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

In the Matter of Amendment of Parts 2)
and 15 of the Commission's Rules to)
Permit Use of Radio Frequencies Above)
40 GHz for New Radio Applications)
)
)
Petition of Sky Station International,)
Inc. for Amendment of the Commission's)
Rules to Establish Requirements for a)
Global Stratospheric Telecommunications)
Service in the 47.2-47.5 GHz and)
47.9-48.2 GHz Frequency Bands)

DOCKET FILE COPY ORIGINAL

ET Docket No. 94-124

RM-8784

To: The Commission

**REPLY COMMENTS ON REQUEST TO ESTABLISH NEW GSTS SERVICE,
ADDITIONAL COMMENTS AND PETITION FOR RULEMAKING**

In the above-captioned Request to Establish New GSTS Service, Additional Comments and
Petition for Rulemaking ("Request and Petition"), Sky Station International, Inc. ("SSI") seeks to
create a new global stratospheric telecommunications service ("GSTS") in the 47.2-47.5 and 47.9-48.2
GHz bands. Pursuant to Section 1.415 of the Commission's Rules,¹ the Fixed Point-to-Point

¹47 C.F.R. Section 1.415 (1996).

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Communications Section, Network Equipment Division of the Telecommunications Industry Association ("TIA"),² hereby replies to comments on the Request and Petition.³

SSI contemplates deploying the millimeter wave technology in the bands above 40 GHz to provide worldwide telecommunications service. To implement GSTS, SSI would use a network consisting of sky station stratospheric platforms, ground control and switching centers, and mobile radio units.⁴

TIA supports introduction and implementation of new technologies, such as GSTS. However, it is essential that establishment of these new technologies does not compromise the availability of spectrum for fixed point-to-point microwave service ("FS") users. Thus, in its comments, TIA

²TIA is the principal industry association representing fixed point-to-point microwave radio manufacturers. TIA members serve, among others, companies, including telephone carriers, utilities, railroads, state and local governments, and cellular carriers, licensed by the Commission to use private and common carrier bands for provision of important and essential telecommunications services. TIA has completed its June 1994 "Telecommunications Systems Bulletin No. 10-F, Interference Criteria for Microwave Systems" ("Bulletin 10-F"), which prescribes standards for implementing the new channel plan for the bands above 3 GHz and for establishing criteria regarding 2 GHz band PCS-to-microwave interference protection. As part of its ongoing standard-setting process, TIA is updating Bulletin 10-F, and Bulletin 10-G is in draft. Furthermore, TIA, along with the National Spectrum Managers Association, was responsible for most of the technical rule proposals recently adopted by the Commission in its consolidation of Parts 21 and 94 into new Part 101. See Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, Report and Order, WT Dkt. No. 94-148 (FCC 96-51, released Feb. 29, 1996).

³On April 1, 1996, the Request and Petition was placed on Public Notice. Public Notice, Rep. No. 2127 (mimeo no. 62231).

⁴In addition to the Request and Petition, SSI has applied for authorization to provide GSTS. See March 20, 1996, Application of Sky Station International, Inc., File No. 96-SAT-P/LA-96 ("Application"). Public Notice, Rep. No. SPB-44 (mimeo no. 62579, released April 22, 1996). Furthermore, SSI has requested that the U.S. delegation to the 1997 World Radio Communications Conference ("WRC-97") support its proposal. See Sky Station International, Inc.'s April 5, 1996, IWG-1 Proposal to the Commission's WRC-97 Advisory Committee and its April 30, 1996, presentation to the WRC-97 IWG-6.

strongly urged the Commission and WRC-97 to resolve the following issues before adopting SSI's proposal:

- SSI's proposal should be established in the Commission's Rules and in the ITU Radio Regulations as a "new" service that would include not only stratospheric applications, but would be expanded to encompass different competitive airborne technologies.
- Any allocation for the new service must not adversely affect a separate TIA proposal for the exclusive allocation of the 48.5-51.4 and 55.2-58.2 GHz bands to the terrestrial fixed point-to-point microwave service.
- The amount of the spectrum allocated to the new service must be consistent with anticipated demand.
- A determination must be made if the new service should be considered primarily "fixed" and secondarily "mobile."⁵

TIA acknowledges that most of the parties commenting on the Request and Petition support implementation of SSI's proposal. However, these commenters fail to explain how the Commission should proceed to introduce GSTS, manage the spectrum that would be used by GSTS, and protect other users of the bands where GSTS would be operated.

The record indicates that, in addition to the issues TIA raised in its comments, there is significant concern regarding the nature of the service proposed by SSI and how this spectrum should be shared with other potential co-primary users. Until the record demonstrates that there is a practical way to implement GSTS in accordance with basic spectrum management principles and international regulations, the Commission should proceed carefully in determining whether SSI's proposal should be adopted.

⁵TIA at 3.

THE NATURE OF THE SERVICE PROPOSED BY SSI MUST BE IDENTIFIED

In its comments, TIA states that:

In proposing the GSTS, it appears that SSI does not consider it to be a "fixed" or a "mobile" service, per se, but instead considers it to be a new service. To achieve this classification, SSI proposes that the Commission and WRC-97 establish an entirely new service, within the ITU Radio Regulations and Commission rules, which could be used for fixed and mobile type applications.⁶

Motorola Satellite Communications, Inc. ("Motorola Satellite") has the same concerns. It concludes that the SSI proposal does not fall into the "Fixed" or "Mobile" service categories:

The terrestrial fixed and mobile service allocations can hardly be said to contemplate stratosphere-to-earth and earth-to-stratosphere communications provided by means of stratospheric balloon-supported platforms -- as SSI itself emphasizes, an unprecedented concept. Indeed, SSI also acknowledges that its system would be above 99% of the earth's atmosphere.⁷

Motorola Satellite's dilemma is not surprising. SSI, in the Request and Petition, fails to demonstrate how GSTS fits into any appropriate international service definition. Specifically, in the most recent ITU-R Recommendations, the ITU-R Study Group 9 ("Study Group 9") defines Radio-Relay Systems to be "[s]ystems and networks of the fixed service operating via terrestrial stations."⁸ Aside from failing to meet this definition, the SSI system would not be able to share with any of the Fixed Service systems of Study Group 9 because of the multitude and portability of its proposed earth stations. As a general rule, incompatible systems should not end up in the same class of service.

By its mandate to coordinate use of telecommunications systems and spectrum among countries, the ITU is mainly concerned with the behavior, as interference sources, of the systems and

⁶TIA at 3 (footnote omitted).

⁷Motorola Satellite at 4.

⁸ITU-R Recommendations, 1994 F Series Volume Part I, p. XIX (emphasis added).

services it regulates. Clearly, SSI's potential as an interference source is similar to that of a satellite based system. In fact, SSI's GSTS qualifies as a "Space Station" according to the pertinent article of the ITU Radio Regulations.⁹

The mobile and/or fixed nature of the GSTS concept is especially confusing following a series of contradictory statements from SSI. For example, in its April 30, 1996, presentation to IWG-6 (FCC WRC-97 Advisory Committee), which was an attempt to fit the proposed service under the Fixed Microwave agenda item 1.9.6 of WRC-97, SSI declared that GSTS is a "Fixed Service."¹⁰ However, in the Request and Petition, SSI makes it abundantly clear that one of its fundamental objectives is to eventually provide mobile services.¹¹ Indeed, several parties to this proceeding clearly confirm their understanding that GSTS would be a "mobile" service.¹²

Unless the Commission and the public understand exactly what SSI should be on a long-term basis, it will be quite difficult to make any serious progress in finding an appropriate regulatory niche for this new service. In light of this uncertainty, TIA recommends two possible courses of action:

⁹No. 61 of ITU Article 1 on Terms and Definitions states that a Space Station is "[a] Station located on an object which is beyond, is intended to go beyond, or has been beyond, the major portion of the Earth's atmosphere." Under No. 58 of these Terms and Conditions, SSI's proposed system qualifies as a "Station." SSI establishes that "the platform will be above 99% of the atmosphere" Application at 6. Thus, since SSI will operate beyond a "major portion" of the Earth's atmosphere, it should be classified as a "Space Station."

¹⁰This agenda item involves "the identification of suitable frequency bands above 30 GHz for use by the fixed service for high density applications." It was proposed by Canada and supported by the U.S. delegation. Its intent is to establish one or more exclusive or near exclusive allocations for terrestrial, high density microwave access networks. The sharing of high density microwave bands with space based services at 23 GHz (ISL), 26 GHz (TDRS) and 38 GHz (FSS) limits the rapid and high density deployment that the market demands at these frequency ranges.

¹¹Request and Petition at 2, 13, 17, 25.

¹²Syigma Photo News, Inc. at 1-4; Magnet Interactive Group, Inc. at 2-3; Mercy Medical Airlift at 2; U.S. Robotics Corporation at 1-3.

- Since SSI qualifies as a "Space Station," then GSTS should be considered to be a Mobile-Satellite System pursuant to No. 27 of ITU-R Radio Regulation Article 1. Any fixed applications would be considered "fixed-MSS" applications in the same manner as "fixed-cellular" systems providing wireless local loop services.
- At the ITU, the Commission should promote establishment of a new "Global Airborne Telecommunications Service" as proposed by TIA in its comments.¹³ Once established, this service would encompass different competitive airborne technologies and would help resolve the confusion over how to regulate GSTS.

SPECTRUM SHARING RESPONSIBILITIES MUST BE ADDRESSED

In its comments, Hughes Communications, Inc. ("Hughes") is "disturbed" by what it sees as a growing trend in spectrum management. In particular, Hughes regrets that "systems are designed and promoted without regard to other planned uses of radio spectrum and the other uses (that have been planned for decades) are summarily displaced"¹⁴

Hughes, and other satellite users, should heed these words. As detailed by TIA in its comments, FS users are, in effect, being displaced summarily from the 28 GHz band by LMDS and FSS users.¹⁵ Satellite systems that were "designed and promoted without regard to other uses" are now forcing FS systems in the 18, 23, 26 and 38 GHz bands to assume all or most sharing restrictions to accommodate space-based systems that never considered implementing interference mitigation

¹³TIA at 6-7.

¹⁴Hughes at 3.

¹⁵See Rulemaking to Amend Parts 1, 2, 21 and 25 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band, to Reallocate the 29.5-30.0 GHz Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, Third Notice of Proposed Rulemaking, 11 FCC Rcd 53 (1995).

techniques in their unchangeable designs.¹⁶ This is exactly why agenda item 1.9.6 was added to the WRC-97 agenda. TIA justifiably fears that this trend of disregarding FS needs will continue as the Commission evaluates SSI's proposed GSTS.

Consistent with this ongoing insensitivity to FS needs, neither Motorola Satellite nor Hughes mentions the co-primary status of FS in the 47.2-50.2 GHz band. Even though TIA might not have an issue with the future use of the 47.2-48.5 GHz band, it is now time that the Commission clearly declare to all potential users of these bands that FS users must be protected and that their legitimate needs for spectrum must be guaranteed. Regulatory actions involving spectrum allocation and spectrum management of these bands, including consideration of SSI's Request and Petition and Application, must incorporate these goals.

CONCLUSION

TIA supports the introduction of new technologies that would fully exploit the bands above 40 GHz. It generally does not oppose the services proposed by SSI.

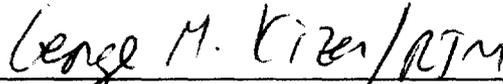
TIA recommends, however, that the Commission carefully consider SSI's proposal and that this evaluation fully weigh the potential impact on other users of the band requested, including FS users. Specifically, the Commission must: (i) ensure competitive availability of new airborne telecommunications technologies; (ii) identify how much spectrum is needed for the new service; (iii) reconcile SSI's proposal with the acute need for FS spectrum in the bands above 40 GHz; (iv) determine exactly how to classify GSTS; and (v) emphasize that any approval of GSTS must

¹⁶TIA at 7-9. See also Resolution 118 of WRC-95 "Use of the Bands 18.8-19.3 GHz and 28.6-29.1 GHz by NGSO FSS;" ITU-R WP 4/9 work to accommodate Inter-Satellite Links at 23 GHz; ITU-R WP 7/9 work to accommodate Data Relay Satellites at 26 GHz; and TIA's recent opposition to Motorola's FSS proposals at 37.5-40.5 GHz (pp. 18-19 of the March 29, 1996, TIA Reply Comments in ET Docket No. 95-183).

incorporate sound spectrum management protocols and, consistent with Hughes' warning, must guarantee protection of other users sharing the band.

Respectfully submitted,

FIXED POINT-TO-POINT COMMUNICATIONS
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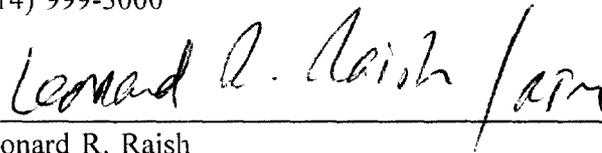


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CERTIFICATE OF SERVICE

I hereby certify that a true and correct copy of the foregoing Reply Comments on Request to Establish New GSTS Service, Additional Comments and Petition for Rulemaking will be mailed via first class mail, postage prepaid, to the following parties on the 14th day of May, 1996.

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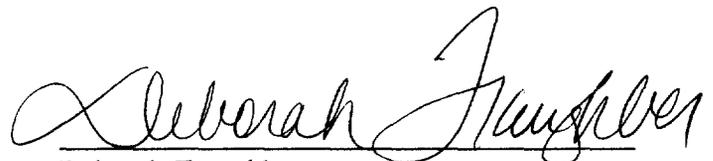
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