

Canadian VLBI Technology Development Center Report

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Abstract The Canadian VLBI Technology Development Center (TDC) is involved in a number of activities contributing to the realization of the VLBI Global Observing System (VGOS).

1 General Information

The Canadian TDC is a collaborative effort of the National partners interested in the advancement of VLBI technology, namely the Canadian Geodetic Survey (CGS) of Natural Resources Canada (NRCan) and the Dominion Radio Astrophysical Observatory (DRAO) of the National Research Council of Canada (NRC).

2 Activities during the Past Year

The Canadian TDC is focused on encouraging the realization of VGOS. This is done by Bill Petrachenko of NRCan, who is the IVS Technology Development Coordinator, the chairman of the VGOS Technical Committee (VTC), and a member of the VGOS Project Executive Group (VPEG). In collaboration with others, this year's activities focused on the following areas:

- Completion and presentation of the VGOS Observing Plan.

- Compilation of comparisons of VGOS feeds, digital back ends (DBEs), and recorders.
- Collection of information regarding data acquisition equipment at VGOS sites. This is needed to help to determine compatible international VGOS observing modes.
- Study of more cost-effective broadband down-conversion schemes.
- Study of efficient and robust broadband frequency sequences.
- Development of FPGA code for VGOS digital back ends.

In addition, NRC is involved in a number of Square Kilometer Array (SKA) related activities that have potential applications to the IVS.

- Digital signal processing including development of correlators, beam formers, and systems for pulsar processing.
- Fabrication of a light, stiff, and cost effective 15-m off-axis Gregorian top-fed composite antenna.
- Development of focal plane arrays.

3 Future Plans

The Canadian TDC plans to continue to actively encourage the realization of VGOS.

Canadian Geodetic Survey, Natural Resources Canada

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