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Cybersecurity in space systems, risks and countermeasures (4)

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THE SPACE STATION GATEWAY : THE SPACE CYBERSECURITY KILL CHAIN IN THE SECOPS
FOR THE CREW AND THE SPACECRAFT FUNCTIONALITIES

Abstract

With the new step to the Moon and the Esprit module infrastructure communication system of the Gateway launched further than ever before, the security and the safety should be removed with the deep space constraints. So, it needs a cybersecurity kill chain concept to manage space operations from Earth through mass satellite on orbit, then the Gateway station, and above all, the space operation data permanently in a context of human outpost to the solar system close to the Moon. The cyber kill chain founded in the current cybersecurity framework is to be updated for the data transmission providing by the Esprit module. It concerns both the need of simulation for the lunar networks incoming and data from Earth ground to lunar surface via the Gateway. This cyber kill chain will be able to understand the way to improve the security and the safety of the crew and the spacecraft through an accurate management. And with the Apollo missions and the ISS experience, the cyber kill chain will introduce the cognitive cybersecurity as well the specific components of the space cybersecurity in the deep Space.