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

JUL 13 2010

Ms. Mindel De La Torre
Chief of the International Bureau
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Dear Ms. De La Torre:

The National Telecommunications and Information Administration (NTIA), on behalf of the Executive Branch agencies, approve the release of a draft Executive Branch proposal for WRC-12 agenda item 1.25. NTIA proposes no change for some of the candidate frequency bands for potential mobile-satellite services allocations.

NTIA considered the Federal agencies' input toward the development of U.S. proposals for WRC-12. NTIA forwards this package for consideration and review by your WRC-12 Advisory Committee. Dr. Darlene Drazenovich is the primary contact from my staff.

Sincerely,

Karl B. Nebbia
Associate Administrator
Office of Spectrum Management

UNITED STATES OF AMERICA

DRAFT PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda Item 1.25: *to consider possible additional allocations to the mobile-satellite service, in accordance with Resolution **231 (WRC-07)***

Background Information: WRC-12 will consider possible allocations to the mobile-satellite service (MSS), particularly in the 4-16 GHz range, based on the results of ITU-R sharing and compatibility studies and without placing undue constraints on the existing services. The ITU-R studies to date on some of the possible bands indicate difficulties in sharing with existing services. For other possible bands, the ITU-R did not conduct studies. Therefore, this proposal advocates no change in the spectrum allocations listed below due to the results of the ITU-R sharing studies.

5 150 – 5 250 MHz Band

Some administrations are considering the band 5 150-5 250 MHz for MSS downlinks. This band is allocated to the aeronautical radionavigation service (ARNS), the fixed-satellite service (FSS) (Earth-to-space) and the mobile (except aeronautical mobile) service on a primary basis. This band is also allocated to the aeronautical mobile service on a primary basis in some countries through No. **5.446C**. The ITU-R has not conducted studies between the MSS and ARNS. The ITU-R identified this ARNS allocation as a candidate band for UAS sense and avoid (S&A) applications. The ITU-R conducted studies between the MSS (geostationary orbit (GSO) spacecraft utilizing multi-beam downlink antennas) and FSS (feeder uplinks to non-GSO MSS systems). The ITU-R studies do not fully quantify the constraints necessary on the proposed MSS downlinks to avoid interference to the FSS (MSS Feeder uplinks) space station receiver, especially if the MSS system uses non-GSO satellites.

Radio local area network (RLAN) systems operate in this band, limited to indoor use and power constraints through Resolution **229 (WRC-03)**. The MSS Earth Stations (MESs) may receive interference from the RLANs in certain circumstances.

7 055 – 7 250 MHz Band

Some administrations are considering the band 7 055 – 7 250 MHz for MSS downlinks. The entire band is allocated to the fixed and mobile services. The ITU-R conducted limited studies between the MSS (GSO) and fixed service (FS) indicating sharing difficulties. Studies of non-GSO MSS systems may produce similar results.

Systems in the FS between 7125 – 7250 MHz operate point-to-point microwave data communication links for backbone networks to transport voice, video, and data traffic to support various missions, including air traffic control information. These links are critical for control of aircraft during all phases of flight and under all weather conditions. The point-to-point microwave communication links also interconnect multiple local vessel traffic systems (VTS) radar and radio communications sites important for marine traffic in enclosed waterways.

The sub-band 7 145 – 7 235 MHz band is allocated to the space research service (SRS) (Earth-to-space). ITU-R studies have shown a strong potential for interference into the SRS space stations from MSS satellites unless extraordinary mitigation techniques are applied. Large exclusion zones are needed around SRS earth stations to prevent interference with MESs.

8 400 – 8 500 MHz Band

Some administrations are considering the band 8 400 – 8 500 MHz for MSS uplinks. This band is allocated to the fixed, mobile, and space research (space-to-Earth) services.

The 8 400 – 8 450 MHz sub-band is used for SRS deep space applications. Large exclusion zones (several hundred km over land, longer over water) are needed around SRS earth stations to prevent interference from MESs. The required separation distances would make large areas unavailable for MSS use, despite the relatively low number of SRS earth stations. The MSS satellites could be subject to excessive interference during SRS mission phases when the SRS spacecraft is in the near-Earth environment.

In conjunction with the frequency band 7125 – 7250 MHz, systems operating in this band perform point-to-point microwave data communications links for backbone networks to transport voice, video, and data traffic to support various missions, including air traffic control information. These links are critical for control of aircraft during all phases of flight and under all weather conditions. The point-to-point microwave communications links also interconnect multiple local VTS radar and radio communications sites important for marine traffic in enclosed waterways.

The ITU-R has conducted limited studies between the MSS and FS, which indicate sharing difficulties. As with the 7 055 – 7 250 MHz band, the ITU-R only conducted studies in the 8 400 – 8 500 MHz band for GSO MSS systems and it is likely that studies of non-GSO systems will produce less favorable results.

10.5 – 10.6 GHz Band

Some administrations are considering the band 10.5-10.6 GHz for MSS downlinks. The band is allocated to the fixed and mobile services. In the sub-band 10.5-10.55 GHz, the band is allocated to the radiolocation service on a secondary basis in Region 1 and on a primary basis in Regions 2 and 3. In the sub-band 10.55-10.6 GHz, radiolocation is secondary. The ITU-R has not conducted studies between the MSS and radiolocation.

13.25 – 13.4 GHz Band

Some administrations are considering the band 13.25 – 13.4 GHz for MSS downlinks. The band is allocated to the Earth exploration-satellite service (EESS) (active) and space research service (SRS) (active) on a primary basis. The band is also allocated to the aeronautical radionavigation service on a primary basis, limited to use for Doppler navigation aids through No. **5.497.**

Airborne Doppler navigation systems installed in aircraft for this band (helicopters as well as certain airplanes) perform specialized applications such as continuous determination of ground

speed and drift angle information of an aircraft with respect to the ground. The Radio Technical Commission for Aeronautics (RTCA) has developed a standard for this equipment: DO-158 - Minimum Operational Performance Standards (MOPS) – Airborne Doppler Radar Navigation Equipment.

ITU-R studies did not evaluate the effects of the MSS on the EESS and SRS, to include the three types of EESS (active) instruments: scatterometers, altimeters and precipitation radars. MESs will also be susceptible to interference from the EESS (active) and SRS (active) space stations. The ITU-R has not conducted studies between the MSS and the Doppler radars. The ITU-R has also identified this band for potential UAS S&A applications under agenda item 1.3.

15.43 – 15.63 GHz Band

Some administrations are considering the 15.43-15.63 GHz band for MSS uplinks. The band is allocated to FSS (Earth-to-space), limited to feederlinks for non-GSO MSS systems through No. **5.511A**. The band is also allocated to ARNS and provision No. **4.10** of the RR applies.

ITU-R studies show co-coverage sharing between the MSS and aircraft landing systems (ALS) and aircraft multipurpose radars (MPR) will be difficult. There is no evidence of FSS use of this band. WRC-12 agenda item 1.21 considers an allocation in the 15.4-15.7 GHz band to the radiolocation service. Preliminary ITU-R studies between MSS and radiolocation indicate a single MES will cause interference into the radar, with additional MESs causing more interference. WRC-12 agenda item 1.3 considers a portion of the 15.4-15.7 GHz band for UAS S&A applications in the existing ARNS allocation or UAS command applications in a new aeronautical mobile-satellite (route) service allocation.

Proposal:

ARTICLE 5

Frequency allocations

Section IV – Table of Frequency Allocations

(See No. 2.1)

NOC USA/1.25/1

4 800-5 570 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
5 150-5 250	AERONAUTICAL RADIONAVIGATION FIXED-SATELLITE (Earth-to-space) 5.447A MOBILE except aeronautical mobile 5.446A 5.446B 5.446 5.446C 5.447 5.447B 5.447C	

Reasons: Studies have shown that compatibility between the MSS and the existing services will be difficult, if not impossible, to achieve, and there are insufficient assurances that the existing services will be able to operate without unacceptable interference from the MSS.

NOC USA/1.25/2

5 570-7 250 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
6 700-7 075	FIXED FIXED-SATELLITE (Earth-to-space) (space-to-Earth) 5.441 MOBILE 5.458 5.458A 5.458B 5.458C	
7 075-7 145	FIXED MOBILE 5.458 5.459	
7 145-7 235	FIXED MOBILE SPACE RESEARCH (Earth-to-space) 5.460 5.458 5.459	
7 235-7 250	FIXED MOBILE 5.458	

Reasons: Studies have shown that compatibility between the MSS and the existing services will be difficult, if not impossible, to achieve, and there are insufficient assurances that the existing services will be able to operate without unacceptable interference from the MSS.

NOC USA/1.25/3

7 250-8 500 MHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
8 400-8 500	FIXED MOBILE except aeronautical mobile SPACE RESEARCH (space-to-Earth) 5.465 5.466	

Reasons: Studies have shown that compatibility between the MSS and the existing services will be difficult, if not impossible, to achieve, and there are insufficient assurances that the existing services will be able to operate without unacceptable interference from the MSS.

NOC USA/1.25/4

10-11.7 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
10.5-10.55 FIXED MOBILE Radiolocation	**10.5-10.55** FIXED MOBILE RADIOLOCATION	
10.55-10.6	FIXED MOBILE except aeronautical mobile Radiolocation	

Reasons: Studies have shown that compatibility between the MSS and the existing services will be difficult, if not impossible, to achieve, and there are insufficient assurances that the existing services will be able to operate without unacceptable interference from the MSS.

NOC USA/1.25/5

11.7-14 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
13.25-13.4	EARTH EXPLORATION-SATELLITE (active) AERONAUTICAL RADIONAVIGATION 5.497 SPACE RESEARCH (active) 5.498A 5.499	

Reasons: Studies have shown that compatibility between the MSS and the existing services will be difficult, if not impossible, to achieve, and there are insufficient assurances that the existing services will be able to operate without unacceptable interference from the MSS.

NOC USA/1.25/6

15.4-18.4 GHz

Allocation to services		
Region 1	**Region 2**	**Region 3**
15.43-15.63	FIXED-SATELLITE SERVICE (Earth-to-space) 5.511A AERONAUTICAL RADIONAVIGATION 5.511C	

Reasons: Studies have shown that compatibility between the MSS and the existing services will be difficult, if not impossible, to achieve, and there are insufficient assurances that the existing services will be able to operate without unacceptable interference from the MSS.