Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of

Application of RBC Signals LLC for a 60-Day Special Temporary Authorization ("STA") To Operate an Earth Station To Provide Tracking, Telemetry & Command ("TT&C") to a U.S. Cubesat	)))))	Call Sign: File No.: SES-STA-_____

Expedited Consideration Requested

REQUEST FOR SPECIAL TEMPORARY AUTHORITY

RBC Signals LLC ("RBC Signals"), pursuant to Section 25.120 of the Commission's rules, 47 C.F.R. § 25.120, respectfully seeks a 60-day special temporary authorization ("STA") to operate a M2 Antenna Systems Yagi antenna (the "400 MHz Yagi") at a facility in Boulder, Colorado to communicate with a U.S.-licensed low-Earth orbit ("LEO") cubesat to perform tracking, telemetry and command ("TT&C") for housekeeping, orientation and subsystem control. RBC Signals seeks to commence these short-term TT&C operations on May 1, 2018, to ensure the timely initiation of TT&C operations following the satellite's scheduled launch on that date. Moreover, RBC Signals requests expedited consideration and grant as soon as practicable to support the associated space station license application pending with the Commission.[1]

I. BACKGROUND

RBC Signals is a Seattle, Washington-based satellite services company that provides earth station services around the world. RBC Signals currently holds multiple STAs to provide similar TT&C support for various LEO non-geostationary satellite orbit satellite ("NGSO") cubesats from

[1] *See* Analytical Space, Inc., File No. 0044-EX-ST-2017, Call Sign WL9XLY ("*Radix Experimental Application*").

a facility in Deadhorse, Alaska using the 400 MHz Yagi.[2] RBC Signals plans to seek long-term commercial authority to support its operations from the Boulder facility, which will be similar to its ongoing Deadhorse operations.

Here, RBC Signals seeks short-term authority to conduct TT&C operations for the proposed Radix experimental cubesat, a U.S. satellite that was developed by Analytical Space, Inc. ("ASI") to demonstrate ASI's optical-based data relay network technology. The Radix cubesat is currently the subject of an experimental license application with the Commission,[3] which will allow ASI to analyze the technical feasibilities of its optical communication technology. Here, RBC Signals seeks authority to conduct short-term TT&C following the Radix satellite's planned launch on May 1, 2018, as a secondary payload aboard Orbital Sciences' CRS Cygnus OA-9E from Kennedy Space Center.[4] The Radix cubesat will be launched into a nominal 400 km circular, sun-synchronous orbit with an inclination from the equator of approximately 51.6°.

This 60-day STA will cover initial TT&C for the Radix cubesat and RBC Signals plans to file an application for longer-term authority for the operations sought herein. To the extent applicable, RBC Signals incorporates by reference the satellite technical specifications and mission overview information previously provided by ASI in the *Radix Experimental Application* and will perform the proposed TT&C operations consistent with the terms and conditions imposed by the Commission in any grant issued to ASI. Grant of this STA request is in the public interest because it will ensure the timely initiation of TT&C for these novel and important cubesat operations and

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[2] *See, e.g.*, RBC Signals, LLC, File Nos. SES-STA-20171213-01333 (60-Day STA to provide TT&C for Planetary Resources Development Corp. cubesats), SES-STA-20180118-00042 (60-Day STA to provide TT&C for Astranis Space Technology Corp. cubesats).

[3] *Supra* n.1.

[4] *Id.*, Radix Technical Description.

facilitate the safe operation of the Radix cubesat during these critical strategic evaluations.

II. DISCUSSION

RBC Signals seeks to operate the 400 MHz Yagi with the proposed Radix cubesat in the 401.24-401.36 MHz band (Earth-to-space/space-to-Earth). As discussed below, RBC Signals has examined other operations in the subject bands and ensures that the proposed TT&C operations will not cause interference to current or future U.S. government users of the band. RBC Signals has commenced coordination with Federal government operations and will ensure that the short-term and longer-term interests of the United States are fully accommodated.

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 and space operations services. RBC Signals seeks to perform TT&C uplink and downlink operations in frequencies from 401.24-401.36 MHz consistent with the co-primary space operations allocation in this band.[5] RBC Signals understands that there are certain U.S. government meteorological aids and earth exploration operations conducted in the 401-402 MHz band.[6] Specifically, RBC Signal's proposed operations are within a 1.5 mile radius of the National Oceanic Atmospheric Administration ("NOAA") Table Mountain Radio Receiving Zone, which is a designated "quiet zone" under the Commission's rules.[7] Accordingly, RBC Signals has commenced coordination with the regional frequency manager to minimize possible interference

[5] *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.").

[6] *See* https://www.ntia.doc.gov/files/ntia/publications/compendium/0401.00-0402.00_01MAR14.pdf.

[7] 47 C.F.R. § 1.924(b) ("Coordination is recommended for . . . stations located within 2.4 kilometers (1.5 miles) of the Table Mountain Radio Receiving Zone.").

to the NOAA Table Mountain facility. Based on our research and coordination efforts to date, RBC Signals believes the proposed TT&C operations in this band will not present a potential for interference into other users of this band. However, if RBC Signals learns that its operations are causing harmful interference to other operations, it will suspend or modify its operations to immediately resolve such interference. RBC Signals will inform the Commission upon completion of coordination and will update this 60-day STA application filing accordingly.

B. STA Request & Public Interest Considerations

RBC Signals respectfully requests this 60-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 an expedited grant date but a commencement date of May 1, 2018, following the launch of the Radix satellite. Additionally, the Commission may grant a 60-day STA if the STA request has not been placed on public notice and the applicant plans to file a request for regular authority for the operations. RBC Signals plans to file an application for longer-term authority as soon as possible to permit continuing TT&C operations for the Radix cubesat from the Boulder facility.

This STA request is in the public interest because it will ensure that RBC Signals is able to commence TT&C in time for the launch of the Radix satellite and assist ASI in demonstrating the significant benefits of its satellite communication technology. Moreover, this STA is necessary to support the *Radix Experimental Application* and ensure that ASI can secure appropriate Commission authority prior to the satellite's launch. The requested expedited grant is vital to ASI's associated space station license application and will provide additional time for ASI to finalize its operation strategies. RBC Signals acknowledges that any action on the requested STA will not affect the Commission's ultimate determination with respect to the application for longer-term TT&C earth

station operating authority.

III. CONCLUSION

In view of the foregoing, the public interest would be served by expedited grant of a 60-day STA to support grant of the underlying experimental satellite application and ultimately to allow RBC Signals to perform TT&C for the Radix cubesat commencing on May 1, 2018.