

Legal aspects of satellite monitoring for the compliance and enforcement of environmental law

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



Legal aspects satellite monitoring for environment law

20-04-2010

HELf, IES, The Hague

1



Roadmap

1. Space law
2. International environmental treaties
3. European Union law
 1. On the environment & environmental information
 2. On database protection/IPR & privacy issues
4. European Convention Human Rights
5. Role GMES



Legal aspects satellite monitoring for environment law

20-04-2010

HELFI, IES, The Hague

2



1. Space law (1)

1. Outer Space Treaty (1967)

- Freedom of activities in space – incl. EO (Art. I)
 - ◆ Further to freedom of information gathering & distribution as specific human right
- Limits to such freedoms only as per international agreement
 - ◆ Outer space does not belong to any state! (Art. II)
 - ↔ Airspace, where national sovereignty applies
 - Boundary question...
 - Customary international law: slight tendency of convergence on 100 km as appropriate boundary



Legal aspects satellite monitoring for environment law

20-04-2010

HELFI, IES, The Hague

3



1. Space law (2)

2. UN Resolution 41/65 (1986)

- Not binding as such \leftrightarrow adopted by consensus
- *“For the purpose of improving natural resources management, land use and the protection of the environment”* (# I(a))
- Confirms freedom of remote sensing (# IV)
- *“For the benefit and in the interests of all countries”* (# II)
- In accordance with international law (# III)
- International cooperation & UN (## V-VIII)



Legal aspects satellite monitoring for environment law

20-04-2010

HELF, IES, The Hague

4



1. Space law (3)

2. UN Resolution – *ctd.*

- States shall make relevant information available “*to the greatest extent feasible and practicable to any other State*” (# IX)
- ↔ No obligation of ‘prior consent’ underlying state, or even preferential right to data: “*access on non-discriminatory basis and on reasonable cost terms*” to primary & processed data; same for ‘analysed information’ (# XII)
- ◆ Allows e.g. for ‘discrimination’ between participants to remote sensing operation & others



1. Space law (4)

2. UN Resolution – *ctd.*

- *“Remote sensing shall promote the protection of the Earth’s natural environment”* → if info exists capable of averting harm to environment, such info shall be disclosed to states concerned – without fee (# X)
- *“Remote sensing shall promote the protection of mankind from natural disasters”* → if info exists useful to states affected by natural disasters, such info shall be transmitted as promptly as possible – without fee (# XI)



2. Environmental treaties (1)

■ General approach:

- Establish general parameters of allowable emission / pollution – or prohibit altogether
- Sometimes liability regime established
- Establish system of monitoring, possibly some sort of dispute settlement
 - ◆ Reference to non-interference with National Technical Means for verification – including satellites
 - ◆ Issues of satellite data as (contributory) evidence
 - Familiarity trust courts & tribunals with technology
 - Trustworthiness of data



Legal aspects satellite monitoring for environment law

20-04-2010

HELFI, IES, The Hague

7



2. Environmental treaties (2)

■ To-do's (?)

- Standardise data sets
- Create audit trail solutions
- Learn from experience with arms control treaties
 - ◆ Mutual obligations not to interfere with NTM including satellites
- **Expand NTM to ITM**
- **Dedicate satellites to the task at hand (...!)**
- Establish (technological expertise with) dispute settlement system



Legal aspects satellite monitoring for environment law

20-04-2010

HELF, IES, The Hague

8



3. European Union law (1)

1. On environment & information

P.M.: EU law on environment

■ INSPIRE Directive (2007/2/EC)

- “Infrastructure for Spatial Information in the European Community” (now Union)
 - ◆ Focus here on terrestrial infrastructure distribution data
- Obligations EU m/s to liberalise & harmonise access to spatial data available in order to promote as unrestricted & extensive access to spatial data as possible



Legal aspects satellite monitoring for environment law

20-04-2010

HELFF, IES, The Hague

9



3. European Union law (2)

■ INSPIRE Directive – *ctd.*

- Scope: electronic spatial data held by public authority on area where m/s has jurisdiction if on e.g. environmental parameters (Art. 4)
- Obligation to provide metadata (Art. 5) & info:
 - ◆ On conformity with Directive
 - ◆ On conditions applying to access & use, & fees (if any)
 - ◆ On quality & validity of data sets
 - ◆ On responsible public authorities
 - ◆ On any limitations to public access & reasons



Legal aspects satellite monitoring for environment law

20-04-2010

HELFI, IES, The Hague

10



3. European Union law (3)

■ INSPIRE Directive – *ctd.*

- Interoperability of data to be progressively realised by procedural means (Artt. 7-10)
- Necessary networks & their operations have to be established / guaranteed (Art. 11)
- Availability search & view services for free (Artt. 11(1), 14(1))
- Availability other services via e-commerce should be offered if otherwise fees are charged (Artt. 11(1), 14(4))



3. European Union law (4)

■ INSPIRE Directive – *ctd.*

- Limited derogations possible (Art. 13)
 - ◆ Obligatory confidentiality
 - ◆ International relations, public security, national defence
 - ◆ Criminal or other disciplinary procedures
 - ◆ Confidential commercial / industrial information
 - ◆ Intellectual property rights (IPR)
 - ◆ Confidentiality personal data (ref. ‘privacy’)
 - ◆ *“The protection of the environment to which such information relates, such as the location of rare species.” (...!)*



Legal aspects satellite monitoring for environment law

20-04-2010

HELF, IES, The Hague

12



3. European Union law (5)

2. Database protection (IPR) & privacy issues

■ Database protection & remote sensing

- Need to protect \leftrightarrow copyrights not (always) considered appropriate
 - E.g. need for 'creativity'; applicability to whole 'product'
 - National differentiation contents national regimes
- ➔ European Commission study
- ➔ Need for a specific right to protect databases incl. remote sensing databases, EU-wide & harmonised



3. European Union law (6)

→ Directive 'On the legal protection of databases' (96/9/EC)

➤ *Sui generis* right of protection

- ◆ Special version of copyright, essentially
- ◆ Mandatory inclusion in national law
- ◆ Applies to nationals EU m/s & databases ≈ generated on EU m/s territory (Art. 11)
- ◆ Individual accessibility & investment required
- ◆ Extraction right & re-utilisation right (Art. 7)
 - Resting with database creator alternatively owner



Legal aspects satellite monitoring for environment law

20-04-2010

HELFI, IES, The Hague

14



3. European Union law (7)

- Privacy issues in economic context
- Data Protection Directive (95/46/EC)
 - EU m/s shall protect human rights to privacy
 - ↔ EU m/s shall in principle neither restrict nor prohibit free flow personal data if that unduly interferes with Internal Market & competition
 - Overarching aim to provide *equivalent* protection
 - ***Relevance for remote sensing environmental purposes depends essentially on resolution!***



3. European Union law (8)

■ Data Protection Directive – *ctd.*

- Personal data = any info relating to identified or identifiable individual, incl. by reference to physical, physiological, mental, economic, cultural & social identification factors
- Artt. 6, 7: may be collected & processed, if:
 - ◆ Processed fairly & lawfully; collected for specified, explicit & legitimate purposes, & accurate
 - ◆ 'Data subject' has unambiguously consented
- OR** Processing is necessary for purposes specified by law / as a consequence of legal obligations



Legal aspects satellite monitoring for environment law

20-04-2010

HELF, IES, The Hague

16



3. European Union law (9)

■ Data Protection Directive – *ctd.*

- Art. 11: if not obtained from data subject itself:
 - ◆ Data subject has to be informed of processing data & substance thereof, of identity data controller & of rights of access & rectification
- Art. 8: no processing certain data ('too personal')
- Art. 11: no prohibitions if for statistical / historical / scientific purposes
- Art. 3: no prohibitions if for public & state security, defence, & criminal law purposes

... Meaning *national* restrictions may still apply!

Legal aspects satellite monitoring for environment law

20-04-2010

HELFI, IES, The Hague

17



3. European Union law (10)

- Regulation 45/2001
 - Applies Directive 95/46/EC specifically to EU & EU institutions → possible role EU in GMES ...?
- Directives 97/66 & 2002/58
 - Deals with privacy issues specifically in context of telecom services → role publicly available / accessible telecom infrastructure
- Decisions 2001/497 & 2002/16
 - Deals with extra-EU application (...)



4. ECHR (1)

■ European Convention on Human Rights (1950)

Note: EU & its member states also bound

- Art. 8 provides prohibitions on interference with privacy by public authorities
- Case law has 'extended' scope of this clause
 - ◆ *Petty case*, 2002: 'Positive obligation' public authority: not only refrain itself, also ensure adherence to privacy protection by individuals within their jurisdiction
 - ◆ *Colas Est case*, 2002: Rights also extend to legal persons (companies)



Legal aspects satellite monitoring for environment law

20-04-2010

HELFI, IES, The Hague

19



4. ECHR (2)

- Relevant once satellite data are of sufficient resolution to allow identification persons – or companies
 - Case law on ‘nuisance’, ‘intrusion’ – national
 - Possible exceptions:
 - ◆ *“In accordance with the law and as necessary in a democratic society for the national security, public safety or economic well-being of the country, for the prevention of disorder or crime, for the protection of health or morals, or for the protection of the rights & freedoms of others.”*



5. Role GMES (1)

- 2001: political decision
 - Independent European capability in EO
 - ➔ Global Monitoring Environment & Security
 - ◆ Decision-support system
 - ◆ Optimising use current EO systems – ESA, EUMETSAT, 3rd state systems, even private systems

Note: Not only satellite data!

- As far as space: multi-satellite project
 - ◆ To be financed & run jointly by ESA & EU
 - ◆ Focus on applications, serving major public interests



Legal aspects satellite monitoring for environment law

16-02-2010

HELF, IES, The Hague

21



5. Role GMES (2)

■ State of play

- Communication 10/XI/2005
 - ◆ Introduces fast track services
- So far no proper legal bases / EU law
- ➔ 2008: Commission-ESA Delegation Agreement to build 1st segment GMES Space Component
 - ◆ Sentinel-1 (2012): all-weather, day & night radar imaging for land and ocean services
 - ◆ Sentinel-2: high-resolution optical imaging for land services
 - ◆ Sentinel-3: ocean and global land monitoring services



5. Role GMES (3)

- Public infrastructure for public (i.a. security-related) purposes
 - INSPIRE-based & similar obligations to allow / maximise access ↔ interest to maximise access for some purposes, but not for others...?
 - IPR owned by public entities – used as access-limiting tool?

Note: Role private entities upstream & downstream?

- ➔ Issues will be put in sharper contrast – & perhaps lead to GMES-specific EU law



Legal aspects satellite monitoring for environment law

20-04-2010

HELFI, IES, The Hague

23



5. Role GMES (4)

- To the extent VHR data would become involved:
 - Privacy concerns may arise
 - ◆ Whether EU Agency or autonomous operator
 - In particular also *vis-à-vis* private companies, following *Colas Est case*
 - Need may arise to defined ‘(public) security’ etc. more precisely
- ➔ Again, issues will be put in sharper contrast – & perhaps lead to GMES-specific EU law



Concluding remarks (1)

- So far not addressed: liability issues
- No show-stoppers – but obstacles
 - Incoherence due to varying sources of law → legal uncertainty
 - Lack of trust in evidentiary value
 - Difficulties in translating environmental values into legal parameters – interdisciplinary approach needed
 - Balancing other (economic / political) interests



Concluding remarks (2)

- Europe: further complications resulting from multi-institutional 'spacescape'
 - EU law still best positioned to achieve measure of harmonisation internally & coherence externally
 - EU best placed also to start its own sat ops
- ➔ GMES may prove to be interesting booster for enhanced possibilities to use satellites for monitoring



Legal aspects satellite monitoring for environment law

20-04-2010

HELFI, IES, The Hague

26

