

November 12, 1999

Mr. Donald Abelson  
Chief of the International Bureau  
Federal Communications Commission  
Washington, D.C. 20554

Dear Mr. Abelson:

The National Telecommunications and Information Administration on behalf of the Executive Branch Agencies, has approved the release of an additional proposal for WRC-2000. This proposal is being forwarded to you for review. Karl Nebbia from my staff will contact Damon Ladson and reconcile any differences.

WRC-2000 Agenda Item 1.17 is to consider the possible worldwide allocation for earth-satellite (passive) and space research (passive) services in the band 18.6-18.8 GHz, taking into account the results of the ITU-R studies. We are proposing the addition of a footnote that would limit the operation of FSS systems to geostationary satellites and to NGSO satellites with apogees of 20,000 km. This footnote would enable passive sensors and the fixed-satellite service to operate in the 18.6-18.8 GHz band without excessive interference to the sensors.

Sincerely,

*Original Signed by  
Fred Wentland for*

William T. Hatch  
Acting Associate Administrator  
Office of Spectrum Management

Enclosure

# United States of America

## Proposals for the Work of the Conference

### Proposal for Agenda Item 1.17

to consider possible worldwide allocation for the earth exploration-satellite (passive) and space research (passive) service in the band 18.6 - 18.8 GHz, taking into account the results of the ITU-R studies

**Background Information:** At present, the allocations for the Earth exploration-satellite (passive) service in the band 18.6-18.8 GHz is on a primary basis in Region 2, but on a secondary basis in Regions 1 and 3. There is another proposal to upgrade these allocations to primary status to ensure the long-term ability to obtain environmental data with passive spaceborne sensors. The ITU-R has performed extensive studies on sharing between geostationary satellites operating in the fixed-satellite service and passive sensors operating in the Earth exploration-satellite service and has found that a pfd limit on the geostationary FSS satellites of  $-95 \text{ dB(W/m}^2/200 \text{ MHz)}$  will protect the passive sensors from excessive interference allowing these important environmental measurements to be obtained, while still allowing the FSS systems to operate satisfactorily. The ITU-R studies also concluded that satellites in highly elliptical orbits (HEO) with 12 and 8-hour periods caused no more interference than did a GSO satellite for the same pfd value. These types of HEO orbits have apogees with altitudes of 39,400 km and 26,800 km respectively. However, the ITU-R studies did not arrive at a conclusion on sharing between other non-geostationary orbit (NGSO) satellites and the passive sensors except to conclude that satellites in low Earth orbit (LEO) caused significantly more interference (up to 1000 times in the worst case) to the passive sensors than did GSO satellites for the same pfd value. In addition to the proposal for the upgraded allocation to the passive sensors with a pfd limit of  $-95 \text{ dB(W/m}^2/200 \text{ MHz)}$ , an additional footnote is proposed to postpone the introduction of these LEO NGSO FSS systems in the 18.6-18.8 GHz band until the ITU-R can complete studies on an appropriate pfd limit on these systems to protect the passive sensors.

### **Proposal:**

USA/ 1  
MOD

Allocation to Services		
Region 1	Region 2	Region 3
<p><b>18.6 - 18.8 GHz</b></p> <p><u>EARTH EXPLORATION-SATELLITE (passive)</u> FIXED FIXED-SATELLITE (space-to-Earth) S5.523 <b>ADD S5.523F</b> MOBILE except aeronautical mobile <del>Earth Exploration Satellite (passive)</del> Space Research (passive) S5.522</p>	<p><b>18.6 - 18.8 GHz</b></p> <p><u>EARTH EXPLORATION-SATELLITE (passive)</u> FIXED FIXED-SATELLITE (space-to-Earth) S5.523 <b>ADD S5.523F</b> MOBILE except aeronautical mobile SPACE RESEARCH (passive) S5.522</p>	<p><b>18.6 - 18.8 GHz</b></p> <p><u>EARTH EXPLORATION-SATELLITE (passive)</u> FIXED FIXED-SATELLITE (space-to-Earth) S5.523 <b>ADD S5.523F</b> MOBILE except aeronautical mobile <del>Earth Exploration Satellite (passive)</del> Space Research (passive) S5.522</p>

USA/ 2  
ADD

**S5.523F:** In the band 18.6-18.8 GHz, the fixed-satellite service shall be limited to geostationary-satellite systems and to non-geostationary-satellite systems with apogees of 20,000 km or higher.

**Reasons:** To enable passive sensors and the fixed-satellite service to operate in the band without excessive interference to the sensors, it is necessary to limit the operation of FSS systems to geostationary satellites and to NGSO satellites with apogees of 20,000 km or higher until the ITU-R can arrive at an appropriate pfd limit for NGSO FSS systems with apogees of less than 20,000 km operating in the 18.6-18.8 GHz band.

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