



**GeoAI for Security**

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

Newsletter N° 1 – November 2025

### Welcome to the first issue of the THEIA Newsletter!

We are excited to launch this series of updates, where we will share key project milestones, events, progress, and insights from the consortium. THEIA aims to enhance Copernicus Security Services and deliver an EU governmental crisis-management hub dedicated to supporting forced population displacement scenarios. Through these newsletters, we look forward to keeping stakeholders and the wider community informed throughout the journey.

**Project start:** December 2024

**Project duration:** 30 months

**Expected end:** May 2027

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.

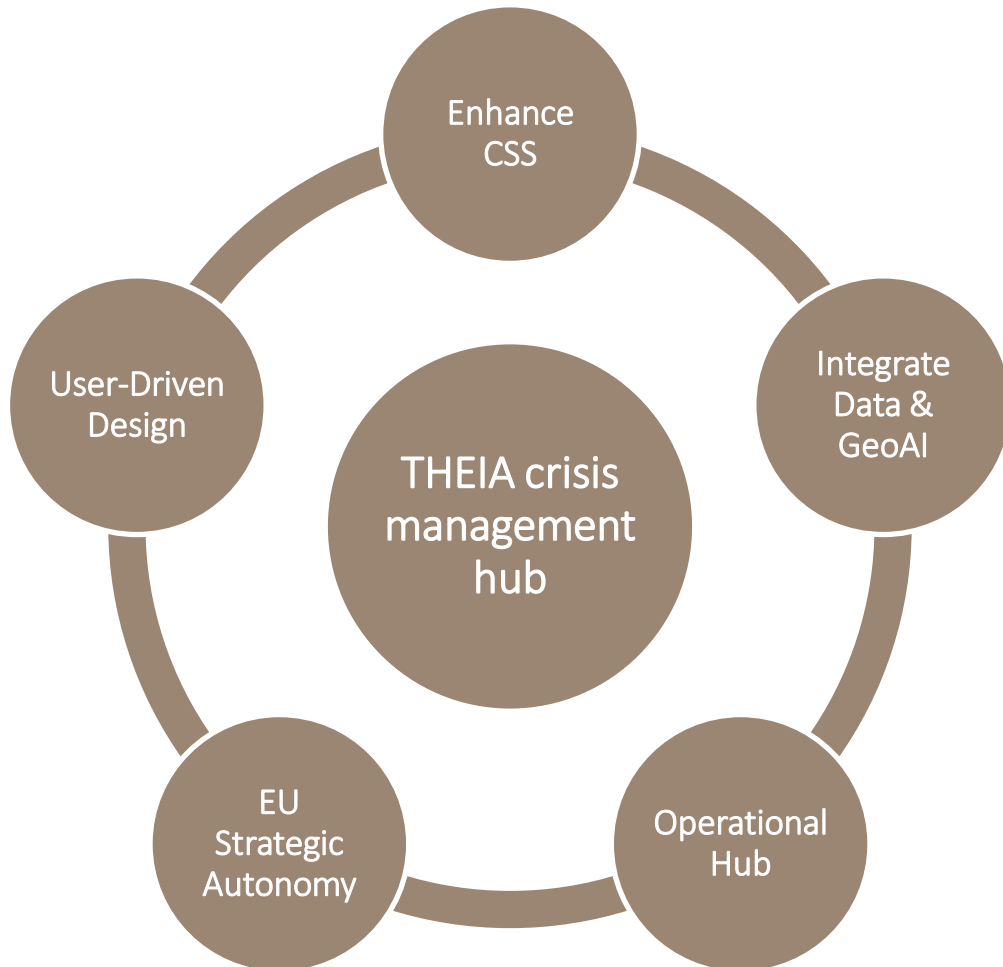


Funded by the  
European Union



# THEIA

## Mission and Objectives



### THEIA Mission

THEIA aims to enhance Copernicus Security Services (CSS) by developing an integrated EU governmental crisis-management hub dedicated to supporting forced population displacement scenarios. Leveraging multi-temporal Earth Observation data, advanced data fusion, GeoAI, and machine-learning-based analytics, THEIA strengthens situational awareness and early detection capabilities across Europe.

[www.theia-project.eu](http://www.theia-project.eu)  
Coordinator: Geosystem Hellas S.A  
Mrs. Liza Panagiotopoulou



# THEIA Meetings



The **THEIA kick-off** meeting was hosted on the 3<sup>rd</sup> and 4<sup>th</sup> December 2025 in Athens (Greece). All partners attended the event. This event officially launching our collaborative efforts toward Enhancing Copernicus Security Services and provide an EU governmental crisis management hub for forced population displacement.

The first THEIA Plenary Meeting was hosted on 23<sup>rd</sup> and 24<sup>th</sup> June 2025 (M7) in Vienna (Austria), where Austrian Institute of Technology (AIT) is based. All partners attended this meeting. During the event, the THEIA consortium reviewed the progress, shared insights, and aligned on the next steps toward delivering cutting-edge Earth Observation tools and more.



**Fig.1** THEIA kick-off meeting



**Fig.2** THEIA first plenary meeting

## Planned events:

- ✓ The next THEIA consortium meeting (M15) will take place in Luxemburg, Luxemburg.



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# Dissemination Activities



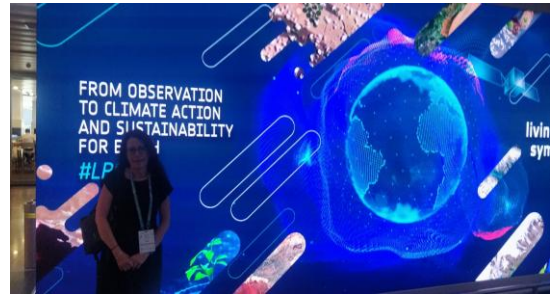
## ✓ Events

The THEIA consortium participated in several workshops ... some pictures of the events:



**Fig.3: Workshop on Research for Security Applications**

This workshop was held on October 22. The THEIA project was presented by Betty Charalampopoulou, CEO and President of Geosystems Hellas, which is the Coordinator of the project.



**Fig.5 LPS25 - X5 poster area**

THEIA was presented with a poster in Session D.02.05: “EO-based solutions to address civil security-related scenarios” on June 25, from 17:45 to 19:00 (CEST) in the X5 Poster Area.



**Fig.4 Living Planet Symposium**

THEIA was featured with an e-poster at the Living Planet Symposium 2025 in Vienna, June 23–29. DG DEFIS stand explored HaDEA’s Earth Observation projects, including ours.



**Fig.6 10 years of Copernicus at Frontex**

THEIA took part in the celebration of 10 years of Copernicus at Frontex in September 2025. An inspiring event highlighting the evolution of Copernicus services and their role in supporting border security, resilience, and innovation across Europe.



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# Printed Materials

✓ Conference Posters

The THEIA consortium created several posters for the events.



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

Berly Charalampopoulou<sup>1</sup>, Liza Panagiotopoulou<sup>2</sup>,  
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**Introduction**

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

**Discussion**

THEIA represents a strategic step forward in enhancing the European Union's ability to manage complex security and humanitarian challenges. By combining cutting-edge technologies, THEIA supports enhanced decision-making for a wide range of end-users, including SACSEN and Frontex, national authorities, intelligence agencies and research institutions.

**Aims & Objectives**

**Aims of THEIA**

1. Enhance the EU's capacity to respond effectively to security crises and forced population displacement.
2. Support autonomous, timely and data-driven decision-making through advanced Earth Observation services.
3. Strengthen Europe's strategic independence in space-based technologies and services.

**Objectives of THEIA**

- Enhance Copernicus Security Services' resilience to better respond to evolving policy and user requirements.
- Create beyond State-of-the-Art reusable information tools tailored to users' needs.
- Integrate of GeoAI and Earth Observation data analysis with a variety of other application-specific data sources.

**Materials & Methods**

Combination of High-Resolution Data Sources:  
 - Earth Observation Data from Copernicus and Copernicus Contributing Missions.  
 - Satellite optical video.  
 - Multi-Frequency (RF) data for activity detection in forests or low-visibility areas.  
 - Advanced computing infrastructure to support large-scale data processing and real-time analysis.

THEIA employs a multi-layered, technology-driven approach:  
 - Data Fusion and Integration: Multi-modal and real-time datasets are aggregated.

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**PROGRAMME OF THE EUROPEAN UNION**

**THEIA**

**In a nutshell**

THEIA addresses critical challenges: conflict-driven displacement, environmental crises, climate change and resource scarcity. By integrating GeoAI, Machine Learning, and multi-source data fusion, THEIA enhances detection capabilities in dynamic or low-visibility environments. Through its modular, data-driven approach, THEIA adapts to varying policy needs, from supporting decision-making at EU, national and local levels.

**Objectives**

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

Improve response to displacement and 2nd priority of border security and humanitarian assistance.

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

Open new markets for EO services and strengthen Europe's resilience to external security.

**Deliver innovative products**

1. THEIA GeoAI Platform: A multi-modal and real-time decision and analysis.
2. Satellite Video Analytics: Real-time video analysis for activity detection in forests and low-visibility areas.
3. RF Signal Evaluation: Forest-based video analysis for activity detection in forests and low-visibility areas.
4. Multi-source Data Fusion (EO, AIS, RF) Integration: Multi-modal and real-time decision and analysis.
5. Decision Support Tools (DSTs): Real-time decision support tools for activity detection in forests and low-visibility areas.

**Accomplishments**

THEIA is delivering critical capabilities: conflict-driven displacement, environmental crises, climate change and resource scarcity. By integrating GeoAI, Machine Learning, and multi-source data fusion, THEIA enhances detection capabilities in dynamic or low-visibility environments. Through its modular, data-driven approach, THEIA adapts to varying policy needs, from supporting decision-making at EU, national and local levels.

Learn more

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

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<sup>1</sup>Geosystems Hellas SA  
<sup>2</sup>European Union Satellite Centre

**Project Description**

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

**Products**

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

**Multisource procedure & GeoAI**

Combination of High-Resolution Data Sources:  
 - Earth Observation Data from Copernicus and Copernicus Contributing Missions.  
 - Satellite optical video.  
 - Multi-Frequency (RF) data for activity detection in forests or low-visibility areas.  
 - RF data and smart security monitoring.  
 - Advanced computing infrastructure to support large-scale data processing and real-time analysis.

THEIA employs a multi-layered, technology-driven approach that includes:  
 - Data Fusion and Integration: Multi-modal and real-time 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 reusable information tools tailored to users' needs.

**A tool that support Decisions**

**Aims of THEIA**

1. Enhance the EU's capacity to respond effectively to security crises and forced population displacement.
2. Support autonomous, timely and data-driven decision-making through advanced Earth Observation services.
3. Strengthen Europe's strategic independence in space-based technologies and services.

**Objectives of THEIA**

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GEO Global Forum 2025

LP25 Defis Stand

LP25 Session Poster

✓ Dissemination Materials

The THEIA consortium has created several dissemination materials

**THEIA Builds Public Engagement Around Next-Generation Copernicus Services**

Athens, November 2024 - THEIA, a cutting-edge research and innovation project funded by the European Union's Horizon Europe programme, is laying the groundwork for a new era of public engagement and technological advancement within the Copernicus Security ecosystem. With a strong focus on integrated artificial intelligence (AI), satellite video, RF signal evaluation, and cross-modal data fusion, THEIA is working to make next-generation Earth Observation services more accessible, responsive, and impactful.

From its inception, THEIA has prioritized communication, openness, and collaboration as key pillars of its strategy. Through its dynamic website, active social media presence, and early promotional materials—including videos, a poster, and a leaflet—the project is building visibility among both technical stakeholders and the broader public. As security and humanitarian challenges grow increasingly complex, THEIA's commitment to user engagement and public dialogue has remained at the top of its research, development, and activities.

Over the coming months, THEIA will continue to strengthen its engagement through scientific publications, open events, press releases, and collaboration with related EU projects. A particular mission will be shared on the overall state-of-the-art of Earth Observation-enabling disaster preparedness, improving crisis monitoring, and supporting policy-making through transparent data-driven tools. THEIA's work is part of the EU's broader ambition to modernize its security services by space-based capabilities and to make the Copernicus Security Services better equipped to modern threats. By combining state-of-the-art innovation with inclusive outreach, THEIA is setting a new benchmark for how Earth Observation can empower public institutions and citizens alike.

please visit: <https://www.theia-project.eu>, and follow on Facebook, LinkedIn, and YouTube

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Press release

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in Europe to critical complex climate-related issues. Radio Artificial intelligence (AI) supports like CSS ministries. Copernicus. Theia\_project. Theia\_project.eu. Multi-modal data into processing. The project has received funding from the European Union's Horizon Europe research and innovation programme under GA 10109895.

Leaflet

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Brochure

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# THEIA

## Ethics, Data Protection & AI Compliance



THEIA is firmly committed to the highest ethical standards, robust data protection practices, and responsible AI development.

Throughout the project, we acknowledge that challenges related to security, privacy, sensitive data, AI transparency, and operational risk may arise. THEIA addresses these proactively through:

- **Strict adherence to EU ethical and legal frameworks**, including GDPR and Horizon Europe ethics requirements.
- **Responsible use of Artificial Intelligence**, ensuring transparency, accountability, and human oversight.
- **Robust data governance**, including protection of sensitive information, secure data handling, and controlled access aligned with operational needs.
- **Regular internal reviews and risk monitoring** to ensure compliance and ethical integrity throughout the project's lifecycle.

## Coming Next – Spring Issue

Our next Spring issue will explore:

-  THEIA requirements engineering work
-  Key findings from the first reporting period
-  Updates from technical development and user engagement

## Stay tuned!

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# THEIA Consortium



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## Follow THEIA



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