



SnowSAR

APPLICATIONS

- Snow and ice monitoring
- SWE (Snow Water Equivalent) retrieval

SNAPSHOT

- Compact and portable
- Low power
- Dual frequency
- Dual polarization
- High radiometric resolution and accuracy
- Operational under arctic conditions
- Cost-effective

MISSIONS

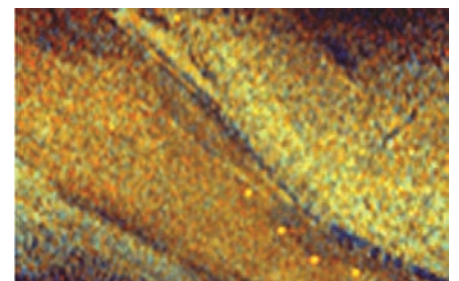
- Developed in 2010 to support ESA's CoReH2O mission
- Operated in Finland, Canada, Austria and U.S.A

The snow and ice melt are fundamental sources of water supply for many densely inhabited areas. Global warming could seriously endanger these water availabilities, therefore it is necessary to measure more precisely the changes and variability of water cycle.

In the framework of its Earth Observation Envelope Programme (EOEP), European Space Agency (ESA) has commissioned to MetaSensing the development of the SnowSAR, a dual frequency (X- and Ku-band), dual polarization miniSAR airborne system to mimic the Earth Explorer's candidate CoReH2O satellite radar.



High spatial and radiometric resolution at X- and Ku-band makes the SnowSAR a unique tool to retrieve the Water Snow Equivalent (SWE). During the last three winters, MetaSensing has operated the sensor in different countries, including Finland, Austria, Canada, U.S.A. The radar has been installed on six different aircraft: four Cessna 208, a Piper 32-R and a Tecnam MMP.



First image at CoReH2O frequency

Thousands of radar pictures have been acquired and focused by MetaSensing's airborne data SAR processor, delivering images radiometrically and geometrically calibrated.





SnowSAR datasheet

MetaSensing SnowSAR	
Central frequency (adjustable)	9.6 GHz (X band) 17.2 GHz (Ku band)
Bandwidth (adjustable)	150 MHz
Polarization modes	VV + VH
Airborne platform	Piper PA 32 Saratoga, Cessna 208 or any other similar small platform
Incidence angle	30° - 45°
Operating altitude above the ground	500 - 3000 m
Swath width	200 - 2000 m
Spatial and radiometric resolution	200 ENL or greater for areas of 10 x 10 m
Absolute bias	< 1 dB
Radiometric stability	< 0.5 dB
NESZ	< -28 dB
Operating conditions	-30° C to 50° C
Power consumption	< 400 W



©2013 MetaSensing. MetaSensing shall not be liable for any error contained herein or any damages arising out of or related to this document or the information contained therein, even if MetaSensing has been advised of the possibilities of such damages. This document is intended for informational and instructional purposes only. MetaSensing reserves the rights to make changes in the specifications and other information contained in this document without prior notification.

