

Edgybees® georegistration in the GXP® Ecosystem

Providing a single and reliable source of truth for geospatial positioning across video, imagery, and reference maps

Geospatial data is critical to situational awareness and decision-making, but it is often compromised by distorted location data, especially across disparate sensors. Addressing this challenge, BAE Systems' Geospatial eXploitation Products™ (GXP®) integrates Edgybees georegistration AI to automatically enhance the georegistration accuracy of satellite imagery (including Synthetic Aperture Radar) and aerial video in real time.

Rapid georegistration

Automatically register satellite imagery or aerial video without human intervention, improving the accuracy of the geopositioning metadata to enhance speed-to-decision workflows and interoperability in the GXP Ecosystem. Edgybees SKY and MX ensure accurate processing for both satellite imagery and Full Motion Video (FMV) sources, respectively.

Accuracy and precision

Ensure satellite imagery accuracy within 2 pixels of actual positioning, SAR C-band and L-band pixel positioning on the GXP grid with sub-meter accuracy, and FMV precision down to 1 meter accuracy. Edgybees georegistered data, combined with GXP's precise mensuration capabilities, deliver mission-critical accuracy.

Automated workflows

Accurately georegistered data is the first step for data pipelines, AI/ML workflows, interoperability, and deeper analysis. Available on-demand, as an automated data ingest workflow, and via API, Edgybees image georegistration can be initiated from GXP Xplorer® on defined data sets, while GXP InMotion™ supports UDP from Edgybees with KLV metadata for processing of FMV data.

Sensor and mode agnostic

Support for government and commercial satellite imagery, including SAR C-band and L-band, plus Electro-Optical (EO) and Infra-Red (IR) day/night payloads for FMV. Align multiple types together with other GIS layers (e.g. roads, EO imagery, and video) on top of SAR imagery for enhanced contextual understanding.

Automatic correction of every pixel for higher quality analysis and decision-making



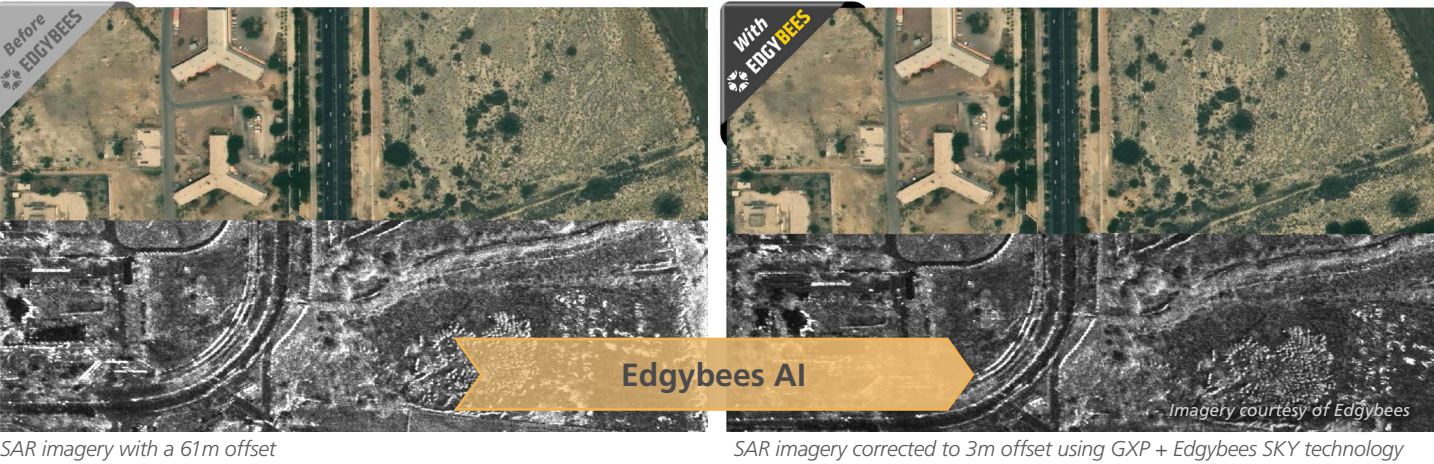
Original, uncorrected image. Location features are off by 80m.



Edgybees georegistered image. Precise location features within <1 pixel.

Synthetic Aperture Radar (SAR) georegistration

Deliver actionable insights and geospatial precision for mission-critical operations, regardless of weather conditions or time of day.



C-Band (4-8 GHz; 7.5-3.8cm)

For global mapping, change detection, and moderate penetration monitoring.
Applications: Ice, ocean maritime navigation, areas requiring higher coherence.

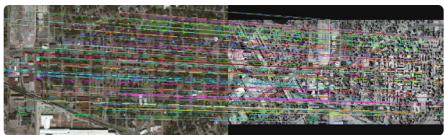
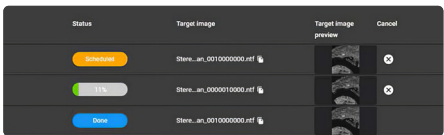
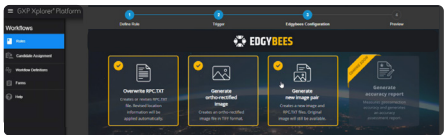
L-Band (1-2 GHz; 30-15cm)

Medium-resolution, notable for high penetration capabilities.
Applications: Geophysical monitoring, biomass, and vegetation mapping.

Workflow automation for better data pipelines

Enrich your data streams automatically with GXP Xplorer and Edgybees georegistration job service workflows.

- 1 Select GXP workflow automation(s)
- 2 GXP jobs run Edgybees on incoming data
- 3 Edgybees AI detects and aligns features in frame



Full Motion Video (FMV) corrected to 1m by Edgybees MX.

Integrating Edgybees technology into the GXP Ecosystem delivers:

- » **Superior image accuracy:** Achieve sub-pixel georectification, ensuring precise image alignment for critical analysis.
- » **Rapid image processing:** Process high-resolution images in minutes, boosting operational efficiency without compromising quality.
- » **Universal format support:** Seamlessly integrate common image formats for flexibility across various workflows.
- » **Advanced object detection:** Leverage our GXP Xplorer plugin for cutting-edge object detection and algorithms, enhancing analysis capabilities.
- » **Scalability and efficiency:** Optimize performance across diverse use cases, improving decision-making speed and accuracy.

Supported data types	System specs	Performance metrics
Image input file types: GeoTIFF, JP2, NITF	Minimum: High-end PC with NVIDIA RTX, Tesla, Quadro 8GB+	Imagery (SKY): 2.5 Megapixels per 10 seconds (on average)
Required over area: Ortho-rectified imagery, Terrain (DEM/DTM)	Recommended: GPU-enabled Cloud or Server hardware	FMV (MX) [video-in to video-out]: 120ms
Streaming: MISB 0601		Interpolation: 220ms
Codec: H.264		

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