Abstract.

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Abstract. Since the launch of RADARSAT-2 there has been a continuing effort to develop new image modes that enhance the capability for a variety of land and maritime applications. At the same time and in collaboration with CSA and various stakeholders a background acquisition plan was developed and maintained with the objective to utilize the acquisition capacity for downlinking of large volumes of useful data into Canadian archives. The data included maritime and land collections: 1. Small “high value” target areas such as well-known volcanoes, geohazards sites and small islands  2. Large areas of strategic importance in Canada, S-America, Eurasia and other regions around the world.

One of the results of this effort was the development of the XF imaging mode (Extra-Fine) in 2013 which combines a wide swath (125 km) with a relatively high ground resolution (5 m). These characteristics in principle allow for the complete coverage of nearly unlimited sized areas every repeat cycle of 24 days. Due to the consistent and accurately repeated orbit geometries it is possible to use this mode for detailed change detection as well as interferometry. In order to serve emerging broad area land applications as well as cover very large numbers of “high value targets” it was decided to use XF as one of the most significant sources of data for background acquisitions. Since 2014 more than 1.5 Billion square km of XF coverage has been collected into the archive.

The presentation will provide an overview of broad area land archives and characteristics. It will focus on the emerging and established applications for broad area high resolution land monitoring. The applications include forest degradation and natural environment monitoring, urban and infrastructure monitoring as well as defense applications (“where to look?…”).