

# 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

HELF, 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

HELF, 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



### Legal aspects satellite monitoring for environment law

20-04-2010

HELF, IES, The Hague

5

# 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)



**Legal aspects satellite monitoring for environment law**

20-04-2010

HELF, IES, The Hague

6

# 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

HELF, 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

HELF, 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

HELF, 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))



**Legal aspects satellite monitoring for environment law**

20-04-2010

HELF, IES, The Hague

11

# 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*



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



#### Legal aspects satellite monitoring for environment law

20-04-2010

HELF, IES, The Hague

13

# 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

HELF, 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!***



Legal aspects satellite monitoring for environment law

20-04-2010

HELF, IES, The Hague

15

# 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

HELF, 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 (...)



**Legal aspects satellite monitoring for environment law**

20-04-2010

HELF, IES, The Hague

18

# 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

HELF, 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.”*



## Legal aspects satellite monitoring for environment law

20-04-2010

HELF, IES, The Hague

20

# 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, 3<sup>rd</sup> 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 1<sup>st</sup> 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



**Legal aspects satellite monitoring for environment law**

16-02-2010

HELF, IES, The Hague

22

# 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

HELF, 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



**Legal aspects satellite monitoring for environment law**

20-04-2010

HELF, IES, The Hague

24



# 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



**Legal aspects satellite monitoring for environment law**

20-04-2010

HELF, IES, The Hague

25

# 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

HELF, IES, The Hague

26