

# Space Traffic Management

## *ESPI perspectives*

ESPI/UNIDIR Evening Event  
Space Traffic Management - National and International Efforts  
Vienna, 6th February 2020

# New ESPI report



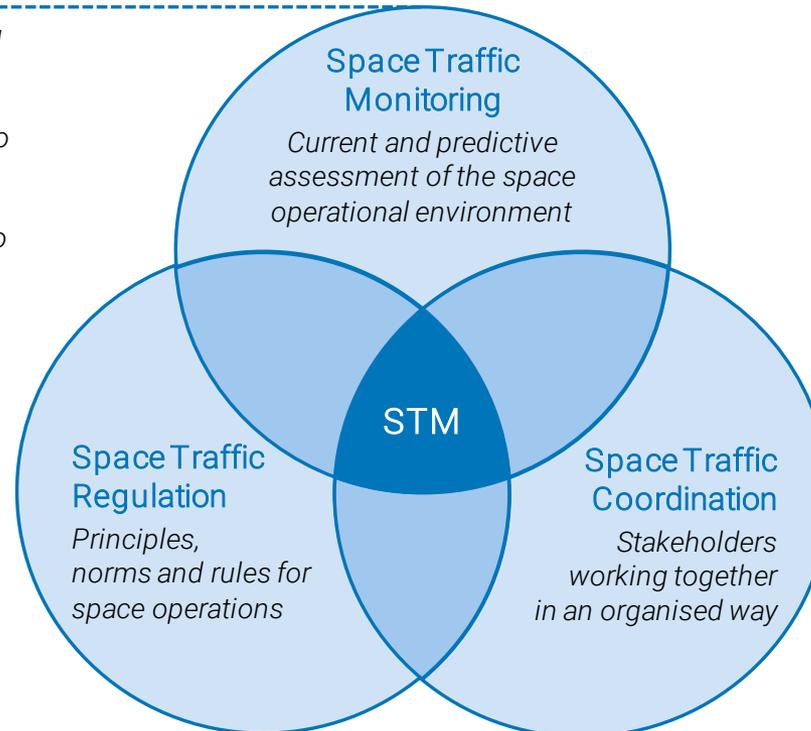
# About Space Traffic Management

## Objectives:

- enhance the safety of on-orbit operations by reducing the risk of collisions and interferences.
- ensure long-term sustainability of space activities by mitigating negative effects on the space environment.

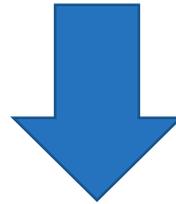
*Detection, identification, tracking and cataloguing of active and inactive objects constituting space traffic with the objective to provide necessary data and services to ensure the safety of space operations, from launch to re-entry.*

*Definition, enforcement and verification of technical and regulatory provisions encouraging or compelling actors to conduct their activities in ways that are not detrimental to the safety and long-term sustainability of the space operating environment.*



*Means and measures to support, promote or constrain actors to conduct their space activities in a coordinated manner with others by sharing information, synchronising their operations or defining and following common procedures for example.*

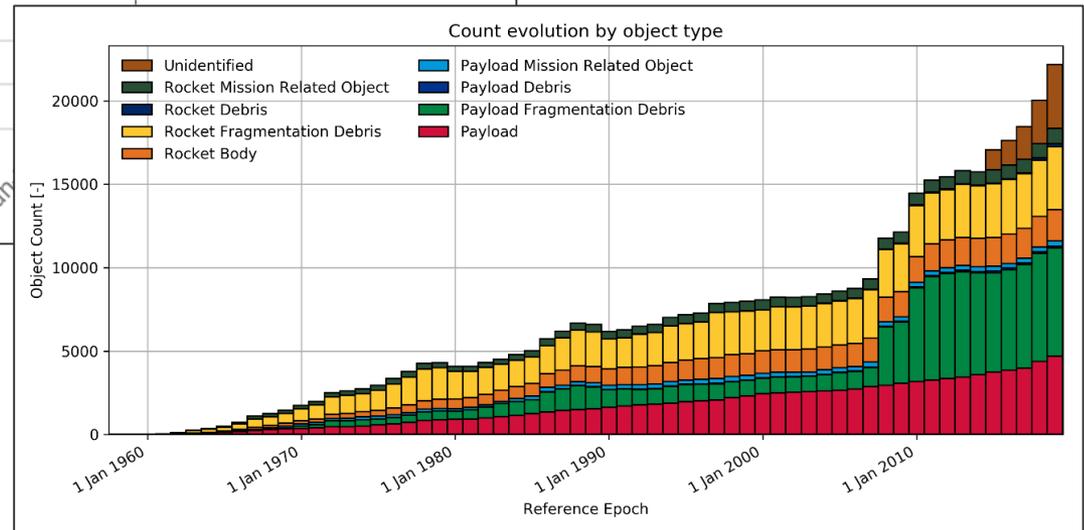
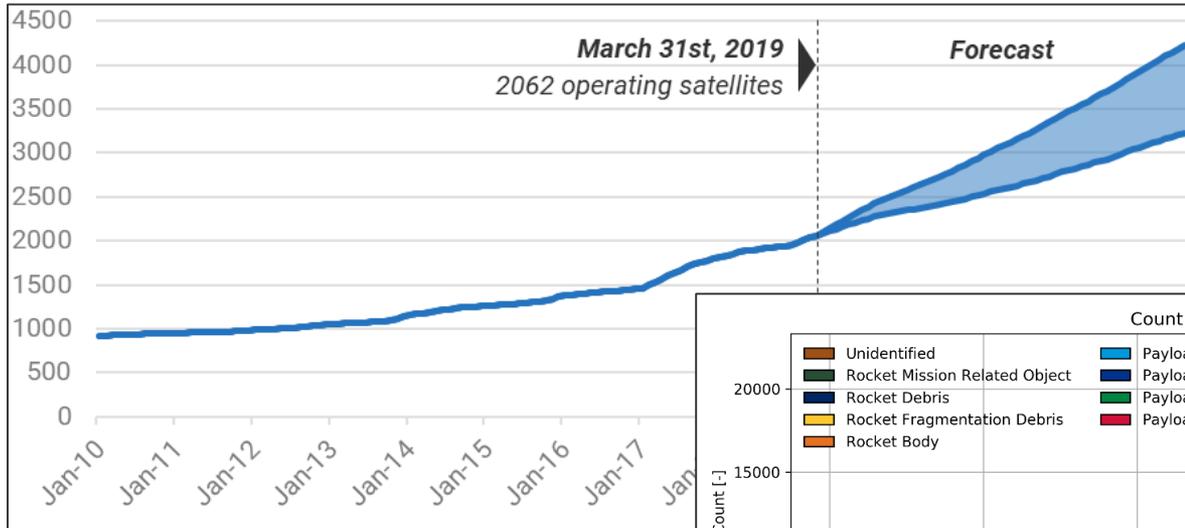
# Space Traffic Management already exists!



## Need for a **BETTER** Space Traffic Management

- 1** **CAPABLE** to ensure the safety of on-orbit operations and the long-term sustainability of space activities
- 2** **ADAPTED** to future space activities and operational conditions (globalization, intensification, diversification)

# Increasing space traffic risks of collision and interferences



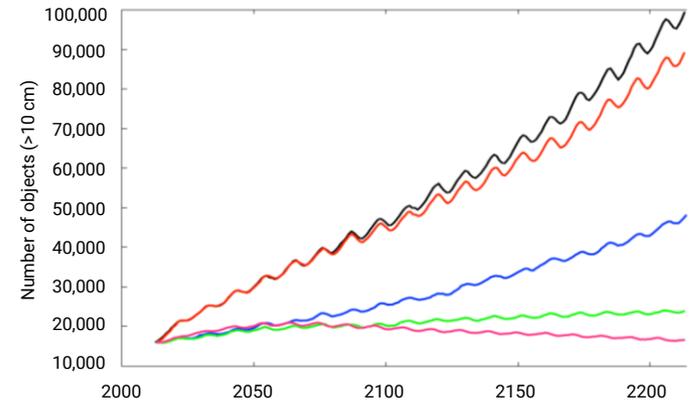
Dawn of a space activity transformation: Growing activity, new actors, new concepts (e.g. cubesats, mega-constellations, on-orbit servicing), debris generating events...

# Inadequate regimes and capabilities for future space operational conditions

## PREVENTION

### Low compliance with international guidelines

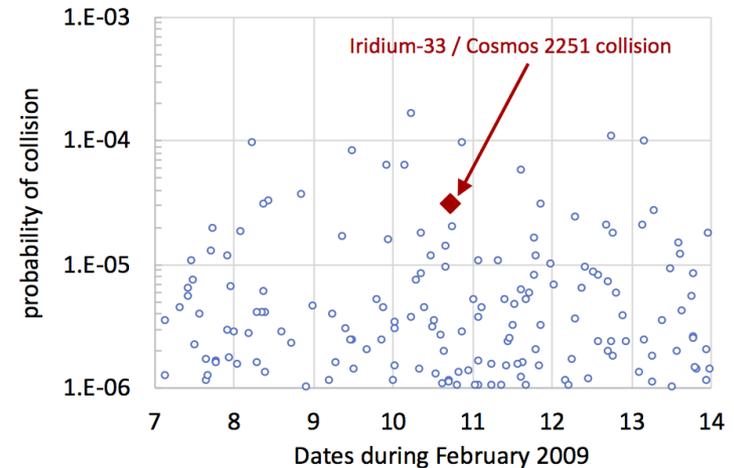
- Strong consensus on the effectiveness of international recommendations
- Current compliance too low to achieve safety and sustainability objectives.



## PROTECTION

### Limited capabilities to detect, evaluate and respond to collision risks

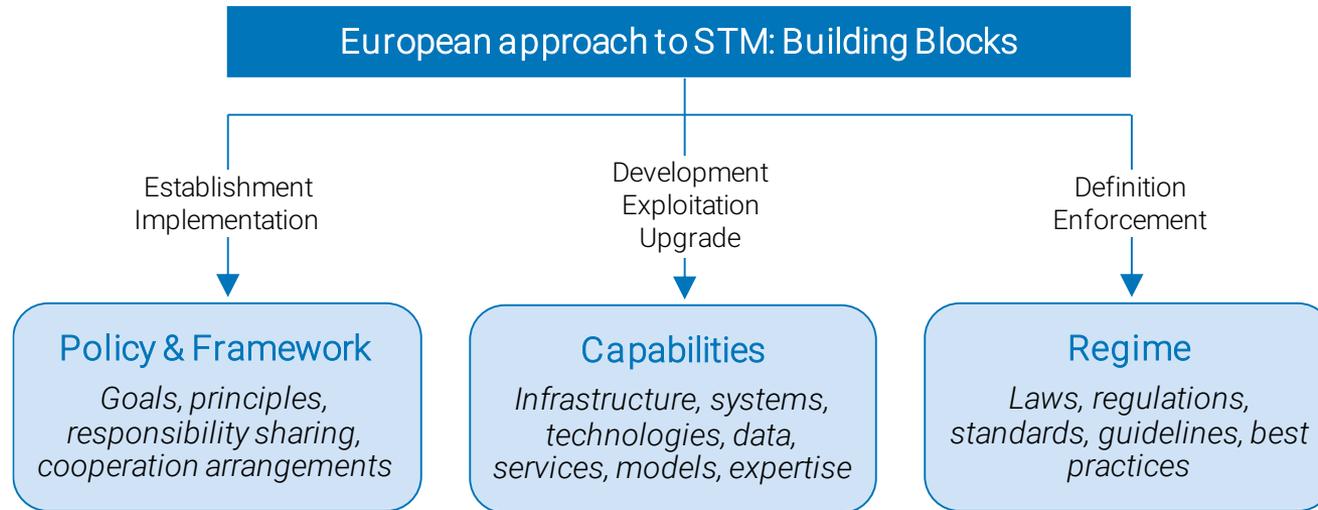
- Coverage and tracking challenge
- Precision and accuracy challenge
- Need advance capabilities, greater transparency/information-sharing
- Interoperability issues to ensure data quality, integrity, availability and confidentiality.



# Stakes for Europe

- 1** Protect the value of the European space infrastructure
- 2** Contribute to a service-oriented policy
- 3** Reinforce European autonomy and leadership

# Building blocks of a European approach to STM



- 1** Europe already addresses many STM functions through various parallel domestic activities as well as an active participation in multilateral and bilateral frameworks.
- 2** The European approach to STM-related issues is multilayered, centered around the sovereign competence of national governments over policy, regulation and capabilities
- 3** A more comprehensive and operational approach to STM in Europe will require some update/upgrade and harmonisation of European frameworks, capabilities and regime along a common policy

# Towards a European approach to STM

**1**

## Setting up a joint European STM policy and framework

- The development of a “regional” approach, integrating an international dimension, would be highly desirable
- It will imply to reach a broad political consensus among Member States and to balance national interests against the merits of European cooperation
- Should address civil needs and be applicable to civil programmes

**2**

## Advancing European capabilities and best practices

- Advance European capabilities and best practices as part of a comprehensive and coherent Risk Management Strategy
- Enhance and formalize data sharing with third parties
- Further integrate commercial data and services to leverage cost-effective and innovative solutions and foster international competition

**3**

## Promoting European positions on the international scene

- Promote clear, common and consistent European positions in international frameworks
- In the shorter term standardization bodies will play a central role to capture best practices of a variety of stakeholders and to translate them into common requirements

## Report available on ESPI website



# Thank you

*ESPI is the European think-tank for space. The institute provides decision-makers with an informed view on mid to long-term issues relevant to Europe's space activities.*



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