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Author: Ms. Katja Grünfeld  
Slovenia

DRONES IN SPACE SETTLEMENTS: NEW REGULATION OR OLD?

**Abstract**

Humanity has long dreamed of building human settlements in the cosmos. The recent technological developments have advanced humanity to the eve of a settlement-building age. Artemis, Moon Village, Chinese-Russian MoU or SpaceXs interplanetary Starship, exemplify these dreams.

Preceding humanity into space were, however, robotic emissaries, which endured conditions humans could not and sent information back to Earth, sometimes perishing in the process. Thus humanity's efforts have focused on the Earth's Moon and the red planet Mars, which have since become home to numerous robotic explorers, including Curiosity Rover and the first aircraft to achieve powered, controlled flight on another planet, the Ingenuity Helicopter. As robotics continue to be at the forefront of space exploration and as Ingenuity was lauded as ushering in a new era of space exploration, it is apt to propose that robotic helpers, including aerial vehicles, will assist astronauts in space future settlements. Drones on Earth provide often vital services especially in remote or hard-to-access areas, such as imagery or delivering medicines/packages. However, past experience also demonstrates dangers, including damage resulting from accidents or emanating from intentional nefarious use, for example physical injuries to humans or destructive potential illustrated in armed conflicts, exemplified most recently in the ongoing Russo-Ukraine conflict. On Earth, drones are subject to a developing body of drone-specific air law, dividing drones into categories and requiring different assurances. Man-made objects launched into outer space are subject to space law, decreeing in Article VIII of the Outer Space Treaty that launched objects are subject to the jurisdiction and control of the State that registers them in its national registry. In other words, domestic laws of the registering State can be applied to the object and any personnel thereof. In practice, States regulate launch and operation of a space object, primarily focused on safety of launch and operation. Question therefore arises whether space-drones will be subjected to relevant air law provisions of the registering State, launch and operation of a space object regulation or whether outer space, including the Moon and other celestial bodies, as sovereignty-free areas pursuant to Articles I and II of the OST, impacts the situation to a degree that renders a new set of rules necessary at international level? This contribution aims to examine what legislation, if any, is applicable to drones in outer space, identify potential loop-holes and propose solutions to these before astronauts join their robotic counterparts in space settlements.