



الطيران المدني
Civil Aviation
دولة الكويت - State of Kuwait



ICAO Fifth MID Region Safety Summit

(Strategic, Approach for Safety Management)

26-28 November 2024, Kuwait





Cybersecurity and Innovation Priorities and Challenges

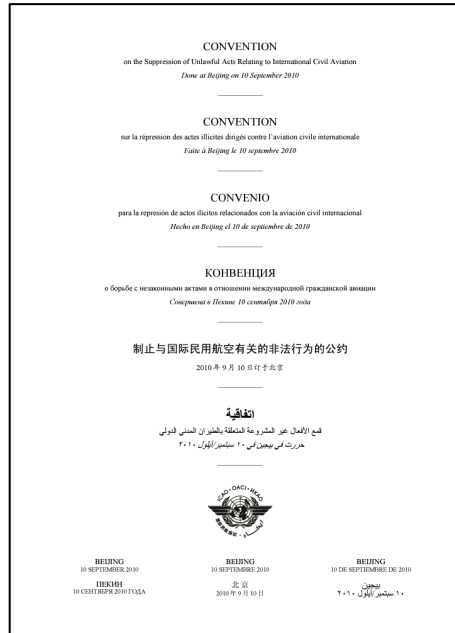
Eng. Mohamed Iheb Hamdi

ICAO MID Regional Officer for Aerodromes and Ground Aids

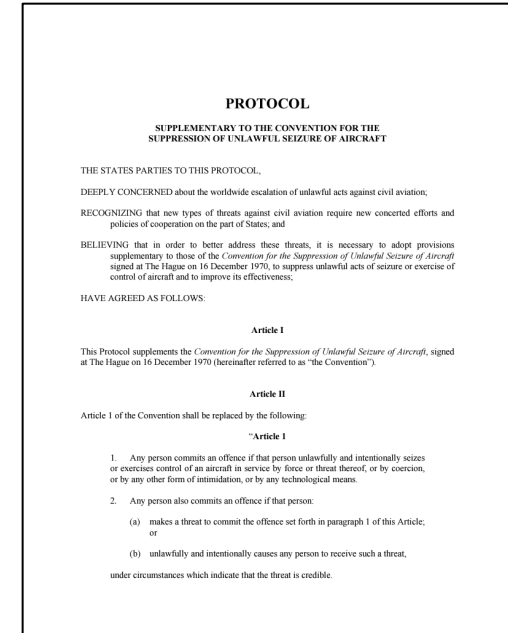
ICAO MID Regional Coordinator for Cybersecurity

International Legal Instruments on Aviation Cybersecurity

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The Beijing Convention (2010)



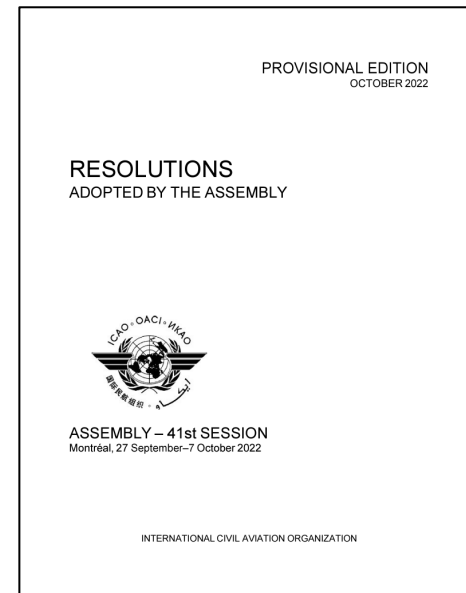
The Beijing Protocol (2010)

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

ICAO's Work on Aviation Cybersecurity – Assembly Resolutions

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A41–19: Addressing Cybersecurity in Civil Aviation





ICAO

International Standards
and Recommended Practices

Annex 17 to the Convention on International Civil Aviation

Aviation Security

Safeguarding International Civil Aviation
against Acts of Unlawful Interference

Twelfth Edition, July 2022



This edition supersedes, on 18 November 2022, all previous editions of Annex 17.

For information regarding the applicability of the Standards and Recommended Practices, see the Foreword.

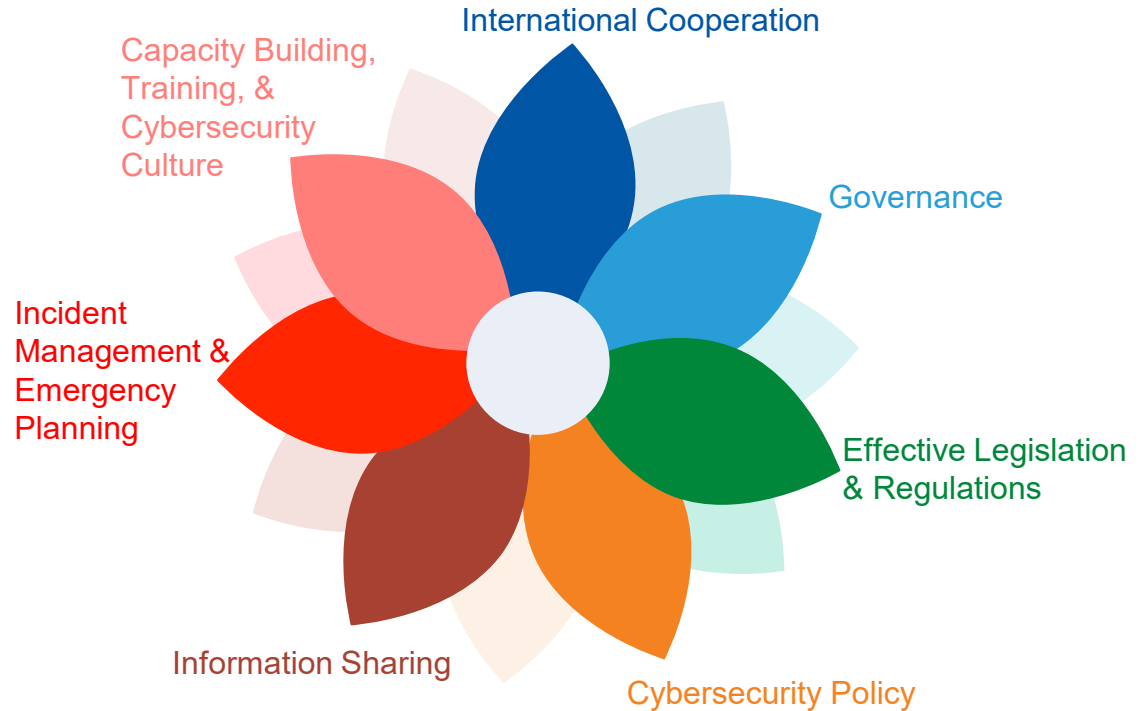
INTERNATIONAL CIVIL AVIATION ORGANIZATION

Annex 17: Standards & Recommended Practices

- **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*

The Aviation Cybersecurity Strategy

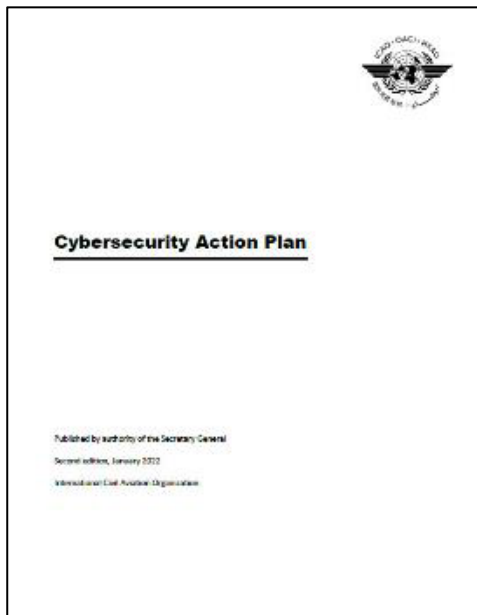
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<https://www.icao.int/aviationcybersecurity/Pages/Aviation-Cybersecurity-Strategy.aspx>

The Cybersecurity Action Plan

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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

<https://www.icao.int/aviationcybersecurity/Pages/Cybersecurity-Action-Plan.aspx>

MID Region Approach on Cybersecurity Implementation

MIDANPIRG CONCLUSION 20/43: MID REGION ANS CYBERSECURITY ACTION PLAN

That, in order to assist States achieving the objectives of ICAO Cyber Security Strategy seven pillars in ANS area in the MID Region:

- a) endorse the Template listing of Minimum Reporting Areas of non-compliance to be reported, as presented at **Appendix 4K**, to ICAO MID Office for consolidation and follow-up actions, and*
- b) nominate a Main/National Focal Point responsible for the anonymous communication of these datasets using the Template.*

MID Region ANS Cybersecurity Action Plan

Action Number	Specific Measures/Task	by	Start date of Implementation	Traceability to Cybersecurity Action Plan
MID-01	States to develop their own national/organizational Cyber Security policies	MID States	2023	CyAP 0.1
MID-02	Plan, organize and support international and regional events to promote cybersecurity in civil aviation.	MID States ICAO MID	2023 - 2024	CyAP 1.8
MID-03	Establish a governance structure in the civil aviation for ANS cybersecurity field.	MID States	2023	CyAP 2.1
MID-04	Promote coordination mechanisms between civil aviation authorities and cybersecurity authorities.	MID States	2023	CyAP 2.4
MID-05	Establishment of a civil aviation ANS cybersecurity point of contact network.	MID States	2023	CyAP 5.5

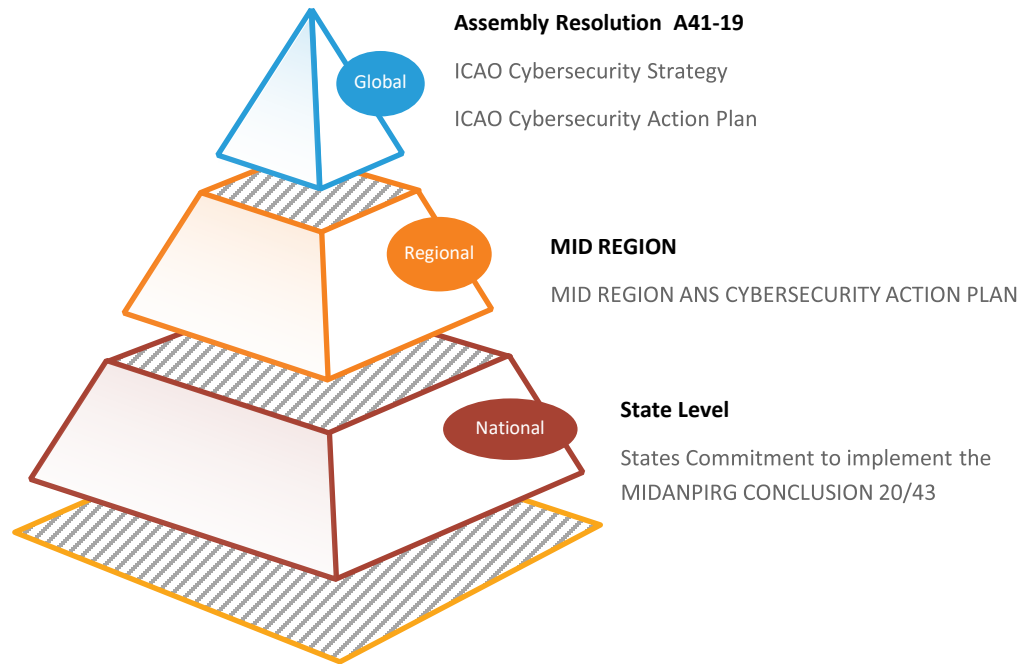


MID Region ANS Cybersecurity Action Plan

Action Number	Specific Measures/Task	by	Start date of Implementation	Traceability to Cybersecurity Action Plan
MID-06	To share cybersecurity-related information using ADCS portal	MID States	2023 - 2024	CyAP 5.2
MID-07	develop and implement capabilities and plans for civil aviation cybersecurity incident detection, analysis and response at operational level.	MID States	2023 - 2024	CyAP 6.4
MID-08	Conduct periodically ANS Cyber Resilience tabletop and live exercises at Regional and national levels	MID States	2023 – 2024	CyAP6.6
MID-09	Organization of ANS Cyber Sec capacity building activities (ANS Cyber Security oversight, Managing Security risks in ATM)	ICAO MID	2023 – 2024	CyAP 7.5
MID-10	Identify potential threats and vulnerabilities for ANS systems	ACS WG MID States	2023 – 2024	-



MID States engagement on Cybersecurity



Priorities and Challenges in Cybersecurity



- Emerging technologies (AI, IoT, blockchain) are enhancing detection, response, and prevention capabilities.
- Automation and AI reduce response times to cyber threats.
- Advances in encryption and secure communication protect sensitive aviation and operational data.
- Real-time monitoring ensures proactive cybersecurity measures.

Priorities and Challenges in Cybersecurity

Priorities:

- Ensure robust encryption and secure communication protocols.
- Implement AI-driven threat detection and mitigation tools.
- Strengthen collaboration between stakeholders to share intelligence.

Challenges:

- Rapidly evolving threats from sophisticated cyberattacks.
- Balancing innovation with compliance and operational demands.
- Addressing skill gaps in cybersecurity expertise.
- Managing risks from increased connectivity and IoT integration.





Thank You!