

United States of America

PROPOSAL FOR THE WORK OF THE CONFERENCE

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)**;

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 a new resolution that is referenced in No. **5.552A** of 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 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/ /3** below).

USA/ /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 Resolution **VBANDHAPS (WRC-07)** 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. Resolution **VBANDHAPS** is a new resolution (see **USA/ /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/ /3 ADD

RESOLUTION VBANDHAPS (WRC-07)

Additional coordination mechanism resulting from high altitude platform stations (HAPS) in the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz by and by other services

The World Radiocommunication Conference (Geneva, 2007),

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 Recommendation ITU-R F.1500 contains the characteristics of systems in the fixed service using HAPS;
- d) that while the decision to deploy HAPS can be taken on a national basis, such deployment may affect neighboring administrations, particularly in small countries;
- e) that ITU-R has completed studies dealing with sharing between systems using HAPS in the fixed service and other types of systems in the fixed service in the bands 47.2-47.5 GHz and 47.9-48.2 GHz;

recognizing

- a) that the procedures of Article **9** have been applied on a provisional basis from the end of WRC-97 through the end of WRC-07 for coordination between satellite systems and systems using HAPS in the bands 47.2-47.5 GHz and 47.9-48.2 GHz;
- b) that with the suppression of Resolution **122 (Rev. WRC-03)** as of the end of WRC-07, there is a need to provide coordination provisions between satellite systems and systems using HAPS in the bands 47.2-47.5 GHz and 47.9-48.2 GHz in cases not presently covered under the procedures of Article **9**;
- c) that Nos. **9.17** and **9.18** apply for the coordination of terrestrial stations, including HAPS, with earth stations, and vice versa;
- d) that the coordination scenario involving a transmitting station in the fixed service which is part of a high altitude platform network as defined by No. **1.66A**, and other administrations with frequency assignments for existing or planned space stations in any frequency band in which the high altitude platform station network is to operate, is not presently addressed in Section **II** of Article **9**,

resolves

1 to encourage administrations to facilitate coordination between systems in the fixed service using HAPS operating in the bands 47.2-47.5 GHz and 47.9-48.2 GHz and systems of the co-primary satellite services in the same bands;

2 that, before an administration notifies to the Bureau or brings into use a frequency assignment in the bands 47.2-47.5 GHz and/or 47.9-48.2 GHz for a transmitting station in the fixed service which is part of a high altitude platform network as defined by No. **1.66A**, it shall request and effect coordination with other administrations with frequency assignments for existing or planned space stations in any frequency band in which the high altitude platform station network is to operate;

3 that any administration requesting coordination pursuant to *resolves 2* above shall send its request to the Bureau, together with the appropriate information listed in Appendix **4** to the Radio Regulations;

4 that any administration having received a request for coordination made under *resolves 2* above shall promptly examine the matter with regard to interference which may be caused to its own assignments, using relevant ITU-R Recommendations for guidance on interference calculation methods and criteria;

5 that if, following its action under *resolves 4* above, the administration with which coordination was sought under *resolves 2* does not agree to the request for coordination, it shall, within four months of the date of publication of the BR IFIC under No. **9.38**, inform the requesting administration of its disagreement, and shall provide information concerning its own assignments upon which that disagreement is based, including suggestions as it is able to offer with a view to satisfactory resolution of the matter, to the requesting administration with a copy to the Bureau;

6 that an administration having received a request for coordination made under *resolves 2* above, but having not responded in the manner provided in *resolves 5* above, shall be regarded as unaffected;

7 that Nos. **9.53** through **9.55** and Nos. **9.58** and **9.59** shall apply or be applied, as appropriate, to coordination activities initiated pursuant to this resolution,

instructs the Director of the Radiocommunication Bureau

1 to treat complete coordination information provided to it under *resolves 3* above in the manner in which No. **9.34** directs the Bureau to treat complete information sent under No. **9.30** or No. **9.32**;

2 to apply No. **9.40A** if the information provided to it under *resolves 3* above is found to be incomplete.

Reasons: Incorporates into a new resolution the coordination provisions in Article 9 that are not already applicable by operation of regulation to HAPS stations in the fixed service in the 47.2-47.5 GHz and 47.9-48.2 GHz bands.
