

Space Law and Cyber Law: A Comparison

Prof. Dr. Stephan Hobe, LL.M.
Director of the Institute of Air and Space Law
University of Cologne

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Outer space and Cyber space: two comparable domains?

- No universal definition of outer space;
- Proposal for a definition:

"Outer space comprises the solar system within the universe whereby in relation to the Earth and its atmosphere it may arguably start at at least 110 km above sea level".

- No universal definition of cyber space, but more than 25 different ones such as:

1. **ISO/IEC, 2012** : "The complex environment resulting from the interaction of people, software and services on the Internet by means of technology devices and networks connected to it, which does not exist in any physical form."
2. **Canada's Cyber Security Strategy, 2010**: "Cyberspace is the electronic world created by interconnected networks of information technology and the information on those networks."
3. **Germany's Cyber Security Strategy, 2011**:
Cyberspace is the virtual space of all IT systems linked at data level on a global scale. The basis for cyberspace is the Internet as a universal and publicly accessible connection and transport network which can be complemented and further expanded by any number of additional data networks. IT systems in an isolated virtual space are not part of cyberspace.

The development of space law and cyber law

- **Oct. 4th 1957:** Sputnik I launched into space
- **1958:** Establishment of an ad hoc Committee on the Peaceful Uses of Outer Space
- **1963:** Adoption of UNGA Res. 1962 (XVIII) "Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space"
- **Jan. 27th 1967:** Adoption of the Outer Space Treaty
- **1962-1966:** first commercial communication satellites launched
- **1982:** The first privately funded rocket launched to 309 km

- **Since the 1960s:** first computer communication networks (e.g. ARPANET)
- **1986:** access to supercomputer sites for researchers
- **Since 1989:** first public commercial uses of the Internet
- **1995:** full commercialization of the Internet in the USA
- **Since the 2000s:** a number of national and EU regulatory acts on internet privacy
 - Data Protection Directive (95/46/EC)
 - ePrivacy directive (2002/58/EC, as revised by 2009/136/EC)

Outer space and cyber space: characteristics

Characteristics of outer space:

- A nature-made materialized domain for natural phenomena and used for human activities
- A global common
- Regulated by **state-made laws**:
 - international space law
 - national space laws
 - general international law as *lex generalis*
 - telecommunications law
- Sovereignty-free (Art. II OST)
- Jurisdiction over space objects is "exported" into outer space (Art. VIII OST)
- Attribution of space activities **to a certain State** through the concept of 'Launching State'

Characteristics of cyber space:

- A man-made de-materialized domain* used only for human activities
* J. Feick/R. Werle, "Regulation of Cyberspace", Oxford Handbooks Online
- Arguably a global common space
- Regulated through:
 - some applicable rules of general international law
 - private self-regulation **of the technical infrastructure** through NGOs (IETF, W3C, ICANN)
 - national and regional (EU) regulation of the cyber **content** (commercial, civil and criminal actions, privacy and data protection)
- Sovereignty over cyber infrastructure
- Jurisdiction over users
- Attribution of (malicious) cyber operations is very difficult (so-called "hacker attribution problem")

Results

- The development of law cannot keep up with the pace of technology
- A variety of actors (private, national, international, governmental and non-governmental) are involved in both space and cyber activities
- For many technological issues and their effects, no easy legal solution is available
- As international law rests upon voluntary adherence, the enforcement mechanisms are very limited
- A conflict of freedom to use and safe/reliable usability?
- So far, it is mainly States which are in the position to regulate over both domains