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# Satellite communication solutions for remote Polar GPS and seismic networks.

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Advances in satellite communications and sensor technologies have put us on the threshold of deploying large autonomous GPS and seismic networks at the Polar latitudes. To capitalize on these advances, UNAVCO and IRIS have begun a three-year formal technology collaboration for the International Polar Year: *Development of a Power and Communication System for Remote Autonomous GPS and Seismic Stations in Antarctica* that will enable autonomous station operation in the most remote Polar locations for periods of two or more years. The communication solution relies primarily on the Iridium satellite network, and the Inmarsat BGAN service is also under consideration for Arctic applications. To gain real-world experience, two remote prototype stations are deployed in Antarctica with daily data retrieval to the UNAVCO GNSS archive. Upcoming deployments are also planned in Greenland this summer in support of geophysical studies related to the recent surges in outlet glaciers. The extreme environment communication and power systems are closely coupled and require a systems integration approach, and we discuss system design, reliability, cost, future challenges, and applications.