

United States of America

**DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE**

**WRC-07 Agenda Item 1.8 (Res. 122 (Rev.WRC-03) only):** *to consider the results of ITU-R studies on technical sharing and regulatory provisions for the application of high altitude platform stations operating in the bands 27.5-28.35 GHz and 31-31.3 GHz in response to Resolution 145 (WRC-03), and for high altitude platform stations operating in the bands 47.2-47.5 GHz and 47.9-48.2 GHz in response to Resolution 122 (Rev.WRC-03);*

**ISSUE:** Matters related to the 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 systems and networks in the fixed-satellite service (FSS).

**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"

**Background Information:**

The ITU has been considering the implications of HAPS in the fixed service in the 47.2-47.5 GHz and 47.9-48.2 GHz band since 1997, when WRC-97 first made provision for the operation of HAPS within the fixed service. Studies have been ongoing under versions of Resolution 122 since WRC-97.

Resolution 122 (Rev. WRC-2000) indicated that sharing studies remain to be completed between the fixed-satellite service (FSS) and HAPS operations in the FS. Pending the completion of studies, Resolution 122 (Rev. WRC-2000) instructed the Radiocommunication Bureau "that from 22 November 1997, and pending review of the sharing studies in *considering j*) and review of the notification process by WRC-99, the Bureau shall accept notices in the bands 47.2-47.5 GHz and 47.9-48.2 GHz only for high altitude platform stations in the FS and for feeder links for the broadcasting-satellite service (BSS), 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." In other words, notices received after 22 November, 1997 from non-BSS feeder link FSS networks in the 47.2-47.5 GHz and 47.9-48.2 GHz bands have not been accepted.

Resolution 122 (Rev. WRC-03) extended the restriction on processing of notices for FSS networks other than those providing service exclusively within Region 2. It also instructed the Bureau to maintain, until a date to be decided by a future WRC, notices concerning HAPS that

were received by the Bureau prior to 22 November 1997 and provisionally recorded in the Master International Frequency Register. This is a substantial exception to No. 11.26, which provides that “[n]otices relating to assignments for high altitude platform stations in the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz shall reach the Bureau not earlier than five years before the assignments are brought into use.”

The studies regarding HAPS in the 47.2-47.5 GHz and 47.9-48.2 GHz bands have been completed and the results are contained in Recommendation ITU-R SF.1481. This recommendation makes clear that co-frequency operations between HAPS in the fixed service and FSS networks and systems are feasible in the 47.2-47.5 GHz and 47.9-48.2 GHz bands, even while noting that “there may be a need to develop the maximum allowable power flux-density at satellites on the GSO due to aggregate interference caused by ground user terminals of high altitude platform networks.” The revision to Resolution **122** that was approved at WRC-03 confirms that co-existence between HAPS in the FS and the FSS at 47.2-47.5 GHz and 47.9-48.2 GHz is feasible, as administrations were encouraged to facilitate interservice coordination.

In the WRC-03 revision of Resolution **122**, the ITU-R was invited to study power limitations on HAPS ground stations to facilitate sharing with space station receivers, regulatory provisions to address deployment of HAPS in the FS near country borders, and technical sharing criteria between HAPS in the FS and both radio astronomy and FSS systems (taking into account the operational environments and the requirements of FSS systems). With the exception of interference to and from FSS spacecraft, and border area coordination matters in the FS, the deployment of HAPS is a national issue. The issue of interference between the FSS satellite and HAPS networks can be addressed through coordination using Articles **9** and **11** of the Radio Regulations. As a result, Resolution **122** can be suppressed, provided that reference to the use of Article **9** for HAPS is included in the Radio Regulations. The Bureau should be instructed to retain all notices concerning HAPS that are maintained in the MIFR only by virtue of *instructs the Director of the Radiocommunication Bureau* 1 of Resolution **122 (Rev. WRC-03)** only until 1 January 2010, unless the notifying administration earlier informs the Bureau that the notified assignments have been brought into use.

**Proposal:**

**USA/1.8/1  
SUP**

**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**

**Reasons:** Studies called for in relation to HAPS at 47 GHz have been completed. The Resolution **122** application of the provisions of Article 9 is proposed for incorporation into the Radio Regulations (see **USA/1.8/3** below).

**USA/1.8/2  
MOD**

**5.552A** The allocation to the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz is designated for use by high altitude platform stations. The use of the bands 47.2-47.5 GHz and 47.9-48.2 GHz by high altitude platforms in the fixed service is subject to the provisions of No. 9.22. Resolution 122 (WRC-97). All notices for high altitude platform stations in these bands that were filed with the Bureau prior to 22 November 1997 shall be canceled as of 1 January 2010 unless the notifying administration informs the Bureau before this date that the notified assignments have been brought into use.

**Reasons:** Consequential to the suppression of Resolution 122. While studies have been completed, HAPS systems still need to be subject to the provisions of Article 9 to ensure coordination with the FSS at 47 GHz. Nos. 9.17 and 9.18, which apply for the coordination of terrestrial stations, including HAPS, with earth stations, are currently applicable without having to be called out in a footnote to Article 5 of the Radio Regulations. No. 9.22 is a new provision (see USA/1.8/3 below) that is intended to address the previously unaddressed coordination case of transmitting HAPS ground-based stations with receiving space station of the FSS, when the HAPS ground station appears in the coverage area of a satellite network. The final sentence of the provision is needed because Resolution 122 (Rev. WRC-03) instructs the BR to maintain HAPS notices received prior to 22 November 1997 “until a date to be decided by a future WRC.”

**USA/1.8/3  
MOD**

**9.22** ~~Not used.~~ q) for a transmitting station which is part of a high altitude platform station network as defined by 1.66A of the Radio Regulations, for which the requirement to coordinate is included in a footnote to the Table of Frequency Allocations referring to this provision, in respect of a space station in any frequency band allocated with equal primary rights to the space service of the existing or planned space station and to the terrestrial service in which the high altitude platform station network is to operate.

**Reasons:** Addresses a coordination scenario for HAPS stations.

**USA/1.8/4  
MOD**

**9.5B.1** The only terrestrial stations to be taken into account are those for which the requirement to coordinate is under Nos. 9.11, 9.11A, ~~and 9.21,~~ and 9.22.

**Reasons:** Consequential to the addition of No. 9.22 (see USA/1.8/3 above).

**USA/1.8/5  
MOD**

**9.30** Requests for coordination made under Nos. **9.7** to **9.14**, ~~and **9.21** and **9.22**~~ shall be sent by the requesting administration to the Bureau, together with the appropriate information listed in Appendix **4** to these Regulations.

**Reasons:** Consequential to the addition of No. **9.22** (see **USA/1.8/3** above) there is a need to determine what happens to the coordination information.

**USA/1.8/6  
MOD**

**9.36.1** The list of administrations identified by the Bureau under Nos. **9.11** to **9.14**, ~~and **9.21** and **9.22**~~ is only for information purposes, to help administrations comply with this procedure.

**Reasons:** Consequential to the addition of No. **9.22** (see **USA/1.8/3** above), the identification of affected administrations by the BR in the case of a HAPS network will be for information only.

**USA/1.8/7  
MOD**

**9.50** An administration having received a request for coordination under Nos. **9.7** to ~~**9.21**~~**9.22**, or having been included in the procedure following action under No. **9.41**, shall promptly examine the matter with regard to interference which may be caused to or, in certain cases, by its own assignments<sup>20</sup>, identified in accordance with Appendix **5**<sup>21</sup>.

**Reasons:** Consequential to the addition of No. **9.22** (see **USA/1.8/3** above), the affected administrations must examine the HAPS information.

**USA/1.8/8  
MOD**

**9.52C** For coordination requests under Nos. **9.11** to **9.14**, ~~and **9.21** and **9.22**~~, an administration not responding under No. **9.52** within the same four-month period shall be regarded as unaffected and, in the cases of Nos. **9.11** to **9.14**, the provisions of Nos. **9.48** and **9.49** shall apply.

**Reasons:** Consequential to the addition of No. **9.22** (see **USA/1.8/3** above), the affected administrations must examine the HAPS information.

**USA/1.8/9  
MOD**

**9.53A** Upon expiry of the deadline for comments in respect of a coordination request under Nos. **9.11** to **9.14**, ~~and **9.21**~~ and **9.22**, the Bureau shall, according to its records, publish a Special Section, indicating the list of administrations having submitted their disagreement or other comments within the regulatory deadline. (WRC-2000)

**Reasons:** Consequential to the addition of No. **9.22** (see **USA/1.8/3** above), the BR will publish those administrations that have objected to the HAPS network.

**USA/1.8/10  
MOD**

APPENDIX 5

TABLE 5-1 (WRC-2003)

**Technical conditions for coordination**  
(see Article 9)

Reference of Article 9	Case	Frequency bands (and Region) of the service for which coordination is sought	Threshold/condition	Calculation method	Remarks
No. <b>9.22</b> <u>HAPS/GSO, non-GSO</u>	<u>a transmitting station which is part of a high altitude platform station network as defined by <b>1.66A</b> of the Radio Regulations, for which the requirement to coordinate is included in a footnote to the Table of Frequency Allocations referring to No. <b>9.22</b>, in respect of a space station.</u>	<u>Frequency bands for which a footnote refers to No. <b>9.22</b></u>	<u>Bandwidth overlap</u>	<u>Check using assigned frequencies and bandwidths</u>	

**Reasons:** Consequential to the addition of No. **9.22** (see **USA/1.8/3** above), Table 5-1 needs to be updated to take No. **9.22** into account.