

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC 2055**

In the Matter Of	)	
	)	Call Sign N/A
Application of RBC Signals LLC for an	)	
Emergency 14-Day Special Temporary	)	File No. SES-STA-
Authorization To Operate an Earth Station	)	
To Provide Telemetry, Tracking &	)	
Command To Foreign-Licensed Satellites	)	

*Expedited Consideration Requested*

**REQUEST FOR SPECIAL TEMPORARY AUTHORITY**

RBC Signals LLC (“RBC Signals”), pursuant to Section 25.120 of the Commission’s rules,<sup>1</sup> respectfully seeks emergency 14-day special temporary authority (“STA”) commencing on November 9, 2018, to operate an earth station (the “400 MHz Yagi”) at its facility in Deadhorse, Alaska, with certain foreign-licensed low-Earth orbit (“LEO”) non-geostationary satellite orbit (“NGSO”) satellites. Specifically, RBC Signals will perform tracking, telemetry and command (“TT&C”) for the CICERO-7 (NORAD ID 43143, Int’l Code 2018-004AJ) and TYVAK-61C (NORAD ID 43144, Int’l Code 2018-004AK ) satellites (the “CICERO spacecraft”)<sup>2</sup> operated by Tyvak Nano-Satellite Systems Inc. (“Tyvak”) at an orbital altitude of approximately 550 km and an inclination of 97.8°. RBC Signals seeks to perform TT&C for the CICERO spacecraft in the 401-401.3 MHz band (Earth-to-space/space-to-Earth).

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<sup>1</sup> 47 C.F.R. § 25.120.

<sup>2</sup> The satellites operate under Norway filings TYVAK-0082 and TYVAK-0022, respectively. The two satellites were inadvertently both referred to as “CICERO spacecraft” or “CICERO satellites” in the previous STA applications. Because this STA request is for TT&C earth station operations only, RBC Signals has not provided the full range of satellite and market access information associated with requests to provide satellite services in the U.S. market.

RBC Signals requests this authority due to extraordinary circumstances that have resulted in the inability of Tyvak to adequately communicate with the CICERO spacecraft from its primary ground station in Norway. Accordingly, RBC Signals seeks this 14-day STA to operate the 400 MHz Yagi at its Deadhorse, Alaska facility to provide TT&C functions for the CICERO mission and ensure no lapse in essential ground station support. RBC Signals has received verbal grant of this 14-day STA from Commission staff.

## **I. DISCUSSION**

RBC Signals is based in Seattle, Washington and provides earth station services around the world. RBC Signals partners with other earth station operators and operates its own earth stations to efficiently support various LEO satellite missions and applications. RBC Signals provides “infrastructure as a service,” supporting satellite operators on an as-needed basis. RBC Signals currently operates from the Deadhorse, Alaska facility in the 401-402 MHz band without issues<sup>3</sup> and has a pending commercial application for long-term operations from the facility.<sup>4</sup>

RBC Signals was previously authorized to provide identical TT&C support for the CICERO spacecraft from the Deadhorse, Alaska facility following prior mechanical failures of Tyvak’s TT&C ground station in Norway.<sup>5</sup> RBC Signals successfully supported the CICERO spacecraft from Deadhorse during the STA term with no incidents or reports of interference. The TT&C operations proposed herein are identical to those previously authorized at the Deadhorse

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<sup>3</sup> See RBC Signals, File No. SES-STA-20180302-00176 (granted on April 12, 2018).

<sup>4</sup> RBC Signals’ commercial license application for the Deadhorse facility was recently taken off of public notice and remains pending. Upon final Commission action on the application, RBC Signals plans to request modification of the license to add long-term authority to support the CICERO mission. See RBC Signals, LLC, File Nos. SES-LIC-20180201-00081 & SES-AFS20180321-00238, Call Sign E180010.

<sup>5</sup> See RBC Signals LLC, File No. SES-STA-20180330-00293 (expired on April 29, 2018) and File No. SES-STA-20180607-01103 (expired on October 10, 2018).

facility and, accordingly, there is no material change in the potential for interference from RBC Signals' authorized operations at this location.

The CICERO spacecraft are operated by Tyvak, a U.S. company that holds multiple experimental licenses from the Commission, including for the first demonstration satellite of the CICERO mission.<sup>6</sup> The subject Norwegian-licensed CICERO satellites, which operate pursuant to authority granted by the Norwegian Communications Authority ("Nkom"),<sup>7</sup> are technically identical versions of the 6U cubesat previously described to the Commission in the CICERO Experimental License.<sup>8</sup>

RBC Signals seeks this 14-day emergency STA due to another failure of Tyvak's TT&C ground station in Norway,<sup>9</sup> which has left Tyvak unable to adequately communicate with the CICERO spacecraft. Tyvak is working diligently to resolve the matter but certain circumstances, including limited availability of parts and personnel, prevent implementation of near-term remedial measures. Tyvak requires TT&C support from RBC Signals, an existing ground station partner, because it can provide immediate support for the CICERO spacecraft from its existing facility in Deadhorse until Tyvak's primary ground station repair efforts are successful.

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<sup>6</sup> See Tyvak Nano-Satellite Systems Inc., File No. 0399-EX-PL-2016, Call Sign WI2XKJ ("CICERO Experimental License").

<sup>7</sup> See Technical Appendix, III. Pursuant to the regulatory procedures adopted by Nkom, the attached submission of Advance Publication Information from Nkom to the International Telecommunications Union ("ITU") constitutes the Nkom authorization action for the CICERO spacecraft.

<sup>8</sup> The CICERO satellites will operate under the Tyvak-0082 ITU NGSO system filings. RBC Signals acknowledges that authority for TT&C operations does not constitute market access to the United States for the Tyvak satellites and therefore is not providing the full technical information required by Sections 25.114 and 25.137 of the Commission's rules, 47 C.F.R. §§ 25.114 and 25.137.

<sup>9</sup> The mechanical problems involve an elevation rotor that is not moving and is preventing Tyvak from tracking the satellite. The reasons for this failure are still unclear but they are likely due to cabling issues at the site.

Grant of this STA request is critical for the ongoing reliability of the CICERO mission and will allow for the short-term continuation of TT&C services while Tyvak works to address the issue at the Norway ground station site. RBC Signals' short-term TT&C operations will be conducted on an unprotected and non-interference basis and only as-needed to communicate with the CICERO spacecraft as it passes over the Deadhorse earth station (several times per day with an average access time of five to seven minutes).

RBC Signals provides the attached Technical Appendix, including a draft FCC Form 312 Schedule B, for information relating to the proposed earth station operations and the CICERO spacecraft. RBC Signals incorporates by reference the CICERO satellites' technical specifications previously provided in the CICERO Experimental License and the information set forth in its prior STA requests. RBC Signals will conduct these operations in accordance with the Commission's rules and interagency requirements governing fixed earth station operations in the subject band, as well as the conditions of its prior STAs, and acknowledges that Commission grant of STA authority is without prejudice to other requests for authority to communicate with the Cicero spacecraft.

The United States Table of Frequency Allocations ("Table of Allocations"), Section 2.106 of the Commission's rules,<sup>10</sup> 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 the 401-401.3 MHz band pursuant to the coprimary space operations allocation in this band.<sup>11</sup> RBC Signals understands that there are

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<sup>10</sup> See 47 C.F.R. § 2.106,

<sup>11</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.").

certain U.S. government meteorological aids and earth exploration operations conducted in the 401-402 MHz band.<sup>12</sup> RBC will operate on an unprotected, non-interference basis and, if it learns that its operations are causing harmful interference to other operations, it will suspend or modify its operations to immediately resolve such interference.

## **II. CONCLUSION**

In view of the foregoing, including the Commission's previous grant of identical STA authority and verbal grant of this emergency STA request, the public interest would be served by formalizing the grant of the STA authority requested herein to allow RBC Signals to perform TT&C functions for the CICERO spacecraft using the 400 MHz Yagi from Deadhorse, Alaska, commencing November 9, 2018.

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<sup>12</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)