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ACTIVITIES (D5)

Cyber-security threats to space missions and countermeasures to address them (4)

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USING OPTICAL COMMUNICATION TO ENHANCE DATA SECURITY

Abstract

Greater dependence on high speed information systems to plan, communicate and prosecute missions and evaluate results is today's reality for most Government and commercial organizations. Securing those information and communications systems in the era of increasingly complex cyber threats/attacks by state-sponsored and unsophisticated individual users alike is a multifaceted process. Beyond securing data at rest, preventing intrusions, and encrypting information for transmission, one way to reduce the attack surface is to utilize optical communications systems. Free space optical communications, more commonly lasercom, scales to support very high bandwidth communications links (>1Tbps per single channel), are inherently LPI/LPD and are becoming increasingly affordable in the commercial marketplace. Complimenting undersea and terrestrial fiber optic infrastructure, traditional space and ground mobile RF and cellular systems, this paper will present methods for employing lasercom (space, airborne & ground) systems to enable new services and enhance security and resiliency for tactical, strategic and commercial missions.