



# Observera

*t o s e e t h e t r u t h*

## Services

## Expertise

Observera delivers to our customers a rich understanding of core remote sensing disciplines. From sensor technologies to imagery analysis to photogrammetry to imagery science, GIS, and advanced processing techniques, our employees individually bring technical depth and understanding of many specific imagery and geospatial fields, while our customers enjoy access to the collective strengths of our entire workforce.

### Spectral and Polarimetric Imagery

High-resolution spectral and polarimetric imagery can make significant contributions to information extraction for remote sensing applications. Observera's customers benefit from our exceptional image science expertise in these areas. Our image scientists work across the board on these sensor technologies - in theory, techniques, algorithms, analysis, and applications. Dr. Mary Kappus, a Senior Image Scientist at Observera, was one of the scientists on the Navy's PHILLS HSI sensor program, and is currently one of the foremost authorities on optical polarimetric imagery. ALLEGRO, a system developed by Observera for the US Army Topographic Engineering Center, packages the expertise of a spectral image scientist into an easy to use workflow designed for land-cover / land-use classification by junior military personnel. Among our specific skills are spectral calibration, materials classification, spectral-spatial analysis, signature extraction, spectrally accurate resolution enhancement, atmospheric and illumination correction, and search.

### Photogrammetry

HighPhotogrammetry and geomatics are core elements of Observera's technical capabilities, forming a foundation for many of our activities, just as they are a foundation for much of geospatial information processing and analysis. Our personnel are well-versed in photogrammetric science and engineering - including both theory and practice. We have developed numerous sensor models for airborne and satellite platforms, including both passive and active sensor systems, and have developed unique framework concepts for large-scale photogrammetric workflows. We have also built an automated triangulation / registration software library that can be used to implement data fusion and change detection processes. Each year, we also perform a significant number of independent evaluations of sensor and metadata accuracy for our customers, as well as assessments of various other collection capabilities, such as stereo parameters, resolution, sampling, error propagation, geometric calibration, and collection strategies. In addition, our work in Radargrammetry is at the forefront of efforts to standardize SAR geometry models and unify metadata standards for SAR geopositioning.



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*to see the truth*

## Services

### Geology

Several Observera personnel have special expertise in the geologic sciences, which play a part in a number of remote sensing activities. Our knowledge and experience with various aspects of geology, including geomorphology, hydrogeology, geophysics and geologic standards, enhances our ability to support analysis and assessment for various problems that utilize geologic information, such as underground facilities, water supply analysis, soil analysis, trafficability studies, broad area search, and natural resource exploration. Our Award-Winning Geologic Database Project for NGA exemplifies our ability to merge our geologic proficiency with other geospatial skills and community needs. For this project, we established requirements for and then developed a geologic data layer to be incorporated into the Geospatial Knowledge Base (GKB). The data base incorporates 'best practices' by implementing a derivative of the data schema and scientific terminology of the North American Data Model Concept 1, which has been developed by the USGS and is being adopted internationally for geologic data.

### Synthetic Aperture Radar (SAR)

SAR makes critical contributions to both military and civilian remote sensing, and it plays a major part in Observera's past and current activities. We have been and continue to be major participants in SAR studies and in the application of SAR methods to challenging problems. Our contributions range from architecting next generation SAR processing frameworks to evaluating new SAR sensors to applying advanced geospatial intelligence (AGI) processing and analysis techniques. Our AGI analysts assist imagery analysts in understanding the unique contributions of SAR AGI and provide cradle-to-grave support for analysis projects, including collection strategy development, data acquisition, processing management, analysis, and reporting assistance.

### Training

Quality training is key to the success of any organization, and Observera's customers benefit from our formal and informal training activities. We offer training programs in a number of areas, usually tailored to the specific needs of our customers and often included as part of an entire service contract. Some of the training packages available include Imagery Analysis, Geomatics and Photogrammetry, Spectral Imagery, Polarimetry (EO and SAR), Understanding SAR, SAR AGI, Change Detection, and Mapping, as well as training on any of the software products that we offer.

Observera is a small business in the Washington DC area with a 12 year track-record helping the defense and intelligence community perform their missions. We specialize in imagery and geospatial information. We deploy ideas and exploit systems that allow our customers to achieve their demanding goals. To discover your vision with "Intelligent GEOINT", contact Observera today.