

Satellite Communications (SATCOM) Ground Terminal Facility

SATCOM Ground Terminal Facility is a versatile test bed for satellite reception and transmission capable of supporting uplink and downlink communication in all military bands and most commercial bands.

It consists of four separate antenna systems that operate over the frequency range of 225 Megahertz to 45 Gigahertz. Three of the systems are dishes mounted on computer-controlled all-sky coverage pedestals, and the fourth consists of a pair of manually-positioned helical antennas supporting communication in the UHF band.

The Four Antenna System

Antenna	Bands
9.1 m	L, C, X, Ku
4.6 m	C, X, Ku, EHF
1.2 m	EHF
Helical	UHF

The DRDC ground terminal has been the prime site for a number of MILSATCOM R&D projects in recent years. In the past, it has acted as the communications hub in the evaluation of a portable X-band suitcase terminal developed for DND by Calian Communications. The UHF capability of the facility has been applied to the collection of data during an experiment to transmit digital voice over the MARISAT UHF transponder.

The terminal was used in a coordinated experiment involving multiple antenna systems to evaluate downlink and uplink synchronization techniques using the UK SKYNET-4A EHF to X-band transponder. In a separate project, it was used as part of a series of NATO Communications Systems Network Interoperability (CSNI) trials. These trials were conducted jointly between Canada, the U.S., the U.K. and the Netherlands.

Currently the ground terminal is actively involved in supporting, testing and maintaining C-band, X-band and Ku-band satellite data links used by the Canadian Forces during global peacekeeping deployments.

In the near future, the terminal will be reconfigured again to provide alternate ground station services for a series of low-earth-orbiting (LEO) Pico Satellite experiments operating in the 900 MHz band. This is a U.S. initiative in which Canada has been invited to participate. The goal is to evaluate micro electromechanical systems (MEMS) technologies for future space applications. It is also planned to add an

S-band transmit and receive capability to the 9.1m antenna system in order to support communications with the next generation of PicoSat payloads.



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Business Opportunities

Access to this technology is available to government departments, allied nations, industry and academia through a variety of business models. For information on collaboration, partnering, fee-for-service and technology transfer opportunities please contact the Technology Exploitation Office.

Business Inquiries

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