

**INTERMAP**
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Feature Extraction

Feature Extraction from Intermap's Radar

Feature Extraction Process

Features extracted from satellite or airborne imagery are in high demand for a growing range of applications that includes hydrology, forest inventory mapping, urban infrastructure modeling, change detection, road mapping and many others. Intermap boasts one of the most accurate and highest resolution commercial radar imaging systems currently available. With a ground spacing of 50 centimeters and a spatial accuracy of better than two meters, Intermap imagery can produce highly accurate features at a fraction of the cost of the leading providers of optical satellite imagery.

Radar images are capable of penetrating through cloud and haze to provide seamless imagery of high geometric and radiometric quality making these images an excellent choice for feature extraction. High accuracy feature extraction

Key Benefits and Features



100% Cloud-free Imagery

Benefit from Intermap's cloud-free imagery for unobstructed feature collection in the tropical cloud belt and all other locations where optical sensors fall short.



Homogenous Seamless Imagery

Intermap's Radar imagery is seamless and homogenous across entire regions further enhancing quality feature extraction.



High-Resolution Imagery

Intermap boasts the highest resolution commercial radar imaging systems with 50 centimeter ground spacing and spatial accuracy better than 3m CE90.



Under Canopy Imagery

Intermap's P-band Radar imagery can be used to extract features hidden under forest canopies.

techniques are significantly enhanced by the inclusion of additional data sources to help differentiate one feature type from another. In addition to high resolution imagery, Intermap also provides Digital Surface Model (DSM) and the Digital Terrain Model (DTM) elevation data posted at one and five meter spacing with a vertical accuracy of better than one meter. Elevation differences between the DSM and DTM can be leveraged to highlight features in agricultural regions, forests or dense urban areas to augment visual feature identification in the imagery alone.

Another benefit of using Intermap's elevation data and imagery together is that they are collected at the same time and are perfectly geo-registered. This increases the geo-positional accuracy of extracted features and eliminates any effort required to geo-register the three data sources.

Built on the NEXTMap Foundation

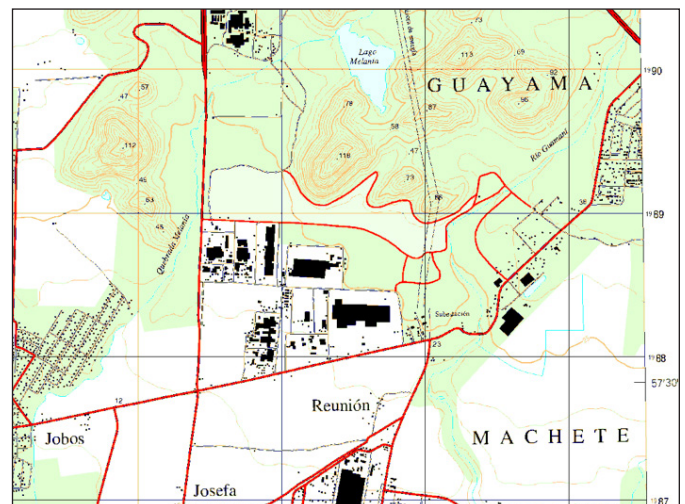
The basis of our feature extraction service is our high-accuracy NEXTMap 3D terrain data. This includes digital elevation models (DEMs) with vertical accuracies starting at 1m LE90 and orthorectified radar images with ground resolution up to 50 cm and a spatial accuracy of better than 3m CE90. The data are wide-area and optimized to ensure seamlessness and consistent results.

Wide Area Mapping Through Target Data Resolutions

Intermap's feature extraction service can also leverage multiple elevation and image datasets of differing resolutions and specifications to target high value areas such as cities, corridors and critical flood plains with higher spatial resolution data while providing wider area or rural coverage from NEXTMap IFSAR data.

Potential applications include:

- Transportation network mapping
 - o High resolution radar imagery makes it possible to extract features such as roads ranging from low traffic rural routes to major urban thoroughfares
- Hydrology network mapping
 - o Radar signals typically reflect off water surfaces providing sharp contrast between water surfaces and adjacent shorelines to enhance water feature collection
- Forestry inventory mapping
 - o High resolution radar imagery enables accurate forest stand delineation
- Urban infrastructure mapping
 - o Imagery at 50cm resolution allows for identification of most urban and residential features
- Change detection
 - o IFSAR DSM and DTM elevation models can be leveraged to pinpoint temporal changes in both rural and urban environments



*Intermap's **Feature Extraction** coupled with high resolution Radar imagery provides all features necessary for topographic line map and other thematic mapping applications.*

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