

# Case Study

## Environmental Monitoring



**Customer:** National Science Foundation, EarthScope division

**Web Site:** [www.earthscope.org](http://www.earthscope.org)

**Country/Region:** North America

**Application:** Long-range wireless data backhaul over a continent-spanning network.

### Customer Profile

EarthScope is a program of the National Science Foundation (NSF) that deploys thousands of seismic, GPS, and other geophysical instruments to study the structure and evolution of the North American continent and the processes the cause earthquakes and volcanic eruptions.

## Continent-Wide Continuous Monitoring Network Must Operate in All Conditions on Very Low Power.

### Situation

The Plate Boundary Observatory (PBO) is the geodetic component of EarthScope, operated by UNAVCO, and funded by the National Science Foundation.

The ability of PBO to address its scientific goals relies heavily on long-term and continuous instrument operation to obtain uninterrupted data. The network spans the North American continent, gathering the detailed data necessary to address a wide range of scientific goals at the forefront of tectonics and earthquake science.

Previous attempts to deliver this data proved unsuccessful or inadequate for the task of delivering this data reliably through weather extremes and remote locations.

### Communication Solution

PBO relies heavily on long-term and continuous instrument operation to obtain uninterrupted data. The search for the proper mix of robust communication products to meet the data demands as well as the remote nature and challenging environment proved challenging (From Baja California to the Aleutian Islands of Alaska).

The PBO has several critical requirements, including:

- Proven long range capabilities, often beyond 70km.
- Robust, Mission-Critical Operation
- Low power operation
- Capable of meeting data requirements

### Results

Intuicom Serial and Ethernet transceivers were selected. More than 800 radios were put into operation on this large scale network. As the project further developed, Intuicom provided the BBS-58 Broadband products where expanded throughput of greater than 5MB was required.

