Res. 544: NTIA proposal is **SUP**, with "Noting RRC issue". IWG-4 does not object to this proposal.

Res. 545: SUP this Resolution and the Footnote 5.311. IWG-4 supports the method "B-4" in the CPM text.

Res. 729: NTIA proposal is **SUP**. IWG-4 does not object to this proposal.

IWG-4 submitted two Draft Proposals relating to Resolution 544 to the last meeting of the WAC for resolution; one proposing additional HF spectrum allocations to the broadcasting service, and the second opposing additional HF spectrum to the broadcasting service

3. **WRC-07 AI-7.2,** recommend agenda items for the next and future WRCs, taking into account Resolution **803** (WRC-03).

IWG-4 did not identify any changes or additions to WRC-2010 or future agendas.

INFORMAL WORKING GROUP 5 (IWG-5)

Regulatory Issues

Document WAC/139(04.10.06):

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.12[1]: *to consider possible changes in response to Resolution **86** (Rev. Marrakesh, 2002) of the Plenipotentiary Conference: "Advance publication, coordination, notification and recording procedures for frequency assignments pertaining to satellite networks" in accordance with Resolution **86** (WRC-03);*

Background:

WRC-**03** identified in Resolution **86 (WRC-03)** the scope and the criteria to be used for the implementation of Resolution **86 (Rev. Marrakesh, 2002)**. Resolves 1) of Resolution **86 (WRC-03)** specifically states that WRC-**07** should "consider any proposals which deal with deficiencies in the advance publication, coordination, notification and recording procedures of the Radio Regulations for space services which have either been identified by the Board and included in the Rules of Procedure or which have been identified by administrations or by the Bureau as appropriate." WRC-**03** also resolved that future WRCs consider any proposals that are intended to transform the content of the Rules of Procedure into regulatory text.

There has been a longstanding requirement in Article 9 of the Radio Regulations, under **No. 9.1**, for the Radiocommunications Bureau to wait a requisite six months after receiving the advanced publication information for satellite networks requiring coordination under Section II of Article 9 before receiving the accompanying coordination request information, even if both sets of information are submitted to the Bureau at the same time. While this six-month delay may have served a purpose in years past when there was a substantial amount of technical data included in the API for administrations to consider and potentially comment upon, this is no longer the case. As a consequence of the simplification of the Radio Regulations at WRC-95, the API for satellite networks requiring coordination under Section II of Article 9 includes very limited information, e.g. orbital position and frequency bands, and as such, there is little for administrations to review and comment upon. This required six month delay therefore serves no purpose other than to delay the overall coordination process for satellite networks.

PROPOSAL:

This proposal modifies the provisions of No. **9.1** to allow for the simultaneous receipt of advanced publication and coordination request information for satellite networks requiring coordination under Section II of Article 9. The requisite six-month delay between receipt of the coordination request information and the notification request information has been retained.

USA/ / 1 MOD

9.1 Before initiating any action under this Article or under Article **11** in respect of frequency assignments for a satellite network or a satellite system, an administration, or one[9] acting on behalf of a group of named administrations, shall, prior to the coordination procedure described in Section II of Article **9** below, where applicable, send to the Bureau a general description of the network or system for advance publication in the International Frequency Information Circular (BR IFIC) not earlier than seven years and preferably not later than two years before the planned date of bringing into use of the network or system (see also No. **11.44**). The characteristics to be provided for this purpose are listed in Appendix **4**. The coordination or notification information may also be communicated to the Bureau at the same time.~~;~~ Where coordination information is required by Section II of Article 9, the coordination information ~~it~~ shall be considered as having been received by the Bureau upon its actual date of receipt whereas notification information shall be considered as having been received by the Bureau not earlier than six months after the date of receipt of the coordination information. ~~for advance publication , where coordination is required by Section II of Article 9.~~ Where coordination is not required by Section II, notification shall be considered as having been received by the Bureau not earlier than six months after the date of publication of the advance publication information. (WRC-07~~3~~)

9.5B If, upon receipt of the BR IFIC containing information published under No. **9.2B**, any administration considers its existing or planned satellite systems or networks or terrestrial stations[11] to be affected, it may send its comments to the publishing administration, so that the latter may take those comments into consideration during~~when initiating~~ the coordination procedure. A copy of these comments may also be sent to the Bureau. Thereafter, both administrations shall endeavour to cooperate in joint efforts to resolve any difficulties, with the assistance of the Bureau, if so requested by either of the parties, and shall exchange any additional relevant information that may be available. (WRC-2007~~0~~)

Reasons:

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[11] **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**.

1) to address the unnecessary requirement for the Radiocommunications Bureau to wait six months after receipt of the advanced publication information before receiving the coordination request information for satellite networks requiring coordination under Section II of Article 9.

Document WAC/140(04.10.06):

Subject: Agenda item 1.12

United States of America

MODIFICATION OF APPENDIX 5

(EQUAL RIGHTS ONLY)

1 Background

APPENDIX 5 (rev.WRC-03), "Identification of administrations with which coordination is to be effected or agreement sought under the provisions of article 9", paragraph 1 reads as follows :

> 1 For the purpose of effecting coordination under Article **9**, except in the case under No. **9.21**, and for identifying the administrations with which coordination is to be effected, the frequency assignments to be taken into account are those in the same frequency band as the planned assignment, pertaining to the same service or to another service to which the band is allocated with equal rights or a higher category[1] of allocation, which might affect or be affected, as appropriate, and which are:.....

The purpose of this proposal is to consider the phrase, "to which the band is allocated with equal rights or a higher category". The Radio Regulations are very clear that in some situations coordination is limited to services with equal rights:

1. No. **9.15** states, "...in respect of terrestrial stations in frequency bands allocated with equal rights to space and terrestrial services.."
2. No. **9.17** states, "...allocated with equal rights to space and terrestrial services....".
3. No. **9.17A** states, "....in frequency bands allocated with equal rights to space radiocommunication services in both directions of transmission..."

No. **9.11A** applies "the provisions of Nos. **9.12** to **9.16**" and the Rule of Procedure (RoP) on No. **9.11A** specify that the procedure of No. **9.11A** is applicable to, "...satellite services having allocations with equal rights...". Additionally, while there is no text in the RR or in the RoP on No. **9.7** it doesn't appear that administrations responsible for a geostationary-satellite networks should have to coordinate if they are not allocated on an equal basis. Based on the current principle of "allocated with equal rights or a higher category of allocation," new GSO networks allocated on a secondary basis have to coordinate under this provision with the GSO networks allocated on a primary basis that are ahead of them, but not with the GSO networks behind them in the process.

Also, the successful coordination between stations with primary and secondary allocations may infer, or lead to confusion, of the status of the rights of the station with a secondary allocation.

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[1] The coordination between an earth station and terrestrial stations under Nos. **9.15**, **9.16**, **9.17**, **9.18** and **9.19**, or between earth stations operating in opposite directions of transmission under **9.17A**, applies only to assignments in bands allocated with equal rights.

While it may be appear that coordination between primary and secondary services may provide for an opportunity for them to agree on ways the secondary service can operate compatibly with the primary service, it is recognized that there is no incentive for a secondary service to coordinate with a primary service, as no reciprocity is allowed and the provisions of Nos. **5.28** to **5.31** apply regardless of the result of the coordination procedure. Any such discussions could take place on a bilateral basis between the administrations, including during the Advance Publication process or when the secondary GSO network coordination special section is published for coordination with other networks allocated on a secondary basis.

Proposal - Modification Appendix 5 (Paragraph 1)

USA/ / 1 MOD

APPENDIX 5 (REV.WRC-03)

Identification of administrations with which coordination is to be effected or agreement sought under the provisions of Article 9

1 For the purpose of effecting coordination under Article **9**, except in the case under No. **9.21**, and for identifying the administrations with which coordination is to be effected, the frequency assignments to be taken into account are those in the same frequency band as the planned assignment, pertaining to the same service or to another service to which the band is allocated with equal rights ~~or a higher category~~[+] ~~of allocation~~, which might affect or be affected, as appropriate, and which are:

[+] ~~The coordination between an earth station and terrestrial stations under Nos. **9.15**, **9.16**, **9.17**, **9.18** and **9.19**, or between earth stations operating in opposite directions of transmission under **9.17A**, applies only to assignments in bands allocated with equal rights~~.

Reasons: To clarify that Nos. **9.7** and **9.11A** to **9.19** applies only between assignments in bands allocated with equal rights.

* * *

Document WAC/141(04.10.06):

IWG-5 Comments on Document IWG-5/66 (RCS draft proposal on active and passive sensors)

IWG-5 has tabled a Draft Proposal for the Work of the Conference from the NTIA offered under agenda item 1.12, IWG-5/066 (02.27.06). The proposal concerns modifications to Appendix 4 of the Radio Regulations to provide for data elements for active and passive sensors on board satellites to provide for , "analyzing the compatibility of these sensors with systems operating in other services.....and subsequent entry into the Master International Frequency Register (MIRF)." These sensors operate in the Earth Exploration Service (EESS).

After long consideration, IWG-5, at its meeting of 17 July, 2006, and as reflected in its minutes of the meeting, determined to oppose this proposal. It was noted that this proposal is related to the still un-reconciled FCC/NTIA proposals for agenda item 1.20. This agenda item concerns consideration of band pairs of EESS passive sensors and active satellite services. The NTIA proposal advocates mandatory Out of Band Emission limits on the active satellite services and the WAC/FCC proposal is opposed to such limits.

In summary it was the view of IWG-5 that agreement to the referenced proposal in advance of the resolution of the agenda item 1.20 would put the industry at considerable disadvantage. It is hoped that such resolution will take place soon.

Draft Proposals

for the

2007

World Radiocommunication Conference

developed by the

Executive Branch Agencies

and provided by the

National Telecommunications and

Information Administration (NTIA)

II. Draft Proposals on WRC-07 Agenda Items received from the National Telecommunications and Information Administration (NTIA):

Document WAC/121(04.10.06) – ***Draft Proposal No. 1*:**

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.2: to consider allocations and regulatory issues related to the Earth exploration-satellite (passive) service, space research (passive) service and the meteorological-satellite service in accordance with Resolutions **746 (WRC–03)** and **742 (WRC–03)**;

Background Information: This proposal addresses Resolution **742 (WRC-03),** "consideration of sharing criteria between the passive services and the fixed and mobile services in the band 36-37 GHz to determine appropriate sharing criteria and to consider the possible inclusion of such sharing criteria within the Radio Regulations."

The frequency band 36-37 GHz is allocated to the Earth exploration-satellite (passive), the space research (passive), the fixed and the mobile services on a primary basis. This band has been used for passive sensing of the Earth and its atmosphere for many years. It is an important resource for remote sensing of rain rates, snow, sea ice and clouds and is often used in conjunction with a number of other passive sensing bands to extract such data. A variety of scientific and meteorological spacecraft carry instruments that utilize this band. There is limited use of the band by the fixed or mobile services. However, determination of appropriate sharing criteria should not place undue constraints on the future use of the band by the fixed and mobile services.

The ITU-R has undertaken studies that should result in Recommendations in Study Group 9 and Study Group 7, which would recommend various interference mitigation measures to be taken. These studies indicate that passive sensing systems may receive excessive interference if there are no limitations on the power of fixed and mobile service transmitters as deployment densities of the terrestrial services in this band increase. Based on the results of these studies, a new footnote in Article **5** of the Radio Regulations should be added, containing appropriate transmitter power limits on future systems operating in the 36-37 GHz band for the fixed and mobile services.

Proposal:

USA/ /1 MOD

34.2-40 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
.....		
36-37	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE SPACE RESEARCH (passive) 5.149 **ADD 5.AAA**	
.....		

USA/ /2 ADD

5.AAA In the band 36-37 GHz, the power delivered to the antenna of a station brought into use in the fixed or mobile services after [effective date of WRC-07 Final Acts] shall not exceed –10 dBW.

Reasons: Passive sensor measurements in this band are currently being used to determine rain, snow, ocean ice and water vapor properties for use in numerical weather prediction models and other scientific applications including studies the hydrological cycle or global water circulation. Currently, this band is lightly used worldwide by the fixed and mobile services. It is necessary to establish an appropriate operational environment to protect the future use of Earth exploration-satellite (passive) and space research (passive) services in this band without imposing undue constraints on the fixed or mobile services.

Document WAC/121(04.10.06) – *Draft Proposal No 2*:

DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda Item 1.2: to consider allocations and regulatory issues related to the Earth exploration-satellite (passive) service, space research (passive) service and the meteorological-satellite service in accordance with Resolutions **746 (WRC 03)** and **742 (WRC 03)**;

Background Information: This proposal addresses ***resolves 2*** of Resolutions **746 (WRC-03)**, "consideration of the sharing conditions between the EESS (passive) and the SRS (passive) on one hand and the fixed and mobile services on the other hand in the band 10.6-10.68 GHz to determine appropriate sharing criteria" and ***resolves 3***, "...to consider the inclusion of such sharing criteria within the Radio Regulations."

The frequency band 10.6-10.68 GHz is allocated to the Earth exploration-satellite service (EESS) (passive), radio astronomy and space research (passive) services on a primary basis. This band is also allocated to the mobile (except aeronautical mobile) and the fixed services on a primary basis, taking into account RR No. **5.482**, which limits transmitter power and e.i.r.p. in these services in most administrations. This band has been used for passive sensing of Earth and its atmosphere for many years. It is an important resource for remote sensing of rain, snow, sea state, ocean wind, and soil moisture content and is often used in conjunction with a number of other passive sensing bands to extract such data. A variety of scientific spacecraft carry instruments that utilize this band. However, this band is also extensively use by the fixed service.

Resolution **746** states in *considering h)* "that the EESS (passive) operating in the band 10.6-10.68 GHz may experience harmful interference from the emissions of systems of active services;" and in *recognizing 3)* "that the provisions given in No. **5.482** may not be sufficient to ensure the protection of the EESS (passive) in the band 10.6-10.68 GHz." On this basis, Resolution **746** called for studies of the sharing conditions in this band. The ITU-R has undertaken studies that should result in Recommendations on additional interference mitigation measures. The studies supporting the Recommendations are to be summarized in ITU-R Reports.

A contribution to ITU–R Working Party 7C from the World Meteorological Organization (WMO) provided evidence of interference detected by one EESS (passive) instrument operating in the 10.6-10.68 GHz band.

Based on the results of the ITU-R studies and the apparent ineffectiveness of the current constraints given in No. **5.482** in protecting the EESS (passive) operations in the 10.6-10.68 GHz band, a modification to No. **5.482**, urging administrations to further limit the fixed and mobile service emissions in this band is proposed.

Proposal:

USA/ /1 MOD

10-11.7 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
.....		
10.6-10.68	EARTH EXPLORATION-SATELLITE (passive) FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY SPACE RESEARCH (passive) Radiolocation 5.149 **MOD** 5.482	
.....		

USA/ /2 MOD

5.482 In the band 10.6-10.68 GHz, stations of the fixed and mobile, except aeronautical mobile, services shall be limited to a maximum equivalent isotropically radiated power of 40 dBW and the power delivered to the antenna shall not exceed –3 dBW. These limits may be exceeded subject to agreement obtained under No. **9.21**. However, in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Bangladesh, Belarus, China, the United Arab Emirates, Georgia, India, Indonesia, Iran (Islamic Republic of), Iraq, Japan, Kazakhstan, Kuwait, Latvia, Lebanon, Moldova, Nigeria, Pakistan, the Philippines, Qatar, the Syrian Arab Republic, Tajikistan and Turkmenistan, the restrictions on the fixed and mobile, except aeronautical mobile, services are not applicable. ~~(WRC-03)~~ In order to protect the Earth exploration-satellite (passive) and space research (passive) services, after [effective date of WRC-07 Final Acts], administrations should limit the power delivered to the transmitter antenna to a maximum of -10 dBW for new stations authorized in the fixed service, and to a maximum of -17 dBW for new stations authorized in the mobile service (except aeronautical mobile) operating in the 10.6-10.68 GHz band.

Reasons: Passive sensor measurements in this band are currently being used for weather prediction and natural disaster prediction as well as for other scientific applications. Interference into operational passive sensors has been documented in the ITU-R, even with the current power and e.i.r.p. limits specified in RR No, **5.482**. To limit the potential increase in interference and maintain the utility of this band for passive remote sensing, the transmit power levels of future stations in the fixed and mobile (except aeronautical mobile) services needs to be reduced to protect the Earth exploration-satellite (passive) and space research (passive) services.

Document WAC/119(04.10.06):

DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda Item 1.3: in accordance with Resolution **747 (WRC-03)**, consider upgrading the radiolocation service to primary allocation status in the bands 9 000-9 200 MHz and 9 300-9 500 MHz, and extending by up to 200 MHz the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9 500-9 800 without placing undue constraint on the services to which the bands are allocated;

The 200 MHz extension of the primary EESS (active) and SRS (active) allocations in the 9500-9800 MHz band[9]

Background Information: The band 9 500-9 800 MHz is allocated on a primary basis to the Earth exploration-satellite (EESS) (active), space research (SRS) (active), radiolocation and radionavigation services. In order to satisfy requirements for increased resolution of global environmental and land use monitoring and terrain mapping of planetary surfaces, EESS (active) and the SRS (active) allocations require an increase of 200 MHz.

The ITU-R studied the compatibility between EESS (active) and the existing services in the two bands identified by Resolution **747 (WRC-03)** for consideration as extension bands.

Results of ITU-R tests and measurements indicate that representative radiolocation and radionavigation radars do not suffer any performance degradation due to any of the representative EESS (active) waveforms. Results of various ITU-R compatibility studies combined with these test and measurements indicate that sharing is feasible in the additional 200 MHz of spectrum between the EESS (active) and existing services in either the 9 300-9 500 MHz band or the 9 800-10 000 MHz band. Since the SRS (active) systems operate in the vicinity of planets and celestial bodies other than the Earth, these systems need not show compatibility with Earth-based systems.

The proposal provides for an extension of 200 MHz to the EESS (active) and SRS (active). It extends the protection given in RR **5.476A** to the radiolocation and radionavigation services in the existing 9 500-9 800 MHz band to this extension. Given that the extension is only required for wideband systems that could not operate within the existing allocation, the proposal restricts the use of the extension band to wideband systems.

[9] The United States has previously submitted a proposal to CITEL concerning the radiolocation part of this agenda item covering some of the same frequency bands as this proposal. This proposal is in addition to that earlier proposal.

Proposal

USA/ /01 MOD

8 500-10 000 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
.....		
9 300-9 500	EARTH EXPLORATION-SATELLITE (active) RADIONAVIGATION 5.476 Radiolocation SPACE RESEARCH (active) 5.427 5.474 5.475 MOD 5.476A ADD 5.XXX	
9 500-9 800	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) MOD 5.476A	
9 800-10 000	RADIOLOCATION Fixed 5.477 5.478 5.479	

Reasons: Provides a worldwide contiguous primary allocation to meet the requirements of EESS (active) and SRS (active) systems for global environmental monitoring and surface terrain mapping.

USA/ /02 MOD

5.476A In the band 9 3~~5~~00-9 800 MHz, stations in the Earth exploration-satellite service (active) and space research service (active) shall not cause harmful interference to, or constrain the use and development of, stations of the radionavigation and radiolocation services. (WRC-~~97~~07)

Reasons: Extends the provisions of RR **5.476A** in the existing 9 500-9 800 MHz band to the 9 300-9 500 band.

USA/ /03 ADD

5.XXX The use of the band 9 300-9 500 MHz by Earth exploration-satellite service (active) and space research service (active) is limited to systems that cannot be accommodated within the 9 500-9 800 MHz band and that require bandwidths larger than 300 MHz.

Reasons: The extension is only required for wideband systems that cannot operate within the existing 9 500 - 9 800 MHz allocation.

USA/ /04 SUP

RESOLUTION 747 (WRC-03)

Possible upgrade of the radiolocation service to primary allocation status in the frequency bands 9000-9200 MHz and 9300-9500 MHz, and possible extension of the existing primary allocations to the Earth exploration-satellite service (active) and the space research service (active) in the band 9500-9800 MHz

Reasons: As a consequence to the completion of agenda item 1.3 at WRC-07, Resolution **747** can be suppressed.

Document WAC/120(04.10.06):

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.4: to consider frequency-related matters for the future development of IMT 2000 and systems beyond IMT 2000 taking into account the results of ITU-R studies in accordance with Resolution **228 (Rev.WRC 03)**;

Background Information: Resolution **228 (WRC-03)** calls for studies on frequency-related matters for the future development of IMT-2000 and systems beyond IMT-2000 (IMT-Advanced) as defined by ITU-R. Resolves 2 under Resolution **228 (WRC-03)** invites the ITU R to report, in time for WRC 07, on the results of studies on the spectrum requirements and potential frequency ranges suitable for the future development of IMT-2000 and systems beyond IMT 2000, taking into account:

- the evolving user needs, including the growth in demand for IMT 2000 services;
- the evolution of IMT-2000 and pre-IMT-2000 systems through advances in technology;
- the bands currently identified for IMT-2000;
- the time-frame in which spectrum would be needed;
- the period for migration from existing to future systems;
- the extensive use of frequencies below those identified for IMT-2000 in No. **5.317A**.

WARC-92 identified the bands 1 885-2 025 MHz / 2 110-2 200 MHz and WRC-2000 identified the bands 806-960 MHz (ITU-R Region 1: 862-960 MHz) / 1 710-1 885 MHz / 2 500-2 690 MHz for use on a worldwide basis by administrations wishing to implement IMT-2000 systems. Resolutions **212 (WARC 92)**, **223 (WRC-2000)** and **224 (WRC-2000)** invite administrations to make available the necessary portion of these identified bands for IMT-2000 development, while recognizing that administrations have the flexibility to use the bands for other applications of services to which the bands are allocated and to implement IMT-2000 in other mobile bands.

In order to identify additional spectrum to meet IMT-Advanced requirement, compatibility with existing services in the bands of interest must be demonstrated through ITU-R technical studies. However, at this time such studies have not been completed.

The prioritized candidate bands for IMT-2000 and IMT-Advanced systems are between 400 MHz and 5 GHz (ITU-R Report [IMT.CANDI]) and are:

1. 410-430 MHz
2. 450-470 MHz
3. 470-862 MHz (portions already identified for Region 2 and some administrations by Resolution **224**)
4. 2 300-2 400 MHz (already identified for some administrations (U.S.) by Resolution **223**)
5. 2 700-2 900 MHz
6. 3 400-3 650 MHz

7. 3 650-4 200 MHz
8. 4 400-4 940 MHz
9. 4 940-5 000 MHz

Four of the bands identified as candidates, 410-430 MHz, 2 700-2 900 MHz, 3 400-3 650 MHz, and 4 400-4 940 MHz are considered in this proposal. The remaining bands are 450-470 MHz, 470-698 MHz, 2 300-2 400 MHz, 3 650-4 200 and 4 940-5 000 MHz.[1]

The band 410-430 MHz is used extensively by many administrations for fixed and mobile communications systems, long-range surveillance systems, as well as personnel location systems. Ground, shipborne, and airborne radars, which are used for national security, utilize this particular frequency band. Parts of the band are also used for extra vehicular activity (EVA) communications by both the Shuttle and International Space Station on a primary basis for the space research service; and for transmitting hydrological and meteorological data.

In all three ITU-R Regions, the 2 700-2 900 MHz band is allocated to aeronautical radionavigation. The radionavigation service is designated as a safety service under RR No. **4.10** and harmful interference to it cannot be accepted. By footnote No. **5.423**, ground-based meteorological radars are authorized to operate on an equal primary basis. Previous detailed analysis and sharing studies undertaken by various ITU administrations and ongoing within the working parties have shown that the utilization of the 2 700-2 900 MHz band by IMT systems is not feasible.

The 3 400-3 650 MHz band is allocated to the radiolocation service on a primary basis in ITU-R Regions 2 and 3. The band 3 400-3 600 MHz is allocated to the radiolocation service on a secondary basis in ITU-R Region 1 and the band 3 600-3 700 MHz band is allocated to the radiolocation service on a secondary basis in ITU-R Regions 2 and 3. In this frequency range, administrations have developed and deployed a variety of mobile and transportable high power radar systems that operate on land, on ships, and on aircraft. The shipborne radars are principally used in coastal areas, but can be used during open ocean transit also. The airborne radars are highly mobile and operate in many areas of the world. A number of ongoing sharing studies submitted to the ITU-R have indicated that sharing in the 3 400-3 700 MHz band between the radiolocation service and IMT-Advanced systems operating in the mobile service is not feasible due to significant levels of interference into both the radar systems and IMT-Advanced devices.

The 4 400-4 940 MHz band is allocated on a primary basis to the fixed service. The 4 400-4 800 MHz band is allocated on a primary basis to the mobile service. The 4 500-4 800 MHz band is allocated on a primary basis to the fixed satellite service, subject to Appendix **30B**. The 4 800-5 000 MHz band is allocated on a primary basis to the mobile service, expect aeronautical mobile. The 4 990-5 000 MHz band is allocated on a primary basis to the radio astronomy service. ITU-R Working Party 8B successfully concluded studies under agenda item 1.5 that show aeronautical telemetry systems for flight test can share with fixed and mobile systems in this band. Use of this band includes many datalinks and a number of unmanned air systems networks. Troposcatter radio terminals are deployed in this band to provide secure digital long-haul radio trunking. Systems in this band include deployable communications systems as well as fixed and mobile radio relay networks.

[1] The United States has not identified any additional bands that might be suitable.

The band 4 400–5 000 MHz is designated by several administrations in Europe and North America as a harmonised band to be used for defense communications and thus is critical to these administrations' ability to fulfill their peacekeeping obligations.

Proposal

ARTICLE 5

USA/ / 1 **NOC**

410-460 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
410-420	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-space) 5.268	
420-430	FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271	
.....		

Reasons: ITU-R studies have not shown compatibility between IMT systems and the incumbent services in the 410-430 MHz band. Extensive use of this band for national security and public safety purposes preclude the use of this band for commercial wireless purposes.

ARTICLE 5

USA/ / 2 **NOC**

2 700-4 800 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
2 700-2 900	AERONAUTICAL RADIONAVIGATION 5.337 Radiolocation 5.423 5.424	
.....		

Reasons: ITU-R detailed analysis and sharing studies undertaken by various ITU administrations and working parties have shown that the utilization of the 2 700 - 2 900 MHz band by IMT-2000 and IMT-Advanced systems is not feasible.

ARTICLE 5

USA/ / 3 **NOC**

2 700-4 800 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
.....		
3 400-3 600 FIXED FIXED-SATELLITE (space-to-Earth) Mobile Radiolocation 5.431	**3 400-3 500** FIXED FIXED-SATELLITE (space-to-Earth) Amateur Mobile Radiolocation 5.433 5.282 5.432	
3 600-4 200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile	**3 500-3 700** FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile Radiolocation 5.433 5.435	
	3 700-4 200 FIXED FIXED-SATELLITE (space-to-Earth) MOBILE except aeronautical mobile	
....		

Reasons: ITU-R studies have not shown compatibility between IMT systems and the radiolocation service, nor between IMT systems and the fixed or fixed satellite service in the 3 400-3 650 MHz band.

ARTICLE 5

USA/ / 4 <u>NOC</u>

2 700- 4 800 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
.....		
4 400-4 500	FIXED MOBILE	
4 500-4 800	FIXED FIXED-SATELLITE (space-to-Earth) 5.441 MOBILE	

4 800-5 570 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
4 800-4 990	FIXED MOBILE 5.442 Radio astronomy 5.149 5.339 5.443	
4 990-5 000	FIXED MOBILE except aeronautical mobile RADIO ASTRONOMY Space research (passive) 5.149	
.....		

Reasons: Studies have not shown the compatibility of IMT with the radio relay and troposcatter networks operating within the fixed and mobile services. This NOC proposal applies to Agenda Item 1.4 and the identification of spectrum for IMT. The 4 500-4 940 MHz band is being considered for aeronautical mobile telemetry for flight test (air-to-ground) under Agenda Item 1.5.

Document WAC/126(04.10.06):

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.7: to consider the results of ITU-R studies regarding sharing between the mobile-satellite service and the space research service (passive) in the band 1 668 - 1 668.4 MHz, and between the mobile-satellite service and the mobile service in the band 1 668.4 - 1 675 MHz in accordance with Resolution **744 (WRC-03)**;

Background Information: **(Issue A)** The band 1 668-1 668.4 MHz is allocated to the space research (passive) service (SRS (passive)) and the mobile-satellite service (MSS) (Earth-to-space). The space research allocation may be used by space-based radio astronomy applications, as part of Space Very Long Baseline Interferometry systems (S-VLBI). The band 1 668-1 668.4 MHz is a part of the band, 1 660.5-1 668.4 MHz, allocated to the SRS (passive). However S-VLBI spaceborne receivers typically receive over a wider frequency band because a wider band is desirable for increasing the sensitivity of systems and also to observe highly red-shifted objects.

The potential for interference from mobile earth stations (MES) operating in the MSS to the S-VLBI systems has been studied by the ITU-R, in accordance with Resolution **744**. The studies concluded that to ensure protection of future SRS (passive) systems operating in highly elliptical orbits, with an apogee of 150 000 km and higher, the power density of MESs operating in the GSO MSS networks should not exceed to – 12.5 dBW/4 kHz in any part of the frequency band 1 668-1 668.4 MHz.

(Issue B) The band 1 668.4-1 675 MHz is allocated to the MSS in the Earth-to-space direction. There are two potential interference scenarios: 1) interference from transmitting stations in the mobile service to receiving space stations in the mobile satellite service; and 2) interference from transmitting mobile earth stations to receiving mobile stations. Regulatory provisions relating to scenario 2 were dealt with at WRC-03 by the inclusion of a coordination mechanism and appropriate parameters in Appendix **7** of the Radio Regulations. However, there are currently no regulatory provisions which address potential interference from systems in the mobile service to MSS systems in the band 1 668.4-1 675 MHz. Therefore, the ITU sharing studies have been focused on scenario 1. No proposals are included herein concerning this issue.

Proposal:

USA/ /1 ADD

5.379[F] In order to protect the space research service (passive) in the band 1 668-1 668.4 MHz the maximum emission power density of any mobile earth station in a mobile-satellite service network in the geostationary satellite orbit network operating in this band, shall not exceed -12.5 dBW/4 kHz in any part of the frequency band 1 668-1 668.4 MHz.

Reasons: To ensure the protection of and future S-VLBI systems operating in the SRS (passive).

USA/ /2 MOD

5.379D For sharing of the band 1 668-1 675 MHz between the mobile-satellite service and the fixed, and mobile ~~and space research (passive)~~ services, Resolution **744 (WRC-03)** shall apply. (WRC-03)

Reasons: Studies under Res. **744** have concluded with regard to the SRS (passive).

USA/ /3 MOD

RESOLUTION 744 (WRC-~~03~~07)

Sharing between the mobile-satellite service (Earth-to-space) ~~and the space research (passive) service in the band 1 668-1 668.4 MHz~~ and between ~~and the space research (passive) service in the band 1 668-1 668.4 MHz and between~~ the mobile-satellite service (Earth-to-space) and the fixed and mobile services in the band 1 668.4-1 675 MHz

The World Radiocommunication Conference (Geneva, 2007~~2003~~),

Considering

a) that WRC-03 ~~this conference~~ made a global allocation to the mobile-satellite service (MSS) (Earth-to-space) in the band 1 668-1 675 MHz and a global allocation to the MSS (space-to-Earth) in the band 1 518-1 525 MHz;

b) that due to sharing conditions between MSS (space-to-Earth) and the aeronautical mobile service for telemetry in the band 1 518-1 525 MHz (see No. **5.348B**), MSS operation in the United States of America is unlikely to be feasible;

c) that the above constraints on the MSS in the band 1 518-1 525 MHz therefore limit the possible use of the band 1 668-1 675 MHz by the MSS in the United States of America;

d) that the band 1 660.5-1 668.4 MHz is allocated to the space research (passive) service;

~~e) that in the band 1 668-1 68.4 MHz, mobile earth stations and space research (passive) stations are subject to coordination under No.9.11A;~~

~~f~~e) that the band 1 670-1 675 MHz is currently planned for use in the United States of America for the fixed and mobile services,

considering further

a) *that the band 1 668.4-1 675 MHz is allocated to the fixed and mobile services;*

b) that No. **5.380** identifies the band 1 670-1 675 MHz for aeronautical public correspondence systems but that no such systems exist;

resolves

that, in the band 1 670-1 675 MHz, stations in the MSS shall not claim protection from fixed and mobile stations operating within the United States of America,

Reasons: Studies called for in this resolution have been completed.

Document WAC/116(04.10.06):

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

WRC-07 Agenda Item 1.8 (Res. 122 (Rev.WRC-03) only[1]): *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~~Therefore, the Bureau has not accepted 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

[1] NTIA counter proposal to WAC 065 contained in FCC Public Notice DA-05-2481A1.

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: