The European Space Agency

- international intergovernmental organisation
- 22 Member States, 5.75 Billion EUR budget
- actor and mechanism of int. cooperation
- space research, technology and applications for exclusively peaceful purposes
- SSA + space weather program; IADC member
Legal aspects of CSTM

- an international perspective
- a regulatory perspective
  - How does international law regulate space activities today?
  - What could STM mean from a perspective of international law?
  - An international STM regime?
Regulation of space activities today

- Public international law:
  - Treaty on Principles Governing the Activities of States in the Peaceful Exploration and Use of Outer Space (1967)
  - other UN space treaties;
  - ITU regime; UN Charter (“space activities ... in accordance with IL”)
- Domestic laws and regulations
- Non-legally binding instruments incl. technical norms
UNCOPUOS, 1959

A comprehensive space law codification

• “not practicable or desirable at the present stage of knowledge and development.”

• “premature codification might prejudice subsequent efforts to develop the law based on a more complete understanding of the practical problems involved”
Towards an era of “new space”
International STM regime: the concept

- “Space Traffic Management is the set of regulatory rules to ensure **safe access** to outer space, **safe operations** in outer space and **safe return** from outer space.” (IAA, 2006)
- “... free from physical or radiofrequency interference” (IAA, 2018)
- Underlying idea: **to view spaceflight as a comprehensive traffic regime and regulate it accordingly**
Spaceflight as a comprehensive traffic regime
Outer space: a realm of a different kind

• Caution to resort to simple analogies with air traffic:
• Outer space is an extra-territorial regime
• Different physical realities; different object types:
  – motion of objects / orbital mechanics
  – limited maneuvering capabilities; different traffic infrastructure
  – high velocities; remote operations
  – objects remain after EOL unless deorbited; etc.
Challenges and opportunities

• **Technical prerequisites**, international data and technology exchange and cooperation ... *challenging*

• **International political will** to advance the current models of space law and space governance ... *challenging*

• **Coherence** and completeness of regulation ... *an opportunity*

• “Rules of the game” **for all space actors** (States and non-governmental entities) ... *an opportunity*
STM elements: existing & evolving

• National space legislation
  – Various novel concepts of traffic regulation

• International non-legally binding instruments
  – Example 1: IADC Space Debris Mitigation Guidelines (2002 etc.)
  – Example 2: UN Guidelines on the Long-term Sustainability of Space Activities

• International law (beyond space law)
  – Spectrum (frequency) and orbit management via ITU ... administers a sophisticated system of frequency ‘traffic’ management
STM: bottom-up approach

• co-existence of regulatory instruments of different nature and purpose
  – may constitute the building-blocks of STM emerging from single fields of regulation
  – allows individual solutions at domestic level
• flexibility to tackle key issues in a comparatively timely manner, but at the risk of fragmentation
STM: top-down approach

• creating a comprehensive and inclusive STM regime: legal norms (evolvement of existing space law) + institutional management

• ITU approach as a possible model:
  – Level 1: Outer Space Convention (OSC)
  – Level 2: Outer Space Traffic Rules (OSTR) ... comparable to the ITU Administrative Regulations... reviewed and updated
  – Level 3: Outer Space Traffic Technical Standards (OSTTS)
International developments

- Discussion of STM at intergovernmental level: agenda item at UNCOPUOS Legal Subcommittee 2016-2017-2018
- STM Study of the International Academy of Astronautics (IAA) 2018
- ESA continues work on space safety (including SSA and STM)