



PUBLIC NOTICE

Federal Communications Commission
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THE FCC'S ADVISORY COMMITTEE FOR THE 2003 WORLD RADIOCOMMUNICATION CONFERENCE APPROVES DRAFT PROPOSAL

On October 31, 2002, the World Radiocommunication Conference Advisory Committee (WRC-03 Advisory Committee) adopted a recommendation to the Commission on an issue that the 2003 World Radiocommunication Conference (WRC-03) will address. The WRC-03 Advisory Committee was established by the Commission in January 2001 to assist it in the development of proposals for WRC-03. To that end, the WRC-03 Advisory Committee has forwarded the recommendations it has developed since the beginning of 2001 to the Commission for consideration. We have attached to this Public Notice the WRC-03 Advisory Committee's recommendation, which is in the form of a recommended draft proposal to the WRC-03. We appreciate the substantial amount of work that the WRC-03 Advisory Committee has put into developing its recommendation. This Public Notice requests comments on this recommendation.

Based upon our initial review of the recommendation forwarded to the Commission, the International Bureau, in coordination with other Commission Bureaus and Offices, tentatively concludes that we can generally support the proposal recommended by the WRC-03 Advisory Committee. We seek comment on the recommendation that appears in the WRC-03 Advisory Committee document and on our tentative conclusion.

In addition, the National Telecommunications and Information Administration (NTIA) has submitted letters to the Commission containing draft proposals that have been developed by the Executive Branch Agencies. We also request comment on these draft proposals, which are attached hereto as well.

The FCC will consider the draft proposals and comments provided in its upcoming consultations with the U.S. Department of State and NTIA in the development of U.S. proposals to WRC-03. Once agreed by these agencies of the U.S. Government, proposals will be used by U.S. delegations at bilateral, regional and international meetings. The draft proposals attached to this Public Notice may evolve as we approach WRC-03 and during the course of interagency discussions. Therefore, they do not constitute the final national position on these issues.

The complete texts of these draft proposals are also available in the FCC's Reference Information Center, Room CY-A257, 445 12th Street, SW, Washington, DC 20554 and by accessing the FCC's WRC-03 world wide web site at <http://www.fcc.gov/wrc-03>. To comment on the proposals, please submit an original and one copy of your comments to the Office of the Secretary, Federal Communications Commission, 445 12th Street, SW, Washington, DC 20554 and provide a courtesy copy to Alex Roytblat, FCC WRC-03 Director, Room 6-A738. When possible, these comments should also be forwarded to the Commission via the Internet at: wrc03@fcc.gov. Comments should refer to specific proposals by document number. The deadline for comments on the draft proposals and NTIA letters is **December 2, 2002**.

I. Informal Working Group 1: IMT-2000 and Terrestrial Wireless Interactive Media

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Doc. WAC/163(31.10.02)

Resolution 228

WRC-03 Agenda Item 1.22: To consider progress of ITU-R studies concerning future development of IMT-2000 and systems beyond IMT-2000, in accordance with Resolution 228 (WRC-2000).

Background:

Resolution **228** (WRC-2000), which is related to Agenda Item 1.22, invites ITU-R to continue studies on overall objectives, applications and technical and operational implementation for the future development of IMT-2000 and systems beyond. ITU-R Working Party 8F has developed a Draft New Recommendation on the vision, framework and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000 [DNR-VIS], which is expected to be approved at the ITU-R Study Group 8 meeting in February 2003. Studies will continue to be carried out in WP 8F, and are scheduled to be completed before WRC-07. The results of these studies will indicate which requirements should be reviewed by WRC-07.

USA / / XXX
MOD

RESOLUTION 228 (REV.WRC-03)(WRC-2000)

**Studies to consider requirements and frequency related matters of related
to requirements for
the future development of IMT-2000
and systems beyond
IMT-2000 as defined by ITU-R**

The World Radiocommunication Conference (~~Istanbul, 2000~~Geneva, 2003)

considering

a) that International Mobile Telecommunications-2000 (IMT-2000) systems have started operation in-is scheduled to start service around the some countries in the year 2000, subject to market and other considerations;

b) ~~that Question ITU-R 229/8 addresses the future development of IMT-2000 and systems beyond IMT-2000;~~

c) ~~that the future development of IMT-2000 and Systems beyond IMT-2000 are being studied within ITU-R;~~

db)e) that the technical characteristics of IMT-2000 are specified in ITU-R and ITU-T Recommendations, including Recommendation ITU-R M.1457 which contains the detailed specifications of the radio interfaces of IMT-2000;

c) that Question ITU-R 229/8 addresses the future development of IMT-2000 and systems beyond IMT-2000;

d) that the ITU-R has adopted [Draft New] Recommendation ITU-R M.[DNR-VIS], which addresses the vision, framework, and overall objectives of the future development of IMT-2000 and systems beyond IMT-2000;

e) that [Draft New] Recommendation ITU-R M.[DNR-VIS] has identified the new elements of systems beyond IMT-2000 that are to be developed, and has stated that such systems will closely inter-work with the currently operating IMT-2000 and with future developments of IMT-2000;

f) that the technical characteristics of systems beyond IMT-2000 have not been specified in an ITU-R Recommendation, but remain under study within the ITU-R;

eg) that it was ~~nine~~nine years ahead of the IMT-2000 initial deployment that WARC-92 identified the spectrum for IMT-2000 in No. **5.388** and under the provisions of Resolution **212 (Rev. WARC-927)**;

f) ~~that the review of IMT-2000 spectrum requirements at WRC-2000 concentrated on the bands below 3 GHz;~~

gh) that telecommunication and information technologies evolve rapidly;

ei) that, as it is with many other services and systems, adequate spectrum availability is a prerequisite for the technological and economic success of the future development of IMT-2000 and systems beyond IMT-2000;

jj)f) that the demand for the provision of multimedia applications such as high-speed data, IP-packet and video by mobile communication systems will continue to increase;

~~kk)g)~~ that the future development of IMT-2000 and systems beyond IMT-2000 is foreseen to address the need for higher data rates than those of currently deployed~~planned for~~ IMT-2000 systems;

~~ll)h)~~ that, for global operation and economy of scale, it is desirable to agree on common technical, operational and spectrum-related parameters of systems;

~~mm)i)~~ that it is therefore timely to study technical, spectrum and regulatory issues pertinent to the future development of IMT-2000 and systems beyond IMT-2000;

~~nn)~~ that Question ITU-R 77-4/8 addresses adaptation of mobile radiocommunications technology to the needs of developing countries, including the optimum arrangements and technical characteristics needed to use mobile technology/equipment in urban, rural or remote areas;

o) that all existing services, some of which are also evolving to permit the use of higher data rates and throughput within their allocations in order to meet increasing user demands and requirements, should be taken into account in any studies evaluating potential spectrum for systems beyond IMT-2000.

noting

a) that the IMT-2000 radio interfaces as defined in Recommendation ITU-R M.1457 are expected to evolve within the framework of the ITU-R beyond those initially specified, to provide enhanced services and services beyond those envisaged in the initial implementation;

b) that the use of the spectrum identified for IMT-2000 does not preclude the use of these bands by any station in the services to which they are allocated and does not establish priority in the Radio Regulations.

~~b) that the ITU-R has identified the new elements of systems beyond IMT-2000 to be developed, which will closely inter-work with the currently operating IMT-2000 and the enhanced IMT-2000.~~

recognizing

a) the time necessary to develop and agree on the technical, operational, spectrum and regulatory issues associated with the continuing enhancement of mobile services;

b) that service functionalities in fixed and mobile networks are increasingly converging;

c) that future mobile systems will ~~require the adoption of~~employ more spectrum-efficient techniques than those used by current mobile systems;

d) the needs of developing countries for the ~~cost-effective and rapid~~ implementation of advanced mobile communication technologies and the propagation characteristics of lower frequency bands that result in larger cell sizes.;

e) that the review of IMT-2000 spectrum requirements at WRC-2000 concentrated on the bands below 3 GHz and that these bands remain technically desirable for both IMT-2000 and systems beyond IMT-2000;

f) that, to the extent that they may not be the same, it would be preferable for the location in the radiofrequency spectrum of bands that support systems beyond IMT-2000 to be reasonably close to the location of bands already identified for IMT-2000 and predecessor services.

g) that many countries have not yet made available spectrum already identified for IMT-2000, due to various reasons, including the use of these bands by existing services;

h) that studies may show that the identification of certain bands for use by the future development of IMT-2000 and systems beyond IMT-2000 may be precluded by the use of these bands by existing services.

resolves

1 to invite ITU-R to further study, and develop Recommendations on, continue studies on overall objectives, applications and technical and operational issues relating to implementation, as necessary, for the future development of IMT-2000 and systems beyond IMT-2000;

2 to invite ITU-R to complete studies, in time for WRC-05/06/07, on study the spectrum requirements and potential frequency ranges suitable for the future development of IMT-2000 and systems beyond IMT-2000, taking into consideration the bands currently identified for IMT-2000 and the evolution of IMT-2000 and pre-IMT-2000 systems therein through advances in technology and in what time frame such spectrum would be needed;

3 that, taking into account the *recognizings* above, the studies in *resolves 1* and *2*:

a) examine the compatibility of the future development of IMT-2000 and systems beyond IMT-2000 with existing services, including their future development;

b) indicate the extent to which the existing services and their future development would be affected and how they can be protected from interference from the future development of IMT-2000 and systems beyond IMT-2000.

34 that WRC-07 consider, as a matter of urgency, the results of ITU-R studies and review the requirements and frequency related matters related to for the future development of IMT-2000 and systems beyond IMT-2000, be reviewed by WRC-05/06, taking into consideration the results of ITU-R studies presented to WRC-03 in accordance with this Resolution;

5. that the studies contemplated in *resolves 1-3* above take into consideration the needs of developing countries.

urges administrations

to participate actively in the studies by submitting contributions to ITU-R.

Reasons: Appropriately modify Resolution 228 (WRC-2000) for further studies to consider detailed requirements and ensure that the interests of existing services are taken into consideration in these studies, and to enable WRC-07 to review these requirements any necessary action to be taken by WRC-06.

II. Draft Proposals Approved by the National Telecommunications and Information Administration (NTIA)

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Doc. WAC/156(31.10.02)

Agenda Item 1.10.1: to consider the results of studies, and take necessary actions, relating to exhaustion of the maritime mobile service identity numbering resource (Resolution **344 (WRC-97)**);

Background Information: This agenda item addresses the potential of an impending exhaustion of the Maritime Mobile Service Identities (MMSI) numbering resource. Resolution **344** instructs the Radiocommunication Bureau to monitor the status of the MMSI resource and report the status to each WRC.

A second issue that can affect the MMSI numbering resource is potential assignment to aircraft stations. Aircraft used for SAR purposes may have a need to establish aircraft-to-ship communications using DSC-equipped radios or using universal shipborne automatic identification systems (AIS). This AIS communications requirement is addressed in ITU-R M 1371-1, which includes a message to be used for SAR aircraft position report and requires the use of an MMSI.

Proposal:

USA/ / 1 **MOD**

19.30 2) As the need arises, ship stations and ship earth stations to which the provisions of Chapter **IX** apply, and coast stations, ~~or~~ coast earth stations or aeronautical stations capable of communicating with such ship stations, shall have assigned to them maritime mobile service identities in accordance with Section VI of this Article.

Reasons: Permits MMSIs to be assigned to aeronautical stations that require communications to ship stations.

USA/ / 2 **MOD**

19.99 § 39 When a station⁵ in the maritime mobile service, ~~or~~ the maritime mobile-satellite service, or the aeronautical mobile service is required to use maritime mobile service identities, the responsible administration shall assign the identity to the station in accordance with the provisions described in Nos. **19.100** to **19.126**; in so doing, it should take into account the relevant ITU-R and ITU-T Recommendations. In accordance with No. **20.16**, administrations shall notify the Bureau immediately when assigning maritime mobile service identities

Reasons: Permits MMSIs to be assigned to aeronautical stations that require communications to ship stations.

USA/ / 3 MOD

19.100 § 40 1) Maritime mobile service identities are formed of a series of nine digits which are transmitted over the radio path in order to uniquely identify ship stations, ship earth stations, coast stations, coast earth stations, aeronautical stations, and group calls.

Reasons: Consequential change to **19.30**.

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Doc. WAC/160(31.10.02)

Agenda Item 1.15c: to review the results of studies concerning the radionavigation-satellite service in accordance with Resolutions **604 (WRC-2000)**, **605 (WRC-2000)** and **606 (WRC-2000)**;

Background Information: WRC-2000 introduced a primary allocation in the 5 010-5 030 MHz band to the radionavigation-satellite service (RNSS) (space-to-Earth) (space-to-space), with a provisional aggregate pfd limit of $-171 \text{ dB(W/m}^2\text{)}$ in the 4 990-5 000 MHz band at any radio astronomy observatory site, not to be exceeded for more than 2% of time, to protect from harmful interference radio astronomy stations operating in this band. In order not to cause harmful interference to the microwave landing system operating above 5 030 MHz, the aggregate pfd limit of space stations operating in the radionavigation-satellite service in the 5 030 - 5 150 MHz band was also limited to $-124.5 \text{ dB(W/m}^2\text{)}$, in any 150 kHz band (**RR 5.443B**).

Resolution **604 (WRC-2000)**, dealing with compatibility between the radio astronomy service (RAS) and the RNSS at 5 GHz, invited the ITU-R to conduct, in time for consideration by WRC-03, the appropriate technical, operational and regulatory studies to review the provisional pfd limit in the 4 990-5 000 MHz band concerning the operation of space stations, including the development of a methodology for calculating the aggregate power levels in order to ensure that the RNSS (space-to-Earth) in the band 5 010-5 030 MHz will not cause interference detrimental to the RAS in the band 4 990-5 000 MHz. Based on the results of the studies, Res. **604 (WRC-2000)** invited WRC-03 to review the provisional pfd limit on the RNSS in the band 4 990-5 000 MHz for out-of-band space-to-Earth emissions of the RNSS operating in the band 5 010-5 030 MHz. The provisions of Resolution **604 (WRC-2000)** currently apply to the band.

Studies conducted within the ITU-R confirmed the adequacy of the provisional aggregate pfd limit to protect radio astronomy stations in the 4 990 - 5 000 MHz band from unwanted emissions of GSO RNSS satellites that might operate in the 5 010 - 5 030 MHz band. For NGSO RNSS systems, a methodology to calculate the detrimental interference threshold adequate to protect radio astronomy sites was developed within the ITU-R, and it is contained in DNR ITU-R M.[Non-GSO/RA]. The proposal includes some consequential changes in Appendix 4, annexes 2A and 2B, as well as the deletion of the parameter C.13 "Class of observations" that is no longer useful.

Proposal:

USA/ / 1 **MOD**

5.443B *Additional allocation:* The band 5 010-5 030 MHz is also allocated to the radionavigation-satellite service (space-to-Earth) (space-to-space) on a primary basis. In order not to cause harmful interference to the microwave landing system operating above 5 030 MHz, the aggregate power flux-density produced at the Earth's surface in the band 5 030-5 150 MHz by all the space stations within any radionavigation-satellite service system (space-to-Earth) operating in the band 5 010-5 030 MHz shall not exceed $-124.5 \text{ dB(W/m}^2\text{)}$ in a 150 kHz band. In order to protect ~~not to cause harmful interference to~~ the radio astronomy service in the band 4 990-5 000 MHz, the aggregate power flux density produced in the 4 990-5 000 MHz band by all space stations within any GSO

radionavigation-satellite service (space-to-Earth) system operating in the 5 010-5 030 MHz band shall not exceed ~~the provisional value of~~ $-171 \text{ dB(W/m}^2\text{)}$ in a 10 MHz band at any radio astronomy observatory site for more than 2% of the time, and the aggregate equivalent power flux density (epfd) produced in the 4 990-5 000 MHz band by all space stations within any non-GSO RNSS (space-to-Earth) system operating in the 5 010-5 030 MHz band shall not exceed $-245 \text{ dB(W/m}^2\text{)}$ in a 10 MHz band, at any radio astronomy observatory site for more than 2% of the time. ~~For the use of this band, Resolution 604 (WRC-2003-2000) applies (WRC-2000).~~

Reasons: On the basis of its studies under Resolution **604 (WRC-2000)**, the ITU-R has confirmed the provisional pfd value in **5.443B** for the protection of the RAS in the 4 990 - 5 000 MHz band, from GSO RNSS systems operating in the 5 010 - 5 030 MHz range. For non-GSO RNSS systems operating in the same range, the ITU-R developed the epfd concept, a methodology to apply it to compute the epfd level at the sites of radio astronomy stations (Recommendation ITU-R M.[non-GSO/RAS], and an epfd protection level for the RAS in the 4 990- 5 000 MHz band. Footnote **5.443B**, as modified, allows for compatible operation of the RNSS in the 5 010-5 030 MHz band and the RAS in the 4 990-5 000 MHz band.

NOTE: A separate proposal will be needed to include the value of θ_{min} , the lowest angle above the horizon at which a particular radio telescope can observe, among the parameters listed for radio astronomy stations in Appendix 4 of the RR.

USA/ 12 MOD

RESOLUTION 604 (WRC-200003)

~~Studies on e~~ Compatibility between the radionavigation-satellite service (space-to-Earth) operating in the frequency band 5 010-5 030 MHz and the radio astronomy service operating in the band 4 990-5 000 MHz

The World Radiocommunication Conference (~~Istanbul, 2000~~ Geneva, 2003),

considering

~~a) that new radiocommunication services are developing, many of which require satellite transmitters, and need to be allocated sufficient spectrum;~~

~~b) a) that research in radio astronomy depends critically upon the ability to make observations at the extreme limits of sensitivity and/or precision;~~

~~e) b) that transmissions from space stations of the radionavigation-satellite service (RNSS) in the frequency band 5 010-5 030 MHz near the radio astronomy service operating in the band 4 990- 5 000 MHz may cause interference harmful to the radio astronomy service (RAS);~~

~~c) that Recommendation ITU-R RA.769-1 recommends, *inter alia*, that all practicable steps be taken to reduce to the absolute minimum all unwanted emissions falling into RAS bands, particularly emissions from aircraft, spacecraft and balloons;~~

~~e d)~~ that protection requirements for RAS are explained and interference threshold values detailed in the Annex to Recommendation ITU-R RA.769-1;

~~f e)~~ that different coupling mechanisms apply to interfering emissions from terrestrial transmitters or from transmitters on board GSO or non-GSO satellites;

~~g)~~ — that this conference has revised Recommendation ~~66~~, which calls for study of those frequency bands and instances where, for technical or operational reasons, out-of-band emission limits may be required in order to protect safety services and passive services such as radio astronomy, and the impact on all concerned services of implementing or not implementing such limits;

~~h f)~~ that administrations may require criteria to protect RAS from interference detrimental to radio astronomy observations caused by space-to-Earth transmissions of space stations,

noting

~~a)~~ — that this conference has adopted No. **5.443B** specifying a pfd limit in the 4 990 - 5 000 MHz band for out-of-band space-to-Earth emissions of GSO RNSS systems, and an ~~provisional~~ *epfd* limit in the ~~same band 4 990-5 000 MHz~~ for out-of-band space-to-Earth emissions of RNSS systems operating in the band 5 010-5 030 MHz;

~~b)~~ — that the general problem of protection of radio astronomy and passive services is under study in ITU-R, *inter alia* in response to Recommendation ~~66~~;

resolves

~~1.~~ — to invite WRC-03 to review the provisional pfd limit on the RNSS in the band 4 990-5 000 MHz for out-of-band space-to-Earth emissions of the RNSS operating in the band 5 010-5 030 MHz;

~~2 1~~ that the limits indicated in No. **5.443B** shall be applied ~~provisionally~~ for RNSS systems operating in the 5 010 - 5 030 MHz band for which complete notification information has been received by the Bureau after 2 June 2000;

~~2~~ that, for non-GSO RNSS systems, the methodology and parameters specified in Recommendation ITU-R M.[non-GSO/RAS] shall be used for the calculation of the aggregate *epfd* levels at the sites of radio astronomy stations

~~3~~ that, as of 3 June 2000, when notifying frequency assignments to a satellite network in the radionavigation-satellite service in the bands 5 010-5 030 MHz, the responsible administration shall provide the calculated values of the aggregate power flux-density in the bands above 5 030 MHz and in the band 4 990-5 000 MHz, as defined in No. **5.443B**, in addition to the relevant characteristics listed in Appendix 4.

urges administrations

~~1~~ — to participate actively in the aforementioned studies by submitting contributions to ITU-R;

~~2 — to ensure that, to the extent feasible, systems designed to operate in the RNSS frequency band 5 010-5 030 MHz incorporate interference avoidance techniques, such as filtering,~~

instructs the Radiocommunication Bureau

as of the end of WRC-03, to review and, if appropriate, revise any finding previously made in respect of the compliance with the out-of-band emission limits contained in No. **5.443B** of an RNSS (space-to-Earth) system for which notification information has been received before the end of WRC-03; in accordance with resolves 1 and 2 above, this review shall be based on the values, as revised, if appropriate, by WRC-03.

Reasons: The modified footnote **5.443B** allows for compatible operation of the RNSS in the 5 010-5 030 MHz band and the RAS in the 4 990-5 000 MHz band. The modified Resolution **604 (WRC-2003)** provides guidance to Administrations for the appropriate methodology to be used in computing the epfd levels of non-GSO RNSS systems, and instructs the Bureau to check that RNSS systems advance published between the end of WRC-2000 and WRC-03 are in conformance with the pfd and epfd levels in **5.443B**.

APPENDIX 4 (WRC-2000)

Consolidated list and tables of characteristics for use in the application of the procedures of Chapter III

ANNEX 2A

Characteristics of satellite networks' earth stations or radio astronomy stations² (WRC-2000)

A General characteristics to be provided for the satellite network, earth station or radio astronomy station (WRC-2000)

A.17 Compliance with aggregate power flux-density limits

USA/ /3 **NOC**

A.17 Compliance with aggregate power flux-density limits

- a) For non-geostationary-satellite systems operating in the radionavigation-satellite service in the band 5 010-5 030 MHz, the aggregate power flux-density produced at the Earth's surface in the band 5 030-5 150 MHz in a 150 kHz bandwidth and in the band 4 990-5 000 MHz in a 10 MHz bandwidth, as defined in No. **5.443B**.

Reasons: WRC-03 confirmed the provisional pfd limit in the 4 990- 5 000 MHz band and established an epfd limit for GSO RNSS systems and non-GSO RNSS satellite systems, respectively, operating in the 5 010-5 030 MHz band. These limits continue to be found in No. **5.443B**.

² See footnote 1.

B Characteristics to be provided for each satellite antenna beam or each earth station or radio astronomy station antenna (WRC-2000)

USA/ /4 MOD

B.6 Radio astronomy station antenna characteristics

The antenna type and dimensions, effective area and angular coverage (in azimuth and elevation), including the minimum angle of elevation above the horizon at which observations are conducted (θ_{min}). For the purposes of epfd calculations, $\theta_{min} = 5^\circ$ shall be used in the absence of an entry in the Annex 2B Table.

Reasons: Calculation of epfd threshold levels, referred to in No. **5.443B** and elsewhere in the radio regulations require knowledge of this parameter.

C Characteristics to be provided for each group of frequency assignments for a satellite antenna beam or an earth station or radio astronomy station antenna

USA/ /5 MOD

~~**C.13 Class of observations**~~

~~The class of observations to be taken on the frequency band shown in § C.3 b). Class A observations are those in which the sensitivity of the equipment is not a primary factor. Class B observations are those of such a nature that they can be made only with advanced low noise receivers using the best techniques.~~

~~C.14 Not used. (SUP - WRC-2000)~~

~~C.15 Description of the group(s) required in the case of non-simultaneous emissions (WRC-2000)~~

Reasons: This classification is no longer useful.

ANNEX 2B

Table of characteristics to be submitted for space and radio astronomy services

C – Characteristics to be provided for each group of frequency assignments for a satellite antenna beam or an earth station antenna (*end*) (WRC-2000)

USA/ 16 MOD

Items in Appendix	Advance publication of a geostationary-satellite network	Advance publication of a non-geostationary-satellite network subject to coordination under Section II of Article 9	Advance publication of a non-geostationary-satellite network not subject to coordination under Section II of Article 9	Notification or coordination of a geostationary-satellite network (including Appendix 30B)	Notification or coordination of a non-geostationary-satellite network	Notification or coordination of an earth station	Notice for space stations in the broadcasting-satellite service under Appendix 30	Notice for feeder-link stations under Appendix 30A	Notice for stations in the fixed-satellite service under Appendix 30B	Items in Appendix	Radio astronomy
C.9.b.5							X	X		C.9.b.5	
C.9.b.6							X	X		C.9.b.6	
C.9.b.7							X	X		C.9.b.7	
C.9.b.8							X	X		C.9.b.8	
C.9.b.9							X	X		C.9.b.9	
C.9.b.10							X	X		C.9.b.10	
C.9.c			X		X					C.9.c	
C.9.d			X		X		X	X		C.9.d	
C.10.a			X	X	X					C.10.a	
C.10.b			X	X	X			X		C.10.b	
C.10.c.1			X	X	X			X	X	C.10.c.1	
C.10.c.2			X	X	X			X	X	C.10.c.2	
C.10.c.3			O	X	X			X	X	C.10.c.3	
C.10.c.4			X	X	X			X	X	C.10.c.4	
C.10.c.5			X	X	X				X	C.10.c.5	
C.10.c.6								X		C.10.c.6	
C.11.a	X ¹⁰	X ¹⁰	X	X	X					C.11.a	
C.11.b								X		C.11.b	
C.11.c							X		X	C.11.c	
C.11.d					X					C.11.d	
C.12									X	C.12	
C.13										C.13	✗
C.15							X	X		C.15	

Reasons: Consequential change due to the deletion of C.13.

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Doc. WAC/155(31.10.02)

Agenda Item 1.38: to consider provision of up to 6 MHz of frequency spectrum to the Earth exploration-satellite service (active) in the frequency band 420-470 MHz, in accordance with Resolution 727 (Rev.WRC-2000);

Background Information: A similar agenda item was debated at WRC-97 resulting in a decision not to adopt proposed allocations for the Earth exploration-satellite service in the 420-470 MHz band. The Earth sensing community has identified that the need for such an allocation, at a radio spectrum wavelength of approximately one meter, is important because experiments have shown good correlation of backscatter radiation with biomass and soil moisture, which are parameters needed for forest monitoring. The need for such forest monitoring was emphasized at the United Nations Conference on Economic Development (UNCED) (Buenos Aires - 1992). Subsequent to UNCED 1992, studies have identified a minimum bandwidth requirement of 6 MHz to satisfy mission objectives.

The bands 420-430 and 440-450 MHz are allocated to the radiolocation service on a primary basis in several countries, the band 430-440 MHz is allocated to the radiolocation service on a primary basis worldwide and are used for telemetry, telecommand and long-range surveillance by land, ship and airborne stations for early missile warning, detection of low-observable targets, and the tracking of all objects in Earth orbit. Studies to date have shown the potential for interference between EESS (active) sensors and ground-based radars when in the line of sight of the ground-based radars. Preliminary studies have also shown that there is a potential for interference from EESS (active) to airborne radars operating worldwide.

The amateur community is concerned with the possibility of harmful interference to amateur operations in the 430-440 MHz portion of the band. There are currently 16 amateur satellites in orbit that use frequencies within the band 435-438 MHz for both up and down links internationally. The band 430 – 440 MHz is allocated to the amateur service on a co-primary basis in Region 1, and on a primary basis in eight Region 2 countries: Argentina, Colombia, Costa Rica, Cuba, Guyana, Honduras, Panama and Venezuela (No. 5.278). Elsewhere in Region 2 and in Region 3, the amateur service allocation is secondary. Additionally, the bands 420 – 430 MHz and 440 – 450 MHz are allocated to the amateur service on a secondary basis in Australia, the United States, Jamaica and the Philippines (No.5.270). Studies to date have shown the potential for interference between EESS (active) sensors, and amateur stations when the SAR is in the line of sight of amateur stations, and specifically in the band 435-438 MHz, which would be the worst-case scenario for the amateurs.

Proposal:

Article 5

Frequency Allocations

420-450 MHz

		Allocation to services		
		Region 1	Region 2	Region 3
USA/ / 1 <u>NOC</u>	420-430	FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271		
	430-440	AMATEUR RADIOLOCATION 5.138 5.271 5.272 5.273 5.274 5.275 5.276 5.277 5.280 5.281 5.282 5.283	430-440 RADIOLOCATION Amateur 5.271 5.276 5.277 5.278 5.279 5.281 5.282	
USA/ / 3 <u>NOC</u>	440-450	FIXED MOBILE except aeronautical mobile Radiolocation 5.269 5.270 5.271 5.284 5.285 5.286		

Reasons: ITU-R studies have not shown compatibility between EES and radiolocation, nor between EES and the amateur service in the bands.

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Doc. WAC/160(31.10.02)

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 **801 (WRC-2000)**;

Background Information: WRC-03 is competent to make all the decisions that are necessary for allocations within the 4 -10 MHz spectral region through its agenda items 1.23 and 1.36 and, as noted above. All the data and analysis have been done, and will be thoroughly documented in the final CPM report. A proposal to eliminate the preliminary agenda item 2.5 from the final WRC-06 agenda will help to support the general feeling that something should be done to minimize unnecessary workloads at WRCs. Furthermore, WRC-92 reallocated 200 kHz in the 4-10 MHz range to the broadcast service from the fixed service. This reallocation will take affect after 1 April 2007. Any further consideration of reallocation in the 2006 time frame for the broadcast service will necessarily take into account the need for reaccomodation to the fixed service users as a result of WRC-92, and will most likely be viewed unfavorably.

Proposal:

USA/ /1 **MOD**

RESOLUTION 801 (WRC-2003)

Agenda for the 2005/2006 World Radiocommunication Conference

The World Radiocommunication Conference (~~Istanbul, 2000~~), (Geneva, 2003).

Reasons: Editorial

resolves to give the view

USA/ /2 **SUP**

2.5 to review the allocations to services in the HF bands, taking account of the impact of new modulation and adaptive control techniques and any recommendations by WRC-03 on the adequacy of the frequency allocations for HF broadcasting and the fixed and mobile services (excluding those bands whose allotment plans are in Appendices 25, 26 and 27), from about 4 MHz to 10 MHz;

Reasons: WRC-03 is competent to make all the decisions that are necessary for allocations within the 4 -10 MHz spectral region through its agenda items 1.23 and 1.36 and, as noted above. All the data and analysis have been done, and will be thoroughly documented in the final CPM report.

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Doc. WAC/157(31.10.02)

NTIA revised the background section of this proposal that originally appeared in Doc. WAC/138(05.09.02)

Proposal for Resolution 801, Agenda Item 3.1

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 **801 (WRC-2000)**;

Background Information: Working Party 8B considered several studies on the feasibility of sharing between the mobile service (IMT-2000) and radar systems operated in the band 2 700-2 900 MHz. Those studies indicate sharing of the band 2 700-2 900 MHz between the mobile service, IMT-2000 and aeronautical radionavigation and meteorological radars is not feasible. Working Party 8B proposed that the draft CPM text for Chapter 7, Future Work Program, reflects, “WRC-03 may wish to consider deletion of this agenda item from the WRC-05/06 agenda” (8B/TEMP/103-E, 6 May 2002).

The band 2 700-2 900 MHz is used worldwide to support airport surveillance radars in the aeronautical radionavigation service, which is a safety service and “requires special measures to ensure their freedom from harmful interference” in accordance with Article **4.10** of the Radio Regulations.

Footnote **5.423** allows meteorological radars to operate in the band with equality to the ARNS. The primary ~~weather~~ meteorological radar system used for flight planning activities operates in the band 2 700-2 900 MHz and is often collocated at airports worldwide, to provide accurate weather conditions for aircraft. Also, these radars are used to detect the formation and movement ~~observe the presence and calculate the speed and direction of motion~~ of severe weather elements such as tornadoes, ~~and~~ violent thunderstorms and wind shear. These radars provide quantitative area precipitation measurements important to hydrologic forecasting of potential flooding. The severe weather and motion detection capabilities offered by weather radars contribute towards an increase in the accuracy and timeliness of warning services critical to the protection of life and property.

Proposal:

USA/ / 1 SUP

~~3.1 — to consider results of ITU-R studies on the feasibility of sharing in the band 2 700-2 900 MHz between the aeronautical radionavigation service, meteorological radars and the mobile service, and to take appropriate action on this subject.~~

Reasons: WP8B has already determined that sharing is not feasible in this band; therefore it is not necessary to continue this agenda item.

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Doc. WAC/159(31.10.02)

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 **801 (WRC-2000)**;

Background Information: The frequency band 5 000-5 250 MHz is allocated internationally to the aeronautical radionavigation service (ARNS) on a primary basis. The fixed-satellite service (FSS) (Earth-to-space) is allocated on a primary basis in the band 5 150-5 250 MHz for the use of feeder links for non-geostationary satellite systems of the mobile-satellite service (**5.447A**), as well as in band 5 091-5 150 MHz pursuant to **5.444A**. The aviation community is exploring new applications in the band 5 091-5 150 MHz.

Allocation for new civil aviation systems:

Two current aviation safety objectives are to provide more information to the pilot/cockpit, and to reduce runway incursions. In the bands 5 091-5 150 MHz, a new system called the airport network and location equipment (ANLE) would address both of these objectives. In its most basic form, ANLE is a high integrity grid of multilateration sensors, integrated with a wireless network that would provide aeronautical radionavigation and safety communications for the airport area and would provide the cockpit with access to appropriate information via a high-bandwidth connection. Those same transmissions would be used to derive three-dimensional position of the mobile user. This derived position that could then be broadcast via the ANLE data link to provide all users with situational awareness on the airport surface. Adding simple transmitters to other surface-movement vehicles would allow for the development of a high-fidelity complete picture of the airport surface environment. A new provision in this band would accommodate the systems such as ANLE. The International Air Transport Association (IATA) is considering a similar system called Airport Vehicle Position System (AVPS), which would also operate in the band 5 091-5 150 MHz. The AVPS is intended to monitor surface movement, reduce runway incursion and increase airport security.

New aeronautical-fixed service:

Currently there is no aeronautical band to support applications that transmit critical aeronautical data from systems such as wind shear radars, remote maintenance monitoring systems, runway lighting, low-level wind shear alert systems, automated weather surface observing systems, or automatic weather observation systems. Data from these systems are transmitted in other bands that are allocated to the fixed and mobile services, which are also used by others for non-aviation uses. Redundant paths are used to ensure integrity and reliability requirements are met. In most cases, this data is flight critical, thus the applications should be accommodated in an appropriate aeronautical allocation. The increasing trend of flight operations will result in shortage of assignments in these bands and little protection from other services. An allocation for the aeronautical fixed service in the band 5 091-5 150 MHz would help alleviate the spectrum congestion problem. It is impractical from a cost and loss-of-facility-use standpoint to run wires to transmit the information -- especially on established airports. The fixed links would operate compatibly with the ANLE and AVPS applications also planned for this band.

Proposal:

USA/ /1 MOD

RESOLUTION 801 (WRC-2003)

Agenda for the ~~2005~~2006 World Radiocommunication Conference

The World Radiocommunication Conference (~~Istanbul, 2000~~), (Geneva, 2003).

Reasons: Editorial

resolves to give the view

USA/ /2 ADD

2.xx to consider a new worldwide primary allocation to accommodate a system that would provide supplemental radionavigation data in the band 5 091-5 150 MHz;

Reasons: New provisions in the ITU Radio Regulations in the band 5 091-5 150 MHz for supplemental aeronautical radionavigation data would accommodate systems such as the (Airport Network and Location Equipment) ANLE and Airport Vehicle Position System (AVPS) that would aid in providing more information to the pilot/cockpit and reduce the risk of runway incursions. ANLE would provide aeronautical radionavigation and safety communications for the airport area. The AVPS is intended reduce runway incursion and increase airport security. The AVPS would operate in the aeronautical radionavigation service.

USA/ /3 ADD

2.xx to consider a new worldwide primary allocation to accommodate the aeronautical fixed service links in the band 5 091-5 150 MHz;

Reasons: The new allocation of the aeronautical fixed service in the band 5 091-5 150 MHz would allow critical aeronautical data to be transmitted between aeronautical facilities in 59 MHz of contiguous spectrum for aeronautical use. Aeronautical fixed applications would transmit critical aeronautical data from systems such as wind shear radars, remote maintenance monitoring systems, runway lighting, low-level wind shear alert systems, automated weather surface observing systems, or automatic weather observation systems. The new service would also alleviate some of the spectrum congestion in other bands.

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Doc. WAC/158(31.10.02)

Proposal for Resolution 801

Upgrade Radiolocation 9 000-9 200 MHz and 9 300-9 500 MHz to Primary

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 **801 (WRC-2000)**;

Background Information: Working Party 8B is conducting studies in accordance with Question ITU-R 226/8, titled, “Characteristics of and Protection Criteria for Radars Operating in the Radiodetermination Service.” Working Party 8B has also developed a Preliminary Draft New Recommendation on Characteristics of and Protection Criteria for Radars Operating in the Radiodetermination Service in the Frequency Band 8 500-10 500 MHz.

The frequency band 9 000-9 200 MHz is allocated to the aeronautical radionavigation service on a primary basis, limited to ground-based radars and associated airborne transponders, and the radiolocation service on a secondary basis. Also, in several countries, the band 9 000-9 200, is allocated to the radionavigation service on a primary basis (**5.473**). In the band 9 200-9 500 MHz, search and rescue transponders (SART) may be used (**5.474**). The band 9 300-9 500 MHz is allocated to the radionavigation service on a primary basis, and to the radiolocation service on a secondary basis. Also, in the band 9 300-9 500 MHz, the aeronautical radionavigation service is limited to airborne weather radars and ground-based radars; and, in addition, ground-based radar beacons permitted in the band 9 300-9 320 (**5.475**).

The 9 000-9 500 MHz range is optimum for the radars due to antenna, signal propagation, target detection, and large necessary bandwidth characteristics.

Airborne radiodetermination radars currently operating in these bands are: search & track radars, search radars, ground-mapping & terrain-following radars, track radars and surface search radars. Shipborne Radiodetermination Radars used in this band include: search & navigation radars (shipborne and shore-based), track radars, low altitude & surface search radars, maritime radionavigation radars, and surface surveillance & navigation radars. Beacons and Ground-Based Radiodetermination Radars are currently operating in these bands and include: rendezvous beacon airborne and ground based transportable radars, ground based transportable tracking radars and ground based transportable precision approach and landing radars.

It is necessary to upgrade the radiolocation service to primary in the band 9 000-9 200 MHz and 9 300-9 500 MHz in order for existing and planned radar systems to achieve their maximum potential and perform their required missions. There is a trend towards frequency-agile type radar systems in this band that will suppress or reduce interference and requiring larger bandwidths for the radars to function. Emerging requirements for higher target resolution necessitate wider contiguous emission bandwidths. An upgrade is required to provide radar system developers, manufacturers and investors confidence that their systems will have the regulatory assurance to operate worldwide.

Proposal:

USA/ / 1 ADD

2.xx To consider upgrading the allocation to the radiolocation service in the frequency range 9 000-9 200 MHz and 9 300-9 500 MHz to primary.

Reasons: To provide necessary spectrum for existing and planned radar systems to operate in the 9 000-9 500 MHz range.

-FCC-