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CAPACITY-BUILDING OF THE INTERNATIONAL LEGAL FRAMEWORK FOR MITIGATING  
CONSEQUENCES FROM NON-OPERATIONAL SMALL SATELLITES: ADVANCING SPACE LAW  
TOWARDS NEWSPACE PARADIGM

**Abstract**

Current growth tendencies of NewSpace companies are largely based on small satellites, allowing affordable access to space for commercial services. They are economically-viable as they use commercial components (COTS) and standard architectures, and are easy to launch. As a result, more than 2000 small satellites to be launched till 2020 with focus on telecommunications, Earth observation and technology testing. Lifetime of such satellites usually does not exceed two years, while they can stay in orbit much longer than this. Non-operational or non-cooperative satellites are generally seen as space debris. However in comparison to big spacecraft the small satellites are difficult to detect with today's available technical means that potentially can result in a situation where "dead" smallsats can cause damage to valuable space assets. So far no special requirements are imposed on the operators of this category of satellites.

The existing legal instruments regulating space debris mitigation deal with the problem from a general perspective, not foreseeing any differentiated approach.

However just the development of international regulatory framework is not sufficient anymore. Being primarily of a non-binding nature, the regulations shall be implemented through national legislation by changing national rules of licensing for small spacecraft manufacturers and operators. Keeping it in mind, the paper will aim to analyze the possible implementation mechanisms for mitigating consequences from non-operational small satellites ("Debris"-Sats). The "Debris"-Sats issue requires comprehensive analysis as it has direct impact on SSA, long-term sustainability of space, space security and access to space.

Appropriate legal framework must ensure the sustainability of space activities without causing any damage to a growing NewSpace industry based on utilization of small satellites.

The paper will analyze the necessity of a special regulatory framework to be developed for small satellites missions.

Particularly it will examine the regulation on certain types of orbit for small spacecraft, ensuring their deorbiting upon the end of its exploitation.

It will also consider the mandatory installation of special devices on small spacecraft (electrodynamic tethers, solar sails etc.) to reduce their orbital lifetime.

Finally the paper will examine the possibility of increasing visibility and traceability of such kind of spacecraft to monitoring systems (such as NORAD and ASPOS OKP enabling the tracing of small satellites even if the contact with ground station is lost.