Geometric Validation of Sentinel-2 Products

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Abstract

This presentation details the recent activities performed by the Sentinel-2 Mission Performance Center and CNES to validate the Global Reference Image (GRI).

We first recall the concept of the GRI and how it can be used in the processing chain to improve multi-temporal co-registration. The GRI is produced by IGN, by global spatio-triangulation of a large set of Sentinel-2 images. The GRI is validated by IGN (internal validation) and an external team involving CS, Thales Alenia Space and CNES.

The validation activities include:

• Format and completeness checks (internal IGN, external CS)
• Absolute geolocation validation against independent ground control points (internal by IGN, external by CNES)
• Empirical multi-temporal performance assessment (Thales Alenia Space)
• Consistency assessment: tie-points residual analysis (internal IGN), assessment of overlapping ortho-rectified products (external CS and Thales Alenia Space) Thanks to these activities, some defects have been corrected and the geometric performance has been estimated globally.

We will present the latest validation status and draw some perspectives on Sentinel-2 geometric refinement.

Keywords - Calibration methodology and techniques