



PUBLIC NOTICE

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

News Media Information 202 / 418-0500
Internet: <http://www.fcc.gov>
TTY: 1-888-835-5322

MAILED

54794

PROJECT FILE 0007 0976

OCT 17 2006

FCC mail room

DA 06-2013
October 12, 2006

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).

**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-0307)

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.

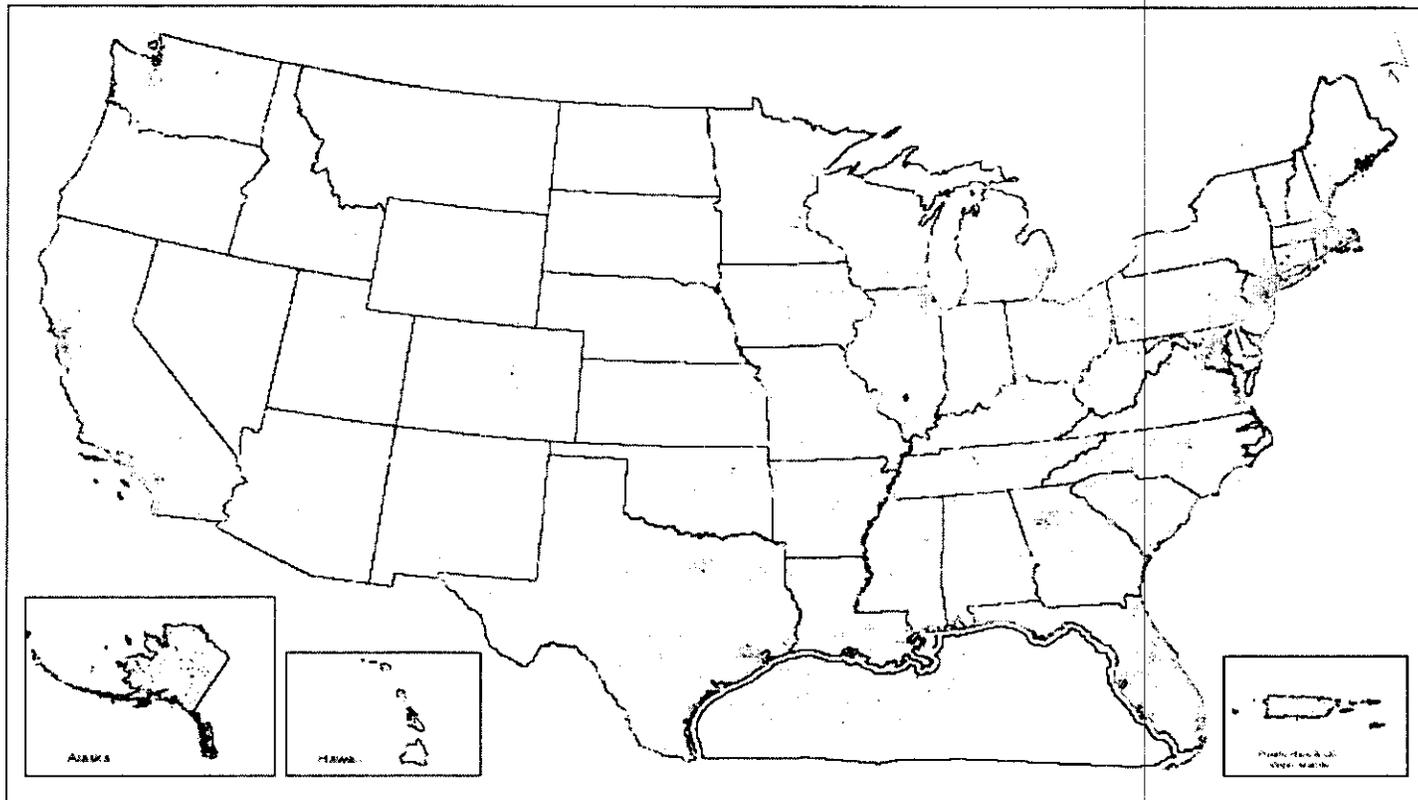
⁶ Attachment 1 contains a map showing all transmit-receive and receive only earth stations currently in the FCC database.

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 Commission
Office of Engineering And Technology

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
<u>5 250-5 450</u> <u>260</u>	FIXED MOBILE except aeronautical mobile	
<u>5 260-5-410</u>	FIXED MOBILE except aeronautical mobile <u>Amateur</u>	
<u>5 410-5 450</u>	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.