

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



UN Resolution 41/65

- Accepted by consensus → 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



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” ↔ “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



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 “national activities 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



... & 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)



2. State liability ...

- Art. VII, OST & Liability Convention make “launching state(s)” 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



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



... & 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



... & 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 – non-determined – 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



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



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



Space law ↔ sea law?

■ Outer space 'global commons'

➤ 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?



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!
 - No landlocked states in outer space, properly speaking → (need) 'right of innocent passage'?
 - 'Remote controlled' character most space activities → use of territorial (& personal) sovereignty to control activities in space



Ocean – space cooperation

■ Currently three main areas

1. Use of satellite navigation & communications
 - ◆ Satcoms: already commercialised ↔ 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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