



Administrative Regulations for the Assignment of Frequencies for Satellite Communications (VVSatFu)

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VVSatFu Part A

General Part

1 Application area

Under Section 55(1) of the Telecommunications Act (TKG) of 22 June 2004 (Federal Law Gazette I No. 29 of 25.06.2004, p. 1190 ff) each frequency use requires a previous frequency assignment. The frequency assignment is issued according to the frequency usage plan. To enable technical progress and to implement international harmonisation decisions as early as possible, the frequency usage plan only comprises the framework conditions guaranteeing an interference-free and efficient frequency use. These framework conditions are rendered more concrete by means of administrative regulations to ensure a uniform administrative approach. The following represent administrative regulations for frequency assignments in satellite communications (VVSatFu).

The latter encompasses in particular the following satellite services defined in the Table of Frequency Allocations:

- Earth exploration-satellite service
- fixed-satellite service
- inter-satellite service
- aeronautical mobile-satellite service
- mobile-satellite service
- radionavigation-satellite service
- standard frequency and time signal-satellite service
- radiodetermination-satellite service
- broadcasting-satellite service
- space operation service
- space research service
- meteorological-satellite service

2 Definition of terms

Within the framework of this administrative regulation especially the definition of terms in the TKG, the Frequency Band Allocation Ordinance (FreqBZPV), the Frequency Usage Plan Ordinance (FreqNPAV) and the Radio Regulations (RR) of the International Telecommunication Union (ITU) in the currently valid version apply.

3 Frequency assignment proceedings

Frequencies for satellite communications are assigned upon request. Applications for the assignment of frequencies for satellite communications should be filed in writing, by post or fax, with the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway, providing the information requested in the application form. The application form is available for download on the Agency's website www.bundesnetzagentur.de - "Federal Agency > Telecoms Regulation > Frequency Assignment (application forms and guidance notes) > Satellite Communications", or may be obtained from the Agency.

Written form may be replaced by electronic form. In this case the electronic document must be accompanied by a qualified electronic signature in accordance with the Signature Act.

The complete application should be submitted at least 4 weeks prior to scheduled use. Since as a rule comprehensive compatibility examinations are carried out as part of the application's processing procedure, timely assignment cannot be guaranteed in the case of applications received at shorter notice.

4 Content of the frequency assignment

In the frequency assignment, type and scope of the frequency use are determined by the specification of the parameters and corresponding collateral clauses aligned to the intended use (see Chapter B.1).

The frequency assignment concerns solely telecommunications-related legal issues and aspects regarding the frequency use. Other regulations, e.g. relating to occupational health and safety and health protection or to road safety and rights of third parties, e.g. authorisations of a constructional nature or under private law, remain unaffected. This applies likewise to adherence to the provisions of the Electromagnetic Compatibility Act (EMVG) and the Radio and Telecommunications Terminal Equipment Act (FTEG).

5 Administration expenses

The frequency assignment – and under certain circumstances its rejection – is subject to a fee. The fees themselves are determined by the Frequency Fee Ordinance (FGebV) in the currently valid version. In addition, the holder of a frequency assignment must pay annual contributions. The exact amounts are determined by the ordinance on the protection of interference-free frequency use (FSBeitrV) in the currently valid version. Furthermore, under Section 144 of the TKG the operators of profit-oriented public telecommunications networks or the providers of profit-oriented telecommunications services for the public have to pay a telecommunications contribution.

6 Frequency assignments under Section 58 of the TKG

If the planned radio application is not in line with the specifications in the Table of Frequency Allocations or the frequency usage plan, in certain special circumstances an assignment under Section 58 of the TKG may be possible. This applies especially for the testing of innovative technologies in telecommunications or in the case of a frequency requirement arising at short notice under the condition that none of the frequency uses entered in the Table of Frequency Allocations or frequency usage plan are impaired. The applicant must specify in detail that these requirements will be met.

7 Stationary receiving radio installations of Federal Network Agency's radio monitoring and inspection service

The stationary receiving radio installations of Federal Network Agency's radio monitoring and inspection service (PMD) may not be affected by the frequency use. Hence, for the protection of PMD's receiving radio installations at their locations certain field strengths may not be exceeded. This applies especially to PMD's antenna sites used jointly with the assignment holder. The maximum field strength values depend on the PMD's receiving radio installations deployed at the various locations and the frequency range. The maximum field strength values

applicable to the relevant frequency range and the PMD's locations are in individual cases furnished to the frequency assignment holders.

In order to ensure compliance with these maximum field strength values, the frequency use – especially in the case of transmitters operated within the protection zones – may be restricted.

8 Site coordination

Site coordination is the agreement between the locations of fixed radio stations between the civil and military authorities in accordance with the “Administrative agreement on coordinating sites for fixed stations” between the Federal Network Agency for Electricity, Gas, Telecommunications, Post and Railway and the Bundeswehr's Bundesamt für Informationsmanagement und Informationstechnik (IT-AmtBw).

In terms of site coordination, fixed radio stations of the services listed under 1. with an antenna diameter of more than 2 metres are subject to coordination.

VVSatFu Part B

Special Part

1 Frequency assignment proceedings for earth stations

1.1 Prerequisites

The frequency assignment for an applied frequency use may be issued under the following basic conditions:

- the allocation to the service is included in the Table of Frequency Allocations,
- the frequency use is envisaged in the frequency usage plan,
- the frequency use applied for is compatible with existing frequency uses, i.e.
 - national frequency coordination,
 - international frequency coordination in accordance with the Radio Regulations, Appendix 7,
 - and site coordination with the military users in accordance with “Administrative agreement on coordinating sites for fixed stations” can be successfully concluded,
- frequency use will take place within an internationally coordinated satellite network (Radio Regulations Articles 9 and 11 of the ITU),
- the frequency use in the vicinity of airports with ILS (Instrument Landing System) must ensure that no impairment of the electronics on board aircraft will take place¹

1.2 Application

Applications for frequency assignment for an earth station should be made using the appropriate application form. The form has to be filled in completely for the application to be processed.

To ensure the efficient and interference-free use of frequencies, the Federal Network Agency may request the applicant to provide additional information showing that the subjective requirements for frequency assignment (reliability, efficiency and knowledge) are satisfied.

1.3 Frequency assignment

An individual assignment is in accordance with Section 55(3) of the TKG if it is required for guaranteeing an interference-free and efficient frequency use.

In the case of the frequency use of a service listed under Part A, item 1., as a rule an individual assignment must be issued since to guarantee an interference-free and efficient frequency use the compatibility with radio stations of the same service and with radio stations of other services must be examined nationally and internationally.

¹ A procedure is currently being agreed with the Federal Office of Civil Aeronautics and DFS Deutsche Flugsicherung GmbH

The following major technical parameters are covered by the assignment:

- transmitting frequency
- bandwidth
- polarisation
- location of the earth station (postal designation) or location of deployment
- geographical coordinates according to WGS 84
- maximum permissible effective radiated power in the direction of the satellite
- maximum permissible transmitting power
- azimuth of the transmitting antenna
- elevation of the transmitting antenna
- ITU name of the satellite system
- commercial name of the satellite system
- orbital position of the satellite system in degrees East/West

As a rule, individual frequencies are assigned. In justified exceptional cases a frequency range may be assigned if the applicant has provided evidence for the necessity of such a step.

In individual cases the frequency assignment may specify further parameters relating to the intended use.

The frequency assignment may be supplemented by collateral clauses to ensure an efficient and interference-free use.

To ensure compatibility with the stationary receiving radio installations of Federal Network Agency's radio monitoring and inspection service, usage limitations may be specified at a later point in time.

A precondition for frequency assignment for an earth station is that (at least) a C-publication for the satellite system has been communicated to the ITU in accordance with Article 9 RR. As a result of the lengthy procedure for filing a satellite system with the ITU it can happen that a satellite is in operation before the launch date specified in the C-publication.

In such cases, a frequency can be assigned only with special conditions attached. It is assigned for a limited period (one year, as a rule), use of the transmitting frequency or frequencies is on a non-interference basis and use of the receiving frequency or frequencies on a non-protection basis.

The frequency assignment also comprises notes. Special attention is drawn to the fact that emissions from earth stations can affect the electronics on board of aircraft. The risk potential is dependent on power emitted by the earth station and the distance to the aircraft. If a limit of 20 V/m is exceeded, impairments of the electronics on board of aircraft (not just in case of single-engine turboprop aircraft, but also, for example, in the case of helicopters and Zeppelins) cannot be excluded. The critical case is the final approach by means of ILS (Instrument Landing System).

Frequency use is each desired emission or radiation of electromagnetic waves. Hence for the exclusive receive operation of earth stations no frequency assignment is required.

1.4 Time limit for the frequency assignment

Frequency assignments for earth stations are limited to 10 years (shorter periods are possible at the applicant's request).

1.5 Assignment prior to termination of international frequency coordination / site coordination

Since both the international frequency coordination of an earth station in accordance with the Radio Regulations, Appendix 7, and site coordination may take up several months, frequency assignments for such earth stations are usually issued in advance. These frequency assignments comprise the following dissolving condition(s) as collateral clause:

“This assignment expires when the initiated site / international frequency coordination cannot be concluded successfully within 9 months after its issue. Until then, frequency use by the earth station(s) takes place on a „non interference basis“ (NIB). This means that the use may not cause any interference to any other radio application.“

Any costs which may accrue due to a change which needs to be made to the earth stations as a result of incompatibility with other telecommunications installations determined during coordination are not payable by Federal Network Agency. This also applies for a possible subsequent change of frequency.

The assignment holder is informed in writing by Federal Network Agency about the successful conclusion of the coordination procedure(s).

1.6 Earth stations for Satellite News Gathering (SNG)

Earth stations for Satellite News Gathering (SNG) are used for short periods for the transmission of picture and/or sound signals for the purpose of broadcasting distribution at changing locations.

The assignment for SNG applications is issued on a nationwide scale and on a frequency-range-related basis (14.0 – 14.25 GHz or 14.0 – 14.5 GHz). The assignment entitles the use of one frequency (of a transponder) in the specified range. The use is only permitted within a coordinated satellite network.

Federal Network Agency must be informed well in advance about each deployment of the SNG earth station, quoting the assignment number. The following data should be sent preferably via e-mail to „Satellitenfunk@BNetzA.de“ or by per fax to +49 (0)6131 185614:

- location of deployment of the earth station (place, street, house number),
- start and end of the deployment (date, time),
- used frequency/frequencies ± occupied bandwidth(s),
- name and orbital position of the used satellite system.

The frequency assignment for SNG applications must point out the impairment of electronics on board aircraft (see B.1). The frequency user must observe this note.

Event-related use of satellite earth stations (especially SNG installations for reporting purposes) is issued as short-term use unless a permanent assignment is applied for. The provisions of the administrative regulation for frequency assignments within the framework of short-term use (VVKuNz) apply.

1.7 Mobile earth stations

Frequency assignments for mobile earth stations are only issued in the bands 14.0 – 14.25 GHz and 29.5 - 30.0 GHz. The requirements for notification of the Federal Network Agency of each place of operation of the earth station under item 1.6 also apply with respect to mobile stations.

1.8 Satellite earth stations in aircraft and on board ship

For use within the framework of an aircraft station or an ship station, the provisions of the administrative regulation for frequency assignments in the aeronautical service (VVFlufu) and the administrative regulation for frequency assignments in the maritime mobile service and Radiotelephone Service on inland waterways (VVSB) apply.

In other cases an individual examination is carried out in terms of this administrative regulation.

2 Frequency assignment proceedings for satellite networks

There are satellite-based applications in which the customer terminals are controlled by a satellite network, i.e. as in the case of a GSM mobile the end user does not have an influence on the frequency-related technical parameters (e.g. frequency, transmitter power) of his device. The frequency use by the terminal devices are hence largely directed and controlled by the network operator. In these cases the assignment is issued to the operator of the satellite network.

On the one hand, this approach provides the network operator with a great deal of freedom as regards the installation and expansion of the network. On the other hand, Federal Network Agency then has a competent contact person regarding frequency use and in the case of interference.

In the case of mobile-satellite systems (inter alia Satellite Personal Communications Systems, S-PCS systems such as Iridium, Globalstar, Thuraya), the terminal devices may be operated in the Federal Republic of Germany without further assignment in individual cases on the basis of the assigned satellite network.

For VSAT networks in the frequency range 14.0 – 14.25 GHz satellite network assignments are also issued.

Frequency uses corresponding to the frequency usage conditions for VSAT uses as published in RegTP Official Gazette 1/2005, Administrative Order 2/2005, may be operated on the basis of the assigned satellite network without further assignment in individual cases. This relates especially to the following conditions:

- the EIRP of the VSAT earth station may not exceed 50 dBW and the transmitting power during operation may not exceed 2 watts,

- during the transmit mode of the VSAT earth station a minimum distance of 500 metres must be kept to airports (enclosure of the airport compound).

Earth stations not complying with these criteria still require an individual frequency assignment.

For reasons of transparency RegTP publishes the frequency usage conditions and the assigned satellite networks.

2.1 Prerequisites

The frequency assignment for a satellite network may be issued within the framework of the following basic requirements:

- the allocation to the service is included in the Table of Frequency Allocations,
- the frequency use is envisaged in the frequency usage plan,
- the frequency use will take place within the framework of an internationally coordinated satellite network (RR Articles 9 and 11 of the ITU).

In individual cases Federal Network Agency may link the assignment to further requirements with a view to an interference-free and efficient frequency use.

2.2 Application

The application must include the relevant technical data pertaining to the overall system and the evidence relating to the dependability, capability and specialised knowledge of the applicant. The applicant must supply proof to the effect that the use will take place within an internationally coordinated satellite network.

Explanatory notes on the application can be ordered from the office mentioned under 4. or be downloaded from the Internet.

To ensure the efficient and interference-free use of frequencies, the Federal Network Agency may request the applicant to provide additional information showing that the subjective requirements for frequency assignment (reliability, efficiency and knowledge) are satisfied.

2.3 Frequency assignment

An individual assignment is in accordance with Section 55(3) of the TKG if it is required to ensure an interference-free and efficient frequency use.

In the event of frequency use within the framework of a satellite network it is as a rule necessary to issue an individual assignment since to ensure an efficient and interference-free frequency use the compatibility with radio stations in the same service and with radio stations in other services must be verified.

The following major technical parameters are covered by the assignment:

- transmit/receiving frequency/frequencies
- bandwidth(s)
- polarisation(s)

- ITU name of the satellite system
- commercial name of the satellite system
- orbital position of the satellite system in degrees East/West or orbital parameters in the case of non-geostationary satellite systems
- maximum permissible effective radiated power of the earth stations
- maximum permissible transmitting power of the earth stations
- technical parameters of the ground station (gateway station), if located in Germany.

In exceptional cases the frequency assignment may include further parameters relating to the intended use.

To ensure an efficient and interference-free use of frequencies the frequency assignment may be supplemented by collateral clauses even extending beyond the requirements deriving from the international coordination.

To guarantee compatibility with the stationary receiving radio installations of Federal Network Agency's radio monitoring and inspection service, usage restrictions may be defined at a later date.

For the assignment of a satellite network a fee is levied in accordance with FGebV, serial number B.3.3. In terms of this ordinance a satellite network is a network the traffic of which in the direction Earth – space is processed by a single satellite transponder, i.e. the assignment fee is levied per satellite transponder used.

2.4 Time limit for the frequency assignment

Frequency assignments for satellite networks are issued for a period of 10 years (shorter periods are possible at the applicant's request).

Note: This administrative regulation does not cover the procedure for the international registration of satellite systems on German behalf. This is regulated in Administrative Order 46/1999, published in RegTP Official Gazette 6/2005.

3. Assumed standards / interface descriptions

A listing of the interface descriptions assumed could be found on the internet page of Federal Network Agency, mentioned under 4.

4. Competent office

Federal Network Agency Section 223 is responsible for frequency assignment in satellite communications.

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