UNITED STATES DEPARTMENT OF COMMERCE
National Telecommunications and Information Administration
Washington, D.C. 20230

DEC 19 2002

Mr. Donald Abelson
Chief of the International Bureau
Federal Communications Commission
445 12th Street SW
Washington, D.C. 20554

Dear Mr. Abelson:

The National Telecommunications and Information Administration (NTIA), on behalf of the Executive Branch Agencies, has approved the release of an additional draft Executive Branch proposal for WRC-03. This proposal considers the federal agency inputs toward the development of U.S. Proposals for WRC-03.

The enclosed document contains a proposal that addresses agenda item 1.8.2. This proposal is forwarded for your consideration and review by your WRC-03 Advisory Committee. Jim Vorhies from my staff will contact Alexander Roytblat and reconcile any differences between NTIA and FCC views.

Sincerely,

Fredrick R. Wentland
Acting Associate Administrator
Office of Spectrum Management

Enclosure

United States of America

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

Agenda Item 1.8.2: consideration of the results of studies, and proposal of any regulatory measures regarding the protection of passive services from unwanted emissions, in particular from space service transmissions, in response to *recommends* 5 and 6 of Recommendation **66 (Rev.WRC-2000)**;

Background Information: Agenda item **1.8.2** references *recommends* 5 and 6 of Recommendation **66** which state:

> **5** study those frequency bands and instances where, for technical or operational reasons, more stringent spurious emission limits than the general limits in Appendix **3** may be required 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;
>
> **6** study those frequency bands and instances where, for technical or operational reasons, out-of-band limits may be required 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.

Following the completion of a general Recommendation by Task Group 1/5 on the protection of passive services from unwanted emissions, Study Group 1 charged Task Group 1/7 with studying protection of radio astronomy and satellite remote sensing on a band-by-band basis, using a list of frequency bands prepared by Task Group 1/5. Task Group 1/7 developed a methodology for the band-by-band studies and studied pairs of active and passive service bands thought most likely to require regulatory measures. The radio astronomy and remote sensing protection issues were considered separately because of the differences in protection criteria, operational characteristics and likely interference mitigation solutions.

Representatives of the active and passive services came together in Task Group 1/7 to address problems that had defied solutions going back as far as WARC–79. Through cooperative efforts, participants identified measures that would provide protection to the passive services in some bands and considered the impact of these measures on the active services. The studies, documented in PDNR ITU–R SM.[BbB], found that a few of the band pairs could be eliminated from consideration, because interference from unwanted emissions was not a significant problem. In some other cases, significant interference can be eliminated if the active and passive service systems adhere to certain restrictions. A number of other cases will require further study to identify solutions.

Recommends 5 and 6 of Recommendation **66 (Rev.WRC-2000)** require that the studies consider the impact of limits on all concerned services. For this reason, it is necessary that representatives of the active and passive services reach agreement on restrictions that may affect their services. Although Task Group 1/7 made progress on identifying solutions that would protect the passive services, further studies are necessary to fully consider the impact on the active services and to refine the solutions to yield interference mitigation measures acceptable to all. Because of pressure to limit the size of the WRC agendas, and the extraordinary difficulty of reaching agreement on general regulatory solutions to passive service protection, future Conference agendas should not include review of these studies.

Recognizing the difficulty of resolving adjacent or near band interference problems between certain types of active and passive service allocations, future Conferences should avoid, to the extent practicable, new allocations that would make these troublesome situations more widespread.

The proposals below suppress Recommendation **66 (Rev. WRC–2000)** in favor of a new Resolution that addresses the problem of adjacent or nearby active and passive service allocations, and that calls for completion of studies on the protection of passive services from unwanted emissions.

Proposals:

USA/ /1 **SUP**

RECOMMENDATION 66 (REV.WRC-2000)

Studies of the maximum permitted levels of unwanted emissions

Reasona: Recommendation **66 (Rev. WRC–2000)** is suppressed in favor of two new Resolutions that will address the unfinished work.

USA/ /2 **ADD**

RESOLUTION [RAS/EESS] (WRC-2003)

Studies of the protection of the radio astronomy and Earth exploration-satellite (passive) services from unwanted emissions from active services

The World Radiocommunication Conference (Geneva, 2003),

considering

a) that excessive levels of unwanted emissions may give rise to harmful interference;

b) that unwanted emissions from space-to-Earth links may cause harmful interference to stations in the radio astronomy service, particularly emissions from wideband amplifiers which cannot be adjusted after launch;

c) that unwanted emissions from terrestrial services, especially those with stations transmitting at high elevation angles, may cause harmful interference to passive sensors in the Earth exploration-satellite (passive) service;

d) that Appendix **3** specifies the maximum permitted levels of spurious emissions;

e) that while out-of-band emissions can also give rise to harmful interference, the Radio Regulations do not provide general limits for these emissions;

f) that, for technical or operational reasons, more stringent spurious emission limits than the general limits in Appendix **3** may be required to protect the radio astronomy and Earth exploration-satellite (passive) services in specific bands or situations;

g) that broadband digital modulation may cause unwanted emissions at frequencies far from the carrier frequency,

noting

a) that space services space-to-Earth links have in some cases been allocated to frequencies adjacent to or close to those allocated to the radio astronomy service;

b) that active services with stations transmitting at high elevation angles have in some cases been allocated to frequencies adjacent to or close to those allocated to the Earth exploration-satellite (passive) service;

c) that some administrations have adopted more stringent limits for spurious emissions than those specified in Appendix **3**;

d) that in response to *resolves* 2.3.2 of Resolution **722 (WRC-97)**, ITU-R decided to recommend not including general out-of-band limits in the Radio Regulations;

e) that measures taken to protect receivers in the radio astronomy and Earth exploration-satellite (passive) services from interference may result in additional costs or reduced capabilities for the active services affected;

f) that conversely, not taking such measures may result in additional costs or reduced capabilities or operational efficiencies for the radio astronomy and Earth exploration-satellite (passive) services,

resolves to request WRC–07 and subsequent WRCs

1 to avoid, to the extent practicable, allocation of frequency bands for space-to-Earth links in the space services when those frequency bands are adjacent to or nearby frequency bands allocated to the radio astronomy service, unless adequate consideration is given to protecting the radio astronomy service;

2 to avoid, to the extent practicable, allocation of frequency bands to active services with stations transmitting at high elevation angles when those frequency bands are adjacent to or nearby frequency bands allocated to the Earth exploration-satellite (passive) service, unless adequate consideration is given to protecting the Earth exploration-satellite (passive) service,

resolves

1 that further studies are urgently required to identify methods of protecting radio astronomy receivers from harmful interference from unwanted emissions of space-to-Earth links in specific frequency bands, with a view to the development of one or more Recommendations providing guidance on the protection of the radio astronomy service from such interference;

2 that further studies are also urgently required to identify methods of protecting passive sensors in the Earth exploration-satellite (passive) service from harmful interference from unwanted emissions

from stations in the active services in specific frequency bands, with a view to the development of one or more Recommendations providing guidance on the protection of the Earth exploration-satellite (passive) service from such interference;

3 that these studies would consider the impact of implementing or not implementing such protection methods, including costs and reduced system capabilities or operational efficiencies, on the active and passive services affected,

urges administrations

to participate actively in these studies, with the involvement of both active and passive service interests,

invites ITU–R

to complete studies to provide guidance on the protection of the radio astronomy and Earth exploration-satellite (passive) services from unwanted emissions from stations in the active services.

Reasons: This proposed Resolution would draw attention to the ongoing problem of adjacent and nearby allocations to the active and passive services, while also calling for completion of the unfinished work under Recommendation **66 (Rev. WRC–2000)**.