

Harnessing Space Assets for Emergency Response: Insights from the First EUSATfinder Advisory Board

by Marco Nisi

Rapid disaster response depends on integrated satellites, terrestrial networks, and digital tools. The EUSATfinder project unites GOVSATCOM, Copernicus, and Galileo with drones and AI, giving first responders secure communications, real-time situational awareness, and mobile operational centers—enabling faster, coordinated action across Europe during floods, wildfires, landslides, and earthquakes.

On 1 July 2025, the municipality of Île-Rousse in Corsica hosted the inaugural EUSATfinder Advisory Board (AB#1), gathering representatives of European institutions, first responders, technology providers, and research bodies. The aim was to discuss how Europe's space, aerial, and terrestrial technologies can strengthen emergency and crisis management. The meeting underscored the growing role of secure communications, real-time data processing, and multi-platform



integration in supporting first responders. Special focus was given to the EUSATfinder project, a Horizon Europe initiative funded by the European Union Agency for the Space Programme (EUSPA).

The context: European space assets for emergencies

The Advisory Board emphasized the synergistic use of three flagship European programmes: GOVSATCOM, Copernicus, and Galileo. GOVSATCOM provides secure satellite communications for government and emergency users. Copernicus delivers Earth observation services offering critical geospatial data. Galileo ensures precise positioning and timing, which is essential for coordinated interventions.

Speakers highlighted that combining these assets with terrestrial networks allows rapid and coordinated responses to natural disasters, geo-hazards, and technological accidents. Dr. Vasileios Kalogirou from EUSPA stressed how cross-border

collaborations can be strengthened through such integrated frameworks.

User needs across operational contexts

A core part of the meeting was dedicated to user needs identification, drawing on field experiences from Italy and France. The Geological Service of Valle d'Aosta in Italy presented its work in monitoring landslides and rockfalls. By leveraging drones, GNSS, InSAR satellite sensors, and stratospheric balloons, the service conducts safe inspections of unstable rock faces and generates real-time 3D models of hazardous sites. For future operations, the service expressed interest in robust data transmission systems to guarantee communication during emergencies.

Colonel Stéphane Drenne of the French Civil Security (UIISC5) described the history and global missions of the brigade, ranging from wildfire management in Corsica to deployments in Chile and Greece. He underlined the

importance of a clear chain of command supported by reliable communication systems.

The fire services of Corsica, SIS 2A and SIS 2B, described their specialized teams covering mountain rescue, hazmat response, drones, and canine units. Their main challenges include real-time event detection, wildfire propagation modeling, and integration of artificial intelligence into command systems. Satellite and aerial data are increasingly seen as essential to achieve these goals.

The Italian National Firefighters Corps (CNVVF), with more than 675,000 interventions in 2024, stressed the need for satellite-based situational awareness in floods, earthquakes, and large-scale fires. Rapid access to Earth observation imagery and geospatial platforms is vital for planning and intervention. The Civil Protection Centre of the University of Florence (CPC-UNFI) highlighted the demand for integrated, user-friendly platforms that merge satellite, aerial, and in-situ data. A live questionnaire confirmed that secure communications, drones, and AI-driven analysis rank among the top technological priorities for European practitioners.

Innovation at work: projects and solutions

Several ongoing projects showcased how research and industry are advancing emergency management tools.

The Université de Corte presented Project FEU, a multidisciplinary effort to enhance wildfire resilience, focusing on firefighter safety, smoke analysis, and fire-resistant construction materials.

GTER introduced the I-EM platform, a web-based solution that integrates Copernicus data, GNSS monitoring, and AI risk analysis to optimize intervention times and coordination.

The MIDGARD initiative demonstrated AI-powered decision-support systems to detect hazards early and provide real-time field imagery.

The European Union Satellite Centre (SATCEN) described how it provides geospatial intelligence services to EU decision-makers, with strong emphasis on timely data sharing across stakeholders.

The EUSATfinder value proposition

At the heart of the meeting was the EUSATfinder project, which aims to deliver secure, reliable, and integrated communications

infrastructure for emergency responders.

Its approach combines GEO and LEO satellites such as ATHENA FIDUS, Konnect VHTS, Iridium Certus, and Inmarsat SwiftBroadband with terrestrial networks. This architecture enables beyond visual line of sight drone missions for surveillance, search and rescue, and disaster monitoring, supported by satellite communications.

Mobile operational centers are another key feature, designed as deployable units equipped with terminals and sensors to provide immediate connectivity and data access in the field. The project also foresees mobile applications allowing citizens in distress to connect securely with responders via satellite.

A comprehensive zero trust security architecture is being developed to protect the system. This includes encryption of data, intrusion detection, access management with multi-factor authentication, and systematic vulnerability testing.

A preliminary SWOT analysis confirmed strong advantages in data integration and operational reliability, while also highlighting challenges such as training needs, system costs, and market



competition. Importantly, the survey conducted during AB#1 revealed high demand for flexible procurement models such as pay-per-use, with budgets adapted to the scale of missions. Respondents also expressed a preference for remote support and training to ensure rapid adoption across dispersed operational units.

Conclusions and next steps

The first EUSATfinder Advisory Board created a shared understanding between users, developers, and policymakers. It reaffirmed that the future of emergency management in Europe will depend on the seamless integration of secure satellite and terrestrial communications, the combination of satellite and drone imagery with ground data for situational awareness, and dedicated multi-platform tools enabling real-time information exchange across teams.

The next milestone for the project will be showcased at the Technology for All event in Rome in November 2025, with further demonstrations planned for 2027 in the Aosta Valley.

EUSATfinder exemplifies how Europe can leverage its strategic space assets to deliver resilient, user-driven, and secure technologies for first responders, ultimately saving lives and protecting communities in times of crisis.

KEYWORDS

EUSATFINDER; EMERGENCY RESPONSE;
SATELLITE COMMUNICATION

ABSTRACT

The first EUSATfinder Advisory Board (AB#1) took place in Île-Rousse, Corsica, on 1 July 2025, bringing together first responders, institutions, and technology providers to discuss the role of space, aerial, and terrestrial assets in crisis management. Central to the debate was the integration of Europe's flagship programs: GOVSATCOM for secure communications, Copernicus for Earth observation, and Galileo for positioning and timing.

Operational insights from Italian and French agencies showed how drones, satellites, and advanced monitoring systems are already transforming disaster response, while also exposing needs for reliable communication, rapid data sharing, and user-friendly platforms. Industry and research partners presented innovative tools ranging from AI-powered decision support to geospatial intelligence platforms.

At its core, the EUSATfinder project seeks to deliver secure, integrated communications, enabling beyond visual line of sight drone missions, mobile operational centers, and citizen applications. The project will be further demonstrated in Rome in November 2025 and in the Aosta Valley in 2027.

AUTHOR

MARCO NISI
MARCO.NISI@GRUPPOSISTEMATICA.IT



Venue, Municipality of Ile Rousse, Corsica (France)

During the meeting, all participants completed a questionnaire designed to capture user needs, challenges, and current use of technology to refine EUSATfinder's market fit. The survey focused on drone surveillance systems with satellite communication, exploring value, mission types, procurement preferences, decision-making autonomy, desired features, support expectations, budgets, and partnerships. Respondents highlighted the critical role of satellite links for beyond visual line of sight (BVLOS) operations and real-time video feeds, especially in emergencies.

Questionnaire Key Points and results:

Value of Satellite Communication	Satellite communication is considered highly valuable, with a rating score of 4.4 out of 5
Preferred Mission Types for Drone Deployment	High priority missions include hazardous area monitoring (78%), search and rescue (67%), forest fire surveillance (56%), and earthquake or flood response (56%).
Procurement Preferences	Majority prefer pay-per-use models (67%) and purchasing/owning systems (56%), with no interest in leasing.
Autonomy in Procurement Decisions	44% have full autonomy, 33% engage in joint procurement with national/regional bodies, and 22% have limited autonomy.
Important Features for Operations	Real-time video feed (86%) is the most critical feature, followed by night vision/infrared (56%) and satellite communication (56%).
	Other notable features include AI-based object detection (33%), long-range flight endurance (33%), and autonomous flight/autopilot (33%).
Support and Maintenance Expectations	Strong preference for remote support with training (80%), with minimal demand for full on-site support or outsourced contracts.
Budget Range	56% find budgets up to 100,000 Euros acceptable; 33% can justify budgets exceeding 500,000 Euros.

Results show strong perceived value (4.4/5) for satellite-enabled surveillance, particularly for hazardous area monitoring and search and rescue. Real-time video and night vision emerged as top priorities for situational awareness, while AI detection and autonomous flight were rated lower, likely due to maturity or operational focus.

Interestingly, pay-per-use and ownership models were favored over leasing, reflecting the need for flexibility and budget alignment. High procurement autonomy supports quick adoption but requires solid justification for larger investments.

Respondents also valued remote support with training, pointing to scalable maintenance needs, and emphasized collaboration with private partners and consortia to share expertise and risks in pilot projects.

EUSATfinder is funded by the European Union Agency for the Space Programme (EUSPA) under the Horizon Europe programme (Grant Agreement No. 101180157).

