International Space Law: Background for Ocean Surveillance & Background for National Space Law

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Surveillance from space

General space law applies **Baseline: freedom of space activities** Also: freedom of information (gathering) UN Res. 41/65 of 1986 Treaty- & law-induced remote sensing National law Acceptance of data in legal disputes

Privacy aspects & IPR aspects



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UN Resolution 41/65

Accepted by consensus \rightarrow generally considered customary int'l law Freedom of remote sensing for "improving natural resources management, land use and the protection of the environment" (I(a)) Principles generally provide little by way of further specific legal obstacles



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Treaty verification

Environmental treaties

- 1973 MARPOL Convention
- 1985 Vienna Ozone Layer Convention
- 1992 Convention Climate Change
- Evidence in court ...?
 - Song San-case: VIII/1996 pollution Singapore
 - Detected by satellite validated on 'ground'
 - Criminal charges, incl. MARPOL Convention
 - Fines S\$ 400,000 for pollution, S\$ 50,000 for failure to keep book



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National law & verification

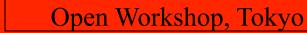
A Case Study: the United Kingdom

- Project UCL; book scheduled for 2012
- Satellite data so far not directly used as evidence
 - But: analogies may be useful
 - Aerial photos, computer data, digital imagery ...
- Evidential rules: based on adversarial testing
- → Focus not on admissibility, but on reliability
- → Standardised procedures & audit trail



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Two remaining aspects

Privacy aspects

- Under many national laws
- Also Int'l Covenant Civil & Political Rights, 1966
 - Art. 17: prohibition arbitrary interference with privacy (+ entitlement to protection by law against interference)

Applicable to companies as well ... (?)

- IPR aspects i.e. copyright
- > Nat'l laws: "originality" $\leftarrow \rightarrow$ "sweat of the brow"

Int'l treaties: mutual acceptance & harmonisation

Berne 1886, UCC 1952, TRIPs 1995, WIPO 1996

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Towards national space law

- Space law = public & international law
 - Outer Space Treaty, Liability Convention & Registration Convention
 - States 'makers & breakers' of space law
 - ←→ Legal status IGOs
 - Responsibility ultimately still with member states
 - Liability also ultimately still with member states
 - Legal status private sector?
 - Hardly even mentioned
 - Same story with responsibility & liability



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Private sector involvement

- From subcontracted builders to space entrepreneurs
 - Satellite communications; launching; satellite remote sensing; private spaceflight
 - Requiring control (& appropriate stimulation)
 - National authorisation / licensing system
 - 1. Ensuring proper implementation state responsibility
 - 2. Ensuring proper implementation state liability
 - 3. Ensuring due qualifications
 - 4. Ensuring monitoring mechanism (space agency)



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1. State responsibility ...

Art. VI, OST, requires "authorisation & continuing supervision" with regard to "<u>national activities</u> in outer space"

Policy choices scope licensing regime:

- Only activities of nationals
- Only activities from national territory
- Both activities of nationals & from nat'l territory
- Various exceptions e.g. in case of possibility multiple licensing authority

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... & national space laws

Divergence in practice

- United Kingdom & Hong Kong: nationals
- Australia: territory (essentially: 4 types!)
- Russia, Ukraine, Sweden: territory & nationals
- S Korea, Netherlands, Belgium: territory; nationals only in (different) special cases
- USA: territory & nationals (launching); both + 'control' (remote sensing); territory (satcom)
- S Africa, France: territory & nationals (launching); nationals (other space activities)



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2. State liability ...

- Art. VII, OST & Liability Convention make "<u>launching state(s)</u>" liable for damage caused by space object
 - Absolute liability for damage caused on earth
 - ←→ Fault liability for damage caused in space
 - Alternative criteria for qualifying as launching state: launch, procurement, territory, facility
 - Without principled limit to compensation
 - National derogation vis-à-vis private operators



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... policy options ...

- Various policy choices for licensing:
- Issue 1: reimbursement proper
 - ♦ Unlimited? → problems for private party
 - ♦ Limited? → state *de facto* partial insurer
 - Fixed limit? Flexible limit? Ad hoc determination?
- Issue 2: insurance

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- Obligatory = imposing burdens upon private party
 - To a limit? Same limit of liability, if indeed limited?
 - Also if liability unlimited?
- Optional \rightarrow allow for betting the company ...
- Or leave it to individual decisions / negotiations



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... & national space laws (1)

- Divergence in practice on liability
- USA: MPL, with max. max. of US\$ 500 M
 - From Pegasus US\$ 10 M to Delta 4-M US\$261 M
- Australia: MPL, with max. max. of A\$ 750 M
- France: € 50-70 M
 - So far only Arianespace € 60 M
- Austria: max. € 60 M
- S Korea: max. 200 B SKWon
 - Others: no specific reference to an amount; some suggest limitations, others do not



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... & national space laws (2)

Divergence in practice on insurance

- USA, S Korea, France, Netherlands, Austria: obligatory, up to liability cap
- Russia: obligatory, in principle up to nondetermined – cap in spite of unlimited liability
- Ukraine, Brazil: obligatory, cap t/b established
- United Kingdom: obligatory up to £ 100 M
- Australia: depends on type of license
- Sweden, Hong Kong, S Africa, Belgium: optional



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3. Due qualifications

- Technical & economic for safety & liability-related purposes
- Political for security related purposes
- Usually inserted in license:
 - Compliance with public health & safety demands
 - Compliance with national security interests
 - Compliance with international policy interests & with international law binding upon state
 - Increasingly: provisions on 'after life' handling



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4. Monitoring space agency

- Providing national (space) agency with monitoring & enforcement powers
 - Existing agencies endowed with powers
 - Specifically established agencies
 - Monitoring powers
 - Inspection of sites, facilities, records
 - Stopping ongoing activity / demanding specific action
 - Enforcement powers: sanctions & penalties
 - From suspension / cancellation of license to criminal liability / impositions of fines / imprisonment



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Space law ←→ sea law?

Outer space 'global commons'

- High seas High seas <-> territorial waters
 - Some straits with special regime customary int'l law
 - ◆ Later: contiguous zone; Continental Shelf; EFZs & EEZs: even special regime ocean floor → 'functional sovereignty'
 - Case of the Sea Launch joint venture!
- Individual sovereignty versus int'l governance
 - Different role international law:
 - State territory: states *can* agree on certain limitations
 - Global commons: freedom = baseline, limitations can only be agreed upon at int'l level



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Space law ←→ air law?!

- 1967 Outer Space Treaty
 - Confirms 'global commons' status
 - Freedom to act is baseline
- ←→ 1944 Chicago Convention
 - Sovereignty over national airspace
- → Outer space ←→ airspace = high seas ←→ territorial waters …
- → Boundary air space outer space?



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Sea law → space law …?

- In a number of respects comparison does not hold
 - No physical differentiation terrestrial waters + oxygen & gravity diminishes with altitude
 - Space accidents will impact underlying state!

 - 'Remote controlled' character most space activities → use of territorial (& personal) sovereignty to control activities in space



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Ocean – space cooperation

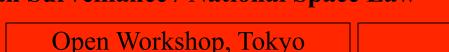
Currently three main areas

- 1. Use of satellite navigation & communications
 - Satcoms: already commercialised $\leftarrow \rightarrow$ GNSS (...?)
- 2. Extend use satellites for ocean monitoring
 - Pollution
 - Fisheries
 - Security issues & TCBMs
- 3. Guide proper use oceans for launch activities
 - Sea Launch
 - Land launches directed over seas
 - Pollution ?

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Tasks for national space law

- Deal with main current issues:
- Further precision in many areas
 - Scope of licensing control; registration requirements; liability issues ('fault'?); use of force
- Space situational awareness / space debris tracking / information
- Pollution / space debris prevention / mitigation
 - Starting point does now exist: IADC guidelines as recognised by UN Resolution
 - Exploitation celestial bodies resources (←→
 frequency/orbit resources as per ITU system)



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Thank you!



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