

GPSRO Mission on Iridium NEXT

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A unique opportunity exists to host up to 66 earth observation sensors on the Iridium NEXT LEO constellation in a manner that can revolutionize earth observation and weather predictions. A constellation approach to sensing, using the real-time communications backbone of Iridium, can enable unprecedented geospatial and temporal sampling for now-casting of weather on a global basis as well as global climate monitoring. The NEXT constellation, with 66 interconnected satellites in 6 near polar orbiting planes, provides a unique platform for hosting a variety of earth observation missions. The launches are planned to start in 2014.

Iridium has performed feasibility studies for several Earth observation and climate missions on NEXT satellites. These include GPS radio occultation sensors, earth radiation budget measurements, altimetry, ocean and land imaging, solar total and spectral irradiance, and troposphere and stratospheric winds measurements including polar winds measurements. Study teams consisting of Iridium, NASA/JPL and multiple industrial partners of Iridium have conducted detailed studies of these missions for compatibility with NEXT. These studies have established technical feasibility, unique benefits from a constellation approach, and cost effectiveness for these solutions on NEXT. GPSRO mission was studied in detail to demonstrate technical feasibility on a constellation of NEXT satellites.