

# How Satlantis Tripled Its Satellite Imaging Capacity with Dotphoton Jetraw Core

## Key results

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300–400% increase in image acquisition

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3.5× increase in daily coverage — from 54 000 km<sup>2</sup> to 175 000 km<sup>2</sup> per day

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Increased on-board storage & 3× lower CO<sub>2</sub> footprint

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## The Challenge

Satlantis provides high-resolution Earth-observation imagery for environmental and industrial monitoring. As demand for higher resolution and wider coverage increased, the company faced a critical constraint: raw image data volumes exceeded available onboard storage and downlink capacity.

Conventional “visually lossless” compression reduced file sizes but discarded subtle pixel-level information essential for scientific analysis and AI-based applications.

To scale imaging capacity without new hardware or additional satellites, Satlantis needed a solution that significantly reduced data volume while preserving full image fidelity within strict space-mission constraints.

## The Outcome

In April 2024, Satlantis upgraded its GEISAT precursor satellite with Dotphoton’s Jetraw Core via a remote firmware update. The software-only integration increased the amount of usable image data the satellite could capture and downlink — without any hardware changes.

Satlantis can now acquire and transmit 3–4× more image data per mission while preserving the full quality of raw image data, reducing the impact of downlink limitations and improving mission efficiency.

“This collaboration with Dotphoton will increase the throughput of our very high-resolution data acquisition and belongs to our commitment to constantly upgrade the performances of our missions for our customers through innovation and operational efficiency.”



— Juan Tomas Hernani,  
CEO of SATLANTIS



## SATLANTIS

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Headquarters	Leioa, Spain
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Founded	2013
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**Imaging techniques:** The satellite monitors infrastructure across various sectors, including oil and gas, biogas, landfills, and power infrastructure, targeting the main contributors to methane emissions: agriculture, fossil fuels, among others.

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**Instruments:** GEISAT features the iSIM-90 VNIR/SWIR camera, enabling simultaneous VNIR and SWIR imaging at 2 m and 5 m resolution, with 13 m resolution for methane products.

### More data, cheaper, faster — 3 to 4x

Using Jetraw Core, Satlantis increased data throughput, achieving a 300–400% increase in image acquisition. By significantly reducing image file sizes, Jetraw Core lowers bandwidth requirements and enables faster and more cost-effective downlink.

This improvement allows Satlantis to optimize bandwidth usage and overall throughput within existing mission constraints. As a result, the GEISAT satellite can now download up to 55,000 frames per day, compared to approximately 15,000 frames previously.

### Increased daily coverage — 3.5x

The increased data throughput enabled a significant expansion of daily imaging coverage. GEISAT increased coverage from approximately 54,000 km<sup>2</sup> per day to 175,000 km<sup>2</sup> per day, representing a 3.5x increase.

This expansion substantially enhances Satlantis' Earth-monitoring capabilities by enabling broader geographic coverage within the same mission framework.

### Lower km<sup>2</sup> carbon footprint ~ 3x

By transmitting more usable data per downlink, Satlantis now emits approximately 3x less CO<sub>2</sub> per square kilometer of satellite imagery. This represents a significant improvement in the sustainability of its operations relative to the initially planned emissions budget.

The reduction aligns with Satlantis' broader objective of delivering satellite data in a more environmentally sustainable manner.

“We continuously push the boundaries of innovation in Earth observation, and integrating Jetraw's advanced compression technology into our GEISAT innovative mission is another example of this commitment. This collaboration strengthens our ability to set new industry standards, ensuring that SATLANTIS remains at the forefront of sustainable, next-generation space imagery, empowering the future of Earth monitoring.”



— Aitor Conde,  
Chief Technology Officer  
SATLANTIS

S A T L A N T I S

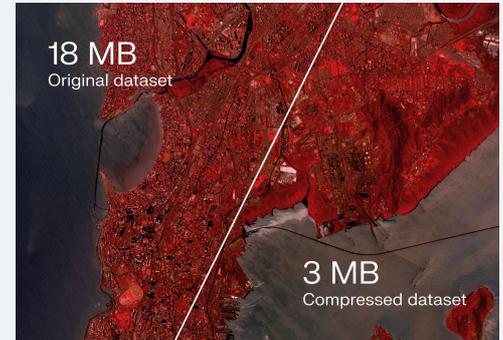


IMAGE ACQUIRED IN 2024 ON GEISAT  
AND COMPRESSED WITH JETRAW CORE

Image over India (18.6744131670765,  
73.47714949631047)

[Learn more](#)



## About Jetraw Core

An on-device solution for camera and instrument manufacturers, optimising image performance and user experience without compromising quality.

- Up to 6:1 compression ratio with raw image quality preserved
- Faster downlink and processing with minimal resource usage
- Hardware and software integration optimized for ML/AI

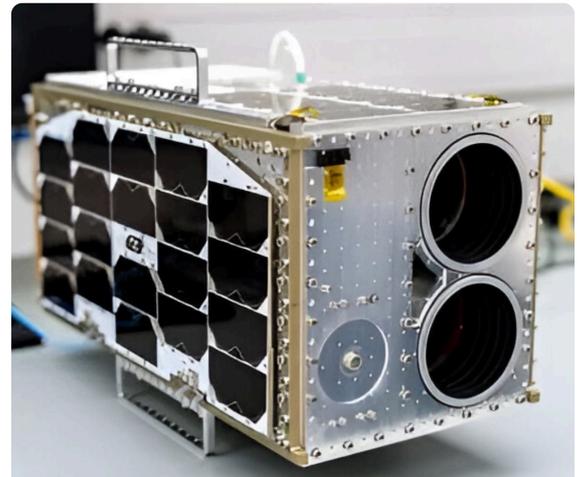
## Key characteristics

### Compression speed

- FPGA:  
6.4 Gpx/s with 32-pixel parallel
- Software:  
6.2 GB/s (Intel i9 14900k)

### Data quality

- No artefacts
- No bias
- No filtering



Satlantis GEISAT Precursor satellite

## Collaborations and Partners



Jetraw Core – unlock the true power of your satellite images for AI

[dotphoton.com/aerospace](https://dotphoton.com/aerospace)

Contact us: [jetraw@dotphoton.com](mailto:jetraw@dotphoton.com)