BEFORE THE

Federal Communications Commission

WASHINGTON, D.C.

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the matter of	)	
	)	
Amendment of the Commission's Rules with Regard to the 3650-3700 MHz Government Transfer Band	)))	ET Docket No. 98-237

COMMENTS OF LORAL SPACE & COMMUNICATIONS LTD.

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Loral Space & Communications Ltd. ("Loral") files these comments in response to the Notice of Proposed Rulemaking in the above-captioned proceeding.[1]

I. INTRODUCTION.

Loral is the owner of Loral Orion, Inc. ("Loral Orion") and, through its subsidiaries, is the majority owner and managing partner of CyberStar Licensee ("CyberStar"). Loral Orion and CyberStar are both Ka-band GSO FSS licensees and each have an interest in using a portion of the spectrum at issue in this proceeding for TT&C operations of their Ka-band satellites. Specifically, Loral Orion is a petitioner in the Petition for Rulemaking (the "TT&C Petition")[2] which seeks a Commission

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1 See In re Amendment of the Commission's Rules with Regard to the 3650-3700 MHz Government Transfer Band, Notice of Proposed Rule Making and Order, ET Dkt No. 98-237 (rel. Dec. 18, 1998).

2 See In re Amendment of Parts 2 and 25 of the Commission's Rules to Designate Extended C-Band Spectrum for TT&C Functions of GSO FSS Systems Operating in Bands Above Ku-

proceeding to designate 10 MHz of spectrum in both the 3600-3700 MHz band and the 6425-6525 MHz band for operations of GSO FSS space stations operating in bands above Ku-band. In addition, Loral filed an Application for Modification of the CyberStar license to use extended C-band -- specifically 3697 and 3699 MHz (space to earth) and 6426.5 and 6428.5 MHz (earth to space) frequencies for its TT&C operations.[3] On December 23, 1998, Loral filed a letter with the Commission in support of the TT&C Petition, stating that use of the extended C-band for GSO FSS systems above Ku-band would be economical, technically feasible, and practical.[4] Loral also urged the Commission to coordinate an extended C-band TT&C Notice of Proposed Rulemaking with the instant Notice.[5]

The Commission should permit satellite systems operating above the Ku-band to use a portion of the 3650-3700 MHz band (the "extended C-band") for their TT&C functions.[6] Because

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band, Petition for Rulemaking, RM No. 9411 (filed Aug. 7, 1997); Public Notice, Report No. 2306 (Nov. 23, 1998).

3 See Application of Loral Space & Communications Ltd. for Modification of Authorization for a Global Ka-band Satellite Communications System in Geostationary Orbit, at 6-8 (filed April 6, 1998).

4 See Letter from Laurence D. Atlas to Magalie Roman Salas, RM No. 9411 and ET Dkt. No. 98-237 (Dec. 23, 1998).

5 Id.

6 The Ka-band licensees requested a designation of 10 MHz in the 3600-3700 MHz band for TT&C operations of satellite systems operating above the Ku-band. Because the Commission noted that spectrum below 3650-3700 MHz band is encumbered by high powered government radar operations, the Commission must consider the fact that the Ka-band licensees' request

frequencies above the Ku-band are not suitable for TT&C operations, it is essential that the Commission allow TT&C operations from the extended C-band. Permitting satellite systems operating above the Ku-band to use the extended C-band for TT&C operations will promote the public interest by improving satellite system reliability and reducing satellite development and operational costs, thereby reducing costs to consumers and facilitating early deployment of new services. Moreover, TT&C earth stations can share with fixed wireless providers. Thus, the Commission should rescind its freeze on earth station applications, major modifications, and major amendments in the extended C-band and it should not allocate that band solely to the fixed service on a primary basis.

II. ALLOCATION OF SPECTRUM IN THE EXTENDED C-BAND FOR SATELLITE SYSTEMS' TT&C IS CRITICAL TO THE SYSTEMS' VITALITY.

Dependable TT&C communications are crucial to the mission of any satellite system. TT&C provides lifeline communication to satellites during all phases of spacecraft launch and on-orbit operations. Typically TT&C functions use very little spectrum (usually less than 1 MHz per system) and can be included and coordinated within the service band of GSO systems. However, the newer satellite systems that are licensed and proposed in frequencies above Ku-band cannot establish and maintain reliable TT&C functions within their service bands because of the propagation characteristics at these higher frequencies.

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in the TT&C Petition may be satisfied only by an allocation in the 3650-3700 MHz band. See Notice, at ¶ 4.

Implementing TT&C in bands above Ku-band is undesirable because the signal is fragile and much more susceptible to rain fade and other outside environmental forces than in Ku-band and lower frequencies. The critical TT&C links remain one of the few possible single-point failures for most satellite missions, and accordingly, satellites must have access to a clear, robust TT&C signal. Boosting power on a Ka-band or higher frequency system to strengthen an in-band TT&C signal is not a practical solution. Higher power TT&C systems would significantly increase ground equipment costs, require new designs and qualification of amplifier equipment, and complicate TT&C coordination with the in-band satellite services. This would increase operational costs and technology risks while reducing reliability.

On the other hand, TT&C ground systems that operate in C-band and Ku-band to support launch and operations are available worldwide and are built using industry accepted standard designs. Current equipment already has been adapted to operate in the extended C-band to provide greater reliability at a much lower cost than could be achieved by developing new, non-standard designs. Thus, the use of the extended C-band for TT&C is an efficient and reliable solution for satellite systems operating above Ku-band.

The first round satellite licensees in the Ka-band notified the Commission of the need for TT&C spectrum in the 3600-3700 MHz band when they filed their Petition for Rulemaking on August 7, 1997. Since that time, the FCC (on behalf of the licensees) has made filings at the ITU that support plans to use the extended C-

band for TT&C functions for these satellite systems. The licensees maintain that it is consistent with ITU regulations for the Commission to permit TT&C operations in the extended C-band.[7] The Commission should consider their request in this rulemaking and allocate the extended C-band on a primary basis for the TT&C functions of satellites operating above the Ku-band.

III. DESIGNATING SPECTRUM IN THE EXTENDED C-BAND FOR SATELLITE SYSTEMS OPERATING ABOVE KU-BAND IS EFFICIENT USE OF THE RADIO SPECTRUM AND IS IN THE PUBLIC INTEREST.

The new satellite systems which are being designed to operate above the Ku-band will offer reliable, ubiquitous, and affordable broadband services including high speed Internet services and digital access to telemedicine, distance learning, and multimedia services. These broadband satellite systems will advance the objective of Section 706 of the Telecommunications Act of 1996 to "encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans . . . by utilizing . . . measures that promote competition on the local telecommunications market".[8] Ensuring adequate TT&C operations for these satellite systems is consistent with the Commission's goals and the public interest.[9]

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[7] See TT&C Petition, at 3-4.

[8] See Notice, at ¶ 1.

[9] The Commission recognized the potential of these satellite systems in its Third Report and Order when it stated, "[t]hese satellite systems that will operate in this band [the Ka-band] represent a new age in satellite communications. These systems have the potential to provide a wide variety of broadband interactive digital services in the United States and around the world including voice, data and video; videoconferencing; facsimile; computer access and

In fact, Ka-band satellite services are likely to reach many more consumers sooner than proposed terrestrial services because Ka-band satellite operators already are licensed for their service frequency and are designing their systems. When a satellite-based service is implemented, all users within the service area footprint have immediate service access. The Commission's proposal to license the 3650-3700 MHz spectrum through auction will delay service because only after the auction, when the licensees are determined, will fixed service providers begin to plan and implement their systems. Moreover, rollout of terrestrial service will proceed only as fast as infrastructure obstacles can be overcome and will reach only those areas where market demand is high enough to justify investment.

Permitting Ka-band (and other) satellite operators to perform TT&C operations in the extended C-band will serve the public interest by enhancing system reliability, reducing development risks and operational costs, thereby reducing costs to consumers, and facilitating early deployment of satellite systems.

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telemedicine. The systems can provide direct-to-home services, potentially allowing customers to participate in activities from distance learning to interactive home shopping." In re 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 Frequency Band, to Establish Rules and Policies for Local Multipoint Distribution Service and for Fixed Satellite Services, 12 FCC Rcd 22310, ¶ 1 (1997).

IV. TT&C EARTH STATIONS CAN BE SUCCESSFULLY COORDINATED WITH FIXED SERVICE EQUIPMENT.

It is easier to share spectrum and to coordinate TT&C earth stations with other service providers that use the same spectrum because TT&C earth stations are usually located in remote areas and through larger antennae, they use a more narrow beamwidth than satellite service providers. This spacial isolation and use of narrow beamwidth allows an efficient use of radio spectrum and ensures that satellite services and terrestrial fixed services can both satisfy mission and business requirements effectively. While the Commission expressed concern regarding the spatial needs of earth stations operating in the extended C-band and fixed wireless providers offering point to multipoint services, it noted that through the limitation of power levels of the fixed wireless providers, coordination can be accomplished.[10] Indeed, the rural areas where TT&C earth stations are located typically are not financially attractive for fixed point to multipoint service providers. As already demonstrated in other service bands, fixed point to multipoint services that compete against incumbent telephone companies with local loop services are deployed in populated areas, leaving rural areas unserved. If planned appropriately, TT&C earth stations and fixed wireless providers can share the extended C-band. Accordingly, the Commission should lift its freeze on applications for new earth stations, major modifications, and amendments to existing earth

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[10] See Notice, at ¶ 12.

station facilities because such requests would have only a minor impact during the pendency of the Commission's Notice. Moreover, this would permit operators of international earth stations to meet the public need for capacity.

The Commission should promote the most efficient use of the spectrum in the planning and development stages of the extended C-band. Both satellite and terrestrial services can adapt easily to a shared spectrum policy when neither service has invested heavily in an inflexible infrastructure. Certainly, TT&C satellite earth stations could co-exist with fixed wireless services under certain parameters.[11] The Commission should establish these parameters and allocate the extended C-band as co-primary for both services.[12] As stated in the TT&C Petition, satellite operators need very little spectrum for their TT&C functions. Indeed, the licensees in the TT&C Petition request only a small amount of spectrum for the TT&C operations of systems above Ku-band -- a mere 10 MHz. As demonstrated above, a primary allocation of the extended C-band for TT&C operations is consistent with the Telecommunications Act of 1996.

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11 The current frequency coordination requirements that are now used in the 3700-4200 MHz band should be continued for TT&C earth stations operating in the extended C-band.

12 Accordingly, Loral supports the Commission's proposal to eliminate the primary land mobile service and the secondary non-government radiolocation service allocations in extended C-band. See Notice, at ¶¶ 16-17.

V. CONCLUSION.

For the foregoing reasons, the Commission should allocate the extended C-band on a co-primary basis for TT&C earth station operations for satellite services operating above the Ku-band and fixed wireless and rescind its freeze on earth station filings.

Respectfully submitted,

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