The development of Canadian remote-sensing SAR systems

Chuck LIVINGSTONE,
DRDC Ottawa, 3701 Carling Ave. Ottawa, Ontario K1A 0Z4
Chuck.Livingstone@DRDC-RDDC.gc.ca

Abstract:

With Canada about to launch the first RADARSAT Constellation Mission (RCM) satellite in 2018 it is interesting to look at the history of Canadian efforts to develop and field Remote-Sensing Synthetic Aperture Radar (SAR) systems. In 1970 the Canada Centre for Remote Sensing (CCRS) was established as a branch of the Department of Energy Mines and Resources (EMR) under the leadership for Director General Larry Morley with a mandate to develop and promote remote sensing technology for Canada and to foster the development of a Canadian remote sensing industry. By 1976 a significant conjunction of technology, opportunity and events led to Canadian involvement in SAR technology. CCRS had acquired a former Johnson and Johnson Convair 580 executive aircraft and was modifying it for remote sensing use, the Environmental Institute of Michigan (ERIM) had an experimental SAR system but no aircraft to carry it, Litton Industries was fielding the LTN 51 inertial navigation system and was amenable to working with CCRS to incorporate navigation system modifications to support remote sensing use. The aircraft, radar and navigation system came together to form the first Canadian remote sensing SAR system, the CV 580 SAR. This talk follows the evolution of Canadian remote sensing SAR instrument development from 1976 to the present day and outlines parallels between radar evolution and the growth of observational understanding of the role of SAR systems in the remote sensing of cultural features and the natural world.