



INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION  
DEVELOPMENT BUREAU**  
**ITU-D STUDY GROUPS**

**Document 1/005-E**  
**30 July 1998**  
**Original: English**

FIRST MEETING OF STUDY GROUP 1: GENEVA, 10 - 12 SEPTEMBER 1998

FIRST MEETING OF STUDY GROUP 2: GENEVA, 7 - 9 SEPTEMBER 1998

---

Question 9/1: Impact of the introduction and utilization of new technologies on the regulatory environment of telecommunications

### **STUDY GROUP 1**

SOURCE: GERMANY

TITLE: KEY ELEMENTS CONCERNING THE REGULATION AND LICENSING OF TRANSMISSION LINES FOR SATELLITE PERSONAL COMMUNICATIONS SERVICES (S-PCS)<sup>1</sup> IN GERMANY

- 
1. Satellite personal communications services(S-PCS) are services which by their nature primarily address the needs of mobile users.
  2. A S-PCS network is a network "used to provide satellite personal communications services, usually on a worldwide basis". A S-PCS system encompasses a constellation of low earth orbit, medium earth orbit or geostationary earth orbit satellites, their control earth stations and a number of gateway earth stations through which access will be provided to terrestrial fixed or mobile networks. Such a configuration will support full user mobility and identification by a single number anywhere in the world, using "intelligent" features, similar to those of digital terrestrial cellular systems (such as GSM), that will be located either in earth stations or ... in the satellites themselves.
  3. Hence under European Community law a S-PCS network comprises not only elements of satellite communications ("a constellation of low earth orbit, medium earth orbit or geostationary earth orbit satellites and a number of gateway earth stations") but also of mobile communications ("full user mobility and identification anywhere in the world").

---

<sup>1</sup> Although the European S-PCS definition does not exactly correspond to ITU's GMPC definition, in Germany potential GMPC-operators will receive a license under this regime

4. In general under a Telecommunications Act, whosoever operates transmission lines going beyond the limits of a property and used to provide telecommunications services for the public requires a licence. The German Telecommunications Act<sup>2</sup> provides for 4 different classes of licenses:
  - class 1 - Mobile
  - class 2 - Satellite
  - class 3 - Transmission lines
  - class 4 - Voice telephony for the public
5. According to the Telecommunications Act, it is not the provision of satellite personal communications services but the operation of transmission lines for the provision of such service, that is subject to licence. The rights conferred in this context do not relate to the provision of transmission lines for other network operators (leasing). This is covered by Licence Class 3.
6. Under the Telecommunications Act, a mobile radio licence (Licence Class 1) is a licence for the operation of transmission lines for mobile radio services for the public or other parties.
7. Under the Telecommunications Act, a satellite licence (Licence Class 2) is a licence for the operation of transmission lines for satellite services for the public by the licensee or other parties. Satellite services are telecommunications services provided by means of satellite earth station equipment.
8. Hence the aforementioned legal definitions of the Telecommunications Act do not provide for a clear assignment to licence classes in the case of the satellite personal communications services as these "are intended for mobile use" and are provided "by means of satellite earth station equipment".
9. One of the main characteristics of satellite personal communications networks, however, is that transmission lines are operated by means of satellites and satellite earth station equipment respectively. The radio frequencies required for this purpose have to be harmonised and coordinated internationally to meet the requirements of satellite communications. Hence the operation of transmission lines for S-PCS, on principle, comes under Licence Class 2. The services to be provided over these transmission lines, however, are telecommunications services intended for mobile use. The mobile component of S-PCS has to be taken into consideration when a licence is issued. For this reason a licence for the operation of transmission lines for S-PCS should be a combined licence comprising Classes 1 and 2. This takes into account not only the technology-related regulatory requirements specific to satellites, but also the fact that, for competitive reasons, it needs to be considered as part of mobile radio.
10. The regulatory aims according to the Telecommunications Act have to be observed when licences are granted. One of the main regulatory aims is to ensure equal-opportunity and workable competition. This requires a separation of the relevant product market from the relevant geographical market in accordance with the Law against Restraints of Competition. The services which are sufficiently similar for the informed consumer to regard them as substitutable are considered to be part of the same relevant product market. Hence the description of the subject matter of the licence has to be tailored to the markets defined in this

---

<sup>2</sup> Telecommunications Act in this text refers to the German Telecommunications Act of July, 25 1996

sense. Regarding the definition of product markets the European Commission ruled in its Decision referred to in Key Element 2, that S-PCS systems will act as a complement and even a substitute for the public switched fixed telephone network, enhancing service coverage in remote areas of low population density or where the terrestrial infrastructure is very poor. Major users would be international business travellers.

11. In the field of the satellite personal communications services a distinction usually has to be made between the operator of the space segment including the relevant infrastructure, the operator of the ground segment including the relevant infrastructure, and the provider offering nothing but services. Whosoever operates transmission lines in the meaning of Key Element 4 requires a licence. Under the Telecommunications Act the "operation of transmission lines" means "exercise of de jure and de facto control (functions control) of all the functions that must necessarily be provided for the implementation of information transmission on transmission lines". Based on the relevant contractual relation the decision needs to be made in the individual case whether it is the operator of the space segment, the operator of the ground segment or a third party who exercises de jure and de facto control of all the functions that must necessarily be provided for the implementation of the satellite personal communications services, and therefore exercises functions control in the meaning of the Telecommunications Act and is a potential licensee. These contracts are an integral part of the application for a licence for the operation of transmission lines intended for the provision of satellite personal communications services.
12. The licence held by a licensed operator authorizes him to operate transmission lines (cable and radio links) necessary for the provision of satellite personal communications services. These include especially transmission lines which consist of the uplink from the satellite earth station (ground segment) and the mobile terminal equipment respectively to the space segment and of the downlink, ie the connection from the space segment to the satellite earth station and the mobile terminal equipment respectively.
13. Concerning the frequencies allocated to the mobile-satellite service, the European Commission gives CEPT/ECTRA and CEPT/ERC mandates with regard to the harmonization of frequency use and of the conditions attached to the general licences for satellite personal communications services. In this context it is necessary, to determine "whether the scarcity of frequencies in the 1.6/2.4 GHz and 1.9/2.1 GHz frequency bands represents a constraint on the number of satellite personal communications services which can be provided in the Community in these bands shared among candidate systems. To prevent the emergence of paper satellite systems due account must be taken of the advanced stage of development of those systems." To be able to make frequencies available for S-PCS transmission lines, international frequency harmonization is required.
14. For this reason the licence for the operation of transmission lines for satellite personal communications services does not include a guarantee with regard to the use of S-PCS frequencies. Frequencies can be assigned only after implementation of frequency harmonization at European level in accordance with Community law, on the basis of a special administrative act which will be part of the licence. Hence the licence is to include a reservation, in conformity with Community law, regarding the use of frequencies. The degree to which international frequency harmonization has been achieved by the time the licence is granted will have to be taken into consideration. This may lead to a relative delinkage regarding the granting of the licence and the guarantee of a frequency (two-step procedure).
15. The granting of licences and frequencies is done in the exercise of the sovereign rights of the Federal Republic of Germany. The international agreements on frequency coordination and

harmonization as well as Community law, e.g. on the approximation of the laws of the Member States concerning telecommunications terminal equipment, including the mutual recognition of their conformity in respect of satellite earth station equipment, and Decisions on a coordinated authorization approach in the field of satellite personal communication services in the Community, have to be taken into consideration.

---