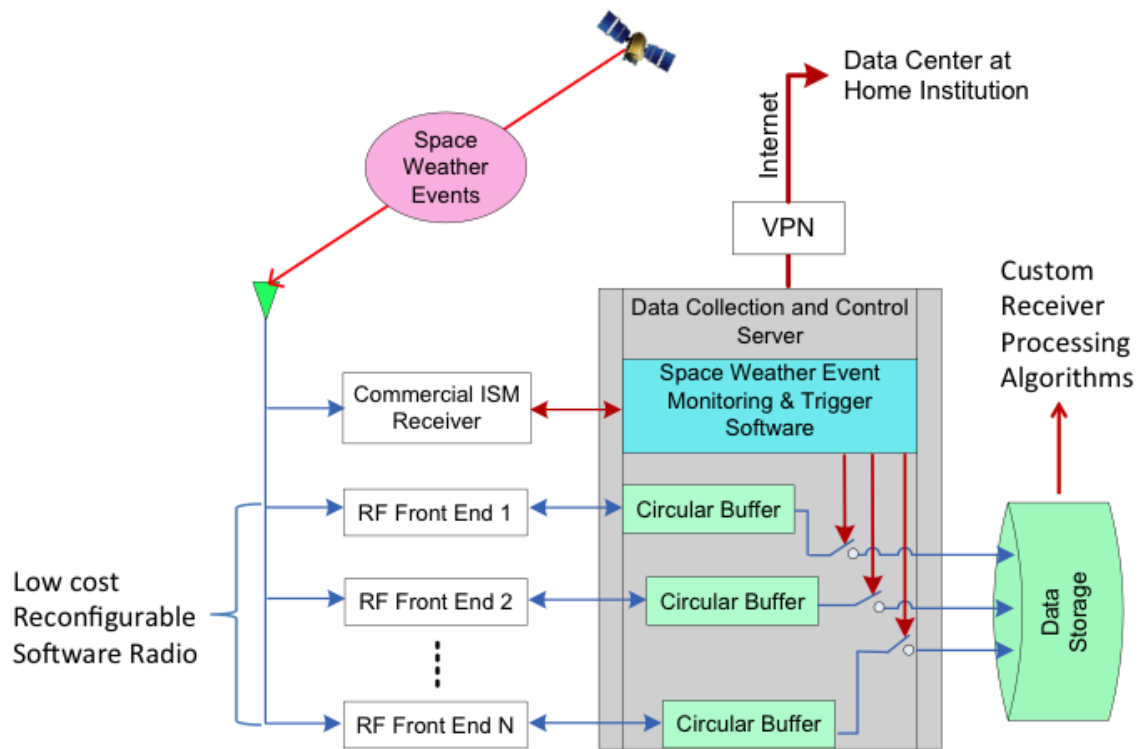


Multi-Constellation Multi-Frequency GNSS Data Collection Arrays for Low Latitude Ionospheric Effects Studies

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Sponsor: NSF



The objective of this project is to acquire six units of multi-constellation, multi-band global navigation satellite systems (GNSS) wideband IF data collection systems for passive remote sensing of ionospheric phenomena. The systems will be deployed at the Jicamarca Ionospheric Radio Observatory (JIRO) and the Arecibo Observatory (AO) to form spaced receiver arrays with existing GNSS setups to support research activities in five areas: (1) equatorial ionospheric irregularity formation and evolution mechanisms and plasma dynamics studies; (2) diagnostics of high power radio wave modification effects on ionosphere; (3) high resolution ionospheric total electron content (TEC) and TEC gradients mapping; (4) ionospheric effects on radio wave propagation; (5) development of advanced GNSS receiver algorithms for assured navigation in physically and electromagnetically challenging environments.