

Setting the scene From the ICAO resolutions to the ICAO strategy and action plan

Sonia HIFDI

Aviation Security Policy Section, Chief **ICAO**



2005

Global Operational ATM concept

2014

IHLG - Civil Aviation Cybersecurity Action Plan 1st SARP in Annex 17

2016

A39-19

2017

SSGC

2019

Aviation Cybersecurity Strategy – A 40-10 **TFSG**

2020

Cybersecurity Action Plan -1st Edition

Overview of milestones achieved and future developments

2022

Cybersecurity Action Plan -2nd Edition

A 41-19: Establishment of:

- the Ad Hoc Cybersecurity Coordination Committee (AHCCC)
- Cybersecurity Panel (CYSECP)
- Trust Framework Panel (TFP)

2023

First two meetings of the CYSECP

First meeting of the TFP

First meeting of the AHCCC



ICAO's Work on Aviation Cybersecurity – International Legal Instruments



The Beijing Convention (2010)

PROTOCOL SUPPLEMENTARY TO THE CONVENTION FOR THE SUPPRESSION OF UNLAWFUL SEIZURE OF AIRCRAFT THE STATES PARTIES TO THIS PROTOCOL DEEPLY CONCERNED about the worldwide escalation of unlawful acts against civil aviation; RECOGNIZING that new types of threats against civil aviation require new concerted efforts and policies of cooperation on the part of States; and BELIEVING that in order to better address these threats, it is necessary to adopt provisions supplementary to those of the Convention for the Suppression of Unlawful Scizure of Aircraft signed at The Hague on 16 December 1970, to suppress unlawful acts of seizure or exercise of HAVE AGREED AS FOLLOWS This Protocol supplements the Convention for the Suppression of Unlawful Seizure of Aircraft, signed at The Hague on 16 December 1970 (hereinafter referred to as "the Convention"). Article 1 of the Convention shall be replaced by the following 1. Any person commits an offence if that person unlawfully and intentionally seizes or exercises control of an aircraft in service by force or threat thereof, or by coercion, or by any other form of intimidation, or by any technological means. 2. Any person also commits an offence if that person: (a) makes a threat to commit the offence set forth in paragraph 1 of this Article; (b) unlawfully and intentionally causes any person to receive such a threat under circumstances which indicate that the threat is credible

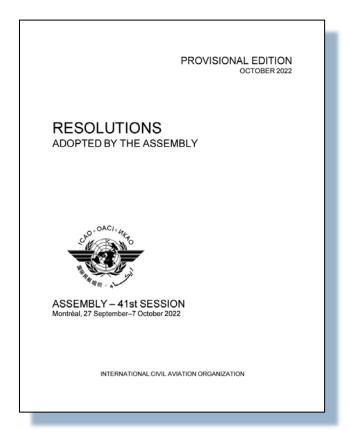
The Beijing Protocol (2010)

Governments' Adoption of the Beijing Instruments is an Important **DETERRENT of Cyber-Attacks** Against Civil Aviation

ICAO's Work on Aviation Cybersecurity – Assembly Resolutions

A41–19: Addressing Cybersecurity in Civil Aviation

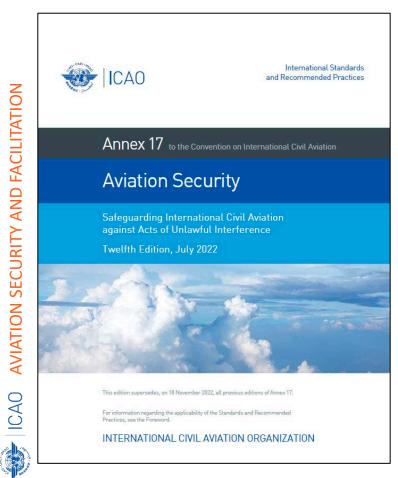




AVIATION SECURITY AND FACILITATION

Standards & Recommended Practices

Annex 17



Standard 4.9.1

Each Contracting State shall ensure that operators or entities as defined in the national civil aviation security programme or other relevant national documentation identify their critical information and communications technology systems and data used for civil aviation purposes and, in accordance with a risk assessment, develop and implement, as appropriate, measures to protect them from unlawful interference

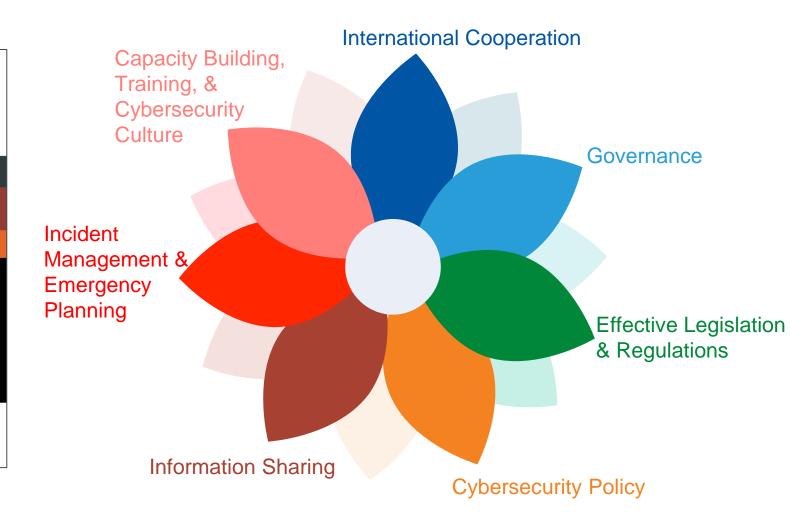
Recommended Practice 4.9.2

Recommendation— Each Contracting State should ensure that the measures implemented protect, as appropriate, the confidentiality, integrity and availability of the identified critical systems and/or data. The measures should include, inter alia, security by design, supply chain security, network separation, and the protection and/or limitation of any remote access capabilities, as appropriate and in accordance with the risk assessment carried out by its relevant national authorities

ICAO Security and Facilitation Strategic Objective Aviation Cybersecurity Strategy October, 2019

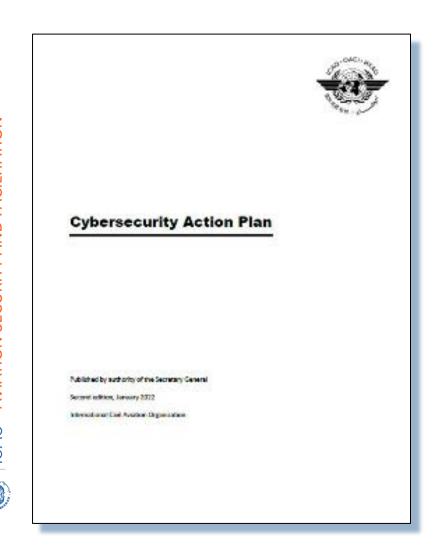
INTERNATIONAL CIVIL AVIATION ORGANIZATION

The Aviation Cybersecurity Strategy





The Cybersecurity Action Plan





First Edition published in November 2020



Second Edition published in January 2022



Available on ICAO Public Website

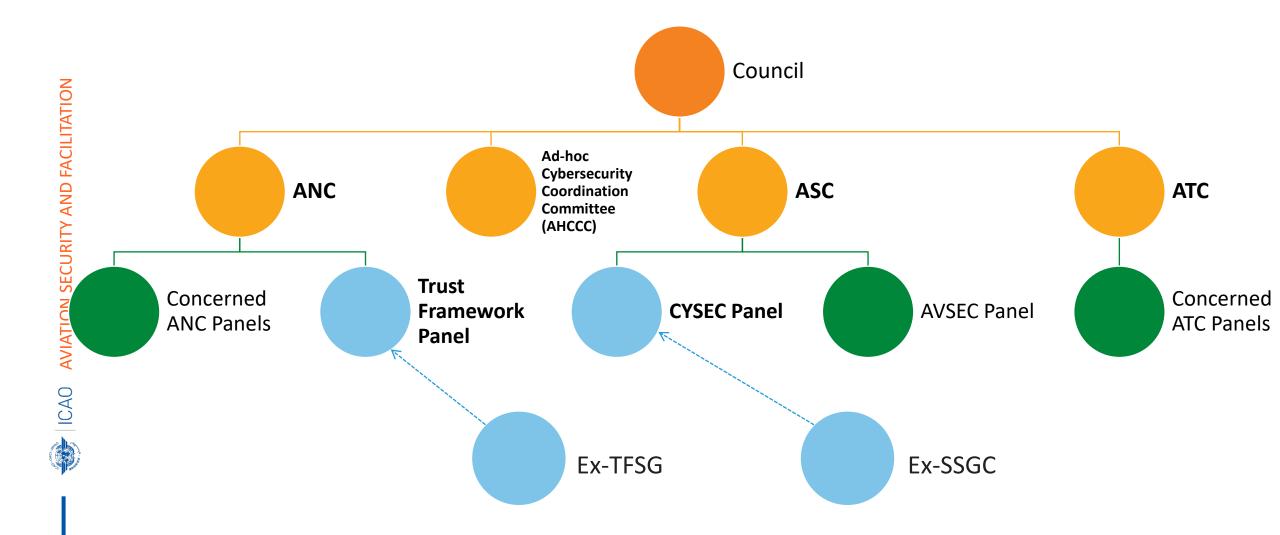


Provides the Foundation for ICAO, States and stakeholders to work together

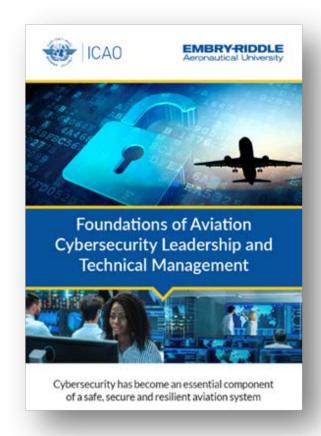


Develops the **7 Pillars** of the Aviation Cybersecurity Strategy into **32 Priority Actions**, which are further broken down into **51 Tasks** to be implemented by ICAO, States, and Stakeholders

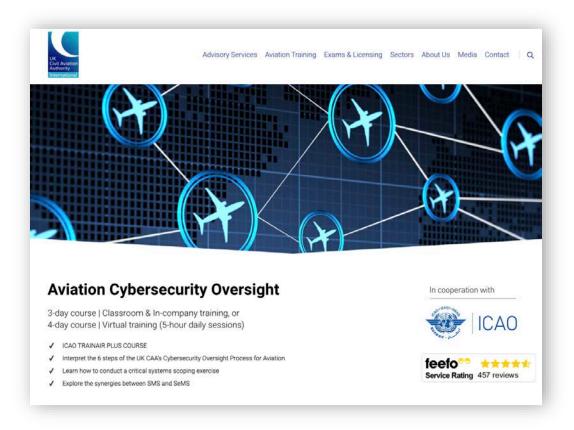
Cybersecurity Governance Structure



ICAO Aviation Security Resources - Capacity Building

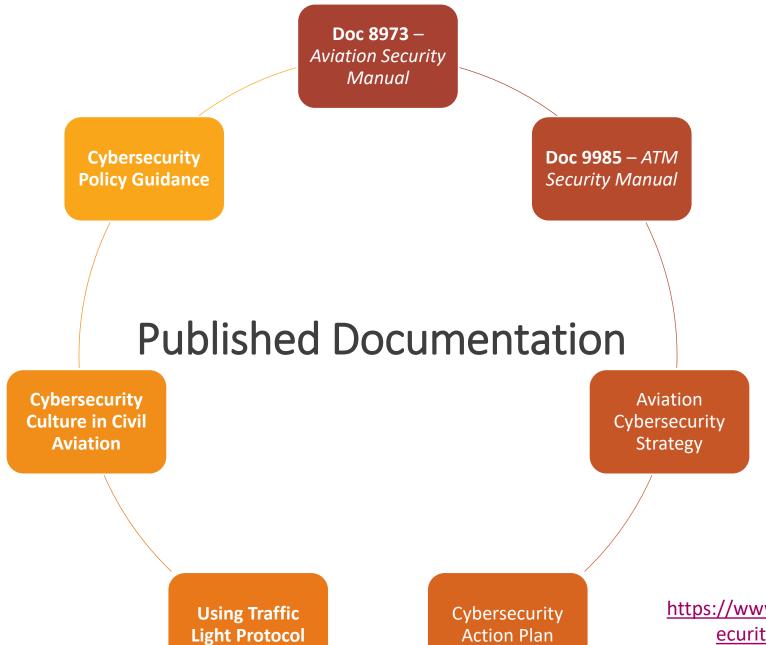


https://www.enrole.com/erau /jsp/course.jsp?categoryId=55 86BD00&courseId=SGC-1102



https://caainternational.com /course/icao-aviationcybersecurity-oversight/





https://www.icao.int/aviationcybers ecurity/Pages/Guidancematerial.aspx

Cybersecurity Panel's ongoing Work Programme

Analysis of
Potential Need
for Aviation
Cybersecurity
Provisions in
the Annexes to
the Convention
on International
Civil Aviation

WG on Cybersecurity Threat & Risk (WGCTR) Cybersecurity **Panel** (CYSECP) WG on Cybersecurity Guidance Material (WGCGM)

Cyber Threat & Risk Assessment Methodology & Scenarios

Cyber Threat Categories

Document on Methodology and global cyber threat & risk landscape (Global Cyber Risk Considerations)

Aviation Cybersecurity Terms Glossary

Principles for Integrating Aviation Cybersecurity in SSP/NCASP

Cyber incident Reporting

Cyber Information Sharing

Cyber Incident Response & Recovery & Coordination with Organizational Emergency Response/Crisis Management Plans



Setting the scene Air Navigation & Safety Considerations

Mike GOODFELLOW

Technical Officer, Globally Interoperable Systems Air Navigation Bureau



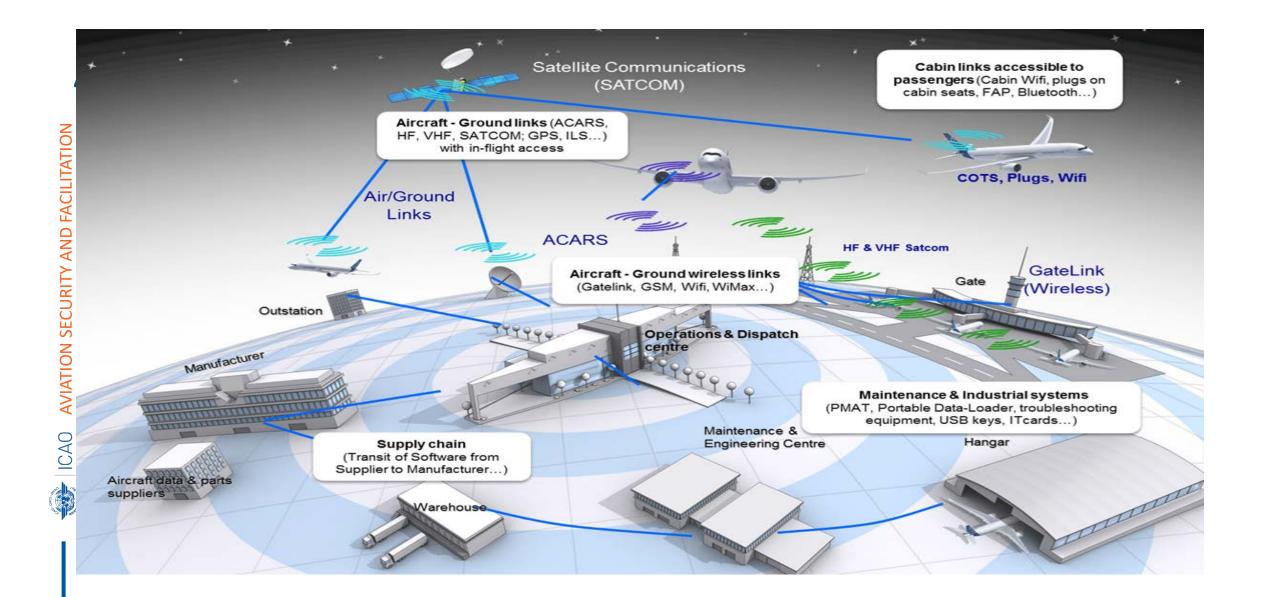
Cyber in Air Navigation and Safety

Critical enabler of ANS and other systems

- Important considerations for legacy systems
 - Bandwidth limitations
 - Lack of authentication/encryption
 - Upgrade cycle and costs







Areas of cyber work

- Navigation Systems
 - GNSS Interference
 - SBAS Authentication
- Communications
 - ATN Security
 - Air/ground links
- RPAS
 - C2 Links
 - UTM
- SWIM

- Meteorology
- ATM
 - FF-ICE
 - Connected Aircraft
- Licensing
 - Personnel
 - Operations
- Digital Trust
 - Identity Management
 - Information Assurance





Thank You