

### **3.1-P15. Modernization of the Yellowknife Seismic Array (PS09)**

In late 2011, an agreement was made between the Department of Natural Resources Canada (NRCan) and the Provisional Technical Secretariat (PTS) of the Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO) to invest in the recapitalization of the aging infrastructure of the Yellowknife Seismic Array (YKA) in Yellowknife, Northwest Territory, Canada. Originally constructed in 1962, YKA is currently one of the primary seismic arrays of the International Monitoring System (PS09). The recapitalization and modernization of the seismic array was extensive, requiring replacement of remote power systems, seismometer vaults, digitization systems and radio communications to all 18 elements of the short period array. In addition, new sensors replaced aging broadband sensors along with a complete replacement of the Central facility's acquisition computers. Significant challenges were overcome in the process of the reinvestment, since much of the array's infrastructure is scattered across ~125 km<sup>2</sup> of northern Canadian muskeg. To ensure data quality of the new array, both the new YKA and its predecessor were run simultaneously for nearly a year for side-by-side comparison. Details of the process and new infrastructure will be discussed along with array comparisons.

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**Track Classification:** 3. Advances in sensors, networks and processing