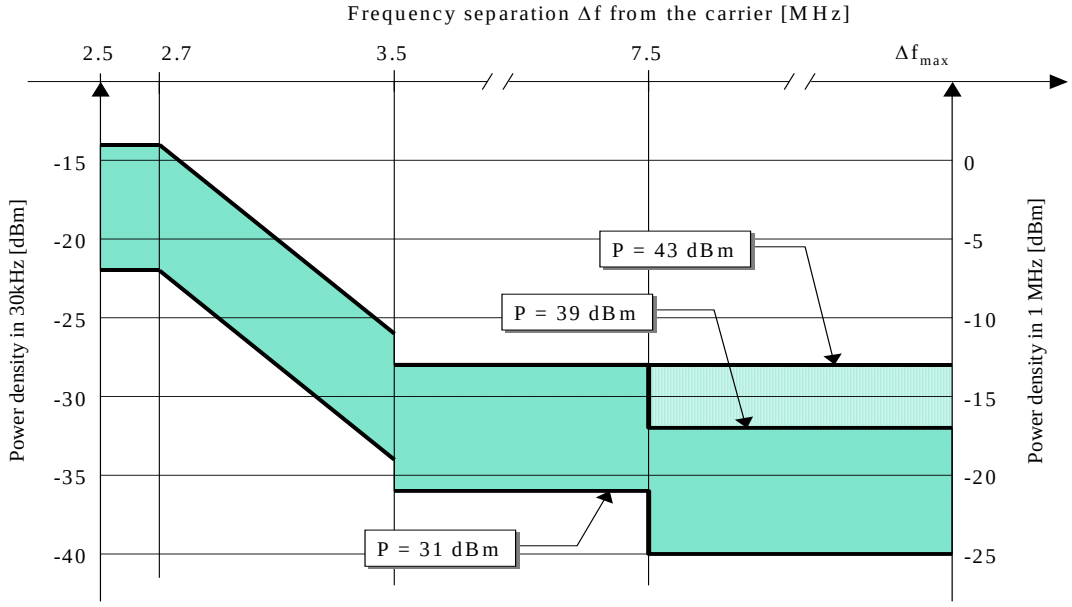
The extent of impairments to terrestrial radio systems in Europe due to satellite systems in the 2500 – 2690 MHz band cannot be more precisely defined until after WRC-07. For this reason, any additional long-term costs generated for the mobile communication networks can also not be estimated until later.

Appendix 2 / Enclosure 1

Frequency usage conditions for FDD/TDD mobile and base stations

A) Frequency usage conditions for FDD base stations (FDD (Frequency Division Duplex) in the 1805.0 – 1880.0 MHz, 2110.0 – 2170.0 MHz and 2620.0 – 2690.0 MHz bands:

Spectrum mask:



Illustrative diagram of spectrum emission mask

Permissible out-of-block emissions of the base stations with a maximum output power of P ≥ 43 dBm

Frequency offset of -3dB point of measurement filter, Δf	**Frequency offset of centre frequency of measurement filter, f_offset**	**Minimum requirement band III, VII**	**Measurement bandwidth[2]**
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	30 kHz
(see comment 1)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 MHz ≤ Δf ≤ Δf_{max}	4.0MHz ≤ f_offset < f_offset_{max}	-13 dBm	1 MHz

- Δf is the distance between the carrier frequency and the nominal -3dB point of the measurement filter with the smallest distance to the carrier frequency.
- F_offset is the distance between the carrier frequency and the middle of the measurement filter.
- f_offset_{max} is either 12.5 MHz or the offset compared to the set edge of the Tx-band, whatever is the greater value.
- Δf_{max} is equal to f_offset_{max} minus half the bandwidth of the measurement filter.

Permissible out-of-block emissions of the base stations with a maximum output power of 39 ≤ P < 43 dBm

Frequency offset of -3dB point of measurement filter, Δf	**Frequency offset of centre frequency of measurement filter, f_offset**	**Minimum requirement band III, VII**	**Measurement bandwidth[2]**
2.5 MHz ≤ Δf < 2.7 MHz	2,515MHz ≤ f_offset < 2,715MHz	-14 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2,715MHz ≤ f_offset < 3,515MHz	$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	30 kHz
(see comment 1)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	-13 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	P - 56 dB	1 MHz

Permissible out-of-block emissions of the base stations with a maximum output power of 31 ≤ P < 39 dBm

Frequency offset of -3dB point of measurement filter, Δf	**Frequency offset of centre frequency of measurement filter, f_offset**	**Minimum requirement band III, VII**	**Measurement bandwidth[2]**
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	P - 53 dB	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$P - 53dB - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	30 kHz
(see comment 1)	3.515MHz ≤ f_offset < 4.0MHz	P - 65 dB	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	P - 52 dB	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	P - 56 dB	1 MHz

Permissible out-of-block emissions of the base stations with a maximum output power of P < 31 dBm

Frequency offset of -3dB point of measurement filter, Δf	**Frequency offset of centre frequency of measurement filter, f_offset**	**Minimum requirement band III, VII**	**Measurement bandwidth[2]**
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-22 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-22dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	30 kHz
(see comment 1)	3.515MHz ≤ f_offset < 4.0MHz	-34 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	-21 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	-25 dBm	1 MHz

COMMENT 1: this frequency band ensures that the band of the f_offset values is continuous.

COMMENT 2: in general, the resolution bandwidth of the measurement equipment should correspond to the measurement bandwidth. To improve accuracy, sensitivity and efficiency of measurement, the resolution bandwidth can also be smaller than the measurement bandwidth. In this case, the result should be integrated via the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.

B) Frequency usage conditions for FDD mobile stations (FDD (Frequency Division Duplex) in the 1710.0 – 1785.0 MHz, 1920.0 – 1980.0 MHz and 2500.0 – 2570.0 MHz bands:

Spectrum mask (FDD) terminal equipment:

Requirement in relation to the emissions' spectrum mask

Δf in MHz (comment 1)	**Minimum requirement (comment 2)**		**Measurement bandwidth (comment 6)**
	Relative requirement	**Absolute requirement**	
2.5 – 3.5	$\left\{-35-15\cdot\left(\frac{\Delta f}{MHz}-2.5\right)\right\}dBc$	-71.1 dBm	30 kHz (comment 4)
3.5 – 7.5	$\left\{-35-1\cdot\left(\frac{\Delta f}{MHz}-3.5\right)\right\}dBc$	-55.8 dBm	1 MHz (comment 5)
7.5 – 8.5	$\left\{-39-10\cdot\left(\frac{\Delta f}{MHz}-7.5\right)\right\}dBc$	-55.8 dBm	1 MHz (comment 5)
8.5 – 12.5 MHz	-49 dBc	-55.8 dBm	1 MHz (comment 5)

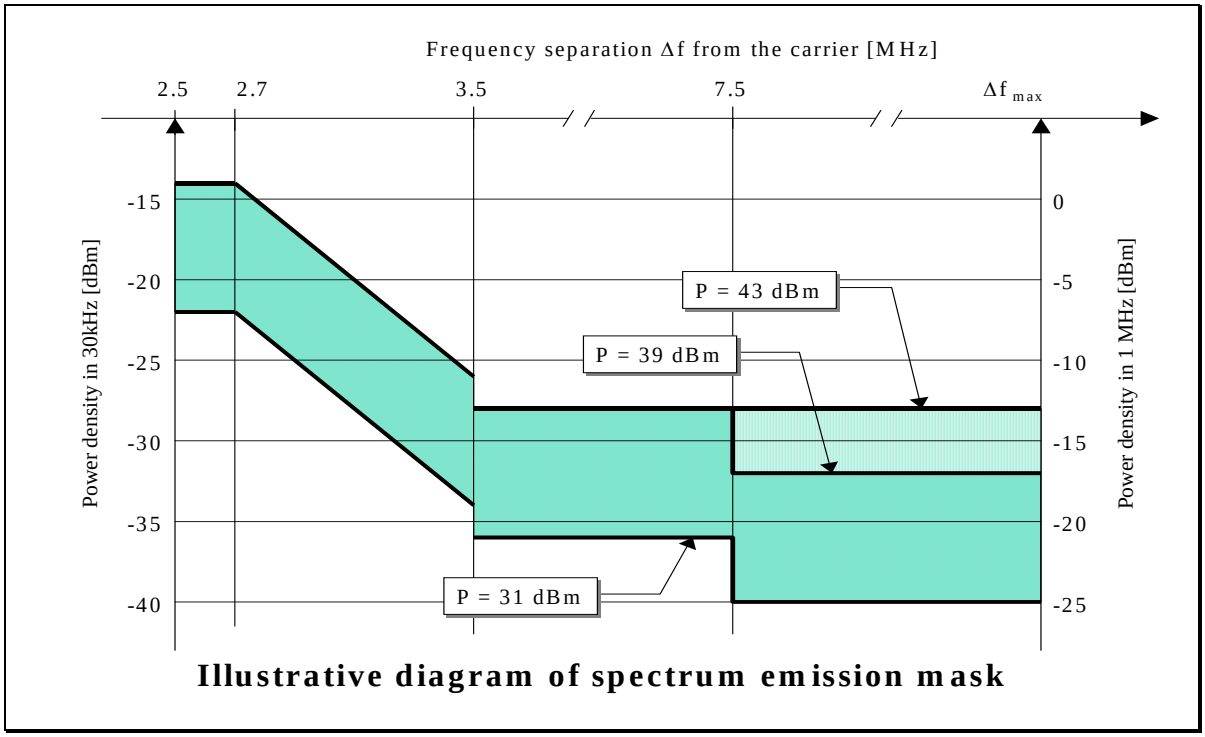
Comment 1: Δf is the distance between the carrier frequency and the middle of the measurement bandwidth.
Comment 2: the minimum requirement is calculated from the relative requirement or from the absolute requirement, whatever is the higher value.
Comment 4: the first and last measurement position with a 30 kHz filter if Δf is equal to 2.515 MHz and 3.485 MHz.
Comment 5: the first and last measurement position with a 1 MHz filter if Δf is equal to 4 MHz and 12 MHz.
Comment 6: in general, the resolution bandwidth of the measurement equipment should correspond to the measurement bandwidth. To improve accuracy, sensitivity and efficiency of measurement, the resolution bandwidth can also be smaller than the measurement bandwidth. In this case, the result should be integrated via the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.

Duplex procedure Subscriber station	**Frequency band**	**Max. permissible EIRP (Uplink)**
FDD	**1710 – 1785 MHz**	**24 dBm**
FDD	**1920 – 1980 MHz**	**24 dBm**
FDD	**2500 – 2570 MHz**	**24 dBm**

Comment: The out of block and spurious emissions of the 4.95 MHz channels have the same pattern as the spectral masks shown. It must be taken into account that these unwanted emissions start not with the frequency marks $\pm\frac{5{,}00MHz}{2}$ but as early as $\pm\frac{4{,}95MHz}{2}$. The rest of the form of the limit curve remains unchanged.

C) Frequency usage conditions for TDD base stations (TDD (Time Division Duplex) in the 1900.0 – 1920.0 MHz, 2010.0 – 2025.0 MHz and 2570.0 – 2620.0 MHz bands:

Spectrum mask:



Illustrative diagram of spectrum emission mask

Permissible out-of-block emissions of the base stations with a maximum output power of P ≥ 43 dBm

Frequency offset of -3dB point of measurement filter, Δf	**Frequency offset of centre frequency of measurement filter, f_offset**	**Maximum level**	**Measurement bandwidth**
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-14dBm - 15 \cdot \left(\frac{f\_offset}{MHz} - 2.715 \right) dB$	30 kHz
(see comment)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 MHz ≤ Δf ≤ Δf_{ma}	4.0MHz ≤ f_offset < f_offset_{max}	-13 dBm	1 MHz

Δf is the distance between the carrier frequency and the nominal -3dB point of the measurement filter with the smallest distance to the carrier frequency.

- F_offset is the distance between the carrier frequency and the middle of the measurement filter.
- f_offset_{max} is either 12.5 MHz or the offset compared to the set edge of the Tx-band, whatever is the greater value.
- Δf_{max} is equal to f_offset_{max} minus half the bandwidth of the measurement filter.

Permissible out-of-block emissions of the base stations with a maximum output power of 39 ≤ P < 43 dBm

Frequency offset of -3dB point of measurement filter, Δf	Frequency offset of centre frequency of measurement filter, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-14 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-14dBm-15\cdot\left(\frac{f\_offset}{MHz}-2.715\right)dB$	30 kHz
(see comment)	3.515MHz ≤ f_offset < 4.0MHz	-26 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	-13 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	P - 56 dB	1 MHz

Permissible out-of-block emissions of the base stations with a maximum output power of 31 ≤ P < 39 dBm

Frequency offset of -3dB point of measurement filter, Δf	Frequency offset of centre frequency of measurement filter, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	P - 53 dB	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$P-53dB-15\cdot\left(\frac{f\_offset}{MHz}-2.715\right)dB$	30 kHz
(see comment)	3.515MHz ≤ f_offset < 4.0MHz	P - 65 dB	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	P - 52 dB	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	P - 56 dB	1 MHz

Permissible out-of-block emissions of the base stations with a maximum output power of P < 31 dBm

Frequency offset of -3dB point of measurement filter, Δf	Frequency offset of centre frequency of measurement filter, f_offset	Maximum level	Measurement bandwidth
2.5 MHz ≤ Δf < 2.7 MHz	2.515MHz ≤ f_offset < 2.715MHz	-22 dBm	30 kHz
2.7 MHz ≤ Δf < 3.5 MHz	2.715MHz ≤ f_offset < 3.515MHz	$-22dBm-15\cdot\left(\frac{f\_offset}{MHz}-2.715\right)dB$	30 kHz
(see comment)	3.515MHz ≤ f_offset < 4.0MHz	-34 dBm	30 kHz
3.5 MHz ≤ Δf < 7.5 MHz	4.0MHz ≤ f_offset < 8.0MHz	-21 dBm	1 MHz
7.5 MHz ≤ Δf ≤ Δf_{max}	8.0MHz ≤ f_offset < f_offset_{max}	-25 dBm	1 MHz

D) Frequency usage conditions for TDD mobile stations (TDD (Time Division Duplex) in the 1900.0 – 1920.0 MHz, 2010.0 – 2025.0 MHz and 2570.0 – 2620.0 MHz bands:

Spectrum mask (FDD) terminal equipment:

Requirement in relation to the emissions' spectrum mask (TDD option)

Δf* in MHz	**Minimum requirement**	**Measurement bandwidth**
2.5 – 3.5	$\left\{-35-15\cdot\left(\frac{\Delta f}{MHz}-2.5\right)\right\}dBc$	30 kHz **
3.5 – 7.5	$\left\{-35-1\cdot\left(\frac{\Delta f}{MHz}-3.5\right)\right\}dBc$	1 MHz ***
7.5 – 8.5	$\left\{-39-10\cdot\left(\frac{\Delta f}{MHz}-7.5\right)\right\}dBc$	1 MHz ***
8.5 – 12.5	-49 dBc	1 MHz ***
*	Δf is the distance between the carrier frequency and the middle of the measurement filter.	
**	the first and last measurement position with a 30 kHz filter if Δf is equal to 2.515 MHz and 3.485 MHz.	
***	the first and last measurement position with a 1 MHz filter if Δf is equal to 4 MHz and 12 MHz. In general, the resolution bandwidth of the measurement equipment should correspond to the measurement bandwidth. To improve accuracy, sensitivity and efficiency of measurement, the resolution bandwidth can also deviate from the measurement bandwidth. If the resolution bandwidth is smaller than the measurement bandwidth, then the result should be integrated via the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.	
Comment:	the lower limit value is around -50dBm/3.84 MHz or at the minimum requirement stated in this table, or whatever the higher value is.	

Duplex procedure Subscriber station	**Frequency band**	**Max. permissible EIRP (Uplink)**
TDD	**1900 – 1920 MHz**	**24 dBm**
TDD	**2010 – 2025 MHz**	**24 dBm**
TDD	**2570 – 2620 MHz**	**24 dBm**

Appendix 2 / Enclosure 2

Protection of frequency usages in the 1710 – 1785 MHz / 1805 – 1880 MHz and 1920 – 1980 MHz / 2110 – 2170 MHz bands

The transmission process (access behaviour) used by the company that has acquired the spectrum is not given. This applies to all bands to be auctioned. The spectrum masks enclosed at Annex 2 / enclosure 1 are the minimum requirement that must be complied with to ensure interference-free coexistence.

The principle whereby protection of older usages takes priority over the right to introduce new usages continues to apply to the 1710-1785 MHz / 1805-1880 MHz and 1920-1980 MHz / 2110-2170 MHz bands.

If GSM technology is deployed alongside older GSM applications in the blocks up for award in the 1710-1785 MHz / 1805-1880 MHz bands, one GSM channel is to be kept clear between the blocks of the different mobile communication networks in each case. The channels to be kept free can be used as measurement channels.

For this reason, it is in addition the case for the mixed usage of GSM / UMTS (FDD) / GSM in the so-called sandwich process that mutual interference-free operation in the uncoordinated case (use of different locations for the base stations) is only possible if a 200 kHz guard band (1 GSM channel) is inserted (carrier spacing: 2.8 MHz) in each case in addition to the 5 MHz already provided on both sides of the UMTS channel. For the coordinated case, no additional guard channel must be inserted (carrier spacing: 2.6 MHz).

Additional studies must be carried out for all other transmission processes (access behaviour) in order to determine the optimum boundary conditions in each case to ensure protection of existing applications.

Text to diagram on next page:

Channel plan of frequencies to be awarded in the 1.8 GHz, 2 GHz and 2.6 GHz bands

Frequenzbereich bei 1,8 / 2 / 2.6 GHz...= 1.8 GHz / 2 GHz / 2.6 GHz frequency band

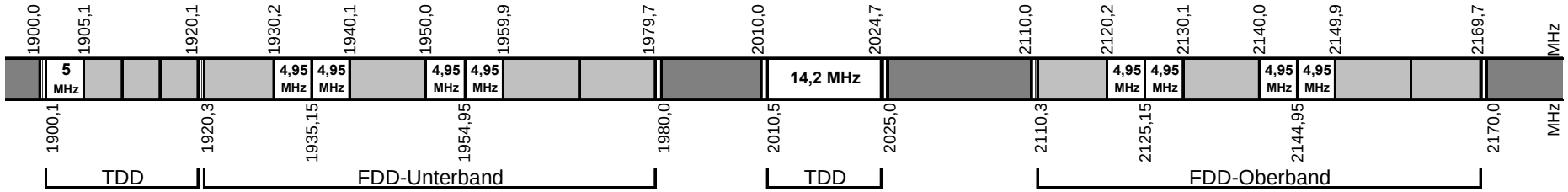
FDD/TDD Unterband = FDD/TDD lower band
FDD/TDD Oberband = FDD/TDD upper band

Schutzkanäle = guard channels; verfügbares Frequenzspektrum = frequency spectrum for award; bereits zugeteiltes Frequenzspektrum = frequency spectrum already allocated

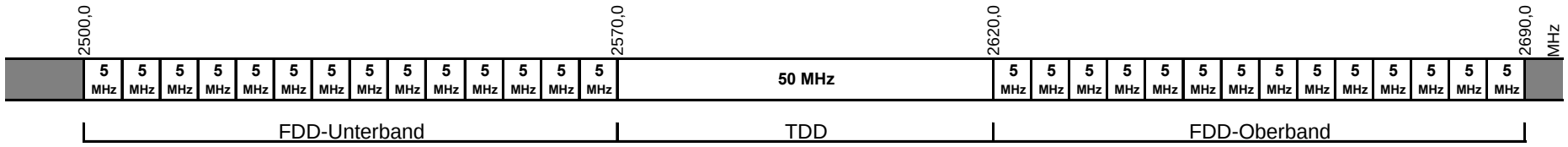
Kanalplan der zur Vergabe stehenden Frequenzen in den Bereichen bei 1,8 GHz, 2,0 GHz und 2,6 GHz

> Frequenzbereich bei 1,8 GHz

> Frequenzbereich bei 2,0 GHz



> Frequenzbereich bei 2,6 GHz



Schutzkanäle

... MHz verfügbares Frequenzspektrum

bereits zugeteiltes Frequenzspektrum