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June 4, 1997

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Federal Communications Commission
Office of Secretary

William F. Caton
Acting Secretary
Federal Communications Commission
1919 M Street, Northwest
Washington, D.C. 20554

Re: Submission of Motorola's Corrected Reply Comments in I.B. Docket 97-95

Dear Mr. Caton:

Enclosed are an original and four (4) copies of Motorola's corrected Reply Comments in I.B. Docket 97-95. Motorola discovered after filing these comments yesterday that the caption numbering was incorrect. This corrected version resolves this problem, but these reply comments are otherwise identical in every other respect.

Please do not hesitate to contact the undersigned if you have any questions.

Sincerely,

Brent Weingardt
Counsel for Motorola Satellite Systems, Inc.

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ORIGINAL

CORRECTED VERSION

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

RECEIVED

JUN - 4 1997

Federal Communications Commission
Office of Secretary

DOCKET FILE COPY ORIGINAL

In the Matter of	)	
Allocation and Designation of Spectrum for Fixed-Satellite Services in the 37.5-38.5 GHz, 40.5-41.5 GHz, and 48.2-50.2 GHz Frequency Bands; Allocation of Spectrum to Upgrade Fixed and Mobile Allocations in the 40.5-42.5 Frequency Band, Allocation of Spectrum in the 46.9-47.0 GHz Frequency Band for Wireless Services; and Allocation of Spectrum in the 37.0-38.0 GHz and 40.0-40.5 GHz Frequency Bands for Government Operations.	)	IB Docket No. 97-95

REPLY COMMENTS

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June 4, 1997

SUMMARY

Motorola Satellite Systems, Inc. ("Motorola") submits these comments in response to the initial comments in the Commission's proceeding addressing spectrum allocation issues in the 37.0-51.4 GHz band, known as the millimeter wave bands.

The satellite commenters support Motorola's views. These companies, who are otherwise fierce competitors, are in agreement that the Commission has significantly underestimated the current and future demand for satellite broadband operations and the accompanying need for spectrum in the millimeter wave bands. Not only has the Commission proposed less spectrum than Motorola alone is seeking for its M-Star system, but the proposed band plan does not accommodate the several additional applications that are sure to follow once the Commission opens a 40 GHz filing window. As Hughes and others point out, satellite operation in these bands is no longer merely hypothetical. Therefore, the Commission must adjust its thinking to the reality of permitting commercial satellite operations in these bands.

In order for the Commission to properly evaluate the satellite industry's need for millimeter wave allocations, the FCC must first open a filing window and permit all interested companies to submit their requirements. Otherwise, the Commission simply cannot accurately judge satellite demand for millimeter wave frequencies.

The satellite commenters also agree that the Commission must do everything possible to preserve, if not expand, the existing global allocations for satellite operations in these bands. Global allocations are crucial to the viability of

such massive undertakings as broadband satellite systems. The Commission has historically worked to harmonize its satellite allocations with the international Table of Allocations in order to promote global operations. It should not change course now. Because of the critical need for these allocations, the Commission should take no actions on its domestic band plan until it is sure that the international community will adopt substitute allocations for FSS that allows for global operations. Therefore, the Commission should suspend all millimeter wave allocation decisions until the results of WRC-97 are known.

Both FSS and FS commenters voice little or no support for the Commission's "underlay" licensing proposal. Almost all of the commenters indicate that the proposal is far too ambiguous and requires further definition before it can be considered for possible adoption. The satellite commenters cannot support FS underlay licenses if it means that FS licensees will have other than secondary status in primary FSS bands. Limiting FS to secondary status is especially important because all of the FS commenters indicate that they cannot share with FSS operations. Any other status would place FSS in a de facto secondary status in its own primary band allocations with no means of protecting its operations from co-primary FS operators who are unwilling or unable to avoid harmful interference to FSS systems.

In light of these comments, Motorola respectfully urges the Commission to rethink its millimeter wave band plan. At a minimum, Motorola urges the Commission to delay 40 GHz allocation decisions until it has reviewed other satellite applications for these frequencies and WRC-97 has concluded.

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REPLY COMMENTS

Motorola Satellite Systems, Inc. ("Motorola"), a wholly-owned subsidiary of Motorola, Inc., hereby replies to the initial comments filed in the above-captioned proceeding.[1] As Motorola explained in its initial comments, its interest in this

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[1] Notice of Proposed Rulemaking, FCC 97-85 (released March 24, 1997) ("40 GHz Notice"). By an Order released on May 12, 1997, the Chief of the International Bureau's Satellite and Radiocommunication Division extended the deadline for filing reply comments until June 3, 1997. Order, DA 97-1005 (May 12, 1997). Comments were filed by GE American Communications, Inc. ("GE Americom"); Lockheed Martin Corporation ("Lockheed Martin"); TRW Inc.; Teledesic Corporation; Satellite Industry Association ("SIA"); Skybridge LLC; Hughes Communications, Inc. ("Hughes"); International Communications Electronics Group ("ICE-G"); Advanced Radio Telecom Corp.; WinStar Communications, Inc. ("WinStar"); BizTel, Inc.; Alcatel Network Systems, Inc.; Telecommunications Industry Association, Fixed Point-to-Point Communications Section, Network Equipment Division ("TIA"); and the Cellular Phone Taskforce.

proceeding stems from its recent application to construct, launch and operate the M-Star System in the millimeter wave bands.[2] In its application, Motorola requested an assignment of 3 GHz in the space-to-Earth and Earth-to-space directions in millimeter wave bands that have already been internationally allocated for Fixed Satellite Service (FSS) operations. In its comments, Motorola commended the Commission's initiative in opening the millimeter wave bands to satellite operations, but Motorola demonstrated that insufficient spectrum had been proposed for FSS. Most of the commenters to the 40 GHz Notice agree with Motorola's position. They correctly observe that the successful introduction of broadband FSS operations is at risk because the Commission's proposal provides for far less spectrum than is necessary to accommodate the many satellite uses of these bands and fails to uphold the few FSS bands that have already been allocated on an international basis.

In light of this broad satellite industry consensus, the Commission should reevaluate its initial positions concerning broadband satellite spectrum requirements. The commenting satellite companies are otherwise fierce competitors with divergent views on almost all regulatory matters. Nevertheless, they agree that the Commission has significantly underestimated the current and future demand for satellite broadband operations and the accompanying need for spectrum allocations. Several satellite companies have expressed their intention to file soon applications in the millimeter wave bands. The Commission, therefore, should not render any decisions based on perceived spectrum demand until it has reviewed these impending applications. To do

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[2] Motorola's application was submitted to the Commission on September 4, 1996. The Commission has not yet placed this application on Public Notice.

otherwise would lead to spectrum allocation decisions that could forever foreclose the millimeter wave bands to the viable provision of broadband satellite services. Nor should the Commission take any further millimeter wave actions in these bands until it is sure that any international satellite allocations it removes from use within the United States are replaced with functionally equivalent international satellite allocations at WRC-97. Otherwise, the global use of promising broadband technologies will be undermined by inconsistent global spectrum allocations.

The comments also share Motorola's skepticism over the creation of an "underlay" licensing system. Even the Fixed Service (FS) community, which is the intended beneficiary of the Commission's "underlay" licensing plan, expresses only marginal support for underlay licenses. Indeed, the FS commenters adamantly claim that they cannot share spectrum with the FSS community, which is central to the Commission's "underlay" licensing proposal. Based upon universal FSS opposition and lack of support from the FS community, the Commission should not adopt the "underlay" approach to spectrum licensing. It is, at the very least, a concept that could at once cause significant interference concerns to FSS and confusion both domestically and internationally.

I. THE SATELLITE INDUSTRY UNIVERSALLY SUPPORTS THE NEED TO DESIGNATE MORE SPECTRUM FOR SATELLITE OPERATIONS IN THE MILLIMETER WAVE BANDS APPROPRIATE FOR GLOBAL OPERATIONS.

In its initial comments, Motorola urged the Commission to designate more than the 4 GHz of spectrum proposed for FSS use in the 40 GHz Notice.[3] Motorola also urged the Commission to protect the existing global allocations for FSS in these bands.[4] Finally, Motorola suggested that the Commission take no further frequency assignment allocation decisions in the millimeter wave bands until after it had opened a filing window for millimeter wave satellite applications and evaluated the resulting spectrum requirements.

The satellite industry unanimously supports these positions. In addition, the strident position of the FS commenters that they are unable to share with FSS raises significant doubt that these bands can be shared between the services. In light of these comments, the Commission must reevaluate a proposed band plan that allocates only 4 GHz for millimeter wave satellite operations.

A. The Commission Must Consider Additional Allocation for Satellite Operations

The Commission has seriously underestimated the future demand for broadband satellite communications and the resulting need for global satellite spectrum. As Hughes points out, satellite services offer unparalleled public interest benefits that cannot be matched by any terrestrial technologies.

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[3] Motorola Comments at 5-7.

[4] Id. at 7-9.

> [S]atellites offer ubiquitous service at a cost that is distance insensitive. This characteristic of satellite communications allows satellite operators to provide first-and last-mile connectivity much more efficiently and cost-effectively than terrestrial systems. Satellite systems also offer instantaneous deployment to thin route areas without the high distance-based tariffs that are characteristic of terrestrial networks.[5]

Motorola suggests that in the difficult balancing that comes with any spectrum designation decision, the Commission has seriously underestimated both the current and future capability of satellite networks to link with consumers and the consumer demand for these services. At a time when satellite operators are on the brink of being able to offer ubiquitous services to the world's population, the Commission needs to adjust its perspective. Otherwise, the benefits expressed by Hughes and others will never unfold.

The satellite commenters agree that the Commission's proposal significantly under-allocates spectrum to this next generation of satellites. Lockheed Martin correctly points out that the Commission is not taking a long-term view as to satellite spectrum needs. According to Lockheed Martin, FS and other terrestrial service development will always precede that of satellites, which necessarily have a longer research, development and implementation timeframe. Simply because a particular satellite allocation takes longer to develop fully should not be taken as an indication of lack of interest in or demand for the spectrum.[6] Motorola agrees with Lockheed that the "leadership role the U.S. has occupied in the field of satellite

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[5] Hughes Comments at 6-7.

[6] Lockheed Martin Comments at 10-11.

communications for almost the last half-century"[7] would be threatened if the Commission ignores the inherently longer timeline needed by satellite systems by prematurely redesignating bands to the terrestrial services.

As both Lockheed Martin and TRW note, the Commission's proposed band plan would not permit FSS use in two-thirds of the downlink band (37.5-40.5 GHz) that is currently allocated internationally.[8] Hughes correctly wonders how the future needs for satellite services can be met when the Commission is reducing existing satellite allocations by more than 50 percent, especially when it is doing so on the basis of only one pending application.[9] Moreover, the Commission is reducing satellite allocations of various types in these bands from 12.4 GHz to 4 GHz.[10] GE Americom argues that the Commission should allocate no less than 8 GHz (4 uplink, 4 downlink) to meet the needs of the satellite industry.[11] Likewise, the Satellite Industry Association argues that the Commission's spectrum proposal is insufficient to accommodate anticipated satellite requirements and will "severely impair the future operations of the U.S. satellite industry."[12]

In contrast, the FS industry makes no compelling argument that it suffers from an inadequate amount of spectrum. TIA seeks to confuse the issue by citing to

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7/ Lockheed Martin Comments at 11.

8/ Lockheed Martin Comments at 14; TRW Comments at 7.

9/ Hughes Comments at 8-9.

10/ GE Americom Comments at 3.

11/ Id. at 5.

12/ SIA Comments at 2.

the many instances where FS users have been moved to higher bands.[13] This does not suggest a limited availability of FS spectrum, only sound spectrum management. Any claim that operations are being shunted to unusable bands is at best a technical exaggeration.

The comments of the FS industry also indicate that the Commission's proposed FSS allocation is insufficient in another way. The High Density FS (HDFS) commenters indicate that they are unable to share spectrum with FSS on a co-channel basis under any circumstances.[14] The Commission's proposal, then, deletes FSS allocations where FSS now enjoys co-primary status and replaces them with allocations where HDFS will be allowed to share the few remaining bands where FSS is the "predominant" use. A requirement that FSS concede "underlay" interference rights to HDFS users, users who clearly do not believe that sharing is possible, further decreases FSS access to effectively usable millimeter wave spectrum even before the Commission has a complete picture of FSS needs.

B. The Commission Should Take No Action That Undermines the Current International Allocation for Satellite Operations

The satellite industry not only agrees that the Commission's proposed band plan quantitatively shortchanges satellite needs, but also agrees that the proposal threatens to undermine the existing global allocations that are crucial to broadband satellite operations. As Motorola indicated in its initial comments, it designed its

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13/ TIA Comments at 5.

14/ See Note 42, infra.

proposed M-Star System to conform with existing international allocations. Without the use of these global allocations, it is not clear that Motorola will be able to implement an economically viable broadband satellite network.

The satellite commenters unanimously agree that the Commission must, at a minimum, preserve existing global allocations. As Hughes correctly notes, the Commission has consistently worked toward the creation of global satellite allocations at previous WRCs. It should not act unilaterally now to dismantle the existing allocation before the true needs of the broadband satellite industry are known.[15] Hughes also correctly outlines the economic and technical benefits of global satellite allocations: (1) a global allocation permits all spacecraft in a system to share the same frequencies; (2) simplifies satellite system design; (3) reduces the cost and weight of a spacecraft; (4) facilitates prompt in-orbit restoration of failed spacecraft; and (5) allows for the development of low-cost transmit/receive equipment.[16] The Commission should not abandon these benefits by embarking on an unsupported domestic exception to global satellite spectrum allocations.

The Commission itself recognizes the value of consistent global allocations. The Commission states in the 40 GHz Notice that "seamless global networks are facilitated by global allocation of spectrum for the same or similar

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[15] Hughes Comments at 13.

[16] Id. See, also, GE Americom Comments at 10 ("Although other services may enjoy certain lower operating costs as a result of global spectrum allocations, consistent global allocations for satellites are essential to permit integrated satellite systems capable of providing worldwide communications capabilities.") (emphasis in original).

services. This not only supports a compatible technical environment and minimizes potential harmful interference, but creates economies of scale for equipment manufacturers and ease of use for consumers."[17] Yet the Commission's proposals all but ignore this noble goal.[18] The Commission's proposal would prohibit FSS operations in two thirds of the spectrum globally allocated to FSS uplink operations on a co-primary basis between 37.5-40.5 GHz and in one third of the band currently globally allocated for satellite downlinks between 47.2-50.2 GHz. Even if the Commission's domestic band plan proposed to maintain 3 GHz for satellite operations in each direction, moving satellite operations out of existing global allocations would severely limit their potential for operating ubiquitous broadband satellite networks on a worldwide basis.

Motorola completely supports the admonition of Lockheed Martin, which urges the Commission to think globally while acting domestically.

> In general, it is far easier to maintain internationally an existing global allocation for spectrum than it is to secure a new global allocation. While global allocations of spectrum may also be desirable for terrestrial systems, they are not essential; with terrestrial systems, it is more of a question of economies of scale than it is of economic and technological viability. By contrast, global and regional satellite systems are inherently dependent upon harmonized allocations to achieve global/regional coverage; moreover the same economies of scale that are desirable for terrestrial systems are no less desirable for the satellite systems' ground and satellite equipment.[19]

17/ 40 GHz Notice at ¶11.

18/ See TRW Comments at 7-10.

19/ Lockheed Martin Comments at 3-4.

Even TIA, while promoting an alternative band plan that would prohibit domestic satellite operations in bands currently allocated globally for satellite use, forcefully urges the Commission to harmonize its band plan with international allocations.[20] While Motorola cannot support TIA's alternative band plan, Motorola does agree with TIA's stated conclusion: "Matching international allocations and corresponding international standards has been, and must continue to be, an essential ingredient in domestic telecommunications and trade policy."[21] The Commission should heed TIA's advice in this regard, as well as the consensus view of the satellite commenters, by conforming its band plan proposal to the existing global satellite allocations.

Motorola finds it difficult to reconcile TIA's sound advice with its proposal. For example, Europe is now providing FS in the 37.5-39.5 GHz band, a band that is presently allocated globally for that use. Yet TIA promotes a band plan that provides HDFS with exclusive use of the band from 37.0-40.0 GHz, removes FSS entirely from bands where FSS has existing global allocations and pushes FSS into the 40.5-42.5 GHz band, where FSS enjoys no international allocation. Motorola fails to see how this proposal is in any way "harmonized" with international allocations.

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[20] Telecommunications Industry Association Comments at 19-21.

[21] Id. at note 37. See also, Biztel Comments at 6-8; Alcatel Network Systems Comments at 3.

II. THE SATELLITE INDUSTRY AGREES THAT ADOPTION OF A MILLIMETER WAVE BAND PLAN NOW WOULD BE PREMATURE

In its comments, Motorola urged the Commission should delay any final millimeter wave allocation decisions pending the outcome of two events. First, the Commission should evaluate the satellite proposals for use of these bands that will be filed in response to public notice of Motorola's M-Star broadband satellite application. Otherwise, the Commission would not be able to accurately judge satellite spectrum needs in these bands. Second, the Commission should make no changes to current domestic satellite allocations until it is assured that compensatory global spectrum allocations are adopted internationally at WRC-97. Otherwise, the Commission risks unilaterally decreasing spectrum available for global satellite operations.[22/] Motorola's position is fully supported by the satellite industry.

In evaluating any millimeter wave band plan, the Commission indicated that it would be guided by several factors, including the requirements of existing licensees, spectrum requirements expressed in pending applications, and "other expressions of interest" raised in international forums and by other administrations.[23/] While the Commission has had several years to evaluate FS spectrum needs it has received only one FSS application, viz., Motorola's M-Star application which as yet has not appeared on public notice. As the comments clearly show, there is considerable interest by the rest of the satellite industry in using the millimeter wave bands, limited only by the current prohibition on submitting satellite broadband applications. Hughes,

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22/ Motorola Comments at 12-14.

23/ 40 GHz Notice at ¶ 10.

for example, states that it intends to file in the 40 GHz band when the Commission opens a filing window.[24] As Hughes states, "[t]he one [Motorola] satellite application now pending for use of the 40 GHz band simply does not reflect the breadth of the satellite industry's interest in the 40 GHz band or the wide range of satellite services that will develop in the 40 GHz band in the future..."[25] Likewise, Lockheed Martin argues that the Commission is lacking crucial information needed to develop a rational international allocation proposal until it has invited and reviewed other satellite proposals.[26] For its part, TRW claims that it would be "irrational" and "arbitrary" to evaluate satellite spectrum needs based solely on the one application before the Commission.[27] TRW, Hughes and Lockheed Martin all correctly point out that such an approach would always favor terrestrial interests over satellite interests due to the vastly different lead times for developing and implementing terrestrial and satellite systems.

> Unlike terrestrial systems, which can be based on "off-the-shelf" technology, satellite systems require long-term planning and development due to their very high initial capital costs and lengthy construction time frames... Satellite hardware must be specifically developed for each frequency band before actual use of the spectrum can begin.[28]

24/ Hughes Comments at 9.

25/ Id.

26/ Lockheed Martin Comments at 11-12.

27/ TRW Comments at 13-14.

28/ TRW Comments at 11-12. See, also, Hughes Comments at 9; Lockheed Martin Comments at 9-11.

The FS industry should not gain "first come first served" spectrum allocation rights due to its inherently shorter development cycle.[29] Simply because terrestrial commercial rollout of systems will always precede satellites in any given band, the Commission should not take this fact as a measure of greater terrestrial demand for that spectrum.[30]

Not only must the Commission delay any further domestic allocation decisions until it has reviewed the "real" satellite demand for millimeter wave spectrum, but it must also first want to see whether the international community adopts alternative international satellite allocations that are integral to the Commission's domestic proposal. Hughes points out that the Commission's band plan assumes the future availability of 40.5-41.5 GHz for FSS global use to match the U.S. domestic proposal, an issue that is not even on the WRC-97 agenda. Should the Commission adopt its domestic proposals prior to WRC-97, the risk of garnering even minimal additional global 40 GHz allocations falls entirely upon the satellite industry.[31] Motorola has learned that in the wake of the just-completed Conference Preparatory Meeting, it is unlikely that the issue of FSS allocations above 30 GHz will even be considered at WRC-97. The CPM Report indicates strong opposition from several countries to even

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[29] See Lockheed Martin Comments at 10.

[30] Hughes Comments at 9. In this regard the FS commenters attempt to use their incumbent status as leverage against "encroaching" satellite allocations. See WinStar Communications Comments at 1-2; Biztel Comments at 2; Advanced Radio Telecom Corporation Comments at 2-4; TIA Comments at 5-6. The Commission should ignore these claims for what they are: an attempt by terrestrial interests to claim squatter's rights in radio spectrum.

[31] Hughes Comments at 17-18.

considering additional satellite allocations in these bands at WRC-97.[32] Motorola understands that this view reflects firm European opposition to the creation of additional FSS allocations. In light of this outcome of the CPM, the Commission clearly should not proceed with a domestic allocation proposal so dependent on WRC-97 action until after the U.S. has achieved the desired results.[33] Following its evaluation of WRC-97's results, the Commission would be free to proceed with its millimeter wave proposal, presumably modified to reflect these international decisions and FSS spectrum needs.

III. THERE IS LITTLE OR NO SUPPORT FOR THE COMMISSION'S UNDERLAY LICENSE PROPOSAL

Motorola's comments express serious concerns over the Commission's proposed "underlay" licensing for FS systems in the FSS bands. Motorola believes that the concept is ill-defined, would create unresolvable interference scenarios, and would cause significant confusion outside the U.S. Motorola cannot support any underlay concept that affords FS more than secondary interference rights vis-a-vis primary FSS licensees in the same bands. If, however, the Commission were to adopt

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[32] CPM Report on technical, operational and regulatory/procedural matters to be considered by the 1997 World Radiocommunication Conference, Geneva 1997, Chapter 7.5.4.

[33] Motorola agrees with GE Americom that it may not be sufficient to merely place additional FSS allocations on the WRC-99 agenda. This would seriously undermine the development of broadband satellite systems by increasing the risk that satellites would never receive "replacement" global millimeter wave allocations. GE Americom Comments at 11.

some version of "underlay" status, Motorola believes that simple equity requires that FSS be given identical underlay rights in primarily FS bands.

The comments generally share Motorola's position as to underlay licensing. Even the FS industry, which is the intended beneficiary of the Commission's proposal, expresses only marginal support for it. Moreover, the adamant calls of the FS industry for band segmentation and their expressed inability to share with FSS under any circumstances should cause the Commission to rethink a proposal so dependent on coordination between these industries.

Among the satellite commenters, GE Americom, like Motorola, raises serious concerns about the underlay concept. According to GE, the underlay proposal creates substantial ambiguity as to the legal status of an underlay licensee. This ambiguity threatens the planning of a satellite service since operators or investors cannot assume that underlay licenses will not somehow limit the use of satellite spectrum. "The Commission's vagueness about the underlay concept... is at best a recipe for confusion about the status of underlay licensees."[34/] GE also correctly notes that the possibility of auctioning underlay licenses likely would mandate that these licenses have more than secondary status. If so, the novelty of this hybrid status will dissuade potential satellite operators from investing in these bands. In addition, because FS systems in any given band will be operational before any satellite networks in that band, satellite operators will always face entrenched FS licensees with a hybrid

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34/ GE Americom Comments at 6-7.

and likely uncertain interference protection status.[35] Motorola agrees that these concerns alone warrant abandonment of the underlay proposal.

Among the satellite commenters, support for the underlay concept is based on the expectation that it must include secondary status for FS operators. Lockheed Martin, for example, assumes that underlay licenses are a form of secondary status, but asks the Commission to clarify its intent.[36] TRW, which generally supports the concept, wonders why the Commission has not proposed it for all millimeter wave bands and seeks further clarification as to what interference protection an underlay license provides.[37] Teledesic voices support for the concept if it means that FS will be able to offer services on a secondary basis, but urges the Commission not to adopt a band plan that promotes conflicts between satellite and terrestrial users.[38]

Even among the FS commenters, who are the obvious beneficiaries of the proposal, support is surprisingly muted. ICE-G supports the underlay concept so long as FS is considered primary, but still seeks clarification from the Commission.[39] Advance Radio Telecom Corp. supports the concept only if underlay licenses do not undermine the operations of the two sharing services. It too asks the Commission to

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35/ GE Americom Comments at 8.

36/ Lockheed Martin Comments at 17-18.

37/ TRW Comments at 18-19.

38/ Teledesic Comments at 5.

39/ ICE-G Comments at 3-4.

clarify what an underlay license actually entails.[40] Finally, for its part, TIA rejects the concept entirely for existing FS operations, but calls for further study.[41]

This broad absence of support for the underlay concept -- from both FSS and FS commenters -- is cause enough for the Commission to rethink its proposal. When coupled with FS comments concerning its inability to share spectrum with FSS,[42] there is simply no rational justification for the Commission to proceed with underlay licensing as it has been proposed.[43] Therefore, any underlay licensing of FS in primary FSS bands must remain on a strictly secondary basis. Any other status would place FSS in a de facto secondary status in its own primary band assignments with no established means of protecting FSS as the "predominant" user of the band.[44]

While Motorola still believes that sharing with FS is possible and will continue to work with the FS industry to achieve it, the FS commenters' views on sharing indicate that it would be entirely inappropriate to upgrade FS to co-primary status in any band where underlay status might be granted. Motorola suggests that

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[40] Advanced Radio Telecom Corp. Comments at 15-16.

[41] TIA Comments at 17-18.

[42] The FS industry remains firm in its opposition to any co-frequency sharing with FSS and calls on the Commission to adopt strict band segmentation. See TIA Comments at 13-14; WinStar Comments at 3-5; Biztel Comments at 5; Advanced Radio Telecom Corp. at 5.

[43] Motorola continues to believe that FSS-FS sharing is technically possible. However, this sharing should take place only in the context of the existing secondary-primary interference status regime.

[44] See Motorola Comments at 18-19.

further consideration of an underlay license concept must wait the outcome of an agreement on the technical means of co-channel sharing in the millimeter wave bands.

IV. CONCLUSION

The satellite industry agrees that the Commission has severely underestimated the need for satellite broadband spectrum allocations. Motorola respectfully urges the Commission to rethink its band plan in light of these comments. At the very least, Motorola urges the Commission to delay any millimeter wave band plan decisions until both after the 40 GHz satellite filing window has closed and WRC-97 has concluded.

Respectfully submitted,

MOTOROLA SATELLITE SYSTEMS, INC.

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