ICAO Security Week 2024
Air Navigation Services

Overview of ANS Systems

Air Navigation Systems play a vital role in addressing safety and security vulnerabilities, improving operational efficiency, and maintaining compliance with ICAO's aviation standards

Surveillance Systems

- Primary Radar
- Secondary Radar
- ADS-B
- MLAT

Navigation aids

- VOR
- ILS
- DME

Communication networks and systems

- VHF radio communication.
- Speed lines/AFTN/OLDI/AIDC

Automation Systems

- Flight Data Processing Systems (FDPS).
- Decision-support tools for conflict resolution (Safety nets)

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Security Threats

A security breach can lead to system downtime, mismanagement of air traffic, loss of situational awareness, and potential safety incidents.

Cyber-Attacks
- Malware and Ransomware
- Phishing Attacks

System Interference
- Jamming
- Spoofing

Unauthorized Access
- Internal threats
- External breaches

Supply Chain Vulnerabiliti
- Exploitation of weaknesses in third-party software or hardware

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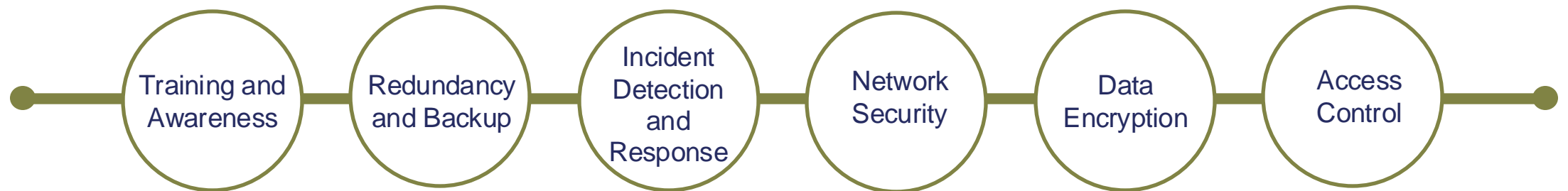www.met.gov.om

Regulatory Framework

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Adherence to these standards ensures a uniform approach to mitigating risks, facilitates international collaboration, and enhances resilience against evolving threats.

Offers guidelines for cybersecurity in civil aviation

Doc 9985

International Civil Aviation Organization (ICAO)

Annex 17 (Security)

Specifies safeguarding measures for aviation against unlawful interference.

DGCA

Ensure compliance with ICAO procedures.

Prepare comprehensive documentation to support ICAO audits and ensure all requirements are met.

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Security Protocols

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Integrating advanced technologies with stringent security measures and regulatory compliance is essential for ensuring the safety, efficiency, and resilience of ATC systems. These efforts safeguard not only air traffic but also the lives of millions of passengers and crew worldwide.

- Training and Awareness
- Redundancy and Backup
- Incident Detection and Response
- Network Security
- Data Encryption
- Access Control

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Oman ANS contribution in security

Initiatives

Participating in national and international security conferences and exercise

Analyze cybersecurity challenges in ANS systems

Implementation of robust cybersecurity protocols for communication and navigation systems

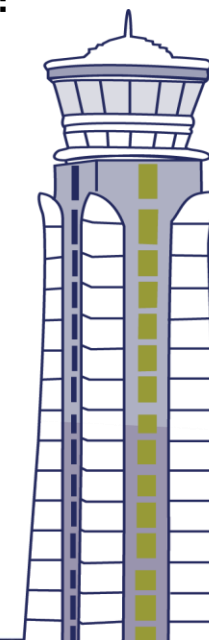**Collaboration with Stakeholders**

Technological Enhancements

Future Plan:

Implement cyber security in ATM systems by 2025

Oman national aviation security program

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