

IISL COLLOQUIUM ON THE LAW OF OUTER SPACE (E7)  
International cooperation on the way to the Moon and Mars (2)

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MODELS OF REGULATORY COOPERATION FOR MOON AND MARS EXPLORATION

**Abstract**

Missions launched in 2020-2021 portend significant exploratory commitments by an expanding number of countries and commercial entities for the exploration and continuing robotic and human presence on the moon and Mars in the coming decades. While technological advances in reusable launch components, in situ lunar water recovery, and mineralogical sample returns from asteroids, moon, and eventually Mars, are rapidly evolving, the efforts to adapt regulatory principles and mechanisms are struggling to keep pace. This paper examines how foundational legal regime principles obligating cooperation in space exploration during earlier eras now require a reassessment towards a more comprehensive model of regulatory cooperation. In particular, this paper will argue that international maritime law and cyberspace norms and mechanisms for cooperative governance of the Internet may serve as a model(s) for designing a cooperative regulatory regime for moon and Mars explorations.

More specifically, this paper examines salient norms of maritime law for longstanding general principles for mutual aid and cooperation that may inform the basis for the current debate. The paper then examines three specific characteristics of cyberspace (i.e., Internet) cooperative governance in terms of their applicability to models of cooperation for moon and Mars exploration: (1) how voluntary network interconnections creating the Internet closely resemble “soft law” mechanisms for aspects of space traffic management (such as the Space Data Association); (2) already operating cybersecurity-focused organizations (i.e., CCSDS) with space-related purview embody the development and deepening of standards across space exploration infrastructures; (3) the multi-stakeholder (government-civilian-commercial-user) governance structures of the ITU and ICANN point towards parallel memberships expansions in outer space governance organizations and soft law mechanisms. The paper concludes with an assessment of “next steps” as set out by the UNCOPUOS Long Term Sustainability Guidelines.