ICAO UNOOSA

SPACE2016

Space Traffic Management

Alexander Soucek

Legal Officer, European Space Agency

ICAO / UNOOSA Symposium

15–17 March 2016, Abu Dhabi, United Arab Emirates

Space Traffic Management: 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)
- Basis: to view space activities as a comprehensive traffic regime and regulate them accordingly.

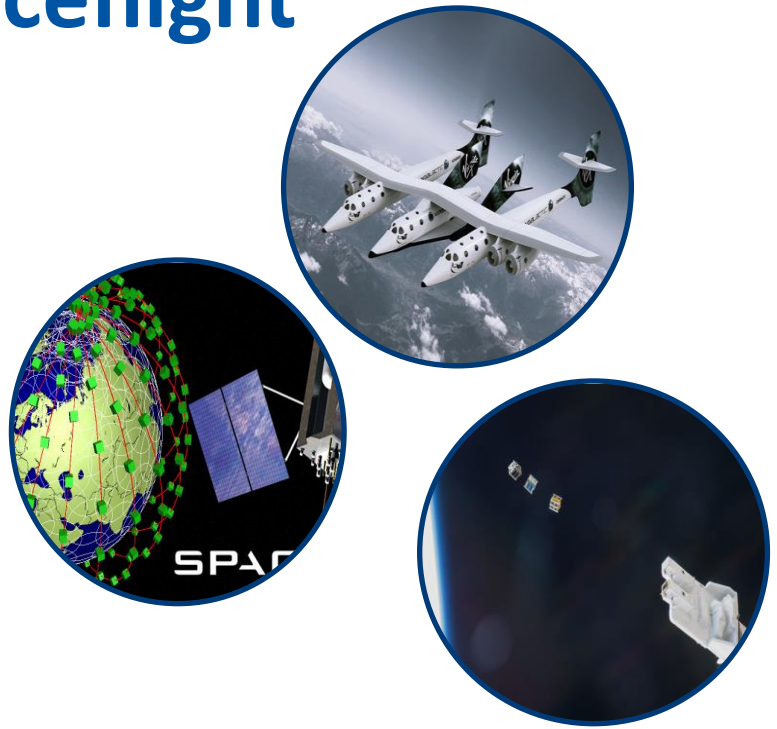
Spaceflight as comprehensive traffic regime

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 int. law)", etc.
- Domestic laws and regulations.
- Non-legally binding instruments incl. technical norms.

Evolution of spaceflight

- New ways of using outer space.
- New types of space activities.
- New actors.
- New technical challenges.
- => new regulatory requirements.



Possible phases and elements of STM

- Phases: **launch phase** (e.g. pre-launch notification, launcher upper stages), **in-orbit phase** (operations until EOL; e.g. information duties, CAM), **post-mission and re-entry phase** (debris mitigation, ADR).
- Elements: space-related norms (e.g. orbit zoning), object-related norms and traffic-related norms.
- Builds upon existing space law (c.f. custom).

Conceptual options for STM

- Various approaches towards one or more STM regimes are conceivable, e.g.: *"ICAO concept"* or *"ITU concept"*:
- a legal framework of permanent character rooted in public international law; derived provisions for space traffic for regular revision; derived technical standards; an overarching institutional frame.

Outer space: a realm of a different kind

- Caution to resort to simple analogies with air traffic:
- Outer space as extra-territorial regime.
- Different physical realities; different object types; motion of objects / orbital mechanics; limited maneuvering capabilities; different traffic infrastructure and limited knowledge of objects (-> SSA); high velocities; remote operations, objects remain after EOL; etc.

Space Traffic Management: the future

- The discussion of STM at intergovernmental level has begun: single issue / item at UNCOPUOS Legal Subcommittee 2016.
- STM Study of the International Academy of Astronautics (IAA) to be published in 2016.
- ESA STM approach is in preparation.

ICAO UNOOSA

SPACE2016

THANK YOU

Alexander Soucek

European Space Agency

ICAO / UNOOSA Symposium

15–17 March 2016, Abu Dhabi, United Arab Emirates