ASF RADARSAT PROCESSOR SYSTEM PERFORMANCE SUMMARY

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The Alaska SAR Facility (ASF) located at the University of Alaska Fairbanks (UAF) has been in operations since 1991 serving as a key data acquisition, processing, archive and distribution center for a number of polar orbiting SAR satellites including ERS1 /2 and JERS-1. Since late 1994, it has been going through a multi-year upgrade effort to provide operational data processing capability for Radarsat. In September 1996, the first of two phases of the Radarsat upgrade was completed with the introduction of processing capabilities for Radarsat standard as well as ScanSAR mode data. The second phase of the upgrade is targeted for completion in late summer of 1997 and will add a Precision Processor with enhanced processing capabilities relative to those of the existing ASP (Alaska SAR Processor).

With the first phase of the Radarsat upgrade, Radarsat standard mode processing capability has been added to the existing operational processor, the ASP. As a result of throughput and operability enhancement, the ASP can now process daily 60 minutes of combined ERS1 /2, JERS-1, and standard mode Radarsat data. Radarsat ScanSAR mode processing, however, requires the addition of new ScanSAR Processors (SSPs). The current SSP installation consists of 3 SSPS and together support processing of upwards of 51 minutes of Radarsat ScanSAR mode data per day. This paper reports on the Radarsat processor system performance as a result of this first phase of the upgrade. Emphasis is given to the processing performance capabilities of the two Radarsat processors (ASP and SSPs) as characterized by measurements obtained using simulated data as well as various types of real Radarsat data. Key processor attributes in terms of image quality, throughput, reliability and operability are presented. Comparison with performance predicts and requirements are made. Also, as appropriate, data peculiarities observed that are attributed to the Radarsat sensor are identified.