A Tale of Two Oceans: Governance of Terrestrial and Outer Space 'Global Commons'

Prof. Dr. Frans G. von der Dunk
University of Nebraska-Lincoln, College of Law

Table of Contents

1. Governance & regulation of outer space as compared to high seas
2. Legal challenges of using space technology for ocean surveillance
3. Comparing existing national space laws – in narrow sense of the word

Table of Contents

1. Governance & regulation of outer space as compared to high seas
2. Legal challenges of using space technology for ocean surveillance
3. Comparing existing national space laws – in narrow sense of the word

Governance & 'territory'

- Concept 'global commons'
  - W European notion: 'modern state' 17th century
  - ←→ Hugo Grotius (i.a.): 'freedom of high seas'
  - Three options legal status landmass / seas
    1. State territory (incl. inland & territorial waters)
    2. No man's land – but *terra nullius*
    3. No man's land – but *terra communis*
       - High seas; Antarctica (?); outer space
  - More recently 'Common Heritage of Mankind'
    4. Ocean floor (resources); celestial bodies (resources) ?

Governance earth's seas (1)

- Essentially zone-by-zone system
  - Originally: territorial waters ←→ high seas
    - \+ Some straits with special regime – customary int'l law
  - Increasing refinement
    - Continental Shelf – US example; then 1958 Geneva
    - Contiguous zone – as per 1958 Geneva
    - EFZs & EEZs – 1982 Montego Bay
    - Special regime ocean floor – 1982 Montego Bay
      - – 'Mitigated' by 1994 New York
  - Increasing precision demarcation
    - Max. 12, max. 12+12, max. 12+188

Governance earth's seas (2)

- Individual state sovereignty *versus* international governance
  - ‘Functional sovereignty’ in between

& Different role international law

- State territory: states *can* agree on certain ***limitations*** to their sovereign discretion

←→ Global commons: freedom = baseline, ***limitations*** *can only* be agreed upon at int’l level

… By treaties, customary int’ law & *jus cogens*

Governance earth's seas (3)

- Examples of such int'l ***limitations***
  - As per 1982 Montego Bay itself
    - Provisions on oil a.o. platforms on the high seas
    - Provisions on resource utilisation ocean floor
      - Additionally: 1994 New York
    - Provisions limiting certain fishing activities
      - Additionally: further conventions
  - As per other international arrangements
    - Antarctic waters: 1959 Antarctic Treaty & follow-up
    - Marine pollution: 1978 MARPOL & follow-up
    - Safety of life: 1974 SOLAS & follow-up

Governance outer space (1)

- 1967 Outer Space Treaty
  - Confirms 'global commons' status ("province of all mankind", "freedom of exploration & use", 'no national appropriation by way of sovereignty')
  - ➔ Freedom to act is baseline (… indeed …)
  - ←➔ Responsibility & liability key mirror concepts
    - Including for private activities
  - First, general, further ***limitation*** by OST itself
    - Art. II: no national appropriation whatsoever
    - Art. IV: no stationing WMD in outer space & use celestial bodies for peaceful purposes

Governance outer space (2)

- Also raises issue of boundary lines
  - Outer space ←→ airspace (above territory) = high seas ←→ territorial waters …
  - Tendency towards (±) 100 km
    - Australian national space law: explicit reference
    - South African national space law: lowest perigee
    - Russian proposals
    - German & Pakistani answers to UN questionnaire
    - US: FAA astronaut wings & Virginia draft act
    - *Fédération Aéronautique Internationale* & private space tourism operators …

Governance outer space (3)

- Further substance: other treaties
  - Rescue Agreement, Liability Convention, Registration Convention (& Moon Agreement…), Test Ban Treaties
  - Other types, e.g.: ITU; ISS IGA; ISOs & ESA
- Customary international law (…)
- Mind also Art. III, OST UN Charter
  - E.g. on use of force: self-defence & UN-sanctioned / -mandated

Governance outer space (4)

←→ Lacking:

- 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)

Table of Contents

1. Governance & regulation of outer space as compared to high seas
2. Legal challenges of using space technology for ocean surveillance
3. Comparing existing national space laws – in narrow sense of the word

Surveillance from space

1. General space law applies
   - Baseline: freedom of space activities
     - Also: freedom of information (gathering)
2. UN Res. 41/65 of 1986
3. 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

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

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

Table of Contents

1. Governance & regulation of outer space as compared to high seas
2. Legal challenges of using space technology for ocean surveillance
3. Comparing existing national space laws – in narrow sense of the word

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)

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 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

Towards the future

- More & more states will draft national space laws
  - Japan; Germany; Italy (?); India; Nigeria; … ?
  - Issues of ‘flags of convenience’ may arise
  - ➔ Need for some measure of international harmonisation / cooperation – at COPUOS …?
  - Within Europe: increasing role EU in efforts to try & harmonise national licensing systems
    - Satellite communications: Internal Market since 1994

Thank you!