

IAF SYMPOSIUM ON SECURITY, STABILITY AND SUSTAINABILITY OF SPACE ACTIVITIES
(E9)Interactive Presentations - IAF SYMPOSIUM ON SECURITY, STABILITY AND SUSTAINABILITY
OF SPACE ACTIVITIES (IP)

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CYBERSECURITY IN COSMIC SPACE

Abstract

Cybersecurity is a technology and process designed to protect networks and devices from attack, damage, or unauthorized access. Cybersecurity is important to the nation's military, hospitals, large corporations, small businesses, and other organizations and individuals because data is now the cornerstone of any organization. If this information is used, many risks arise. The extreme expansion of space capabilities has made space systems critical infrastructure for many aspects of human society and cyber security. Cyber security is one of the most studied areas of our time. Just as the Internet has integrated into all areas of life, cyber security has also integrated into these areas. Cybersecurity is especially important in space. Much of the technology and infrastructure we depend on revolves around our planet. Technologies in space are critical to global communication and innovation. Satellites, GPS, etc. Cyber attacks on space infrastructure can have devastating effects on everyone on Earth. Cybersecurity in space should be a priority. The biggest threat to space cyber security is intrusion into spacecraft and satellites. Cybercriminals can easily gain control over vital systems, control and manipulate them and capture critical confidential information. Cyber attacks are often used to slow down and manipulate data received from satellites. The war in Ukraine used jamming and other cyberattacks on the Starlink SpaceX terminal. Military leaders said these tactics are a common weapon. As space systems become increasingly complex, the threat of cyberattacks is increasing, a study from the University of Oxford says. However, most space stations and infrastructure were built before cybersecurity became this global. This means that these systems are very vulnerable to cyber attacks. In this article, I have explored vulnerabilities in space systems and ground infrastructure and the causes of these vulnerabilities. At the same time, in the article, I have provided detailed information about the cyber attacks on telescopes, satellites and other space systems and how these attacks affect the systems. In the end, I drew attention to the ways of protection against these attacks and strengthening the security of the space infrastructure. Cybersecurity is everywhere. As well as in space, which is the greatest dream of mankind. So, let's explore it better.