

Airbus Space Reference Points (SRPs): Orthorectification

Precise 3D information of any
location on Earth - Use Case





Airbus Space Reference Points (SRPs) represent our latest global reference layer product, delivering precision 3D information about any location on Earth.

Get the best-in-class orthorectified imagery

One of the key benefits of the SRPs is the ability to provide highly accurate orthorectified imagery, using highly accurate 3D coordinates and image chips to georeference assets and increase positional accuracy. Airbus applies an automated orthorectification process that uses the new SRP database and an Elevation Model, so called WorldDEM4ortho, to remove horizontal and vertical distortions from the data.

Working with raw data

Raw data from satellite imagery poses several challenges in the context of orthorectification. When captured by the satellite's sensors, the data may contain distortions caused by various factors, such as the satellite's orbit, sensor characteristics, and the Earth's curvature and terrain. These distortions

result in geometric inaccuracies, making it difficult to directly use the raw data for precise mapping and analysis.

To overcome these problems, orthorectification is employed to correct the raw data and eliminate distortions. Orthorectification involves applying mathematical transformations to the imagery, based on accurate GCPs, digital elevation models, and satellite image information. Combining these datasets with the new SRP database, along with accurate geometric and radiometric correction algorithms, enables the generation of orthorectified images that are geometrically superior, accurately georeferenced, and suitable for a wide range of applications, including geographic information systems (GIS), cartography, defence, and remote sensing analysis.

Unmatched accuracy and resolution

Our off-the-shelf SRP layer is created using SPOT 6/7 satellites. They deliver an unmatched image chip resolution of 2m, with an unprecedented accuracy of <3m CE90 on a global scale.

Benefits of SRPs-enhanced orthorectification:

- Enhanced geolocation accuracy
- Supporting mass-automated image-to-image matching
- Consistent image accuracy due to time series
- Free from geometric distortions
- Easily integrated with other raster or vector datasets enables accurate data combination and overlay

The database is available off the shelf, supporting any resolution and can register all kinds of optical images. SRPs support a broad range of mapping projects for orthorectification and mosaicking purposes.

5m
Vertical accuracy

Up to 10
Image chips

<3m
Horizontal accurate

2m
Resolution

**1GCP/
2km²**
High density

The SRP database is co-edited by the French mapping agency Institut National de L'Information Géographique et Forestière (IGN) and Airbus.

Airbus Defence and Space
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