

52nd COLLOQUIUM ON THE LAW OF OUTER SPACE (E8)
Recent Developments in Space Law (6)

Author: Dr. Cynthia Jimenez Monroy
Finland, c.jimenez.monroy@umail.leidenuniv.nl

THE CASE OF SPACE ROBOTIC APPLICATIONS IN THE EVOLUTION OF INTERNATIONAL
SPACE LAW**Abstract**

Technological advances in space activities have brought along new scenarios that need to be addressed by space law. This is an opportunity for reviewing how international space law could deal with new applications of space technology.

This paper analyses the legal aspects involved in space robotic applications and how international space law could develop to regulate these new scenarios.

The first part briefly describes the applications of space robotics in two areas: Orbit servicing (Geostationary (GEO) and non-GEO satellites), and; planetary exploration (rovers, astronaut's assistants, autonomous missions).

The second part highlights the legal issues involved in space robotics in five different areas:

1. Space science (e.g. legal aspects of orbit servicing for space debris mitigation and space traffic management, or international cooperation in space robotics).
2. Satellite operations (e.g. legal aspects of life extension of satellites, changing of satellite ownership, and frequency spectrum allocations).
3. Space industry (e.g. legal aspects of small satellite rationale being replaced by large satellites so they can be reused and recycled in orbit, satellite design and on-orbit servicing contracts).
4. Space insurance (legal aspects of new insurance contracts).
5. Space business (legal aspects of second-hand satellite market).

The third part assesses whether the current legal framework for space activities (UN treaties on outer space, ITU regulations, international law) is able to adequately address these legal issues. Some of the topics that will be addressed in this analysis are: the concepts of 'launching State' and 'State of registry', international responsibility, liability, space resources and space debris mitigation.

The paper concludes by presenting a set of legal recommendations to provide more certainty in the development of space robotic activities, and formulates a proposal for their implementation by one of the three alternatives:

1. Elaboration of new international space regulation
2. Review for modification of current international space law
3. Legal interpretation of the international space regulations already adopted

The analysis will indicate what will be the best approach for space law to regulate new space activities and scenarios.