

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

In the Matter of)
)
The Establishment of Policies and) IB Docket 02-19
Service Rules for the Non-Geostationary)
Satellite Orbit, Fixed Satellite Service)
in the Ka-band)

REPLY COMMENTS OF HUGHES COMMUNICATIONS, INC.

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Hughes Communications, Inc. hereby submits its Reply Comments in response to the Commission's Notice of Proposed Rulemaking¹ in this proceeding.

Hughes is interested in this proceeding as the applicant for the Ka-band SPACEWAY NGSO satellite system,² which will be subject to the service rules adopted by the Commission.

I. Introduction and Summary

With but one exception, all Commenters in this proceeding agree that neither the Option I nor the Option II band segmentation approach would be commercially feasible for Ka-band NGSO systems. Furthermore, the majority of Commenters agree as to the critical purposes and policy goals which should drive selection of a spectrum-sharing solution. Although two Commenters believe that Option

¹ *The Establishment of Policies and Service Rules for the Non-Geostationary Satellite Orbit, Fixed Satellite Service in the Ka-Band*, FCC 02-30 (rel. Feb. 6, 2002) (“NPRM”).

² Application of Hughes Communications, Inc. for the SPACEWAY Satellite System, FCC File No. SAT-LOA-19971222-00210 (filed Dec. 22, 1997).

III, Avoidance of In-Line Events, would achieve these goals, Hughes believes that a sharing solution based on harmonized systems, as proposed by Hughes and TRW, best accomplishes all the goals and avoids all the problems of the other Options.

A few Commenters refer to ITU deadlines, mostly in the context of possible revisions to the milestone requirements. However, in one commenter's case, a perceived need to maintain "U.S. ITU filing priority" leads to the plea that licenses be issued as quickly as possible under a band-segmentation approach. ITU priority itself would in no way be affected by the issuance of licenses under a band-segmentation approach, and there would still remain a single U.S. ITU filing (i.e. LEOSAT-1) that would enjoy date priority over a large number of primarily non-U.S. GSO FSS systems that have been filed in the Ka-Band. Coordination issues with these same non-U.S. GSO ITU filings for the remaining U.S. NGSO ITU filings (i.e. the so-called MEOSAT filings) , however, would actually be best resolved by adopting EPFD limits designed to allow co-primary/co-frequency GSO-NGSO operation, rather than by rushing to simply issue licenses under a sharing approach that will not be commercially feasible.

Regarding service rules and coordination priority for the Ka-band NGSO FSS, Hughes recommends that the Commission utilize its existing rules and policies. Coordination priority for the U.S. Ka-band NGSO FSS is already settled by Commission decisions, as other Commenters note. In addition, many of the service rules proposed in the NPRM already apply to Ka-band NGSO FSS. There is also no need to add unduly burdensome quarterly reporting, additional milestone, or "committed funds" requirements to the Commission's existing rules.

II. Spectrum Sharing

A. Neither Band Segmentation Option Is Commercially Feasible

With one exception, all Commenters agree that neither Option I (Flexible Band Segmentation) nor Option II (Dynamic Band Segmentation) would support the deployment of all proposed Ka-band NGSO systems.³

A number of insurmountable problems characterize both band segmentation options. Most importantly, Commenters generally agree that a 1/n division of the available spectrum simply does “not guarantee licensees access to sufficient spectrum to support economically-viable operations.”⁴ Both Option I and Option II are also essentially inefficient since they “over-mitigate[],” may not correspond to the actual spectrum use of a particular system,⁵ and would waste otherwise useable spectrum by requiring guard bands.⁶ Option II adds to this problem by requiring systems to give up operating spectrum after the system becomes operational, precisely when they would tend to need more spectrum due to increased demand.

In addition, Teledesic correctly notes that it would be “prohibitively difficult” to develop a system that can operate over “500 MHz, for a few months, then

³ See generally Comments of TRW; Comments of Skybridge; Comments of Teledesic; Comments of Hughes.

⁴ Comments of SkyBridge at i. See also Comments of TRW at 10; Comments of Hughes at 3.

⁵ See Comments of Teledesic at 5.

⁶ See Comments of Hughes at 3.

167.67 MHz, and then 125 MHz, etc.,”⁷ and SkyBridge rightly notes that such flexibility would impose needless costs and complexity on system operators.⁸ Even assuming that any of the proposed systems could operate in the narrow bands to which they would eventually be relegated, Teledesic’s and SkyBridge’s comments support Hughes’ comments that designing a system able to make the necessary bandwidth reductions is not commercially feasible. Finally, as Teledesic notes, both of the band segmentation Options would also hinder international coordination, where there may be no band segmentation plan, or varying segmentation plans.⁹

Alone among the Commenters, @contact supports band segmentation as an “administratively simple” alternative that will “allow licenses to be issued immediately,” and supposedly “preserve U.S. ITU date priority.”¹⁰ Unlike all the other participants in this proceeding, @contact’s planned system evidently would be able to function in 83.3 MHz—or else @contact is betting that not all systems will be implemented. However, this gamble would prove fatal to @contact if the technical and commercial success of its system (as is likely) would require bandwidth similar to the other parties’ proposed systems. And, since the Commission is expressly considering which spectrum sharing plan would allow *all* systems to operate, @Contact’s preferred approach (as far as Hughes understands it) seems inadequate for the other parties to this proceeding.

⁷ See Comments of Teledesic at 10.

⁸ See Comments of SkyBridge at 7.

⁹ See Comments of Teledesic at 11.

¹⁰ See Comments of @contact at i-ii.

Finally, although band segmentation would allow quick issuance of licenses, it would not facilitate quick implementation of services, which is what @contact claims is critical both for “ITU priority” and for “competition in satellite services.” Even if licenses were issued tomorrow under either Option I or Option II, all parties would still have to complete international coordination and implement interference mitigation techniques before the systems could be finalized and they could know what to build. Doing otherwise would be short-sighted given that such coordination will have to be conducted with all, or at least some, of the other internationally proposed systems, in order to gain access to adequate spectrum to implement a viable business.

B. Significant Support Exists For An Approach Based On Harmonized System Parameters.

Hughes believes that all Commenters besides @contact agree on the essential points concerning spectrum sharing among U.S. Ka-band NGSO licensees. Both Teledesic and SkyBridge stress the same essential qualities of a sharing solution: it should permit each system to use all the spectrum most of the time (with interference mitigation being the exception); it should not require ongoing Commission oversight; it should leave system design choices to operators instead of the Commission; it should prevent spectrum warehousing; it should promote equitable coordination burden-sharing; and it should facilitate international coordination.¹¹

Hughes fully concurs that a sharing solution should achieve these goals. The approaches suggested by TRW and Hughes achieve these goals while also going

¹¹ See Comments of SkyBridge at ii; Comments of Teledesic at Summary, 2-4 (unpaginated).

further to simplify the interference environment, and therefore the interference mitigation and coordination tasks that operators will eventually face.

Although described in different terms and starting from slightly different positions, Hughes believes that its proposed “homogeneous constellation” approach is essentially consistent with TRW’s proposed “hybrid approach.” In essence, both proposals rely on increased standardization or harmonization among Ka-band NGSO systems. This harmonization would be encouraged and facilitated by the Commission, but the precise parameters would be determined by the system proponents themselves through a coordinated spectrum-sharing solution.¹² The goal in both cases is to align Ka NGSO systems in a mutually acceptable manner to the maximum extent possible so as to (1) ensure access to the full paired 500 MHz for all systems for as much time as possible, and (2) minimize the need to employ complex and burdensome ongoing interference avoidance measures. In other words, the sharing solutions proposed by Hughes and TRW do not rely on homogenization as a form of agency-imposed “substitute for implementation of generic mitigation techniques,”¹³ but rather propose it as a licensee-driven method for facilitating interference-mitigation and coordination.

In the end it is not important that TRW has proposed aligning systems based on operational parameters (to be chosen by the parties, for example, e.i.r.p density,

¹² Hughes agrees with Teledesic that, as proposed in the NPRM, Option IV is “not so much ... a concrete sharing option but rather... a concept that might be elaborated further to yield a sharing solution.” Comments of Teledesic at Summary, 2 (unpaginated).

¹³ Comments of SkyBridge at 10.

downlink power flux density, satellite and earth station antenna patterns, etc.)¹⁴ whereas Hughes has proposed homogenizing orbital parameters. Both proposals seek to have NGSO operators harmonize their technical parameters where possible in an effort to maximize the system capabilities and minimize the burdens for all Ka-band NGSO systems.

As described below, this harmonized approach would avoid or solve substantially all the problems raised by Commenters with respect to potential sharing solutions.¹⁵ Most importantly, this solution would avoid the obvious problems associated with either of the Option I or Option II segmentation approaches and would solve the problems Commenters identify with Option IV as well.

Contrary to the suggestions of some, this approach would not “take critical business and technical decisions away from the marketplace and force the Commission to make such a determination,”¹⁶ nor would it “render completely worthless the technical and business plans of the majority, if not all, of the other applicants.”¹⁷ Hughes does not suggest that the Commission should declare the approved system by regulatory fiat, but instead has pointed out that *proponents themselves* (including Teledesic, based on its recent modification application) appear to be converging on a single system type, *i.e.* “are already significantly advanced toward a sharing solution based on a homogeneous MEO constellation.” Building on proponents’ independent decisions as the basis for a

¹⁴ See Comments of TRW at 6.

¹⁵ See generally, Comments of SkyBridge, Comments of Teledesic, Comments of @contact.

¹⁶ Comments of SkyBridge at 9.

¹⁷ *Id.*

coordinated sharing solution is hardly “taking technical and business decisions away from the marketplace.” For its part, TRW also does not suggest that the Commission dictate a set of standardized system parameters, but rather that “the Commission should establish system parameters that *applicants must identify* in order to facilitate coordination” and that “standardization of system parameters itself *should be formally encouraged.*”¹⁸

In sum, both TRW’s and Hughes’ proposals would go a long way toward solving real interference issues without compromising the Commission’s stated goal of allowing the proponents to develop systems based on independent market choices. There is also no need for the Commission having to select a “winning design,”¹⁹ since it would be the system proponents themselves who determine the system changes that are needed in the coordination process.

Nor does harmonizing system parameters pose a problem of “constrain[ing] operators towards certain classes of service”²⁰ as dictated by a required constellation design. To the extent that the majority of proponents (including licensee Teledesic) have already selected similar systems, they have chosen a similar class of service on their own. To the extent that operators choose to coordinate less closely with other systems, based perhaps on choices as to “classes of service,” then those operators

¹⁸ Comments of TRW at 4, 6 (emphasis added).

¹⁹ See Comments of SkyBridge at 9.

²⁰ Comments of SkyBridge at 10.

should be free to accept a more complex coordination environment as the necessary cost of their business decisions.²¹

In addition, this plan would also solve the potential problem of international coordination.²² Certainly, a plan based on homogenized orbits alone could solve interference issues for those systems that are part of the coordinated constellations, but would not address coordination with other, non-U.S.-licensed, systems. Therefore for purposes of international coordination, a homogenized constellation approach “in its simplest form”²³ would not be optimal. However, systems that are coordinated so as to minimize interference between themselves and which are standardized also to include some type of in-line avoidance mitigation capability would not suffer from this limitation. TRW’s proposal of coordinated system parameters could provide this type of international interference mitigation flexibility.

Clearly, in-line avoidance mitigation techniques would have to be built in by all systems, even if they would seem, from a strictly domestic standpoint, redundant in a homogenized constellation. However, in order to operate globally, it is fairly evident that all proposed systems will require some form of mitigation functionality anyway. Furthermore, the choice of mitigation strategy need not be forced on any operator; each proponent would be free to use whatever techniques it prefers, so long as they do not worsen the interference environment, *i.e.* systems could accept interference, utilize satellite diversity or frequency segmentation, temporarily shut down, etc.

²¹ See Comments of TRW at 7, n. 5.

²² See Comments of SkyBridge at 7, 10; Comments of Teledesic at 6, 14.

²³ Comments of SkyBridge at 9.

Harmonized systems would also go farther than Option III alone in improving the interference environment and coordination among operational systems. As an initial matter, harmonization of system parameters would allow a simple definition of “in-line interference event.” As SkyBridge notes, “many approaches” can be taken to define this event;²⁴ however, the approach actually selected will be of critical importance for all operators. Additionally, as Teledesic’s discussion makes clear, the definition of in-line events becomes increasingly complex when more than two systems are considered.²⁵ Selecting an “arbitrary” angular separation²⁶ may be simple, but it hardly takes into account varying system parameters. Unless agreed by all operators, such a definition would end up being forced on some operators either by their competitors or by the Commission. Other possible definitions, such as relying on the threshold for synchronization loss,²⁷ would lead to a standoff since some operators would not find them acceptable within their technical schemes or business plans.

On the other hand, if operators could reach an initial agreement as to standardization of all or some system parameters, then a definition of in-line events could

²⁴ Comments of SkyBridge at 13.

²⁵ See Comments of Teledesic at 21-22.

²⁶ See Comments of SkyBridge at 13.

²⁷ See Comments of SkyBridge at 14. Setting the threshold for an in-line event at the point of synchronization loss would be unhelpful because by the time that point is reached, the system has already been completely disrupted to the point where satellite lock would have to be re-achieved. This would be extremely disruptive of service and commercially impracticable. A workable threshold for in-line event would have to focus on a point before synchronization loss or other total system failure, where potential disruption is identified but service could be maintained by resorting to a mitigation technique.

follow simply and naturally from those parameters.²⁸ The point is that in-line events would be clearly defined by the systems themselves, which would make it far simpler to deal with these in-line events, rather than being arbitrarily imposed without regard to the systems that would then have to work around the definition. Since the definition would also flow from operators' own choices, it would be far superior from a policy perspective as well.

Besides simplifying the definition of in-line events, harmonized system parameters would make interference mitigation far simpler by reducing the number of in-line events. If all systems are completely or even partially harmonized, interference events are naturally reduced or eliminated between the standardized systems. This leaves operators more resources to coordinate with other, non-standardized systems (particularly non-U.S. NGSO systems), which would be a significant benefit both domestically and internationally.

At bottom, the majority of the Commenters agree as to what a spectrum sharing plan should achieve. While Option III alone could meet these essential goals, Hughes believes that the harmonized system approaches suggested by TRW and Hughes would do the job best. Hughes proposes that the Commission adopt a plan along the lines of those put forth by Hughes and TRW, which will encourage and assist Ka-band NGSO operators to reach this best possible solution.

²⁸ For example, TRW's 4-5 degree separation proposal could work once selected parameters are standardized. *See* Comments of TRW at 6.

III. ITU Priority and Coordination

@contact repeatedly stresses the need to “jumpstart” competition in satellite services and the need to “preserve U.S. ITU priority,” as rationales to support selecting a band segmentation approach. However, it is not clear to what “U.S. ITU priority” @contact is referring. Issuing licenses to five MEO Ka-band NGSO systems would hardly affect the status of U.S. ITU filings such as LEOSAT-1 where all the systems at issue are not currently associated with that filing.²⁹

More to the point, no second-round Ka-band NGSO applicant would be benefited with respect to ITU priority and coordination simply by being handed a license as quickly as possible. As Teledesic has noted in another context, there are over 300 GSO systems with ITU date priority over the U.S.-filed MEOSAT filings that presumably will be used for all but one U.S. NGSO system (that one other system being associated with the U.S. LEOSAT-1 filing).³⁰ Even immediate issuance of licenses (under a spectrum sharing plan that precludes commercially feasible operations, to boot) would not help NGSO systems coordinate with these primarily non-U.S. GSO systems, and will not change ITU filing priorities.

²⁹ By contrast, harmonizing constellations or system parameters (as discussed above) will help with regard to international coordination, which will be more helpful than maintaining ITU filing priority for selected US systems.

³⁰ See Application of Teledesic LLC For Modification Of License To Launch And Operate A Non-Geostationary Orbit Fixed Satellite System In The Ka Band, File No. SAT-MOD-20020201-00011 at A-32 (filed April 2, 2002).

However, the development of appropriate EPFD power limits for the 18.8-19.3 GHz and 28.6-29.1 GHz bands *would* benefit all U.S.-sponsored NGSO systems. As Hughes has noted, application of limits similar to those adopted at WRC-1997 and WRC-2000 for other parts of the Ka-band would allow GSO and NGSO systems to operate co-primary/co-frequency and would therefore obviate the need for GSO-NGSO coordination, essentially eliminating the issue of ITU date priority for those GSO systems that are ahead in the ITU queue.³¹

This approach would actually benefit all second-round applicants, in stark contrast to @contact's proposal. Nevertheless, @contact (and TRW as well) seem to misstate the purpose of EPFD limits. They are not "devised for situations in which NGSO services would be secondary in nature."³² and in fact were developed specifically for cases where NGSO systems would enjoy co-primary status with GSO systems. Certainly, by developing such limits for second-round Ka-band NGSO systems, the Commission would eliminate the pressure felt by Commenters such as @contact and Teledesic for the Commission to take hasty decisions in order to meet deadlines based on ITU filing priority, and would also vastly improve the ability of Ka-band NGSO systems to coordinate with non-U.S. GSO FSS systems.

³¹ See Comments of Hughes Communications, Inc., File Nos. 22-DSS-P/LA-94; 43-SAT-AMEND-95; 127-SAT-AMEND-95; 195-SAT-ML-97 at 10-11, (filed Mar. 18, 2002).

³² Comments of @contact at 2, n. 4; *see also* Comments of TRW at 5, n. 4 (stating that "[i]n the secondary bands, epfd limits adopted at WRC-2000 for the protection of the geostationary orbit would apply.")

IV. The Commission's Priority Rules Are Settled For The Ka-band NGSO FSS.

Almost all of the other Commenters have correctly noted that, under applicable law, priority among all Ka-band NGSO proponents is to be determined by each proponent's overall system development and flexibility.³³ The order granting the single Ka-band NGSO license issued to date specifically noted that several service rule issues—notably, spectrum sharing arrangements and rules governing coordination priority—would be finalized in future proceedings.³⁴ Those spectrum sharing issues are, clearly, the subject of this proceeding, and the single NGSO license issued to date has been from the outset subject to subsequent service rules and rulemakings.

By contrast, the *priority rules* have already been definitively concluded by the Commission in its Order, released February 6, 2002, which ended a four-year inquiry into certain service rule issues applicable to the Ka band NGSO FSS.³⁵ Specifically, the

³³ See Comments of TRW, SkyBridge, @contact. These parties note that, assuming Teledesic's pending system modification application does not substantially increase interference to other Ka-band NGSO systems (which determination is not at issue in this proceeding), priority among all Ka NGSO systems is determined under the Commission's stated policy as described above.

³⁴ See *Application of Teledesic Corporation for Authority to Construct, Launch, and Operate a Low Earth Orbit Satellite System in the Domestic and International Fixed Satellite Service*, 12 FCC Rcd 3154 (rel. Mar. 14 1997) at ¶¶ 10- 29; *The Matter Of 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*, CC Docket No. 92-297, (rel. Oct. 15, 1997) at ¶19.

³⁵ *In The Matter Of Teledesic Corporation Petition For Clarification And/Or Reconsideration, 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 Of Local Multipoint Distribution Services And For Fixed Satellite Services*, CC Docket No. 92-297, FCC 02-6, (released February 6, 2002) ("*Teledesic Reconsideration Order*").

Commission had been asked to clarify the extent to which first-round licensees would be protected from later-round licensees. The Commission held that “the degree of burden sharing for NGSO FSS systems depends in large part on where the licensee is in implementing its system.”³⁶ As the Commission explained,

We recognize that...a licensee that has already contracted for and constructed major components into its authorized system would not have the same degree of flexibility to redesign its system as would entities not yet or newly licensed. Consequently, to the extent Teledesic is proceeding with construction of its licensed system, subsequently licensed systems would be obligated to coordinate with Teledesic. Conversely, in the event Teledesic should seek to modify its system’s parameters instead of constructing its system as authorized, we would find that Teledesic would be in a much better position to make changes to facilitate coordination and accommodate new entrants. If Teledesic were to significantly alter its system design at this point, it would indicate that Teledesic has not made the kind of progress that would limit its flexibility to incorporate design changes into its systems. In this case, sharing the burden equally with new entrants may not impede its progress in implementing its system.³⁷

Quite simply, this is the “law” on coordination priority for the Ka-band NGSO FSS. Under the Commission’s decisions, determining coordination priority between *particular* licensees or applicants requires a factual analysis, *i.e.*, how far along is a given system, and how much flexibility does it have to implement changes for coordination with other systems. Other Commenters have aptly explained that there is no basis on which to give any U.S. NGSO licensee or applicant priority over any other system in this coordination process given the current state of system design and redesign.

³⁶ *Teledesic Reconsideration Order* at ¶8.

³⁷ *Teledesic Reconsideration Order* at ¶9.

V. Service Rules

With a few exceptions, Hughes notes that Commenters are generally in agreement with regard to the Commission's service rule proposals. Although Teledesic provides some comments on the service rule proposals, it generally proposes that any revision of the current service rules be considered in the upcoming review of satellite licensing.³⁸ Hughes agrees that revision of the Commission's rules in general are appropriately dealt with in that proceeding. More fundamentally, all the rules that are needed to support the issuance of Ka NGSO licenses in the second round already exist today.

A. Financial Qualifications.

Most parties agree that the proposed additional requirement of "committed funds" makes no sense in the context of NGSO systems and would not assist the Commission to determine which applicants would be likely to actually deploy systems.³⁹

@contact is the only commenter actually supporting the "committed funds" proposal.⁴⁰ @contact asserts that, "[s]trict compliance with this standard would

³⁸ See Comments of Teledesic at 24; Amendment of the Commission's Space Station Licensing Rules and Policies, FCC 02-45, I.B. Docket No. 02-34/00-248 (rel. Feb. 28, 2002).

³⁹ See Comments of SkyBridge at 19 (stating that if financial qualifications are necessary, the Commission should impose its existing standard); Comments of TRW at 15. TRW also appears basically to agree with Hughes that the Commission could rely on a modified milestone requirement rather than a heightened financial qualification requirement. See *Id.*; Comment of Hughes at 27.

⁴⁰ See Comment of @contact at 19. Teledesic discusses both benefits and problems with the proposal but generally proposes considering any revision of the current

prevent applicants from referencing funds already allocated for the construction and operation of different satellite systems or other projects entirely.”⁴¹ Obviously, that is what the Commission’s proposal would *require*. But @contact completely misses the point, which is, “what would the requirement *achieve*?” The requirement simply does not promote the policy it intends to serve, and therefore should not be implemented. What the proposed requirement certainly will *not* do is “protect[] against the warehousing of spectrum by parties who do not actually have the financial means to implement all requested systems.”⁴² That is because, as Hughes, TRW, and Teledesic (in another context) have all explained, a requirement of committed funds is essentially useless (since a commitment can easily be withdrawn), does not ensure a system will be implemented, and bears no resemblance to how global satellite systems are actually funded, especially in current financial markets.⁴³ The Commission has twice settled that “financial capability” (or “financial means” as @contact puts it) means funds or the ability to raise funds to support system development.⁴⁴ The “committed funds” proposal has nothing to do with the purpose of the financial requirement test and should not be considered further.

standard in the pending satellite licensing reform proceeding. *See* Comments of Teledesic at 24-25.

⁴¹ *Id.*

⁴² *Id.*

⁴³ *See* Comments of Hughes at 17-24; Comments of TRW at 15-16. *See also* Application of Teledesic LLC For Modification Of License To Launch And Operate A Non-Geostationary Orbit Fixed Satellite System In The Ka Band, File No. SAT-MOD-20020201-00011 at A-30-31 (filed April 2, 2002).

⁴⁴ *See* Comments of Hughes at 17-24.

B. Milestones

Hughes generally agrees with TRW that streamlined milestones would be appropriate, and that imposing the rapidly-approaching ITU bringing-into-use deadline on second-round applicants is neither equitable nor appropriate. As Teledesic notes, the ITU date for bringing second-round systems into use is so near that it “will have little effect on the second round licenses.”⁴⁵ On the other hand, @contact, after stressing that second-round applicants will have one year less than is typically needed to construct and design an NGSO system than would be permitted if the ITU date applied, inexplicably proposes that the ITU date should apply.⁴⁶

Additional FCC milestones would also be unnecessary and unduly burdensome. @contact is also the only commenter specifically supporting the “critical design review” milestone and the requirement of affidavits to certify milestone completion, consistent with its apparent desire (apparently unique among these Commenters) to impose additional but unhelpful requirements on satellite operators. As Hughes has already noted, the certification requirement and milestone requirements already exist in the Commission’s rules and apply to all Ka-band NGSO licensees.⁴⁷ Hughes continues to maintain that the milestones in effect under the Commission’s

⁴⁵ Comments of Teledesic at 26. Again, Teledesic proposes delaying consideration of modification of milestones to the upcoming satellite licensing proceeding.

⁴⁶ See Comments of @contact at 3, 20.

⁴⁷ See Comments of Hughes at 27-31. Teledesic also points out that the affidavit requirement is a “useless formality” given licensees duties to the Commission and the application of the False Claims Act. See Comments of Teledesic at 27.

existing rules (and subject to possible streamlining in future proceedings) should meet the Commission's needs.

C. Reporting Requirements

All parties addressing the issue agree that parties should not be required to report unscheduled satellite outages.⁴⁸ However, @contact is alone once again in supporting its proposal to quadruple the current reporting schedule and require quarterly progress reports.⁴⁹ All other Commenters are in agreement that quarterly reports add burdens whose "costs would outweigh the intended benefits."⁵⁰ As Teledesic notes, "quarterly milestones might make sense if licensees had to meet quarterly milestones. But there are no quarterly milestones, which means that there is nothing, really, to report on a quarterly basis..."⁵¹ In other words, @contact's proposal serves no real purpose but to appear to encumber operators and Commission staff with completely unnecessary reporting and review obligations. Finally, based on the Commission's past elimination of semi-annual reporting requirements⁵² and its stated intention to further streamline satellite licensing, quarterly progress reports are clearly not desirable at this time.

⁴⁸ See Comments of SkyBridge at 20; Comments of TRW at 19; Comments of Hughes at 30. Teledesic does not address this issue, presumably assuming it would be considered in the upcoming satellite licensing proceeding.

⁴⁹ See Comments of @contact at 21.

⁵⁰ Comments of TRW Inc. at 20.

⁵¹ Comments of Teledesic at 26.

⁵² See *In the Matter of Streamlining of the Commission's Rules and Regulations for Satellite Applications and Licensing Procedures*, IB Docket No. 95-117, (released Dec. 16, 1996), at ¶ 14.

VI. Conclusion

The majority of Commenters agree that neither the Option I nor the Option II band segmentation approach would be commercially feasible for Ka-band NGSO systems. Furthermore, the majority of Commenters agree as to the critical purposes and policy goals that should drive selection of a spectrum-sharing solution. Hughes believes that a sharing solution based on harmonized systems, as proposed by Hughes and TRW, best accomplishes all the goals and avoids all the problems of the other options. Issues of ITU date priority for U.S. licensed NGSO Ka-band systems vis-à-vis non-U.S.GSO systems would best be resolved by advocating EPFD limits, rather than by rushing to simply issue licenses under a sharing approach that will not be commercially feasible. Regarding service rules and coordination priority for the Ka-band NGSO FSS, Hughes respectfully recommends that the Commission apply its existing rules and policies.

Respectfully submitted,

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