



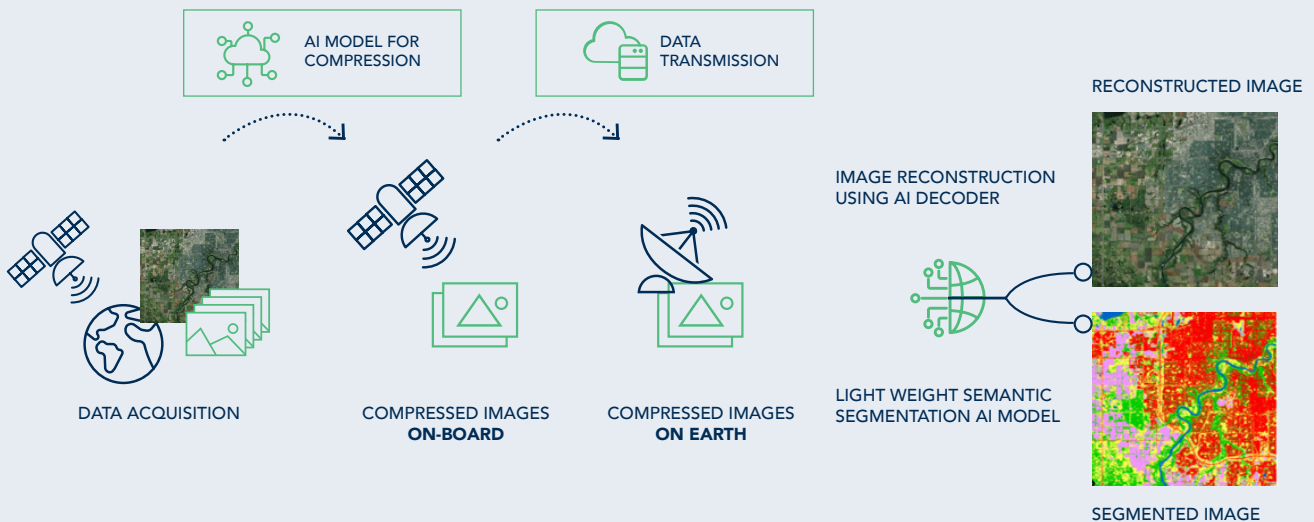
CORSA

EO DATA AI-BASED
COMPRESSION &
ANALYTICS

REVOLUTIONIZING EO WITH AI-DRIVEN DATA COMPRESSION

CORSA introduces a revolutionary AI-based method for near-lossless image compression and analysis of Earth observation data, optimizing storage use and enhancing data processing efficiency.

THE CORSA PROCESSING FLOW



EFFICIENT DATA USE

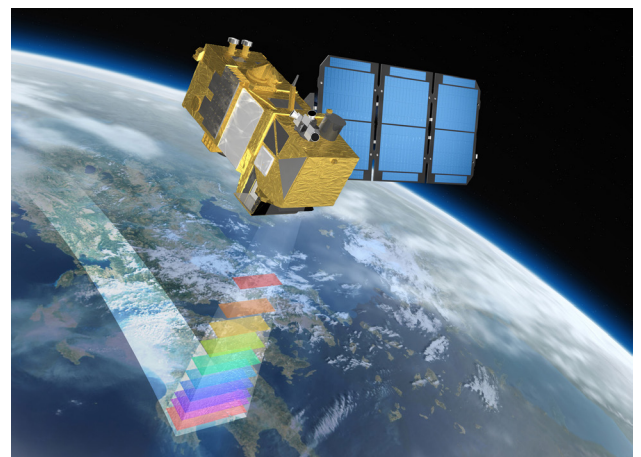
Greatly reduces the volume of data that needs to be transmitted and stored, up to 100x compression.

HIGH-QUALITY RECONSTRUCTION

Maintains high image fidelity with minimal quality loss.

VERSATILE APPLICATION

Supports a range of downstream tasks like land use classification, change detection and natural disaster mapping directly from compressed data.





KEY FEATURES

AI-DRIVEN COMPRESSION

Implements a novel deep learning architecture to compress optical EO imagery into compact vectors.

EDGE COMPUTING

Reduces data transmission needs by processing data closer to the source.

SELF-SUPERVISED LEARNING

Models learn image representations without needing human-labeled data, adaptable on-board with incremental finetuning.



TARGET AUDIENCE

Space agencies, EO satellite and data providers, environmental monitoring organizations, and research institutions involved in Earth observation.

This technology enhances efficiency and reduces costs for space providers and space agencies.

It paves the way for advanced AI in future space missions and will expand into hyperspectral data analyses, broadening its impact across EO sectors.



OFFERED SERVICES

- + **CUSTOM TRAINED MODELS FOR NEW SENSORS:**
Tailored for efficient onboard integration with a custom ground decoder.
- + **PRETRAINED MODELS FOR EO PORTAL:** Optimizes large-scale EO data storage and processing.
- + **DOWNSTREAM APPLICATION AI:** Provides templates for training algorithms on compressed vectors.
- + **PROTOTYPE TO COMPRESS SENTINEL-2 IMAGES WITH THE CORSA ALGORITHM:**



Via the notebook at the CORSA Github



As a service via Terrascope



TECHNICAL SPECIFICATIONS

- + **SUPPORTED SENSORS:** Sentinel-1, Sentinel-2, EnMAP, PRISMA
- + **CORE ALGORITHM:** Lightweight Adapted and quantized VQVAE-2 architecture
- + **PERFORMANCE:** e.g. EnMAP 54 VNIR bands, 128x128 frame: CPU: (intel i5 1335u) 74ms / frame, GPU (Iris Xe embedded) 27ms / frame



PRICING

Details are project-specific and available upon request.



CASE STUDIES

Success stories and detailed benefits are illustrated through case studies, available for review in project-specific documentation.



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Feel free to contact us
remotesensing@vito.be



@VITO_RS_

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remotesensing.vito.be