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LIABILITY FOR AUTONOMOUS OBJECTS IN OUTER SPACE

Abstract

The development and use of more sophisticated technologies are driving significant change across the space sector. However, the adoption of Artificial Intelligence (AI) in the creation of autonomous space objects to significantly reduce the level of human control for a variety of in-orbit activities comes with underlining challenges to the existing legal framework governing the affairs of both state and non-state actors in the use and exploration of Outer Space. For example, under international space law, states bear liability for damages caused by their space objects, regardless of whether they are manned or unmanned. However, as AI-powered autonomous space objects become more common, it is becoming increasingly difficult to determine who is responsible for any damages they may cause. This paper examines the concept of international liability and responsibility for damages caused by the use of autonomous space objects in outer space within the purview of the Outer Space Treaty (OST) and the Convention on International Liability for Damage Caused by Space Objects, also known as the Space Liability Convention. A non-doctrinal research method was adopted in conducting this study to identify some limitations within the existing legal frameworks, which has created some conditions that potentially cause a liability gap in mitigating the risk posed by autonomous space objects in Outer Space. This research also makes some recommendations which include, amongst others, the need for registration and identification of all autonomous space objects, including those powered by AI. This would enable states to identify and track any objects that are causing damage and to hold their operators accountable for any liability. Another recommendation is to expand our outer space liability regimes to take into account the unique characteristics and ranges of autonomous space objects. For example, liability could be based on the degree of control that the operator has over the object or the level of risk associated with the object's operation for various missions in orbit.