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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20024

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FEDERAL COMMUNICATIONS COMMISSION
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In the Matter of	)	
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Redesignation of the 17.7-19.7 GHz Frequency Band, Blanket Licensing of Satellite Earth Stations in the 17.7-20.2 GHz and 27.5-30.0 GHz Frequency Bands, and the Allocation of Additional Spectrum in the 17.3-17.8 GHz and 24.75-25.25 GHz Frequency Bands for Broadcast Satellite-Service Use	)	IB Docket No. 98-172 RM-9005 RM-9118

REPLY COMMENTS OF
LOCKHEED MARTIN CORPORATION

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EXECUTIVE SUMMARY

Lockheed Martin hereby submits its reply comments in this rulemaking proceeding. First and foremost, Lockheed Martin urges the Commission to designate all primary fixed-satellite service ("FSS") downlink spectrum in the 18 GHz band on an expedited basis to permit Ka-band FSS licensees to construct their systems at the earliest possible time. Specifically, Lockheed Martin requests that the Commission designate 500 megahertz of sole primary geostationary orbit ("GSO") FSS downlink spectrum in either the 18.3-18.8 GHz or 18.1-18.6 GHz band, as well as 500 megahertz of sole primary non-geostationary orbit ("NGSO") FSS downlink spectrum at 18.8-19.3 GHz.

Designation of the requested sole primary FSS spectrum in the 18 GHz band will permit the deployment of ubiquitous small-antenna user terminals in all available Ka-band FSS spectrum. In this connection, Lockheed Martin requests the Commission to adopt blanket licensing procedures and related technical parameters for Ka-band GSO FSS systems based on the criteria agreed upon by a majority of the GSO Blanket Licensing Industry Working Group participants. However, because no such agreement exists with respect to the blanket licensing of NGSO FSS user terminals, the Commission should permit interested Ka-band NGSO FSS proponents to perform necessary technical work before addressing NGSO FSS blanket licensing.

In addition, the Commission should not consider issues relating to GSO/NGSO sharing in the instant rulemaking. These GSO/NGSO sharing issues are outside the scope of this proceeding, involve technical work which remains ongoing before the ITU, and would substantially impact the ability of U.S. satellite licensees to utilize Ka-band spectrum. Therefore,

as it is doing in the context of GSO/NGSO sharing in the Ku-band, the Commission should address Ka-band GSO/NGSO sharing issues in the context of a separate rulemaking proceeding.

Finally, Lockheed Martin supports the Commission's proposal to adopt a domestic broadcast-satellite service ("BSS") allocation in the 17.3-17.8 GHz band and a corresponding BSS feeder link allocation in the 24.75-25.25 GHz bands. This allocation will not only provide additional spectrum for traditional BSS video services, but will also promote the development of next-generation BSS services to meet the increasing demand for advanced broadband communications services.

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Before the
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REPLY COMMENTS OF
LOCKHEED MARTIN CORPORATION

Lockheed Martin Corporation ("Lockheed Martin") hereby submits its reply comments in the above-captioned rulemaking proceeding.[1] While Lockheed Martin believes that the technical issues associated with blanket licensing should be addressed expeditiously by the Commission, it is critical for the Commission to identify and designate, at the earliest possible time, all FSS downlink spectrum in the 18 GHz band to permit Ka-band FSS licensees to construct their systems. Specifically, Lockheed Martin requests that the Commission designate 500 megahertz of sole primary GSO FSS downlink spectrum in either the 18.3-18.8 GHz or the

[1] Lockheed Martin is the licensee of the Astrolink™ System, a global geostationary satellite orbit ("GSO") fixed-satellite service ("FSS") Ka-band satellite network. Lockheed Martin also has pending before the Commission applications for (i) certain modifications to the Astrolink™ authorization; (ii) a second-round GSO FSS Ka-band satellite system (Astrolink-Phase II™) ; and (iii) a non-geostationary satellite orbit ("NGSO") FSS satellite system that will operate in Ka-band and V-band frequencies (the LM-MEO System).

18.1-18.6 GHz band, as well as 500 megahertz of sole primary NGSO FSS downlink spectrum at 18.8-19.3 GHz.

Sole primary FSS designations in the 18 GHz band will permit the full implementation and operation of Ka-band FSS systems, including the deployment of ubiquitous small-antenna user terminals in all available FSS spectrum. To facilitate such deployment, particularly in the context of a 2° spacing environment, the Commission should adopt blanket licensing procedures and related technical parameters for Ka-band FSS systems based on the criteria agreed upon by a majority of interested Ka-band FSS proponents. With respect to Ka-band GSO FSS systems, this agreement is set forth in the GSO Blanket Licensing Industry Working Group Report. No such agreement yet exists with respect to NGSO FSS user terminals, and the Commission should permit interested Ka-band NGSO FSS proponents to perform necessary technical work before addressing blanket licensing of NGSO FSS user terminals.

Moreover, the Commission should resist efforts to bootstrap unrelated issues into this proceeding. Specifically, Motorola seeks to expand the scope of this proceeding to include blanket licensing of NGSO FSS user terminals operating in primary GSO FSS spectrum, and to have the Commission substantially alter the delicate balance it struck in the Ka-band plan by effectively eliminating the secondary designation for NGSO FSS use of primary GSO FSS bands. Because these GSO/NGSO issues are outside the scope of this rulemaking proceeding, involve technical work which remains ongoing before the ITU, and would substantially impact the ability of U.S. satellite licensees to utilize Ka-band spectrum, these issues must be addressed by the Commission in the context of a separate rulemaking proceeding on GSO/NGSO sharing.

Finally, Lockheed Martin supports the Commission's proposal to adopt a domestic broadcast-satellite service ("BSS") allocation in the 17.3-17.8 GHz band and a corresponding BSS feeder link allocation in the 24.75-25.25 GHz bands. This allocation will not only provide additional spectrum for traditional BSS video services, but will also promote the development of next-generation BSS services to meet the increasing demand for advanced broadband communications services.

I. 18 GHZ SPECTRUM ALLOCATION ISSUES

The Commission has determined that Ka-band GSO FSS systems require a minimum of 500 megahertz of downlink spectrum within the 17.7-18.8 GHz band, and that Ka-band NGSO FSS systems require 500 megahertz of downlink spectrum in the 18.8-19.3 GHz band, to permit full deployment and operation of these advanced broadband satellite systems.[2] The Commission has since concluded that it is impractical for FSS systems with ubiquitous user terminals to operate co-frequency with FS systems, and that the public interest is best served by segmenting the 18 GHz band.[3] In view of these findings, Lockheed Martin urges the Commission to designate immediately 500 megahertz of sole primary GSO FSS spectrum, as well as 500 megahertz of sole primary NGSO FSS spectrum, in the 18 GHz band.

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2 *See 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*, First Report and Order and Fourth Notice of Proposed Rulemaking, 11 FCC Rcd 19005, 19036-37 (1996) ("*28 GHz First Report and Order*").

3 *See* NPRM ¶ 19.

In its initial comments, Lockheed Martin asked the Commission to designate 500 megahertz of sole primary GSO FSS spectrum in the 18.3-18.8 GHz band, subject to a relaxation of the p.f.d. limit currently imposed on FSS use of the 18.6-18.8 GHz band in Region 2. Additional analysis suggests that the Commission alternatively should consider designating the 18.1-18.6 GHz band for sole primary GSO FSS use. The latter option would involve accommodating users of 40 megahertz of wideband point-to-point fixed service ("FS") spectrum (18.1-18.14 GHz) and 20 megahertz of narrowband point-to-point FS spectrum (18.58-18.6 GHz) in other parts of the 18 GHz band designated for FS use. However, this option does have the benefit of avoiding the p.f.d. issues associated with use of the 18.6-18.8 GHz band.

The Independent Cable & Telecommunications Association ("ICTA"), on behalf of the CARS/private cable industry, has stated that CARS users simply cannot operate at 18 GHz if any portion of the CARS designation at 18.142-18.580 GHz is modified in any way, and that CARS operators cannot share spectrum with ubiquitous GSO FSS user terminals.[4] Accordingly, under either scenario described above, and even under the Commission's primary spectrum designation proposal put forward in the NPRM, it appears that CARS operations cannot be accommodated at 18 GHz. Because CARS operators must obtain spectrum in other appropriate FS frequency bands, the Commission will have additional flexibility to adopt a sole primary GSO FSS designation in either the 18.3-18.8 GHz or 18.1-18.6 GHz band.

Regardless of the specific frequency bands chosen by the Commission for GSO FSS use, it is essential that the Commission designate these bands at the earliest possible time to permit Ka-band GSO FSS licensees to finalize their system designs and begin constructing their

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4 *See* ICTA Comments at 6-10, 13.

satellite systems. As with inter-satellite link spectrum, Ka-band GSO FSS licensees must know precisely what service link spectrum will be available to proceed with system construction. Delay in identifying available service link will result in a commensurate delay in the deployment of Ka-band GSO FSS systems, unnecessarily denying the benefits of advanced broadband satellite communications services to U.S. consumers during the interim. Therefore, the Commission should identify and designate available GSO FSS spectrum at the earliest possible time, even if it must later revisit the rules associated with GSO FSS use of that spectrum.

Finally, as stated in its initial comments, Lockheed Martin believes the Commission's spectrum dedication plan should grandfather only FS operations that are licensed and constructed as of the NPRM release date, September 18, 1998, and that any such grandfathering should have a reasonable sunset date.[5] A sunset for grandfathered FS operations will permit Ka-band FSS systems to deploy ubiquitous small-antenna user terminals in spectrum designated for FSS use on a sole primary basis. In implementing such a sunset provision, and indeed any possible relocation procedures it may develop, the Commission must carefully balance the requirements of incumbent FS users with the needs of Ka-band FSS licensees to implement new systems and services without unnecessary capital outlays. In this connection, to the extent that reasonable relocation costs may be associated with the deployment of ubiquitous FSS user terminals prior to the sunset of grandfathered FS operations in a particular band, the Commission should not impose such costs on FSS licensees which opt to utilize the subject spectrum for applications which otherwise could have been coordinated with FS operations on an individual basis.

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5 *See* Lockheed Martin Comments at 10-13.

II. BLANKET LICENSING ISSUES

Lockheed Martin supports the Commission's proposal to implement blanket licensing in certain bands for ubiquitous small-antenna FSS earth stations. Specifically, Lockheed Martin urges the Commission to adopt immediately blanket licensing procedures and associated technical parameters for GSO FSS earth stations based on the criteria agreed upon by a majority of interested Ka-band licensees. However, because no effort has yet been made to forge such an agreement among interested Ka-band NGSO FSS proponents, and because it must preserve the ability of multiple NGSO FSS systems to operate at Ka-band, the Commission should not address blanket licensing of Ka-band NGSO FSS user terminals until the necessary technical work has been performed by interested members of the U.S. satellite industry.

A. GSO FSS Blanket Licensing

Many of the technical issues relating to GSO FSS blanket licensing have been addressed by the GSO Ka-Band Blanket Licensing Industry Working Group ("BL-WG"), the first report of which has been filed with the Commission in connection with this proceeding.[6] Lockheed Martin strongly supports the compromise uplink off-axis e.i.r.p. spectral density limits agreed to by all participants in the BL-WG — with the exception of Hughes/PanAmSat — as well as the other technical matters on which the BL-WG was able to reach consensus.

Specifically, Lockheed Martin supports the adoption of an uplink e.i.r.p. spectral density limit of 25.0 dBW/MHz measured at an off-axis angle of 2°.[7] This figure represents a

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[6] *See* Report of the GSO Ka-Band Blanket Licensing Industry Working Group, Conditions for Compatibility with 2° Orbital Spacing (filed Nov. 19, 1998) ("BL-WG Report").

[7] *See* BL-WG Report at 7.

substantial reduction from Lockheed Martin's initial preferred value of 32.6 dBW/MHz, and constitutes the lowest off-axis e.i.r.p. spectral density limit at which Lockheed Martin's Astrolink™ System can operate blanket licensed user terminals in a 2° spacing environment.[8] Commission adoption of a lower value would preclude the deployment of small-antenna user terminals by the Astrolink™ System and many other licensed Ka-band GSO FSS systems, making those systems non-viable. Lockheed Martin also supports the downlink p.f.d. spectral density limit of -120 dBW/m^2/MHz averaged across a 40 megahertz band, with a higher limit of -118 dBW/m^2/MHz applicable on a per megahertz basis.[9]

In addition, Lockheed Martin agrees with the Commission's proposal to individually license earth stations that do not comply with the adopted uplink off-axis e.i.r.p. density and downlink p.f.d. threshold values if these earth stations are coordinated with affected Ka-band satellite systems. As discussed in the BL-WG Report, such authorizations should include a caveat that coordination agreements are valid only as to the operators with which they were reached, and that another coordination agreement covering non-conforming earth station operations must be reached if the Commission reassigns the subject orbit locations to a new operator.

Hughes and PanAmSat, however, advocate blanket licensing technical parameters and related provisions which diverge substantially from those agreed to by the other Ka-band GSO

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8 *See id.* at 8.

9 *See id.* at 6.

FSS licensees in the BL-WG Report.[10] Hughes/PanAmSat simply believe that they have got it right and the rest of the U.S. satellite industry has it wrong. However, with respect to basic blanket licensing issues such as the uplink e.i.r.p. spectral density limit, the current Hughes/PanAmSat position is even dramatically different from that which Hughes itself had been advocating previously in the BL-WG.[11] Despite the uncertain and evolving nature of the Hughes/PanAmSat system design and business plan, they would have the Commission adopt blanket licensing technical parameters and related provisions which would accommodate Hughes/PanAmSat only, and would make other licensed Ka-band systems totally non-viable.[12] The Commission should reject attempts to dictate the outcome of this proceeding in a manner which would prohibit the deployment of other licensed Ka-band systems in favor of a system design that apparently is still evolving. Instead, the Commission should establish technical parameters and related provisions for GSO FSS blanket licensing based on the general agreement

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[10] Given that Hughes owns 80 percent of PanAmSat and the two companies have adopted similar, if not identical, positions on all major blanket licensing issues, Lockheed Martin will address their arguments together rather than separately.

[11] Hughes Comments, Technical Appendix B at 1 (although Hughes/PanAmSat now advocate a 2° off-axis uplink e.i.r.p. spectral density limit of 20 dBW/MHz, "[i]n the GSO Blanket Licensing Industry Working Group, Hughes had been advocating a higher EIRP density value, about 28 dBW/MHz . . .").

[12] Lockheed Martin suspects that the differences between Hughes/PanAmSat's current positions and those of the rest of the U.S. satellite industry, as well as the positions that Hughes had advocated earlier, are the result of an evolving system design on the part of Hughes/PanAmSat. In contrast, Lockheed Martin has expended tens of millions of dollars to design and develop the Astrolink™ System to operate successfully under real-world conditions at Ka-band. The technical parameters and related provisions developed by the BL-WG and supported by all participants — with the exception of Hughes/PanAmSat — reflect the general agreement regarding appropriate blanket licensing parameters for Ka-band user terminals, below which the Astrolink™ System and other licensed systems will be unable to operate.

reached by the majority of Ka-band GSO FSS licensees as outlined in the BL-WG Report. The adoption of the higher uplink levels proposed by the majority of the licensees in the BL-WG Report would allow all systems to proceed, including those of Hughes/PanAmSat. By contrast, the adoption of the lower Hughes/PanAmSat uplink levels will preclude many of the licensees from proceeding with their system implementation.

Indeed, examination of the new Hughes/PanAmSat position on the appropriate uplink off-axis e.i.r.p. limit for Ka-band user terminals reveals their fundamental misunderstanding of real-world satellite system operations at Ka-band. For example, Hughes/PanAmSat make much of the Commission's rules and the satellite industry's past experience at C-band and Ku-band. Hughes/PanAmSat's basic premise appears to be that the Commission simply should adopt an artificially low off-axis uplink e.i.r.p. limit for Ka-band earth stations and let satellite operators coordinate earth station operations which exceed that very low limit, just as they have done at C-band and Ku-band. However, the Hughes/PanAmSat position totally ignores the needs of other Ka-band licensees, as well as the significant technical differences between C/Ku-band networks and the broadband satellite systems that will be deployed at Ka-band.

First, the Hughes/PanAmSat approach would make the Astrolink™ System and other licensed Ka-band systems non-viable because these systems' user terminals cannot successfully operate at an artificially low off-axis e.i.r.p. limit of 20 dBW/MHz, thereby denying the benefits of blanket licensing to all of these systems. Rather than accepting a blanket licensing scheme which excludes a large number of Ka-band systems, the Commission should instead adopt blanket licensing technical parameters which would accommodate the maximum number of

licensed Ka-band systems. Such technical parameters are reflected in the BL-WG Report, and have been agreed to by all participants in the BL-WG except, of course, Hughes/PanAmSat.

Second, there are substantial technical differences between C/Ku-band and Ka-band satellite networks that impact their ability to coordinate with adjacent satellites and make the industry's experience at C-band and Ku-band of only limited value in developing appropriate blanket licensing criteria for Ka-band systems. Significantly, the broadband satellite systems licensed at Ka-band typically will use digital transmissions across the entire bandwidth, leaving essentially no flexibility to accommodate non-compliant transmissions in adjacent satellite networks.[13] In contrast, C-band and Ku-band FSS networks typically utilize a wide range of transmission types across their usable frequency range, thereby giving the flexibility to plan compatible transmissions based on a knowledge of the actual traffic loading of the adjacent satellite networks. This variety in the types of traffic carried in C/Ku-band satellite networks provides C/Ku-band satellite operators the ability to use traffic management as an effective tool in coordinating their networks. Because Ka-band satellite operators generally will be unable to exploit such flexibility to coordinate their networks, the rules applicable at C-band and Ku-band are simply inappropriate at Ka-band. Blanket licensing rules for Ka-band networks must be defined more strictly to permit co-frequency operation of these broadband satellite systems in a 2° spacing environment, without reliance on the ability to coordinate with adjacent satellites.

With respect to other blanket licensing issues, blanket licensing of GSO FSS earth terminals should also be allowed in the 29.25-29.5 GHz uplink band which is shared co-primary

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[13] For example, the 500 megahertz of spectrum available at 29.5-30.0 GHz typically is divided into four 125 megahertz channels, each of which is fully utilized to carry digital traffic.

between GSO FSS and mobile-satellite service ("MSS") feeder links, despite the suggestions of Iridium to the contrary. As Hughes noted in its comments, this band was specifically contemplated for use by GSO FSS ubiquitous user terminals when the 28 GHz band plan was promulgated.[14] Future use of the band by MSS feeder links must be consistent with the Commission's rules, which reflect a delicate compromise between GSO FSS and MSS interests and which already provide feeder link spectrum for Iridium and similar NGSO MSS systems. Iridium cannot now assert that these rules should be changed to provide it with additional MSS feeder link spectrum.

Finally, Lockheed Martin urges the Commission to reject efforts to limit unnecessarily the types of FSS earth stations which may be deployed in the Ka-band. For example, although SkyBridge recognizes that "[w]isely, the Commission does not propose technical constraints on the sort of gateway earth stations that would be permitted to co-exist with FS operations . . . [so as not to] impede the development of new technologies and result in economic inefficiencies," it suggests that the Commission adopt a narrow definition of "gateway" earth stations to limit their deployment to "protect FS licensees."[15] The narrow definition SkyBridge proposes describes perfectly the type of gateway earth stations contemplated for the SkyBridge and SkyBridge II systems, but may exclude other types of gateway earth stations that may be deployed by first-round Ka-band licensees and other second-round Ka-band applicants. Therefore, the Commission should retain its initial proposal to rely on individual coordination

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14 *See* Hughes Comments at 12.

15 SkyBridge Comments at 8-9.

with FS stations to govern earth station deployment in any GSO FSS bands that may be shared with the FS on a co-primary basis.

B. NGSO FSS Blanket Licensing

As noted above, Ka-band NGSO FSS proponents have not yet had the opportunity to perform technical work relating to the blanket licensing of NGSO FSS user terminals to ensure that multiple systems will be able to share Ka-band NGSO FSS spectrum. The Commission should not address NGSO FSS blanket licensing until such essential technical work is performed. Teledesic, however, asks the Commission to ignore the needs of other Ka-band NGSO FSS proponents and instead "simply adopt a rule permitting blanket licensing of earth stations for use with NGSO FSS systems, processed on a system by system basis."[16] Such an approach would have disastrous consequences for NGSO FSS sharing at Ka-band.

The need to preserve access to NGSO FSS spectrum for multiple systems, and to further examine the complex technical issues associated with NGSO/NGSO sharing, make it absolutely critical that the Commission, together with interested NGSO FSS proponents, develop appropriate technical criteria for blanket licensing of NGSO FSS user terminals. Indeed, technical work relating to NGSO/NGSO sharing is already being performed in the ITU-R in Joint Task Group 4-9-11 and Working Party 4A. The Commission and NGSO FSS proponents should build on this important work to develop blanket licensing criteria for NGSO FSS user terminals that facilitate access to available spectrum by multiple systems. Thus, the Commission should decline Teledesic's invitation to adopt a blanket licensing approach that would simply ignore critical NGSO/NGSO sharing issues, force other NGSO FSS proponents to continue to develop

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[16] Teledesic Comments at 10.

their systems without Commission guidance regarding the NGSO FSS sharing environment, and blindly subject subsequent systems to the criteria set by an individual NGSO FSS blanket licensing application. Rather, the Commission should address blanket licensing of NGSO FSS user terminals only after NGSO FSS proponents have the opportunity to perform necessary technical work in this area. The Commission should encourage the formation of an NGSO FSS industry group similar to the BL-WG, comprised of the one current licensee and other NGSO FSS applicants, and the Commission should adopt NGSO FSS blanket licensing criteria based on the consensus views of this group.

III. THE COMMISSION SHOULD NOT ADDRESS GSO/NGSO SHARING ISSUES IN THIS PROCEEDING

In its comments, Motorola attempts to bootstrap unrelated issues associated with GSO/NGSO sharing into this blanket licensing proceeding. Specifically, Motorola urges the Commission to expand the scope of this proceeding to include NGSO FSS user terminals operating on a secondary basis in GSO FSS bands, and argues that their operations would be consistent with secondary status if they meet e.p.f.d. and a.p.f.d. limits that may be adopted at WRC-2000.[17] However, because the GSO/NGSO sharing issues raised by Motorola are outside the scope of the instant proceeding, involve technical work that remains ongoing before the ITU,

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[17] *See* Motorola Comments at 7-8. Motorola and Boeing also urge the Commission to impose the more stringent uplink power density limits applicable within ± 3° of the GSO arc to directions other than the GSO plane. *See* Motorola Comments at 14, Boeing Comments at 3-4. As discussed in its original comments, Lockheed Martin strongly opposes this proposal because it would place an undue burden on GSO FSS licensees and could significantly increase the cost and complexity of GSO FSS user terminals. Moreover, imposition of such onerous requirements on GSO FSS operators would be totally inconsistent with their primary spectrum designation, forcing primary GSO FSS operators to "protect" secondary NGSO FSS operations.

and would substantially impact the ability of U.S. satellite licensees to utilize Ka-band spectrum, they should be addressed in a separate rulemaking proceeding.

The Commission and the U.S. satellite industry are currently attempting to develop appropriate GSO/NGSO sharing criteria internationally in ITU-R Joint Task Group 4-9-11. Premature consideration of GSO/NGSO sharing issues threatens GSO Ka-band deployment and the delicate balance struck between GSO FSS and NGSO FSS systems in the Commission's Ka-band plan. The Commission has determined that these Ka-band satellite services should operate in separate band segments "[u]ntil such time as studies are completed in the ITU-R."[18] Accordingly, the Commission should not adopt blanket licensing criteria based on e.p.f.d. and a.p.f.d. limits that have not yet been adopted internationally, and should continue to require NGSO FSS systems to operate on a secondary, non-interference basis in spectrum designated primary for GSO FSS use. To the extent that the Commission seeks to modify in any way its implementation or interpretation of the primary GSO FSS or secondary NGSO FSS designations at Ka-band, such modifications should only be considered as part of a separate rulemaking proceeding after ongoing ITU technical work has been completed.

IV. BROADCAST-SATELLITE SERVICE ALLOCATION

As stated in its initial comments, Lockheed Martin supports the Commission's proposal to domestically allocate the 17.3-17.8 GHz and 24.75-25.25 GHz bands for the broadcast-satellite service ("BSS") in conformance with the international BSS allocation in this band for Region 2.[19] Because there is insufficient capacity available for use in the United States in the Planned BSS

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18 *28 GHz First Report and Order*, 11 FCC Rcd at 19030.

19 *See* Lockheed Martin Comments at 23-25.

bands to support the development and expansion of new BSS businesses, the Commission should implement its proposal to domestically implement a BSS allocation in the 17.3-17.8 GHz and 24.75-25.25 GHz bands. Service rule issues regarding BSS use of this spectrum should not be addressed at this time, but should be discussed in a separate proceeding.

V. CONCLUSION

For the foregoing reasons, Lockheed Martin requests the Commission to designate immediately 500 megahertz of sole primary GSO FSS downlink spectrum in either the 18.3-18.8 GHz or 18.1-18.6 GHz bands, and 500 megahertz of sole primary NGSO FSS spectrum in the 18.8-19.3 GHz band. In addition, the Commission should adopt the GSO FSS blanket licensing criteria supported by the substantial majority of the GSO Ka-Band Blanket Licensing Industry Working Group, including off-axis uplink e.i.r.p. and downlink p.f.d. spectral density limits, and should address NGSO FSS blanket licensing issues only after NGSO FSS proponents have had an opportunity to perform necessary technical work. Finally, the Commission should consider GSO/NGSO sharing issues in a separate proceeding after ITU work on these issues has been completed.

Respectfully submitted,

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December 21, 1998

ENGINEERING CERTIFICATE

I hereby certify that I am the technically qualified person responsible for the preparation of the engineering information contained in the attached Reply Comments of Lockheed Martin Corporation, that I have either prepared or reviewed the engineering information contained in these Comments, and that the technical information is true and correct to the best of my knowledge, information, and belief.

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I hereby certify that the foregoing **Reply Comments of Lockheed Martin Corporation** were sent this 21st day of December, 1998, by first-class mail (except where hand delivery is denoted by an asterisk), to the following persons:

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