PROGRAMME OF THE EUROPEAN UNION

THEIA

GeoAI for Security

In a nutshell

THEIA addresses critical challenges: conflict-driven displacement, intensified by climate change and resource scarcity. By integrating **GeoAI**, **Machine Learning, and multi-source data fusion—including satellite video and RF signal exploitation and crowdsourced data** THEIA is delivering timely, high-resolution insights for crisis monitoring. These technologies enhance detection capabilities in dynamic or hard-to-access environments. Through its modular, user-driven approach, THEIA adapts to evolving policy needs while supporting decision-making at EU, national, and local levels.

Objectives

Enhance Copernicus Security Services fitness to better respond to evolving policy and user requirements.

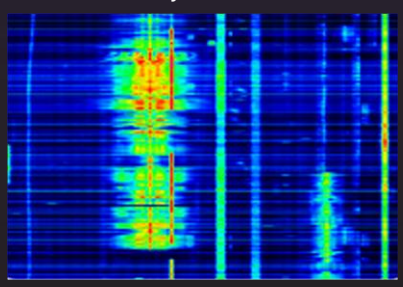
Improve response to displacement and disaster by boosting community and institutional resilience.

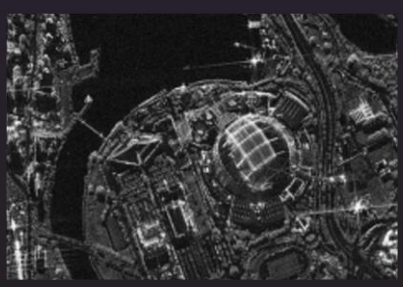
Advance EU capabilities in satellite videos, RF data and smart security .monitoring.

Open new markets for crisis services and strengthen Europe's EO-based. service economy.

Deliver innovative products:

1. **THEIA GeoAI Platform**: A modular, intelligent system for automated crisis detection and analysis.
2. **Satellite Video Analytics**: Enables motion tracking and detailed scene interpretation in dynamic crisis zones.
3. **RF Signal Exploitation**: Provides surveillance capabilities in low-visibility or signal-denied environments.
4. **Multi-source Data Fusion (EO, AIS, RF)**: Integrates diverse data streams for comprehensive situational awareness.
5. **Decision Support Tools (DSS)**: Translates raw data into actionable insights tailored to end-user needs.





Accomplishments

THEIA is delivering early operational components of its modular processing pipelines, integrating GeoAI, data fusion, and automation to support crisis monitoring. In collaboration with CSS Entrusted Entities, the project has outlined initial user requirements—focused on challenges like conflict-driven displacement and climate-related events—while identifying relevant technological gaps. Initial demonstrations show its ability to fuse satellite imagery, RF, and open-source data for security and humanitarian use. With a scalable, user-driven design, THEIA lays the groundwork for next-generation Earth Observation aligned with Copernicus Security Services.

Learn more

Funded by the European Union

This project has received funding from the European Union's Horizon Europe research and innovation programme under GA 101190051. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.