



# LIVE DEMONSTRATION: SATELLITE COMMUNICATIONS IN EMERGENCY THEATRE



Italian Space Agency  
Luxembourg Space Agency

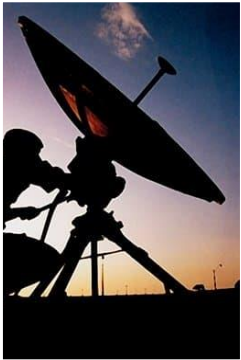
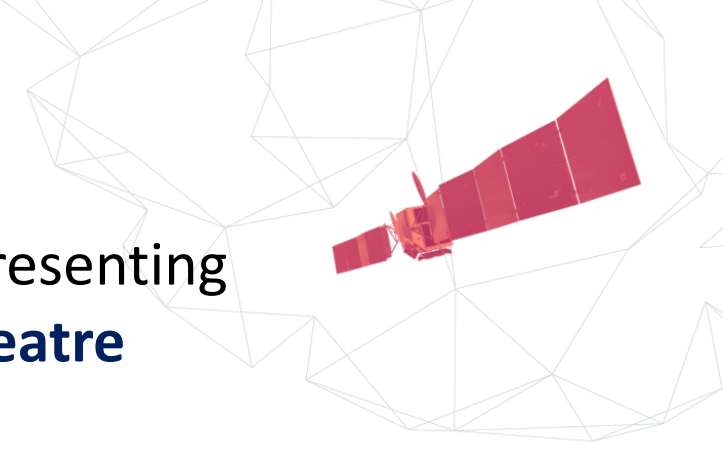


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# LIVE DEMONSTRATION

Live Demonstration is based on a simulated scenario representing a **Member State joint operation in an emergency theatre**



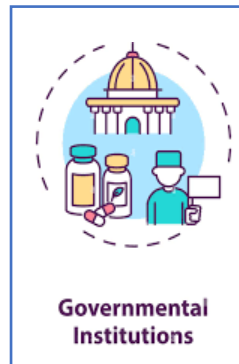
**Fast deployment:** setup of a satellite communication can be actuated in very short times using various type of transportable.



**Absence of terrestrial networks:** the main advantage of satellite communication is the capability to be used where and when the terrestrial network cannot exist, as on ships or onboard aircraft on long routes or in case of interruption of terrestrial services.



**Hybrid networks:** integration of satellite and terrestrial communications to include advantage of both technology. In this scenario a hybrid network is proposed.



Governmental Institutions

**Advantage of GOVSAT versus COMSAT:** sharing of capacity among Member States; optimisation of services provision and prioritization in case of emergency.

# PHASES OF LIVE DEMONSTRATION

## **1. Preliminary phase (in the meeting room)**

Service request on *Service Management Platform*

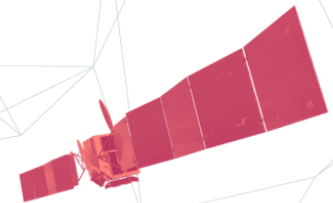
## **2. Connectivity set up phase (in the meeting room)**

Through a VTC application a teleconference is set up between the meeting room and the vehicles equipped with SatCom terminals

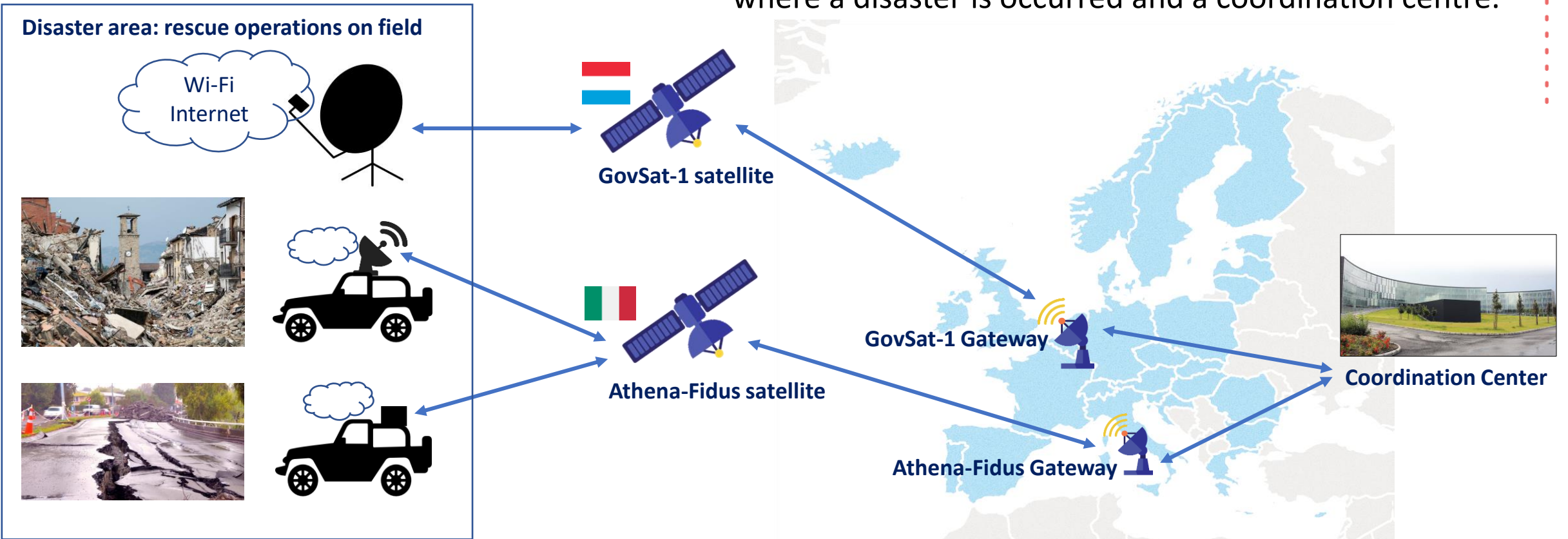
## **3. Showcase of SatCom terminals (outside)**

Different types of terminals are shown in the parking and Wi-Fi bubbles are set up using SatCom connectivity

# DEMO SCENARIO: SATELLITE COMMUNICATIONS IN EMERGENCY THEATRE



This simulated scenario consists of the deployment of three terminals with the objective to emulate the intervention of dedicated teams able to establish connectivity between an area where a disaster is occurred and a coordination centre.



# ASSETS INVOLVED

## IT SatCom capacity in Ka band:

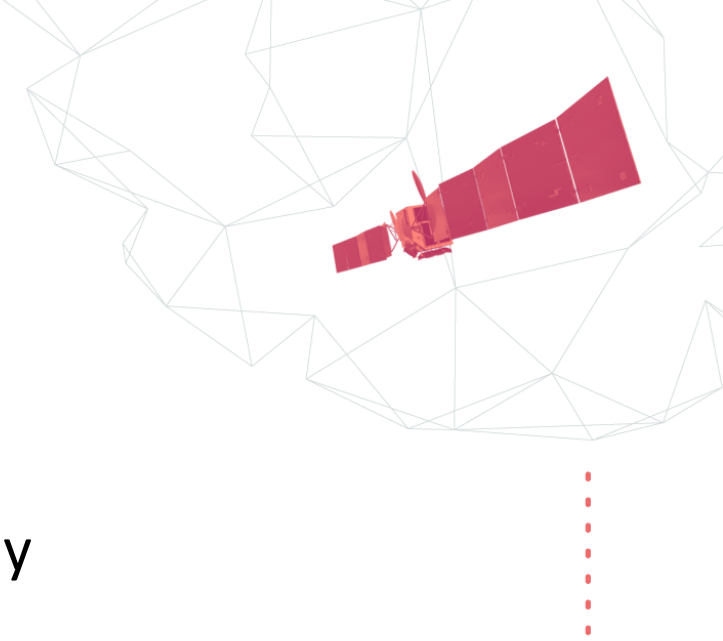
- ✓ transportable and mobile terminals
- ✓ Athena-Fidus Satellite with the associated gateway

## LU SatCom capacity in X band:

- ✓ manpack terminals
- ✓ LUXGOVSAT Satellite with the associated gateway

## Applications:

- ✓ Service management portal
- ✓ Easymeeting VTC application



# ATHENA FIDUS

- Athena-Fidus (Access on Theatres and European Nations for Allied forces – French Italian Dual Use Satellite) is a satellite system for “broadband” communication services for **civil and military uses by the government.**
- Satellite was developed by the Italian Space Agency (ASI) and the Centre National d’études Spatiales (CNES) within the framework of cooperation agreements signed by the Italian and French space agencies and Ministries of Defence.



The image shows the Athena-Fidus satellite in orbit above Earth. The satellite has a central body with various instruments and two large solar panel arrays extending outwards. The background is a view of the Earth from space.



**cnés**  
CENTRE NATIONAL  
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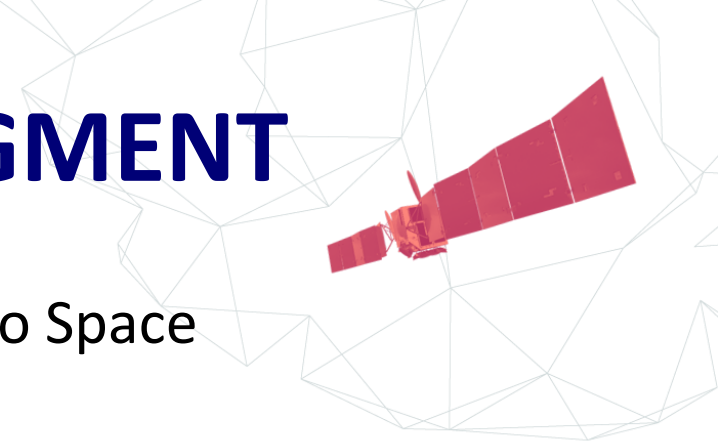


**ASI**  
Agenzia Spaziale Italiana

- launched on February 6th, 2014, from the space centre of Kourou, French Guyana
- expected operating life: more than 15 years

# ATHENA-FIDUS CIVILIAN GROUND SEGMENT

Anchoring of civilian traffic is based at the Ground Segment of Fucino Space Center, managed by Telespazio.



**9 mt Ka Antenna of IT civilian Gateway located at Fucino Space Center**

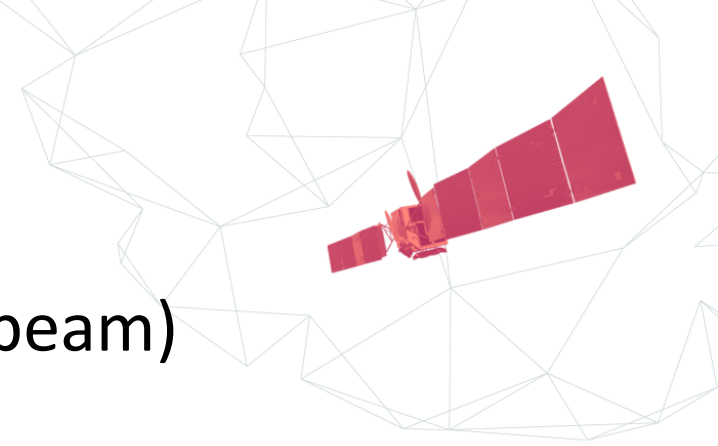


**Operator Room**



**Server Room (BB-HUB, Servers, Network)**

# GOVSAT-1



## Use of LuxGovSat Capacity in X-Band (steerable beam)

LGS Govsat-1 is a dedicated satellite for civil protection, security and defence use cases requiring secure, non-preemptible, reliable and accessible satellite communications in X and mil-Ka bands



LUXEMBOURG  
SPACE AGENCY

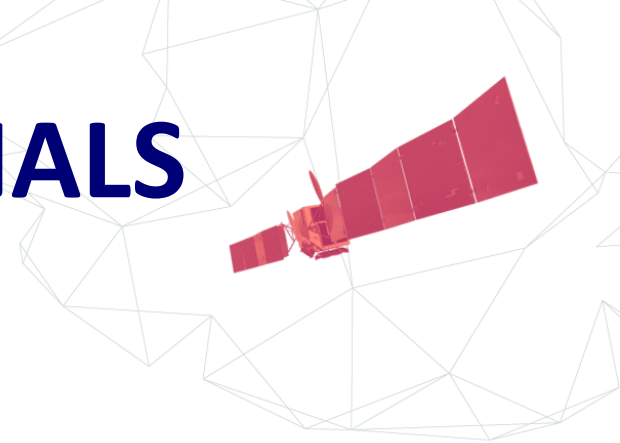




## Transportable terminal



# VEHICULAR TERMINALS

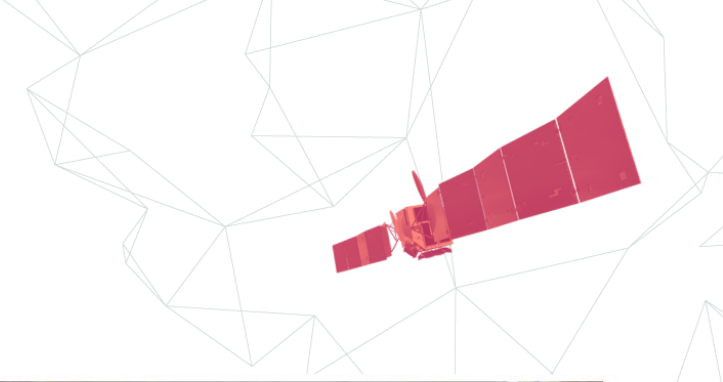


Equipment setup

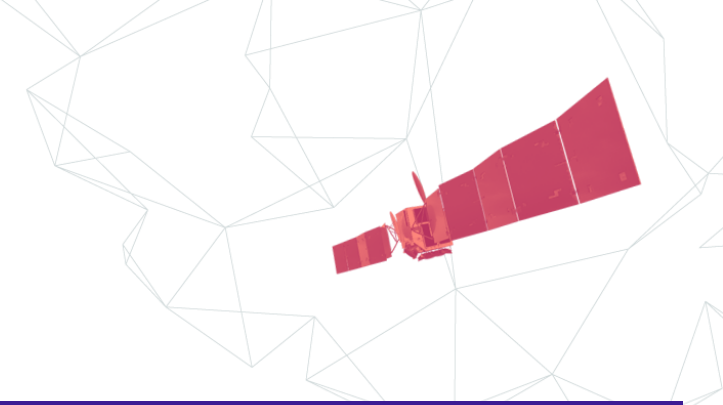
Mobile terminal



# MANPACK TERMINAL



# PRELIMINARY PHASE: *SERVICE MANAGEMENT PLATFORM*

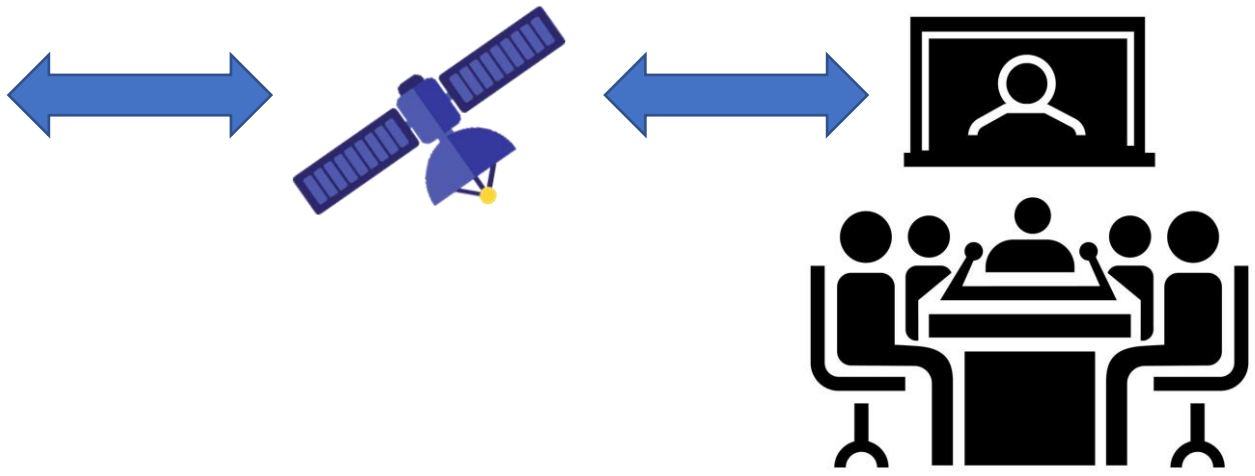
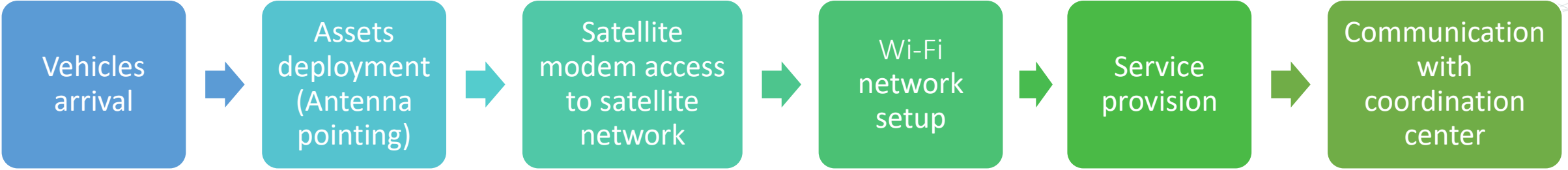


**Subscription to the service:** the user, as a result of a framework contract signed by his MS, enters logistical data in the service portal to allow the GSC operator to provide the service in the event of request.

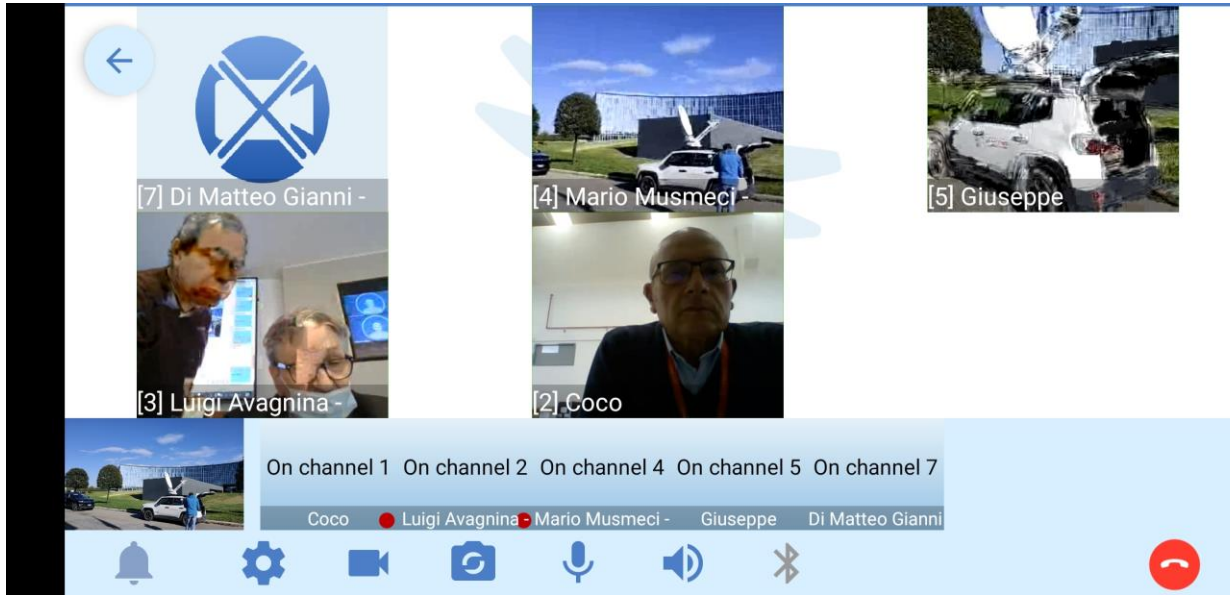
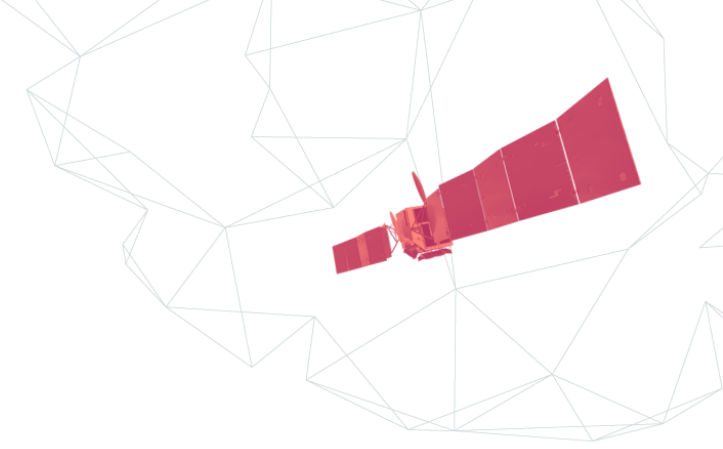
**Service request:** the MS users send the request with the logistical details relating to his specific needs, for example type of request (emergency, ordinary), region, city, place, arrival time, contact points.

What are your needs? - Select Service			
Service Families			
<b>TLC Services</b>			
Network Services	Star Topology	Details	Subscribe
	Mesh Topology	Details	Subscribe
	Star with direct sites links	Details	Subscribe
TLC Standard Services	Turn-Key TLC Services	Details	Subscribe
	Self-Managed TLC Services	Details	Subscribe
Custom TLC Services	Custom TLC Services	Details	Subscribe
<b>Added Value Services</b>			
Added Value Services	Standard IoT Services	Details	Subscribe
	Custom Added Value Services	Details	Subscribe

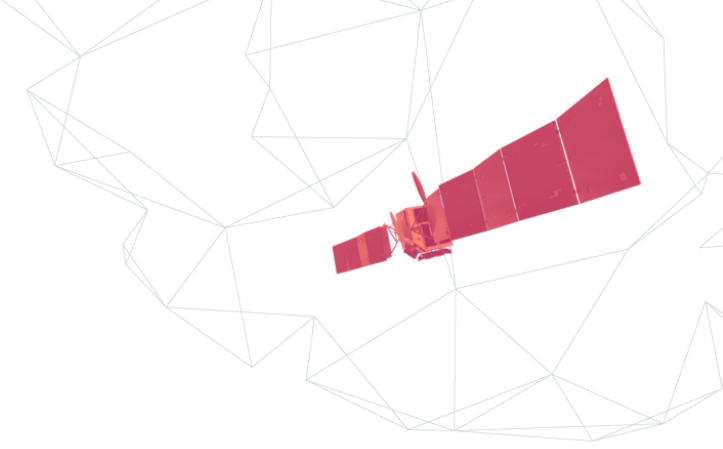
# CONNECTIVITY SET UP PHASE



# COMMUNICATION



# DEMONSTRATION OUTDOORS



- Participants will go outside of the building:
  - Telespazio will showcase the mission deployment from 2 types of ground equipment installed on 2 cars (on the move and on the pause). A Wi-Fi net will be created, and participants will connect with the network using a given password.
  - LuxGovSat will showcase the mission deployment from the manpack terminal. Participants will connect with their Wi-Fi net using a given password.
- Participants will be encouraged to walk around with their smartphones and observe how their connectivity will be switching automatically between Wi-Fi nets.

# ENTRUSTED

## LIVE DEMONSTRATION OF SATELLITE CONNECTIVITY

GOVSATCOM support for Crisis Management

Satellite communications supported by Athena Fidus and Govsat-I satellites

