

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

Dear Mr. Giusti:

The National Telecommunications and Information Administration (NTIA), on behalf of the Executive Branch Agencies, has approved the release of two additional draft Executive Branch proposals for WRC-07. These proposals consider the federal agency inputs toward the development of U.S. Proposals for WRC-07.

The enclosed document contains two draft proposals that address Agenda Item 1.2. These proposals are forwarded for your consideration and review by your WRC-07 Advisory Committee. Jim Vorhies of my staff is the primary contact for NTIA.

Sincerely,

(Original Signed September 18, 2006)
Fredrick R. Wentland
Associate Administrator
Office of Spectrum Management

Enclosure

United States of America

DRAFT PROPOSAL FOR THE WORK OF THE CONFERENCE

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

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

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

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

Proposal:

USA/ /1 MOD

34.2-40 GHz

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

USA/ /2 ADD

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

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

United States of America

DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

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

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

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

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

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

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

Proposal:

USA/ /1 MOD

10-11.7 GHz

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

USA/ /2 MOD

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

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