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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Parts 2 and 25 of the	)	ET Docket No. 98-206
Commission's Rules to Permit Operation	)	RM-9147
of NGSO FSS Systems Co-Frequency with	)	RM-9245
GSO and Terrestrial Systems in the Ku-	)	
Band Frequency Range	)	
and	)	
Amendment of the Commission's Rules	)	
to Authorize Subsidiary Terrestrial Use	)	
of the 12.2-12.7 GHz Band by Direct	)	
Broadcast Satellite Licensees and Their	)	
Affiliates	)	

COMMENTS OF THE SATELLITE COALITION

In a Notice of Proposed Rulemaking ("NPRM") in the above-referenced proceeding, the Federal Communications Commission (the "Commission") has proposed to grant non-geostationary fixed-satellite service ("NGSO FSS") systems access to spectrum that is heavily encumbered by existing and planned geostationary fixed-satellite service ("GSO FSS") and broadcast satellite service ("BSS") systems. This proposal reflects a petition for rulemaking filed by SkyBridge L.L.C. ("SkyBridge") as well as the provisional action taken at the 1997 World Radiocommunication Conference ("WRC-97") to permit NGSO FSS use of spectrum in the Ku-band, subject to the development and approval of appropriate inter-service sharing criteria.

BACKGROUND AND STATEMENT OF INTEREST

When SkyBridge filed its petition for rulemaking, it made two very important promises in order to persuade the FCC to permit NGSO FSS access to the heavily encumbered spectrum. First, SkyBridge promised that NGSO FSS systems would cause no noticeable degradation to the quality of service or availability of GSO satellite operations and terrestrial links. Second, it promised

that NGSO FSS operations would impose no operational constraints on GSO satellite and terrestrial operators.[1]

The basic premise that NGSO FSS systems should be granted access to spectrum used by GSO FSS and BSS networks only if they can protect these networks should serve as the cornerstone of any Commission decision in this proceeding. It is the condition upon which the NGSO FSS industry has sought access to GSO FSS and BSS spectrum; it is the condition upon which WRC-97 provisionally approved NGSO FSS operations in the Ku-band; and it is the condition that the NPRM states must be satisfied in order for the Commission to authorize NGSO FSS use of encumbered spectrum.[2]

The undersigned companies (the "Satellite Coalition") represent a cross-section of the U.S. satellite industry. The Satellite Coalition's members, and the millions of customers who rely on GSO FSS and BSS networks, collectively have invested billions of dollars in the manufacture, launch and operation of such systems. Accordingly, the Satellite Coalition has a strong interest in ensuring that the Commission adopts and enforces technical and service rules that protect GSO FSS and BSS systems from NGSO FSS interference.

While the Satellite Coalition believes that appropriate sharing criteria can be developed, and are being developed, the WRC-97 provisional epfd and apfd limits have been shown to be inadequate and, therefore, the Coalition urges the Commission not to adopt these limits as final rules. As discussed in greater detail below:

- the WRC-97 provisional limits were based on an incomplete technical record;
- technical studies conducted after WRC-97 demonstrate that the WRC-97 provisional limits are insufficient to protect GSO FSS links, particularly links without a significant rain margin;
- technical studies conducted after WRC-97 demonstrate that the WRC-97 provisional limits are insufficient to protect GSO BSS links; and

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[1] SkyBridge Petition, RM-9147, at 2 (filed July 3, 1997) (cited in NPRM at ¶ 2).
[2] E.g. NPRM at ¶ 1.

- the WRC-97 provisional limits are "single entry" limits and, therefore, fail to account for interference from multiple NGSO FSS systems.

Rather than adopt the WRC-97 provisional limits, therefore, the Commission should continue to work with interested parties to examine the technical issues involved in NGSO use of GSO spectrum and, based upon this examination, develop criteria that will protect the investment in, and reliance upon, Ku-band GSO FSS and BSS satellites by U.S. satellite operators and users.

DISCUSSION

I. THE WRC-97 PROVISIONAL LIMITS ARE INADEQUATE.

A. THE WRC-97 LIMITS WERE ADOPTED WITHOUT ADEQUATE TECHNICAL STUDY.

At WRC-97, NGSO FSS proponents worked diligently to secure an allocation for NGSO FSS systems, despite the fact that the necessary technical studies of NGSO/GSO sharing had barely begun.[3] In an attempt to accommodate NGSO interests while protecting incumbent Ku-band GSO FSS and BSS operations, WRC-97 adopted a compromise. On the one hand, it made an immediate allocation for NGSO FSS systems. On the other hand, it initiated a study of NGSO/GSO sharing, deferred the adoption of final epfd and apfd limits until after this study is completed, and ordered that all NGSO systems must comply with the final technical standards, even if the systems are implemented before those standards are adopted.[4] This compromise allowed NGSO proponents to begin to go forward, as long as they accepted the risk of having to redesign their systems in order to meet appropriate protection limits.

The WRC-97 provisional limits were based on data, criteria, and methodology concerning NGSO/GSO sharing that, even at the time of WRC-97, were recognized to be inadequate. They served more as a placemarker than a

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[3] See NPRM at ¶ 5.

[4] See "Final Acts of the 1998 World Radiocommunication Conference," Resolutions 130 and 538 (Geneva, 1997). An NGSO system must comply with the final limits even if information regarding the system is submitted to the ITU, and even if the system is brought into use, prior to WRC-2000. Id. and NPRM at n.13.

reliable set of technical criteria, and the Commission should not now give them a status that was never intended and is not technically justified.

B. TECHNICAL STUDIES PERFORMED AFTER WRC-97 DEMONSTRATE THAT THE WRC-97 PROVISIONAL LIMITS WILL NOT PROTECT GSO FSS AND BSS NETWORKS FROM UNACCEPTABLE INTERFERENCE.

As was contemplated at WRC-97, interested parties have undertaken a study of NGSO/GSO sharing issues. For over a year, technical experts working within the ITU's Joint Task Group ("JTG") 4-9-11 and the U.S. WRC preparatory process have examined the WRC-97 provisional limits and attempted to determine how, and to what extent, these limits must be refined to achieve two goals: protection of GSO/FSS & BSS systems and the enabling of NGSO FSS systems.

As will be discussed in greater detail in the comments filed by individual members of the Satellite Coalition, the WRC-97 provisional limits do not protect GSO FSS or BSS systems from interference. For example, particularly on "sensitive links" — *i.e.*, links on which the GSO system operator has not devoted extra power to create a rain margin that would protect against additional interference — NGSO FSS emissions will drive link margins below the minimum acceptable levels, resulting in reductions in service quality and communications outages. These degradations will have serious negative consequences for GSO system operators and their millions of customers in the United States and around the world.[5]

C. THE WRC-97 PROVISIONAL LIMITS ARE "SINGLE ENTRY" LIMITS AND, THEREFORE, SHOULD NOT BE USED AS FINAL STANDARDS.

As the Commission recognized in the NPRM, the WRC-97 provisional limits are "single entry" limits: *i.e.*, they specify limits only for a single NGSO FSS satellite and do not consider the impact of multiple NGSO FSS satellites or

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[5] The U.S. submission to JTG 4-9-11 quantifies the impact that NGSO FSS systems would have on sensitive GSO FSS links throughout the world. United States of America, "Proposed Revision to Resolution 130 Provisional EPFD and APFD Limits in the Resolution 130 14/11 GHz Bands," Delayed Contribution, Document 4-9-11/342-E (Jan. 13, 1999). A separate U.S. submission addresses the impact on GSO BSS links.

multiple NGSO FSS systems.[6] As the Commission also has acknowledged, the operation of multiple NGSO satellites and multiple NGSO systems will have a cumulative effect that will have to be taken into account to avoid adversely affecting GSO satellite systems.[7]

From the perspective of GSO FSS and BSS systems, single entry limits are irrelevant — what matters are aggregate interference limits and the means for ensuring that, together, all NGSO systems do not exceed those limits. Particularly in light of the WRC-97 provisional limits' other deficiencies, there is no reason for the Commission to employ a backwards analysis, working from single-entry limits to multiple-entry limits.[8] Rather, it should start by defining what really matters — aggregate limits — and then define a means for allocating those limits across NGSO systems.

II. THE COMMISSION SHOULD MAKE AN INDEPENDENT REVIEW OF THE WRC-97 PROVISIONAL LIMITS.

The Commission's review of the WRC-97 provisional limits is in one sense premature. The merits of several alternative proposals to tighten the provisional epfd limits still are being discussed within the ITU JTG 4-9-11. It is, therefore, uncertain what limits the JTG will endorse, or even whether the desired consensus will be reached. One of these proposals is a U.S. proposal, submitted soon after the NPRM issued, which advocates tighter limits.[9]

Although we are striving to achieve a workable international consensus, if WRC-2000 were to endorse the WRC-97 provisional limits, however, that would not be the end of the inquiry. The Commission has a duty to develop technically sound rules, not merely to endorse international decisions that could ultimately be a product of multilateral deliberations rather than technical analysis. As the Commission recognized in the NPRM, the study group's conclusions — as well as the ultimate outcome at WRC-2000 — may have general technical applicability, based on each administration's input and the resultant

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[6] NPRM at ¶¶ 5, 72.
[7] NPRM at ¶ 72.
[8] See NPRM at ¶ 72.
[9] United States of America, "Proposed Revision to Resolution 130 Provisional EPFD and APFD Limits in the Resolution 130 14/11 GHz Bands," Delayed Contribution, Document 4-9-11/342-E (Jan. 13, 1999).

compromise, but may not adequately address sharing conditions that are unique to the United States.[10] Consequently, the Commission has deemed it "essential" to develop an independent record regarding the prospective implementation of NGSO FSS in the United States, based on this country's "unique and extensive" use of the Ku-band.[11] The Satellite Coalition wholeheartedly concurs.

III. THE COMMISSION SHOULD ENSURE THAT ALL RULES ADOPTED IN THIS PROCEEDING ADEQUATELY PROTECT EXISTING AND FUTURE GSO OPERATIONS AND TREAT GSO SYSTEMS EQUITABLY.

The debate over NGSO FSS technical rules will focus primarily on setting adequate epfd and apfd limits. However, it also will address other related questions, such as the extent to which NGSO systems will be required to protect inclined orbit satellites, the extent to which and manner in which they will be required to protect large aperture earth stations, the means for ensuring that TT&C operations are not compromised, and the method for dealing with catastrophic events such as launch or satellite on-orbit malfunctions.

The Commission's proposal to authorize the operation of NGSO systems also raises other issues that indirectly affect GSO FSS and BSS operations. Most importantly, in this proceeding the Commission will have to determine the extent to which GSO and NGSO systems will be entitled to use the 10.7-11.7 GHz and 12.75-13.25 GHz bands (the "NG104" bands) for domestic communications. Additionally, the Commission will need to adopt licensing and service rules for NGSO FSS systems.

Some of the Satellite Coalition's members are addressing these matters in their individual comments.[12] They are in agreement, however, that on each of these questions the Commission should examine current and planned GSO operations — for example, the degrees of inclination and sizes of earth station antennas that are used or are expected to be used — and ensure that any restriction that is adopted or maintained does not place an unreasonable burden on GSO FSS or BSS operators or users. They also uniformly believe that the

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[10] NPRM at ¶ 11.

[11] Id.

[12] In addition, the BSS members of the coalition agree with the Commission's tentative conclusion that Northpoint has not adequately demonstrated that it can avoid interfering with BSS systems.

Commission should not give NGSO FSS access to the NG104 bands for domestic communications without giving comparable access to GSO FSS systems.

IV. THE ACTIONS PROPOSED IN THESE COMMENTS AND IN THE NPRM ARE CONSISTENT WITH THE UNITED STATES' COMMITMENTS UNDER THE WTO BASIC AGREEMENT ON TELECOMMUNICATIONS.

Under the WTO Basic Agreement on Telecommunications (the "WTO Basic Agreement'), the United States maintains the ability to manage its spectrum as long as the procedures used are objective, transparent, and non-discriminatory. The Commission has proposed to adopt — and these comments urge it to adopt — uniform technical and service rules for all NGSO FSS systems, domestic and foreign, operating in the United States. Because the rules to be adopted by the Commission are necessary to govern spectrum use and resolve sharing issues; because they will be applied in a non-discriminatory manner; and because they will be developed in an open, public rulemaking, their adoption and enforcement is consistent with the United States' most favored nations, national treatment, and other commitments under the WTO Basic Agreement.

CONCLUSION

For the reasons discussed herein, the members of the Satellite Coalition respectfully urge the Commission to reject any proposals to codify the provisional epfd and apfd limits adopted at WRC-97. Instead, the Commission should endeavor to develop standards that are based upon rigorous technical analysis and that will adequately protect U.S.-licensed GSO FSS and BSS operations around the globe, both now and in the future.

Respectfully submitted,

PANAMSAT CORPORATION

By: _____
Joseph A. Godles
W. Kenneth Ferree

GOLDBERG, GODLES, WIENER & WRIGHT

1229 Nineteenth Street, N.W.
Washington, D.C. 20036
(202) 429-4900

Its Attorneys

HUGHES ELECTRONICS CORPORATION

By: _____
Gary M. Epstein
John P. Janka
James H. Barker

LATHAM & WATKINS

1001 Pennsylvania Avenue, N.W.
Suite 1300
Washington, D.C. 20004
(202) 637-2200

Its Attorneys

GE AMERICAN COMMUNICATIONS, INC.

By: _____
Peter A. Rohrbach

HOGAN & HARTSON L.L.P.

555 Thirteenth Street, N.W.
Washington, D.C. 20004
(202) 637-5600

Its Attorneys

PRIMESTAR, INC.

By: _____
Benjamin J. Griffin

MINTZ LEVIN COHN FERRIS GLOVSKY AND POPEO PC

701 Pennsylvania Ave., NW
Washington, D.C. 20004
(202) 434-7300

Its Attorneys

UNITED STATES SATELLITE BROADCASTING COMPANY, INC.

By: _____
Marvin Rosenberg

HOLLAND & KNIGHT L.L.P.

2100 Pennsylvania Avenue, N.W.
Suite 400
Washington, DC 20037
(202) 457-7147

Its Attorneys

TEMPO SATELLITE, INC.

By: _____
Kenneth Carroll

Senior Vice-President &
Chief Financial Officer

ECHOSTAR COMMUNICATIONS CORPORATION

By: _____
Karen E. Watson

1850 M Street, N.W.
Suite 1070
Washington, D.C. 20036
(202) 293-0981

LOCKHEED MARTIN GLOBAL TELECOMMUNICATIONS, INC.

By: _____
Gerald Musarra
Vice-President of
Government & Regulatory
Affairs

1725 Jefferson Davis Highway
Crystal Square 2, Suite 403
Arlington, VA 22202
(703) 413-5791

COLUMBIA COMMUNICATIONS CORP.

By: _____
Kenneth Gross
President and Chief
Operating Officer

7200 Wisconsin Avenue
Suite 701
Bethesda, MD 20814

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