

Information about the SelfieSat satellite network

The SelfieSat satellite is a 2U (10 cm x 10 cm x 20 cm) CubeSat developed by Orbit NTNU. The satellite is scheduled to launch in the summer of 2022. The orbital height is intended to be 500 km.

The SelfieSat (SS) and its ground station (GS) will operate with the following frequency bands:

Frequency usage		
Direction	Frequency band	Service
SS - GS	Frequency: 437.5 MHz Bandwidth: 19200 Hz	Educational project. Satellite telemetry and images
GS - SS	Frequency: 437.5 MHz Bandwidth: 19200 Hz Max doppler change: 10945 Hz	Educational project. Satellite images and TT&C

Transmission between the satellite and earth will mainly be done at the NTNU Ground Station (Latitude: 63.417831662 deg, Longitude: 10.401831726 deg), see Figure 1.

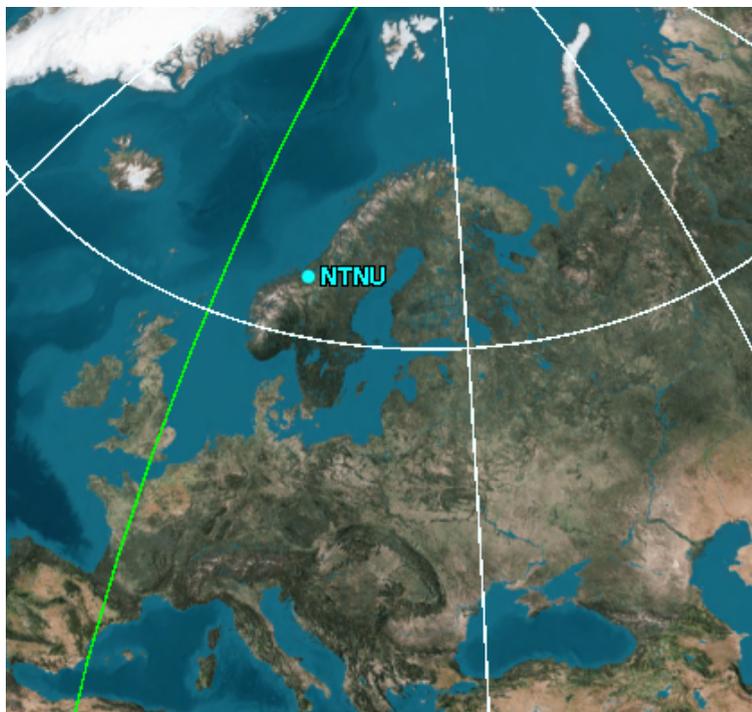


Figure 1: NTNU Ground Station

The transmission will only happen between the satellite and the NTNU Ground Station when the satellite is visible. The NTNU Ground Station antenna has a range of 3000 km, and the satellite is in view at an elevation angle above 2 degrees. See Figure 2 for ground coverage of the NTNU GS antenna.

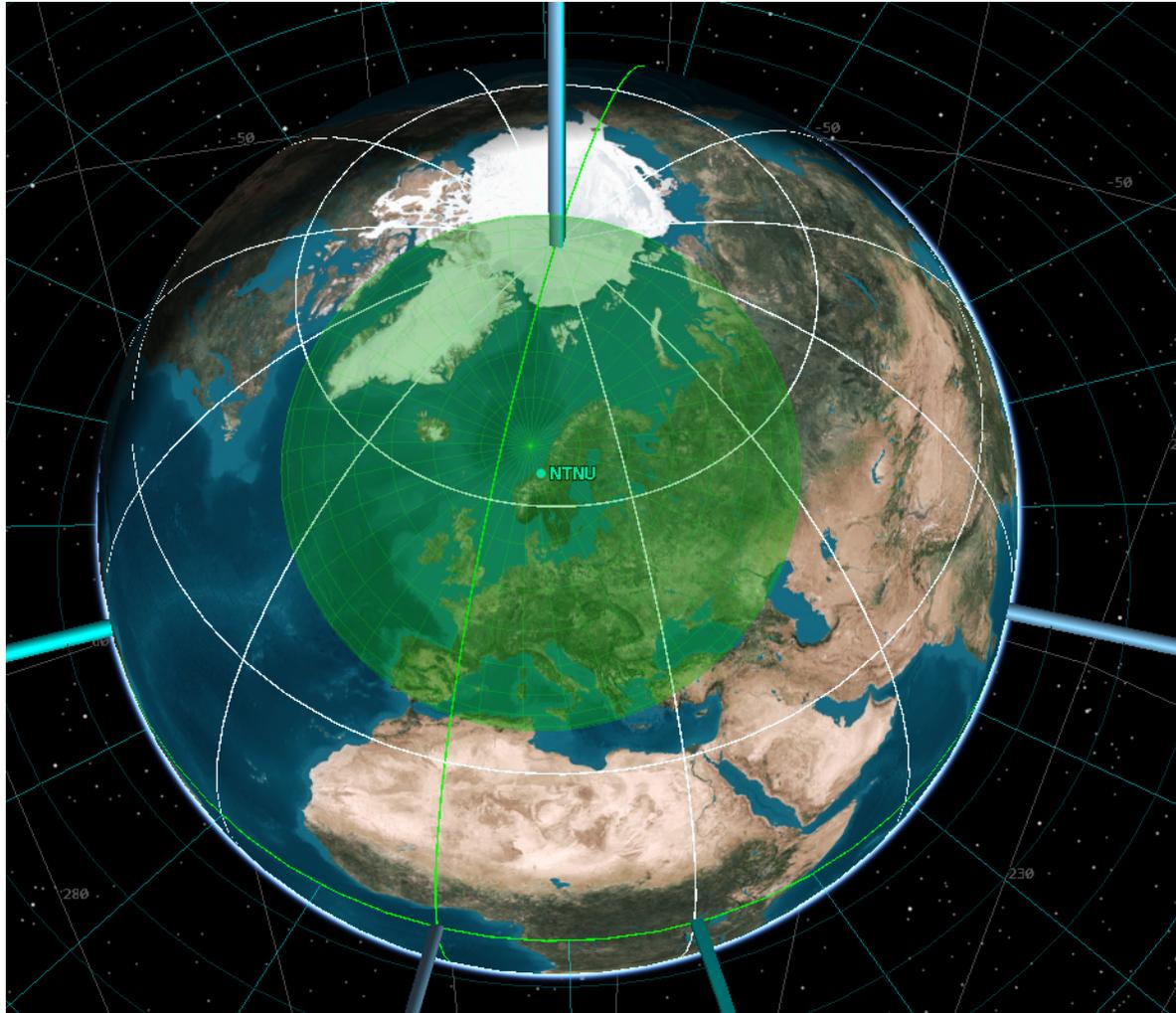


Figure 2: NTNU Ground Station antenna with range 3000 km at 2 deg elevation

Figure 3 shows some satellite passes within the circle (radius of 3000 km for an orbital height of 500 km). The passes are simulated over the timespan of 4 days. The satellite will only send beacons or ack's when pinged by other ground stations outside of this area.

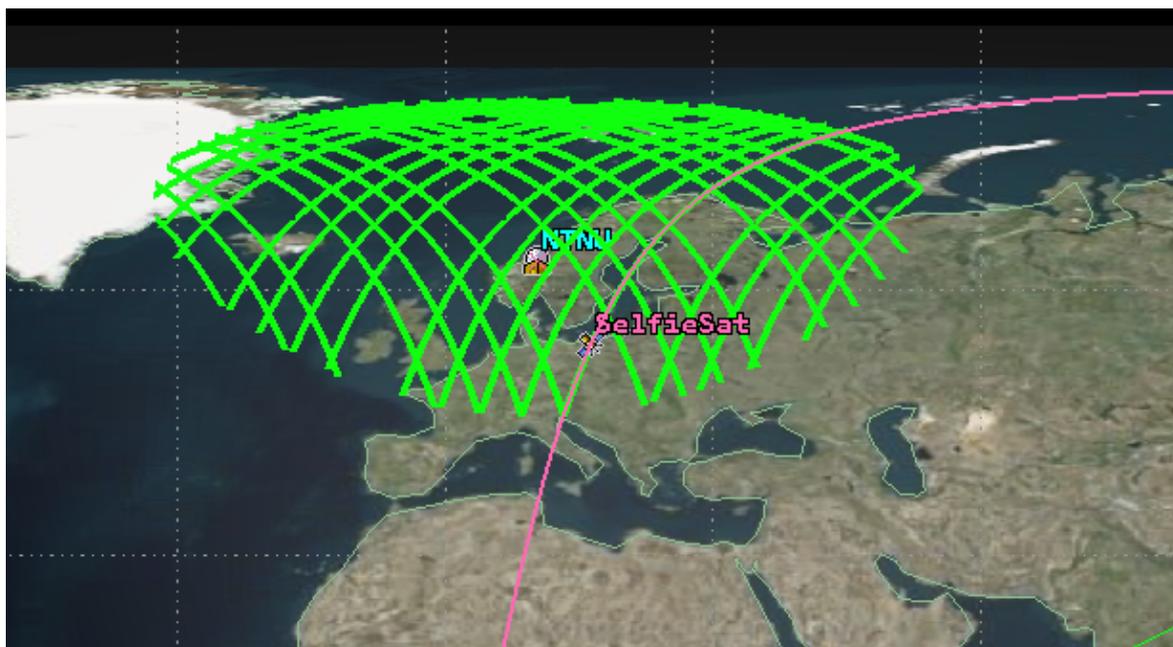


Figure 3: SelfieSat passes over the NTNU Ground Station. Time period of 4 days.

We hope this information will give enough clarification to any concerns, and we look forward to communicating with you if you have any other questions.

For further information, direct contact may be established with the operator of SELFIESAT, Orbit NTNU.

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