



**INTERNATIONAL SPACE COMMERCE
2013 SUMMIT**



PRESENTATION: Regulation of small satellites under international and national space law

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... it's an irn Summit.



Regulation of small satellites in Europe

International Space Commerce Summit, London, UK

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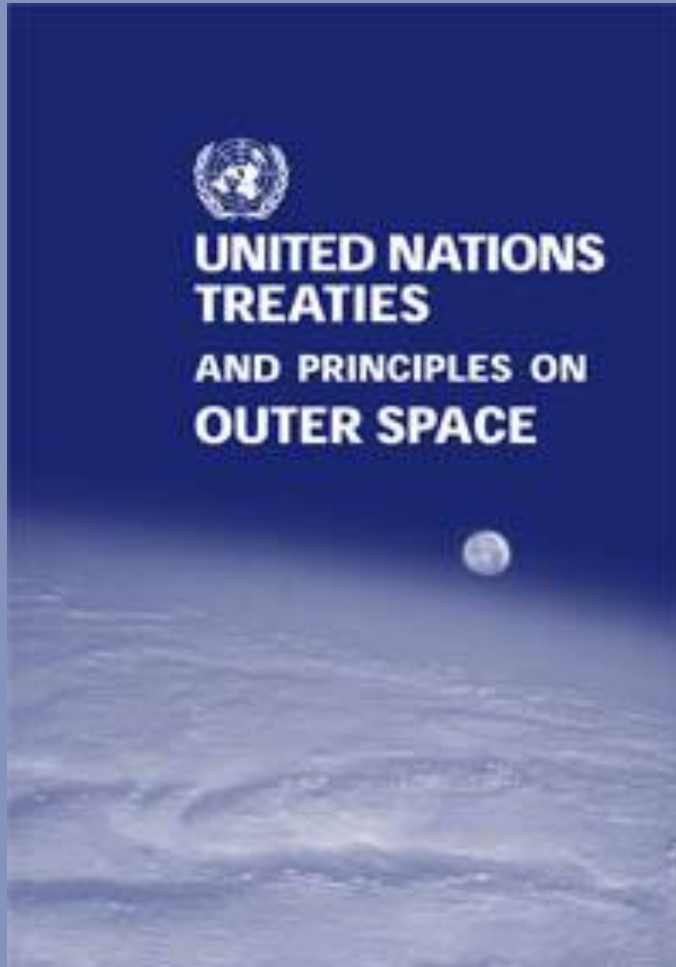
Content

- Benefits & concerns of small satellites
- International space law & small satellites
- National regulation of small satellites
 - Focus on Europe
- Considerations in the UN and ITU
- Prospects for adequate regulation

Benefits & Concerns

- Benefits of small satellites (<1000 kg)
 - Low Cost: accessible to all, incl. developing countries
 - Platform for scientific research/education
 - Technology demonstration
 - Standardization allows international cooperation
 - e.g. QB50
- Concerns
 - Collision risk in LEO, debris
 - Considerable risk: non-manoeuverable once in orbit
 - Fault liability
 - Damage upon re-entry
 - Very low probability, will burn up
 - Absolute liability

International space law



- UN Committee on the Peaceful Uses of Outer Space
- 2 sub-committees
 - Scientific/Technical
 - Legal
- 5 Treaties, 5 sets of Principles
- Works by consensus
- Membership now 70+

Legal instruments

- Outer Space Treaty 1967 (OST)
- Rescue Agreement 1968
- Liability Convention 1972
- Registration Convention 1975
- Moon Agreement 1979

- + UNGA resolutions, sets of principles, guidelines (e.g. debris mitigation)

Main principles OST

- Preamble: exploration & use for peaceful purposes
- Art. I: Exploration & use of outer space & celestial bodies is 'free', but:
 - Benefit & interests of all states
 - Province of all Mankind
 - No discrimination, on basis of equality
- Art. II: Appropriation of outer space & celestial bodies is forbidden
 - No sovereignty in space!
- Art. III: Int. law & UN Charter apply

Main principles (2)

- Art. VI: international responsibility for national activities in space, also covers private enterprises and individuals
- Art. VII: liability of the launching state for damage caused by its space object
- Art. VIII: state of registry retains jurisdiction & control over object/personnel
- Art. IX: International cooperation / due regard for interests of other states, avoid harmful interference

The Treaties & small satellites

- Main relevance: Arts. VI, VII, VIII OST
- VI: Appropriate state to authorize/supervise
 - Do many national laws regulate small satellites?
- VII: Launching state liable for damage caused by 'space object'
 - Interpretation of 'procure the launch'
 - Are small satellites space objects?
 - If damage in space: can fault be proven?
- VIII: State of registry retains jurisdiction & control, one launching state registers
 - Do states register small satellites?

National implementation

- Private commercial space activity growing
- Must be authorized & supervised
 - e.g. via national legislation
- 6 EU member states have national space legislation with licensing system:
 - Sweden (very basic), UK, Belgium, The Netherlands, France, Austria
 - Others must also authorize & supervise

Commonalities in legislation

- National space laws address at least:
 - VI OST: Authorization/supervision, through licensing
 - VII OST: Third party liability provisions, sometimes with insurance obligation & right of recourse
 - Liability usually limited to insurance amount, except in case of gross negligence etc.
 - VIII OST: Registration provisions

National law & small satellites

- The Netherlands
 - Excluded, as a consequence of definition of 'space activity' (the launch, flight operation or guidance of space objects in outer space')
 - Currently under review
 - Insurance: highest available, determined by Minister
- Belgium
 - License needed, amendment underway to clarify this more explicitly
 - Insurance decided by the King in each case

National law & small sats (2)

- Austria
 - Satellites for research & education do not need insurance; otherwise for €60M, liability limited to insurance amount
- UK
 - Insurance for €60M until de-orbiting can be demonstrated (!), liability unlimited (!)
 - Review ongoing: liability expected to be limited to amount of insurance (€60M)
- France
 - Liability limited to insurance amount, €60M (or other guarantee); no insurance if not available on market
 - Liability ends one year after loss of control
 - The only law to limit liability in time and in amount!

National law & small sats (3)

- Considerable differences
- Operators of small satellites can go license-shopping
- Harmonization of laws in EU is not allowed under Lisbon Treaty Art. 189
- Could be done at national level or in other fora
 - European Interparliamentary Space Conference (EISC)?

Availability of insurance?

- So far no product on the market
- Insurance brokers expect a product to be available if demand exists
- Special prices may be needed
 - Usual rate around 0.1% of amount to be covered
But not reasonable to spend > 5-10% of value of satellite project on insurance
- Sometimes launch + 1 year is covered by launch provider
 - If stay is max 1 year, no extra insurance needed
 - National authorities will need insight to verify

Adequate regulation

- Art. VI: States must be encouraged to license small satellites, require proper de-orbiting, perhaps impose a max. height
- Art. VII: perhaps relax insurance requirements
- Art. VIII: States must be encouraged to register small satellites
 - Launch service providers increasingly require registration as condition for launch!

Other challenges

- UN: Long-Term Sustainability of Outer Space Activities
 - Set of guidelines ('best practices') to be presented to UNCOPUOS in 2014
 - For all classes of space objects, including small satellites
- ITU: Orbits & frequencies
 - Currently amateur frequencies used
 - Need for proper frequency allocation
 - Topic on the agenda of WRC 2018

Conclusions

- International treaties provide general legal framework
- Implementation needed at national level, but only a few states have done so
- Considerable differences in exposure and obligations
- Several reviews ongoing: BE, UK, NL; consultation would be advisable (EU cannot harmonize)
- Small satellite operators should review legal issues & obligations at national level

Conclusions (2)

- Legal regulation should ideally be harmonized to some extent, and must be sufficiently flexible to encourage innovative use of outer space, enable states to meet their international obligations, and provide legal certainty for all parties



Thank you

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