

MISSION DESCRIPTION

REASON-2 SATELLITE

Cowboy Space Corp. (“Cowboy Space”)¹ requests authority to launch and operate Reason-2, a single satellite in low-Earth (“LEO”), non-geostationary (“NGSO”) orbit, under the FCC Part 5 experimental licensing framework.² Reason-2 will test the transmission of data via optical link to a specially designed terrestrial ground station as well as in-orbit compute capabilities. Cowboy Space requests a licensing date no later than January 31, 2027, given current launch service provider requirements for the Transporter-20 mission. The launch is currently scheduled for April 2027.

I. BACKGROUND

Cowboy Space is a U.S. aerospace company pioneering an optical transmission technology platform. The company is building an orbital data center constellation, Stampede, to advance American interests in developing compute capacity and novel space technologies. Cowboy Space has previously received authority to launch and operate its Reason-1 satellite in order to facilitate testing of its optical transmitter technology for the purpose of transferring power from space-to-Earth on its first test satellite.³ Reason-2 builds on that technology and allows Cowboy Space to test its equipment for optical communications and in-orbit compute capabilities prior to deploying Stampede.

¹ Cowboy Space is a San Carlos, CA-based company, which is incorporated in Delaware.

² See 47 C.F.R. § 5.1 *et seq.*

³ See ELS File Nos. 0808-EX-CN-2025 and 0124-EX-CM-2026.

II. MISSION DETAILS

A. Space Segment and Spectrum Use

Reason-2 consists of commercial-off-the-shelf components that are space-qualified, including the Apex Aries satellite bus. The satellite includes radios intended to support telemetry, tracking, and control, as well as limited transmissions in the 400.15-401 MHz, 2200-2290 MHz, and 8025-8400 MHz band (“X-band downlink”). Reason-2 will receive signals in the 402-403 MHz band (“UHF uplink”) and the 2025-2110 MHz band (“S-band uplink”). Further details on the radios and spectrum use are included in Exhibit A (Technical Annex). The satellite also incorporates proprietary Cowboy Space optical laser communications technology intended for testing end-to-end high data rate downlink of computed inference results.

B. Ground Segment

Most earth RF ground stations communicating with Reason-2 will be operated by 3rd party operators Leaf Space and AnySignal. Four earth stations in the United States will be operated by Cowboy Space under this license. Detailed information on the earth stations and spectrum use is included in Exhibit A.

C. Launch Schedule and Orbital Information

Cowboy Space’s Reason-2 will launch on board a SpaceX Falcon 9 (Transporter-20) rideshare scheduled in April 2027 and be injected between 490 and 600 km orbital altitude, at a sun-synchronous inclination (+/- 0.1 deg) commensurate with the injection altitude.

D. Mission Concept of Operations

Reason-2 will test the viability of using an optical transmission of data to small ground stations on earth by using eye-safe infrared lasers that can point, acquire, and track the ground station from space. The goal is to demonstrate the functionality of the Cowboy Space-built satellite and validate performance. Testing will also validate Cowboy’s in-orbit compute

capabilities. Communications with Reason-2 are necessary during these demonstrations and functional checkouts. In turn, Cowboy Space will collect data to validate the system and payload design and performance.

Cowboy Space hereby requests an initial two-year license term, as is consistent with standard FCC experimental license requirements. In addition, Cowboy Space hereby respectfully notifies the Commission that the operational lifetime of Reason-2 is expected to require multiple renewals of this two-year experimental license term in order to complete the proposed testing for this ground-breaking project. At the conclusion of its up-to-five year mission, Reason-2 will deorbit consistent with the plan outlined in Exhibit B (ODAR).

III. OTHER MATTERS

A. NOAA Remote Sensing Licensing

The National Oceanic and Atmospheric Administration (“NOAA”) requires a license to operate a remote sensing system.⁴ Cowboy Space has requested a no-license determination and will inform the Commission of NOAA’s determination. Cowboy Space will submit the relevant NOAA correspondence to this application file confirming no NOAA license is required.

B. ITU Requirements

When issuing experimental authority, the Commission submits advance publication information (“API”) to the International Telecommunication Union (“ITU”). In concert with this application, Cowboy Space is submitting the ITU API and, in an attachment, unconditionally accepts all associated cost recovery responsibilities.

⁴ See generally 15 C.F.R. § 960.

IV. CONCLUSION

Cowboy Space seeks to pioneer and to develop an American space-based data center that will enable the future of compute power in the United States. Authorizing this mission, therefore, would be consistent with the public interest.