

Attachment B: Ground Segment

The LIME satellite will communicate with both Earth and other space stations. Earth stations will be the primary point for downlinking mission telemetry and data. Earth stations will be the only way to command the spacecraft. NOVI will conduct its mission operations through a network of ground stations that will consist of commercial facilities operated by Leaf Space. Ground Passes are automatically scheduled by Leaf Space and can use any of Leaf Space’s available S-band capable Earth stations. All current/planned compatible Leaf Space Earth Station locations are listed below:

Location	Long. of Antenna	Lat. of Antenna	RF Bands (Up and Down)
Peterborough, Southern Australia	138° 50' 58.2" E	32° 57' 43.2" S	S-band
Nangetty, Western Australia	115° 20' 30.0" E	29° 00' 37.5" S	S-band
Absheron, Azerbaijan	49° 29' 08.9" E	40° 27' 58.6" N	S-band
Blönduós, Iceland	20° 14' 45.9" W	65° 38' 50.5" N	S-band
Kandy, Sri Lanka	80° 43' 29.5" E	7° 16' 27.2" N	S-band
Awarua, New Zealand	168° 22' 45.1" E	46° 31' 41.2" S	S-band
	168° 23' 05" E	46° 31' 58" S	S-band
Santa Maria, Azores, Portugal	25° 08' 14.3" W	36° 59' 51.2" N	S-band
Unst, Shetland, United Kingdom	00° 51' 30.2" W	60° 44' 53.9" N	S-band
Punta Arenas, Chile	70° 50' 49.6" W	53° 02' 28.4" S	S-band
Pretoria, South Africa	28° 27' 13.6" E	25° 51' 37.2" S	S-band
La Paz, Mexico	110° 22' 19" W	24° 6' 18.36" N	S-band

Additionally, LIME has an Iridium transceiver on board as its space-to-space intersatellite link. This link will be characterized as one of LIME’s main science objectives. The system will duplicate a portion of downlinked S-band telemetry to send over the Iridium link during link characterization experiments. Uplinks to the satellite through Iridium will contain experimental data only. There will be no way to command the satellite through the Iridium link. Iridium

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communications will not be constant and will instead consist of short bursts at an adjustable period.

The Mission Control Center for LIME will be located at NOVI's headquarters in Arlington, Virginia. LIME will be monitored at all times via automated and human systems, facilitating rapid response to any technical or regulatory concerns. All commands and data will originate and end at this control center. To comply with 47 CFR 5.107(a), only trained and authorized NOVI personnel will be able to access the systems able to command the spacecraft.

NOVI has initiated coordination efforts with Iridium and Leaf Space in its requested bands and will operate in accordance with the terms of any agreements.