



PUBLIC NOTICE

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FCC SEEKS COMMENT ON RECOMMENDATIONS APPROVED BY THE ADVISORY COMMITTEE FOR THE 2007 WORLD RADIOCOMMUNICATION CONFERENCE

IB Docket No. 04-286

On October 4, 2006, the World Radiocommunication Conference Advisory Committee (WRC-07 Advisory Committee) approved and submitted for Commission's consideration its recommendations with regard to a number of issues that will be considered by the 2007 World Radiocommunication Conference (WRC-07).¹ These recommendations are attached to this Public Notice.

Based upon an initial review of the attached WRC-07 Advisory Committee recommendations, the International Bureau, in coordination with other FCC Bureaus and Offices, tentatively concludes that it can generally support these recommendations.

The FCC seeks comment on the attached recommendations as well as recommendations that appear in all of the WRC-07 Advisory Committee documents.² The FCC also seeks comment on the attached draft preliminary views and proposals that have been developed by the Executive Branch Agencies and submitted to the FCC by the National Telecommunications and Information Administration (NTIA). Finally, the FCC seeks comment on the International Bureau's initial conclusions with regard to the WRC-07 Advisory Committee recommendations.

The comments provided by interested parties will assist the FCC in its upcoming consultations with the U.S. Department of State and NTIA in the development of U.S. positions for WRC-07. As the recommendations that are attached to this Public Notice may evolve in the course of interagency discussions as WRC-07 nears, they do not constitute final U.S. Government position on any issue.

¹ The WRC-07 Advisory Committee was established by the FCC in January 2004 to assist the FCC in developing proposals for WRC-07. Since its inception, the WRC-07 Advisory Committee has developed and submitted recommendations and preliminary views for Commission consideration. *See, e.g., The FCC's Advisory Committee for the 2007 World Radiocommunication Conference Proposes Preliminary Views on WRC-07 Issues*, Public Notice, DA 04-1698 (rel. June 14, 2004) (Int'l Bur. 2004).

² These documents are available through the FCC's WRC-07 website at: <http://www.fcc.gov/wrc-07>.

The complete text of these recommendations is available in the FCC's Reference Information Center, Room CY-A257, 445 12th Street, SW, Washington, DC 20554 or by accessing the FCC's WRC-07 world wide web site at: <http://www.fcc.gov/wrc-07>. Comments on the recommendations may be filed by referencing IB Docket 04-286 using the Commission's Electronic Comment Filing System (ECFS) or by filing paper copies. Parties are encouraged to file electronically by following the instructions at: <http://www.fcc.gov/cgb/ecfs> Parties who choose to file paper copies only should submit an original and four copies of each filing. Guidelines and address for paper filings are available at: <http://www.fcc.gov/osec> . In addition, please submit one copy of your comments electronically or by paper to Alexander Roytblat, FCC WRC-07 Director, Federal Communications Commission, Room 6-A865, 445 12th Street, SW, Washington, DC 20554; e-mail: WRC07@fcc.gov. Comments should refer to IB Docket No. 04-286 and to specific recommendations by document number. The deadline for comments on the recommendations is October 27, 2006.

I. Recommendations by the Advisory Committee for the 2007 World Radiocommunication Conference:

INFORMAL WORKING GROUP 1 (IWG-1) **Terrestrial and Space Science Services**

Document WAC/127(04.10.06):

IWG-1 Opposition to RCS Draft Proposal on AI 1.2 (10 GHz Band)

The FWCC or Fixed Wireless Communications Coalition represents the users and manufacturers of fixed, point to point microwave frequency radios operating under the FCC's Part 101 rules.

The FCC's Part 101, 10.5 GHz band extends from 10.550 to 10.680 GHz. 80 MHz of this band overlaps the 10.6 to 10.68 GHz band shared with the EESS or Earth Exploration Satellite Service band allocation.

The primary applications for the 10.5 GHz band are for cell site interconnection and basic communications services for:

Cellular companies.

Public safety systems for police, fire and ambulance services.

Critical infrastructure providers including:

Oil and gas exploration and pipeline control.

Electrical energy transportation and grid control.

Railroad inventory management and signals control.

All of these services require very highly reliable communications systems typically engineered for 99.999% availability which is equivalent to less than 5 minutes outage per year.

The Part 101, 10.5 GHz band is particularly desirable, especially in metropolitan areas, because:

1. Spectrum is available even in congested areas. The FCC added 100 MHz of unused spectrum to the 10.5 GHz band in 1996.
2. This is the lowest frequency band in which the FCC allows the use of very popular small, 2 ft. antennas to reduce tower wind loading and improve visual aesthetics.
3. It has reasonably good propagation characteristics.

The propagation characteristics of the 10.5 GHz band are determined by the rain rate between the antennas.

Traditional microwave radio propagation improvement techniques such as space diversity or frequency diversity are ineffective against fading due to rain absorption.

Only greater transmitter power output or larger antennas will improve the path length or increase the reliability of a system limited by rain fading.

Calculations using industry accepted formulas show the 7 dB output power reduction suggested by the modifications to paragraph 5.482 will reduce a 10.5 GHz path length by approximately 27% for equivalent reliability.

Some additional 10.5 GHz facts supplied by FWCC members:

70% of the 10.5 GHz paths are located in metropolitan areas. This information was supplied by Comsearch along with a map (included) showing the metropolitan areas and 10.5 GHz systems.

The 10.5 GHz band usage has increased by 22% over the last 4 years and is approximately twice the growth rate of the other Part 101 frequency bands. This information was supplied by Doug Docherty and based on information from the FCC's universal license system.

Approximately 83% of the 10.5 GHz transmitters in the State of Massachusetts already exceed the 20 dBm or -10 dBW power output restriction being recommended by the modifications to paragraph 5.482.

Existing 10.5 GHz transmitters have power outputs up to +30 dBm or 1 Watt. This is 10 dB greater than the limitations suggested by the modifications to paragraph 5.482 and particularly useful to combat rain fading.

The maximum EIRP of the 10.6 to 10.68 GHz portion of the 10.5 GHz band is already 15 dB lower (+40 dBW) than other Part 101 frequency bands (+55 dBW).

Document WAC/129(04.10.06):

**IWG-1 Modifications to RCS Draft Proposal on
A.I. 7.2 “Enhanced Maritime Ship and Port Security”**

United States of America

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 7.2: to recommend to the Council items for inclusion in the agenda of the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution **802 (WRC-03)**;

Enhanced Maritime Ship and Port Security

Background Information: There is a growing global requirement for application of wireless technology to enhanced security of ships and ports. The International Maritime Organization (IMO) recognized this need by its adoption of the Code on International Ship and Port Facility Security (ISPS), implemented as treaty by amendment to the Safety of Life at Sea (SOLAS) Convention, with the understanding “that the establishment of such measures will further enhance and positively contribute towards the international efforts to ensure maritime security and to prevent and suppress acts threatening the security in the maritime transport sector”, and invited contracting governments “to establish, as they may consider necessary, and to disseminate, as they deem fit, appropriate measures to enhance the security of ships and of port facilities”³. The IMO Sub-Committee on Radiocommunications and Search and Rescue⁴ (COMSAR) has actively supported terrestrial and satellite communication and data exchange systems to enhance maritime safety and port security. IMO’s Maritime Safety Committee (MSC 81) approved new provisions in Chapter V (Safety of Navigation) of SOLAS for Long Range Identification and Tracking following the adoption of the ISPS Code which also introduced a requirement for a Ship Security Alert System (SSAS). COMSAR 10 noted that integration of satellite and terrestrial technologies enhance vessel and personal safety. As a result, additional channels may be required for Automatic Identification (AIS) purposes which, with the existing AIS channels, may require protection and also authorization to operate in the mobile satellite service.

There is a need for improved identification, tracking, and surveillance of international shipping and its cargo. Some administrations as well as the International Standards Organization (ISO) are studying the spectrum and standardization requirements for electronic seals used on freight containers to provide a more secure international transportation system.⁵

IMO has also addressed measures to enhance maritime security and has drafted performance standards and functional requirements and adopted SOLAS Convention carriage requirements

³ IMO CONFERENCE OF CONTRACTING GOVERNMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, SOLAS/CONF.5/5/Rev.1, SOLAS chapter XI has been amended to include special measures for maritime security (XI-1 and XI-2)

⁴IMO COMSAR 10/16, Report to the Maritime Safety Committee, dated 27 March 2006.

⁵ International Organization for Standardization Technical Committee 104 – Freight Containers (ISO TC 104) letter to ITU-R dated 21 May, 2003.

for the Long-Range Identification and Tracking of Ships (LRIT) and the Ship Security Alerting System (SSAS), noting that the integration of satellite and terrestrial technologies enhance vessel and personal safety. The implementation of communication systems in the VHF/UHF, MF/HF, and Satellite spectrum will enable the LRIT and SSAS functions. Changes to the Radio Regulations, and in particular the spectrum allocation table, are expected to be necessary in order to ensure enhanced safety and security of ships and ports.

Proposal:

USA/ /1 MOD

RESOLUTION 803 (WRC-~~03~~07)

~~Preliminary~~ Agenda for the 2010 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 20037),

USA/ /2 ADD

2.XF to consider spectrum requirements and possible additional spectrum allocations to support enhanced ship and port security in accordance with Resolution **Enhanced Port and Ship Security (WRC-07)**.

Reasons: Meet international maritime shipping need for ship and cargo identification, tracking, and surveillance, and ship and port facility security.

USA/ /3 ADD

RESOLUTION [Enhanced Port and Port Security] (WRC-07)

Consideration of spectrum allocations for use by maritime ship and port security systems

The World Radiocommunication Conference (Geneva, 2007),

considering

- a) that there is increasing need, on a global basis, to enhance ship and cargo identification, tracking, and surveillance as well as ship and port security;
- b) that IMO adoption of the International Ship and Port Facility Security (ISPS) Code, specifically Safety of Life at Sea (SOLAS) Convention Chapter XI-2 on special measures to enhance maritime security requires long range spectrum dependent systems;
- c) that the introduction of the shipborne universal Automatic Identification System (AIS) (ITU-R Rec. M.1371 series) offers potential enhancements to ship safety and port security;

d) that studies within ITU-R WP 8B indicate that additional AIS channels in the mobile satellite service may be required to enhance global ship tracking capabilities;

e) that advanced maritime HF data systems may be used to deliver security alerts and safety information to global regions not under satellite coverage,

noting

a) that Resolution **342 (Rev. WRC-2000)** has considered new technologies to provide improved efficiency in the use of the bands in **Appendix 18** by stations in the maritime mobile service;

b) that Resolution **351 (WRC-03)** has reviewed the frequencies and channelling arrangements in the MF and HF bands, of **Appendix 17**, with a view to improving efficiency by considering the use of new digital technology,

recognizing

a) that there is a global requirement to enhance ship and port security via spectrum dependent systems;

b) that existing and future technologies for Ship Security and Alerting Systems (SSAS) will require long range communications links and networks between mobile ships and shorebased stations;

c) that due to the importance of these radio links in ensuring the safe and secure operation of international shipping and commerce, they must be resilient to interference;

d) that studies will be required to provide a basis for considering regulatory changes, including additional allocations and recommendations, designed to accommodate spectrum requirements of ship and port security, consistent with the protection of incumbent services and ensuring that incumbent services are not unduly constrained,

resolves

1 that WRC-10 consider the spectrum requirements for the operation of ship and port security systems;

2 that WRC-10 consider additional allocations to the maritime mobile and/or maritime mobile-satellite service to support the requirements identified in *resolves 1* taking into account the need to protect and not impose undue constraints on existing services, with a view towards using existing maritime mobile allocations where practicable, particularly where international interoperability is required,

further resolves to invite the ITU-R

1 to conduct, as a matter of urgency, studies to determine the spectrum requirements and potential frequency bands suitable to support ship safety and port security systems;

2 that the studies referred to in *further resolves* 1 should include sharing and compatibility studies with services already having allocations in potential spectrum for ship safety and port security systems,

further invites

all members of the Radiocommunications Sector, the International Maritime Organization (IMO) and the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) to contribute to these studies,

instructs the Secretary-General

to bring this Resolution to the attention of the International Maritime Organization (IMO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) and other international and regional organizations concerned.

INFORMAL WORKING GROUP 2 (IWG-2)
Space Services and High Altitude Platform Stations (HAPS)

Excerpt from Document WAC/130(04.10.06) – Minutes of the meeting of IWG-2 on September 21, 2006:

Consideration of Draft Proposals from Exec. Branch Agencies:

Three documents from the Exec. Branch Agencies were considered:

1. Doc. IWG-2/065 (Exec. Branch Agencies proposals for Agenda Item 4, review of resolutions and recommendations). IWG-2 had the following comments on the various proposals impacting satellite services and/or HAPS:

<u>Exec. Branch Agencies Proposal</u>	<u>IWG-2 Comments/Response</u>
USA//1 SUP Res. 21	N/A – Not related to satellites or HAPS
USA//2 SUP Res. 51	IWG-2 Endorses Suppression
USA//3 SUP Res. 56	IWG-2 Endorses Suppression
USA//4 SUP Res. 57	IWG-2 Endorses Suppression
USA//5 SUP Res. 87	IWG-2 Endorses Suppression
USA//6 SUP Res. 88	IWG-2 Endorses Suppression
USA//7 SUP Res. 96	IWG-2 Endorses Suppression
USA//8 and 9 SUP Res. 124 and No. 5.462A	IWG-2 Neither Endorses Nor Opposes These Proposals
USA//10 SUP Res. 136	IWG-2 Endorses Suppression
USA//11 SUP Res. 144	IWG-2 Endorses Suppression
USA//12 SUP Res. 405	N/A – Not related to satellites or HAPS
USA//13 SUP Res. 527	N/A – Not related to satellites or HAPS
USA//14 SUP Res. 528	IWG-2 Seeks to Retain Resolution 528
USA//15 SUP Res. 728	IWG-2 Endorses Suppression; notes that no “reasons” have been provided
USA//16 SUP Res. 734	IWG-2 Endorses Suppression
USA//17 SUP Rec. 14	N/A – Not related to satellites or HAPS
USA//18 SUP Rec. 36	IWG-2 Endorses Suppression
USA//19 SUP Rec. 520	N/A – Not related to satellites or HAPS
USA//20 SUP Rec. 604	N/A – Not related to satellites or HAPS
USA//21 SUP Rec. 606	N/A – Not related to satellites or HAPS
USA//22 SUP Rec. 707	IWG-2 Endorses Suppression; notes that no “reasons” have been provided
USA//23 SUP Rec. 722	N/A – Not related to satellites or HAPS
USA//24 SUP Rec. 723	N/A – Not related to satellites or HAPS

In addition, IWG-2 noted that Resolution 140 (WRC-03), addressing epfd limits in the 19.7-20.2 GHz band, could be a candidate for suppression, for the reason that the studies have been concluded in the ITU-R (resulting in adoption of Recommendation ITU-R S.1715), and that no further WRC action is needed or contemplated.

IWG-2 members will be encouraged to look at additional resolutions and recommendations to see if there are any additional candidates for suppression, and bring any proposals on this subject into IWG-2's November/December meeting.

2. Doc. IWG-2/066 (Exec. Branch Agencies proposals for Agenda Item 1.12, Mod to 9.14 and Mod to Appendix 5). IWG-2 had the following comments on the two proposals from the Exec. Branch agencies on Agenda Item 1.12:

- a. Mod to 9.14: IWG-2 endorsed and supported this proposal.
- b. Mod to Appendix 5: After discussion, IWG-2 participants had several unresolved questions about aspects of the proposal, its intentions, and whether the resulting text may go farther than intended. IWG-2 did not endorse the proposal. IWG-2 understands that the proposal is being considered in the U.S. preparatory process for the December 2006 SCRPM meeting, and that revisions to the proposal are contemplated by the authors. IWG-2 would appreciate the opportunity to review a revised draft U.S. proposal from the Exec. Branch Agencies, if one is able to be developed.

3. Doc. IWG-2/067 (Exec. Branch Agencies proposals for Agenda Item 1.4). This proposal was distributed to IWG-2 participants pursuant to an instruction from the FCC issued upon its receipt from NTIA. IWG-2 limited its consideration to the FSS downlink band at 3650-4200 MHz. IWG-2 noted that there is a discrepancy between the Table element in Proposal USA//3 (NOC for 3400-4200 MHz) and the reason below the proposal (which is limited to 3400-3650 MHz). IWG-2 strongly felt that the reason below USA//3 should be aligned to coincide with the table (i.e., to extend to 4200 MHz on the upper end), and that a corresponding paragraph should be added to the background section emphasizing the extreme significance of the 3650-4200 MHz band for the FSS industry and for the billions of people around the world who rely on C-band telecommunications satellites for the dissemination of information, entertainment, and communications. There was no disagreement with these comments on Doc. IWG-2/067.

INFORMAL WORKING GROUP 3 (IWG-3)
IMT-2000 and 2.5 GHz Sharing Issues

Document WAC/135(04.10.06):

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

WRC-07 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:

In WRC-03, the ITU adopted Resolution 228 concerning studies on frequency related matters for the future development of IMT-2000 and systems beyond IMT-2000. This resolution requested that:

- The ITU-R to further study technical and operational issues relating to the future development of IMT-2000 and systems beyond IMT-2000 and develop Recommendations as required.
- The ITU-R report in time for WRC-07 on the results of the studies on spectrum requirements and potential frequency usage suitable for the future development of IMT-2000 and systems beyond IMT-2000.
- The ITU-R studies should include sharing and compatibility studies with services already having allocations in potential spectrum for the future development of IMT-2000 and systems beyond IMT-2000, taking into account the needs of other services.

Sharing studies have been conducted within the ITU-R regarding sharing of IMT-2000 and systems beyond IMT-2000 (“IMT-Advanced”) with FSS receive earth stations. To provide protection of the FSS receive earth stations, some physical separation to the stations of the mobile terrestrial network is required. The magnitude of this separation distance depends on the parameters of the networks and the deployment of the two services, including the elevation angle of the earth station, the position of the IMT-Advanced terminal and/or base station relative to the FSS earth station and the amount of clutter loss. While the studies are still ongoing, the current range of separation distances associated with a single IMT-Advanced macro base station is from 36 to 70 km for the non-site specific studies (flat terrain model) if only long term interference is considered, and from 34-430 km if short term effects are also considered. It should be noted that the 34 kilometer distance for short-term interference does not include the effects of ducting. If ducting effects are taken into account, the separation distance associated with short term interference ranges from 140 – 430 km. For site specific studies, where actual terrain profiles were taken into account, the current range of separation distances for associated with a single IMT-Advanced macro base station is 1 to 110 km if only long term interference is considered and 270 km to 280 km if short term effects are also considered. It is noted that the 270 – 280 km distance corresponds to the results of a single (and only) site specific sharing study by Working

Party 8F that considered the effects of short-term interference. It should also be noted that mitigation techniques are also under study that may reduce the separation distances. The minimum separation distances related to the IMT-Advanced micro and/or mobile station will generally be smaller than the ranges listed above.

Although the studies have differences in assumptions and methodologies and need to be continued to find convergence, they all show that ubiquitously deployed IMT-Advanced systems can not share in the same geographical area with FSS, when the FSS is deployed in a ubiquitous manner and/or with no individual licensing of earth stations, since no minimum separation can be guaranteed. Sharing may be feasible only when the receiving earth station is specific under the condition that the minimum required separation distance together with the criteria mutually agreed between the concerned administrations are observed.

The results of the ITU-R sharing studies show that sharing of the 3700 – 4200 MHz frequency band by IMT-Advanced systems and the fixed satellite system is not feasible within the same geographic area. This conclusion can be reached if one looks at either the single entry minimum distance separations required for long-term or short-term protection of an FSS receive station, where the smallest required separation is approximately 36 kilometers for an IMT-Advanced macro base station for the non-site specific studies; for site specific studies, the distance reduces to a minimum of 1 km. A similar conclusion is also reached if one looks at the minimum distance separation required for the protection of an FSS earth station from the aggregate interference effects of multiple IMT-Advanced macro or micro cell base stations.

By comparison, the radius of a large city is in the range of 15 – 30 kilometers. Hence, operation of even one FSS earth station in the 3700 – 4200 MHz within a city would preclude the use of a co-frequency IMT-Advanced system within that city, and vice-versa. Given that FSS receive stations are deployed throughout the United States in the 3700 – 4200 MHz band⁶ and that IMT-Advanced systems would be deployed in a ubiquitous manner, it is concluded that sharing of the 3700 – 4200 MHz band between IMT-Advanced and FSS is not feasible in the United States.

FSS operators use the 3700-4200 MHz band to serve customers requiring a high degree of reliability. Among other things, these customers use the 3700-4200 MHz band for program distribution to cable head-ends and radio/TV broadcast stations, broadband communications to U.S. Navy vessels, commercial weather data distribution to airlines and pilots, and position location and status for trucking fleets.

In view of the results of the IMT-Advanced and FSS sharing studies to date within the ITU-R and the above considerations, the band 3700-4200 MHz should be removed from consideration as a candidate band for IMT-Advanced systems.

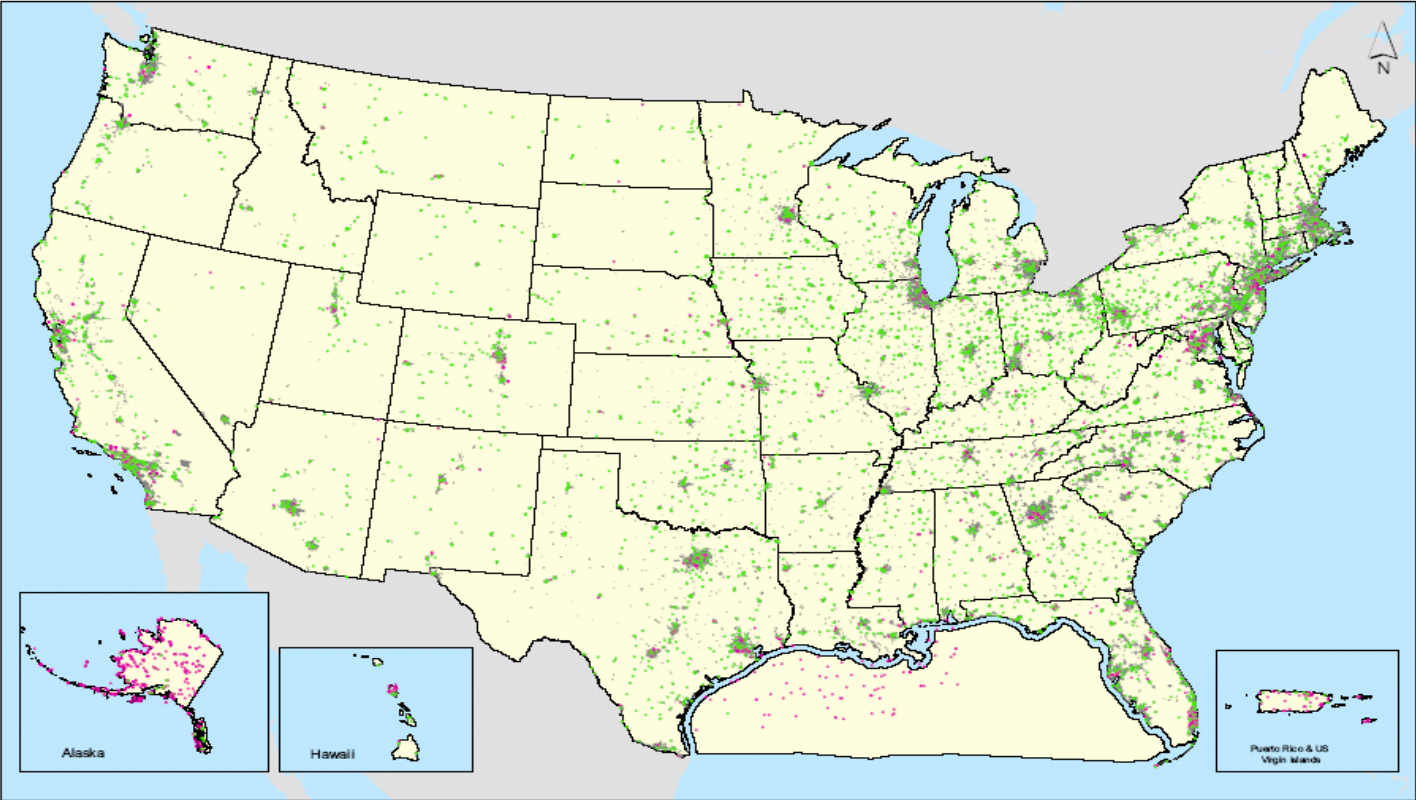
⁶ Attachment 1 contains a map showing all transmit-receive and receive only earth stations currently in the FCC database.

Proposal

No Change to the Table of Allocation of the Radio Regulation with regard to the 3700 – 4200 MHz band.

Reasons: The results of the ITU-R sharing studies to date have shown that sharing of the 3700 – 4200 MHz frequency band by IMT-Advanced systems and the fixed satellite system is not feasible within the same geographic area.

Attachment 1
Locations of C-Band Earth Stations in the United States



**3700-4200 MHz Earth Stations
TR and RO**

- Legend**
- Earth Stations - RO
 - Earth Stations - TR
 - Urban Areas

Document WAC/136(04.10.06):

IWG-3 Comments on the RCS Proposal Contained in IWG-3 Background Document 4

The RCS document in question proposes no change to the international Table of Frequency Allocations in the bands 410-430 MHz, 2 700-2 900 MHz, 3 400-3 650 MHz, and 4 400-4 940 MHz.

IWG-3 neither supports nor opposes this proposal. IWG-3, however, does note that commercial systems are licensed and have been deployed in a number of countries in the 3400-3650 MHz band, and that deployments in other countries are expected.

IWG-3 opposes extending the “no change” proposal from 3400-3650 MHz to 3400-4200 MHz as suggested by IWG-2, and also opposes adding sharing issues with fixed-satellite service (FSS) earth stations to the justification or background of the RCS proposal. IWG-3 notes that satellite use is prevalent above 3700 MHz in the United States. Therefore, IWG-3 is proposing “no change” for the band 3700-4200 MHz on a separate document. However, IWG-3 does not agree that sharing between IMT systems and FSS earth stations below 3700 MHz presents similar difficulties, as the density of FSS earth station deployment is much lower below 3700 MHz. In the United States, fixed and mobile terrestrial services are allocated in 3650-3700 MHz and FSS use is limited to certain grandfathered sites¹. Further, while there is an FSS allocation in 3600-3650 MHz, it is limited to international, inter-continental systems subject to a case-by-case electromagnetic compatibility analysis. The FCC’s rules state that it is expected that only one earth station on each coast could be successfully coordinated. With respect to the 3650-3700 MHz band, IWG-3 notes that this band is still under consideration in IWG-3 with respect to agenda item 1.4.

IWG-3 offers the following comments which it believes are necessary to avoid confusion regarding the proposal.

- Footnote 1 (“The United States has not identified any additional bands that might be suitable.”) on page 2 should be deleted. Otherwise, the reader could infer that the US is supporting identification of the listed candidate bands.
- With respect to the proposal USA//3 on page 4, the proposal’s intent is to specify “no change” to 3400-3650 MHz, as described above. However, the portion of the Table of Frequency Allocations displayed covers all the way up to 4200 MHz. Accordingly, IWG-3 requests that the proposal be modified so that only the portion of the Table leading up to 3650 MHz be displayed. This may entail splitting up the current frequency ranges in the Table.
- Similarly, with respect to the proposal USA//4 on page 5, the proposal’s intent is to specify “no change” to the Table of Frequency allocations from 4400-4940 MHz, as described

¹ Although there are only 49 grandfathered sites, BWA transmitters must be coordinated within a 150 km radius around each of these sites. Many of the grandfathered sites are in close proximity, resulting in a significant overlap of the 150 km coordination zones (see Attachment 1)

above. However, the portion of the Table of Frequency Allocations displayed covers frequencies all the way up to 5000 MHz. Accordingly, if the intent is just to specify no change up to 4940 MHz, then the proposal should be modified so that only the portion of the Table leading up to 4940 MHz be displayed.

Modifications to the RCS proposal to take into account the above comments are provided below.

United States of America

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.

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, except 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.

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 Radiolocation 5.423 5.424	AERONAUTICAL RADIONAVIGATION 5.337	
.....		

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	
3 600-36504 200 FIXED FIXED-SATELLITE (space-to-Earth) Mobile	3 500-3 650700 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 NOC

2 700- 4 800 MHz

Allocation to services		
Region 1	Region 2	Region 3
.....		
4 400-4 500 MOBILE	FIXED	
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 in the 4400-4940 MHz band. 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.

Attachment 1 (for information; not intended to be part of the proposal)

Coordination Zones: 3650 to 3700 MHz



Small dark gray circles = Federal Government stations
Large light gray circles = Grandfathered FSS stations
Not displayed, Guam FSS stations

Federal Communications Commis
Office of Engineering And Techno

Document WAC/134(04.10.06):

IWG-3 COMMENTS ON THE RCS PROPOSAL ON AGENDA ITEM 4 (including Recommendation 722 (WRC-03))

Agenda Item 4: in accordance with Resolution 95 (Rev.WRC-03), to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

ISSUE

Recommendation 722 (WRC-03) invited administrations to participate in ITU-R studies to review the technical, operational and frequency issues for terrestrial wireless interactive multimedia applications (TWIMs) on a global basis. The issue is whether or not to suppress this Recommendation.

WRC-07 will set the agenda for the subsequent WRC, WRC-10. The preliminary, or tentative, WRC-10 agenda resides in Resolution 803(WRC-03). The issue is whether or not the regulatory developments in terrestrial wireless interactive multimedia applications (TWIMs) require review by WRC-10 for action to be taken.

BACKGROUND

This proposal is directly related to a previous proposal from the RCS on Agenda Item 7.2 (including Agenda Item 2.8 in Resolution 803 (WRC-03), Preliminary agenda for the 2010 World Radiocommunication Conference). Agenda Item 2.8 is “to consider the progress of the ITU R studies concerning the development and regulatory requirements of terrestrial wireless interactive multimedia applications, in accordance with Recommendation 722 (WRC 03) and to take any appropriate action on this subject.” At that time, IWG-3 submitted comments stating IWG-3’s view that suppression of the agenda item was premature and that the US should wait until the relevant studies have concluded before reaching a decision on the retention and final wording of agenda item 2.8 for the WRC-10 agenda to the WAC (WAC Document 069). This latest RCS proposal seems to be another attempt to address the same topic. IWG-3 therefore reiterates its previous comments.

WRC-10 provisional agenda item 2.8 derives from the WRC-03 agenda item 1.21, “to consider progress of the ITU-R studies concerning the technical and regulatory requirements of terrestrial wireless interactive multimedia applications, in accordance with Resolution 737 (WRC-2000), with a view to facilitating global harmonization.” As no significant input was submitted to the ITU-R group, Joint Task Group (JTG) 1-6-8-9, formed to develop the text for this agenda item for the CPM Report to WRC-03, there were no substantial study results that could form a basis for proposals at WRC-03. Consequently, WRC-03 formed this agenda item 2.8 for WRC-10, which invited studies in accordance with Recommendation 722 (WRC-03).

While JTG 1-6-8-9 has held its final meeting, the legacy of WRC-03 Agenda Item 1.21 and now WRC-10 Agenda Item 2.8 are present in other ongoing ITU-R studies. Since WRC-2003, Working Party (WP) 1B of ITU-R SG 1 has been developing a Working Document Towards a Preliminary Draft New Report on Technical Convergence with Respect to Terrestrial Fixed, Mobile, and Broadcasting Interactive Multimedia Applications per Question ITU-R 224/1, “Technical Convergence with respect to Terrestrial Fixed, Mobile, and Broadcasting Interactive Multimedia Applications and the Associated Regulatory Environment.” This item currently under study in WP 1B can be considered a follow on to the original WRC-03 TWIMs agenda item.

CPM06-01 gave WPs 1B and 4A (of ITU-R SG 4) the lead for responding to Resolution 951 (WRC-03), “Options to Improve the International Spectrum Regulatory Framework”. This Resolution instructs the Director of the ITU Radiocommunication Bureau to include the results of these studies in his report to WRC-07, with the purpose of consideration of the suitability of this subject on a future WRC agenda.

After WRC-03, Study Group (SG) 1 developed a new Study Question, 229/1, pursuant to the matter of Res. 951(WRC-03). Likewise, SG 1 has sent a liaison statement (Doc. 4A/131, 8/53, 9B/84, etc.) to several WPs across various SGs, seeking their input from their radio service perspective on options to improve the international spectrum regulatory framework. Since then several ITU-R groups have sent back liaison replies to this query. Doc. 1B/83, Annex 3 is the current Working Document Towards the Report to the BR Director in response to the Resolution 951 matter.

The Resolution 951(WRC-03) study, the results of which will be reported to WRC-07, is similar to the TWIMs matter in that replies from ITU-R groups to the above-mentioned SG 1 liaison statement have focused on the issues of convergence of current and future wireless applications, and how they fit into the spectrum regulatory framework. Doc. 1B/50, Annex 4, from the Report of the October 2004 meeting of WP 1B, indicated in its introduction that the scope of these issues may be perceived to fall under the scope of Resolution 951(WRC-03).

IWG-3 RECOMMENDATION ON RCS VIEW

Given that these ITU-R studies are still ongoing and have not yet presented results, IWG-3 is of the view that the US should wait until these studies have concluded before reaching a decision on the retention and final wording of agenda item 2.8 for the WRC-10 agenda and suppression of Recommendation 722 (WRC-03) with which this agenda item is currently associated. Further, although it is noted that the work under Resolution 951 (WRC-03) is related to TWIMs, there is no time limit to the studies under Recommendation 722 (WRC-03), and they may continue in the time after WRC-07 and leading up to WRC-10.

INFORMAL WORKING GROUP 4 (IWG-4)
Broadcasting and Amateur Issues

Document WAC/137(04.10.06):

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.13: taking into account Resolutions **729 (WRC-97)**, **351 (WRC-03)** and **544 (WRC-03)**, to review the allocations to all services in the HF bands between 4 MHz and 10 MHz, excluding those allocations to services in the frequency range 7 000-7 200 kHz and those bands whose allotment plans are in Appendices **25**, **26** and **27** and those whose channeling arrangements are in Appendix **17**, taking account of the impact of new modulation techniques, adaptive control techniques and the spectrum requirements for HF broadcasting;

Background Information: Changes to Article 25 made at WRC-03 encourage administrations to take the necessary steps to allow amateur stations to prepare for and meet communication needs in support of disaster relief. Most administrations recognize the amateur services as serving humanitarian and disaster relief agencies as well as non-government organizations such as the Red Cross and Red Crescent Movement. The amateur services provide emergency communications on a local, national and international basis as an adjunct to normal communications, and in many cases provide the first information about disasters and serve as the only communications link when communications infrastructures are destroyed.

Based on the recommendation of the 1978 CCIR Special Preparatory Meeting, WARC-79 accepted the principle that, like other high-frequency radio services, the amateur service should have access to a family of frequency bands so communications can be maintained as propagation conditions change. Particularly in the higher latitudes, there are many times when the maximum usable frequency (MUF) is below 7 MHz but is too far above the next lowest amateur frequency band (3.8, 3.9 or 4.0 MHz, depending upon the Region) for communication to be supported in that band.

There is successful experience with amateur operation in the band 10 100-10 150 kHz, which is allocated to the fixed service on a primary basis and the amateur service on a secondary basis.

Since 1999, a number of administrations have authorized amateur service operations on specific voice-frequency bandwidth channels, subject to No. 4.4 of the Radio Regulations, as follows:

5 260 CAN, G	5 332 USA, FNL, ISL, NOR
5 269 CAN	5 348 USA, FNL, ISL, NOR
5 280 CAN, FNL, ISL, NOR, G	5 368 USA, FNL, ISL, NOR
5 290 CAN, FNL, ISL, NOR, G	5 373 USA, FNL, ISL, NOR
5 300 FNL	5 400 CAN, FNL, ISL, NOR, G
5 319 CAN	5 405 USA, CAN, ISL, NOR, G
5 329 CAN	

Operating experience has shown that these frequencies have the desired radio propagation characteristics and that amateur operations can co-exist without interference to the fixed and mobile services.

A secondary allocation of 150 kHz would allow sufficient bandwidth to meet amateur service requirements while dynamically avoiding frequencies in use by other services.

Proposal:

USA/ /1 MOD

ARTICLE 5

**Frequency allocations
Section IV – Table of Frequency Allocations**

5 003-7 450 kHz

Allocation to services		
Region 1	Region 2	Region 3
5 250-5 450 260	FIXED MOBILE except aeronautical mobile	
5 260-5-410	FIXED MOBILE except aeronautical mobile <u>Amateur</u>	
5 410-5 450	FIXED MOBILE except aeronautical mobile	

Reasons: Allocation of a band at 5 MHz to the amateur service, on a secondary basis, will provide communications at times when the MUF is below 7 MHz and above the next lower amateur frequency band. Use of listen-before-transmit techniques avoids interference to the primary services.

Document WAC/138(04.10.06):**IWG-4 Comments on WRC-07 Agenda Items 4 and 7.2**

1. **WRC-07 Agenda Item 4**, *to review the Resolutions and Recommendations of previous Conferences with a view to their possible revision, replacement or abrogation.*

IWG-4 reviewed Doc.WAC/079(25.01.06) submitted by NTIA.

The following, under the auspices of IWG-4, were reviewed and are hereby proposed:

AI-1.6, Aeronautical mobile (R) service

Res. 413 (WRC-03)

Res. 414 (WRC-03)

Res. 415 (WRC-03)

AI-1.11, BSS services in the band 620-790 MHz

Res. 545 (WRC-03)

AI-1.13, Services in the HF bands

Res. 351 (WRC-03)

Res. 544 (WRC-03)

Res. 729 (WRC-97)

Resolution 528 (Rev. WRC-03), BSS in the range 1-3 GHz

2. **IWG-4 Agenda Item 4 proposals:**

Res. 351: NTIA proposal is **MOD**, without explanation. IWG-4 does not object to this proposal.

Res. 413: **NOC**, in order to protect existing broadcast services in the adjacent band 87-108 MHz and future digital sound broadcast services in that band.

Res. 414: NTIA proposal is **SUP**. IWG-4 does not object to this proposal.

Res. 415: NTIA proposal is **SUP**. IWG-4 does not object to this proposal.

Res. 528: NTIA proposed **SUP**. **IWG-4 proposes NOC**. WorldSpace indicated that the studies called for in Resolution 528 have not been conducted because the planning conference that should review such studies has not been convened. That is not to say that the technical studies called for by Resolution 528 are superfluous. Resolution 528 called for a planning conference to be convened preferably no later than 1998: however, no initiative has been taken by administrations to plan the BSS(S) in these bands. WorldSpace believes that studies should be conducted.

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 1.12¹: *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 one⁹ 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 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 stations¹¹ 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:

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 category¹ 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.

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 band⁹

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	<u>EARTH EXPLORATION-SATELLITE (active)</u> RADIONAVIGATION 5.476 Radiolocation <u>SPACE RESEARCH (active)</u> 5.427 5.474 5.475 <u>MOD 5.476A ADD 5.XXX</u>	
9 500-9 800	EARTH EXPLORATION-SATELLITE (active) RADIOLOCATION RADIONAVIGATION SPACE RESEARCH (active) <u>MOD 5.476A</u>	
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 3500-9 800 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-9707)

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.

RESOLUTION 747 (WRC-03)

Possible upgrade of the radiolocation service to primary allocation status in the frequency bands 9 000-9 200 MHz and 9 300-9 500 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 9 500-9 800 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, except 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 NOC

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-0307)

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, 20072003),

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;~~
- fe) 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) only¹): *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:

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 Resolution VBANDHAPS (WRC-07) ~~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. Resolution VBANDHAPS No. 9.22 is a new resolution 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
~~ADDMOD~~

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 (or elsewhere), 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 coordinations 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.

~~9.22 — Not used. *g)* 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 assignments²⁰, identified in accordance with Appendix ~~5~~²¹.

~~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. 9.22 HAPS/GSO, non-GSO	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 No. 9.22 , in respect of a space station.	Frequency bands for which a footnote refers to No. 9.22	Bandwidth overlap	Check using assigned frequencies and bandwidths	

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.

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.12: 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 Information: This proposal addresses the need to modify No. **9.14** (Applies to space-to-Earth only). Resolution **86 (Rev. Marrakesh, 2002)** requested that WRC-03 and subsequent Conferences review the regulatory procedures associated with the advance publication, coordination, notification and recording of frequency assignments pertaining to satellite network. 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 (RR) 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.”

The current Rule of Procedure under Article **9** for No. **9.14** in paragraph 2.4a) is as follows:

- a) No. **9.14** applies to space-to-Earth frequency allocations only, i.e. coordination of a transmitting space station in respect of receiving terrestrial stations when the threshold value is exceeded. In the absence of threshold value, the provisions of No. **9.50.1** could apply (see also Appendix **5**). For the Earth-to-space frequency allocations, the Board is of the opinion that no coordination is required between the involved space and terrestrial services, which both are considered on an equal basis.

Also, No. **9.14** should be limited to the space-to-Earth frequency allocations. To clarify that this is the case the following modification is proposed:

Proposal (Modification No. **9.14** (Applies space-to-Earth only):

USA/ /01 MOD

- 9.14** *i)* for a transmitting space station of a satellite network for which the requirement to coordinate is included in a footnote to the Table of Frequency Allocations referring to this provision or to No. **9.11A** in respect of receiving stations of terrestrial services where the threshold value is exceeded; (WRC-073)

Reasons: To incorporate the Rule of Procedure on No. **9.14** which specifies that No. **9.14** applies in the space-to-Earth direction only.

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.12: 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 Information: This proposal addresses the need to modify Appendix 5, Paragraph 1. Resolution **86 (Rev. Marrakesh, 2002)** requested that WRC-03 and subsequent Conferences review the regulatory procedures associated with the advance publication, coordination, notification and recording of frequency assignments pertaining to satellite network. 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 (RR) 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.”

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 category¹ 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....”.

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.

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** specifies that the procedure of No. **9.11A** is applicable to, “...satellite services having allocations with equal rights...”. Additionally, while no text in the RR or in the RoP on No. **9.7** specifically state so, administrations responsible for a geostationary-satellite networks should not 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

While it may 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, 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.

To clarify that Nos. **9.7** and **9.11A** to **9.19** applies only to assignments in bands allocated with equal rights; the following modification is proposed to footnote 1 of §1 of Appendix **5**:

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 category¹ of allocation, which might affect or be affected, as appropriate, and which are:.....

¹ The coordination ~~procedures between an earth station and terrestrial stations~~ under Nos. 9.7 and 9.11A to 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/118(04.10.06:

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 4: in accordance with Resolution **95 (Rev.WRC-03)**, to review the Resolutions and Recommendations of previous conferences with a view to their possible revision, replacement or abrogation;

Background Information: In accordance with Resolution 95 (Rev. WRC-03), the WRC Resolutions and Recommendations should be reviewed at each conference.

resolves

1 to review the Resolutions and Recommendations of previous conferences that are related to the agenda of the Conference with a view to their possible revision, replacement or abrogation and to take appropriate action;

2 to review the Resolutions and Recommendations of previous conferences that are not related to any agenda item of the Conference with a view to:

- abrogating those Resolutions and Recommendations that have served their purpose or have become no longer necessary;
- reviewing the need for those Resolutions and Recommendations, or parts thereof, requesting ITU-R studies on which no progress has been made during the last two periods between conferences;
- updating and modifying Resolutions and Recommendations, or parts thereof that have become out of date, and to correct obvious omissions, inconsistencies, ambiguities or editorial errors and effect any necessary alignment;

The proposals in this document represent the review of Resolutions and Recommendations that can be suppressed, with appropriate reasons provided for each. In the case where an item is proposed for suppression as a consequential action to the proposal for a specific agenda item, those proposals are included in the proposal for the agenda item and not repeated here in the proposal under agenda item 4.

Proposal:

USA/ / 1 SUP

~~RESOLUTION 21 (REV.WRC-03)~~

~~**Implementation of changes in frequency allocations
between 5900 kHz and 19020 kHz**~~

Reasons: The date of implementation for this Resolution was 1 April 2007 and as a consequence this Resolution should be suppressed.

USA/ / 2 SUP

~~RESOLUTION 51 (REV.WRC-2000)~~

~~**Transitional arrangements relating to the advance publication
and coordination of satellite networks**~~

Reasons: Transitional period has expired.

USA/ / 3 SUP

~~RESOLUTION 56 (REV.WRC-03)~~

~~**Modification of the procedures and requirements
for advance publication**~~

Reasons: Radio Regulations edition of 2004 was effective after 1 January 2005, and therefore Res. 56 is no longer required.

USA/ / 4 SUP

~~RESOLUTION 57 (WRC-2000)^{*}~~

~~**Modification of bringing into use and administrative due diligence
requirements as a consequence of allocation
changes above 71 GHz**~~

Reasons: The bringing into use date of 3 June 2007 has been passed.

USA/ / 5 SUP

~~RESOLUTION 87 (WRC-03)~~

~~**Date of entry into force of certain provisions of the Radio Regulations
relating to the non-payment of cost recovery fees**~~

Reasons: No longer required since the BR requirement to give 60 day notice based on the 1 August 2003 implementation date on non-payment of cost recovery fees has passed.

USA/ / 6 SUP

~~RESOLUTION 88 (WRC-03)~~

~~**Rationalization of Articles 9 and 11 of the Radio Regulations**~~

Reasons: No studies submitted to WRC-07. Res. 88 is no longer needed.

* WRC-03 reviewed this Resolution and decided to suppress *resolves* 6.

USA/ / 7 SUP

~~RESOLUTION 96 (WRC-03)~~

~~**Provisional application of certain provisions of the Radio Regulations
as revised by WRC-03 and abrogation of certain
Resolutions and Recommendations**~~

Reasons: The date of implementation has passed and as a consequence this Resolution should be suppressed.

USA/ / 8 SUP

~~RESOLUTION 124 (REV. WRC-2000)~~

~~**Protection of the fixed service in the frequency band 8 025-8 400 MHz
sharing with geostationary satellite systems of the Earth
exploration satellite service (space-to-Earth)**~~

Reasons: Consequential suppression based on change in footnote 5.462A at WRC-03 to include values contained in Recommendation ITU-R F.1502.

USA/ / 9 MOD

5.462A In Regions 1 and 3 (except for Japan), in the band 8 025-8 400 MHz, the Earth exploration-satellite service using geostationary satellites shall not produce a power flux-density in excess of the following ~~provisional~~ values for angles of arrival (θ) under free-space propagation conditions, without the consent of the affected administration:

~~-174~~135 dB(W/m²) in a ~~41~~4 MHz band for $0^\circ \leq \theta < 5^\circ$

~~-174~~135 + 0.5 ($\theta - 5$) dB(W/m²) in a ~~41~~4 MHz band for $5^\circ \leq \theta < 25^\circ$

~~-164~~125 dB(W/m²) in a ~~41~~4 MHz band for $25^\circ \leq \theta \leq 90^\circ$

~~These values are subject to study under Resolution 124 (WRC-97)*. (WRC-97)~~

Reasons: Consequential Modification based on Suppression of Resolution 124 (Rev. WRC-2000) which resolved “to invite a future competent world radiocommunication conference to review No. **5.462A**, taking into account Recommendation ITU-R F.1502, and to take appropriate action.” The above modification to No. **5.462A** implements the results given in the *recommends* of Recommendation ITU-R F.1502.

* *Note by the Secretariat:* This Resolution was revised by WRC-2000.

USA/ / 10 SUP

~~RESOLUTION 136 (REV.WRC-03)~~

~~Frequency sharing in the range 37.5-50.2 GHz between geostationary
fixed-satellite service networks and non-geostationary
fixed-satellite service systems~~

Reasons: Consequential to proposal for suppression of WRC-10 future agenda item 2.5

USA/ / 11 SUP

~~RESOLUTION 144 (WRC-03)~~

~~Special requirements of geographically small or narrow countries
operating earth stations in the fixed-satellite service
in the band 13.75-14 GHz~~

Reasons: Work has been completed on this item in WP 4A.

USA/ / 12 SUP

~~RESOLUTION 405~~

~~Relating to the use of frequencies of the aeronautical mobile (R) service⁺~~

Reasons: This resolution has not been updated since WARC-79 and is accepted practice for aeronautical mobile (R) service and is no longer needed.

USA/ / 13 SUP

~~RESOLUTION 527 (WARC-92)~~

~~Terrestrial VHF digital sound broadcasting⁺~~

Reasons: Consequential suppression based on RRC-06.

USA/ / 14 SUP

~~RESOLUTION 528 (REV.WRC-03)~~

~~Introduction of the broadcasting-satellite service (sound) systems and
complementary terrestrial broadcasting in the bands allocated to
these services within the range 1-3 GHz~~

¹ WRC-97 made editorial amendments to this Resolution.

Reasons: Consequential suppression. This resolution was intended for implementation at WRC-97 and no additional studies have been performed.

USA/ / 15 SUP

~~RESOLUTION 728 (REV.WRC 2000)~~

~~**Studies relating to consideration of allocations in the broadcasting band 470-862 MHz to non-geostationary mobile-satellite services**~~

Reasons:

USA/ / 16 SUP

~~RESOLUTION 734 (REV.WRC 03)~~

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

Reasons: No studies have been carried out and no additional bands need to be identified for use by HAPS.

USA/ / 17 SUP

~~RECOMMENDATION 14 (MOB-87)~~

~~**Identification and location of special vessels, such as medical transports, by means of standard maritime radar transponders**~~

Reasons: This issue has not been progressed since MOB-87 and is no longer needed.

USA/ / 18 SUP

~~RECOMMENDATION 36 (WRC 97)~~

~~**Role of international monitoring in reducing apparent congestion in the use of orbit and spectrum resources**~~

Reasons: Such monitoring capabilities as are feasible have been implemented and this is no longer required.

USA/ / 19 SUP

~~RECOMMENDATION 520 (WARC-92)~~

~~**Elimination of HF broadcasting on frequencies outside the HF bands allocated to the broadcasting service**~~

Reasons: Article 12 coordination procedures limit HF broadcasting on frequencies outside the HF bands allocated to the broadcasting service as much as is feasible.

USA/ / 20 SUP

~~RECOMMENDATION 604 (REV.MOB-87)~~

~~**Future use and characteristics of emergency position-indicating radiobeacons (EPIRBs)^{1, 2}**~~

Reasons: This recommendation was provided to ICAO and IMO following MOB-87 and has not been updated since. Practical steps have already been taking in ICAO and IMO to address EPIRBs and this recommendation is no longer required.

USA/ / 21 SUP

~~RECOMMENDATION 606 (MOB-87)~~

~~**The possibility of reducing the band 4200-4400 MHz used by radio altimeters in the aeronautical radionavigation service¹**~~

Reasons: This recommendation has not been updated since MOB-87 and is no longer required.

USA/ / 22 SUP

~~RECOMMENDATION 707~~

~~**Relating to the use of the frequency band 32-33 GHz shared between the inter-satellite service and the radionavigation service¹**~~

¹——— For the purpose of this Recommendation, references to EPIRBs include references to satellite EPIRBs as appropriate.

²——— WRC-97 made editorial amendments to this Recommendation.

⁺——— WRC-97 made editorial amendments to this Recommendation.

⁺——— WRC-97 made editorial amendments to this Recommendation.

USA/ / 23 SUP

~~RECOMMENDATION 722 (WRC-03)~~

~~**Review of technical, operational and frequency issues
for terrestrial wireless interactive multimedia
applications on a global basis**~~

Reasons: The work on terrestrial wireless interactive multimedia is being accomplished under systems beyond IMT-2000 and a separate recommendation is no longer required. The issues addressed by the recommendation are already part of the work under WRC-07 Agenda Item 1.4.

USA/ / 24 SUP

~~RECOMMENDATION 723 (WRC-03)~~

~~**Spectrum usage and operational characteristics
of electronic news gathering systems**~~

Reasons: Appropriate reports/recommendations have been developed on electronic news gathering and this recommendation is no longer required.

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 7.2: to recommend to the Council items for inclusion in the agenda of the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution **802 (WRC-03)**;

Background Information: There is an increasing interest in the ability to accurately measure the currents and waves in coastal waters and to maintain awareness of ships for security purposes. Operational systems are currently limited in their ability to provide data meeting current accuracy and resolution requirements. As a result, the global oceanography community is planning for the implementation of coastal sea surface monitoring radar networks. The benefits to society for improved measurement of coastal currents and sea state include a better understanding of issues like coastal pollution, fisheries management, search and rescue, beach erosion, maritime navigation and sediment transport. Coastal radar measurements of the sea surface provide support to meteorological operations through the collection of sea state and dominant ocean wave data. In addition, HF coastal radar technology has applications in global maritime domain awareness by allowing the long range sensing of surface vessels. This will benefit the global safety and security of shipping and ports.

HF radar technology has been used on an experimental basis for more than 30 years to conduct measurements of coastal sea conditions. This experimental use has allowed the development of radar technology for such a purpose, and provided insight into the areas of the radio spectrum where coastal sea surface radar operation would be most suitable in terms of both compatibility with other users and effectiveness of the ocean measurements. The need for additional data to mitigate the effects of disasters including tsunamis, understand climate change, and ensure safe maritime travel has led to the consideration of operational use of coastal sea surface monitoring radar networks on a global basis.

The change from experimental status to an operational network supporting maritime safety and security, disaster management, meteorological and oceanographic operations creates the need for radiolocation allocations in which the systems can operate.

The fact that a number of these radars have operated on an experimental basis for more than 30 years is an indicator that radiolocation allocations for such an application may have little or no effect on incumbent users of the bands in 3 to 30 MHz range. Operators of the experimental radars have even studied ways to make the most efficient use of the spectrum by timing operations of a number of radars in a geographic area, using GPS signals, so that many radars can share a single frequency. The work ongoing within Working Party 8B directly supports the objectives of this proposed agenda item, making it possible for all necessary studies to be complete in time for the 2010 World Radiocommunication Conference.

Proposal:

USA/ / 1 **MOD**

RESOLUTION 803 (WRC-~~03~~07)

~~Preliminary~~ Agenda for the 2010 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 200~~3~~7),

USA/ /2 **ADD**

2.XC to consider the creation of radiolocation allocations in the frequency range 3 to 30 MHz, taking into account the results of ITU-R studies and recognizing the need to protect existing systems in the band, in accordance with Resolution **SCSS (WRC-07)**.

Reasons: Allocating sufficient radiolocation spectrum, on a primary basis, will provide adequate spectrum in which to conduct coastal sea surface radar operations on a global, operational basis.

USA/ /3 **ADD**

RESOLUTION SCSS (WRC-07)

Allocation of Radiolocation Spectrum in the Range 3 to 30 MHz to Support Coastal Sea Surface Radar Operations

The World Rdiocommunication Conference (Geneva, 2007),

considering

- a) that there is increasing interest, on a global basis, in the operation of coastal sea surface radars for measurement of coastal sea surface conditions to support environmental, oceanographic, meteorological, climatological, maritime and disaster mitigation operations;
- b) that HF coastal radar technology has applications in global maritime domain awareness by allowing the long range sensing of surface vessels. This will benefit the global safety and security of shipping and ports;
- c) that operation of coastal sea surface radars provides benefits to society through environmental protection, public health protection, improved meteorological operations, increased coastal and maritime safety, and enhancement of national economies;

d) that coastal sea surface radars have been operated on an experimental basis around the world, providing an understanding of spectrum needs and spectrum sharing considerations as well as an understanding of the benefits these systems provide;

e) that for global use of sea surface radar systems on an operational basis, there is a need for several segments of spectrum allocated to the radiolocation service in the 3 to 30 MHz range;

f) that between 3 and 30 MHz, no radiolocation allocations exist that are usable for global sea surface radar operations;

g) that performance and data requirements dictate the regions of spectrum that can be used by sea surface radar systems,

recognizing

1) that coastal sea surface radars have been operated on an experimental basis with few compatibility problems with existing allocated services;

2) that developers of the experimental systems have implemented techniques to make the most efficient use of the spectrum;

3) that ITU-R Working Party 8B has approved a Question on the study of the most appropriate frequency bands for operation of coastal sea surface radars considering both radar system requirements and the protection of existing services,

resolves

1) to invite the ITU-R to conduct sharing analyses between the radiolocation service and incumbent services in the bands suitable for operation of coastal sea surface radar systems;

2) to recommend that WRC-10 review the results of the studies under *resolves* 1 and consider the creation of radiolocation allocations in frequency ranges suitable for operation of coastal sea surface radars and where sharing studies show little or no impact to existing services,

invites administrations

to contribute to the sharing studies between the radiolocation service and possibly affected incumbent services,

invites the ITU-R

to complete the necessary studies, as a matter of urgency, prior to WRC-10,

instructs the Secretary-General

to bring this Resolution to the attention of the International Maritime Organization (IMO), World Meteorological Organization (WMO), and other international and regional organizations concerned.

Reasons: Provide guidance for the required studies and invites administration participation.

Document WAC/123(04.10.06:

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 7.2 to recommend to the Council items for inclusion in the agenda for the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution **802 (WRC-03)**;

Background Information: The 37-38 GHz band is allocated to the fixed, space research (space-to-Earth) and the mobile services on a primary basis, and the 37.5-38 GHz portion of this band is also allocated to the fixed satellite service (space-to-Earth) on a primary basis. In addition, No. **5.547 (MOD WRC-2000)** identifies the 37-40 GHz band as being available for high-density applications in the fixed service (HDFS).

Space research earth station receivers are being implemented in the 37-38 GHz band to support manned missions, for both near Earth and deep space distances, and use of the wider bandwidth available in the 37-38 GHz band will be required to support the increasing data requirements of planned manned missions.

Aeronautical mobile stations are capable of causing unacceptable levels of interference whenever they are within line-of-sight of a receiver in the space research and Earth exploration satellite services. Preliminary calculations within WP 7B have shown that aeronautical mobile transmissions could cause unacceptable levels of interference for significant periods of time. In particular, space research service Earth station receivers operating in the 37-38 GHz band have very low thresholds for which the ITU-R has already established both deep space and non-deep space protection criteria Recommendations. Exceeding the protection criteria of the space research service for an extended period of time could jeopardize the success of a manned or scientific space mission.

Presently, the Table of Frequency Allocations has already excluded aeronautical mobiles in several frequency bands in which the mobile service is co-allocated on a primary basis with the space research service downlinks. These include 2.29-2.3 GHz (space research deep space), 8.4-8.5 GHz (space research deep space and non-deep space), 22.21-22.5 GHz and 31.5-31.8 GHz (Earth exploration-satellite and space research passive). Based on current information, to date there are no aeronautical mobile systems operating in the 37-38 GHz band, nor are any planned. Considering the planned developments of manned space research service missions in the 37-38

GHz band, now might be the appropriate time to consider the exclusion of aeronautical mobile stations from this band as well.

Proposal:

USA/ /1 MOD

RESOLUTION 803 (WRC-~~03~~07)

~~Preliminary~~ Agenda for the 2010 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 200~~3~~7),

USA/ /2 ADD

2.XD to consider modifying the primary mobile service allocation in the 37-38 GHz band to exclude aeronautical mobile stations, or to take such other regulatory action as needed to protect the other primary services in the band from interference from the aeronautical mobile service, taking into account the results of ITU-R studies and Resolution USA02.

Reasons: Planned manned space research missions require access to the wider bandwidth available in this band. Aeronautical mobile stations are capable of causing unacceptable interference when they are within line-of-sight of a receiver operating in the space research service and such interference levels may exist for extended periods, so jeopardizing manned or scientific mission success. Excluding aeronautical mobile systems in the 37-38 GHz band may be necessary to protect the other primary services in the band from harmful interference.

USA/ /3 ADD

RESOLUTION USA02 (WRC-07)

Protection of Primary Services in the Band 37-38 GHz

The World Radiocommunication Conference (Geneva, 2007),

considering

- a) that the band 37-38 GHz is allocated on a primary basis to the fixed, mobile, and, space research (space-to-Earth) services, and the 37.5-38 GHz portion of this band is also allocated on a primary basis to the fixed-satellite service (space-to-Earth);
- b) that space research earth station receivers are being implemented in the 37-38 GHz band to support both manned and unmanned missions, for both near Earth and deep space distances, and use of the wider bandwidth available in the 37-38 GHz band is required to support the increased data requirements of planned manned and scientific missions;

c) that an aeronautical mobile station can cause unacceptable interference to receivers in the space research service whenever it is within line-of-sight of the receiver, as indicated in Recommendation ITU-R SA.1016;

d) that interference from the emissions of an aeronautical mobile station to a space research service earth station receiver may significantly exceed the permissible interference levels for extended periods of time, thus jeopardizing the success of a space mission;

recognizing

1) that the Table of Frequency Allocations already excludes the operation of aeronautical mobile stations in 2.29-2.3 GHz, 8.4-8.5 GHz, 22.21-22.5 GHz and 31.5-31.8 GHz where the mobile service is co-allocated on a primary basis with the space research service (space-to-Earth);

2) that RR. No. 5.547 indicates that the 37-38 GHz band is available for high density applications in the fixed service;

and noting

that aeronautical mobile service systems are currently not deployed nor planned in the 37-38 GHz band;

resolves

1 to invite ITU-R to conduct appropriate studies involving the aeronautical mobile service, the space research service, and the other affected services in the band 37-38 GHz to determine the compatibility of the aeronautical mobile service with these other services;

2 to recommend that WRC-10 review the results of the studies under *resolves* 1 and consider the inclusion of any appropriate compatibility criteria within the Radio Regulations or appropriate modifications to the Table of Frequency Allocations, based on proposals from administrations;

invites administrations

to contribute to the compatibility studies between the aeronautical mobile service and the other services in the 37-38 GHz band;

invites ITU-R

to complete the necessary studies, as a matter of urgency, taking into account the present use of the 37-38 GHz band, with a view to presenting, at the appropriate time, the technical information likely to be required as a basis for the work of the Conference.

Reasons: This resolution provides guidance on the ITU-R studies required in support of the proposed WRC-10 Agenda Item.

Document WAC/124(04.10.06:

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 7.2: to recommend to the Council items for inclusion in the agenda of the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution **802 (WRC-03)**;

Revision of Appendix 17 of the Radio Regulations to Accommodate Advanced Maritime HF Data Services

Background Information: Ships have traditionally made extensive use of the HF bands for long distance safety and general communications using Morse telegraphy, radiotelex and speech. The introduction of the Global Maritime Distress and Safety System (GMDSS) removed the dependence on Morse telegraphy and introduced a standard radiotelex system, known as Narrow Band Direct Printing (NBDP), as a carriage requirement in SOLAS chapter IV together with the option of using Inmarsat satellite services (which do not operate in the Polar Regions – Sea Area A4).

NBDP is a rather technically limited system and is little supported by coast stations around the world. At WRC-03, Appendix **17** was modified by the addition of a new footnote (p) which permitted initial testing and possible future introduction in certain bands of new digital technologies. These new digital technologies are becoming widely used. Studies performed in 2004 reported that a typical HF data communication system had grown threefold over the previous five years to 5,000 ships and that the kilobit usage per ship per day had also tripled over the same period. One such system is currently using three hundred - 3 kHz duplex channels, 75% of which are Appendix **17** frequencies and the remaining 25% which are outside Appendix **17** and are shared frequencies. These shared frequencies are found in the gap of Appendix **17** frequencies between 8 and 12 MHz.

Resolution **351 (WRC-03)** resolves that there should be interoperable technologies implemented under Appendix **17** and the ITU-R is preparing recommendations on technical standards with assistance of IMO. Resolution **351 (WRC-03)** also resolves that necessary changes be considered for Appendix **17** to accommodate new HF services which are replacing Morse telegraphy, NBDP and speech, according to IMO COMSAR 10/16 Annex 7, Report to the Maritime Safety Committee, dated 27 March 2006.

IMO COMSAR 9 has concluded that NBDP is little used for general communications; however, it is still required for shore transmission of Maritime Safety Information (MSI) in Sea Area A4; that there was a requirement for ships to transmit weather observations and position reports in Sea Area A4 for which NBDP could be used (although other technologies could also be possible) and that due to the more robust propagation of NBDP compared to voice, NBDP could not immediately be discontinued in Sea Area A4 as a distress follow up communication. COMSAR 9 therefore concluded that the frequencies for GMDSS that are designated within Appendix **15** concerning NBDP should be retained for the foreseeable future.

Proposal:

USA/ /1 MOD

RESOLUTION 803 (WRC-~~03~~07)

~~Preliminary~~ Agenda for the 2010 World Radiocommunication Conference

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

USA/ /2 ADD

2.XE to consider the revision of Appendix **17** of the Radio Regulations, within the existing spectrum limits of Appendix **17**, to accommodate advanced maritime HF data services in accordance with Resolution **351 (WRC-07)**.

Reasons: Meet international maritime shipping need for advanced globally interoperable HF data services to enhance maritime efficiency and safety. This need is of particular importance in Sea Area A4 (Polar Regions). The implementation of advanced HF data systems will meet the IMO requirement for a Narrowband Direct Printing (NBDP) replacement standard.

USA/ /3 MOD

RESOLUTION 351 (WRC-07)

Review of the frequency and channel arrangements in the MF and HF bands allocated to the maritime mobile service with a view to improving efficiency by considering the use of new digital technology by the maritime mobile service

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

considering

- a)* that the agenda of this Conference included consideration of the use of new digital technology in the maritime mobile service (MMS) in the MF and HF bands;
- b)* that the introduction of new digital technology in the MMS shall not disrupt the distress and safety communications in the MF and HF bands including those established by the International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended;
- c)* that changes made in Appendix **17** should not prejudice the future use of these frequencies or the capabilities of systems or new applications required for use by the MMS;
- d)* that the need to use new digital technologies in the MMS is growing rapidly;

- e) that the use of new digital technology on HF and MF frequencies allocated to the MMS will make it possible to better respond to the emerging demand for new services;
- f) that the HF bands allocated to the MMS for A1A Morse telegraphy and narrow-band direct-printing are significantly under-utilized at present;
- g) that the International Maritime Organization (IMO) supports replacing general communication narrow-band-direct-printing (NBDP) with new HF data exchange technology capable of working Forward Error Correction NBDP;
- h) that the IMO supports the frequencies of Appendix 15, concerning NBDP, be retained for the foreseeable future;
- gj) that the ITU Radiocommunication Sector is conducting ongoing studies to improve the efficient use of these bands,

noting

- a) that different digital technologies have already been developed and are in use in the MF and HF bands in several radiocommunication services;
- b) that new maritime HF data transfer protocols have already been developed to replace general narrow-band-direct-printing communications using Appendix 17 frequencies,

noting also

~~that this conference has modified Appendix 17 to permit the use of various channels or bands identified in the MF and HF bands for the introduction of new digital technology,~~

resolves

- 1 that, in order to provide full worldwide interoperability of equipment on ships, there should be one technology, or more than one interoperable worldwide technology, implemented under Appendix 17;
- 2 ~~that, as soon as the ITU-R studies are completed, a future competent conference WRC-10~~ should consider necessary changes to Appendix 17 to enable the use of new technology by the MMS,

invites ITU-R

to finalize studies currently ongoing:

- to identify future requirements of the MMS;
- to identify the technical characteristics necessary to facilitate use of digital systems in the MF and HF bands allocated to the MMS, taking into account any relevant ITU-R Recommendations;
- to identify the digital system(s) to be used in the MF/HF bands by the MMS;
- to identify any necessary modifications to the frequency table contained within Appendix 17;

- to propose a timetable for the introduction of new digital technologies and any consequential changes to Appendix 17;
- to recommend how digital technologies can be introduced while ensuring compliance with distress and safety requirements,

instructs the Secretary-General

to bring this Resolution to the attention of the International Maritime Organization, the International Civil Aviation Organization, the International Association of Marine Aids to Navigation and Lighthouse Authorities and the Comité International Radio-Maritime.

Document WAC/125(04.10.06:

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 7.2: to recommend to the Council items for inclusion in the agenda of the next WRC, and to give its views on the preliminary agenda for the subsequent conference and on possible agenda items for future conferences, taking into account Resolution **802 (WRC-03)**;

Enhanced Maritime Ship and Port Security

Background Information: There is a growing global requirement for application of wireless technology to enhanced security of ships and ports. The International Maritime Organization (IMO) recognized this need by its adoption of the Code on International Ship and Port Facility Security (ISPS), implemented as treaty by amendment to the Safety of Life at Sea (SOLAS) Convention, with the understanding “that the establishment of such measures will further enhance and positively contribute towards the international efforts to ensure maritime security and to prevent and suppress acts threatening the security in the maritime transport sector”, and invited contracting governments “to establish, as they may consider necessary, and to disseminate, as they deem fit, appropriate measures to enhance the security of ships and of port facilities”¹. The IMO Sub-Committee on Radiocommunications and Search and Rescue² (COMSAR) has actively supported terrestrial and satellite communication and data exchange systems to enhance maritime safety and port security. IMO’s Maritime Safety Committee (MSC

¹ IMO CONFERENCE OF CONTRACTING GOVERNMENTS TO THE INTERNATIONAL CONVENTION FOR THE SAFETY OF LIFE AT SEA, 1974, SOLAS/CONF.5/5/Rev.1, SOLAS chapter XI has been amended to include special measures for maritime security (XI-1 and XI-2)

²IMO COMSAR 10/16, Report to the Maritime Safety Committee, dated 27 March 2006.

81) approved new provisions in Chapter V (Safety of Navigation) of SOLAS for Long Range Identification and Tracking following the adoption of the ISPS Code which also introduced a requirement for a Ship Security Alert System (SSAS). COMSAR 10 noted that integration of satellite and terrestrial technologies enhance vessel and personal safety. As a result, additional channels may be required for Automatic Identification (AIS) purposes which, with the existing AIS channels, may require protection and also authorization to operate in the mobile satellite service.

There is a need for improved identification, tracking, and surveillance of international shipping and its cargo. Some administrations as well as the International Standards Organization (ISO) are studying the spectrum and standardization requirements for electronic seals used on freight containers to provide a more secure international transportation system.³

IMO has also addressed measures to enhance maritime security and has drafted performance standards and functional requirements and adopted SOLAS Convention carriage requirements for the Long-Range Identification and Tracking of Ships (LRIT) and the Ship Security Alerting System (SSAS), noting that the integration of satellite and terrestrial technologies enhance vessel and personal safety. The implementation of communication systems in the VHF/UHF, MF/HF, and Satellite spectrum will enable the LRIT and SSAS functions. Changes to the Radio Regulations, and in particular the spectrum allocation table, are expected to be necessary in order to ensure enhanced safety and security of ships and ports.

Proposal:

USA/ 1 MOD

RESOLUTION 803 (WRC-~~03~~07)

~~Preliminary~~ Agenda for the 2010 World Radiocommunication Conference

The World Radiocommunication Conference (Geneva, 2003~~7~~),

USA/ 2 ADD

2.XF to consider spectrum requirements and possible additional spectrum allocations to support enhanced ship and port security in accordance with Resolution **Enhanced Port and Ship Security (WRC-07)**.

Reasons: Meet international maritime shipping need for ship and cargo identification, tracking, and surveillance, and ship and port facility security.

³ International Organization for Standardization Technical Committee 104 – Freight Containers (ISO TC 104) letter to ITU-R dated 21 May, 2003.

RESOLUTION [Enhanced Port and Port Security] (WRC-07)

Consideration of spectrum allocations for use by maritime ship and port security systems

The World Radiocommunication Conference (Geneva, 2007),

considering

- a) that there is increasing need, on a global basis, to enhance ship and cargo identification, tracking, and surveillance as well as ship and port security;
- b) that IMO adoption of the International Ship and Port Facility Security (ISPS) Code, specifically Safety of Life at Sea (SOLAS) Convention Chapter XI-2 on special measures to enhance maritime security requires long range spectrum dependent systems;
- c) that the introduction of the shipborne universal Automatic Identification System (AIS) (ITU-R Rec. M.1371 series) offers potential enhancements to ship safety and port security;
- d) that studies within ITU-R WP 8B indicate that additional AIS channels in the mobile satellite service may be required to enhance global ship tracking capabilities;
- e) that advanced maritime HF data systems may be used to deliver security alerts and safety information to global regions not under satellite coverage,

noting

- a) that Resolution **342 (Rev. WRC-2000)** has considered new technologies to provide improved efficiency in the use of the bands in **Appendix 18** by stations in the maritime mobile service;
- b) that Resolution **351 (WRC-03)** has reviewed the frequencies and channelling arrangements in the MF and HF bands, of **Appendix 17**, with a view to improving efficiency by considering the use of new digital technology,

recognizing

- a) that there is a global requirement to enhance ship and port security via spectrum dependent systems;
- b) that existing and future technologies for Ship Security and Alerting Systems (SSAS) will require long range communications links and networks between mobile ships and shorebased stations;

c) that due to the importance of these radio links in ensuring the safe and secure operation of international shipping and commerce, they must be resilient to interference;

d) that studies will be required to provide a basis for considering regulatory changes, including additional allocations and recommendations, designed to accommodate spectrum requirements of ship and port security, consistent with the protection of incumbent services,

resolves

1 that WRC-10 consider the spectrum requirements for the operation of ship and port security systems;

2 that WRC-10 consider additional allocations to the maritime mobile and/or maritime mobile-satellite service to support the requirements identified in *resolves* 1, with a view towards using existing maritime mobile allocations where practicable, particularly where international interoperability is required,

further resolves to invite the ITU-R

1 to conduct, as a matter of urgency, studies to determine the spectrum requirements and potential frequency bands suitable to support ship safety and port security systems;

2 that the studies referred to in *further resolves* 1 should include sharing and compatibility studies with services already having allocations in potential spectrum for ship safety and port security systems,

further invites

all members of the Radiocommunications Sector, the International Maritime Organization (IMO) and the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) to contribute to these studies,

instructs the Secretary-General

to bring this Resolution to the attention of the International Maritime Organization (IMO), the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) and other international and regional organizations concerned.