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Legal aspects of Active Debris Removal (ADR): regulation of ADR under international space law and the way forward for legal development

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LEGAL ASPECTS OF ACTIVE DEBRIS REMOVAL (ADR)

Regulation of ADR under International Space Law and the Way Forward for Legal Development

by Zhuang Tian

1. The current international legal framework for space activities provides general rules and principles applicable to space debris and ADR, yet further legal development is needed to ensure the proper governance of ADR activities.
2. For the regulation of space activities, soft law can operate in conjunction with hard law to promote responsible behaviours in outer space and preserve a safe and sustainable space environment for current and future space operations.
3. The lack of a precise standard of fault in the current international legal framework to establish liability for damage caused in outer space creates legal uncertainty that may disincentivise ADR activities. To remedy this gap, the IADC can serve as an appropriate forum for the development of international guidelines for ADR to enhance clarity for ADR operators and ensure the safety of ADR missions.
4. Given the general understanding that space objects remain under the jurisdiction of their State of registry even after they become non-functional, and considering that many States regard manipulation over their space objects as a threatening act, consent must be obtained for the removal of a debris object under foreign jurisdiction.
5. Since the deployment and use of ADR systems can potentially raise dual-use concerns, specific norms should be developed at the international level to ensure that ADR activities are carried out in a responsible and transparent manner.
6. Similar to numerous global challenges on Earth such as climate change, collective efforts of the international community as a whole are needed to address challenges in space, a domain beyond national jurisdiction that is free for exploration and use by all States. While geopolitical tensions may sometimes pose obstacles, the collaborative approach to tackling these challenges can also serve as a constructive means to alleviate such tensions.

7. The privatisation and commercialisation of outer space bring both challenges and opportunities for the governance of space activities. While the deployment of commercial constellations leads to increasing congestion in space, the growing involvement of the space industry in advocating for safer and more sustainable practices in space indicates that the private sector has the potential to emerge as a new guardian of the space environment.
8. The growing number of parties to both the Artemis Accords and the International Lunar Research Station indicates that two groups of countries are on the way towards the construction of their respective lunar bases, and it is thus imperative for these two groups to coordinate their activities and align their regulatory frameworks to ensure that the exploration and use of the Moon are carried out in an orderly and peaceful manner.
9. Like the great monuments on Earth, heritage in space is of historical significance to remember the past and inspire the future, and an international legal regime is needed to protect space heritage while upholding the fundamental principles of space law including free access to all areas of celestial bodies and non-appropriation of outer space.
10. The best advice that I have been given as a PhD student is to eat well, sleep tight, do some sports, and hang in there.
11. The advice that I would like to give to prospective PhD students is to cherish the moments when you laugh wholeheartedly and actively seek to create such moments whenever possible. They can be a wellspring of strength, empowering you to confront challenges and overcome obstacles.