

Cybersecurity in Aviation: A Case-Based Approach to Preparedness

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Abstract

With interconnected systems governing everything from flight management to passenger services, cybersecurity has emerged as a critical concern. This paper presents a comprehensive case-based review of cybersecurity preparedness in the aviation industry. Through an analysis of notable incidents such as data breaches, system outages, and cyber-attacks, the study explores the vulnerabilities inherent in aviation systems. It examines the impact of these incidents on passenger safety, operational continuity, regulatory compliance, and economic stability. Furthermore, the paper evaluates the effectiveness of existing cybersecurity measures and identifies areas for improvement. Drawing insights from real-world cases, the study aims to provide valuable lessons and recommendations to enhance cybersecurity preparedness in the aviation sector. By delving into the complexities of cybersecurity challenges faced by the industry, this review seeks to contribute to a deeper understanding of the evolving landscape of cybersecurity in aviation and the imperative for proactive measures to safeguard critical infrastructure and ensure the safety, security, and reliability of air travel in an increasingly digitalized world.

Index terms: Cybersecurity, Aviation, Airlines, Human Safety, Critical Infrastructure, Life Critical System

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