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Principles of spectrum management

Swiss National Frequency Allocation Plan

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1. Introduction

The National Frequency Allocation Plan (NFAP) serves as a binding basis for the organisational units of the Federal Administration responsible for frequency assignment so that they can fulfil their responsibilities in relation to frequency assignment. Frequency allocation in the NFAP includes the allocation of the frequency spectrum to the various radio services categories in accordance with the Radio Regulations (SR 0.784.403.1) of the International Telecommunication Union (ITU).

The processes and mechanisms relevant to the preparation of the NFAP are presented and explained in the following chapter.

2. Principles of spectrum management

2.1 National level

As radio frequencies are a **limited resource**, efficient use of this resource is indispensable for the functioning of modern communication societies. The Swiss Telecommunications Act (FMG; SR 784.10) therefore includes a direct mandate for the regulatory body responsible for frequency management (OFCOM) to take appropriate measures in order to ensure efficient and interference-free use (Article 25 paragraph 1 FMG).

Frequency regulation is fundamentally concerned with marrying the various interests of frequency users and manufacturers within the aforementioned legal mandate.

In order for frequency regulation to be as target-oriented as possible, the sometimes conflicting interests of the various frequency users must be recorded as accurately as possible and weighed against each other. The requirements of industry and the associated civil uses are largely tabled via the international working groups of the CEPT and the ITU. The tabled requirements are then examined by individual project groups, the relevant bodies then draw up and adopt appropriate basic documentation. These jointly developed principles then serve to allow European-wide and internationally harmonised use of frequency resources. The activity of these working groups is usually limited to civil frequency use. Discussion of military requirements does not take place within the bodies in question. To record the frequency requirements for tasks of the military and civil protection (based on Article 25 paragraph 1^{bis} FMG), OFCOM convened a permanent working group.

The aforementioned activities are ultimately reflected in the NFAP, which as mentioned above, must be considered as a legal basis document for the assignment of individual frequency usage rights by the relevant authorities.

Article 3 paragraph 3 of the Ordinance on the use of the radio frequency spectrum (VNF; SR 784.102.1) describes the content design and the associated international orientation of the NFAP. The strategic orientation of Switzerland in relation to frequency allocation is, based on the aforementioned article, specifically linked to international developments. In order to influence and shape future frequency use, a Swiss participation in the relevant international working groups is therefore essential.

The use of all frequency resources is harmonised at the international level at the ITU World Radiocommunication Conferences in order to ensure efficient and interference-free use of the frequency spectrum. The respective decisions of the World Radiocommunication Conferences are stipulated in the Radio Regulations of 17 November 1995 (SR 0.784.403.1), specifically in Article 5 "Frequency allocations". The decisions of the World Radiocommunication Conferences and related harmonisation efforts at the global level (ITU) are ultimately expressed in European bodies, such as the CEPT, which develops technical implementation scenarios. National frequency allocation and the resulting frequency use is ultimately derived from and determined by this international harmonisation (cf. following section on harmonisation).

2.2 International level

The International Telecommunication Union Radiocommunication Sector (ITU-R) allocates worldwide frequencies to radio services in accordance with the Radio Regulations (RR). The RR is an international agreement, which regulates the use of frequency resources for all radio applications, as well as the orbital positions of geostationary and non-geostationary satellites. This agreement is binding for ITU member states. The RR are revised in the World Radiocommunication Conferences (WRC) to adapt the existing framework to spectrum requirements in order to refine existing applications or facilitate the introduction of new applications. The NFAP assumes and supplements the relevant provisions of the RR for Switzerland.

In Switzerland OFCOM analyses the spectrum requirements for existing and planned future radio services to ensure that these resources are used efficiently and without interference and to provide equitable access to them. For this purpose, OFCOM represents Switzerland in international bodies in the frequency sector, where it safeguards Swiss interests in order to promote them on a regional and global level.

The Swiss strategy aims to regulate access to the frequency spectrum (for both commercial and non-commercial radio services) on a national and international level in a coordinated manner. It aims to ensure that Swiss rights are respected in accordance with international law. International regulatory bodies aim to harmonise the use of the spectrum by the various radio services. Any international decisions taken therefore plays a part in national spectrum management.

The regional contact for harmonisation of the frequency spectrum in Europe is the European Conference of Postal and Telecommunications Administrations (CEPT). The CEPT Electronic Communications Committee (ECC) provides a framework within administrations (together with industry and the sector stakeholders) can develop provisions according to which the conditions for spectrum use can be harmonised with regard to market demand and technological developments. These activities usually lead to consensus resolutions made by the member states: But compliance is voluntary.

In the context of international frequency planning, technical and regulatory harmonisation activities within the CEPT and the ITU result mainly in “resolutions” and “recommendations”. As said in the previous paragraph compliance with the resolutions of the CEPT is voluntary. Within the ITU World Conferences, the recommendations and resolutions or any other change to the Radio Regulations are set forth in the “Final Acts”. By adopting the Final Acts and subject to ratification, Switzerland commits to comply with the Radio Regulations, including its recommendations and resolutions. Thus, the results of both ITU World Conferences and CEPT are integrated in the NFAP.

Switzerland actively participates in the activities of the ECC and the work of the ITU-R. Particularly in a national context, OFCOM conducts its own investigations and submits the results to the various working groups. Swiss delegates also take part in debates during the respective meetings. The main aim is to safeguard Swiss interests in the reports and resolutions of the ECC and to defend the Swiss positions at the WRCs. The positions are developed and coordinated with all Swiss stakeholders in the frequency sector.

Within the European Union (EU), the European Commission is becoming increasingly involved in discussions on frequency management. The Commission’s decisions are binding in all countries neighbouring Switzerland. Switzerland is not obliged to comply with EU spectrum regulations. In most cases, however, harmonisation of frequencies with neighbouring countries is necessary in order to meet the needs of the internal Swiss market.