Remote sensing—via satellites, manned aircraft, unmanned aerial vehicles, or drones—has provided a wealth of new geospatial data to interpret and analyze. Analysts and operators know, however, that this data is often distorted, inaccurate, or misaligned. Sensor data needs to be georegistered, so it aligns with the real world.

Until recently, accurate 3D models representing the complete terrain of the world did not exist, and global models were prohibitively expensive to generate. Current methods of precision mensuration rely on stereo pairs of photographs, are labor intensive, and can’t always measure the z-factor where you need it, e.g., on the sides of buildings.

This paradigm, however, just changed. Vricon Precision 3D Registration (P3DR) synthesizes the Vricon Globe in 3D—a worldwide 3D foundation—with sophisticated algorithms to deliver fast, accurate, and reliable georegistration of your sensor data, anywhere.

Vricon’s 3D solutions depict the world the way it really is; we can help your data reflect this world accurately, too.

**FULL-MOTION VIDEO**

Vricon P3DR can be used with imagery from either single frames or full-motion video feeds and integrated in client and server environments ranging from ground control stations to onboard platforms. P3DR includes a certainty measure for all registrations as an indicator for nominal accuracy of the registered products. This feedback allows smart decisions to be made when poor image quality (e.g., abundance of clouds or other obscurations in the image to be registered) may result in suboptimal matching to the Vricon 3D model. We can also integrate a P3DR plugin with our Vricon Explorer software for stand-alone use.

**Vricon P3DR is a stand-alone software solution** to automatically georegister imagery to the Globe in 3D, a worldwide foundation with resolution of 50 centimeters or better and 3-meter accuracy in all dimensions. Our accuracy is as good in Pyongyang as it is in London or New York.

P3DR enables you to:

- Perform real-time sensor fusion. Data from each available platform and sensor are correlated automatically—API available for integration on platforms (black box) or desktops.
- Be fully operational in GPS-denied environments when P3DR is onboard your platform.
- Accomplish real-time georegistration of imagery that correlates your sensor data with our 3D model, enabling accurate coordinate mensuration and obviating the need for ground control points.
- Carry out accurate georegistration of both oblique and nadir imagery.

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ONBOARD INTEGRATION

Vricon’s P3DR is designed for implementation and processing onboard your platform, whether a satellite, manned aircraft, unmanned aerial vehicle, or drone. P3DR onboard implementations are tailored for each specific application and platform in collaboration with the platform supplier and your technical staff.

Your sensor’s extrinsic parameters (e.g., pose and rotation) and its intrinsic parameters (such as the field of view and geometrical distortions) are precisely modeled and updated in the process. Because our automated georegistration capability is based on image-registration techniques with the Vricon 3D Surface Model data as a reference, we can provide global coverage and outstanding accuracy. When your sensor data is processed on your platform, the georegistration results generate very precise positioning data that can be used immediately in integrated navigation solutions in a GPS-denied environment.

SENSOR TYPES AND FORMATS

- **FMV videos in real time**
  - MISP Standard 0601.4 UAS Datalink Local Metadata Set,
  - 2010 embedded in a mpeg – klv stream
- **Reconnaissance images**
  - NITF + RPC
  - TIFF + RPC
- **Satellite images**
  - Image data from DigitalGlobe, Airbus, and SIIS
  - TIFF + RPC
  (Other formats available on request.)

API

- Windows
- Linux

www.vricon.com