

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

In the Matter of

Request of RBC Signals LLC for a 180-Day )  
Special Temporary Authorization To Provide ) Call Sign: N/A  
Tracking, Telemetry & Command to a U.S.- )  
Licensed Satellite ) File No.: SES-STA-\_\_\_\_\_  
)

**REQUEST FOR 180-DAY SPECIAL TEMPORARY AUTHORIZATION**

RBC Signals LLC (“RBC Signals”), pursuant to Section 25.120 of the Commission’s rules, 47 C.F.R. § 25.120, respectfully seeks a 180-day extension of its existing special temporary authorization (“STA”).<sup>1</sup> RBC Signals seeks to continue to operate two (2) M2 Antenna Systems Yagi antennas (the “400 MHz Yagi”) in the 401.6-401.75 MHz band (Earth-to-space/space-to-Earth) at a site in Windham, New York to communicate with the U.S.-licensed Astranis Demosat-2 cubesat to provide backup TT&C support for the Demosat-2 mission in the event of a failure of Astranis’ primary ground station.

**I. BACKGROUND**

RBC Signals is a Seattle, Washington-based company that provides earth station services around the world. RBC Signals currently holds multiple STAs to provide similar TT&C functions for various LEO NGSO cubesats using the 400 MHz Yagi (Model 400CP30A),<sup>2</sup> including from the subject Windham location.<sup>3</sup> Here, RBC Signals seeks to operate the 400 MHz Yagi (which is

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<sup>1</sup> See RBC Signals, LLC, File No. SES-STA-20180612-01105 (expires on July 26, 2018) (“*Demosat-2–Windham STA*”).

<sup>2</sup> See, e.g., RBC Signals, LLC, File Nos. SES-STA-20180307-00202 & SES-STA-20180605-00993.

<sup>3</sup> See RBC Signals LLC, File No. SES-STA-20180430-00416 (grant reissued with an effective date of June 22, 2018) (“*Radix-Windham STA*”). In the *Radix-Windham STA*, RBC Signals has

currently installed on-site) with Demosat-2 to provide backup TT&C support the Demosat-2 cubesat.<sup>4</sup>

For information on the proposed ground station operations, RBC Signals incorporates by reference the draft FCC Form 312 Schedule B and radiation hazard analysis provided with the *Demosat-2–Windham STA* application. Moreover, to the extent applicable, RBC Signals incorporates by reference the satellite technical specifications and mission overview information previously provided in the *Astranis Experimental STA* application, and will perform the earth station operations consistent with the terms and conditions imposed by the Commission in the *Astranis Experimental STA*. RBC Signals files this 180-day STA extension of the *Demosat-2–Windham STA* to ensure appropriate longer-term authority for 400 MHz Yagi operations with the Demosat-2.<sup>5</sup>

## II. DISCUSSION

RBC Signals seeks to operate the 400 MHz Yagi to communicate with Demosat-2 in the 401.6-401.75 MHz band (Earth-to-space/space-to-Earth). RBC Signals' TT&C operations will be conducted on an unprotected and non-interference basis, and only as-needed as backup to the primary TT&C station for DemoSat-2 in Fairbanks, Alaska, to communicate with the satellite as it passes over the Windham earth station (between one and six times per day for brief periods of

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authority to communicate with the U.S.-licensed Radix cubesat in the 401-401.3 MHz band (Earth-to-space/space-to-Earth) utilizing the same 400 MHz Yagi.

<sup>4</sup> See Astranis Space Technologies Corp., File Nos. 0990-EX-ST-2018, 1624-EX-ST-2017 and 0113-EX-ST-2017, Call Sign WL9XAF, Updated Narrative and Attachments (filed on Aug. 8, 2017) (“*Astranis Experimental STA*”).

<sup>5</sup> The anticipated expiration of the *Astranis Experimental STA* does not warrant regular commercial authority (i.e., a 15-year license). RBC Signals notes that the requested 180-day STA period may extend beyond the *Astranis Experimental STA* period, but that Astranis could potentially seek an extension of its experimental authority. RBC Signals acknowledges it can communicate with the Demosat-2 only for as long as Astranis is authorized to operate the cubesat, and reserves the right to request an additional extension of temporary authority should Astranis' experimental authority be extended.

approximately 10 minutes).

The proposed TT&C operations are consistent with the TT&C operations currently authorized by the Commission at Windham and will be conducted in compliance with the terms and conditions in the *Demosat-2–Windham STA*. RBC Signals will work with Commission staff to ensure that these temporary operations will not create any increase in potential interference to current or future government users. If RBC Signals learns that its operations are causing harmful interference to others, it will suspend or modify its operations to immediately resolve such interference.

#### **A. TT&C Spectrum Use**

The United States Table of Frequency Allocations (“Table of Allocations”), Section 2.106 of the Commission’s rules, 47 C.F.R. § 2.106, provides that the 401-402 MHz band is shared on a co-primary basis between meteorological aids (Earth-to-space) and space operations services (space-to-Earth). RBC Signals seeks to perform TT&C downlink operations in frequencies from 401.6-401.75 MHz consistent with the co-primary space operations allocation in this band,<sup>6</sup> and TT&C uplink operations in the band as a non-conforming use (*i.e.*, on an unprotected, non-interference basis).

RBC Signals understands that there are certain U.S. government meteorological aids and earth exploration operations conducted in the 401-402 MHz band.<sup>7</sup> RBC Signals will operate on an unprotected, non-interference basis to Federal users and, if it learns that its operations are causing

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<sup>6</sup> See 47 C.F.R. § 2.1 (defining “space operations” as “a radiocommunication service concerned exclusively with the operation of spacecraft, in particular space tracking, space telemetry, and space telecommand.”).

<sup>7</sup> See [https://www.ntia.doc.gov/files/ntia/publications/compendium/0401.00-0402.00\\_01MAR14.pdf](https://www.ntia.doc.gov/files/ntia/publications/compendium/0401.00-0402.00_01MAR14.pdf).

harmful interference to other Federal operations, it will suspend or modify its operations to resolve such interference.<sup>8</sup> Moreover, RBC Signals has not identified any non-federal, co-frequency operations within a 40 km radius of the Windham, New York site and believes its TT&C operations in this band will not present a potential for interference into other authorized commercial spectrum users. Although RBC Signals is not aware of any interference cause by previously approved operations in the band, it remains in consultation with relevant Federal agencies regarding these issues and will abide by additional post-grant restrictions or conditions that the Commission imposes to address any concerns.

### **B. STA Request and Public Interest Considerations**

RBC Signals respectfully requests this 180-day STA pursuant to Section 25.120 of the Commission's rules, 47 C.F.R. § 25.120. Section 25.120(a) provides that STA requests should be filed at least three working days prior to the date of commencement of the proposed operations. Here, RBC Signals seeks grant and operation under the 180-day STA consistent with the Commission's processing rules, which includes a 30-day public notice period for this STA request. Pursuant to Commission rules and precedent, RBC Signals understands that this timely filed extension request will effectively extend its current temporary authority until the Commission acts on the instant request, affording sufficient time for it to be placed on public notice and enabling RBC Signals to continue to communicate with the Demosat-2 cubesat in the interim.<sup>9</sup>

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<sup>8</sup> RBC Signals notes that Condition 5 in the *Radix-Windham STA* regarding limiting transmissions towards the International Space Station ("ISS") during extravehicular activities ("EVAs") is not applicable to the operations proposed herein. Demosat-2 will operate in a band with greater separation from NASA frequencies and in an orbit with greater separation from the ISS orbit (at an inclination angle of approximately 97.71°, well above the ISS inclination angle of 51.6°).

<sup>9</sup> See 47 C.F.R. §§ 25.120 & 25.163(b); Administrative Procedure Act § 9(b). See also 47 C.F.R. §1.955(b); *In the Matter of Marc D. Sobel Application for Consent to Assign the License for Conventional 800 MHz SMR Station KKT934, Montrose, California*, Memorandum Opinion & Order, FCC 05-90, ¶¶ 2 & 6; Intelsat License LLC, File Nos. SAT-STA-20171016-00139 (30-day STA to drift and operate Intelsat 16 in TT&C frequencies) and SAT-STA-20171016-00140 (180-day extension of 30-day STA operations).

RBC Signals has been operating the 400 MHz Yagi with the Demosat-2 from Windham, New York on a temporary basis with no reported instances of interference. RBC Signals believes that these temporary operations can continue to be conducted on a non-interference basis, and it has no basis to conclude otherwise. Thus, the Commission can grant a limited extension of operating authority as requested herein.

Grant of this STA request is in the public interest because it will allow RBC Signals to provide reliable secondary ground station support for the Demosat-2 cubesat mission. As noted, RBC Signals agrees to abide by additional post-grant restrictions or conditions that the Commission imposes, to the extent any unanticipated issues arise. RBC Signals also acknowledges that any action on the requested STA will not affect the Commission's ultimate determination with respect to any future application for further earth station operating authority.

### **III. CONCLUSION**

In view of the foregoing, the public interest would be served by grant of a 180-day STA extension to allow RBC Signals to continue to operate the 400 MHz Yagi with the Demosat-2 cubesat from the Windham, New York location.