

## EUROPEAN COMMON PROPOSALS

### PART 13

#### Agenda Item 1.13 HAPS outside IMT-2000 bands

##### Introduction

The general aim of CEPT is the protection of existing services in the bands studied for the introduction of HAPS in the bands 3 - 32 GHz and around 47 GHz. Generally, CEPT considers there is no need for additional identifications of frequency bands for HAPS.

Under Resolution 122 in order to protect existing services around 31 GHz power density levels from HAPS shall be limited in order to protect passive satellite sensing applications, which operate globally.

Under Resolution 734 no studies have been performed and the introduction of HAPS in the 3 –18 GHz range is not supported. Therefore CEPT considers there is no need to change current allocations for the possible introduction of HAPS and proposes deletion of Resolution 734.

##### Proposals

#### ARTICLE 5

##### Table of Frequency Allocations 3 - 18 GHz

##### NOC EUR/1.13/1

*Reason: No change of allocations falling under Resolution 734 between 3 GHz and 18 GHz.*

##### Table of Frequency Allocations 27.5 – 29.5 GHz

##### NOC EUR/1.13/2

##### 5.537A

*Reason: The use of HAPS in the band 27.5-28.35 GHz shall not cause harmful interference to, nor claim protection from, other types of fixed-service systems or other co-primary services*

**Table of Frequency Allocations  
31.0 – 31.3 GHz**

**MOD EUR/1.13/3**

5.543A In Bhutan, Indonesia, Iran (Islamic Republic of), Japan, Maldives, Mongolia, Myanmar, Pakistan, the Dem. People’s Rep. of Korea, Sri Lanka, Thailand and Viet Nam, the allocation to the fixed service in the band 31-31.3 GHz may also be used by high altitude platform stations (HAPS) in the ground-to-HAPS direction. The use of the band 31-31.3 GHz by systems using HAPS shall not cause harmful interference to, nor claim protection from, other types of fixed-service systems or other co-primary services, taking into account No. 5.545. In order to protect the EESS (passive) operating in the band 31.3-31.8 GHz, the out-of-band power density level of any single HAPS shall be limited to –100 dB(W/MHz) at the input to the HAPS antenna. The use of HAPS in the band 31-31.3 GHz shall not cause harmful interference to the radioastronomy service having a primary allocation in the band 31.3-31.8 GHz, taking into account the interference criteria given in Recommendation ITU-R RA.769. The administrations of the countries listed above are urged to limit the deployment of HAPS in the band 31-31.3 GHz to the lower half of this band (31-31.15 GHz) .

*Reason: HAPS using the band 31-31.3 GHz shall not cause harmful interference to, nor claim protection from, other types of fixed-service systems or other co-primary services. In order to protect EESS (passive) operating in the band 31.3-31.8 GHz, studies have concluded that an out-of-band power density limit of –100 dB(W/MHz) is needed at the input to a HAPS antenna.*

**MOD EUR/1.13/4**

**29.9-34.2 GHz**

Allocation to services		
Region 1	Region 2	Region 3
31-31.3	FIXED MOD 5.543A MOBILE Standard frequency and time signal-satellite (space-to-Earth) Space research 5.544 5.545 5.149	

**Table of Frequency Allocations  
47 – 50.2 GHz**

**NOC EUR/1.13/5**

**5.552A**

*Reason: No change of footnote needed.*

RESOLUTION 122 (Rev.WRC-03)

**Use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz by high altitude platform stations (HAPS) in the fixed service and by other services**

The World Radiocommunication Conference (Geneva, 2003),

*considering*

- a) that the band 47.2-50.2 GHz is allocated to the fixed, mobile and fixed-satellite services on a co-primary basis;
- b) that WRC-97 made provision for operation of HAPS, also known as stratospheric repeaters, within the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz;
- c) that ITU has among its purposes “to promote the extension of the benefits of the new telecommunication technologies to all the world’s inhabitants” (No. 6 of the Constitution);
- d) that systems based on new technologies using high altitude platforms will be able to provide high-capacity, competitive services to urban and rural areas;
- e) that the development of any service requires major investment and that manufacturers and operators should be given the confidence to make the necessary investment;
- f) that high altitude platform systems are in an advanced stage of development and some countries have notified such systems to ITU in the bands 47.2-47.5 GHz and 47.9-48.2 GHz;
- g) that WRC-97 adopted a definition of HAPS in Article 1, modified No. 11.24 and added No. 11.26 providing for notices relating to assignments for HAPS in the bands 47.2-47.5 GHz and 47.9-48.2 GHz and that the Radio Regulations Board issued a provisional rule of procedure concerning notification periods in No. 11.24/1228 in February 1997;
- h) that in spite of the urgency attached to the development of such systems, technical, sharing and regulatory issues should be further studied in order to achieve the most efficient use of the spectrum available for these systems;
- i) that while the decision to deploy HAPS can be taken on a national basis, such deployment may affect neighbouring administrations, particularly in small countries;
- j) that technical studies have been undertaken on the characteristics of a system using HAPS in the frequency bands 47.2-47.5 GHz and 47.9-48.2 GHz and on the coordination and sharing requirements between systems using HAPS and systems in the conventional fixed service, radio astronomy and in other services, but that further studies are still in progress on the potential for interference between such systems;
- k) that the radio astronomy service has primary allocations in the bands 42.5-43.5 GHz and 48.94-49.04 GHz;

*l)* that results of ITU-R studies have been presented which indicate that in WRC-97 designated bands at 47.2-47.5 GHz and 47.9-48.2 GHz, sharing between fixed-service systems using HAPS and other conventional fixed-service systems in the same area will require appropriate interference mitigation techniques to be developed and implemented;

*m)* that No. **5.552** urges administrations to reserve fixed-satellite service (FSS) use of the band 47.2-49.2 GHz for feeder links for the broadcasting-satellite service, and that ITU-R studies indicate that HAPS in the fixed service may share with broadcasting-satellite feeder links;

*n)* that ITU-R studies in the bands 47.2-47.5 GHz and 47.9-48.2 GHz indicate that sharing between fixed-service systems using HAPS and the FSS could be feasible under certain limitations, such as geographical separation between HAPS-based systems and FSS earth stations

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*resolves*

1 to urge administrations to facilitate coordination between HAPS in the fixed service operating in the bands 47.2-47.5 GHz and 47.9-48.2 GHz and other co-primary services in their territory and adjacent territories;

2 that, on a provisional basis, the procedures of Article 9 shall be used for coordination between satellite systems and systems using HAPS in the bands 47.2-47.5 GHz and 47.9-48.2 GHz,

*requests ITU-R*

- 1 to study the regulatory provisions that might be needed in order to address those cases where the deployment of HAPS in the territory of one administration may affect neighbouring administrations;
- 2 to complete studies on the appropriate technical sharing criteria for the situations referred to in *considering j)* above;

*instructs the Director of the Radiocommunication Bureau*

- 1 that notices concerning HAPS that were received by the Bureau prior to 22 November 1997, and provisionally recorded in the Master International Frequency Register in accordance with the provisional rule of procedure issued by the Board, shall be maintained;
- 2 that from 22 November 1997, and pending review of the sharing studies in *considering j)* and review of the notification process by WRC-07, the Bureau shall accept notices in the bands 47.2-47.5 GHz and 47.9-48.2 GHz only for HAPS in the fixed service and for feeder links for the broadcasting-satellite service, shall continue to process notices for FSS networks (except for feeder links for the broadcasting-satellite service) for which complete information for advance publication has been received prior to 27 October 1997, and shall inform the notifying administrations accordingly.

*Reason: The 18 – 32 GHz sharing studies are considered completed and the references to 18 – 32 GHz studies can be removed from the Resolution. The 48 GHz provision of instructs 2 of Resolution 122 shall be extended until WRC-07.*

**SUP EUR/1.13/7**

## **RESOLUTION 734 (WRC-2000)**

### **Feasibility of use by high altitude platform stations in the fixed and mobile services in the frequency bands above 3 GHz allocated exclusively for terrestrial radiocommunication**

*Reason: No requirement has been identified for additional spectrum for HAPS. Therefore it is considered that Resolution 734 is no longer required and can be suppressed.*