



**THEIA**

**GeoAI for Security**

**Enhancing Copernicus Security Services -  
EU governmental crisis management hub  
for forced population displacement**

# Project Description

THEIA is a cutting-edge initiative funded under the Horizon Europe programme, aimed at enhancing the European Union's **crisis management** and **security capabilities**. Addresses complex challenges such as **forced population displacement**, **climate-driven emergencies** and **geopolitical conflicts**.

**Multi-source data:** Satellite imagery, Satellite optical video, Radio frequency signals and Crowdsourced data + **Geospatial Artificial Intelligence (GeoAI)** and **Machine Learning**, THEIA supports **informed decision-making** for a wide range of end-users like CSS Entrusted Entities as SATCEN and Frontex, national ministries, intelligence agencies and international organisations.

# Products

1. **GeoAI-Powered THEIA Platform:** A modular, intelligent system for automated crisis detection and analysis.
2. **Advanced Sensor Integration and RF signal exploitation:** Enables motion tracking and detailed scene interpretation in dynamic crisis zones.
3. **Multi-source Data Fusion (EO, AIS, RF):** Integrates diverse data streams for comprehensive situational awareness.
4. **Decision Support Tools (DSS):** Translates raw data into actionable insights tailored to end-user needs.



## Multisource procedure & GeoAI

Combination of high-value data sources :

- **Earth Observation data** from Copernicus and Copernicus Contributing Missions
- **Satellite optical video**
- **Radio Frequency (RF) data** for activity detection in denied or low-visibility areas
- **Crowdsourced data**
- **Advanced computing infrastructure** to support large-scale data processing and real-time analytics

THEIA employs a multi-layered, technology-driven approach that includes:

- **Data Fusion and Integration:** Multi-temporal and multi-modal datasets are aggregated
- **Geospatial Artificial Intelligence (GeoAI):** AI and Machine Learning models are developed and trained to detect displacement patterns, abnormal activities, and emerging crises with high accuracy.
- **Automated Processing Pipelines:** Modular and scalable processing chains

# Consortium



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## Contact The THEIA Team

Mail: [I.panagiotopoulou@geosystems-hellas.gr](mailto:I.panagiotopoulou@geosystems-hellas.gr)

Project Coordinator: Liza Panagiotopoulou

Geosystems Hellas SA

Address: 225 Imittou Street P.O. 116 32 Pangrati,  
Greece



[@theia-project.eu](https://theia-project.eu)



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