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LEX FERENDA OF THE SAFETY OF SPACE NAVIGATION

Abstract

Space activities began over six and a half decades ago with the launch of the first artificial satellite. Since then, the low-Earth orbit (LEO) has remained one of the most sought-after destination in space. According to the Union of Concerned Scientists, 4,700 satellites were orbiting LEO as of May 2022. The number of launches of space objects to low altitudes has steadily increased in recent years – from 66 in 2019, 82 in 2020, 112 in 2021, to 154 in 2022 – and it is clear from the first months of 2023 that this trend will continue. At that, space activities gradually expand: launches of small satellites and entire satellite constellations grow, space tourism flourishes. Moreover, ambitious plans have been announced for the deployment of crewed orbital stations and the launch of space objects from celestial bodies.

When the 1967 Outer Space Treaty and the subsequent UN space treaties were adopted as the foundation of international space law, their drafters could not foresee such a rich variety in space activities. Lex lata therefore only defines the basic principles of the exploration and use of outer space and does not contain a detailed regulation to ensure safety of space navigation.

The issue of the space navigation safety is becoming crucial. Outer space may seem infinite, but the ability to safely navigate space objects in orbits around the Earth is not. Navigating space objects in LEO with the current congestion is already complicated. The growing number of satellites and space debris leads to an increase of dangerous approaches in space. Such approaches threaten not only the safety of expensive space assets, but also the lives of professional astronauts and space tourists during their stay on orbital stations and other crewed space missions. In 2022, the orbit of the International Space Station was corrected several times to avoid collisions. This illustrates that the current space regime is no longer able to ensure safety of space activities.

This article outlines the need to improve the legal regime of outer space in order to prevent dangerous approaches and, more importantly, collisions between space objects. It also discusses potential ways to regulate space navigation, including the prospect of updating the current regime either through recommendatory or binding multilateral regulations. The author proposes a legal solution which introduces the notions of space object operator and space navigation services.