

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

In the Matter of)
)
Utilities Telecom Council and Winchester Cator, LLC) RM-11429
)
Petition for Rulemaking to Establish Rules Governing)
Critical Infrastructure Industry Fixed Service)
Operations in the 14.0-14.5 GHz Band)

To: The Commission

**OPPOSITION OF SES AMERICOM, INC., NEW SKIES
SATELLITES, INC., AND INTELSAT CORPORATION**

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SES Americom, Inc. (“SES Americom”), New Skies Satellites, Inc. (“New Skies”) and Intelsat Corporation and its affiliated entities (collectively “Intelsat”) hereby submit this opposition to the above-captioned Petition for Rulemaking (“Petition”) of the Utilities Telecom Council (“UTC”) and Winchester Cator, LLC (“Winchester,” and with UTC, the “Petitioners”). SES Americom, New Skies and Intelsat are members of the Satellite Industry Association (“SIA”) and strongly support SIA’s pleading explaining why the Petition should be denied (the “SIA Opposition”). We are filing separately here to highlight our own serious concerns about the Petition’s proposals to introduce a new secondary fixed service in the 14-14.5 GHz band, which is allocated on a sole primary basis to the Fixed Satellite Service (“FSS”) and is heavily used for satellite applications that are critical to the public interest. Notwithstanding the Petition’s rhetoric, the facts make clear that the proposal is motivated solely by commercial interests and that the planned fixed service deployment cannot feasibly co-exist with ubiquitous FSS terminals deployed today, much less with continued development of new FSS applications and ubiquitous services. Accordingly, the Commission should summarily deny the Petition.

I. INTRODUCTION AND SUMMARY

As the Commission is aware, satellite services are an essential part of the nation's telecommunications infrastructure. SES Americom, New Skies, Intelsat and other operators and service providers use satellite spectrum to provide capacity for a wide range of services, including government services, transaction processing and corporate communications critical to the economy, and basic communications services relied on as the only connection to communities such as those provided in remote parts of Alaska. Under the Commission's technical policies, FSS uses spectrum extremely efficiently, with full reuse of the frequencies by satellites operated two degrees apart.

As one of the few bands with a sole primary allocation for FSS, the 14-14.5 GHz spectrum is available for Very Small Aperture Terminal ("VSAT") remote antennas, which are subject to blanket licensing, rather than site-specific authorization. The band is also used for Satellite News Gathering ("SNG"), a service that is essential to allow media outlets to cover breaking news stories. Furthermore, there is growing use of the band for mobile services that fulfill key public safety and national security needs, including earth stations on vessels ("ESVs"), aeronautical services, and vehicle-mounted earth stations ("VMESs") for public and government use.

SES Americom, New Skies and Intelsat are active in all these areas. SES Americom is currently offering an ESV service using both SES Americom and New Skies spacecraft. Intelsat similarly offers an ESV service. In addition, all three companies provide capacity for other ESV operators. Capacity on SES Americom satellites is used for aeronautical services offered by Boeing, ARINC and ViaSat, and Intelsat recently entered into an agreement to provide capacity for Panasonic's planned in-flight passenger broadband access services. Qualcomm's long-standing OmniTRACS terrestrial mobile service is provided using SES

Americom capacity, as is the recently authorized Raysat VMES service. SES Americom's subsidiary Americom Government Services also has a pending application for a VMES service that will use SES Americom capacity.

The Petition seeks to introduce into this robustly-used spectrum new fixed services, purportedly to satisfy currently unmet requirements of utilities, which the Petition characterizes as critical infrastructure industries ("CII"). In fact, however, there is absolutely no evidence that existing allocations are insufficient to satisfy utilities' needs. CII entities today obtain communications services from a broad range of providers using a broad range of technologies, including Ku-band VSAT services offered by FSS operators. Moreover, it is clear that the proposed new allocation is driven by Winchester's desire to lease spectrum for profit, not to address any CII requirements.

The Petition also fails in its quest to show that the contemplated secondary fixed services are technically compatible with existing and future primary FSS operations. Its attempt to demonstrate that the fixed services would not interfere with FSS is fatally flawed by the reliance on an interference metric that applies to co-primary operations, not to secondary services. Protecting the envisioned fixed services from interference caused by ubiquitous fixed, temporary fixed, and mobile satellite service transmitters would be even more difficult, as the Petition correctly acknowledges. Yet the only measures proposed in the Petition for mitigating such interference are patently insufficient.

The Commission must see the Petition for what it is: an attempted spectrum grab for commercial purposes cloaked in language about critical infrastructure. The Commission must also be realistic about the risks: fixed service terminals deployed in the quantities suggested in the Petition would cause serious harmful interference to satellite receive antennas,

and would be unable to provide reliable service given the large and growing number of primary satellite transmitters in this band. In these circumstances, there is no conceivable public interest benefit in the proposed allocation, and the Commission should deny the Petition.

II. THE SUGGESTION THAT THE PETITION IS A RESPONSE TO CII SPECTRUM REQUIREMENTS IS DISINGENUOUS AT BEST

Winchester, not UTC, is clearly the driving force behind the Petition. The Petition is understandably coy about Winchester and the for-profit uses that Winchester hopes to make of the 14-14.5 GHz spectrum. UTC gets top billing in the introductory sections of the Petition, while a description of Winchester is relegated to a footnote. *See* Petition at 1 & n.1. Even there, Winchester's interest in the spectrum is not identified – the footnote states merely that “UTC has relied on Winchester's technical expertise.” After that footnote, Winchester's name doesn't appear again in the Petition until the signature page.

Similarly, the Petition focuses on the asserted need for spectrum by UTC members for critical infrastructure, devoting several pages to a description of the utilities' communications operations and their importance. In contrast, the proposal to allow leasing of the spectrum for non-CII services is mentioned in only a handful of places, almost as if it were an afterthought. Thus, a reader could naturally form the impression that UTC approached Winchester to help it obtain access to additional spectrum, that Winchester's stake in the matter is limited to its role as advisor to UTC, and that the proposed allocation will be used primarily for CII services with only a small amount of spectrum made available to Winchester for commercial purposes.

In fact, the opposite is true. SIA met with counsel for UTC and Winchester on May 21, 2008, and learned from that meeting that: (1) Winchester is a sole-purpose entity that was formed expressly to pursue access to spectrum for commercial applications; (2) Winchester

approached UTC with the proposal to seek an allocation for fixed service in the 14-14.5 GHz band; and (3) Winchester's objective is to be the entity with exclusive rights to offer capacity in the band on a for-profit basis for non-CII services such as cellular backhaul. When SIA members observed that the Petition did not substantiate the claim that utilities were in need of additional spectrum and asked UTC for additional information, UTC was unable to quantify the utilities' spectrum requirements. Likewise, when SIA challenged the Petition's premise that current allocations are insufficient to satisfy the utilities' needs and asked why the utilities could not make greater use of spectrum already allocated for fixed services, the response was an unsupported assertion that the equipment was more expensive than in the 14-14.5 GHz band.

This conversation makes clear that the impression carefully created by the Petition is a sham. The Petition is not the result of UTC actively seeking new spectrum in order to respond to urgent demand by its members that cannot be met in existing allocations. To the contrary, there is no evidence of unmet spectrum requirements on behalf of the utilities and no plausible explanation for why spectrum allocated to the fixed service on a primary basis today cannot fully satisfy UTC's projected needs.

Instead, the purpose of the Petition clearly appears to be to set Winchester up to be the single entity in a position to charge a fee for and profit from access to 500 MHz of spectrum for new fixed service applications. Presumably in exchange for allowing use of the UTC name as the apparent lead party on the Petition, UTC has a shot at getting the rights to use spectrum on very favorable terms. Indeed, there was a suggestion in the SIA meeting with the Petitioners that Winchester might partially or wholly subsidize the costs of the backbone fixed network that would be available to UTC members.

For its part, Winchester stands to become a monopoly spectrum provider with free rein to exploit the proposed new spectrum allocation subject to only one restriction. The non-CII services that Winchester seeks to provide must be preemptible to accommodate CII demands, consistent with characterizing the Petition as being motivated by CII usage requirements.

That restriction, however, is unlikely to significantly hinder Winchester's rights. As we have explained, there is no actual evidence that the utilities UTC represents currently have substantial requirements for additional spectrum or have any concrete plans that they would be ready to implement if the proposed new allocation was adopted. Moreover, the assertions about utilities' spectrum needs contained in the Petition primarily focus on heightened demand in response to emergencies. Such emergency situations can be expected to be geographically limited and of relatively short duration. As a result, there is no reason to believe that the preemption requirement would materially constrain Winchester's ability to sell spectrum for non-CII services. It could be years before utilities are ready to deploy any new systems in the 14-14.5 GHz band, and even then, Winchester would only need to curtail for-profit operations in the specific locations where, and during the specific limited time periods when, CII services are actually in use.

Under these circumstances, the Petition's claim that "CII entities would constitute the dominant use of the band" (Petition at 10) is blatantly implausible. Winchester's plans to use the spectrum for applications such as cellular backhaul would presumably be for full-time, nationwide use that could be rolled out very quickly. In contrast, any eventual usage of the spectrum by utilities is likely to be for short-term, localized response. Thus, by any conceivable measure, commercial services would in fact be the dominant use of the proposed new allocation.

The fact that the Petition was designed to satisfy Winchester’s business plans, not UTC’s needs, is key to understanding many of the apparent inconsistencies raised by the Petition. It explains why UTC, when asked, could not substantiate or quantify utilities’ spectrum requirements. It explains why no convincing demonstration has been made that existing fixed service spectrum allocations are insufficient to meet utilities’ needs. And it explains the Petition’s failure to address how a secondary allocation in an already heavily-used band with ubiquitously deployed primary VSAT, SNG, and ESV terminals ever could meet utilities’ stated availability requirement of 99.999%. In short, the Petition fails to make a plausible case in favor of a new allocation for CII because addressing CII demand was never the principal goal.

This disconnect between the Petition’s pro-CII spin and the underlying reality fundamentally undermines the public interest rationale put forward for the Petition. Winchester’s attempt to use alleged CII requirements to justify its pursuit of spectrum for purely commercial reasons must be summarily rejected.

III. THE PETITION’S TECHNICAL ANALYSIS IS FATALLY FLAWED AND INCONSISTENT WITH SECONDARY SPECTRUM USE

The Petition relies on a technical report that purports to show that “the 14.0-14.5 GHz frequency band can be shared by the incumbent and proposed services without harmful interference.”¹ In fact, however, the contemplated secondary fixed services are simply incompatible with existing, planned and evolving primary satellite applications.

A. The Petition Does Not Demonstrate that Current and Future Satellite Services Would Be Adequately Protected

The SIA Opposition provides a comprehensive refutation of the Petition’s assertion that the proposed terrestrial fixed services would not create impermissible interference

¹ Petition at 11, *citing* Report prepared by RKF Engineering, LLC (“RKF Report”).

to satellite receivers. SIA Opposition, Section II. SES Americom, New Skies and Intelsat focus here on a few key points of that discussion.

As a threshold matter, the Petition's analysis of this issue is wholly based on an incorrect premise. The RKF Report assumes that the appropriate metric for evaluating whether excessive interference to satellite uplinks would occur is 6% $\Delta T/T$. RKF Report at n.2. Yet as SIA explains, a 6% $\Delta T/T$ allowance is used as a coordination trigger under ITU procedures for co-primary adjacent satellites. SIA Opposition, Section II.A. This figure is wholly inappropriate for evaluating a proposed secondary service, as ITU procedures specify a 1% $\Delta T/T$ allowance for all non-primary sources of interference. *Id.* Thus, the proposed fixed service would be entitled to only a fraction of the 1% allowance. There is absolutely no evidence that its operations would comply with that much lower limit.

As a result, the Petition's estimate that millions of fixed service terminals could be deployed without harmfully interfering with satellite uplinks is grossly inflated. As the SIA Technical Appendix demonstrates, even generously allowing a new fixed service to account for half of the 1% $\Delta T/T$ allowance produces an estimate that at most one to two hundred fixed service terminals could simultaneously operate nationwide in the 14-14.5 GHz band without creating harmful interference to FSS reception at the satellite. SIA Opposition, Annex 1 at Section 4.

The Commission must also consider the inherent difficulties with identifying and terminating offending transmissions by fixed service terminals if interference to satellite uplinks occurs. SIA Opposition, Section II.A. In their conversation with SIA, Petitioners acknowledged that they sought to deploy fixed service antennas on an unlicensed basis. In fact, the Petition suggests that in the event of an emergency, utilities would need to deploy new temporary fixed

terminals that would be aimed at the “cloud” of pre-positioned base stations. Petition at 5. This is a recipe for disaster in terms of enforcing the proposed fixed service’s secondary status. From the point of view of the satellite’s receive antenna, new fixed service transmissions in the band will contribute to an aggregate increase in the noise floor. With multiple hastily-deployed fixed terminals in service, identifying the most significant sources of interference and ensuring they will be rapidly shut down will be impossible.

This situation will be most dangerous in times of crisis. As the Commission is aware, satellite services are heavily relied on to restore communications functionality when terrestrial networks are damaged due to a disaster. For example, in the aftermath of Hurricane Katrina, satellite services were immediately available and used to provide rescue and recovery communications, transport news and information services critical to public safety, and restore service to gas stations, grocery stores, banks and other businesses in the affected areas. As a result, there was a significant spike in demand for satellite capacity during that period. Similarly, on September 11, 2001 and for some time afterwards, the FSS Ku-band satellite networks were the essential, seamless, and unaffected backbone for the U.S. East Coast and, in fact, U.S. national communications networks.

Under the Petitioners’ proposal, multiple new fixed service transmitters would be rapidly deployed in the 14-14.5 GHz band in response to an emergency, introducing a much greater likelihood of mispointing that could harm satellite reception. Thus, just when the demand for satellite services and the need for reliability would be at their peak, the probability of harmful fixed service interference to satellite reception would also be greatest, and there would be virtually no realistic prospect of quickly identifying and correcting the problem. The CII entities who are the purported beneficiaries of the Petition’s proposals would be among the

victims of interference in these circumstances, because a number of CII entities rely on FSS services for 24/7 capacity, especially in emergencies.

Finally, the Petitioners fail to appropriately consider how they would make certain that their planned fixed service deployments do not impermissibly constrain future satellite service developments. *See* SIA Opposition, Section II.C. The Commission must ensure that the innovation that has been a trademark of satellite services is able to continue. In particular, deployment of secondary fixed services must not be allowed to preclude introduction of new primary FSS applications that are more susceptible to terrestrial interference than existing offerings. The Petition provides no basis on which the Commission could conclude that the proposed fixed service is compatible with the continued growth and evolution of satellite operations in the 14-14.5 GHz band.

B. Harmful Interference from Satellite Terminals into the Proposed Fixed Service Is Unavoidable and Would Prevent Petitioners from Achieving their Stated Service Availability Objectives

The Petition also fails to realistically evaluate the impact of interference from primary satellite uplinks into the proposed secondary fixed service. As SIA explains, satellite terminals in this band today include fixed, individually licensed VSAT hubs and other earth stations used for point-to-point communications and a myriad of terminals for which no location information is available, including blanket-licensed VSAT remotes, SNG trucks, and mobile ESVs, VMESs and aeronautical terminals. SIA Opposition, Section III. In this environment, the standard technique for co-primary FSS/FS sharing in the C-band – geographical separation of satellite transmitters from terrestrial receivers – is simply impossible. Moreover, the interference environment for a given fixed service receiver will not be stable, because the absence of a nearby

terminal transmitting at high power to a satellite today is no guarantee that one will not be deployed in the vicinity of the fixed service receiver tomorrow.

The Petition erroneously assumes that all satellite uplinks in the 14-14.5 GHz spectrum employ narrowband transmissions, and thus the threat of interference can be addressed if the fixed service employs spectrum spreading techniques. In fact, as SIA explains, many satellite uplinks in this spectrum are wideband transmissions today, and that number is likely to continue to grow. While VSAT remote terminals typically use narrow bandwidth, VSAT hub stations do not. Furthermore, spread spectrum is widely used by ESVs, aeronautical services, and VMESs. For example, SES Americom's ESV service employs a spread spectrum technique,² as does Americom Government Service's proposed VMES service.³

In this environment, harmful interference into fixed service receivers is inevitable, and a 99.999% availability requirement is unachievable. Once again, interference is most likely to occur during emergencies, when the number of satellite uplink terminals in the affected area will increase dramatically, while utilities would be simultaneously attempting to establish new terrestrial communications paths. As a result, the stated Petition objective of enhancing utilities' access to spectrum for high-capacity, high-reliability links in emergency situations cannot be met.

This reality underscores the irrationality of proposing to use the 14-14.5 GHz band on a secondary basis for the communications described in the Petition in lieu of spectrum where there is a primary fixed service allocation. The Petition asserts that existing spectrum is insufficient to meet utilities' needs because the bands are "plagued by congestion and interference." Petition at 8. The Petitioners fail to explain, however, why they think the densely

² See, e.g., File Nos. SES-LIC-20060824-01502 & SES-AFS-20061130-02065.

³ See, e.g., File No. SES-LIC-20070509-00584.

used 14-14.5 GHz band, where they will be obliged to accept interference from hundreds of thousands of existing uplink terminals, would be any better for their stated purposes.

No crystal ball is needed to foresee the consequences if the Commission were to allow the Petitioners' proposal to go forward. The Petitioners may make repeated assertions today that they would act immediately to remedy any impermissible interference to satellite uplinks. However, once they were permitted to deploy services, their natural response when faced with a claim of interference would be to challenge and delay any attempt to curtail their operations. The satellite industry's experience with radar detector interference demonstrates that it is virtually impossible to correct harmful interference if a significant number of unlicensed, interfering devices are in service.

Similarly, notwithstanding their recognition today that secondary status gives them no right to protection against current or future primary satellite services, Petitioners almost certainly would change their tune once they learned how difficult achieving reliable service would be in the face of ubiquitous satellite uplink transmitters. Any future attempt to upgrade the status of fixed service in this band – using the claim that the services are needed for CII – would clearly be disastrous for the continued growth and development of critical satellite services.

The Commission, however, can easily prevent this future regulatory nightmare. Because Petitioners have not presented a feasible proposal for allowing secondary fixed service use of the 14-14.5 GHz band, the Petition must be denied.

IV. CONCLUSION

Both the policy arguments made in the Petition, and the technical support on which it relies, are gravely flawed. Accordingly, for the reasons set forth above and those

expressed in the SIA Opposition, the Commission should deny the Winchester/UTC Petition for initiation of a rulemaking.

Respectfully submitted,

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June 26, 2008

CERTIFICATE OF SERVICE

I, Cecelia Burnett, hereby certify that on this 26th day of June, 2008, copies of the foregoing Opposition of SES Americom, Inc., New Skies Satellites, Inc. and Intelsat Corporation to the Petition for Rulemaking were sent by first-class mail to the following:

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