

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

In the Matter of )  
 )  
Spectrum for Broadband ) GN Docket Nos. 09-47, 09-51, 09-137  
 )  
NBP Public Notice #6 )

**REPLY COMMENTS OF THE SATELLITE INDUSTRY ASSOCIATION**

The Satellite Industry Association (“SIA”)<sup>1</sup> submits these reply comments in response to the Commission’s Public Notice seeking comment on the sufficiency of current spectrum allocations for broadband purposes.<sup>2</sup> SIA strongly disagrees with those commenters who suggest that the Commission should expand terrestrial use of satellite spectrum. In particular, the Commission should reject the Wireless Internet Service Providers Association (“WISPA”) proposal to modify extended C-band (3650-3700 MHz) service rules and to restrict the coordination rights of grandfathered earth stations operating in this band. Moreover, the

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<sup>1</sup> SIA is a U.S.-based trade association providing worldwide representation of the leading satellite operators, service providers, manufacturers, launch service providers, remote sensing operators, and ground equipment suppliers. SIA Executive Members include: Artel Inc.; The Boeing Company; CapRock Government Solutions; The DIRECTV Group; Hughes Network Systems, LLC; DBSD North America, Inc.; Integral Systems, Inc.; Intelsat, Ltd.; Iridium Satellite, LLC; Lockheed Martin Corp.; Loral Space & Communications Inc.; Northrop Grumman Corporation; Rockwell Collins; SES World Skies, Inc.; SkyTerra Communications Inc.; and TerreStar Networks, Inc. Associate Members include: ATK Inc.; Comtech EF Data Corp.; DRS Technologies, Inc.; EchoStar Satellite, LLC; EMC, Inc.; Eutelsat Inc.; iDirect Government Technologies; Inmarsat Inc.; Marshall Communications Corp.; Panasonic Avionics Corporation; Spacecom Ltd.; Stratos Global Corp; SWE-DISH Space Corp; Telesat; ViaSat Inc.; and WildBlue Communications, Inc. Additional information about SIA can be found at <http://www.sia.org>.

<sup>2</sup> Comment Sought on Spectrum for Broadband, NBP Public Notice #6, GN Docket Nos. 09-47, 09-51, 09-137, DA 09-2100 (Sept. 23, 2009) (Public Notice).

Commission should deny claims by international providers who seek to internationally harmonize the 3.4-3.8 GHz spectrum band for wireless broadband. Finally, the FCC should not, as the Utilities Telecom Council (“UTC”) and Critical Infrastructure Communications Coalition (“CICC”) suggest, initiate the rulemaking previously requested by UTC that would allow fixed terrestrial use of the 14.0-14.5 GHz satellite spectrum. As clearly demonstrated in comments filed by SIA in this proceeding, as well as in numerous others,<sup>3</sup> satellite spectrum is used heavily for a variety of broadband, public safety, voice, data, and video services, and these services will be disrupted if the Commission permits new, separately operated terrestrial services to operate as well.

**I. THE COMMISSION SHOULD NOT DISRUPT THE CAREFULLY CONSIDERED AND WELL-ESTABLISHED SERVICE RULES IN THE 3650-3700 MHZ EXTENDED C-BAND.**

Well-settled policy permits both grandfathered earth stations and certain terrestrial operations in the 3650-3700 MHz extended C-band. The service rules for these operations were enacted after a lengthy proceeding to determine how this spectrum could best provide quality communications services to the public. WISPA’s attempt to disrupt this well-settled policy should be rejected. Indeed, many of the rule changes requested by WISPA have been rejected

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<sup>3</sup> See e.g., *Spectrum for Broadband, NBP Public Notice #6*, GN Docket Nos. 09-47, 09-51, 09-137, Comments of the Satellite Industry Association (filed Oct. 23, 2009); *Fostering Innovation and Investment in the Wireless Communications Market (GN Docket No. 09-157) and A National Broadband Plan for Our Future (GN Docket No. 51)*, Comments of the Satellite Industry Association (filed Sept. 30, 2009); *Utilities Telecom Council and Winchester Cator, LLC, Petition for Rulemaking to Establish Rules Governing Critical Infrastructure Industry Fixed Service Operations in the 14.0-14.5 GHz Band*, RM-11429, Reply of the Satellite Industry Association (Aug. 11, 2008); *Utilities Telecom Council and Winchester Cator, LLC, Petition for Rulemaking to Establish Rules Governing Critical Infrastructure Industry Fixed Service Operations in the 14.0-14.5 GHz Band*, RM-11429, Opposition of the Satellite Industry Association, (June 26, 2008).

before by the Commission on reconsideration of the 3650-3700 MHz service rules.<sup>4</sup>

Historically, the extended C-band was allocated on a primary basis to fixed-satellite service (“FSS”) earth stations providing “international inter-continental” service.<sup>5</sup> In 2000, the FCC reallocated the band for terrestrial use<sup>6</sup> but grandfathered existing earth stations and protected them from terrestrial interference within a 150 km circular zone.<sup>7</sup> In reallocating this spectrum for primary terrestrial use, the Commission considered relocating all earth stations from this spectrum, but instead determined that existing earth stations needed to be grandfathered because of the importance of providing continuity of critical satellite services to the public:<sup>8</sup>

In arriving at the technical criteria that we adopt here, we strike a balance among a number of competing factors in a manner that we conclude will best serve the public interest and foster the expeditious introduction of new terrestrial services in the 3650 MHz band. Of primary significance, we are mindful of the necessity to provide adequate interference protection to grandfathered FSS earth stations and Federal Government radiolocation

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<sup>4</sup> See *Wireless Operations in the 3650-3700 MHz Band; Rules for Wireless Broadband Services in the 3650-3700 MHz Band; Amendment of the Commission’s Rules With Regard to the 3650-3700 MHz Government Transfer Band*, Memorandum Opinion and Order, 22 FCC Rcd 10421 (2007) (“2007 Extended C-Band Reconsideration Order”).

<sup>5</sup> See *Wireless Operations in the 3650-3700 MHz Band; Rules for Wireless Broadband Services in the 3650-3700 MHz Band; Amendment of the Commission’s Rules With Regard to the 3650-3700 MHz Government Transfer Band*, Report and Order and Memorandum Opinion and Order, 20 FCC Rcd 6502, 6524 (¶ 60) (2005) (“2005 Extended C-band Order”).

<sup>6</sup> *Amendment of the Commission’s Rules With Regard to the 3650-3700 MHz Government Transfer Band; The 4.9 GHz Band Transferred from Federal Government Use*, First Report and Order and Second Notice of Proposed Rulemaking, 15 FCC Rcd 20488, ¶ 1 (2000) (“2000 Extended C-band Order”).

<sup>7</sup> 2005 Extended C-band Order at ¶ 60.

<sup>8</sup> 2000 Extended C-band Order at ¶¶ 23-24. Because the grandfathered earth stations provide international inter-continental service, they are not scattered throughout the country, but are generally located along the more heavily-populated East and West Coasts. The Commission therefore determined that “rural, remote and less densely populated areas that could benefit significantly from deployment of fixed and mobile services are not effected by existing grandfathered FSS earth stations.” *Id.* at ¶ 25.

stations operating in the band...<sup>9</sup>

Today, these grandfathered earth stations continue to provide vital communications such as tracking, telemetry and control services, including launch and early orbit phase (“LEOP”) service, which ensures the safe launch and operation of new satellites and is only provided by a limited number of earth stations. Indeed, satellite earth station operators depend upon the Commission’s established technical limits to prevent harmful interference and disruption of service to existing customers.

Yet, WISPA urges the Commission to ignore the Commission’s well-established policy and modify service rules in the extended C-band to expand terrestrial operations. WISPA’s proposed changes are impractical and should be rejected.

***Increase in power density limits.*** First, WISPA seeks to upset the balance created by the extended C-band service rules by increasing the power density limit for base and fixed stations. Specifically, WISPA argues that the power density limits are “overly limiting in areas with no FSS earth stations,” and that “in many areas the coverage [of base stations] could be increased [with higher power densities], without any potential for an increase in harmful interference to incumbent FSS earth stations.”<sup>10</sup> However, WISPA ignores the fact that the Commission adopted a nationwide 25 watts per 25 MHz power density limit *both* to protect grandfathered FSS and radiolocation services from harmful interference *and* to avoid *intra-service* interference between terrestrial operators. As the Commission itself explained:

In adopting power limits for this band, the Commission balanced the potential for *inter-service* and *intra-service* interference with the need to provide for satisfactory service by 3650 MHz devices: *it sought to ensure*

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<sup>9</sup> 2005 Extended C-band Order at ¶ 47.

<sup>10</sup> WISPA Comments at 12.

*efficient and expeditious use of the band by adopting power limits that would allow multiple 3650 MHz licensees to operate within reasonable proximity of each other without unacceptable interference ...*<sup>11</sup>

WISPA provides no explanation as to how increased power levels would be consistent with the Commission's goal of "allow[ing] multiple 3650 MHz licensees to operate within reasonable proximity of each other without unacceptable interference." Moreover, the increase in the range of 3650 MHz base stations that would result from an increase in power is not a reason to change the Commission's rules. The Commission has already once rejected a higher power density limit because a higher limit would "give greater weight to considerations of transmission strength (range) than to interference avoidance."<sup>12</sup> Thus, WISPA has presented no new argument for an increase in power that has not previously been rejected by the Commission.

In addition, if the Commission were to consider an increase in power density limits in the 3650-3700 MHz band, it would need to re-consider the impact of such higher power on the large numbers of FSS earth stations operating in the adjacent 3700-4200 MHz band (the conventional C-band). While earth stations in those bands would continue to be protected in part by the out-of-band emission limit established by the Commission, the increase in power could nevertheless saturate and overload the low noise block ("LNB") converters used by FSS earth stations in the conventional C-band. This in turn could result in disruption of the higher-modulation satellite signals in the C-band typically used to carry HDTV signals.<sup>13</sup> The Commission has ruled that a 25 watt per 25 MHz power density limit would restrict such effects and enable 3650 MHz licensees to coordinate with FSS earth stations operating in the 3700-4200 MHz band as needed

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<sup>11</sup> 2007 Extended C-Band Reconsideration Order at ¶ 42.

<sup>12</sup> 2007 Extended C-Band Reconsideration Order at ¶ 43.

<sup>13</sup> *Id.* at ¶ 56 n.130.

to prevent LNB saturation.<sup>14</sup> SIA has previously expressed concerns about the issue of LNB saturation even for the power density levels currently authorized by the Commission.<sup>15</sup> Increasing these levels would further aggravate such concerns by increasing the likelihood of LNB saturation for earth stations operating in the 3700-4200 MHz band.

***Decrease in FSS Coordination Zone.*** Second, WISPA asserts (without elaboration) that the “[FSS] exclusion zones are larger than necessary and fail to account for antenna orientation, terrain obstructions and other factors.”<sup>16</sup> This ignores the fact that the Commission considered these “other factors” in the *2005 Extended C-Band Order* and concluded that a 150 km circular coordination zone for FSS earth stations was appropriate.<sup>17</sup> WISPA has presented no basis for changing that conclusion today. Moreover, WISPA’s proposal for a smaller exclusion zone is inconsistent with its request for higher power density limits. As the Commission has explained: “the higher the power limit – more particularly the higher the power density expressed in watts per megahertz – the greater the separation distance that is necessary to protect the grandfathered satellite earth stations.”<sup>18</sup>

In any event, it should be noted that factors such as antenna orientation and terrain obstructions are regularly taken into account in coordination discussions between 3650 MHz licensees and grandfathered earth station licensees for operations within the 150 km coordination zone. Indeed, such factors typically form the basis for agreements to allow 3650 MHz

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<sup>14</sup> *Id.* at ¶ 58.

<sup>15</sup> Petition for Partial Reconsideration of the Satellite Industry Association, ET Docket No. 04-151 (filed June 10, 2005).

<sup>16</sup> WISPA Comments at 12.

<sup>17</sup> *See* 2005 Extended C-Band Order at ¶¶ 59-66.

<sup>18</sup> 2007 Extended C-band Reconsideration Order at ¶ 42.

operations within the FSS coordination zone. In this regard, SIA rejects WISPA’s unsupported allegations of “inordinate delays and a general lack of cooperation from FSS earth station licensees.” If WISPA members have any specific complaints of any lack of cooperation on the part of FSS earth station licensees, they are free to bring such matters to the Commission’s attention. Of course, WISPA members should bear in mind that the obligation to negotiate in good faith is mutual, and FSS earth station licensees are not obliged to approve terrestrial operations within 150 km without adequate and timely information to assess the compatibility of such operations.

***“Safe Harbor” for Operations Within FSS Coordination Zone.*** WISPA also suggests that the existing requirement for terrestrial operations to coordinate within 150 km of grandfathered earth stations should be replaced with a “safe harbor” interference standard.<sup>19</sup> Given the vast array of environments in which grandfathered earth stations and terrestrial services operate, however, it would be practically impossible to determine a “safe harbor” standard that would protect all grandfathered earth stations. Indeed, the safe harbor standard proposed by WISPA would not address the concern of aggregate interference by multiple terrestrial operators – which is of great concern to satellite operators. Moreover, notwithstanding WISPA’s unfounded allegations, SIA believes that the Commission’s current “good faith” coordination requirement<sup>20</sup> works well – allowing for expansion of terrestrial operations while still protecting critical satellite services. Indeed, SIA members have reached a number of agreements with 3650 MHz licensees to allow terrestrial operations within the 150 km coordination zone.

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<sup>19</sup> *Id.*

<sup>20</sup> 2005 Extended C-band Order at ¶ 66.

*Elimination of Registration Requirements.* Finally, the Commission should reject WISPA’s proposal to eliminate the extended C-band terrestrial registration requirement.<sup>21</sup> Terrestrial operators register stations so that “earth station operators will readily have the necessary contact information to locate potential sources should they experience interference.”<sup>22</sup> WISPA’s proposal to allow zones of registration will prohibit earth stations operators from pinpointing exact sources of interference, and, consequently, will prevent the prompt cessation of any interference disrupting service to earth station customers.

**II. THE COMMISSION SHOULD NOT ALLOW HARMFUL INTERFERENCE TO SATELLITE SERVICES OPERATING IN THE UNITED STATES IN ORDER TO INTERNATIONALLY HARMONIZE SPECTRUM.**

Some non-U.S. providers filed comments in the instant proceeding suggesting that the 3.4-3.8 GHz band or, more narrowly, the 3.4-3.6 GHz band should be internationally harmonized for wireless broadband.<sup>23</sup> As discussed in SIA’s initial comments in this proceeding, it is well-settled U.S. policy that 3.7 to 4.2 GHz C-band spectrum is extensively used by and must be protected for satellite communications.<sup>24</sup> Moreover, as explained above, the allocation of the 3.65-3.7 GHz band for limited terrestrial operations and grandfathered earth station operations is well-settled United States policy. The Commission thus should reject any request to reallocate additional C-band satellite spectrum to wireless broadband under the guise of international harmonization. Indeed, there is no global consensus on this matter and the limitations on

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<sup>21</sup> WISPA Comments at 15-16.

<sup>22</sup> 2005 Extended C-band Order at ¶ 64.

<sup>23</sup> See Comments of Bolloré telecom (France), on behalf of Worldmax (The Netherlands), MGM Productions Group (Germany, Italy), Axtel (Mexico) and UK Broadband (U.K.) at 2 (filed Oct. 23, 2009); Comments of Iliad (filed Oct. 23, 2009); Comments of Inquam Broadband (filed Oct. 23, 2009).

<sup>24</sup> See Comments of the Satellite Industry Association at 8-9.

sharing in the C-band already have been recognized by the International Telecommunication Union (“ITU”).<sup>25</sup> Furthermore, the 3.4 -3.6 GHz band is part of the global allocation for fixed satellite services, which makes the band unavailable for harmonized global terrestrial use.

### **III. THE COMMISSION SHOULD REJECT THE PROPOSAL TO PERMIT SECONDARY TERRESTRIAL SERVICES IN THE 14.0-14.5 GHZ BAND.**

In an entirely separate proceeding, UTC filed a Petition for Rulemaking proposing that the Commission create a new secondary fixed service allocation in the 14.0–14.5 GHz band.<sup>26</sup> In the instant proceeding, UTC and CICC urge the Commission to adopt UTC’s proposed rules.<sup>27</sup> However, the separate record is already replete with opposition to the UTC proposal and the Commission should not reconsider the same issue here.

SIA, along with many individual satellite providers, have opposed UTC’s Petition.<sup>28</sup> These oppositions and comments provided a clear record, including technical studies, showing the interference that would be caused to satellite operations if terrestrial operations were permitted in the 14.0-14.5 GHz band. As clearly explained by SIA, UTC’s proposed use of the

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<sup>25</sup> See Comments of the Satellite Industry Association at 8-9. Moreover, although the Inter-American Telecommunications Commission (“CITEL”), an organization that operates under the auspices of the Organization of American States (“OAS”) and which brings together the governments of nations within the Americas on telecommunications matters, brought to WRC-07 an Inter-American Proposal (“IAP”) regarding identification of the 3400-3600 MHz band for IMT, at no time has CITEL proposed or supported the use of any band above 3600 MHz for IMT or IMT-like services.

<sup>26</sup> Utilities Telecom Council and Winchester Cator, LLC, Petition for Rulemaking to Establish Rules Governing Critical Infrastructure Industry Fixed Service Operations in the 14.0–14.5 GHz Band (filed May 6, 2008) (“UTC Petition”).

<sup>27</sup> See Comments of UTC at 19-20, Comments of CICC at 6, GN Docket Nos. 09-47, 09-51, 09-137 (filed Oct. 23, 2009).

<sup>28</sup> See, e.g., Opposition of the Satellite Industry Association, Comments of SES Americom, Inc., New Skies Satellites, Inc. and Intelsat Corporation, Comments of ViaSat, Comments of Boeing, Reply Comments of EchoStar, RM-11429 (filed June 26, 2008 and Aug. 11, 2008).

14.0-14.5 GHz band would cause unacceptable and unresolvable levels of interference both to existing and future satellite services and to the proposed new terrestrial service. In addition, there is substantial likelihood of interference from FSS earth stations to terrestrial stations. As a consequence, SIA is of the view that, notwithstanding that satellite services would be primary while terrestrial services are proposed to be secondary, “public policy issues would arise when both services cannot co-exist.”<sup>29</sup> For the reasons presented by numerous commenters in that proceeding, the Commission should refuse to act on UTC’s Petition in this review of broadband spectrum.

#### **IV. CONCLUSION**

For the foregoing reasons, SIA urges the Commission not to modify existing rules that would harm current and future satellite operations. Specifically, the Commission must reject the proposals of WISPA and UTC, which, as shown in this and other well-documented proceedings, would harm the ability of fixed satellite service operators to continue providing critical satellite services to customers.

Respectfully submitted,

The Satellite Industry Association

By: 

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President

Dated: November 13, 2009

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<sup>29</sup> Opposition of the Satellite Industry Association, RM-11429, (filed June 26 2008).