



March 22, 2016

VIA ELECTRONIC DELIVERY

Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, SW
Washington, DC 20554

**Re: Notice of *Ex Parte* – Use of Spectrum Bands Above 24 GHz For
Mobile Radio Services Notice of Proposed Rulemaking, GN
Docket No. 14 – 177, IB Docket Nos. 15-256 & 97-95; RM-11664; WT
Docket No. 10-112**

Dear Ms. Dortch:

On February 29, 2016, representatives of the Satellite Industry Association Regulatory Working Group (“SIA RWG”) ¹ met with FCC staff to discuss the above referenced proceeding. ² At that meeting, the FCC requested additional information on the following topics:

¹ SIA is a U.S.-based trade association providing representation of the leading satellite operators, service providers, manufacturers, launch services providers, and ground equipment suppliers. Since its creation twenty years ago, SIA has advocated on behalf of the U.S. satellite industry on policy, regulatory, and legislative issues affecting the satellite business. SIA Executive Members include: The Boeing Company; DIRECTV LLC; EchoStar Corporation; Intelsat S.A.; Iridium Communications Inc.; Kratos Defense & Security Solutions; Ligado; Lockheed Martin Corporation; Northrop Grumman Corporation; SES Americom, Inc.; Space Exploration Technologies Corp.; SSL; and ViaSat, Inc. SIA Associate Members include: ABS US Corp.; Airbus DS SatCom Government, Inc.; Artel, LLC; Cisco; Comtech EF Data Corp.; DRS Technologies, Inc.; Eutelsat America Corp.; Global Eagle Entertainment; Glowlink Communications Technology, Inc.; Hughes; iDirect Government Technologies; Inmarsat, Inc.; Kymeta Corporation; Marshall Communications Corporation; MTN Government; O3b Limited; Orbital ATK; OneWeb; Panasonic Avionics Corporation; TeleCommunication Systems, Inc.; Telesat Canada; TrustComm, Inc.; Ultisat, Inc.; Vencore Inc.; and XTAR, LLC.

² See Letter from Tom Stroup, President, SIA, to Marlene H. Dortch, Secretary, FCC, GN Docket No. 14-177, et al., (Mar 1, 2016).

(i) the separation distances required to protect 5G terrestrial receivers from interference from earth stations transmitting in the 27.5-28.35 GHz ("28 GHz") band; (ii) the number of individually licensed 28 GHz earth stations satellite operators expect to deploy in the near future; (iii) the ability of operators to site 28 GHz band earth stations in less populated locations and deploy shielding; and (iv) whether operators can co-locate 28 GHz earth stations that support multiple satellites.

As an initial matter, SIA is engaged in ongoing technical discussions with the terrestrial community to define the necessary operating environment for satellite and terrestrial networks in the 28 GHz band. These discussions will shape any response we provide to questions (i) and (iii) above. Our objective in these discussions is to define the RF environment that satellite network operators require to continue providing services in this band as well as meet the service growth requirements of the future. We expect to establish a technical envelope for satellite networks to ensure interference-free operations. We are hopeful that these discussions will lead to an agreed approach to sharing the 28 GHz band, which will be submitted to the FCC for consideration in the above-referenced proceeding. However, these discussions will take time to complete because of the complexity of the issues and the large number of terrestrial and satellite interests involved. We are moving as quickly as possible while ensuring accuracy and will submit any results of the discussions as soon as they are agreed.

As our analysis is still on-going on questions (i) and (iii), we will submit that information at a later time. At this time, we are providing responses to questions (ii) and (iv).

ii) Expected Number of Individually Licensed Earth Stations for Current and Future Satellites:

The total number of individually licensed earth stations using the 28 GHz spectrum (27.5-28.35 GHz) is approximately 40. In addition, as of March 17, 2016, there are seven pending individual earth station applications seeking to use the 28 GHz band, and the industry anticipates approximately 45 more applications will be filed in the near term.

Hundreds more earth stations will be added in this band within the next two to four years at various geographic locations throughout the United States. As satellite systems continue to grow and new systems begin operations, additional individually licensed earth stations will be deployed and will need access to the 28 GHz and the 38.6-40.0 GHz bands in the future.

Much like a terrestrial wireless network, increasing the capacity and efficiency of satellite broadband networks requires more intensive spectrum reuse. That occurs by employing larger numbers of individually licensed earth stations to provide interconnection for even higher capacity satellite networks with the Internet and other data networks. In addition, the design of individually licensed earth stations for aggregating traffic on satellite networks is also changing, with many decreasing in size and complexity, which may reduce the area where terrestrial 5G services could be affected for some operations.

iv) Feasibility of Co-location of Individually Licensed Earth Stations to Support Multiple Satellites:

Co-location of new antennas with existing antennas has been common in the past with historical satellite designs, but often not feasible for various reasons for newer generation satellites, including different beam laydown patterns for higher-capacity spacecraft. In addition, site diversity may also be required to maintain availability given atmospheric effects. As noted above, the capacity and efficiency of satellite broadband networks requires more intensive spectrum reuse, which occurs by employing larger numbers of individually licensed earth stations at additional locations to provide backhaul. In the 28 GHz band, there are currently approximately 38 locations that cover the 40 individually licensed earth stations. Operators will take advantage of co-location when feasible as satellite communications networks expand in the future; however, new facilities at new locations will be needed to support increasing demand for satellite services on an ongoing basis. It should be further noted that in some cases (e.g., between NGSO systems) separation of earth stations may be required to allow for coordination between satellite systems.

Please contact the undersigned with any questions related to this filing.

Respectfully submitted,

/s/

SATELLITE INDUSTRY ASSOCIATION

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