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 on behalf of the Executive Branch Agencies, has approved the release of an additional Draft Executive Branch (NTIA) proposal, considering federal agency inputs toward the development of U.S. Proposals for WRC-2003. Also a revision to the preliminary view for agenda item 1.22 was considered and approved. Jim Vorhies from my staff will contact Alexander Roytblat and reconcile any differences.

Sincerely,

(Signed May 24, 2002 by Karl B. Nebbia for)
Fredrick R. Wentland
Acting Associate Administrator
Office of Spectrum Management

Enclosures

United States of America

PROPOSALS FOR THE WORK OF THE CONFERENCE

Agenda Item 1.12 (c): to consider allocations and regulatory issues related to the space science services in accordance with Resolution **723 (Rev. WRC-2000)** and to review all Earth exploration-satellite service and space research service allocations between 35 and 38 GHz, taking into account Resolution **730 (WRC-2000)**;

Background Information: Resolution **723 (Rev. WRC-2000)** *resolves 4,* recommends that WRC-03 consider a review of existing allocations to space science services near 15 GHz and 26GHz, with a view to accommodating wideband space-to-Earth space research applications. This *resolves* is in response to a need for allocations to support planned high data rate space research missions requiring bandwidths up to 400 MHz. Satellites for these missions will carry telescopes and/or other passive instruments to measure phenomenon such as the Earth's magnetosphere and solar flares. These missions will be limited in number with an estimated three to five satellites per year worldwide, and will generally be in an equatorial orbit with some at geostationary altitudes and others at the L1 or L2 libration points.

The 15 GHz band has a number of unique advantages that make it extremely useful for high data rate space research service **(**SRS) missions. One advantage of the 15 GHz band, over higher frequency bands, is improved link performance in the presence of rain. This becomes a significant advantage for power-constrained missions required to transmit high rate data from altitudes beyond low earth orbit.

A second advantage of the 15 GHz band for high rate SRS missions is the availability of existing low-latitude ground station assets, including the 11m antennas at the three Deep Space Network (DSN) sites in Australia, Spain and the USA, and a 14m antenna at the National Radio Astronomy Observatory in Green Bank, West Virginia with demonstrated capability to support Space Very Long Baseline Interferometry (SVLBI) missions. The use of the existing mid-latitude 15 GHz ground station resources can result in substantial cost and schedule benefits for international space agencies implementing high rate SRS missions. The availability of mid-latitude ground assets makes the 15 GHz band desirable for SRS missions operating in low to mid inclination orbits, geostationary orbits, or sun/Earth libration point (L1/L2) orbits. The majority of future high data rate SRS missions will operate in these types of orbits.

Also, the ability of SRS missions to receive backup support through the NASA Tracking and Data Relay Satellite System (TDRSS) Ku-band Single Access Return service provides added flexibility to missions. In the 15 GHz band, a full complement of TDRSS spacecraft are currently operational in a three-node constellation providing near continuous coverage to low-earth orbiting spacecraft.

Additionally, it should be noted that a number of ITU-R and Space Frequency Coordination Group (SFCG) recommendations indicate 15 GHz as a preferred band for SRS missions. Recommendation ITU-R SA.1344 identifies the 15 GHz band as preferred from a technical standpoint for wideband SRS (space VLBI) missions. Specifically, Recommendation ITU-R SA.1344 recommends the use of the 14.5 to 15.35 GHz for space-to-earth telemetry transmissions with a typical RF bandwidth of 300-500 MHz. Similarly, Recommendation ITU-R SA.364-6 recommends the use of the 12-20 GHz band for SRS missions in the space-to-earth direction.

The 14.5-15.35 GHz band is currently allocated to the fixed and mobile services on a primary basis, and to the space research service on a secondary basis. In addition, the 14.5-14.8 GHz portion of this band is also allocated to the fixed-satellite service (FSS) on a primary basis. However, the FSS allocation is limited by No. **5.510** to feeder links for the broadcasting-satellite service (BSS) and is reserved for countries outside Europe. These feeder links are subject to the BSS plan contained in Appendix **30A**. The band 15.2-15.35 GHz is allocated to the space research service (passive) and to the Earth exploration-satellite service (passive) on a secondary basis by No. **5.339**.

ITU-R studies have demonstrated the feasibility of sharing between the space research service and other services currently allocated on a primary basis in the 14.8-15.35 GHz band.

With respect to coordination and notification procedures, the current provisions of Articles 9 and 11 and the proposed sharing criteria will continue to apply among the fixed, mobile and space research services in the band 14.8-15.35 GHz.

Proposal:

14.5-15.35 GHz

	Allocation to Services		
	Region 1	**Region 2**	**Region 3**
USA/ /1	14.8-15.35	FIXED	
MOD		MOBILE	
		~~Space research~~	
		SPACE RESEARCH	
		5.339	

Reasons: To upgrade the SRS to a primary allocation to satisfy requirements for high data rate space science missions.

USA/ /2 MOD

Appendix 7

ANNEX 7

TABLE 8c

Parameters required for the determination of coordination distance for a receiving earth station

Receiving space radiocommunication service designation		**Space Research**
Frequency band (GHz)		14.8-15.35
Transmitting terrestrial service designations		Fixed, mobile
Method to be used		§ 2.1, § 2.2
Modulation at earth station (1)		N
Earth station Interference Parameters	p_0 (%)	0.1
	n	2
	p (%)	0.05
	N_L (dB)	0

and criteria	M_s (dB)		1
	W (dB)		0
Terrestrial Station Parameters	E (dBW) in B (2)	A	25(5)
		N	-8
	P_t (dBW) in B	A	-20(5)
		N	-53
	G_x (dBi)		45
Reference band-width(6)	B (Hz)		1
Permissible interference power	P_r (p) (dBW) in B		-216

Reasons: Add characteristics of SRS earth stations to Table 8c of Appendix 7 for use in coordination. Provides the characteristics of the receiving SRS earth station in the 14.8-15.35 GHz band for coordination with transmitting fixed and mobile service stations.

USA/ /3 NOC

Notes to Table 8c:

Reasons: No changes to the notes to Table 8c are required.

Table 21-4

	Frequency band	Service	Limit in dB(W/m2) for angle of arrival (δ) above the horizontal plane			Reference bandwidth
			0°-5°	5°-25°	25°-90°	
USA/ /4 MOD	14.8-15.35 GHz	Space Research, geostationary-satellite orbit	-126	-126 + (δ – 5)/2	-116	1 MHz
USA/ /5 MOD	14.8-15.35 GHz	Space Research, non-geostationary-satellite orbit	-124	-124 + (δ – 5)/2	-114	1 MHz

Reasons: Sharing studies have concluded that these proposed power flux density limits on the space research service are necessary and sufficient to protect the fixed and mobile services from harmful interference.

_____

DRAFT PRELIMINARY VIEW ON WRC-03

WRC-2003 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)**;

ISSUE: To study spectrum requirements and potential frequency ranges suitable for the future development of IMT-2000 and systems beyond IMT-2000, and in what time frame such spectrum would be needed, as well as ongoing enhancements of IMT-2000 systems and systems beyond IMT-2000.

BACKGRROUND: WRC-2000 considered issues related to IMT-2000, resulting in the identification of additional spectrum for the terrestrial component of IMT-2000 in the Radio Regulations **5.317A** and **5.384A**. This spectrum was identified in addition to that identified for initial IMT-2000 deployment at WARC-92 in footnote **5.388**. WRC-2000 also identified existing global MSS allocations as being available for use by the satellite component of IMT-2000, in accordance with Resolution **225**.

In Resolution **228 (WRC-2000)**, the ITU-R was invited to continue studies on overall objectives, applications and technical and operational implementation for the future development of IMT-2000 and system beyond. These requirements are to be reviewed by WRC-05/06, taking into consideration the results of ITU-R studies presented to WRC-03.

ITU-R Working Party 8F continues to work on issues relevant to WRC-03 agenda item 1.22. WP 8F will continue to develop a preliminary draft new recommendation (PDNR) on the vision and objectives for the ongoing enhancement of IMT-2000 and of systems beyond IMT-2000. In addition, 8F is charged with developing CPM text for this agenda item that was approved by 8F at the New Zealand meeting in February 2002.

U.S. VIEW: No action at WRC-2003 is necessary except to consider the progress of ITU-R studies in response to agenda item 1.22, in order to fashion an appropriate future agenda item related to spectrum and associated regulatory issues concerning the future development of IMT-2000 and systems beyond IMT-2000. No changes in the allocation table and resolutions concerning IMT-2000 should be considered under this agenda item at WRC-2003. (May 7, 2002)