#EUSpace

Challenges in Ensuring the Security of EU Space Programmes

Part II.

EU Space Programme

Security Accreditation Board chairperson

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European Union Agency for the Space Programme

Content

Part II: From past challenges to the future

- **EU Space security evolutions since 1999**
- **Is Europe a Space power?**
- **Current issues and challenges**

EU Space Security evolutions since 1999

The first decade… 1999 - 2009

- 1999: The European Parliament adopted a Resolution on the Communication from the Commission to the Council and the European Parliament ‘Towards a trans-European Positioning and Navigation Network: including a European Strategy for Global Navigation Satellite Systems (GNSS)’.
- 1999: The Council authorized the Commission to open negotiations with the United States of America for the conclusion of an agreement concerning the development of a Civil Global Navigation System.
- 2000: **Bill Clinton**, the U.S government **discontinued** its use of Selective Availability, the an **intentional degradation of public GPS signals**.
- 2002: the Council adopted conclusions on Galileo.
- **Council Regulation (EC) No 876/2002 of 21 May 2002 set up the Galileo Joint Undertaking**
- 2004: **Signature of the Agreement** on the promotion, provision and use of Galileo and GPS satellite based navigation systems and related applications **between the European Community and its Member States and the United States of America**.
- 2008: **Regulation (EC) No 683/2008** of the European Parliament and of the Council of 9 July 2008 on the further implementation of the European satellite navigation programmes **(EGNOS and Galileo)**

2010 – 2017 : EU learning independence

2010: Creation of the SAB, the Security Accreditation Authority for European GNSS systems with regulation 912/2010.

2010: SAB affirms need for **EU independence vs critical assets**.

2011: Council confirms SAB request for **reallocation of the Galileo Ground Segment into European territories**

2011: SAB defines and approves the Galileo Security Accreditation Strategy

2011 – 12: SAB approves the launches of the 4 first satellites of Galileo constellation and subsequent operations

Importance of Ground and Space Segment autonomy

2010 – 2017 : EU learning independence

Learning independence (2010 – 2012) from China, US, Australia…

Wikileaks – OHB (2011)

Classified Commission Delegated Decision (2015) related to the PRS Common Mimimum Standards **not published in the Official Journal of the European Union**.

EU addressed BREXIT vote (2016) consequences:

- UK participation to the Programme within EU and ESA
- UK sites removed:
  - GSMC UK
  - Falklands
  - Ascension Island

UK sites relocated to europe

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2018 – 2025: Independence… in EU law

From Galileo and EU Space experience to :

- **EDIDP regulation (2018)** Article 7 “Eligible entities”
- **European Defense Fund regulation (2021)** Article 9 « Eligible legal entities »

to EU defense initiatives

- **EU Space regulation (2021) Article 24 “Eligibility and participation conditions for the preservation of the security, integrity and resilience of operational systems of the Union”**
- Union Secure connectivity (2023) regulation Article 22

“The eligibility and participation conditions shall be as follows:

(a) the eligible legal entity is established in a Member State and its executive management structures are established in that Member State;

(b) the eligible legal entity commits to carry out all relevant activities in one or more Member States; and

(c) the eligible legal entity is not to be subject to control by a third country or by a third country entity.”

2017 until now: Cyber-security

- 2017: Decision to adopt a dedicated cyber requirements baselain for Galileo extended progressively to the other Space Programme components

- SAB standards for cyber audits:
  - Architecture audits
  - Configuration audits
  - Operational audits
  - **Penetration tests** to assess cyber detection, reaction, remediation…
  - Maintenance audits

From audits to concrete action plans

EU Space Programme benefits from SAB cyber expertise

Continuous consolidation of secure operations

- Different levels:
  - General environment
  - Local environment (site)
  - System
  - Security Monitoring and operators response to attacks
  - Council / EEAS response

  with always the need for an operational chain of command !

- First Council Decision operational procedure coming with the Galileo OS and PRS Initial Service SAB approval in 2016.

- Service continuity has not been affected by COVID-19.

- Different personnels with different applicable rules (EU staff, MS staff, private entities…) to be considered

SAB standards

SAB standards to address all EU Space Programme Components:

- Security Accreditation Strategies;
- Accreditation conditions;
- Independent SAB security checks.

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Security Accreditation Board

GOVSATCOM and Union Secure Connectivity Security Accreditation Strategy
EUSPA-SAB-ACC-PRCS-A25731
Issue/version: 1.0

GOVSATCOM and Union Secure Connectivity Security Accreditation Strategy

Reference:
EUSPA-SAB-ACC-PRCS-A25731

Issue/Version: 1.0

Date: 20/06/24

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SAB standards benefit to the Programme and support a competitive EU space industry.

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SAB and MSs independent security checks

- Physical intrusion tests
- Cyber audits and cyber penetration tests
- System architecture audits
- Interfaces with users
- Operation audits including chain of command from Council/EEAS to System

SAB assesses the reality
enhancing the protection of space assets and readiness to aggression.

Is Europe a space power ?

Evolution of usage

- What does “civil programme under civil control” mean?

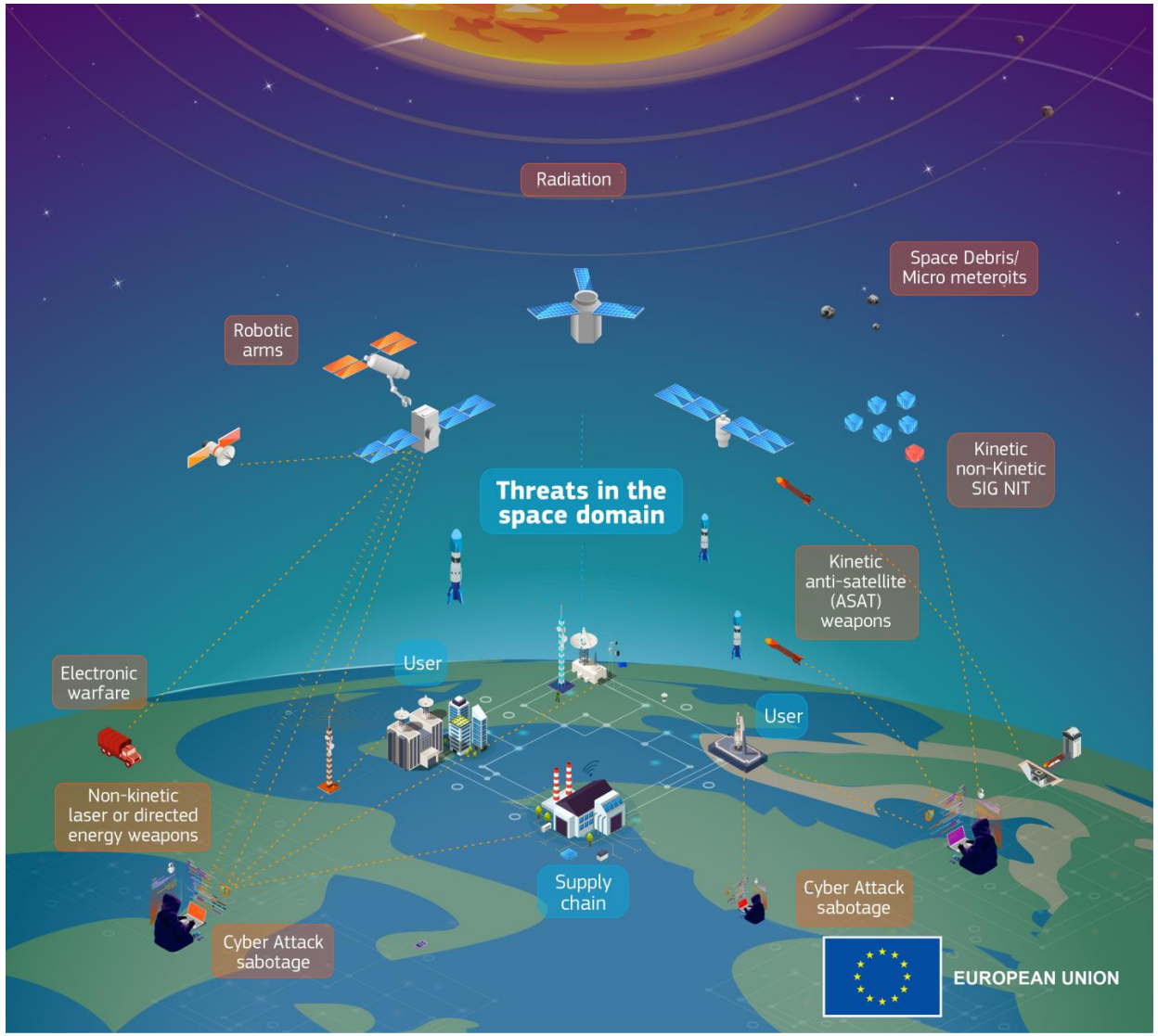
- What does “governmental service” mean ?
  - PRS
  - GOVSATCOM / IRIS2
  - EOGS (SATCEN)

- Global GNSS systems : US, Russia, China and EU – why is so GNSS strategic ?

EU Space Strategy for Security and Defence (2023)

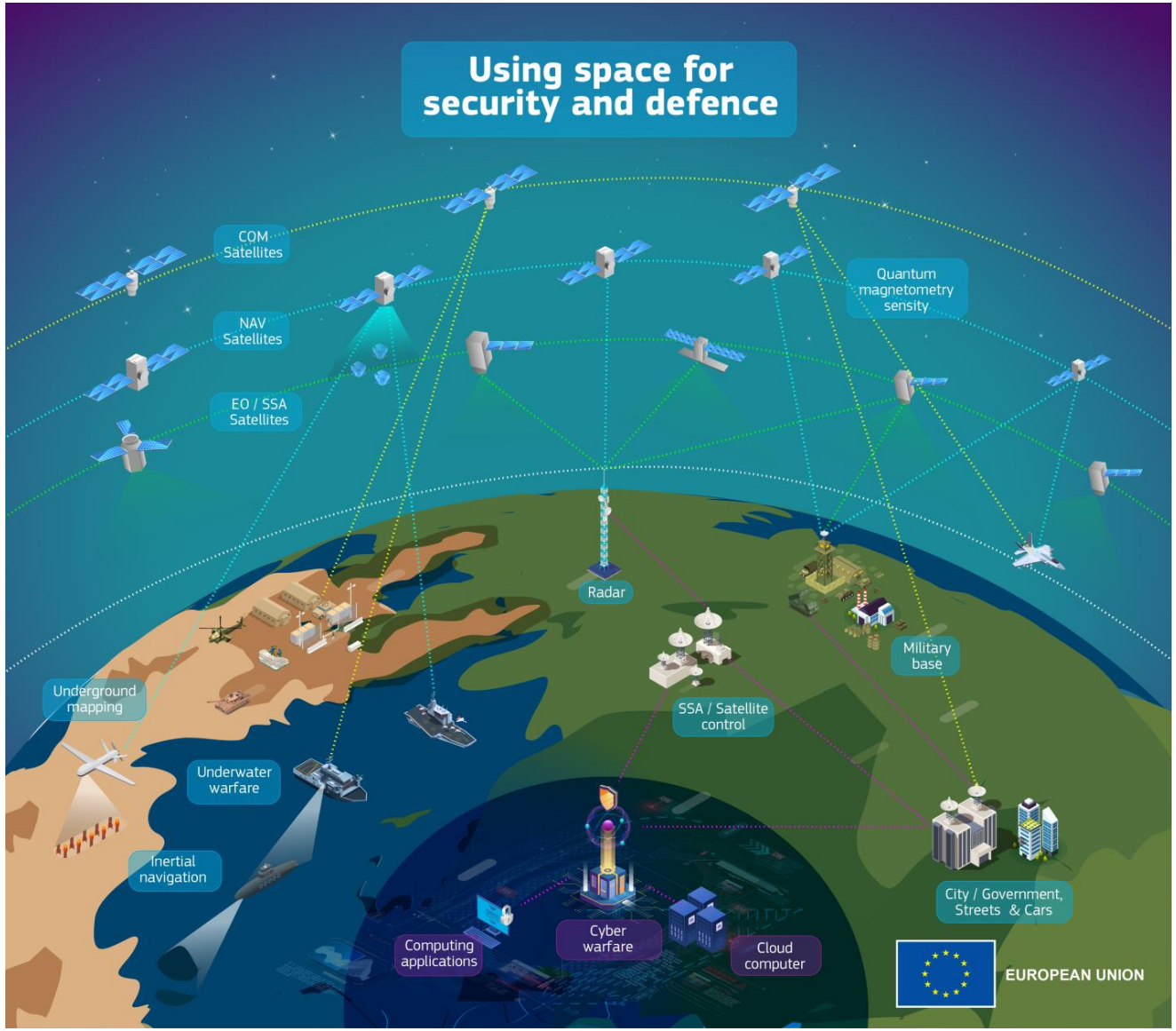
Share understanding of space threats.

Single Intelligence Analysis Capability (SIAC) under the High Representative, along with Member States military and civilian intelligence services, will increase their strategic understanding of space threats and counterspace.



EU Space Strategy for Security and Defence (2023)

- Increasing EU and Member State space activities
- Use of space for security and defence
- Partnering for responsible behaviors in space



EU autonomous access to space

Launches from Cape Canaveral (2024) reflects gap materialized for heavy Launchers in Europe.

It has been possible with :

- A specific EU-US agreement (TFUE 218)
- Specific security measures

Ariane 6 is launching again satellites.

Multiple launchers are now developed in Europe with different launch pads.

Current issues / evolutions

Geopolitical context

- **Space Power**: Brussels, 09th April 2025 – The European Commission and the Government of Ukraine signing an agreement enabling Ukraine's participation in three key components of the European Union Space Programme: **Copernicus, Space Weather Events (SWE) and Near-Earth Objects (NEO) sub-components.**

- Negotiation with Norway and Iceland to join GOVSATCOM and IRIS2

Next MFF and future governance ?

Public consultation for the next Multiannual Financial Framework (MFF) was launched from 12 February 2025 until 06 May 2025

- Budget for Space?
- Budget for Defense in Space ?

In terms of governance:

- Tasks within EU ?
- Role of ESA ?
- Response in case of aggression?

Growing importance of security services

Galileo 2nd generation: More power, more security…

EGNOS V.3 supported by Galileo and GPS

SATCEN
EUROPEAN UNION SATELLITE CENTRE

From Pilot Earth Observation Governmental Service to a complete new Service?

Synergies : Defense and Space…

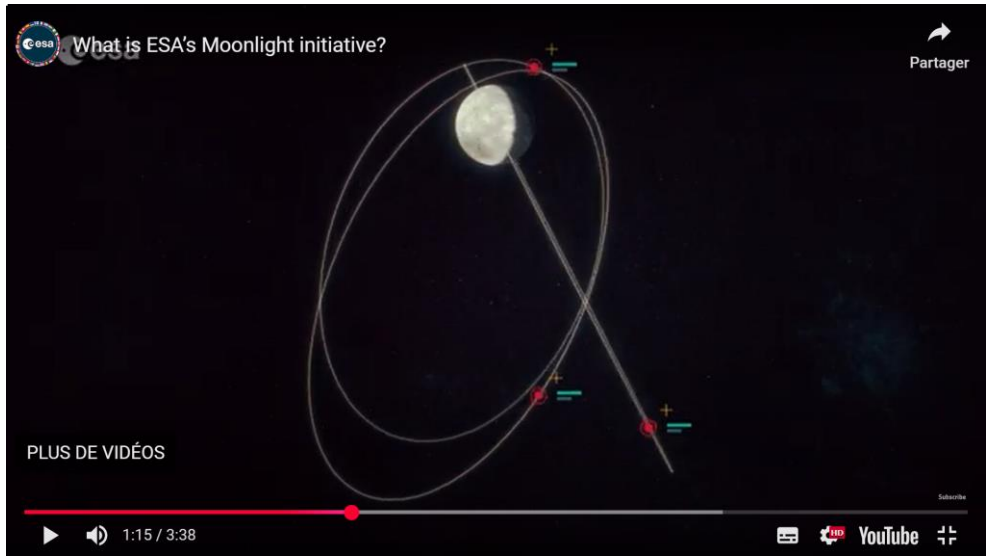
- New capabilities derived from EDF such as NAWAR surveillance ? Protection of space based assets? Space Based Intelligence, Surveillance, and Reconnaissance ? SSA?

- With satellite constellation new possibilities emerge.

- EU SST supporting Galileo, EGNOS, IRIS^2.
- IRIS^2 supporting Galileo and EGNOS.

- Continuation of non-EU dependence reduction?

To the moon and beyond…



Navigation signal can be acquired on the moon…
Lunar Time reference under discussion
… and beyond

Questions?

References

Applicable regulations and decisions

- REGULATION (EU) 2021/696 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 28 April 2021 establishing the Union Space Programme and the European Union Agency for the Space Programme and repealing Regulations (EU) No 912/2010, (EU) No 1285/2013 and (EU) No 377/2014 and Decision No 541/2014/EU
- REGULATION (EU) 2023/588 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 15 March 2023 establishing the Union Secure Connectivity Programme for the period 2023-2027
- COUNCIL DECISION (CFSP) 2021/698 of 30 April 2021 on the security of systems and services deployed, operated and used under the Union Space Programme which may affect the security of the Union, and repealing Decision 2014/496/CFSP
- COUNCIL DECISION of 23 September 2013 on the security rules for protecting EU classified information (2013/488/EU)

Fundamental principles

Nine fundamental principles were adopted by the United Nations General Assembly in 1963:

1. The exploration and use of outer space shall be carried out for the benefit and in the interest of mankind.
2. Space and celestial bodies may be freely explored and used by all States.
3. Outer space and celestial bodies shall not be subject to national appropriation.
4. Activities in the use and exploration of outer space shall be carried out in accordance with international law, with a view to maintaining international peace and security.
5. States have international responsibility for national activities in space, whether pursued by governmental or non-governmental bodies.
6. States must conduct their activities in the use and exploration of space on the basis of the principles of cooperation and mutual assistance.
7. A State which registers an object launched into outer space shall retain it and any personnel occupying it under its jurisdiction and control.
8. Any State that launches or participates in the launch of an object into space is responsible for any damage that may be caused on Earth, in the atmosphere or in outer space.
9. States regard astronauts as envoys of humanity and owe them assistance in the event of an accident, distress or forced landing.