

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

In the Matter of )  
)  
FWCC Request for Declaratory Ruling on )  
Partial-Band Licensing of Earth )  
Stations in the Fixed-Satellite Service )  
That Share Terrestrial Spectrum )  
)  
FWCC Petition for Rulemaking to Set )  
Loading Standards for Earth Stations )  
In the Fixed-Satellite Service that )  
Share Terrestrial Spectrum )  
)  
Onsat Petition for Declaratory Order that )  
Blanket Licensing Pursuant to Rule 25.115(c) Is )  
Available for Very Small Aperture Terminal )  
Satellite Network Operations at C-Band )  
)  
Onsat Petition for Waiver of Rule 25.212(d) to )  
the Extent Necessary to Permit Routine )  
Licensing of 3.7 Meter Transmit and Receive )  
Stations at C-Band )  
)  
*Ex parte* Letter Concerning Deployment of )  
Geostationary Orbit FSS Earth Stations in the )  
Shared Portion of the Ka-band )

IB Docket No. 00-203 )  
RM-9649 )

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COMMENTS OF GE AMERICAN COMMUNICATIONS, INC.

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## SUMMARY

GE Americom is frankly surprised to be in the position of having to write these comments. This *Notice* should never have been written. It responds to a petition filed by the FWCC that completely lacked any supporting information justifying a change in existing policies. The Petition's proposals were unanimously opposed by every party that filed comments below. The unrebutted record developed to date conclusively demonstrates that current policies for licensing and coordination in spectrum shared between satellite and terrestrial services are fair, rational, and necessary for efficient spectrum management. New burdensome regulation is not justified in any respect.

The FWCC Petition asserts that satellite operations have a preference in access to shared spectrum and that terrestrial deployment is suffering as a result. The facts tell a very different story. Fixed services were licensed and deployed before satellite services in the shared spectrum bands at issue, and the Commission's first-come, first-served policy therefore strongly favored terrestrial usage. Furthermore, terrestrial fixed users have numerous options to work around existing earth stations – they can choose from a wide range of other frequencies, change their routes, or employ interference shielding techniques.

In contrast, the record demonstrates that the flexibility provided by current licensing rules is essential to satellite operations. It ensures that operators can coordinate with neighboring satellites, respond to changing customer demand, restore service in the event of an outage, and maximize the efficiency of the network.

The *Notice* nevertheless proposes new restrictions on satellite access to spectrum. These restrictions are unjustified and threaten the huge current and planned investment in satellite network facilities. For example, the *Notice* proposes to require that a satellite earth station demonstrate use of spectrum in order to preserve satellite system access to a channel requested by a terrestrial operator. Yet the *Notice* does not even attempt to develop a definition of use that would fairly account for all the factors relevant to satellite spectrum requirements. The proposal would also impose substantial administrative burdens on earth station licensees and on the Commission.

The proposals for changes to procedures regarding interference coordination are similarly misguided. There is no evidence that the Commission needs to adopt new rules requiring use of particular interference models or implementing assumptions regarding earth station performance requirements. Instead, the facts show that earth stations today make coordination decisions using consistent methods and reasonable technical and business judgments.

In short, the portion of the *Notice* that addresses the FWCC's proposals for changes in earth station licensing and coordination policies should be dismissed without further action.

The Commission should, however, adopt the changes proposed by Hughes to implement blanket licensing in shared Ka-band spectrum. The Hughes proposals will facilitate system deployment and expedite the delivery of advanced services to end users.

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**COMMENTS OF GE AMERICAN COMMUNICATIONS, INC.**

GE American Communications, Inc. ("GE Americom"), by its attorneys, hereby submits its comments in response to the *Notice of Proposed Rulemaking* in the above-captioned proceeding, FCC 00-369 (rel. Oct. 24, 2000) (the "*Notice*").

GE Americom strongly supports the separate comments on the *Notice* being filed today by the Satellite Industry Association, the Satellite Broadcasting and Communications Association, the World Teleport Association, and the

Aeronautical Industries Association of America (collectively, the “Satellite Industry Coalition” or the “Coalition”). We are filing separately here to highlight our own concerns about the *Notice’s* proposals to limit satellite access to spectrum shared with terrestrial operations. These proposed changes are unsupported by the facts and contrary to the public interest.

GE Americom, however, urges the Commission to adopt the Hughes proposal for streamlined licensing of 18 GHz satellite terminals. Implementation of the changes suggested by Hughes will facilitate deployment of important Ka-band services.

## INTRODUCTION

The proposals made by the Fixed Wireless Communications Coalition (“FWCC”) and reflected in the *Notice* raise issues that go to the heart of GE Americom’s business and could threaten the multi-billion dollar investment GE Americom and its customers have made in satellite facilities. GE Americom launched its first satellite almost twenty-five years ago and today has an operational fleet of more than fifteen C- and Ku-band spacecraft, a license for a system of Ka-band satellites, and a pending application for a V-band system. GE Americom’s customers rely on our facilities to transmit video, voice and data services domestically and internationally.

GE Americom is, of course, extremely familiar with the constraints on spectrum use imposed by co-primary sharing between satellite services and terrestrial fixed operations. In fact, we have experience on both sides of this issue.

In addition to numerous earth station licenses, GE Americom holds licenses to operate C-band microwave links used to transport traffic to and from GE Americom earth stations. Thus, we know very well that operators in both services face limitations in siting of new or modified facilities, particularly in urban areas where demand for spectrum is most intense.

However, GE Americom is also quite familiar with how coordination works in practice, and how applicants go about resolving potential conflicts. Current coordination procedures rely on the good faith and reasonable business and technical judgment of all parties involved. In GE Americom's experience, these procedures are very effective in allowing both types of service to expand within the limits imposed by the need to avoid harmful interference.

There is absolutely no evidence before the Commission suggesting that current policies are flawed. In attempting to justify its proposal for radical changes in the rules, the FWCC complains that current policies unfairly favor satellite services over terrestrial operations in shared spectrum. Yet neither the FWCC nor any individual wireless operator has supplied data or examples to back up this claim. Instead, the numerous entities that opposed the FWCC Petition completely rebutted the FWCC's arguments, demonstrating in detail that current policies are necessary and appropriate to the unique characteristics of satellite services.

Despite the lack of justification for any change in the rules, the *Notice* suggests abandoning proven coordination methods in favor of a complicated, burdensome regulatory framework. Not only would the new proposals not achieve

the stated goal of enhancing efficient use of spectrum, they would create huge administrative burdens for both earth station operators and the Commission and make coordination more difficult for terrestrial and satellite operators alike.

More importantly, the proposals would impair the flexibility that is critical to the satellite industry today and in the future. The satellite industry has flourished both domestically and globally because of regulations that recognize and accommodate that need for flexibility. The FWCC's proposals, however, would restrict access by earth station operators to spectrum they have licensed and coordinated. As a result, the proposed rules would adversely affect the ability of satellite service providers to respond to changes in customer requirements, provide coverage of natural disasters or other news events, or restore service in the event of a facility failure.

This is not just a matter of inconvenience to the satellite industry. The economics of satellite operations are based on full-band licensing of both space stations and earth stations. In evaluating the business case for the huge investment required to launch and operate a space station, GE Americom and other operators assume that they will be able to manage their networks efficiently and communicate with earth stations using the full range of available frequencies. The proposals here would nullify those assumptions and create uncertainty about the factors that determine whether operators can achieve an acceptable return on their tremendous investments in satellite systems.

In short, the FWCC's proposals are ill-advised, overly regulatory, and impractical. They would therefore be objectionable even if the FWCC had satisfied its burden of proving that the current rules are unfair. As it is, faced with no evidence justifying a change and overwhelming evidence of the potential harm that would result from the rule changes proposed, the Commission must reject the FWCC proposals reflected in the *Notice*.

In contrast, the Hughes proposal for blanket licensing of terminals in shared Ka-band spectrum is consistent with principles of efficient spectrum use and would decrease administrative burdens on applicants and the Commission. As a result, GE Americom urges the Commission to adopt the rule changes Hughes has proposed.

**I. THE FACTS DO NOT SUPPORT BURDENSOME NEW REGULATION OF EARTH STATION LICENSING AND COORDINATION**

GE Americom strongly agrees with the Satellite Industry Coalition that there is no basis for changing existing policies regarding earth station licensing and coordination. *See* Coalition Comments, Section I. Instead, the facts demonstrate that the FWCC's unsupported complaints regarding the impact of current policies are not justified.

The FWCC Petition, while heavy on speculation and generalized complaints about lack of available spectrum for fixed services, was devoid of any actual data or information suggesting that current procedures are unfair or are

being abused by earth station operators.<sup>1</sup> Furthermore, even after GE Americom and numerous others brought the Commission's attention to the lack of support for FWCC's claims, FWCC did not cure its failure on reply. Instead, FWCC repeated the same broad assertions about constraints of available FS spectrum without providing a shred of supporting documentation.<sup>2</sup> Furthermore, not a single terrestrial operator commented in support of FWCC's proposals.

Thus, there has been absolutely no concrete evidence of a problem here. All we have are the FWCC's generalized complaints about spectrum scarcity. Even these arguments, however, do not survive scrutiny.

The most glaring defect in the FWCC's analysis is the fact that it ignores the effect of the fundamental principle underlying co-primary sharing: first-come, first served. That principle very clearly has operated to the fixed service's benefit in every band that is shared with satellite services. Satellite networks from the beginning have faced significant constraints based on the requirement that they accommodate the base of already-deployed fixed service stations when siting earth stations.

- **C-Band:** Before the C-band was ever made available for satellite use, substantial terrestrial deployment had already taken place. In fact, the Commission expressed doubt as to whether satellite services could be "fully and economically accommodated" in the C-band because terrestrial use had already "substantially saturated" the band "near several population centers throughout the United States and quite

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<sup>1</sup> In the entire FWCC Petition, there was only a single example of any problem experienced by an FWCC member. See FWCC Petition at 10 n.17. Even that lone example was unattributed and unexplained.

<sup>2</sup> See Reply Comments of FWCC at 3-5.

generally in the North-eastern states.”<sup>3</sup>

- Extended Ku-Band: As the *Notice* acknowledges, use of the 10.7-11.7 GHz extended Ku-band by satellite systems is and always has been limited to international services, a restriction that was explicitly designed to protect availability of the band for terrestrial operations. See *Notice* at ¶ 60. Furthermore, the satellite service shares the 13.75-14.0 GHz band with government services, which places an additional constraint on satellite use of the downlink bands that are shared with the fixed service. *Id.* These restrictions have drastically limited deployment of earth stations operating in the extended Ku-band, leaving the band clear for terrestrial operations. As a result, the band is used heavily for terrestrial services.
- Ka-band: In the portion of the Ka-band subject to co-primary FSS/FS sharing, satellite services will also have to work around a deployed base of terrestrial facilities. In fact, the Commission specifically altered its original proposal to give GSO/FSS sole primary access to the 18.3-18.58 GHz band due to the “extremely large number of fixed stations, CARS, wireless PCOs and other links operating in this band.”<sup>4</sup> Co-primary GSO/FSS operations in the band segment will have to contend with that existing population of terrestrial links.

Thus, if anyone has enjoyed an “overwhelming preference” in access to shared spectrum (FWCC Petition at 3), it has been fixed service operators.

GE Americom knows all too well how these factors impact the siting of earth stations. Earth station applicants are required under Commission rules to choose sites “where the surrounding terrain and existing frequency usage” minimize the potential for harmful interference to terrestrial stations. 47 C.F.R. §25.203(a).

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<sup>3</sup> *Establishment of Domestic Communication-Satellite Facilities by Non-governmental Entities*, 18 RR2d 1631, 1634 (1970).

<sup>4</sup> *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 User, Report and Order*, 15 FCC Rcd 13430, 13446 (2000)

GE Americom's network engineers generally do not even attempt to site new earth stations that would operate in shared spectrum in a major urban area. They know from experience that such attempts are usually futile due to the saturation of urban areas by microwave links.

The FWCC asserts that in the 4 GHz band, "ubiquitously deployed FSS receive earth stations" have made it "all but impossible to coordinate new fixed service links." Reply Comments of FWCC at 9 n.23. This assertion is, like the rest of the FWCC's claims, completely unsupported. It is also simply untrue.

GE Americom is confident that in substantial areas of the U.S., fixed service operators would have no problem coordinating new links. The problem in rural areas is not lack of spectrum availability, but lack of fixed service interest in installing facilities. In major cities, as we have already noted, it was the terrestrial operators who deployed links first, seriously limiting the ability to coordinate earth stations in urban areas.

Furthermore, even in cases where they do have to accommodate a pre-existing earth station, terrestrial operators have significant advantages. Basic engineering realities give terrestrial applicants much more flexibility in siting fixed links than is available to earth station operators. If a fixed service applicant needs to avoid creating interference to a previously coordinated earth station, it has a range of possibilities. It can move one or both ends of the path to change the interference angle or take advantage of terrain blockage, or it can change the number of hops. A terrestrial operator also has a much broader range of

frequencies available to it than do earth station operators, including a substantial amount of spectrum that is not shared with satellite services. Thus, the terrestrial provider has significant latitude to choose another frequency channel if necessary to coordinate with an earth station.

In contrast, earth station operators have control over only one end of the transmission path. The location of the other end and the frequencies that can be used for the communications link are fixed. The direction the earth station must face for transmission to or reception from a geostationary orbit satellite cannot change. Similarly, the elevation angle of the earth station is a function of the latitude at which the station operates and likewise cannot be changed. Thus, when an earth station applicant needs to protect existing fixed services from interference, it has very limited methods at its disposal.<sup>5</sup>

In short, the facts present a very different picture of spectrum sharing than the one painted by the FWCC and relied on in the *Notice*. The reality is that the fixed service interests thought co-primary sharing was fine when it worked to their advantage. Fixed services had a huge head start on deployment that allowed them to preclude C-band earth station siting in major cities and significant parts of the rest of the country. However, satellite service providers have nevertheless managed to deploy significant facilities by squeezing them in among the substantial

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<sup>5</sup> One option that earth station operators have used is placement of an RFI barrier to block interference to or from nearby terrestrial links. Construction of such barriers is costly, but may be the only way to respond to customer requirements in some instances. Of course, this option is available to microwave operators as well in order to coordinate a link.

and ever-growing population of fixed service links. As a result of earth station deployment, the siting of some new fixed service links is now constrained. The fixed service interests therefore think that the rules of the game should be changed.

The Commission must reject this blatantly self-serving attempt by the FWCC to re-write the rules in their favor.

## **II. GE AMERICOM AND OTHER OPERATORS NEED THE FLEXIBILITY PROVIDED BY CURRENT RULES**

In contrast to the absence of any supporting facts for the FWCC's suggestions, the record reflects unanimous opposition to the FWCC Petition from each and every service provider that filed comments.<sup>6</sup> The comments demonstrated in substantial detail that current policies are designed to ensure that satellite operators and the Commission both have the necessary flexibility to ensure efficient utilization of satellite network capacity and spectrum/orbit resources.

These policies, moreover, permit satellite systems to provide services and fulfill functions for which fixed services are not well suited. For example, due to the distance insensitivity of satellite services, satellite networks can provide service to rural and remote areas without the need for substantial infrastructure build-out. Satellite networks also allow immediate, short-term response to emergencies and coverage of breaking news or sporting events.

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<sup>6</sup> The sole support for the FWCC's proposals came from another fixed wireless industry group, the Fixed Point to Point Communications Section of the Telecommunications Industry Association ("TIA"). See Notice at Appendix A. TIA's Satellite Communications Division, however, filed in opposition to the Petition. *Id.*

For example, GE Americom C-band satellite capacity is used by Alascom to provide critical telecommunications services to Alaska. Alascom operates a statewide telecommunications system to offer long distance telecommunications throughout Alaska, using more than 200 satellite earth stations. The vast majority of these stations were deployed for service to remote Alaska “bush” villages (communities of between 1,000 and 25 persons isolated by distance and geography from larger population centers). The vast distances, extreme terrain, natural conditions, and harsh weather of Alaska mean that for a substantial majority of bush locations, satellite facilities are the only feasible form of interconnection. For many rural Alaskans, telecommunications are the only way to reach out to the world for essential medical and social services.

The record also demonstrates that satellite networks use spectrum extremely efficiently. Like fixed service licensees, satellite and earth station operators are subject to technical rules designed to promote frequency reuse and optimize utilization of spectrum/orbit resources. More important, however, is the strong economic incentive for efficiency that is inherent in satellite service. A huge initial investment must be made to construct and launch a satellite, and transponder usage rates must be set to recover that cost. Furthermore, service rates must also cover the costs of earth segment facilities. As a result, the economics of satellite networks ensure that both space and ground assets are used efficiently.

GE Americom will supplement the existing record and the Coalition's Comments by providing here a few illustrations of why the flexibility built into current licensing and coordination policies is essential for efficient satellite network operation.

First, full spectrum access for earth stations is needed because of the way protected services are provided. GE Americom customers who need a strong guarantee that back-up service will be available in the event a transponder or satellite fails purchase protected service. That level of service entitles the customer to capacity on another transponder or satellite in the event of a malfunction in the primary facility relied on by the customer. But neither GE Americom itself nor the customer knows in advance what frequency would be used for replacement service – that frequency is assigned based on conditions at the time the need for restoration arises.

Specifically, in the event a malfunction occurs, GE Americom would restore service to customers who purchased protection by using available capacity on other transponders or spacecraft and also by reclaiming capacity from pre-emptible service customers. Under GE Americom's contracts with its pre-emptible customers, the order in which customers get pre-empted is determined based on the level of service and the contract date. Because the mix of pre-emptible customers on a satellite changes regularly, the pre-emption "hierarchy" also changes.

As a result, it is completely impossible to predict ahead of time what frequency would be needed to restore service to any given protected service

customer. Obviously, the amount of capacity needed to restore service will depend on the scope of the failure and the number of affected customers who bought protected service. The frequency that GE Americom would assign to any individual customer would be determined based on a range of variables at the time the malfunction occurs, including the available capacity on the system, the individual protected customer's "seniority," GE Americom's current mix of pre-emptible customers, and the pre-emptible customers' service levels and contract dates. Furthermore, a failure creates a daisy-chain effect. After protected service is restored, customers who have been pre-empted would attempt to find replacement capacity for their requirements.

Thus, GE Americom customers who purchase protected service need earth segment with access to the full band in order to ensure that they can derive the benefits of that protection by taking advantage of capacity assigned for restoration. Pre-emptible service customers also need the flexibility to shift frequencies if necessary in the event that their primary capacity is pre-empted.

Flexibility is also the key to coordination with adjacent satellite operations. During the coordination process, satellite network engineers exchange and analyze detailed information regarding the services and technical parameters of each spacecraft. Transponder assignments to customers depend on the adjustments required to accommodate adjacent operations. Even after the initial coordination, additional changes are routinely required to reflect shifts in services and operational characteristics of each satellite's customers.

Finally, earth station access to the full frequency band for which the satellite is licensed is needed to enable GE Americom to manage its network efficiently. For example, the optimum way for GE Americom's network to handle SCPC (single channel per carrier) traffic is to designate specific transponders for SCPC use and consolidate the SCPC traffic on those transponders. GE Americom generally will not designate a transponder for SCPC use unless there is sufficient SCPC demand to ensure substantial loading of the transponder. Once the transponder is designated for SCPC traffic, GE Americom can fill out the transponder with additional SCPC usage only if potential customers have the ability to use the available frequencies on that transponder. Furthermore, if SCPC demand decreases over time, GE Americom may need to reduce the number of SCPC transponders by consolidating the traffic. In each case, GE Americom's ability to manage its network to optimize traffic loading depends on full access by earth stations to the bands for which GE Americom's satellites are licensed.

Because there is no evidence that current policies are unfair to terrestrial operations and because there is strong evidence that current policies are needed to protect legitimate spectrum requirements for satellite networks, the Commission should retain its existing rules.

### **III. THE PROPOSAL FOR A USE DEMONSTRATION REQUIREMENT SHOULD BE REJECTED**

GE Americom agrees completely with the Satellite Industry Coalition's comprehensive showing that the Notice's proposal for a use demonstration requirement is unjustified, unworkable, and contrary to the public interest. *See*

Coalition Comments, Section II. We discuss below our particular concerns about this proposal.

**A. Earth Station Access to Spectrum Should Not Be Limited by an Artificial Definition of Use**

The proposal that an earth station be required to demonstrate past, current or “imminent” future use of a channel it has coordinated in order to protect its access to that channel ignores the basic operational realities of satellite networks. Access by earth stations to the full spectrum band licensed to space stations is a legitimate requirement in order to ensure efficient spectrum utilization and permit the continued provision of critical satellite services. There is a broad range of circumstances that could require an earth station to add or change frequencies actively being used. GE Americom has discussed a few examples above, and many more are contained in the Coalition Comments.

The Commission cannot possibly hope to develop a definition of use that would adequately account for all the factors relevant to any given coordination. On the one hand, a framework that considered all the appropriate variables would be too complex to be easily administered. The Satellite Industry Comments provide a detailed analysis of the questions asked in the *Notice* regarding the development of a use standard. That discussion shows that attempting to fairly define earth

station use with “narrow, concise rules” as demanded by Commissioner Furchtgott-Roth<sup>7</sup> is an exercise in futility.<sup>8</sup>

On the other hand, implementation of a standard that did not reflect all the relevant factors would unjustly deprive earth stations of access to spectrum, impairing the efficiency of satellite operations and undercutting the economic assumptions on which satellite facility investments have been made. The examples mentioned above highlight the damage that would be done by adoption of an unreasonably narrow definition of use.

For example, rules that resulted in limitations on earth stations’ ability to access the full communications band would impair GE Americom’s ability to restore service in the event of a transponder or satellite failure. GE Americom has been offering protected service based on the assumption that in the event of a malfunction, GE Americom will have the freedom to reassign its customers to new frequencies as needed. If that freedom is constrained because frequencies cannot be used at one or more customer earth station sites, GE Americom’s ability to deliver on its promise of restoration will be impaired and could be destroyed. Protected service accounts for millions of dollars of revenue annually for GE Americom. A use

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<sup>7</sup> See *Notice*, Separate Statement of Commissioner Harold Furchtgott-Roth at 1.

<sup>8</sup> Even the FWCC states that earth stations can legitimately show need for spectrum not currently in a wide range of circumstances, including cases where spectrum is assigned at the discretion of the space station operator, or where earth stations have multiple antennas or business that routinely requires access to multiple satellites. Reply Comments of FWCC at 12-13. The FWCC, however, does not make any attempt to suggest how the Commission would fashion a definition of use that reflects all those varying circumstances.

demonstration standard that could interfere with restoration of protected service would therefore be extremely damaging to GE Americom economically.

Similarly, restrictions on the availability of spectrum at earth station sites would limit GE Americom's ability to accommodate neighboring satellites in coordination discussions. In addition to the numerous other factors that must be considered in operator-to-operator discussions, GE Americom would be constrained by the need to ensure that transponder assignments are consistent with the frequencies that can be used on the ground to serve each customer. Such additional restrictions would exponentially increase the complexity of coordinations for new satellites or services. One result would likely be an increase in coordination disputes, perhaps requiring additional Commission intervention.

Finally, network management would be adversely affected, and spectrum efficiency would be impaired. As we have explained, the flexibility GE Americom has under existing policies permits it to manage SCPC traffic by consolidating it on a limited number of transponders. Restrictions on the availability of frequencies at earth stations would create barriers to achieving these efficiencies. Instead, GE Americom could well be faced with situations in which SCPC transponders are only partially filled, but the remaining capacity cannot be sold because potential customers do not have access to the relevant frequencies. Furthermore, the restrictions would seriously limit GE Americom's ability to improve network efficiency by consolidating SCPC traffic on fewer transponders, because to do so GE Americom must be free to make frequency reassignments.

In sum, imposition of an artificial and arbitrary standard for demonstrating use would be extremely detrimental to the efficiency of satellite services and undermine long-standing commercial arrangements.

**B. The Proposed Use Demonstration Requirement Would Significantly and Unfairly Burden Satellite Operations**

The *Notice* also fails to acknowledge the huge burden that would be placed on satellite systems by the proposed new rule. Specifically, the *Notice* proposes that if an earth station licensee denies a request for coordination of a new terrestrial link, the earth station licensee would be required to show its past (during the last 24 months), current, and imminent future use of the spectrum at issue. Thus, responding to a single coordination request will require the earth station operator to review two years worth of data for the earth station and assemble information regarding each use of the frequency channel during that time. In addition, the operator would need to review future commitments for the frequency.

For GE Americom, responding to coordination requests under such a rule would be very difficult and time-consuming. GE Americom does not maintain a single unified database to track specific channel usage. Instead, GE Americom has two databases, one for occasional use traffic and one for all other traffic. Of course, neither database was designed for the purpose of responding to a use demonstration showing. Instead, the principle function of both databases is to provide a snapshot of current system operations. GE Americom's main (non-occasional use) database, for example, does not retain information about past frequency use subsequent to a

change. Instead, recovering such historical information would be possible only through retrieving all the previous edits to a given field.

GE Americom cannot readily estimate the total administrative burden GE Americom would face under the proposal in the Notice, in part because it is impossible to know how much the number of terrestrial coordination requests would increase if the proposal was adopted. However, given GE Americom's substantial base of earth station licenses, we could be required to respond to one or more coordination requests each week. This would require allocation of significant resources, and might even necessitate reconfiguring GE Americom's databases.

GE Americom finds it particularly troubling that the *Notice* proposes to impose excessive and unwarranted burdens on satellite network operations without any demonstration of need by the fixed terrestrial operator. As noted above, terrestrial operations have a wide range of options at their disposal for avoiding interference to pre-existing earth stations, including route diversity, choosing alternative spectrum, and employing RFI shielding. Yet the *Notice* ignores these possibilities and does not suggest that terrestrial operators should have any obligation to show that they have explored available alternatives before seeking to deprive the earth station operator of licensed spectrum. Such a one-sided approach, besides being fundamentally unfair, would simply invite abuse by terrestrial applicants.

**C. A Spectrum Efficiency Standard for Earth Stations Is Neither Necessary Nor Practical**

GE Americom also opposes any attempt to develop and apply a spectrum efficiency standard for earth station operations. *See* Coalition Comments at Section I.G. First, there is simply no reason to believe such a standard is needed. Even the FWCC has made clear that it does not seek imposition of bits-per-Hertz efficiency requirements on satellite operations. Reply Comments of FWCC at ii. In fact, the FWCC stated that it recognizes that such a standard for FSS “would be unrealistic in view of long lead times and numerous other constraints on satellite system design” and is not necessary for equitable sharing. *Id.* at 6.

Furthermore, existing Commission policies already impose requirements that ensure a high level of efficiency for satellite operations. *See Notice* at ¶ 39 & n.71. The basic economics of satellite network operations also ensure efficient use of capacity. Transponder rates must be set to recover the huge sunk costs required to construct, launch and operate a satellite system, and service prices must recover associated ground segment costs as well. Inefficient use of capacity is simply too expensive to be tolerated.

Finally, attempting to develop an enforceable standard that could apply to the broad range of services offered and technologies used would be difficult, if not impossible. Given the lack of any demonstrated need for it, the Commission should not waste valuable resources in trying to develop an earth station loading standard.

**IV. THE COMMISSION SHOULD NOT IMPOSE NEW AND UNNEEDED LIMITS ON INTERFERENCE COORDINATION**

GE Americom also agrees with the points made by the Coalition in opposing the two proposals for new requirements regarding interference coordination procedures. *See* Coalition Comments at Section III. There has been no demonstration that either proposal is necessary to address a significant problem. Furthermore, in each case the proposed solution would simply restrict the freedom both satellite and terrestrial operators need to resolve coordination issues.

**A. The Commission Should Not Mandate Use of Any Interference Model**

The *Notice* proposes to require an earth station licensee that relied on a given interference model in order to initially coordinate its site to accept the use of the same model in future coordinations. *Notice* at ¶ 78. According to the Commission, this would ensure that similar situations are treated similarly. But there is absolutely no evidence that a new rule is needed to achieve this result. In GE Americom's experience, both satellite and terrestrial systems generally use reasonable and consistent methods to evaluate coordination requests. This includes relying on use of earlier interference analyses, provided that there have not been significant intervening changes in the relevant terrain or other obstructions.

Furthermore, even if the earth station operator accepts the use of an earlier interference model, there is no guarantee that coordination of a new terrestrial link can be accomplished. As the *Notice* recognizes, every coordination is different. *Notice* at ¶ 73. The interference model is only one factor in determining

whether a new terrestrial link will cause unacceptable interference into existing earth station operations.

Thus, there is no reason to believe that this proposed rule is necessary or would facilitate coordination of additional terrestrial links. Instead, it would simply impose an unwarranted constraint in coordination proceedings.

**B. The Commission Should Not Substitute Its Judgment Regarding Earth Station Performance Objectives for the Judgment of Earth Station Operators**

The second proposal in the *Notice* regarding interference coordination would preclude protection of a channel once the earth station operator accepts interference on that channel such that performance will be “below accepted interference objectives.” *Id.* at ¶ 78. Again, there is no basis for imposing such a requirement because there is no evidence that a significant problem exists.<sup>9</sup>

In addition, as the Coalition explains, the amount of interference that can be accepted before a channel becomes unusable depends on a wide variety of factors that will vary from service to service and operator to operator. The Commission does not suggest how it would go about deciding whether or not performance on a channel has already been degraded to a level “below accepted interference objectives.”

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<sup>9</sup> The FWCC provides a single example in which it alleges that an earth station operator took an unreasonable position, but provides no details regarding the circumstances. See FWCC Petition at 10 n.17. Even assuming for purposes of argument that there were no extenuating circumstances that justified the decision by the earth station operator in question, one occurrence does not constitute a sufficient basis for imposing a new across-the-board rule.

**V. THE HUGHES PROPOSALS FOR BLANKET LICENSING IN SHARED 18 GHz SPECTRUM SHOULD BE ADOPTED**

GE Americom does support the rule changes proposed by Hughes to facilitate licensing of terminals in the shared portions of the Ka-band. *See Notice* at ¶¶ 98-99. Specifically, Hughes asks the Commission to extend its blanket licensing rules to spectrum that is shared between satellite and terrestrial operations in the 18.3-18.58 GHz band and spectrum that is shared between GSO/FSS and MSS feeder link operations in the 29.25-29.5 GHz bands.

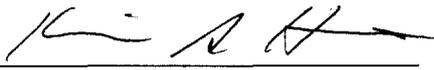
In each case, the Hughes proposal is consistent with established policies. It would permit deployment of receive-only terminals in shared 18 GHz spectrum and allow registration of specific terminal locations to gain protection from future terrestrial interference. In spectrum shared with MSS feeder links, blanket licensing of GSO/FSS terminals is fully in accord with the sharing assumptions that were agreed to by operators when the band plan was adopted. Adoption of streamlined licensing procedures would expedite service to users and minimize administrative burdens for both applicants and the Commission. Accordingly, GE Americom urges the Commission to adopt the Hughes proposals.

## CONCLUSION

GE Americom joins the Satellite Industry Coalition in opposing the proposed limitations on earth station access to spectrum that were requested by the FWCC and are reflected in the *Notice*. The Hughes proposal for streamlined Ka-band terminal licensing, however, is consistent with the public interest and should be adopted.

Respectfully submitted,

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