Before the
FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of

Preparation for International Telecommunication Union World Radiocommunication Conferences	)))	IC Docket No. 94-31

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REPLY COMMENTS OF LORAL/QUALCOMM PARTNERSHIP, L.P.

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EXECUTIVE SUMMARY

The United States proposals to WRC-95 must support and promote the introduction of Big LEO service. In particular, the United States must seek an allocation in the 5000-5250 MHz (Earth-to-space) and 6875-7075 MHz (space-to-Earth) bands to provide feeder link spectrum for GLOBALSTAR and other Big LEO systems. The United States also must seek feeder link allocations for NGSO MSS systems in a number of frequency bands in the C, Ku, and Ka-band ranges to assure that adequate spectrum is available to enable the prompt implementation of U.S.-licensed and other systems. Feeder link proposals should also ensure that appropriate PFD limits are adopted which will not impose excessive costs on NGSO MSS systems.

At WRC-95 the United States should also seek revisions to the MSS user link allocations, to improve their usefulness. The last sentence of RR 731E should be deleted; and RR 733E should be deleted. These provisions are not needed for the protection of other systems which will be adequately protected through other means. The United States can also support the revision to RR 731E concerning the use of mean values for e.i.rp. limits as contained in the CPM-95 Report. RR 753F should be modified to provide for a higher PFD in the 2483.5-2500 MHz band, to be calculated on a per space station basis. Revisions to existing MSS allocations in other frequency bands should also be made to permit MSS on a generic basis in all three ITU Regions.

The United States should support most of the revisions to Resolution 46 identified in the CPM-95 Report. These revisions, with the exception of the application of the affected region approach, should be incorporated into the VGE proposed changes to the Radio Regulations. The inclusion of the affected region methodology in Resolution 46 should be deferred until the implications of this approach are fully understood.

To ensure adequate spectrum for second generation MSS systems, the United States should propose adjustment of the current allocations consistent with the U.S. PCS allocations and propose additional allocations.

WRC-95 provides a critical opportunity to obtain needed allocations and revisions to the Radio Regulations which will support the timely introduction of Big LEO systems.

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REPLY COMMENTS OF LORAL/QUALCOMM PARTNERSHIP, L.P.

Loral/QUALCOMM Partnership, L.P. ("LQP"), hereby submits its reply comments in response to the Commission's Second Notice of Inquiry, ("Second Notice"), in preparation for the 1995 World Radiocommunication Conference ("WRC-95").[1] The Commission, on January 31, 1995, authorized LQP to construct, launch and operate a non-geostationary Mobile-satellite (MSS) system in the 1610-1626.5 MHz and 2483.5-2500 MHz bands, and, on a conditional basis, to construct the system using feeder links in the 5025-5225 MHz (Earth-to-space) and 6875-7075 MHz (space-to-Earth) frequency bands.[2] LQP plans to provide MSS both in the United States and internationally, and so has a substantial interest in the development of United States proposals for WRC-95.

Recent developments since the filing of the initial comments on the Second Notice, have given the Commission and the United States additional incentive to aggressively pursue proposals which support the implementation of Mobile-

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[1] In the Matter of Preparation for International Telecommunication Union World Radiocommunication Conferences, IC Docket No. 94-31, FCC 95-36. released January 31, 1995.

[2] Order and Authorization, ("LQP Licensing Order"), File Nos. 19-DSS-P-91(48), CSS -91-014 and 21-SAT-MISC-95, DA 95-128, released January 31, 1995.

satellite systems. On April 3, 1995, Orbital Communications Corporation, successfully launched the first two non-geostationary satellites in its constellation, which will be used to provide non-voice communications services worldwide. And, on April 7, 1995, the American Mobile Satellite Corporation launched the AMSC-I satellite into orbit over the United States. The implementation of these systems provides further demonstration of the role of United States' industry in developing new and innovative communications systems for the benefit of the U.S. and worldwide economy, and for the benefit of enhancing telecommunications services throughout the world. These systems, as well as LQP's, and others recently licensed by the Commission, have much to contribute. But to ensure the availability of these contributions, the United States must seek and obtain needed NGSO MSS feeder link allocations, elimination of constraints on existing MSS user link allocations, and additional allocations for the mobile-satellite service.

I. Feeder Links for Non-Geostationary MSS Systems

The top priority for the United States at WRC-95 is the adoption of allocations for feeder links for non-geostationary (NGSO) MSS systems. In particular, the United States must ensure that its proposals support the requirements of the currently licensed and pending U.S. NGSO MSS systems.

The United States should support LQP's requirement for feeder link allocations in the 5000-5250 MHz band for the Earth-to-space direction, and 200 MHz, from 6875-7075 MHz, in the space-to-Earth direction.[3] These proposals in the Second Notice support these requirements. Moreover, INMARSAT-P, as well

[3] LQP has been authorized to construct, at its own risk, the GLOBALSTAR system, using feeder links in the 5025-5225 MHz (Earth-to-space) and 6875-7075 MHz (space-to-Earth) frequency bands. See, LQP Licensing Order, File Nos. 19-DSS-P-91(48), CSS-91-014 and 21-SAT-MISC-95, DA 95-238, released January 31, 1995.

as a United States NGSO MSS applicant, plan to utilize these frequency bands for feeder links.[4] The use of these bands by LQP will enable it to implement its system as proposed, with multiple, low-cost gateway earth stations which will permit the service to be utilized as instant telecommunications infrastructure, and to permit extension of existing terrestrial and wireless systems. LQP's GLOBALSTAR system, in particular, can play a key role in the implementation of the Global Information Infrastructure (GII). As discussed below, there is significant support for United States feeder link proposals in the 5 GHz band.

The comments in this proceeding also support the Commission's proposal to seek an international allocation for NGSO MSS feeder links in the space-to-Earth direction in the 6875-7075 MHz band, as well as appropriate PFD limits for that band.

The Commission should also adopt its proposal to seek NGSO feeder link allocations in a number of frequency bands as supported by numerous parties and by the CPM-95 Report. Allocations for NGSO feeder links in a variety of frequency bands will ensure that the needs of the various United States and non-U.S. systems can be met. The Commission must reject unsupported arguments suggesting that feeder link allocations be limited to certain frequency ranges when studies within the ITU-R have amply demonstrated the feasibility of sharing with other services as well as the feasibility of reverse band working in frequencies allocated to the fixed-satellite service (FSS).

A. The United States Must Propose An Allocation for NGSO MSS Feeder Links in the 5000-5250 MHz Band

[4] The United Kingdom has advanced published the use of 150 MHz in the 5000-5250 MHz band for feeder links in the Earth-to-space direction on behalf of the INMARSAT ICO-P system.

Consistent with the Commission's proposals in the Second Notice, the United States must propose an allocation for NGSO MSS feeder links in the 5000-5250 MHz band. This allocation will provide essential feeder link spectrum in the Earth-to-space direction for the implementation of the GLOBALSTAR system, as well as INMARSAT-P and possibly one other system. This allocation will enable the currently unused spectrum in this band to be put to near-term and socially beneficial use.

The allocation in the 5000-5250 MHz band is supported by Comsat Mobile Communications ("Comsat Mobile"),[5] Constellation Communications, Inc. ("CCI")[6], and Mobile Communications Holdings, Inc. ("MCHI").[7] As Comsat Mobile states:

> ...the C-band feeder link proposal is critical to ensuring the success of future MSS systems and as such must be vigorously pursued. This view is based upon the fact that two U.S. Big LEO applicants have requested use of this band as well as the INMARSAT affiliate ICO Global Communications ("ICO-P")....The extensive work done internationally on the 5000-5250 MHz band, and the proposed footnote to protect MLS systems in this band, should help allay any concerns from the international aeronautical community.[8]

Technical support for this allocation is available in numerous studies which LQP has provided to the Commission. These studies confirm that NGSO MSS feeder links (Earth-to-space) can share the 5000-5250 MHz band with aeronautical

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[5] Comments of Comsat Mobile Communications, at pages 12-17.

[6] Comments of Constellation Communications, Inc., at pages 6-7.

[7] Comments of Mobile Communications Holdings, Inc., at pages 3-11.

[8] Comsat Mobile Comments, at page 12.

radionavigation systems.[9]

The Commission should reject the notion that electromagnetic compatibility studies have to be carried out to determine whether MSS can share with the aeronautical radionavigation systems being planned by some administrations, including the United States FAA, in this band. As LQP has demonstrated in previous filings NGSO MSS feeder links (Earth-to-space) can operate in the same spectrum as a number of possible future aeronautical radionavigation systems without causing harmful interference to such operations.

The United States is presented with a critical public policy issue with regard to the 5000-5250 MHz band. By supporting NGSO MSS feeder links in this band, the United States will promote efficient use of spectrum resources for both aeronautical radionavigation and NGSO MSS satellite systems. As the Commission is aware, the band was first allocated to aeronautical radionavigation in 1947, and only a portion of the band (5030-5090 MHz) is currently being used for microwave landing systems, which the FAA itself has announced will not be expanded in the United States. It is contrary to sound public policy to permit the aeronautical community an unlimited timeframe in which to warehouse the 5000-5250 MHz band for services which it currently has not defined and which may not even be suited for this frequency band.

The Commission, State Department, and NTIA staff participated in development of recommendations from ITU-R TG 8/3 and TG 4/5 to CPM-95 The CPM-95 Report supports the Commission's allocation proposals for the 5 GHz band and states that, assuming NGSO MSS feeder links are not operated co-

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[9] See, e.g., "Interference Assessment of MSS Gateway Uplink Transmissions Relative to MLS Airborne Users," prepared by Sat-Tech Systems, LQP Reply Comments in CC Docket No. 92-166, Technical Appendix, Attachment 4, June 20, 1994.

frequency with MLS, the band could "yield 130 MHz of contiguous spectrum for non-GSO/MSS feeder links that do not overlap MLS in frequency."[10] Additional spectrum could be made available for NGSO MSS "prior to the future need of additional channels for MLS as identified by ICAO," according the CPM-95 Report.

> Prior to the future need of additional channels for MLS as identified by ICAO, it may be feasible for MSS feeder links to use the band 5000-5030 MHz and 5091-5150 MHz if an appropriate regulatory procedure is adopted by a WRC to accommodate MLS expansion into this portion of the band if and when MLS requires additional channels in this band.[11]

Thus, CPM-95 recognized that 5091-5150 MHz and 5150-5250 MHz, could be available for NGSO MSS feeder links, assuming an appropriate regulatory procedure is adopted. This would permit 159 MHz of contiguous spectrum for use by NGSO MSS feeder links, until the year 2015 when ICAO has stated that MLS may require expansion spectrum.[12] The CPM-95 Report thus supports the Commission's proposed allocation for NGSO MSS feeder links (Earth-to-space) in the 5000-5250 MHz band. [13]

Consequently, LQP urges the Commission to support a United States proposal that WRC-95 allocate NGSO MSS feeder links in the 5000-5250 MHz band as proposed in its Second Notice.[14] Consistent with this action, the

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[10] CPM Report to WRC-95, Document CPM95/118-E, 4 April, 1995, at Section 3.7.1.1, page 64.

[11] Id.

[12] The United States has expressed its intent to utilize the Global Navigation Satellite System (GNSS) rather than MLS to support aircraft navigation.

[13] Second Notice, at Note 5 to Table 2, page 29.

[14] The 5030-5091 MHz band "is expected to support the aviation requirements until about the year 2015." See Document TG 4-5/117-E, 24 November, 1995.

Commission must reject the suggestion of AT&T and Motorola that the United States propose an agenda item for WRC-97 to consider the allocation of a portion of this band, on a worldwide basis, for high-speed wireless local area networks (LANS). [15] AT&T proposed such an agenda item within Informal Working Group 6 of the WRC-95 Industry Advisory Committee, but the item was not included as a proposal to the Commission. As LQP stated in its opposition to the AT&T proposal, the United States should not seek to include this item on the agenda for WRC-97 because it:

> (1) could undercut the U.S. efforts at WRC-95 to obtain the vitally needed allocations for NGSO MSS feeder links; (2) might have the prospect of limiting the location of NGSO MSS feeder link earth stations, which may be subject to siting considerations in order to share with ARNS; (3) might unduly expose NGSO MSS feeder link earth station operators with obligations to consider locations so as to limit potential interference to high-speed wireless LANS -- which could conceivably operate virtually anywhere; and (4) has not been subject to a United States domestic proceeding, review by the United States government, and an opportunity for review and comment by United States interests.[16]

In addition, LQP notes that AT&T has not undertaken any analysis of the possible impact on aeronautical radionavigation systems of operating high-speed wireless LANS in virtually unlimited locations.

Finally, the Commission should reject ESD USA's suggestion that the United States not propose allocation of portions of the 5000-5250 MHz band in the Earth-to-space direction. LQP's analysis confirms that the operation of the LQP feeder link in the 5 GHz band in the Earth-to-space direction will not cause

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[15] AT&T Comments, at pages 4-6, and Motorola Comments, at page 22.

[16] Report of IWG-6 to the WRC-95 Industry Advisory Committee, April 14, 1995.

harmful interference to ESD USA's feeder link operations in the space-to-Earth direction in the same band. The different characteristics of the systems will enable compatible operation. The Commission should disregard the ESD USA comments.[17]

B. The United States Must Propose Allocation of the 6875-7075 MHz Band for NGSO MSS Feeder links in Support of GLOBALSTAR and Other Systems

As the companion band to the feeder uplinks in the 5 GHz band, the Commission should adopt its United States proposal for allocation of the 6875-7075 MHz band for NGSO MSS feeder links in the space-to-Earth direction. This allocation is supported by Comsat Mobile, CCI and MCHI. Moreover, the feasibility of utilizing this band is supported in the CPM-95 Report. [18]

In addition to the allocation proposal for this band, the Commission has proposed an appropriate PFD limit on NGSO systems with relation to the GSO. [19] Similarly, the CPM-95 recommends the use of -158/-148 dB(W/m^2/4 kHz) for bands heavily used by GSO/FSS. The lower value is for arrival angles up to 5 degrees and the higher values for arrival angles between 25 degrees and 90 degrees. For arrival angles between 5 degrees and 25 degrees, the pfd limits should be linearly interpolated. The CPM-95 Report provides for less stringent values in the case where the non-GSO/MSS feeder links are not shared bidirectionally with GSO/FSS, or are lightly used by the GSO/FSS in the other direction. [20] This value would be used as a coordination threshold; that is, if the value is not exceeded by the NGSO MSS systems, no coordination with GSO FSS systems would be

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[17] Comments of ESD USA, at pages 6-7.

[18] CPM-95 Report, at Section 3.2 on Reverse-band Working, and Table 15.

[19] See Appendix I, MOD 2567, page 16, Second Notice.

[20] See Section 3.6.4.8 of the CPM-95 Report.

required.

At CPM-95, Canada asked that these limits be made more stringent "to ensure that the FS remains adequately protected and that only one set of pfd limits would be appropriate."[21] INMARSAT opposed the more stringent limits proposed by Canada, suggesting that, in the alternative, WRC-95 should consider adopting different PFDs depending on whether bands are "heavily used" or "lightly used."

The results of detailed analysis and discussion undertaken by ITU-R Task Group 4/5 and Working Party 4-9S should not be disregarded. These groups provided the following to the CPM-95 Report:

> Taking into account new and emerging usage of the fixed service, as well as future non-GSO MSS feeder-link requirements, a balance which provides adequate protection to the majority of FS systems plus flexibility to future non-GSO MSS feeder-link networks can be reached.

If the approach of using two sets of PFD limits is adopted, the CPM Report provides the following PFD limits to protect the FS in bands heavily used by the GSO/FSS for the 6-8 GHz band: -158/-148 dB(W/m^2/4 kHz) or -134/-124 dB(W/m^2/4 kHz) in the lightly used bands for the applicable arrival angles described above. This limit provides a balance between FS, GSO/FSS and feeder links for non-GSO/MSS systems.

LQP believes that a middle ground can be found in utilizing the more stringent limit proposed in the CPM-95 Report in all bands in the 4-8 GHz range. Utilizing different PFDs will only lead to controversy as to what constitutes heavily and lightly used bands. However, the United States should not agree to the Canadian proposal which is excessively and needlessly stringent. Use of the PFD proposed by Canada would require significantly larger and more costly

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[21] Revision 1 to Document CPM95/22-E, March 27, 1995.

gateway earth stations for NGSO MSS systems in order to operate at these lower levels, without demonstrable benefit to either GSO FSS systems or FS systems.

The proposal of AT&T to require that the PFD limits "in the 6825-7075 MHz and 12.75-13.25 GHz bands should change gradually as the angle of arrival changes"[22] ignores the outcome of CPM-95 and need not be considered.

C. The Commission Should Propose Feeder link Allocations in a Range of Frequency Bands in Support of Both United States and non-United States NGSO MSS Systems

The Commission should recommend NGSO MSS feeder link allocations in a range of frequency bands, as outlined in the Second Notice. LQP, Comsat Mobile, MCHI, TRW and Constellation support the initial Commission proposals. [23] In addition, the CPM-95 Report contains extensive information of the feasibility of NGSO MSS feeder link allocations in the C, Ku and Ka frequency bands, as well as an explanation of why such bands are required by different types of NGSO MSS systems.[24]

As the Commission is aware, the United States NGSO MSS licensees (LQP, Motorola and TRW) and pending applicants have different technical system designs and different market and service objectives. These system and service differences require feeder links in different frequency ranges. ITU-R TG 8/3 and TG 4/5 performed extensive analyses on the feasibility of NGSO MSS feeder links in a variety of frequency bands, validating their operation in all three frequency

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[22] AT&T Comments, at pages 3-4.

[23] LQP Comments, at page 12, and pages 14-15; Comsat Mobile Comments, at pages 12-17; MCHI Comments, at pages 3-11; Constellation Comments, at pages 6-7 and TRW Comments, at pages 13-19.

[24] CPM-95 Report, at

ranges. The conclusions of the ITU-R Task Groups, as well as of CPM-95 provide ample support for Commission rejection of the suggestion by Comsat World Systems, Hughes, GE Americom and AT&T that certain frequency bands, particularly bands in the Ku and Ka range, be deleted from consideration in United States proposals to WRC-95.[25] These parties have provided no basis for this proposal other than a desire to exclude NGSO MSS feeder links from spectrum currently used or planned for use by their own FSS or FS systems. They offer no technical analysis as to why either reverse-band operation, co-directional operation, or appropriate PFD limits on the NGSO MSS feeder links, will not afford adequate protection for FSS or FS services. As the Commission is well aware, spectrum in all three frequency ranges is essential to meeting the requirements of U.S. licensees and pending applicants, as well as non-U.S. systems.

Finally, LQP supports Iridium's recommendation that the issues of frequency allocations and regulatory provisions relating to NGSO fixed and mobile satellite services operating in user link frequencies above 3 GHz be placed on the agenda for WRC-97 rather than be addressed at WRC-95.[26] As Iridium points out, these matters were not contemplated in preparing the agenda for WRC-95, nor during virtually the entire United States preparatory process. Moreover, the necessary sharing studies for NGSO FSS and MSS feeder links for systems operating in user link frequency bands above 3 GHz have not yet been completed, while more than two years of work have gone into preparations for consideration of the NGSO MSS feeder link allocations for systems using the 1-3 GHz band for user links. The United States should focus on the feeder link requirements for

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[25] See Comsat World Systems Comments, at pages 2-8, Hughes Space & Electronics Comments, GE Americom Comments, at pages 2-5, and AT&T Comments, at pages 2-3.

[26] Iridium Comments, at page 26-27.

NGSO MSS systems using the 1-3 GHz band for user links, and thereby allow the Big LEO systems to be implemented in a timely manner so that they can provide new and enhanced services to the public.

D. The Comments Support a Flexible Approach with Regard to the Pairing of Feeder Link Allocations

Based on the Comments to the Second Notice, LQP believes that the Commission should not address the issue of "pairing" feeder link bands at the present time. As LQP stated in its Comments, the United States must focus on obtaining allocations for NGSO MSS feeder links in a number of frequency bands, including 5000-5250 MHz , 6725-6875, 6875-7075 MHz , 15.4-15.7 GHz, 4.5-4.8 GHz, 10.7-10.95 GHz and 11.2-11.45 GHz. [27] Allocations should also be vigorously pursued above 17.7 GHz to accommodate the needs of all NGSO MSS systems.

LQP agrees with MCHI that the United States should seek as much spectrum as possible, and not attempt to arbitarily match allocations.[28] As MCHI suggests, all systems may not have completed the process of identifying the appropriate band pairs for their systems. MCHI also agrees with LQP's support of allocation of the 15.4-15.7 GHz band in the Earth-to-space direction. As suggested by some parties, use of TT&C in the downlink feeder link, as well as other considerations, may call for more spectrum in the feeder downlink than the feeder uplink.

II. MSS USER LINKS

The commenting parties generally supported the Commission's proposals regarding MSS user links. These proposals should be adopted, with the slight

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[27] LQP Comments, at pages 15-16.

[28] MCHI Comments, at p. 8.

modifications discussed in LQP's initial comments and below, in order to improve the usefulness of the MSS user link bands for competitive MSS systems.

A. The United States Should Propose Modifications to RR 731E by Deleting the Final Sentence to Clarify the Primary Status of MSS at 1610-1626.5 MHz and Imposing a 3 dB Limit Averaged Over 30 Seconds on the Ratio of "Peak" to "Mean" EIRP Density Levels.

The final sentence of RR 731E should be eliminated completely in order to clarify the primary status of MSS in the 1610-1626.5 MHz band. See LQP Comments, at 3-8. MSS is allocated on a co-primary basis in this band with aeronautical radionavigation services. But, the final sentence of the footnote inconsistently suggests that MSS systems are obligated to provide protection from harmful interference to, and not claim such protection from, the Russian GLONASS system.

The obligations to coordinate between co-primary services are defined in the ITU regulations, and so, the language of this final sentence simply confuses the issue. MSS parties proposing to use this band agree with LQP that this confusing language should be eliminated. See Constellation Comments, at 2; TRW Comments, at 5-6.

The Commission's proposal to substitute a reference to RR 953 in place of the final sentence ultimately does not remove the ambiguity from this footnote. First, as noted above, the obligations of co-primary stations are already defined. Moreover, given the Russian Administration's agreement to migrate GLONASS operations below 1605 MHz, there is no longer any need for a "reminder" in RR

731E of GLONASS operations.[29] Accordingly, LQP recommends that the Commission adopt the unambiguous revision for RR 731E developed within Informal Working Group 3 of WRC-95 Industry Advisory Committee, i.e., simply eliminating the final sentence of RR 731E altogether.

With regard to the use of "mean" vs. "peak" values in RR 731E, most commenting parties supported the use of "mean" values. See Iridium Comments, at 8-9; AMSC Comments, at 7; TRW Comments, at 5-6. Although LQP believes that the EIRP density levels should correspond to "peak" values, it finds the use of "mean" values acceptable for both the -15 and -3 dB(W/4 kHz) levels as long as there is a limit on the ratio of "peak" to "mean" values of no greater than a factor of 3 dB averaged over a time period of 30 seconds. Moreover, when Mobile Earth Stations operate at EIRP density levels below -15 and -3 db(W/4 kHz) in the relevant portions of the band, there should be no limit on the "peak" to "mean" ratio. See LQP Comments, at 8. LQP would also accept the approach in the Section 1.3.1 of the CPM-95 Report, that is, the use of the "mean" value is applicable to the part of the band not used by RR 732 systems.

B. The United States Should Propose Suppression of RR 733E.

LQP advocated a proposal in its initial comments (at 9-10) to suppress RR 733E, which suggests an obligation to provide unnecessary protection for Radio-

[29] Although the Russian Administration has not yet ratified the U.S.-Russia agreement of September 1994, the U.S. government should continue to press for finalization of the agreed revisions to the GLONASS frequency plan.

Astronomy Services (RAS) in the 1610.6-1613.8 MHz band. Several other MSS system operators also supported suppression of RR 733E. Iridium Comments, at 9; TRW Comments, at 6-7; Constellation Comments, at 2-4. As LQP noted, this footnote is a holdover from a period when RAS held only secondary status in the band. Now that RAS is co-primary, RR 733E is no longer needed. As Constellation points out, the rationale for suppressing the final sentence of RR 731E is identical to the rationale for suppressing RR 733E, and, therefore, the United States should support suppression of RR 733E. See Constellation Comments, at 3.

The commenting parties also agreed with LQP that it would be inappropriate to replace RR 733E with a regulation similar to that adopted in the United States with regard to protection of RAS sites from MSS Above 1 GHz systems. See 47 C.F.R. § 25.213(a); LQP Comments, at 9-10; Iridium Comments, at 9; Constellation Comments, at 4-5. As Constellation aptly noted: "Administrations will have adequate notice of any proposed MSS earth station operations well outside of any radio astronomy protection zones, and the refinement of radio astronomy protection requirements can be best left to the ongoing activities of the ITU's Radiocommunication Sector." Constellation Comments, at 4-5.

In its comments, the Committee on Radio Frequencies (CORF) objects to

suppression of RR 733E.[30] CORF Comments, at 7-11. However, CORF has provided no legitimate justification for retaining this footnote. First, CORF claims that RR 733E should be retained to ensure that coordination between RAS sites and MSS systems is conducted on a case-by-case basis. Id. at 10. Because RAS is co-primary in the 1610.6-1613.8 MHz band, that is the procedure which would be used in any event.

Second, CORF erroneously claims that suppression of RR 733E "would permit future foreign Big LEO systems to interfere with RAS in the United States because foreign systems would not be bound by the domestic rules that protect U.S. radio astronomy from FCC-licensed MSS systems." Id. at 11. CORF's fears are groundless. Mobile Earth Stations associated with a foreign MSS system operating within the United States would have to be authorized by the Commission, and so, would be operating in accordance with the Commission's Rules. As a co-primary service, RAS will continue to be protected from harmful interference from MSS systems operating in the 1610-1626.5 MHz band if RR 733E is suppressed.

C. The United States Should Propose Its Revision of RR 753F With the Slight Modification Recommended by LQP.

LQP and other commenting parties generally support the Commission's proposed revision of RR 753F. See LQP Comments, at 10-11; TRW Comments, at

[30] CORF also objects to introduction of more specific language such as that in Section 25.213(a) of the Commission's Rules. CORF Comments, at 9-10.

8; Constellation Comments, at 5-6; AMSC Comments, at 8. As Constellation notes, "[t]his proposal will provide adequate protection of terrestrial services in [the 2483.5-2500 MHz] band while permitting higher MSS system capacity, particularly in serving users at the edge of a satellite's coverage area." Constellation Comments, at 6 (footnote omitted).

LQP recommended in its initial comments (at 11) that revision proposed for RR 753F should be modified to reflect that power flux density is to be applied on a per space station basis:

MOD 753F The use of the band 2483.5-2500 MHz by the mobile-satellite service and the radio-determination satellite service is subject to the application of the coordination and notification procedures set forth in Resolution 46 **(WARC-92)**. Coordination of space stations of the mobile-satellite and radio-determination satellite services with respect to terrestrial services is required only if the power-flux density produced at the Earth's surface exceeds ~~the limit in No. 2566~~ on a per space station basis.

The comments were not inconsistent with this proposal, and LQP recommends that it be adopted.

CORF proposes to add language to RR 753F which is unnecessary and unwise. See CORF Comments, at 12. The language itself would have no impact on stations operating in this band, and is therefore a useless addition. Given the substantial agenda of the United States for WRC-95, it should not propose modifications to footnotes which are unnecessary and not likely to receive support. LQP recommends that the language proposed by CORF be rejected.

III. REGULATORY PROCEDURES

While the allocation of spectrum for NGSO MSS feeder links, removal of constraints in the use of the 1610-1626.5 MHz and 2483.-2500 MHz bands, and allocation of additional spectrum to MSS are of paramount importance at WRC-95, the United States cannot overlook the necessity to ensure that the procedures adopted promote the efficient implementation of NGSO MSS systems. Specifically, the United States should propose revisions to Resolution 46 which governs advance publication, coordination and notification of NGSO MSS systems, to improve the usefulness of those procedures, and eliminate unnecessary coordination. The United States must also carefully review the proposed report of the Voluntary Group of Experts and determine how the proposed revisions to the International Radio Regulations should be modified to ensure that United States' MSS systems will effectively served by the new rules.

A. The United States Can Support Consolidation of Resolution 46 into the VGE Revisions of the Radio Regulations

The issue of regulatory procedures for NGSO MSS systems is inextricably intertwined with consideration of the VGE-proposed revision to the International Radio Regulations. Thus, while burdensome, the United States should submit proposed revisions to Resolution 46 as well as proposed revisions to the VGE revisions to the Radio Regulations. Ultimately, the goal at WRC-95 should be to adopt the VGE version as the regulatory output, incorporating current Radio Regulations governing satellite coordination, and Resolution 46.

B. The United States Should Support Revisions to Resolution 46 Which Will Reduce the Number of Coordinations Required Between NGSO MSS Networks and Terrestrial Systems

At CPM-95, a number of possible revisions to Resolution 46 were identified.[31] These revisions are essentially the same as those proposed in Iridium's Comments on the Second Notice.[32] LQP supports the following of these revisions:

(1) using different PFDs and/or FDP thresholds instead of RR 2566 in specific bands, as recommended by TG 2/2;

(2) modifying section 2.5 of Resolution 46 (coordination with terrestrial services) to provide for a new methodology to minimize coordinations between NGSO MSS systems and terrestrial services; and

(3) all ADDs and MODs in the CPM-95 Report concerning Resolution 46, with the exception of MOD 1, iii.

The above changes will clarify when coordination is required between NGSO MSS systems and terrestrial systems, and reduce the number of coordinations between such systems. The changes also will require administrations which believe that their systems may be adversely affected by a proposed NGSO MSS system to provide specific information concerning potential adverse impacts. These revisions will reduce the burdens on NGSO MSS systems and on terrestrial systems by eliminating needless coordination when the operation of neither system would be affected.

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[31] CPM-95 Report, at pages 172-185.

[32] Iridium Comments, at pages 19-21.

C. The United States Should Not Propose the Use of the Affected Region Approach Without Further Study.

The United States should not endorse or propose to WRC-95 revisions to Resolution 46 or other parts of the Radio Regulations which provide for the use of the definition of an affected region in identifying mobile earth stations which must coordinate with an NGSO MSS spacecraft or with other mobile earth stations. Within WP 8D, a Draft New Recommendation ITU-R M. [Doc. 8/45] entitled "Calculation of the affected region for a mobile-satellite service (MSS) network subject to Resolution 46 where coordination is to be effected between its space station assignments and co-frequency MSS, fixed service (FS) and mobile service (MS) ground-based stations of other administrations" is being submitted for approval at the June, 1995 meeting of Study Group 8.

This Draft New Recommendation provides a methodology with the stated purpose of identification of systems with which a proposed MSS spacecraft subject to Resolution 46 must coordinate. Currently, identification is on the basis of frequency band overlap. Because NGSO systems are inherently global in nature, this overlap approach was adopted at WARC-92. After WARC-92, the development of PFD levels, and methods of evaluating potential interference through simulations, proposed for incorporation into Resolution 46, will greatly reduce the number of coordinations between NGSO spacecraft and terrestrial fixed systems.

While the "affected area" approach may be useful with regard to terrestrial fixed systems, the methodology should not be applied in the case of mobile earth terminals of other NGSO MSS systems without additional study. The identification of territories beyond national borders to determine an "affected area" with regard to coordination of mobile earth terminals may conflict with sovereignty or create the perception that transborder rights in the use of

frequencies will result from such coordination.

With regard to coordination between NGSO spacecraft and mobile earth terminals of other systems, to which ITU-R. [Doc. 8/45] also would apply, the problem is more complex than that between NGSO spacecraft and terrestrial systems. More study is required before this approach can be considered for inclusion as a United States proposal.

IV. ADDITIONAL MSS ALLOCATIONS

Several commenters, including LQP, supported the inclusion of additional allocations for MSS in the WRC-95 proposals. The WRC-95 IAC recognized that there was a need for such allocations and the comments support that view.

1675-1710 MHz. Several parties support the global allocation in the 1675-1710 MHz band for Earth-to-space MSS operations. See LQP Comments, at 29-30; Iridium Comments, at 13; AMSC Comments, at 11-12; COMSAT Mobile Comments, at 19-20. This band is currently used by MetSat and MetAids, but it appears possible for MSS systems to share this band with these services. However, to facilitiate this allocation, RR 735A should be suppressed in order to eliminate the unnecessary "super-primary" status for future MetSat and MetAids systems. See Iridium Comments, at 13-16. As Iridium points out, there is no reason to allow MetSat/MetAids systems to develop under the current regulation in a manner which may inhibit effective sharing with MSS.

1525-1559/1626.5-1660.5 MHz. LQP supports a generic allocation for MSS in the 1525-1559 MHz (space-to-earth) band paired with 1626.5-1660.5 MHz (earth-to-space). LQP Comments, at 30. AMSC, Constellation and TRW also support such an allocation, and point out that a generic MSS allocation for these bands would enhance flexibility and spectrum utilization and efficiency. AMSC