DEPLOYING A CONSTELLATION OF GPS RADIO OCCULTATION RECEIVERS ON IRIDIUM NEXT

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The Iridium NEXT satellite constellation, planned for launches in 2015 -2017, would consist of 66 cross-linked satellites in low-Earth (LEO) orbits at 780 Km. These satellites have a designed-in capability to carry a 50 Kg hosted payload on each of the 11 satellites in six planes, offering unprecedented geospatial and temporal coverage for 66 hosted payloads in a cost-effective manner. The GPS Radio Occultation (GPSRO) mission has been studied as a possible hosted payload on these satellites and has been demonstrated to provide a significant data set in real time using 6-12 GSRO receivers by placing one or two sensors in each plane equipped with fore and aft measurement capability. Many different types of GPSRO receivers were surveyed which included ROSA, TOPSTAR, GRAS and IGOR/Blackjack from JPL for this study and were seen as a good fit. A detailed analysis is underway on accommodation and RF interference mitigation for some of these on proposed NEXT SVs.