

You, me and geodesy

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Stronger. Together.

United Nations Global Geodetic Centre of Excellence and United Nations Global Geospatial Information Management Subcommittee on Geodesy

Imagine this scenario... Telecommunications satellites providing television signals, and GNSS systems have stopped working.

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The traffic light systems have either stopped working or become highly erratic because they rely on GNSS synchronization information.

7:50 AM

10:18 AM

7:43 AM

The alarm on your phone didn't wake you up

9:03 AM

Since the GNSS and telecommunication satellites stopped working, land, sea and air travel has ceased.

11:47 AM

All stock exchanges around the world have stopped operating.

Global crisis: GNSS failure triggers widespread state of emergency.

Satellite failure cripples communication, military units stranded, global leaders struggle amid rising tensions.

23:30 PM

14:02 PM

23:58 PM

17:12 PM

12:34 PM

10%

Severely disrupted global systems; business halted, governments struggle, order breakdown feared. Satellite failure disrupts backup timing, causing global issues in communication and infrastructure.



There is panic on the streets and a run on the banks as people try to withdrawal cash.

Operating Critical Infrastructure

"15 of 18 critical infrastructure and key resources sectors relied on the Global Positioning System (GPS) including telecommunications, emergency services and financial exchanges."

~ U.S. Department of Homeland Security



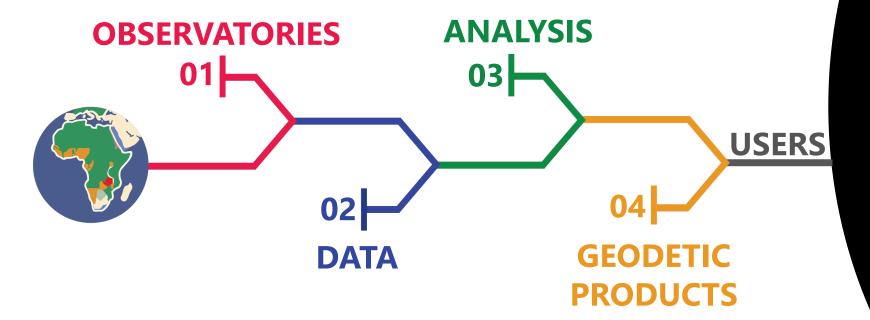
Driving Economic Development

"Over the next decade, revenue from GNSS, Earth Observation and satellite telecommunications (80% of the space industry market revenue) has growth rate of ~9%"

~ EUSPA Market Report and Euroconsult



Global Geodesy Supply Chain







UN General Assembly Resolution (2015)



UN General Assembly resolution (2015) "A global geodetic reference frame for sustainable development"



"Doomsday" scenario

1. **Short** timeframe

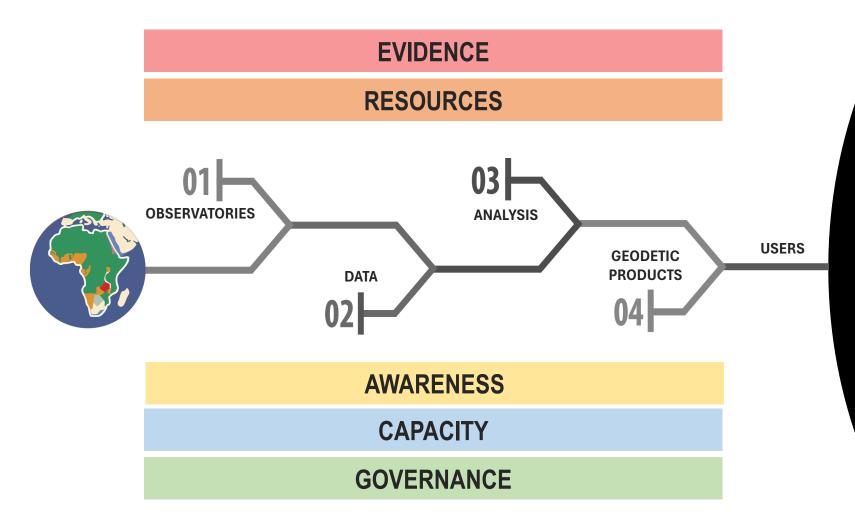
- e.g. Coordinated cyber-attack, space debris collision event, deliberate attack
- Member States, space agencies and satellite operators are aware of these risks and are actively working to mitigate them.

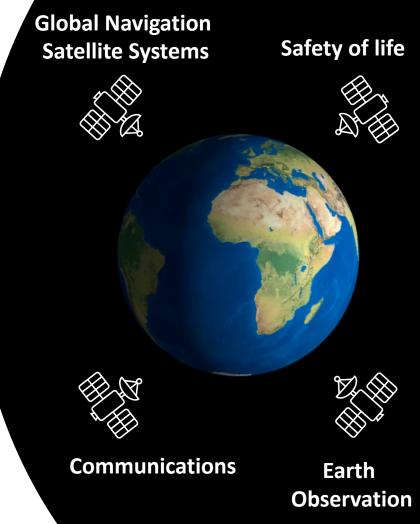
2. **Unknown** timeframe

- Degradation or failure of the global geodesy supply chain
- Many Member States, space agencies and satellite operators are not aware of these risks and are not actively working to mitigate them.



Weaknesses in the Global Geodesy Supply Chain







Stronger. Together.

1st Joint Development Plan for Global Geodesy

- Joint Development Plan with activities to:
 - 1. Avoid further degradation of the supply chain (support current operational requirements)
 - **2. Robust** (improve reliability)
 - 3. Next Generation (meet more ambitious requirements)
- Plan will include activities for UN-GGCE, Member States and partners
- Draft available for review and feedback (mid June 2024)
- Draft presented to fourteenth Session of the United Nations Committee of Experts on Global Geospatial Information Management (August 2024)

