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Cyber-based security threats to space missions: establishing the legal, institutional and collaborative framework to counteract them (2)

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ESTABLISHING A GOVERNANCE FOR CYBER OPERATIONS IN OUTER SPACE: EXPLORING
CHALLENGES FACED BY SPACE COMMANDS**Abstract**

In the past decade, major spacefaring nations have updated their space governance, establishing space forces and space commands to face the evolving threat landscape in outer space. In parallel, the threat landscape has also evolved in cyberspace with a skyrocketing number of attacks coming from an increasingly diversified pool of actors, leading to similar governance changes with the establishment of cyber forces and cyber commands. Both space and cyberspace are now increasingly recognized as warfighting domains and armed forces are conducting, or training to conduct, cyber-enabled space operations, which remain a new set of operations for which governance, operational modes, processes, and doctrines have to be adopted. The paper will aim at providing an overview of the governance of cyber operations in space commands and the challenges that these new missions face from the organizational perspective. First, the paper will provide an overview of the governance of the U.S Space Force, the French Space Command, and the UK Space Command, looking particularly into the governance, mandates and responsibilities regarding cyber operations. Then, the paper will analyze challenges and shortcomings associated with the establishment of responsibilities for cyber operations in Space Commands. Finally, the paper will provide an overview of outstanding governance issues and questions that should be taken into account when it comes to space cyber operations.