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Iridium NEXT SensorPODs: Global Access for Earth Observation

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The operational Iridium constellation is comprised of 66 satellites in low Earth orbit at 781 km and inclination of 86.4°, resulting in unprecedented 24/7 coverage and real-time visibility of the entire globe. Recently, through funding from the National Science Foundation (NSF), Iridium has been utilized for a unique scientific experiment called the Active Magnetosphere and Planetary Electrodynamics Response Experiment (AMPERE). AMPERE provides real-time magnetic field measurements using the existing Iridium constellation as part of a new observation network to forecast weather in space.
In February 2007, Iridium announced Iridium NEXT, a novel design for a second-generation satellite constellation. Anticipated to begin launching in 2015, Iridium NEXT will maintain the existing Iridium constellation architecture of 66 cross-linked satellite LEO covering 100% of the globe. Iridium NEXT will also offer new earth and space observation opportunities through hosted payloads (up to 50 Kg) on the Iridium NEXT satellite network. Recently, Iridium introduced a new hosting concept called SensorPOD for smaller scientific payloads (up to 5 Kg). SensorPODs will offer unique benefits such as unprecedented spatial and temporal coverage, real-time relay of data to and from SensorPODs. SensorPODs are housed in a 4U frame (20 cm x 20 cm x 10 cm). Scientists provide just the payload; all other spacecraft bus functions such as power, data transfer, and attitude control are provided by Iridium NEXT. This access to space comes at a fraction of the cost of a dedicated mission such as 3U or larger CubeSat. These SensorPODs can be hosted as a constellation on all 66 satellites. Such experiments can achieve a mission life of several years (10 year SV design life) as compared to six month to a year for the CubeSat.