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security Analysis on Satellite Network Vulnerability

Satellites play a significant role in communication, especially in situations where it is impossible to utilize conventional cellular networks. Satellites have been used in Early warning systems, meteorology, navigation and, broadcasting, and surveillance. To this effect, satellites are a strategic asset for CTBTO and any cyber attack on them would have disastrous impact. The security of the Satellite should be a pillar of the cybersecurity strategy for CTBTO since the transmission of data from the base stations to the IDC is through the satellite system. The wave of cyber threats has evolved rapidly in the last years in the pace of technological evaluation, therefore, mitigation factors need to be in place to protect the satellite systems from hackers. In this study, we explore the importance of security, satellite network architecture operation design and technologies, satellite network threats and security analysis, satellite network vulnerabilities, deployed security tools, limitations to be considered while deploying such security techniques and protocols for securing satellite communication, as well as statistics on recent attacks on satellite infrastructure. We then propose best practices for each of the above scenario..

Primary author: ONDITI, Reagan Onyango (University of Nairobi)

Presenter: ONDITI, Reagan Onyango (University of Nairobi)

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