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TECHNOLOGY DEVELOPMENT ACTIVITIES FOR THE METEOROLOGICAL MULTI-SPECTRAL  
IMAGER OF THE CANADIAN POLAR COMMUNICATION AND WEATHER MISSION

**Abstract**

The government of Canada is evaluating a space mission to fill an important gap in the communication and high-temporal resolution meteorological imagery of the high northern latitudes. The satellites of the mission are to carry a multi-spectral imager with various spectral bands centred at different wavelengths from the visible to the thermal infrared. The imager will collect data to support operational weather forecasting. In preparation for that potential mission, a series of technology items have been selected, in Phase A, by the Canadian Space Agency for pre-development. The components of the Meteorological Imager selected for development are the telescope, the spectral separation elements and the opto-mechanical and thermal assembly of the infrared cameras. ABB has been selected to conduct these development activities. The selected items have been build and subjected to various environmental tests. They have then been integrated into a breadboard of the PCW Meteorological Multi-Spectral Imager. The test campaign included optical and radiometric tests in thermal vacuum, optical components environmental testing and radiation exposure and vibration tests. We present an overview of the project and key results of the test campaign.