

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of)	
)	
Amendment of Part 27 of the)	
Commission’s Rules to Govern the)	WT Docket No. 07-293
Operation of Wireless Communications)	
Services in the 2.3 GHz Band)	
)	
Establishment of Rules and Policies for the)	IB Docket No. 95-91
Digital Audio Radio Satellite Service in the)	GEN Docket No. 90-357
2310-2360 MHz Frequency Band)	RM No. 8610

COMMENTS OF THE SATELLITE INDUSTRY ASSOCIATION

The Satellite Industry Association (“SIA”) submits these comments in response to the April 2, 2010, Public Notice seeking input from interested parties on draft interference rules for the Wireless Communications Service (“WCS”) and Satellite Digital Audio Radio Services (“SDARS”).¹

SIA is a U.S.-based trade association providing worldwide representation of the leading satellite operators, service providers, manufacturers, launch services providers, and ground equipment suppliers.² SIA is the unified voice of the U.S. satellite industry on policy, regulatory, and legislative issues affecting the satellite business.

¹ Commission Staff Requests that Interested Parties Supplement the Record on Draft Interference Rules for Wireless Communications Service and Satellite Digital Audio Radio Service, WT Docket No. 07-293, IB Docket No. 95-91, GEN Docket No. 90-357, RM No. 8610 (April 2, 2010) (Public Notice).

² SIA Executive Members include: Artel, Inc.; The Boeing Company; CapRock Government Solutions; The DIRECTV Group; Hughes Network Systems, LLC; DBSD North America, Inc.; Echostar Satellite Services, LLC; Integral Systems, Inc.; Intelsat, Ltd.; Iridium Satellite, LLC; Lockheed Martin Corporation.; Loral Space & Communications, Inc.; Northrop Grumman Corporation; Rockwell Collins Government Systems; SES World Skies, Inc.; SkyTerra Communications, Inc; and TerreStar Networks, Inc. SIA Associate Members include: Arqiva Satellite and Media; ATK Inc.; Cobham SATCOM Land Systems; Comtech EF Data

We encourage the Commission to proceed very cautiously before revising the WCS service rules as it has proposed. SIA supports the Commission's efforts to encourage mobile broadband and recognizes the work and progress the FCC has accomplished so far. However, SDARS operators face extremely high costs for infrastructure and upgrades, which must be planned for and financed far in advance and must last for many years for the business to be viable.³ A stable spectrum environment, protected from harmful interference, is therefore essential for SDARS operators to continue to provide their unique and important services as well as new innovative services in the future.⁴

In addition, certain SIA members with a broader set of operational interests, including Lockheed Martin and Boeing, have concerns in this proceeding about interference caused by WCS operations to the aeronautical mobile telemetry ("AMT") service. Specifically, the aircraft flight test community has demonstrated in this proceeding that the out-of-band emissions limits for WCS operations in the upper end of the 2345-2360 MHz band will not adequately protect AMT flight test operations in the adjacent 2360-2390 MHz band. Therefore, the proposed coordination regime for the placement of WCS base stations and the protection of AMT receive locations is critical and should be strengthened to protect existing and future fixed and mobile AMT receive sites.

Corp.; DRS Technologies, Inc.; EchoStar Satellite, LLC; EMC, Inc.; Eutelsat, Inc.; Globecom Systems, Inc.; Glowlink Communications Technology, Inc.; iDirect Government Technologies; Inmarsat, Inc.; Marshall Communications Corporation.; Panasonic Avionics Corporation; SatGE, Inc.; Spacecom, Ltd.; Spacenet Inc.; Stratos Global Corporation; Telesat Canada; Trace Systems, Inc.; and ViaSat, Inc. Additional information about SIA can be found at <http://www.sia.org>.

³ See *Fostering Innovation and Investment in the Wireless Communications Market, A National Broadband Plan for Our Future*, Comments of the Satellite Industry Association, GN Docket Nos. 09-157, 09-51, filed Sept. 30, 2009, at 7.

⁴ See, e.g., *Spectrum for Broadband, NBP Public Notice #6*, Comments of the Satellite Industry Association, GN Docket Nos. 09-47, 09-51, 09-137, filed Oct. 23, 2009.

DISCUSSION

SIA urges the Commission to ensure that spectrum rules adequately protect SDARS services from harmful interference caused by new mobile terrestrial wireless services in adjacent spectrum. Such interference presents an inherent danger to any satellite services operating in spectrum bands adjacent to terrestrial services, especially where either of the services involves mobile units.⁵ SIA has described this danger in multiple other proceedings, explaining that potential interference between satellite and terrestrial devices is often unpredictable and difficult to resolve,⁶ that the aggregate impact of multiple interfering devices exacerbates the problem,⁷ and that once interfering terrestrial services and devices are deployed, adjustments are difficult and recalls are generally ineffective.⁸ The Commission must therefore adopt strict technical requirements to prevent potential interference before SDARS services are harmed and provide an effective mechanism to stop any harmful interference that might nonetheless occur.

Operating unaffiliated SDARS and terrestrial networks on adjacent frequencies, as proposed here, requires stringent technical standards. The SDARS industry and U.S. consumers

⁵ Interference problems between services in adjacent spectrum are widely recognized. *See* Report ITU-R M.2030, *Coexistence between IMT-2000 time division duplex and frequency division duplex terrestrial radio interface technologies around 2600 MHz operating in adjacent bands and in the same geographical area* (2003); *Service Recommendations to Support Technology Neutral Allocations – FDD/TDD Coexistence*, WiMAX Forum, at 21 (Apr. 10, 2007) (acknowledging the severity of “potentially crippling” mobile-to-mobile interference).

⁶ *Wireless Operations in the 3650-3700 MHz Band, Rules for Wireless Broadband Services in the 3650-3700 MHz Band, Additional Spectrum for Unlicensed Devices Below 900 MHz and in the 3GHz Band, Amendment of the Commission’s Rules With Regard to the 3650-3700 MHz Government Transfer Band*, Opposition to Petitions for Reconsideration and Comments of the Satellite Industry Association, ET Docket No. 04-151, WT Docket No. 05-96, ET Docket Nos. 02-380, 98-237, filed Aug. 11, 2005, at 13.

⁷ *See 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*, Opposition of the Satellite Industry Association, RM-11429, filed June 26, 2008, at 7-8.

⁸ *See id.* at 15.

have invested billions of dollars in spacecraft and radio receivers that are optimized to take into account cost, performance, and the relatively low signal strength received at the earth's surface by a small SDARS antenna. Thus SDARS receivers must be highly sensitive in order to receive distant signals, and SDARS service is particularly susceptible to interference from, for example, out-of-band emissions that generally would not cause severe problems for adjacent terrestrial services.⁹ For this reason, even very small changes in the noise floor can easily disrupt SDARS services, so strict technical spectrum rules are essential for SDARS to remain a viable service.

SIA recognizes the Commission's efforts in the draft rules to provide some protection to satellite operations. SIA especially supports the concept of a spectrum guard band as proposed here.¹⁰ Although this 2.5 MHz spectral buffer should help mitigate potential interference, the buffer may not be sufficiently large to avoid interference entirely. As a result, the Commission should also adopt more stringent technical restrictions to ensure adequate protection from interference to SDARS, such as modifying the proposed out-of-band-emissions, power levels, and duty cycle limits. While the current proposal provides some limited protection to SDARS, SIA urges the Commission to adopt as final rules stricter technical standards necessary to protect SDARS in real-world conditions.

The Commission should also consider requiring the SDARS and WCS licensees to enter into a coordination agreement before commencing operation of the new terrestrial service. Satellite operators have a great deal of familiarity with the obligation to enter into and to operate consistent with coordination agreements. Such agreements typically establish technical and

⁹ The Aeronautical Mobile Telemetry service has an analogous situation in that the telemetry data is transmitted from distant aircraft to sensitive large, high-gain parabolic antennas.

¹⁰ See Public Notice at 1-2

other operating parameters intended to avoid interference and any adverse impact on customer service.

Similarly, the Commission should consider providing an adequate mechanism to resolve fully any interference issues that arise. Despite the Commission's efforts to craft rules that prevent harmful interference to SDARS services—and all parties' best efforts to comply with those rules—some harmful interference may nonetheless occur. The mechanism to resolve those instances must be swift, comprehensive, and effective. In this case, it may make sense to adopt a rule requiring the cessation of WCS service in the event harmful interference occurs. The service providers themselves should also have an affirmative responsibility to detect and report any interference, first to the other licensee and ultimately to the Commission, with some mechanism for an expedited complaint resolution process where Commission intervention is required.

CONCLUSION

For the foregoing reasons, SIA urges the Commission to ensure that the final technical service rules adequately protect existing SDARS and flight test operations from any harmful interference from terrestrial services on adjacent bands.

Respectfully submitted,

The Satellite Industry Association

By: 

Patricia Cooper
President

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