

From: Daniel Smith

To: Doug Young

Date: January 17, 2022

Subject: Request for Info - File # 0734-EX-CN-2021

Message:

Please reference the following information in response to issues noted in correspondence reference number 66808:

FCC: 1. As the proposed PMD orbit is highly elliptical, please provide information regarding any precautions/coordination that have been undertaken or considered regarding protecting inhabitable spacecraft in this altitude range, such as the ISS and Chinese Space Station.

PlanetiQ:

Precautions include maintaining enough fuel for a controlled re-entry, continued mission operations consisting of: active collision avoidance processes, building and assessing collision risk in candidate orbits and scheduling ground contacts until PMD is complete.

Coordination consists of: 1) PlanetiQ is registered with 18th Space Control Squadron, with approval for Orbital Data Requests as well as an active Data Sharing Agreement. 2) A subcontract with SpaceNav, LLC (Offices in Boulder, CO and on-site at NASA Goddard) for advanced Space Situational Awareness capability, collision risk management, maintenance station keeping maneuvers, maneuver planning and coordination. Prior to any orbit maneuvers, SpaceNav assesses collision threats with maneuver planning, calculates size of delta-V, burn duration(s), and coordinates with the 18th Space Control Squadron to avoid not only the ISS and Chinese Space Station, but all other objects as well.

FCC: 2. Please address the scope of operations of the spacecraft and any commercial activities undertaken using data derived from operations. Noting that multiple spacecraft have now been licensed on an experimental basis, please identify the specific remaining experimental objectives for this mission and eligibility for experimental licensing.

PlanetiQ: The GNOMES satellite experimental phase is based on successful launches and on-orbit operations for two satellites to demonstrate future constellation capabilities for:

- Establishing the next-generation Pyxis-RO receiver technology and on-orbit performance
- Multi-satellite mission operations for: data collection, data processing, data distribution, latency improvements, ground station scheduling
- Engaging in market trials with the atmospheric data

The two satellites scheduled were GNOMES-1(0011-EX-CN-2019, WK2XIU) and GNOMES-2 (0504-EX-CN-2020, WL2XES). However, due to the GNOMES-1 failure (non-operational status), the GNOMES-3 satellite will complement the GNOMES-2 satellite to complete our two-satellite, experimental market trial efforts.

PlanetiQ will seek a FCC Part 25 authorization for the remaining satellites to complete the constellation of "GNSS Navigation and Occultation Measurement Satellites" (GNOMES).

Note: The current, commercial activity for the satellite is a sub-contract to provide data for data assessment and evaluation for the United States Air Force. Please reference:

Government Project: GNSS-RO data buy under the BAA Commercial Weather Data Pilot-2, as a data supplier to ASTRA, to evaluate our on orbit high Signal to Noise data

Agency: U.S. Air Force

Contract Number: USAF BAA Contract # FA8730-19C-0044 (Subcontract number 242-01 to PlanetiQ)

FCC: 3. There are two NOTICE IDs in the SpaceCap:

1. (which appears to be empty) and 2 (which contains the GNOMES-3 information.) Please provide a clean SpaceCap with only one NOTICE ID (using ID 1) that contains the GNOMES-3 information.

Additionally, the GIMS database also contains the relevant information in NOTICE ID

2. Please ensure a new GIMS database is provided with all relevant information in NOTICE ID 1. 4. Please ensure the correct altitudes are entered in the SpaceCap. The current entries appear to be for 650,000 km and not 650 km.

PlanetiQ: The SpaceCap will be updated and uploaded to the Office of Engineering and Technology web portal, exhibits section. A follow-up response to correspondence will be provided confirming the upload.

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