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

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| In the Matter of | ) | |
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| 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

**REPLY OF SES AMERICOM, INC. AND NEW SKIES SATELLITES, INC.**

SES Americom, Inc. ("SES Americom") and New Skies Satellites, Inc. ("New Skies") hereby submit this reply to the oppositions and comments of other parties in response to the above-captioned Petition for Rulemaking ("Petition") of the Utilities Telecom Council ("UTC") and Winchester Cator, LLC ("Winchester," and with UTC, the "Petitioners"). The Petition proposes to introduce secondary fixed-service ("FS") operations in the heavily-used 14-14.5 GHz spectrum allocated on a sole primary basis to the fixed-satellite service ("FSS"). The record before the Commission here conclusively demonstrates that the Petition should be summarily denied.

The initial Joint Opposition submitted by SES Americom, New Skies and Intelsat[1] explains that the existing and developing satellite services provided in the 14-14.5 GHz band are essential to the public interest, especially in times of crisis, and that disruption of these services would be disastrous. Although the Petitioners allege that their proposals are intended to address spectrum requirements of critical infrastructure industries ("CII"), it is clear that the real purpose of the Petition is to obtain access to spectrum for purely commercial purposes. Furthermore, the

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[1] Opposition of SES Americom, Inc., New Skies Satellites, Inc. and Intelsat Corporation, RM-11429 (filed June 26, 2008) ("Joint Opposition").

Petitioners have wholly failed to show that new FS operations are compatible with satellite use of the band – instead it is clear that the services contemplated by the Petition would both interfere with sensitive satellite offerings and receive interference from FSS transmissions that would prevent the provision of reliable fixed service.

Additional oppositions from parties representing virtually every facet of the satellite industry around the world – other space station operators, equipment manufacturers, user groups, and providers of satellite-based aeronautical, maritime, and terrestrial services to both government and commercial customers – echo the concerns raised in the Joint Opposition.[2] In contrast, the only support for the Petition comes from a handful of parties whose filings do nothing to address the Petition's failure to make a case that the spectrum already allocated to FS is inadequate or that secondary FS use of the 14-14.5 GHz band is compatible with existing and evolving satellite services. If anything, the FS parties' arguments bear out the unsuitability of this spectrum for the CII applications that are the stated rationale for the proposed reallocation.

In light of the overwhelming evidence that the Winchester/UTC Petition is primarily motivated not by CII requirements but by Winchester's desire to lease spectrum for profit and the failure of the proponents to show that secondary FS service could co-exist with

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[2] *See* Opposition of ARINC ("ARINC Opposition"); Opposition of Artel Inc. ("Artel Opposition"); Opposition of The Boeing Company ("Boeing Opposition"); Opposition of Global VSAT Forum and European Satellite Operators Association ("GVF/ESOA Opposition"); Opposition of Hispamar Satellites, S.A. and Opposition of Hispasat, S.A. ("Hispamar/Hispasat Opposition"); Opposition of Hughes Network Systems, LLC ("HNS Opposition"); Opposition of Qualcomm Incorporated ("Qualcomm Opposition"); Opposition of Row 44, Inc. ("Row 44 Opposition"); Opposition of the Satellite Industry Association ("SIA Opposition"); Opposition of the Satellite Users Interference Reduction Group ("SUIRG Opposition"); Comments by the Satelites Mexicanos, S.A. DE C.V. ("SATMEX Comments"); Opposition of SeaMobile Inc. ("SeaMobile Opposition"); and Comments of ViaSat, Inc. ("ViaSat Comments").

*See also* Comments of the National Spectrum Management Association ("NSMA Comments"). NSMA does not expressly oppose the Petition, but emphasizes that additional information is required to evaluate the proposed sharing regime and questions whether a secondary service would meet the proponents' stated requirements. NSMA Comments at 2, 4.

existing and future primary FSS applications without mutual interference, the Commission must terminate this proceeding by denying the Petition.

## I. THE RECORD CONFIRMS THAT COMMERCIAL INTERESTS, NOT CII INTERESTS, UNDERLIE THE PETITION

The Joint Opposition explains that the Petition's reliance on asserted CII requirements to justify the proposed spectrum reallocation is an attempt to divert attention from the solely commercial objectives of Winchester, which was the initiating force behind the Petition. Joint Opposition at 4-7. The alleged CII spectrum needs – which are never substantiated in the Petition – are merely an excuse to give Winchester access to bandwidth it can lease for profit to non-CII users.

Other parties make similar observations. HNS states that the "Petition appears to be a run-of-the-mill attempted spectrum grab that is dressed up in the garb of 'critical infrastructure.'" HNS Opposition at 2. ARINC agrees, noting that although "the Petition emphasizes enhancing the public safety aspects of CII," it also seeks authorization for "widespread commercial use." ARINC Opposition at 5.

ViaSat dismisses the Petition's suggestion that CII applications would be the predominant FS use of the band:

> One thing apparent from the Winchester Petition is that, contrary to the claims therein, the proposed secondary terrestrial service would be primarily *commercial* in nature. The Winchester Petition appears to anticipate nearly constant terrestrial use of the 14 GHz Band by a commercial lessee, and further proposes to place authority to manage and coordinate the band in the hands of the commercial lessee. In short, the Winchester Petition appears to be a thinly veiled attempt to permit widespread commercial terrestrial use of the band at the expense of

satellite operations.[3]

The conclusion that the Petition is intended for non-CII purposes is buttressed by the absence of any evidence quantifying the alleged CII requirements or demonstrating that existing spectrum available for CII uses is insufficient to satisfy demand. Several opponents of the Petition identify underutilized frequency bands that are already allocated on a primary basis for fixed service operations and could be used for CII needs, including the 27 GHz, 38 GHz, and 71 GHz bands.[4]

In its comments, UTC makes the incredible assertion that "critical infrastructure industries currently have *no* RF spectrum access" to accommodate their wireless communications needs.[5] The existence of underused spectrum allocated for fixed services today belies that claim, and UTC makes no attempt to explain why existing FS allocations are insufficient.[6]

The Commission must reject the Petitioners' attempt to use CII rhetoric to disguise Winchester's quest to obtain additional spectrum for purely commercial purposes. Non-CII uses would clearly dominate use of the spectrum under the Petition's proposals, and the Commission's analysis of the Petition from a public interest standpoint must be based on that reality.

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[3] ViaSat Comments at 2. *See also* GVF/ESOA Opposition at 21; Qualcomm Opposition at 5 (noting that the Petition "proposes no safeguards by which the Commission could ensure that the CII use of the spectrum will be the principal purpose for which the spectrum is used").

[4] *See, e.g.,* GVF/ESOA Opposition at 16; HNS Opposition at 4, 6; SeaMobile Opposition at 3. *See also* SIA Opposition at 16-18 (discussing UTC's failure to quantify any spectrum requirements or justify why a new allocation is needed to satisfy them).

[5] Comments of the Utilities Telecom Council ("UTC Comments") at 2 (emphasis added).

[6] *See also* Comments of the Fixed Wireless Communications Coalition ("FWCC Comments") at 2 (arguing that fixed service access to certain bands is limited, but not addressing 27 GHz, 38 GHz or 71 GHz spectrum).

## II. FIXED SERVICE OPERATIONS WOULD INTERFERE WITH ESSENTIAL SATELLITE SERVICES

The record also makes clear that the Petitioners' suggestion that fixed services could be introduced without harming existing satellite services or constraining development of future services is completely unfounded.

As discussed in the Joint Opposition, the threshold problem for Petitioners is that their analysis of the prospective impact of new FS operations on satellite networks is based on the wrong interference measure. Joint Opposition at 8. The 6% $\Delta T/T$ criterion used in the Petition is an ITU standard employed as a coordination trigger for co-primary FSS networks – it is completely inappropriate as a standard for assessing interference from a secondary service.[7]

The use of an excessively high interference allowance completely undermines the basis for Petitioners' conclusion that millions of fixed terminals could co-exist with satellite operations, and the resulting impact is far from academic. SIA submits a technical analysis showing that "deployment of just a few terrestrial transmitters . . . would increase the noise floor sufficiently to cause unacceptable interference to FSS uplinks." SIA Opposition at 7 & Annex 1. HNS demonstrates that the aggregate effect of a concentration of FS terminals will "be harmful interference to primary FSS users from unidentifiable FS sources." HNS Opposition at 5. Artel expresses concern that the new operations proposed in the Petition "will cause uncontrollable and insurmountable interference to our current U.S. government users," which include all branches of the U.S. military, Customs and Border Patrol, the Department of Homeland Security, and the Federal Emergency Management Agency. Artel Opposition at 2-3. GVF/ESOA observe that the Petition's proposal is "ultimately incompatible" with International Telecommunication

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[7] *See, e.g.,* GVF/ESOA Opposition at 10-11; Hispamar/Hispasat Opposition at 3; HNS Opposition at 5; Row 44 Opposition at 5; SIA Opposition at 6-8 & Annex 1; SUIRG Opposition at 8.

Union ("ITU") regulations: because there is no international allocation for fixed service in the 14-14.5 GHz band in Region 2, foreign-licensed satellite operators are entitled to insist that their services be protected from harmful interference resulting from new FS operations. GVF/ESOA Opposition at 14-15.

Several commenters observe that deployment of FS terminals in the numbers contemplated under the Petition's misguided assumptions would be particularly devastating for aeronautical mobile satellite services ("AMSS") currently being provided in the 14-14.5 GHz band. For example, Boeing explains that a 6% "increase in the noise floor would interrupt transmissions between aircraft using Boeing's service and the target satellites, causing a shut down of Boeing's AMSS network." Boeing Opposition at 6. ViaSat agrees, noting that "it would take only a small number of terrestrial users to overwhelm the signal from any particular ViaSat AMSS terminal."[8]

When SIA members met with the Petitioners to discuss their proposal in May, we pointed out that their sharing assessment used the wrong interference criterion. Yet UTC's comments here, submitted more than a month following that meeting, inexplicably fail to address this glaring, fundamental flaw. Instead, UTC alleges that the satellite industry's interference concerns are unsubstantiated and repeats the claim that the technical information already supplied proves that sharing is feasible. UTC Comments at 3. UTC goes on to express concern that the satellite industry "will continue to oppose sharing the 14 GHz spectrum regardless of any evidence presented to them" and to speculate that satellite entities are insufficiently "accustomed to the necessities of sharing" because they "have had the luxury of large amounts of spectrum for their dedicated use." *Id.* at 3-4.

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[8] *See also* ARINC Opposition at 1 (use proposed in the Petition "would cause significant interference to current satellite services offered in this band," especially AMSS).

These statements are gratuitous and wholly unjustified. Clearly any legitimate technical analysis of the proposed new secondary service's effects on primary satellite operations must begin by using an interference metric that reflects the difference in priority between the two services. UTC and Winchester as the Petitioners have the burden of proving their proposed secondary services can operate on a non-interference basis, and the satellite industry is certainly entitled to insist that Petitioners fulfill that burden. The problem here is not with the satellite industry's refusal to accept valid evidence regarding the viability of sharing but with UTC's failure to provide it.

UTC's suggestion that the satellite industry lacks experience with spectrum sharing is equally frivolous. As UTC is presumably aware, FSS shares both C-band and extended Ku-band spectrum with fixed service networks today, and FSS operators accordingly are well aware of the constraints that result from the need to accommodate terrestrial systems. Our concern about Petitioners' proposal is therefore born of experience, not unfamiliarity. The record here demonstrates that attempting to introduce sharing in a band where satellite services have developed and flourished because of the sole primary FSS allocation would impermissibly harm existing satellite services and limit development of new ones.

## III. THE PROPOSED SECONDARY ALLOCATION CANNOT SATISFY THE STATED CII REQUIREMENTS

Finally, there is virtual unanimity among the parties that because of the inevitable interference from satellite networks into the proposed FS receivers, the service quality expectations of CII users, including a 99.999% availability requirement, cannot possibly be met. The Joint Opposition notes that the predominant uses of the 14-14.5 GHz band include ubiquitously-deployed VSAT networks, satellite news gathering operations, and an increasing number of aeronautical, maritime, and terrestrial mobile services, none of which can be

pinpointed by a prospective fixed service user to ensure that a link won't receive harmful interference. Joint Opposition at 10-11. Although the Petition recognizes the difficulty of protecting new fixed services from interference, the mitigation techniques it assumes will be effective are based on the false assumption that FSS transmissions in the spectrum all use narrow bandwidth. *Id.* at 11. Given the large and growing number of wideband and spread spectrum satellite applications in the 14-14.5 GHz band, interference to the proposed new fixed service will be unavoidable, and will be especially pronounced during times of emergency, when both services would be seeking to deploy many new links in a limited geographic area. *Id.*

Other parties emphasize the same problems. The Satellite Users Interference Reduction Group makes clear that the "UTC communication networks as proposed will be unreliable due to interference from ubiquitously deployed FSS terminals." SUIRG Opposition at 6. Boeing notes that its AMSS and vehicle-mounted earth station ("VMES") services rely on spread spectrum and provides a technical analysis demonstrating that "the FSS, AMSS and VMES networks that are already operating in the band will cause significant interference to UTC-Winchester's proposed service." Boeing Opposition at 10. Boeing goes on to state the interference experienced by FS networks "will worsen as new mobile applications of FSS networks become more prevalent in response to the needs of federal government and commercial customers." *Id.* at 11.

Numerous opponents of the Petition explain why the mitigation techniques relied on by Winchester/UTC will be ineffective to protect their contemplated services from interference, particularly during emergencies. SeaMobile comments that "Petitioners apparently underestimate the likelihood of interference from primary FSS, especially in connection with emergency situations." Sea Mobile Opposition at 4. HNS agrees that "there are many primary

Ku-band FSS emergency applications that would disrupt Petitioners' secondary operations in times of crisis," and explains that attempts to rely on frequency coordination or other mitigation techniques will be ineffective in such circumstances.[9]

The inevitability of interference to FS links, particularly in emergency circumstances, ensures that the availability requirements of CII interests cannot be met through secondary operations in the heavily-used 14-14.5 GHz band.[10] In fact, even the few supporters of the Petition recognize that a secondary allocation is unsuitable for CII requirements. The Southern Company, while endorsing the Petition, states that uses of the 14-14.5 GHz band would be limited to "noncritical short-range utility applications."[11] Southern Company emphasizes that most requirements of utilities cannot be met by secondary access to 14 GHz spectrum. *Id.* Similarly, the Fixed Wireless Communications Coalition argues that there is a need for "dedicated" CII frequencies – but if such a need exists, it clearly cannot be met by the Winchester/UTC proposal for CII operations on a secondary basis in the robustly used 14 GHz band. FWCC Comments at 1. In its comments, the Salt River Project makes clear that it "would certainly prefer to have primary use of spectrum" for "critical applications."[12]

In short, neither opponents nor supporters of the Petition believe that secondary use of the 14-14.5 GHz band will allow reliable provision of service for CII systems, particularly

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[9] HNS Opposition at 7. *See also* Artel Opposition at 6 (Artel's government services "are designed to respond to emergency, national security and military situations;" emergencies could cause a convergence of primary FSS and secondary FS terminals in the same area); ARINC Opposition at 5; SIA Opposition at 9-14 (describing flaws in Petition's proposed approach to interference mitigation); SUIRG Opposition at 7-8.

[10] *See, e.g.*, GVF/ESOA Opposition at 17 ("It is incomprehensible that CII applications will be able to perform their critical functions as outlined in the Petition if they are licensed as a secondary service."); NSMA Comments at 4 (noting the conflict between a secondary allocation and proposed CII services).

[11] Comments of Southern Company Services, Inc. ("Southern Company Comments") at 2.

[12] Comments of Salt River Project Agricultural Improvement and Power District at 1.

in the emergency situations that are cited in the Petition as a key rationale for the proposal. To the extent that CII interests have legitimate requirements for spectrum suitable for high-reliability services, they need to look elsewhere to meet them.

## IV. CONCLUSION

The record before the Commission makes clear that implementation of the Petition's proposals would harm essential satellite services without achieving the Petition's purported objective of addressing the needs of CII entities. Accordingly, the Commission should deny the Winchester/UTC Petition for initiation of a rulemaking.

Respectfully submitted,

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## CERTIFICATE OF SERVICE

I, Cecelia Burnett, hereby certify that on this 11th day of August, 2008, copies of the foregoing Reply of SES Americom, Inc. and New Skies Satellites, Inc. were sent by first-class mail to the following:

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