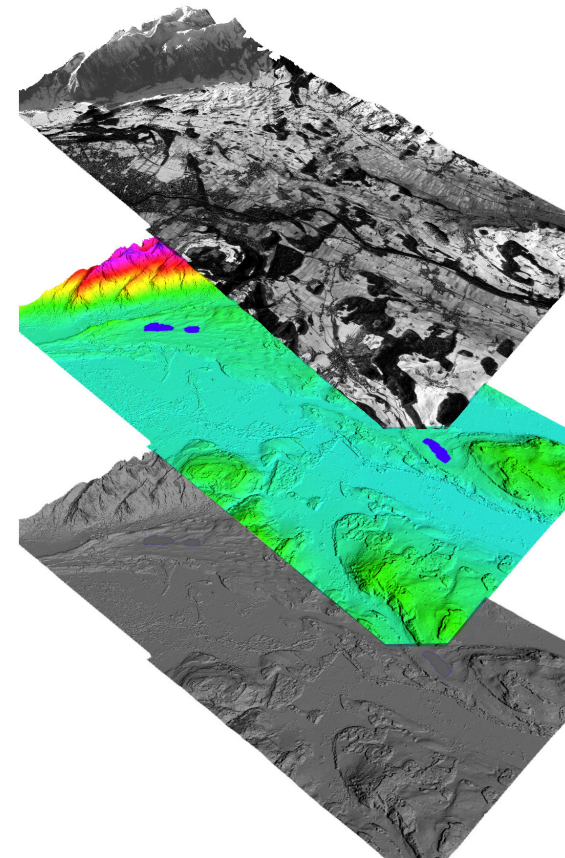# Report on the

Optical Sensors Cal/Val Session

held on November 19th, 2007, Kyoto, Japan

Session Chair: Prof. Clive Fraser
University of Melbourne, Australia

Session co-chair: Sultan Kocaman
ETH Zurich, Switzerland

Papers

❑ 7 papers in total are presented (4 on PRISM, 3 joint papers for PRISM and AVNIR-2)

❑ Koichi University, JAXA, and RESTEC from Japan

❑ ESA/ESRIN, GAEL Consultant, ETH Zurich from Europe

❑ East Carolina University, USA

❑ University of Melbourne, Australia

Headlines-I

<u>PRISM</u> Cal/Val Results:

Both JAXA investigations and independent research by PI groups (from ETHZ & the Univ. of Melbourne at this meeting) have shown that PRISM is performing to metric expectations and that recent developments have improved image quality (de-striping and new JPEG 'anti-blocking' filters). The geometric performance is basically:

a) Direct 3D georeferencing: 3-4 pixels (no GCPs)

b) Around 1.5 pixels with 1 GCP

c) Subpixel accuracy with rigorous sensor modelling, attitude bias correction and using 2 or more GCPs

These are results which are essentially consistent and even better than with other 2.5m resolution sensors like SPOT5 & CartoSat-1. In terms of pixel size, they are equally accurate with QuickBird and IKONOS.

Headlines -II

On PRISM DSMs:

JAXA/RESTEC & ETHZ investigations of DSM accuracy have indicated that 3-fold stereo on PRISM is producing DSM heighting accuracy of around 3-5m (1 - 2 pixels) in flat terrain, rising to about 2.5-3 pixels (6-7m) in mountainous terrain. Again, this is largely consistent with expectations.
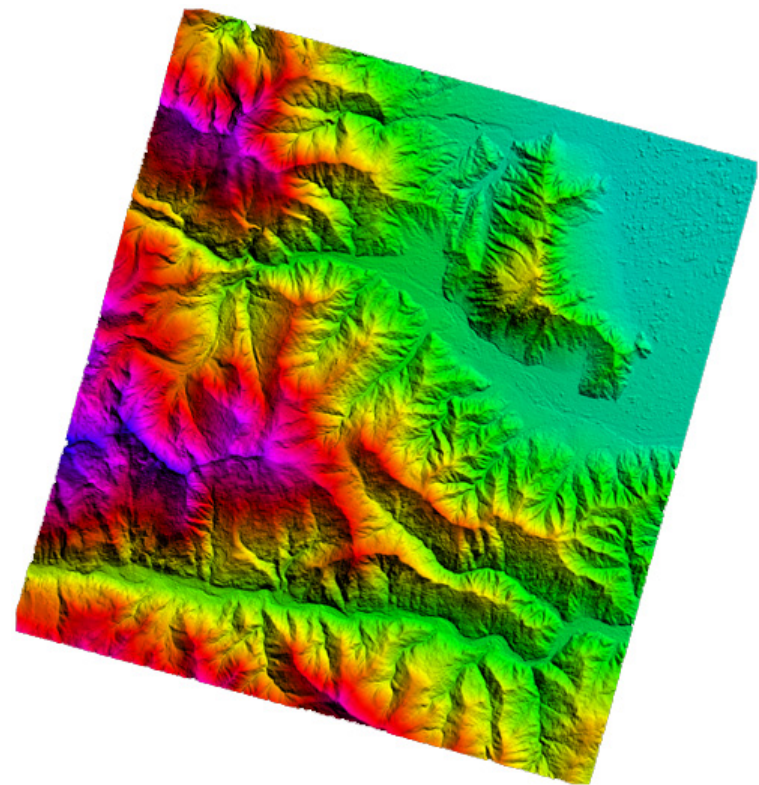
Headlines-III

On AVNIR-2:

- ESA/ESRIN reported that the image quality is fully in line with expectations and satisfactory

- Sensor alignment deviation of AVNIR-2 caused by the changes in STT coordinate system are under investigation by JAXA

Discussions

On PRISM:

1) A number of audience participants expressed a desire for the ALOS PRISM derived DSMs to be generated automatically as part of the standard processing chain and then to be made available for low/no cost. A problematic suggestion both because auto DSM extraction requires a lot of manual QC & clean-up, and RESTEC offers this as a commercial service.

2) Consider pre-merging 1B1 sub-images into single full-scene images. This makes things a little more easy for the user, also because full-scene 1B2 images are not suitable for precise georeferencing & DSM generation.

Many thanks to JAXA
for hosting the ALOS/PI Symposium!

S. Kocaman,   ALOS PI Joint Symposium, Closing Ceremony, 22 November 2007, ICC Kyoto