

DEFENCE AND SPACE
Intelligence

Airbus Ground Control Points and Space Reference Points

Best in Class 3D Reference Data

SAP (S)

GCP (G)

AIRBUS

Get the highest level of precision for your data with Airbus Ground Control Points, complemented by a global database of Airbus Space Reference Points.

Be it mapping, aeronautics, defence, oil or gas mining, civil engineering or autonomous driving, we provide highly accurate 3D information anywhere on Earth.

Ground Control Points (GCPs)

Introduction

Ground Control Points (GCPs) provide precise 3D coordinates, with accuracy down to centimetre level, based on high-resolution stereo imagery from Airbus' Radar Constellation. Fully independent of weather conditions and daylight, GCPs can be extracted anywhere on Earth, at any time. GCPs are essential for accurate orthorectification of aerial, optical satellite imagery and drone data, as well as precise locating of ground features, landmark detection and target recognition.



Product Details

A Ground Control Point represents the specific geolocation of a fixed point/object on the Earth's surface, with specific geolocation accuracy across horizontal (2D) and vertical (3D) axes up to 10cm.

These objects are mainly infrastructure features (lighting poles, traffic signs, fences, etc.). The points can be used to link with corresponding elements in optical imagery or in situ measurements.

Benefits

- Precise orthorectification of optical imagery, elevation models and maps: supporting map scales of 1:2,500–1:10,000
- Geolocation accuracies up to 10cm in horizontal (2D) and vertical (3D) directions
- Increase optical imagery accuracies down to GDS (ground sampling distance)
- Reliable 3D information: supporting sensor data fusion and complementing in situ measurements

Operational Areas

- **Mapping:** Precise orthorectification of input data
- **Aeronautics:** Build and refresh airport runway databases
- **Defence:** Support of mission planning
- **Oil, Gas, Mining:** Localisation of potential exploration sites and pipeline corridors
- **Civil Engineering:** Infrastructure planning
- **Automotive Industry:** Support autonomous driving

Space Reference Points (SRPs)

Introduction

Space Reference Points is a global reference layer, consisting of a set of image chips, every 2 km², with a 3D centre coordinate.

The database is available almost everywhere across the world, supporting image and orthorectification processing and can register all kind of optical images even with poor native location.

Product Details

One SRP GCP is a point in 3D coordinates, along with a set of chips extracted from the SPOT6/7 available images. These allow an automatic and massive image registration process and ensures a geometric coherence between multi-temporal images with limited human interactions management. A large set of metadata is available ensuring quality, traceability and performance characteristics.

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

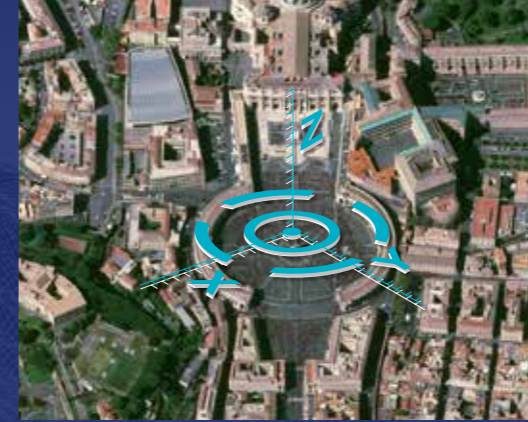


Benefits

- High density of GCPs and image chips: 1 Point min. every 2sq km
- SRP database accuracy is 3m CE90 (XY) and 5m LE90 (Z)
- Globally off-the-shelf available
- Unmatched resolution (2m) for a global Reference Layer
- SRPs supports massive image processing: for sensor modelling and orthorectification

Operational Areas

- **Satellite Operators:** massive orthorectification
- **Mapping organisations:** Large mapping projects
- **Aeronautics:** Precise airport data maps
- **Visualisation** and simulation applications
- **Defence:** weapon systems
- **Border security**
- **LBS (Location-Based-Services):** reference layer for mapping modelling and planning



Portfolio Overview

3D Reference Points



Product	SRPs	GCPs standard	GCP premium
Accuracy	3m CE90	<1m CE90	<20cm CE90
Coverage	Globally (excluding Antarctica)	1000km ² urban areas; 25km ² rural areas	25km ² urban areas
Point density	1 point /2km ²	10 points/1000km ² ; 10 points/25km ²	10 points/25km ²
Availability	Off the shelf	On demand	On demand
Optical Image chips	Yes (up to 10 chips/point)	On request (1 chip/point)	On request (1 chip/point)

