

IAF EARTH OBSERVATION SYMPOSIUM (B1)
Earth Observation Systems (2)

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QPS-SAR 2ND GENERATION - MISSION ARCHITECTURE AND OPERATIONAL OUTCOMES

Abstract

Institute for Q-shu Pioneers of Space, Inc. (iQPS) has been developing and operating 100kg-class small synthetic aperture radar (SAR) satellites, named QPS-SAR. The ultimate goal of QPS-SAR is to form a low Earth orbit constellation that is capable of observing desired location per 10 minutes on average. The 1st generation QPS-SAR satellites are pathfinders for the constellation by two satellites launched in 2019 and 2021 and achieved 0.7m resolution imaging. The 2nd generation QPS-SAR satellites started in orbit operation in January 2023 and achieved 0.46m resolution imaging with adding fast turnaround capabilities in its mission architecture such as stable 1 Gbps downlink, Inmarsat communications link, and onboard SAR imaging. This paper introduces mission architecture and main specification of the 2nd generation QPS-SAR satellites, and also shares their operational outcomes.