The ENVI Photogrammetry Module registers imagery to ground coordinates and geometrically corrects them to remove distortions that occur during image capture. This Module delivers a trusted, rigorous orthorectification method with robust capabilities and also provides a point cloud generation capability using a dense image matching algorithm.

**RIGOROUS ORTHORECTIFICATION**

The rigorous orthorectification function builds highly accurate orthorectified images by rigorously modeling the object-to-image transformation. The details of this transformation are mostly transparent to the user, which means the orthorectified images are created without defining any detailed model parameters. Rigorous orthorectification is implemented as a workflow wizard in desktop ENVI. Spacemetric designed the underlying block-adjustment model, which provides a precision orthorectification solution for over 30 different sensors and utilizes the metadata and ephememeris data provided with each dataset.

The workflow wizard allows the user to view the spatial layout of the input imagery, DEM, and ground control points (GCPs) along with the error magnitudes for each GCP (see Figure 1 at right). This enables adjustment of GCPs and tie points to improve the root mean square error (RMSE) of the orthorectified output.

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**Figure 1: Rigorous Orthorectification**

Workflow Layout Tool
About Harris Corporation
Harris Corporation is a leading technology innovator, solving customers’ toughest mission-critical challenges by providing solutions that connect, inform and protect. Harris supports government and commercial customers in more than 100 countries and has approximately $6 billion in annual revenue. The company is organized into three business segments: Communication Systems, Space and Intelligence Systems and Electronic Systems. Learn more at Harris.com.

FOR MORE INFORMATION:
HarrisGeospatial.com/ENVI
Email: geospatialinfo@harris.com
Phone: 303.786.9900

* The ENVI Photogrammetry Module is a collaborative module between Harris Geospatial and Spacemetric AB of Stockholm, Sweden and is available with a separate license.