

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

In the Matter of )  
 )  
Office of International Affairs Seeks )  
Comment on Recommendations Approved ) IB Docket No. 16-185  
by the World Radiocommunication )  
Conference Advisory Committee )

**COMMENTS OF INTELSAT, ECHOSTAR, HUGHES,  
INMARSAT, VIASAT, AND DIRECTV**

The undersigned parties are pleased to respond to the Federal Communications Commission’s (“Commission”) Public Notice seeking comment on draft recommendations by the 2023 World Radiocommunication Conference (“WRC-23”) Advisory Committee (“WAC”) for Agenda Items that will be considered at WRC-23.<sup>2</sup> The undersigned parties urge the United States not to propose a WRC-27 Agenda Item to review the Ku- and Ka-band equivalent power flux density (“EPFD”) limits in Article 22 or Resolution 76 of the International Telecommunication Union (“ITU”) Radio Regulations that govern the co-existence of non-geostationary satellite orbit (“NGSO”) systems with geostationary (“GSO”) networks, consisted with recommendations provided in View B of WAC Doc. 96.<sup>3</sup>

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<sup>3</sup> See Federal Communications Commission, WRC-23 Advisory Committee, Document WAC\_23\_096 (04.11.2023); IWG-3/80\_AI 10, View B, <https://www.fcc.gov/news-events/events/2023/04/seventh-meeting-wrc-23-advisory-committee>.

<sup>3</sup> See Federal Communications Commission, WRC-23 Advisory Committee, Document WAC\_23\_096 (04.11.2023); IWG-3/80\_AI 10, View B, <https://www.fcc.gov/news-events/events/2023/04/seventh-meeting-wrc-23-advisory-committee>.

There are ten main reasons not to adopt this proposal:

1. Article 22 is a long established and clear method for sharing spectrum between Ku- and Ka-band GSO and NGSO networks.
2. Billions of dollars have been invested in existing and planned Ku- and Ka-band GSO-based networks and services in reliance on the existing EPFD framework specified in Article 22.
3. New and innovative Ku- and Ka-band GSO networks and services (including those to be deployed in the next few years) currently are being developed in reliance on Article 22.
4. The Article 22 framework does not “overprotect” Ku- and Ka-band GSO networks from NGSO interference. To the contrary, the Commission has found that the Article 22 provisions that constrain NGSO interference “were not developed with the most advanced modern GSO networks in mind.”<sup>4</sup>
5. Exceedances of permitted levels of NGSO interference that occur on a short-term basis are a particular concern because of the disruptive impact of such interference on GSO services (*e.g.*, potential to degrade service or even disrupt a video call, real-time news or sports event, or critical communications link) and the time needed to recover from such disruptions. Broadcast Satellite Service (“BSS”) in particular is susceptible to short term degradation events due to its reliance on broadcast modulation techniques for delivery of linear television. As SAVID noted in its study of IMT interference into DBS, “DBS receiver quality of service and availability may be impacted by a burst of maximum EIRP, independent of the duration of transmission.”<sup>5</sup> Even a 0.1% of time exceeded threshold translates to thousands of multi-

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<sup>4</sup> *Update to Parts 2 and 25 Concerning Non-Geostationary, Fixed-Satellite Service Systems and Related Matters*, 32 FCC Rcd 7809, ¶ 35 (2017).

<sup>5</sup> *See* Letter from Stacy Fuller, Senior Vice President, External Affairs, DIRECTV, LLC, to Marlene H. Dortch, Secretary, Federal Communications Commission, WT Docket No. 20-

second bursts annually, each of which can disrupt viewing for one of DIRECTV’s millions of customers.

6. The main problems that exist today with the EPFD provisions in Article 22 lie *in how they are applied*, including:

- Unaddressed abuses reflected by splitting a single NGSO system into multiple ITU filings to evade the requirements of Article 22;<sup>6</sup>
- Unresolved failures of the ITU software to identify geometric alignments where NGSO interference in excess of that permitted by Article 22 can be shown to exist;<sup>7</sup> and

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443, GN Docket No. 17-183, Attachment at 12 (filed Jul. 18, 2022) (citing SAVID LLC, *12 GHz Co-Frequency Interference from Terrestrial Mobile into DBS*, at 12 (Jul. 9, 2022)).

<sup>6</sup> See Letter from GSO Operators to Marlene H. Dortch, FCC, IBFS File Nos. SAT-LOA-20200526-00055 and SAT-AMD-20210818-00105 (Oct. 14, 2022); see also Space Exploration Holdings, LLC, *Request for Orbital Deployment and Operating Authority for the SpaceX Gen2 NGSO Satellite System*, Order and Authorization, IBFS File Nos. SAT-LOA-20200526-00055 and SAT-AMD-20210818-00105, FCC 22-91, ¶¶ 31, 32, 34 (Dec. 1, 2022) (conditioning the Starlink Gen2 license on obtaining a favorable or qualified favorable finding from the ITU Radiocommunication Bureau “that explicitly indicates the ITU has considered the joint effect of SpaceX’s multiple ITU filings”).

<sup>7</sup> ITU-R contribution, Document 4A/833-E (7 September 2022), Viasat, Inc., *Proposal for Addressing Non-Detection of EPFD Exceedances Due to Reliance on Only a Worst-Case Geometry Evaluation*, demonstrating that NGSO systems which have received favorable EPFD findings by the ITU Radiocommunication Bureau under the current process have been shown to exceed the Radio Regulations Article 22 EPFD limits with other geometries. Peak exceedances range from 3 - 8 dB; incorporated into Working Party 4A Chairman's Report, Document 856, Report on the meeting of the Working Party 4A (Geneva, 14-22 September, 2022), Annex 7, *Working document towards a preliminary draft revision of Recommendation ITU-R S.1503 - Functional description to be used in developing software tools for determining conformity of non-geostationary orbit fixed-satellite service systems or networks with limits contained in Article 22 of the Radio Regulations*.

- Unaddressed efforts of certain NGSO systems to “game” the system, by manipulating their EPFD inputs in a way that does not reflect reality, in an effort to mask the true level of NGSO interference in excess of that permitted by Article 22.<sup>8</sup>
7. The framework developed for the “greenfield” that is the Q/V band is vastly different than the EPFD framework applicable to the Ku- or Ka-bands, where GSO satellites have been operating for decades and provide a wide range of services, including new broadband mobility services and direct to consumer services.
  8. For these reasons, and as the ITU Plenipotentiary recently required in Resolution 219,<sup>9</sup> and as explained in detail above in point six regarding the responsive work that is ongoing by the Study Groups, the Radiocommunication Bureau, the Radiocommunication Assembly, and through national administrations to address these issues, it is therefore urgent to direct limited time and resources to addressing (i) issues associated with NGSO systems at the study group level before even considering reopening Article 22, as well as (ii) the impact of the continued and expanded launch and operation of a large number of NGSO satellites.
    - The Plenipotentiary instructed the Radiocommunication Assembly to perform the necessary studies through relevant ITU “study groups on the issue of increasing use of radio-frequency spectrum and associated orbit resources in non-GSO orbits and the long-

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<sup>8</sup> See Letter from Pantelis Michalopoulos, Counsel to DISH Network Corporation, to Marlene H. Dortch, FCC, IBFS File Nos. SAT-LOA-20200526-00055 and SAT-AMD-20210818-00105 (Mar. 6, 2023) (demonstrating that “SpaceX based its new power level calculations on an incorrect and non-compliant exclusion zone for the protection of [GSO] satellites in an attempt to manufacture a showing of compliance with the International Telecommunication Union's (“ITU's”) power limits”).

<sup>9</sup> See International Telecommunication Union, Final Acts of the Plenipotentiary Conference, Resolution 219 (Bucharest, 2022), titled “Sustainability of the radio-frequency spectrum and associated satellite orbit resources used by space services,” <https://www.itu.int/pub/S-CONF-ACTF-2022> (“PP-22 Final Acts, Resolution 219”).

term sustainability of these resources, as well as equitable access to, and rational and compatible use of, the GSO and non-GSO orbit and spectrum resources, consistent with the objectives of Article 44 of the Constitution.”<sup>10</sup>

- The Plenipotentiary further instructed that these issues should be reported on by the Radiocommunication Bureau to WRC-23 and that Member States act at the national level “when authorizing non-GSO systems, to take all necessary actions to avoid unacceptable interference to GSO and other non-GSO systems as well as other radio services, of other administrations and to ensure efficient use of radio-frequency spectrum and associated orbits.”<sup>11</sup>

9. Article 22 ensures the efficient use of the GSO/NGSO shared Ku and Ka band frequencies. Namely: (i) NGSO systems can and do freely operate across a wide swath of orbits around the world without adversely affecting use of the GSO orbit, (ii) GSO networks are by definition constrained to operating in the limited orbital region above the equator, and (iii) NGSO interference into the numerous GSO networks operating above the equator is kept to permitted levels.

10. It is also important for the Commission to note that a similar proposal was recently submitted in the Asia Pacific Telecommunity WRC-23 Preparatory Group meetings.<sup>12</sup> That proposal was not sent forward to the recent ITU Conference Preparatory Meeting (“CPM”) as many

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<sup>10</sup> See PP-22 Final Acts, p. 405, Resolution 219, *resolves* 1.

<sup>11</sup> See PP-22 Final Acts, p. 406, Resolution 219, *encourages Member States* 2.

<sup>12</sup> See Input of Tonga, Preliminary View on WRC-23 Agenda Item 10, Feb. 2, 2023, document APG-5/INP-85.

countries in Region 3 opposed opening the Article 22 NGSO EPFD limits for many of the reasons stated above.<sup>13</sup>

For the reasons explained above, we strongly urge the Commission to reject the proposal contained in WAC Doc. No. 96.

Respectfully submitted,

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April 21, 2023

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<sup>13</sup> See Asia-Pacific Telecommunity (APT), Information on WRC-23 Agenda Item 10, ITU WRC-23 2nd Conference Preparatory Meeting, document CPM23-2/103 (Mar. 3, 2023).