

# Civil Security from Space

Enhancing European and Canadian capability to address **security challenges** and support rapid response to **disasters**

*Space Business Finland Forum*  
2 Dec 2024



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ESA-DCSC-HO-2024-00xx



# There is urgency to act...

## ... for the protection of Citizens, Natural Resources and Critical Infrastructures

**Devastating events are escalating** with higher impact

**Europe needs to be better equipped** to monitor, mitigate and respond to events affecting society and state

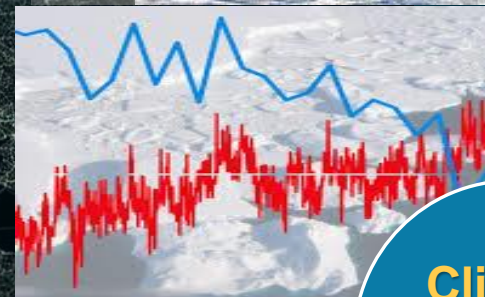
**Fragmented solutions** across Europe reduces responsiveness



Geopolitical challenges



Greece, 2023  
20,000 evacuated  
174,000 ha burnt  
€1.7 billion cost



Climate Induced Disasters



Germany, 2021  
+€30 billion cost



Accidents & Emergencies



Türkiye, 2023  
273,000 buildings destroyed  
€34 billion cost



That is why I am calling for universal early warning coverage





# We need to Predict, Prevent, Respond & Recover



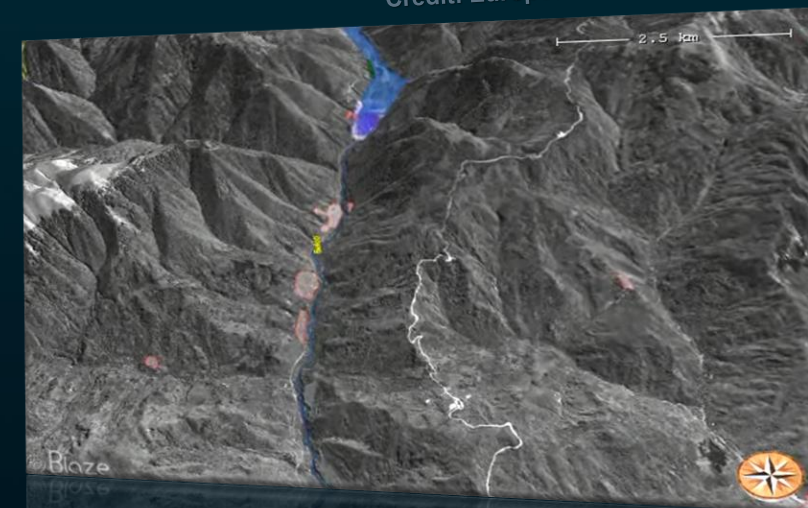
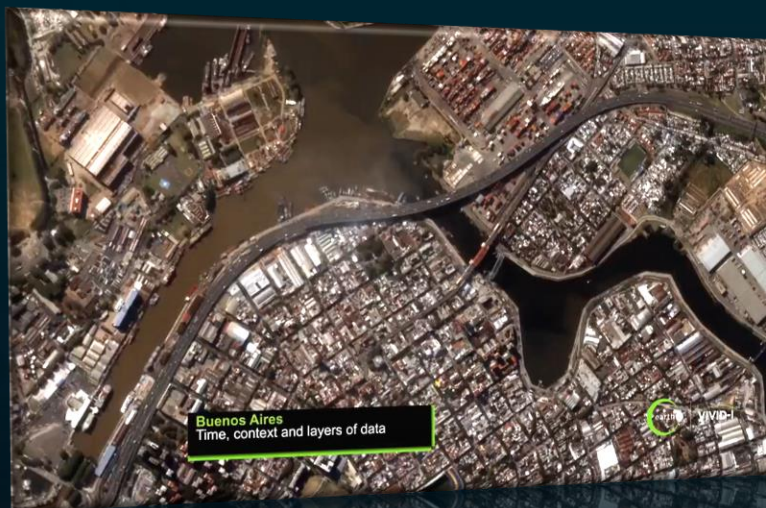
**Reduce** the societal and financial impact



**Act swiftly** for the security for people, state and critical assets



**Ensure fast recovery** supporting planning and efficient action



Credit: European Union Satellite Centre



# Priority Usecases



**NATURAL  
DISASTERS**



**HUMANITARIAN  
RELIEF**



**EMERGENCY  
RESPONSE**



**INFRASTRUCTURE  
PROTECTION**



**MARITIME SAFETY**



**FOOD SECURITY**



**TRANSPORT SAFETY**



**RESOURCE  
PROTECTION**



**LAW ENFORCEMENT**



**GEOPOLITICAL  
CRISIS**



**ENVIRONMENTAL  
SECURITY**



**CYBER CRIME**

# What?

# How?



- Flexible access to space capabilities on demand
- Agile & comprehensive connectivity from source to end users



- Industry leverages current solutions as well as develops new solutions
- Standardised interfaces and product developments



- Users not locked into any specific supplier
- Stimulate industry engagement and response to user needs



- Reaching User with 'trusted' Products
- Customised to working practices

# SERENITY network

## Innovation Pipeline

# Market-Place

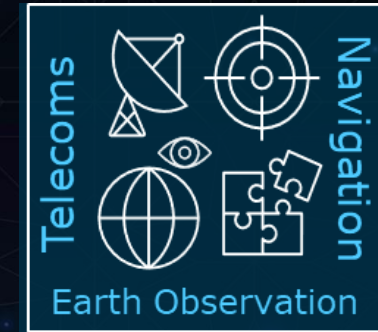
## Applications & Services



# CSS Scope of Activities

Civil Security from Space

developing space-enabled capabilities in Europe to aptly respond to civil protection and crisis challenges



## Programme focus areas

**National:** Focusing on National specific interests and sovereign space-enabled capabilities, integrating with National systems and solutions

Foster sovereign, resilient and trusted solutions and relevant dual-use needs

**European:** Delivery of SERENITY, a ground-based infrastructure federating multi-domain space resources, leveraging interoperability and delivering critical services for civil security and crisis

Focused on pooling & sharing of European wide capabilities, and boost access to space solutions

**International:** Implementing solutions in line with the R3 accelerator objectives on European and international crisis response

Focused on impactful Crisis challengers  
Foster international collaboration



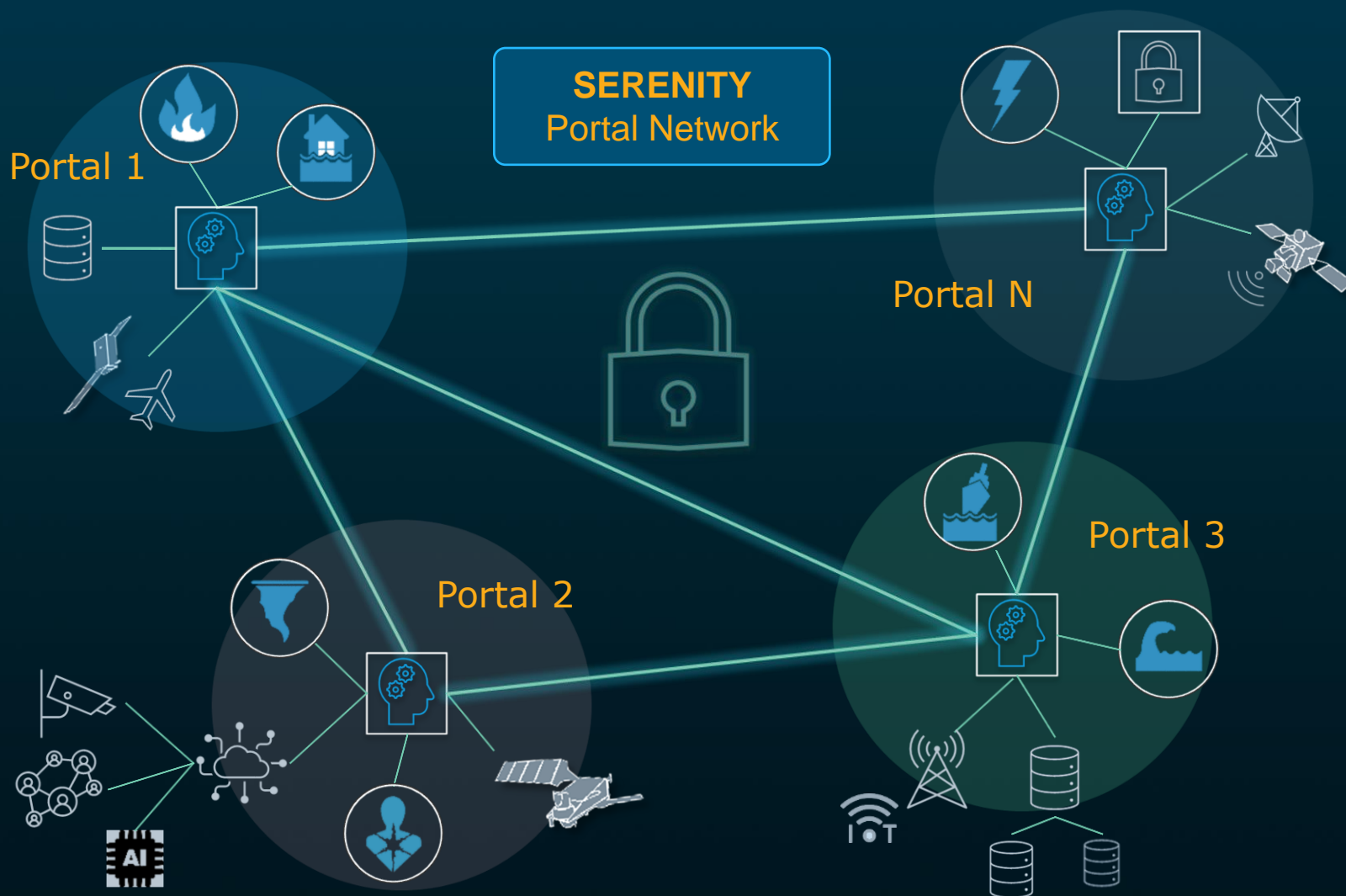








# A European Collaborating Network - SERENITY



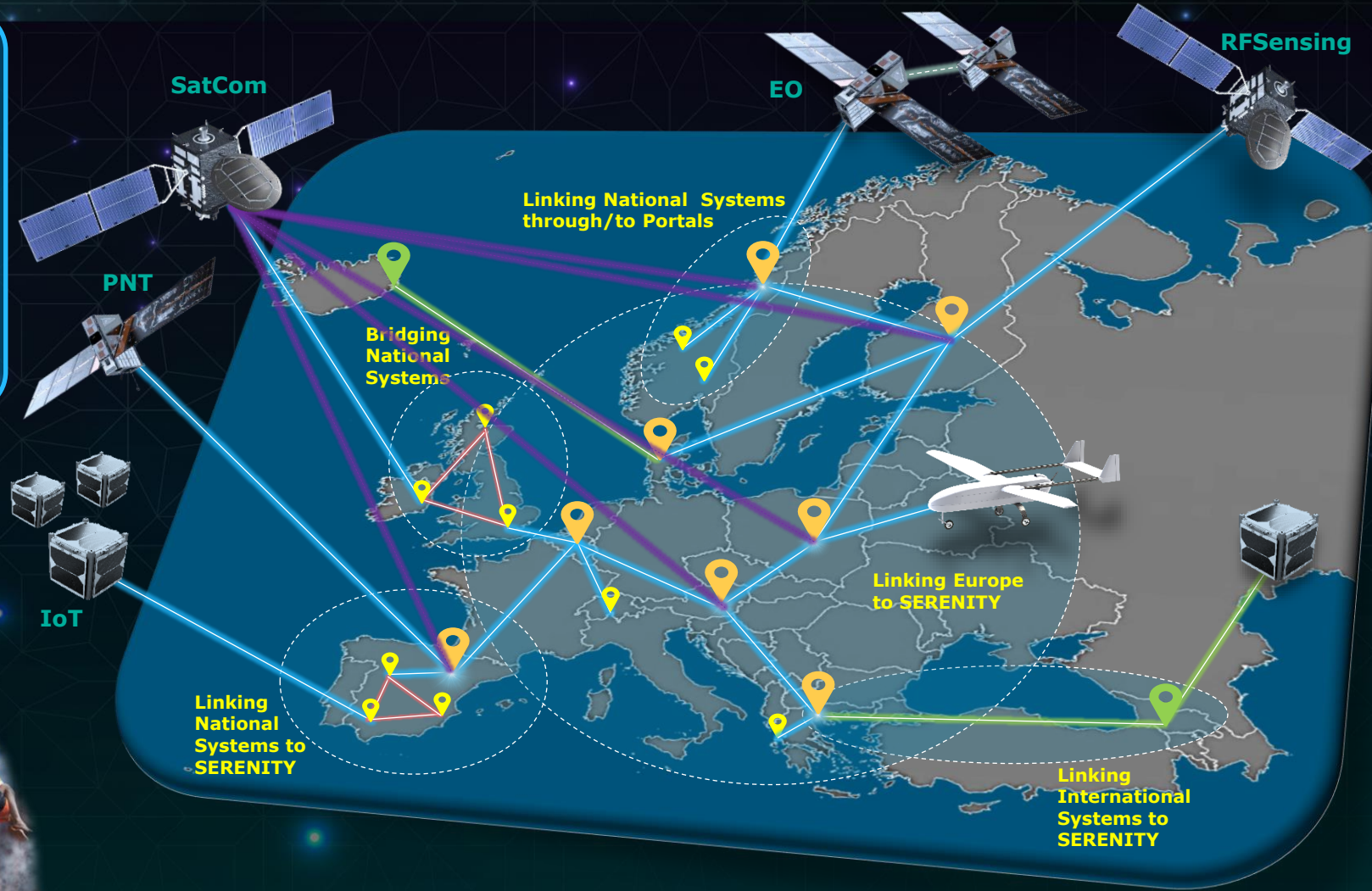
Enabling **Sharing** of diverse European Resources by **interconnecting National Portals** across Europe

- ✓ Multi-system integration and **interoperability TBD**
  - ✓ Standards
  - ✓ Multi-system orchestration
- ✓ Managing **Secure and Trusted** information transfer and control



# A global Security & Crisis Management Network

- ✓ Enable **full situation awareness** with space solutions
- ✓ Deploy Portals **Nationally**, across **Europe & Internationally** hosting state of the art security & crisis solutions



Portal

CSS Portal

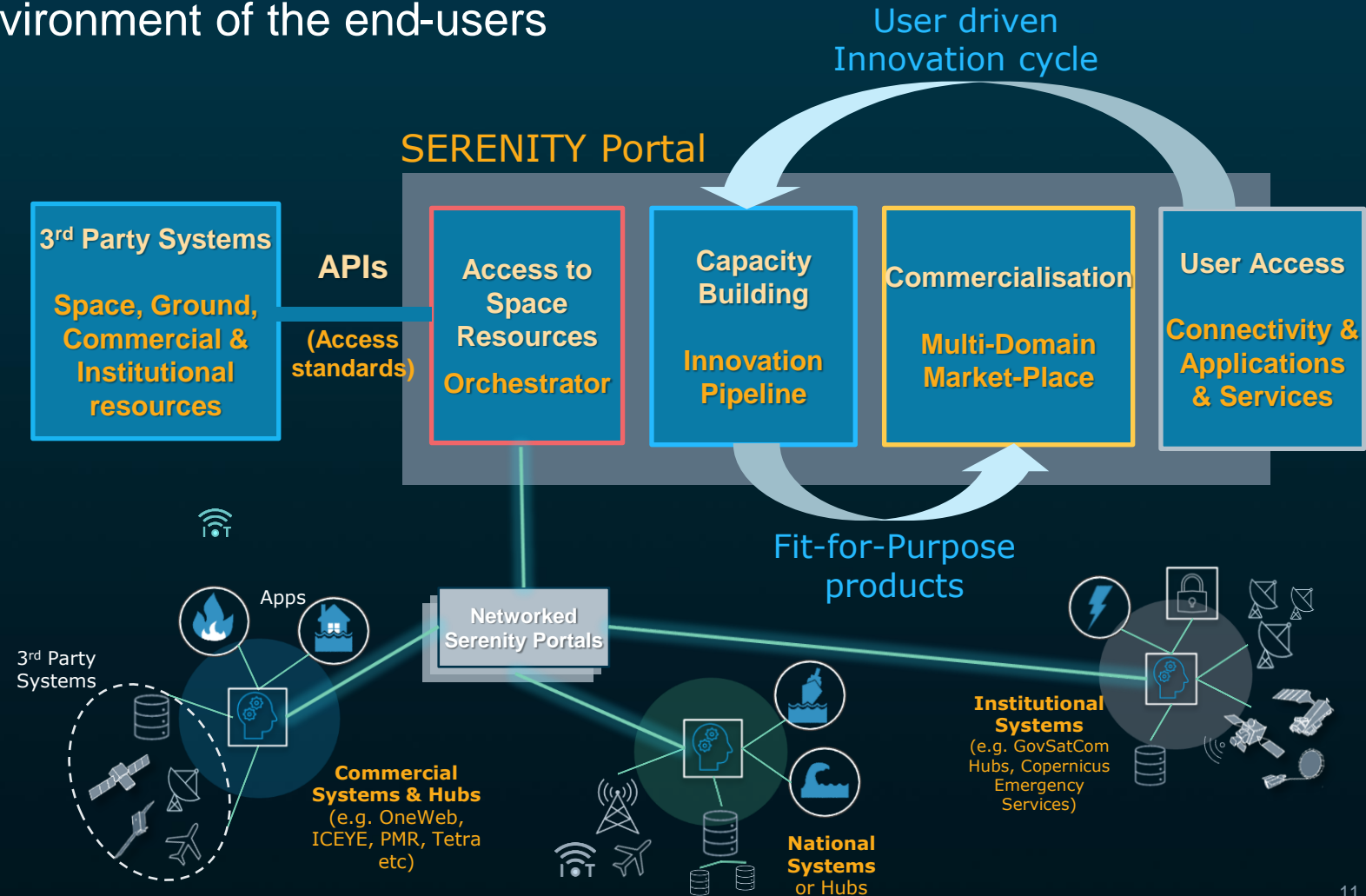
International CSS Portal

Other 3rd Party/National Hub/Centre/MCC



**CSS Portals** hosts Civil Security and Crisis Response solutions, bringing innovative multi-domain space capabilities into the working environment of the end-users

- ✓ Offers a **one-stop-shop access** to National, Institutional and Commercial systems
- ✓ Offers a **sandbox for co-design** between industry and users
- ✓ Swift and Agile **commercialisation of operational products** (Applications/Services)

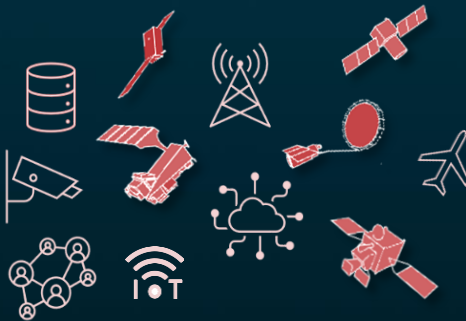




# Development Opportunities – Technologies & Products

## 3<sup>rd</sup> Party Systems

Enhanced Space and Ground Solutions



**Enhanced sensors**  
(EO, RF-sensing, IoT ...)

**Multi-domain secure networking solutions**  
(Seamless space/ground connectivity, e.g. PMR)

**Federated Data Spaces**  
(Data Management Systems)

**In-orbit & On-ground edge-processing**  
(reconfigurable proc.)

**Autonomous operations**  
(Tip&Cue, intelligent systems)

## Orchestrator

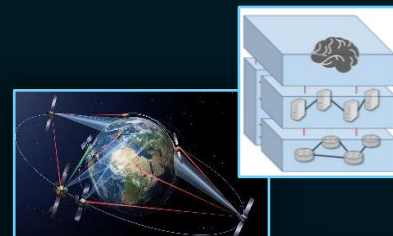
Smart access and networking of 3<sup>rd</sup> party systems



**Secure connectivity solutions**  
(Interfacing to GovSatCom Hub, EC systems, National Systems, Commercial etc)

**Multi-domain pooling and sharing platforms**  
(incl system tasking and control)

**OSS/BSS interface solutions**  
(Business & Operations interoperability)



## AI Factory

New intelligence products leveraging EO + IoT + RF Sensing + Open Source data



**AI enabled Data Fusion platforms**  
(usecase specific)

**Data and access Management systems**  
(security/QoS/user management)

**Testbeds and Simulators**  
(leveraging on digital twins)



## User Access & Control



**Applications platforms**

**Visualisation platforms**

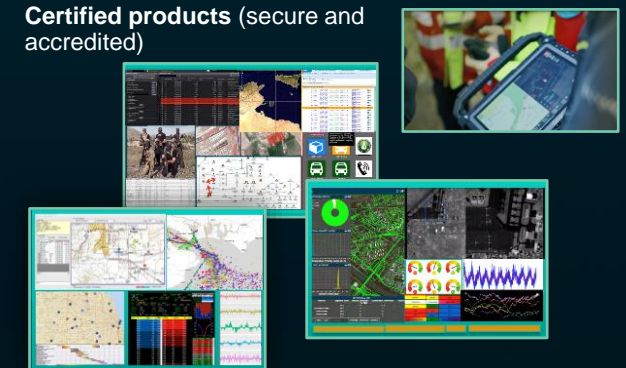
**End-user devices**  
(incl. terminals, sensors, wearables)

**Secure connectivity to end-users**  
(e.g. PMR, D2D, Satcom)

**End-User Multi-domain Digital contracting solutions**  
(incl. blockchain)

**Smart Mission configurator**  
(smart product builder)

**Certified products** (secure and accredited)

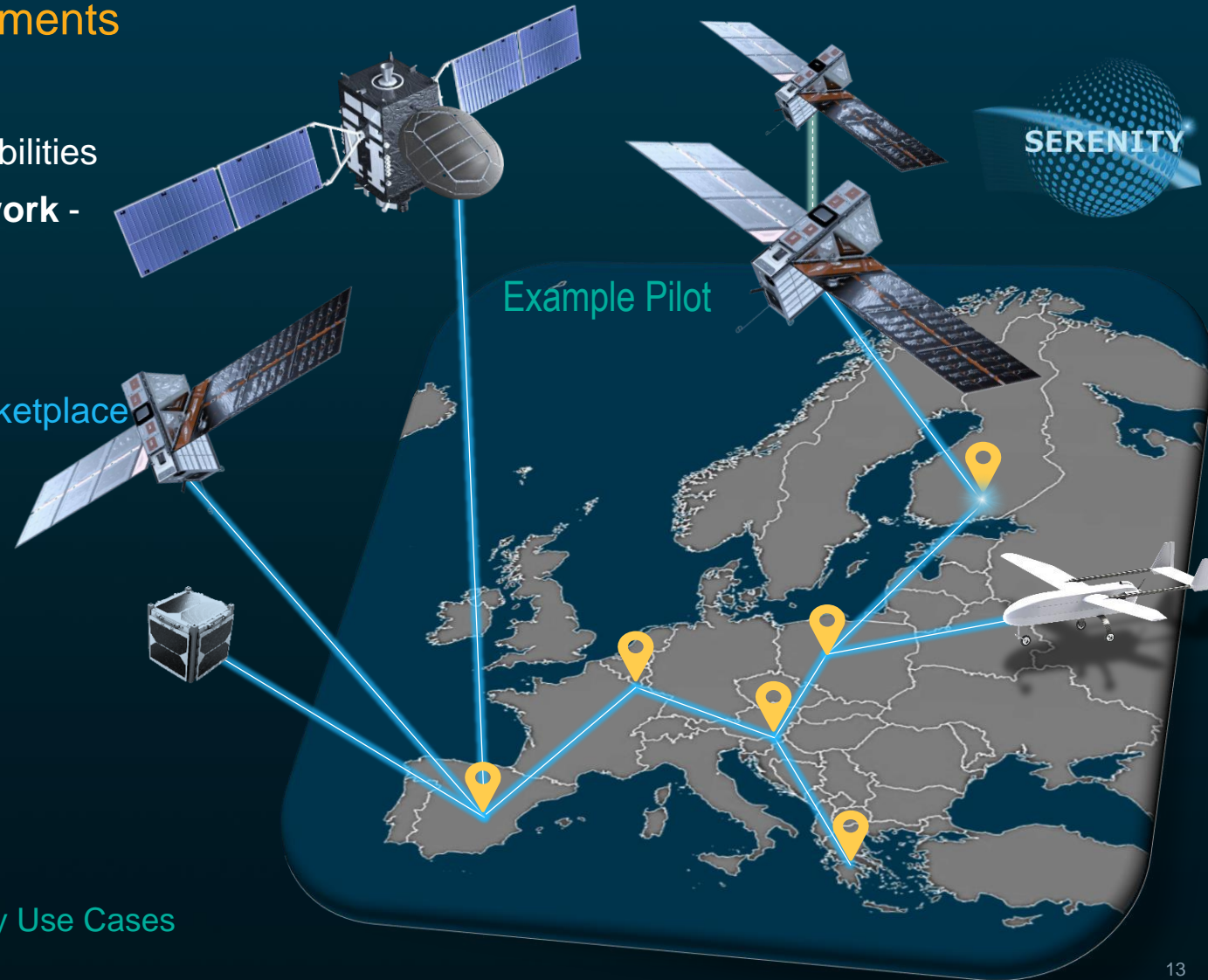




# CSS CM25 Proposal – System Pilot

## Portal & SERENITY Federated System Developments

- Portal and networking developments and deployments
- Orchestrator developments for **pooling and sharing** capabilities
- **Connectivity** solutions linking end-users to the **Portal network** - (e.g. Satcom+ Professional Mobile Radio (PMR))
- AI enabled autonomous **tipping and cueing** solutions - (across ground/aero/space)
- Development of **Innovation-Pipeline** and **Multi-domain Marketplace** for rapid access to space resources
- Development of a portfolio of civil security and crisis **applications and services**
- Integration of **federated system** - (EO+Satcom+PNT+IoT, Space/Ground/HAPS)
- Several **Demonstrations** across multiple regions











# CSS in the last 24 months



- ✓ Over 50M€ funds mobilised
- ✓ 9 Agreements with International Organisations
- ✓ Collaboration Agreement with Commission - April 2024
- ✓ 4 Partnership Projects underway, 1 further PPP in preparation
- ✓ 5 further studies and technology projects running
- ✓ 10 demonstration planned of 6 use-cases over 10 regions

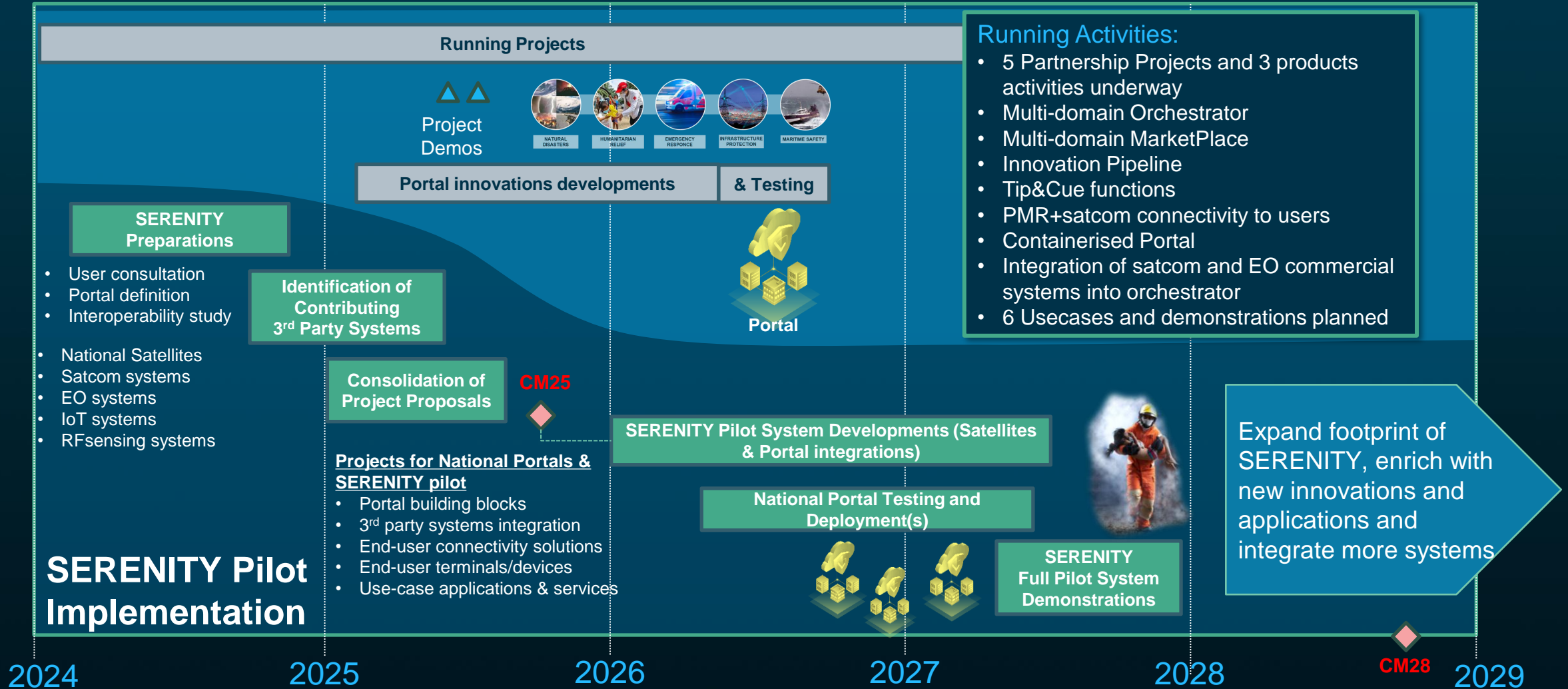


Demos			
WildFires	 Spain Portugal Brazil Finland	Kosovo	 Humanitaria
Floods	 Austrian Alps Finland	Belgium	 Earthquak
Maritime	 Belgium Baltic Sea (Finland, Sweden, Estonia)	Belgium	 Chemical





# Schedule Towards CM25 and Beyond...





# CSS - equipped to take effective action



## THANK YOU!



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