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EUSATfinder

EUSPA AI week 2026

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EUSPA
European Union Agency for the Space Programme

Outline

- Concept
- Project status
- Connectivity
- Application layer
- AI for targets identification, characterization and localisation
  - Rationale
  - Sample datasets
    - Security camera
    - UAV real time video

Concept

The purpose of the EUSATfinder is to provide an innovative integrated and scalable solution, to support decision maker actors in real-life during different operational phases (detection, preparedness, response, recovery and mitigation of emergencies) with particular focus to first responders' activities in situ for a disaster management.

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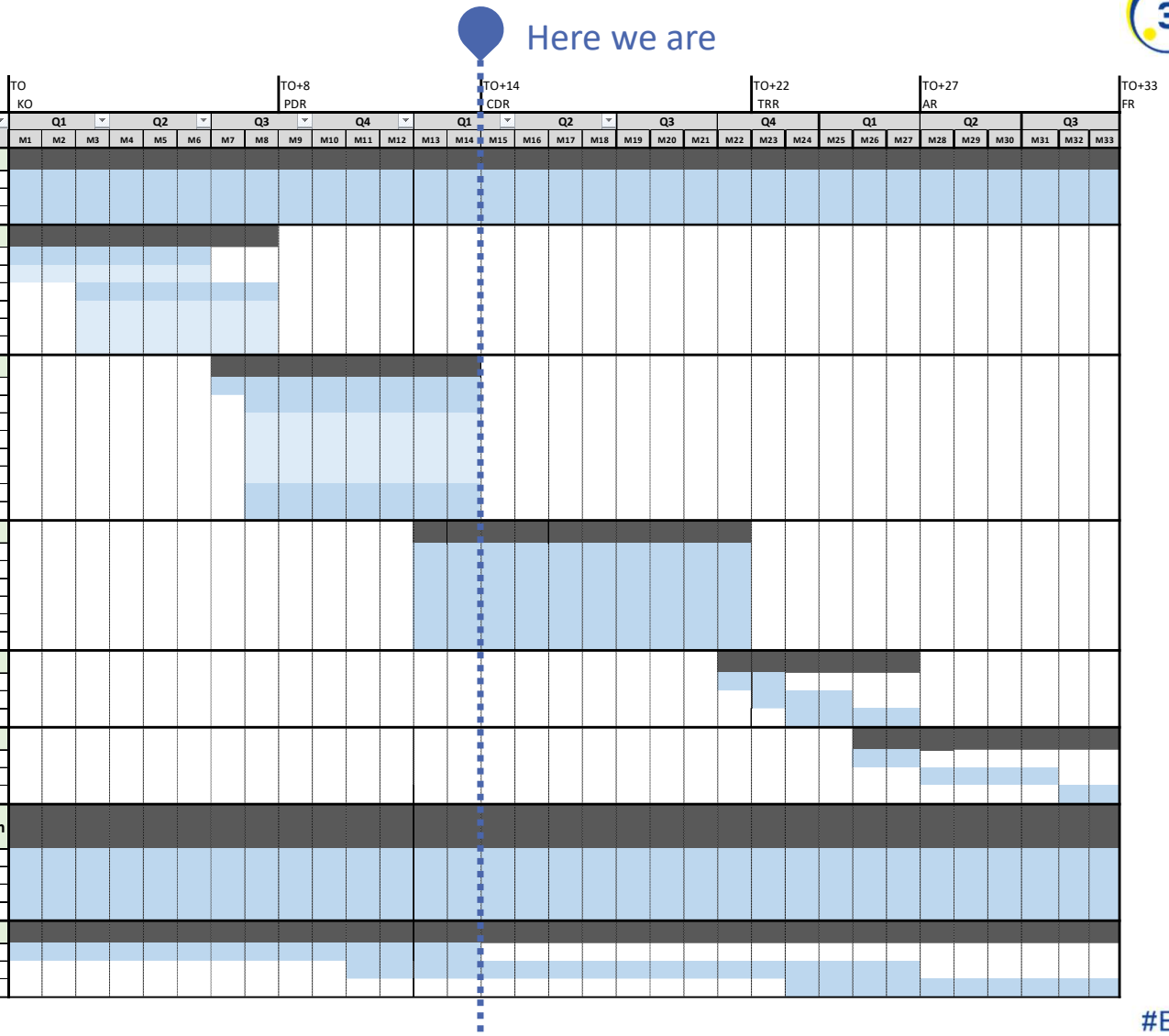
Project status



WP	WP Title	Q1		Q2				Q3				Q4		Q1				Q2				Q3				Q4				Q1				Q2				Q3		
		M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26	M27	M28	M29	M30	M31	M32	M33
1	**Project Management and Technical coordination**																																	
1.1	Project planning control																																	
1.2	Technical coordination																																	
1.3	Ethics																																	
2	**User Requirements, ConOps, Regulatory context**																																	
2.1	European Secure SATCOM																																	
	System context analysis																																	
2.2	First responders use case																																	
	Selected use case analysis for first responders																																	
	Regulatory context for first responders operations																																	
	User Requirements for first responders																																	
3	**EUSATfinder Solution Specification and Design**																																	
3.1	EUSATfinder System Specifications and Design																																	
3.2	EUSATfinder Secure SATCOM network																																	
	Athena Fidus as reference GEO FSS service																																	
	LEO MSS service analysis																																	
	GEO MSS service analysis																																	
	GOVSATCOM HUB analysis																																	
3.3	Secure terrestrial network for secure and reliable communications in situ																																	
3.4	First Responder App delta design																																	
4	**EUSATfinder solution customisation development**																																	
4.1	SATCOM network capability delta development/procurement																																	
4.2	Terrestrial network building up and procurement/ delta-development																																	
4.3	First Responders' platform customisation																																	
4.4	Copernicus data exploitation and customisation																																	
4.5	C2 and mission data using Galileo/EGNOS enabled drones with integrated SATCOM																																	
4.6	U-space service interfacing over secure SATCOM																																	
5	**Multi site integration and verification**																																	
5.1	Verification planning and strategy																																	
5.2	On factory dry runs activities																																	
5.3	System on factory Integration and Verification																																	
6	**DEMO campaign and validation**																																	
6.1	DEMO campaign planning and strategy																																	
6.2	DEMO campaign preparation and execution																																	
6.3	Operational validation Report																																	
7	**Communication and Dissemination for awareness and exploitation**																																	
7.1	AB management																																	
7.2	Communication activities																																	
7.3	Dissemination activties																																	
7.4	Exploitation																																	
8	**Economic and non economic viability analysis**																																	
8.1	Market Analysis and Business Model																																	
8.2	Cost Benefit Analysis																																	
8.3	Business plan																																	

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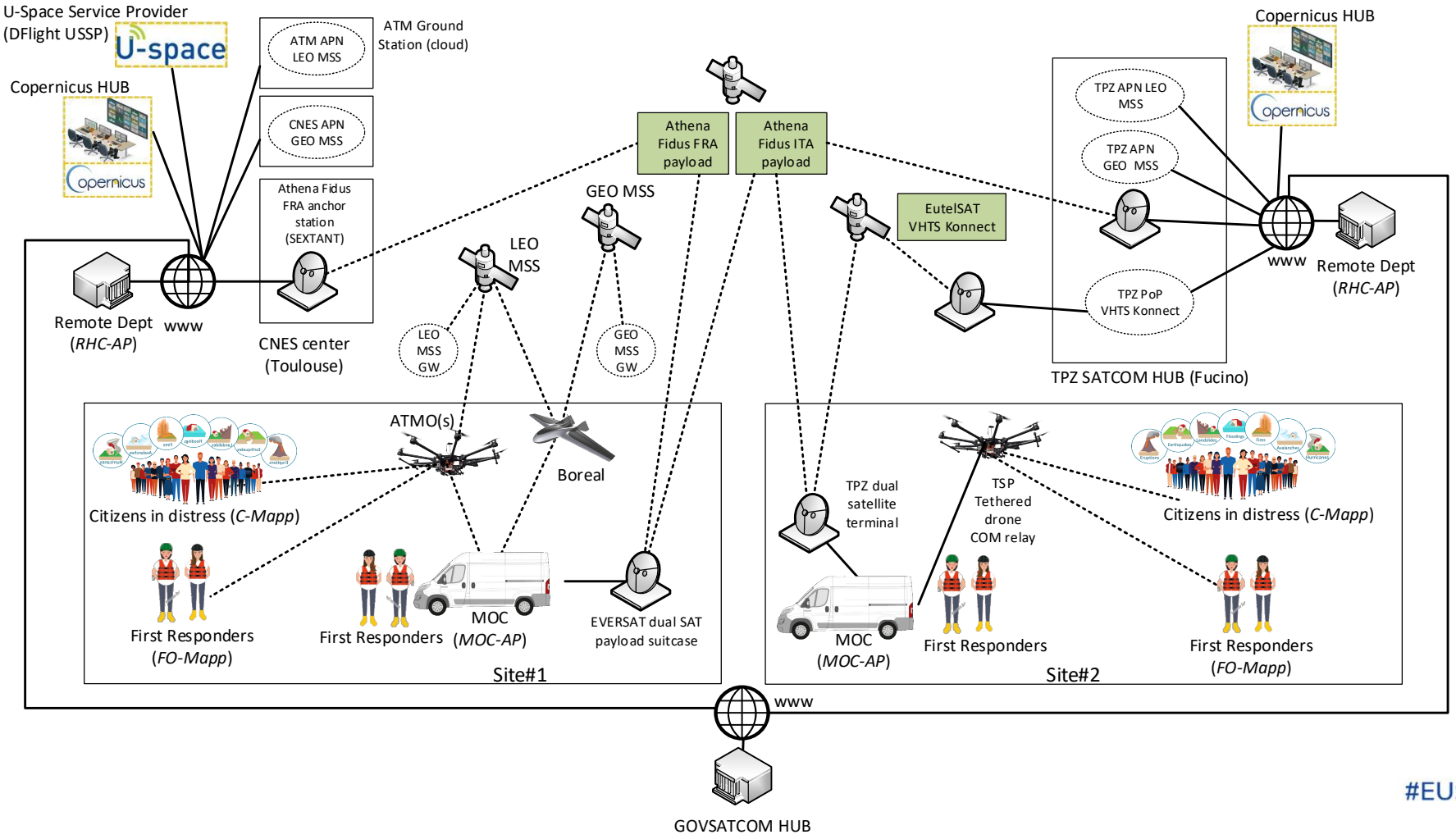
Connectivity



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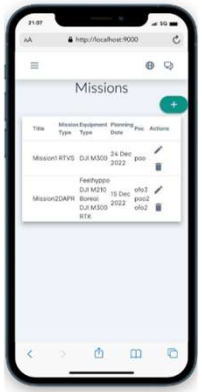
Application layer

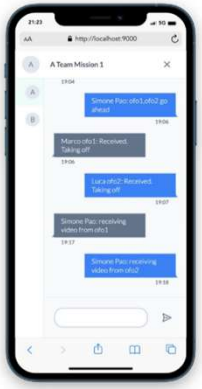
- **Remote Headquarter Center application (RHC-Ap)** – Off-site, located at the First Responder's operations center and potentially integrable with other systems

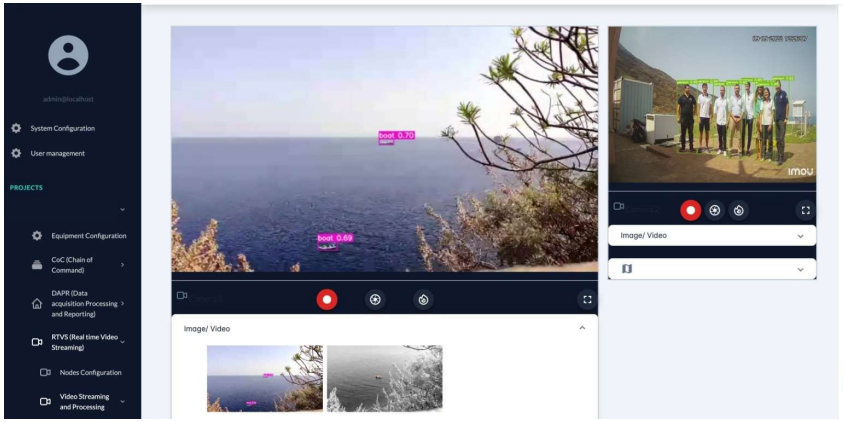
- **Mobile Operations Center Application (MOC-Ap)** – On-site, for example deployed on a specialized vehicle serving as a remote operations center

- **FR' mobile application (FO-Map) –** On-site, installed on First Responders' handheld devices

- **Citizens' mobile application (C-Map)** – Installed on citizens' personal devices after registration







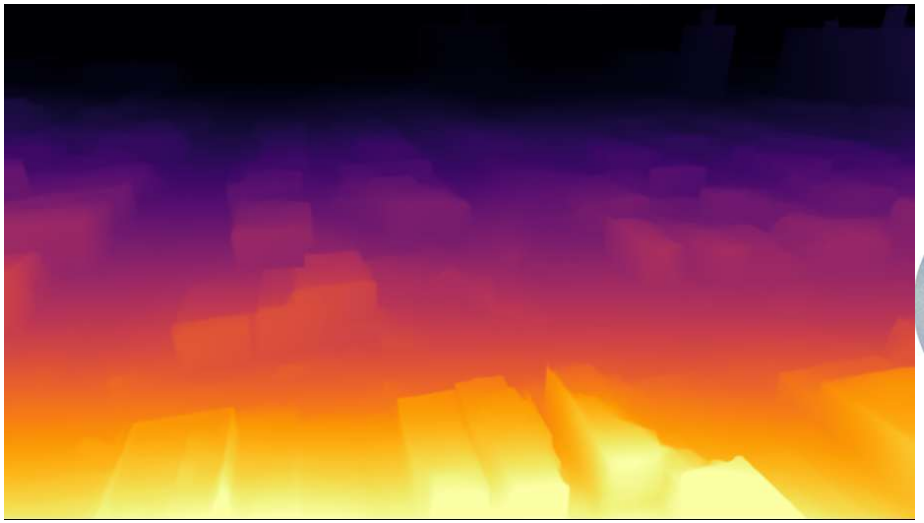
Target Detection, classification and Localization

Target Detection and classification

Fine-tune a pre-trained YOLOv11 model on emergency-scene datasets to detect targets in real time

Target Localization

Estimate target position using geometric/heuristic methods and/or or transformer-based depth estimation (Depth Anything v2/v3)



Example: security camera

Example: UAV real time video

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Linking space to user needs

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