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Author: Ms. Anita RINNER
University Graz, Austria, a.rinner@edu.uni-graz.at

SMALL SATELLITES - SMART LAWS? SMALL SATELLITE PROJECTS FACING NATIONAL
SPACE LEGISLATION. CASE STUDY: AUSTRIAN OUTER SPACE ACT.**Abstract**

Recent advances in small satellite technology have facilitated the design of new types such as Nano-, Pico-, and Cube-satellites. These small spacecraft are generally no bigger than a brick and usually weigh less than 10 kg. Due to their relatively low production cost and the possibility to launch them "piggyback", such satellites are increasingly present in outer space. Additionally, Nano-, Pico-, and Cube-satellites use commercial off-the-shelf (COTS) components which can be bought by non-governmental entities or even individuals at affordable costs. As a consequence, small satellites may even be launched for cultural or purely personal goals rather than exclusively scientific purposes. For the purpose of this study the present paper addresses issues relating to Nano-, Pico-, and Cube-satellites, which may even be launched by non-governmental entities and individuals. This study examines the influence of domestic space law (hereinafter: The Austrian Outer Space Act) on small satellite projects. It specifically identifies legal challenges faced by small satellite projects with cultural and personal rather than scientific strategies. Those challenges may include authorisation requirements, such as expensive mandatory insurance obligations, as well as cumbersome space debris mitigation standards which such small projects cannot afford for several reasons. The Austrian Outer Space Act provides for exoneration of the insurance obligation if the activity reflects a public interest (§4 (4)). However, it is questionable whether small satellite projects with purely cultural or personal goals may benefit from these relaxations. Additionally, paragraph 5 of the Austrian Outer Space Act refers to internationally recognised space debris mitigation guidelines, which, inter alia, include a 25-year in orbit life-time limit laid down in the Space Debris Mitigation Guidelines of the Inter-Agency Space Debris Coordination Committee (IADC). The paper thus focuses on the legal challenges of Nano-, Pico-, and Cube-satellites which frequently cannot fulfil the guidelines due to technical reasons or inadequate financial resources to implement de-orbiting systems. Eventually, this paper seeks to answer the question as to whether the benefits of small satellite technology, such as the opportunity for even non-governmental entities and individuals to actively participate in space activities, meet smart laws. Small satellite technology has been realised for multiple aims, including cultural and personal motives. Those aims should not be torpedoed by purely science-, and research-driven provisions. Hence, the success of small satellite technology clearly depends on smart laws as well.