

**IISL / ECSL Symposium
Prospects for Space Traffic Management
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**Discussion Paper: Prospects for Space Traffic Management
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Space Traffic Management

... so far an academic venture ...

- early, but still excellent, ideas by Lubos Perek in 1982
- AIAA / CEAS / IAA / UNOOSA Workshops 1999 and 2001
- IAA study group 2001-2003

... but soon a „real“ issue

- today approximately 600 active satellites
- approximately 9000 debris larger than 10 cm
- rising number of spacefaring nations
- rising number of launch ventures and facilities
- rising number of non-governmental actors
- new technologies, in particular aerospace objects in the future

What does Space Traffic Management have to achieve?

- Safe access to outer space
- Safe operations in outer space, in particular collision avoidance
- Prevention of pollution of outer space, safeguarding the (limited) natural resources (the orbits)
- To combine existing rules developed in various bodies (UNCOPUOS, ITU) and regimes (international and national space law, air law, telecommunication law)

Elements of Space Traffic Management to be considered regarding the three phases of space activities

- Launch phase
 - expendable and re-usable launch systems, aerospace objects, commercial and private ventures, debris mitigation

- **In-orbit phase**
 - use of orbits, manoeuvrability of spacecraft, collision warning and avoidance, use of disposal orbits, specific use of outer space (e.g. advertising, funerals)
- **Re-entry phase**
 - re-usable launchers and aerospace objects, intentional deorbiting, unintentional deorbiting

Elements for a regulatory framework for the three phases

- Information needs (information / observation / notification)
- Regulatory needs on the international and national level
- Organizational and institutional aspects

A long-term perspective 2010-2020:

- Shared knowledge about the status of space activities at any given time (shared observation capabilities and capacities)
- Comprehensive set of binding rules for all three phases negotiated internationally and implemented through national legislation for governmental as well as non-governmental activities
- Organizational structures comparable to air traffic management as in existence today