



ICAO

SAFE SKIES.
**SUSTAINABLE
FUTURE.**



—
Day 1

Welcome Remarks

Mr. Mohamed Abubaker Farea

Regional Director, ICAO MID

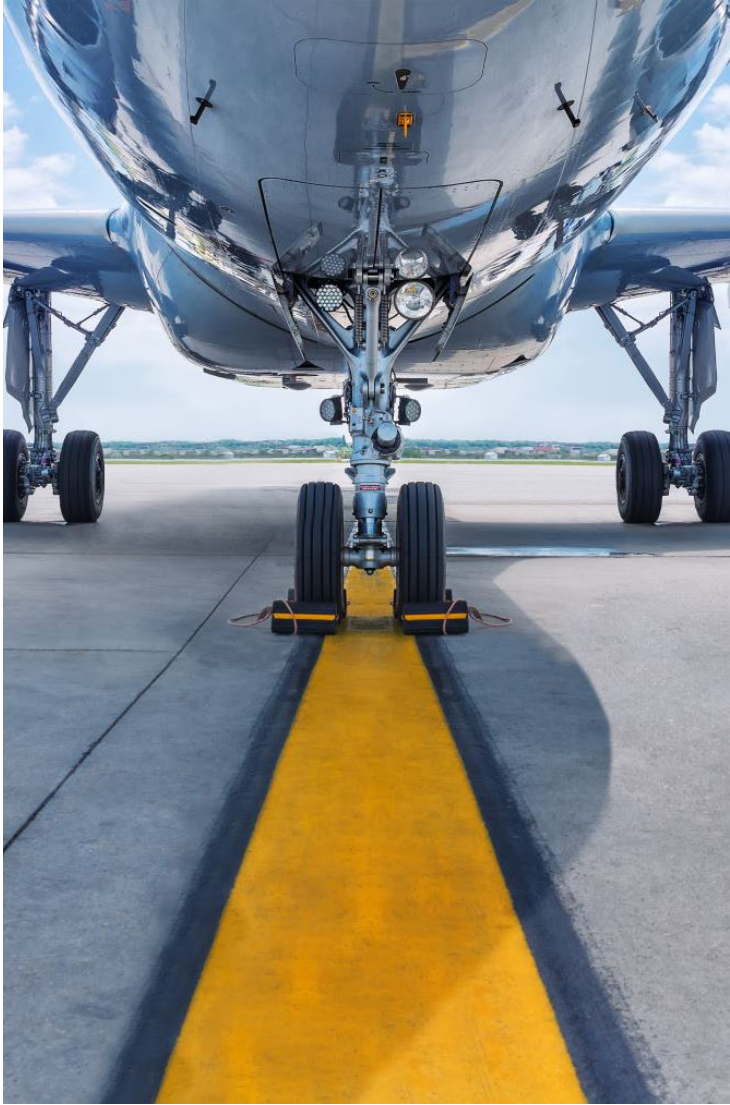
Overview of GAsEP

Ms. Agnieszka Maja Mizgalska

AVSEC Technical Officer

ASP Section

ICAO



International Civil Aviation Organization

UN Specialized Agency, established by the Chicago convention (1944), now counts **193** Member States:

- **issuing** legal instruments: conventions, protocols, resolutions, standards and recommended practices (SARPs) addressed **to States** contained in 19 Annexes to the Chicago Convention (1944)
- **auditing** States, and
- **assisting** them in implementation of SARPs

GASeP revision process

Recommendations for review by:

- 41st ICAO Assembly
- ICAO Office of Internal Oversight (OIO)
- ICAO Aviation Security Panel (ICAO AVSEC Panel)



Principles of the GAsEP Revision



01

Not new or additional requirements or measures

02

A tool to support States' efforts to achieve full compliance with Annex 17

03

Strategic not tactical, triggering political will and helps raise profile of AVSEC

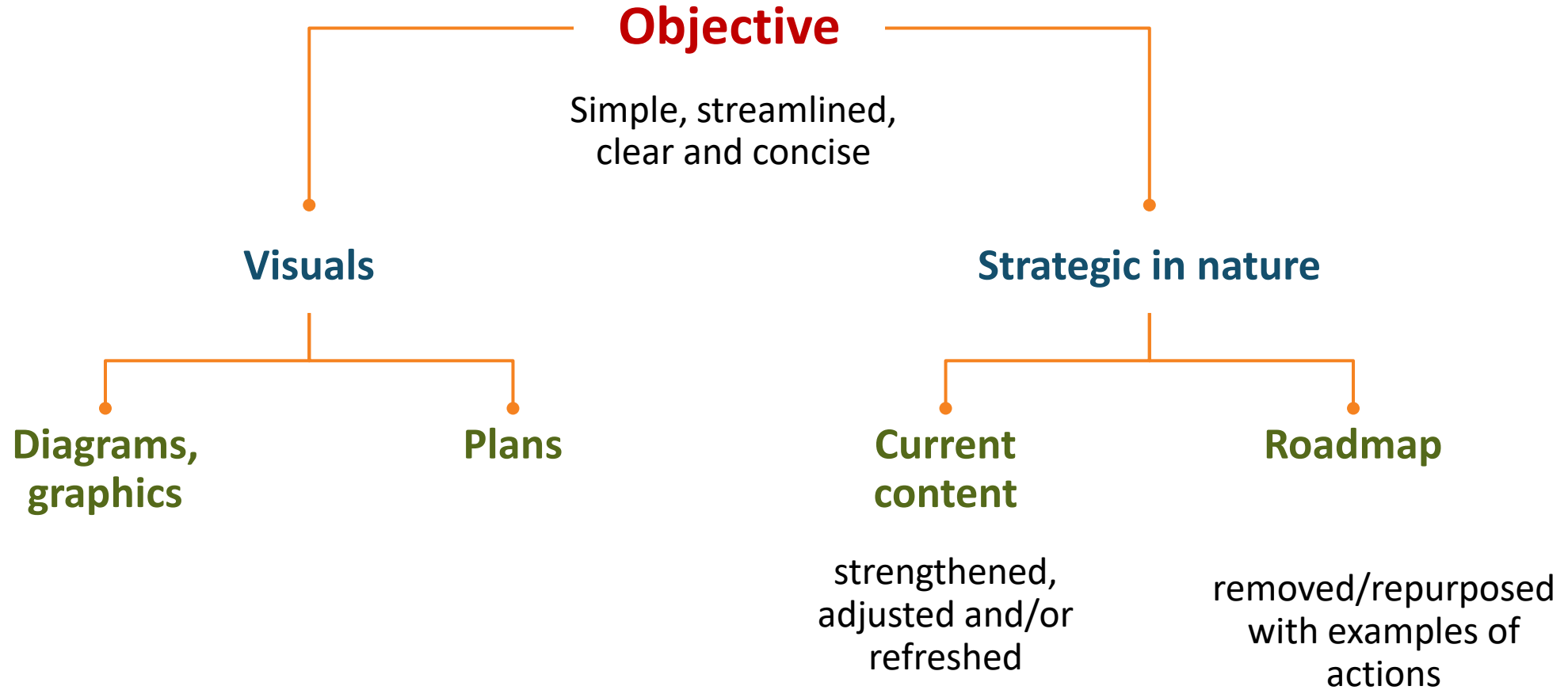
04

Global tool to help strengthen security and ensure sustainable growth

05

Sharing of experiences and best practices" by States and organizations

Structure of Revised GAsEP



Key Features of the 2nd Edition of the GAsEP



Single Aspirational Goal
Associated Milestones,
monitored using the USAP-
CMA Mechanism



Voluntary sharing of experiences by
States and Industry
Contributes to global efforts to
strengthen aviation security



Promotion of updated GAsEP at
every opportunity
And ICAO Security Week 2024 in
Muscat



Simplified, user-friendly clearer
document
Easily understood by all



Aspirational goal



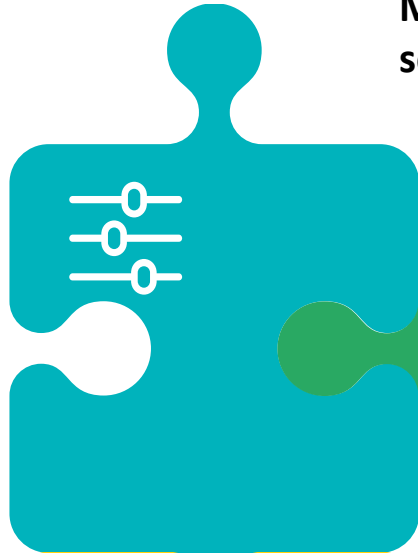
States have set themselves an aspirational goal to:

Achieve and maintain a strong global aviation security system that is underpinned by **full and effective implementation** of ICAO aviation security Standards in all Member States

Global Priority Areas

Global Priority 1

Enhance risk awareness and response



Global Priority 2

Maintain a strong effective security culture



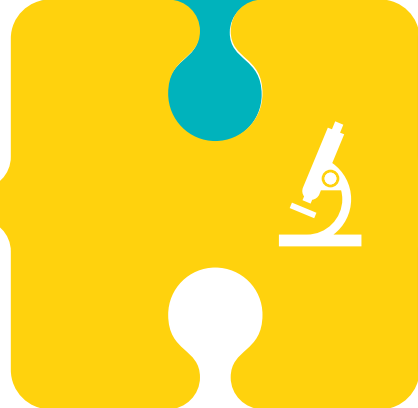
Global Priority 3

Develop and promote the role of human factors



Global Priority 4

Improve technological resources and foster innovation



Global Priority 5

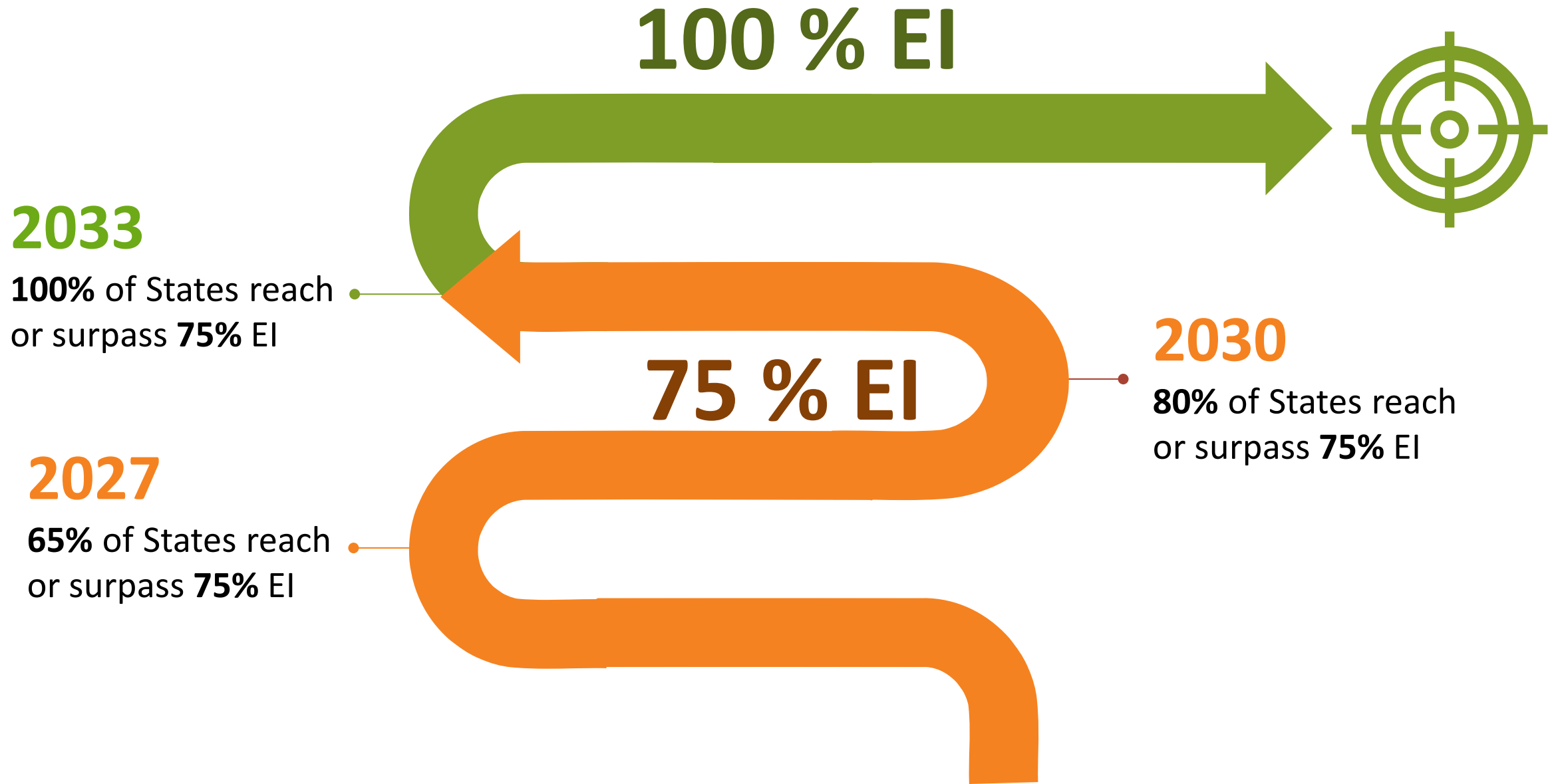
Improve oversight and quality assurance

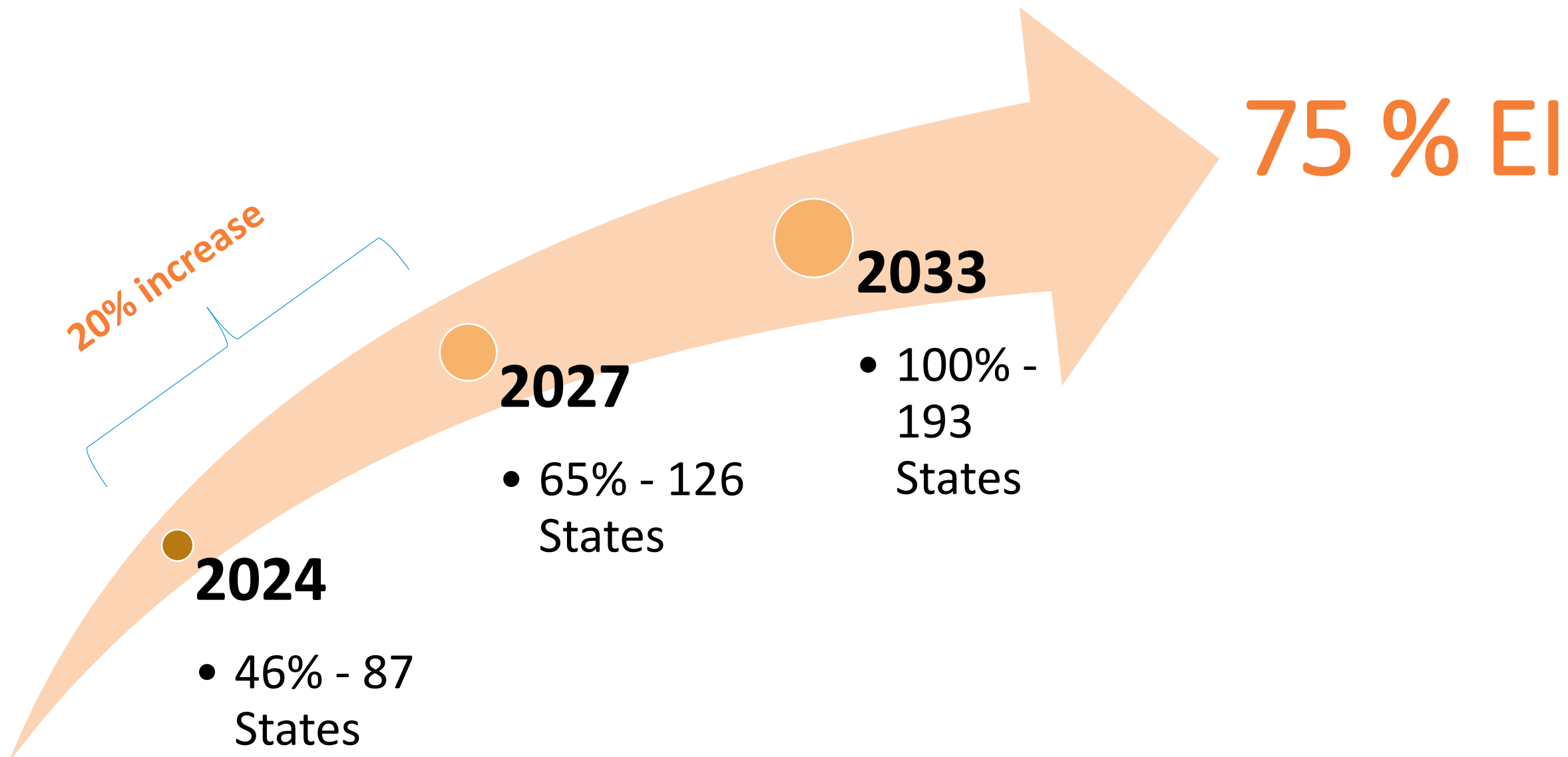


Global Priority 6

Increase cooperation and support

Aspirational goal and milestones

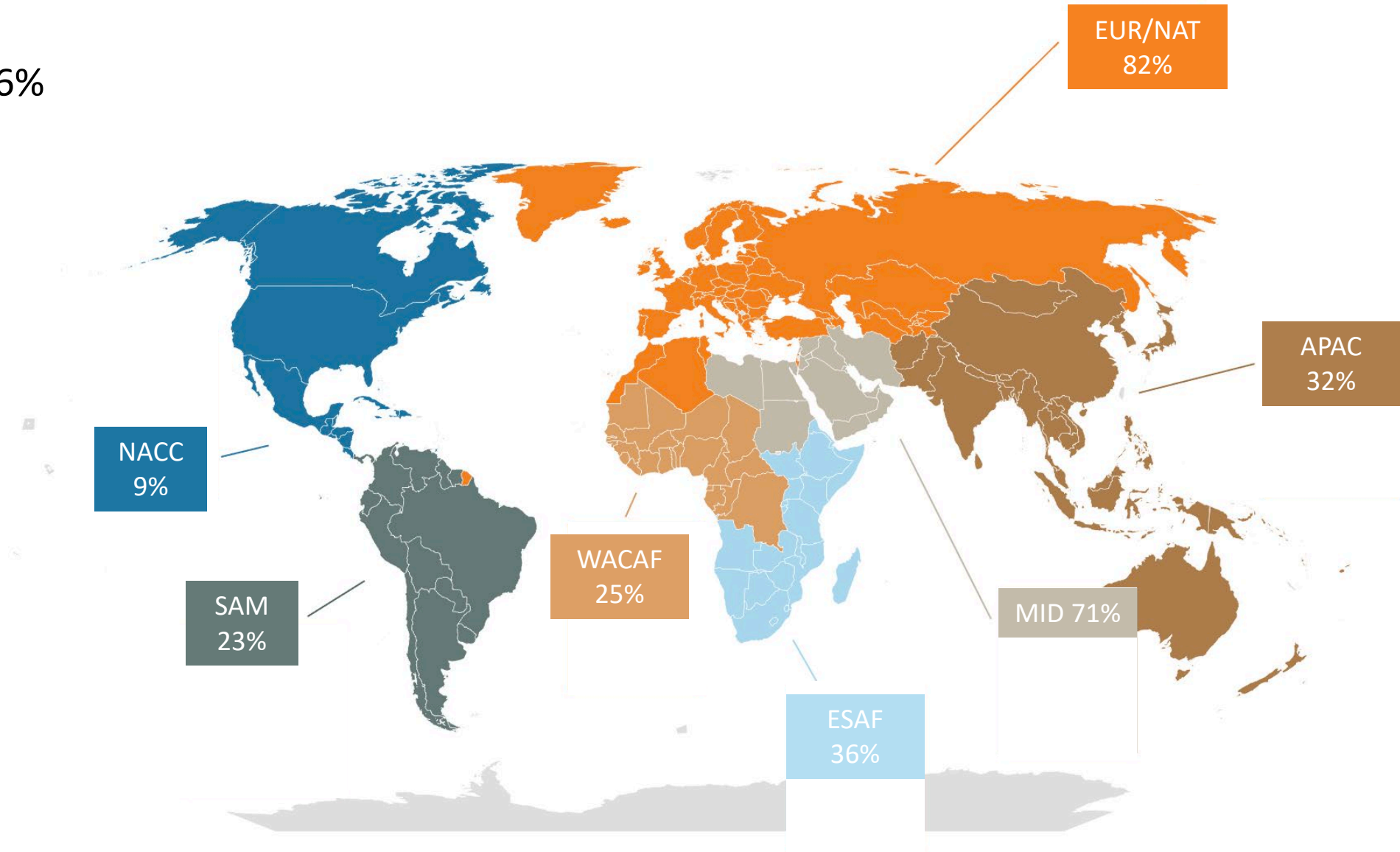




Sustainability indicator

% of States which achieved or surpassed the 75% milestone as of September 2024

Global – 46%



What is next ?

- Introduces communication and advocacy campaign
- Encourages “sharing of experiences and best practices” by States and organizations
- Information to be shared non-confidential
- Helps monitor success and address challenges
- Experience-sharing template found in Appendix to GAsEP

.... **More to come**



Session 1

Enhance risk awareness and response

Ms. Agnieszka Maja Mizgalska

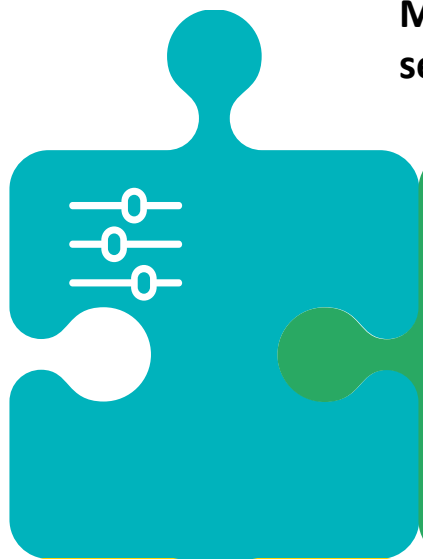
AVSEC Technical Officer
ASP Section
ICAO

Mr. Gary Leung

Senior Manager
Security & Facilitation
ACI Asia Pacific

Global Priority 1

Enhance risk awareness and response



Global Priority 2

Maintain a strong effective security culture



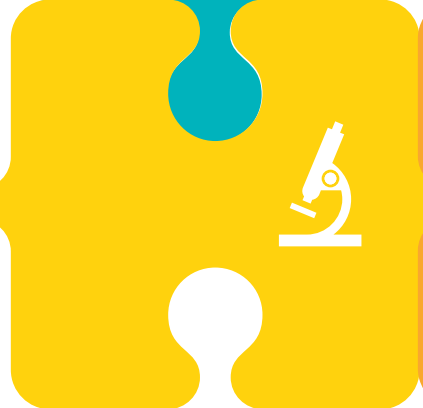
Global Priority 3

Develop and promote the role of human factors



Global Priority 4

Improve technological resources and foster innovation



Global Priority 5

Improve oversight and quality assurance

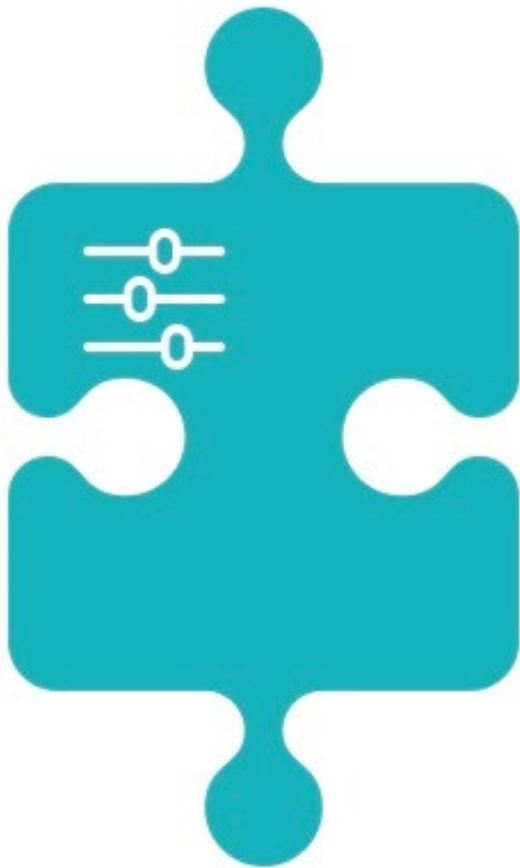


Global Priority 6

Increase cooperation and support

Global Priority 1

Enhance risk awareness and response



- To identify, understand and manage risk, while ensuring that such efforts are targeted in the right areas, where they can have the highest impact and that emerging risks are anticipated

ICAO resources*:

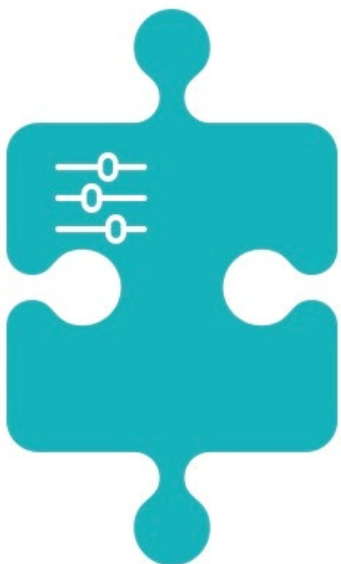
- ICAO *Aviation Security Global Risk Context Statement* (Doc 10108 – Restricted)
- ICAO *Global Cyber Risk Considerations* (expected in 2024)
- ICAO *Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones* (Doc 10084)
- ICAO *Risk Management Workshop*
- UNOCT/ICAO *Threat Assessment Models Project*
- ICAO *Aviation Security Manual* (Doc 8973 – Restricted)
- ICAO *Aviation Security Oversight Manual – The Establishment and Management of a State Aviation Security Oversight Programme* (Doc 10047)

*Not restricted to ICAO resources as other material may also be utilized

What can State do?

Global Priority 1

Enhance risk awareness
and response



1. Up-to-date framework and clearly established risk management methodology
2. Timely reporting of AUI to ICAO
3. Appropriate training for those conducting risk assessments and provision of necessary tools to carry out the assessments
4. Global RCS taken into the account when conducting national risk assessments with a holistic aviation perspective and appropriate impact assessments
5. Adjust relevant elements of their NCASP, as necessary and required, based on national risk assessments
6. Review and amend screening and security controls in light of risk assessments
7. Establish and implement a comprehensive cyber risk management framework (across civil aviation domains)

Session 2

Maintain a strong and effective security culture

Ms. Samiha Al Busaidi

Regional Officer
Aviation Security and Facilitation
ICAO MID

Mr. Elnour Yousif AbdelKarim

AVSEC Director
Sudan CAA

Mr. Faisal Al Harthy

Head of Quality Control &
Licensing
Oman CAA

Mr. Fahad Al Anzi

AVSEC Director
Kuwait CAA

Global Priority 2

Maintain a strong effective security culture



- Establish an appreciation of positive security behaviours amongst staff
- Security is everyone's responsibility, and must be seen as a core value, with all staff thinking and acting in more security-conscious ways

ICAO resources*:

ICAO security culture resources and guidance material, available on the [Security Culture website](#):

- ICAO Toolkit on Enhancing Security Culture
- ICAO Security Culture Campaign Starter Pack
- ICAO Security Culture Workshop
- ICAO Insider Threat Toolkit
- ICAO Pamphlet: Managing Insider Risks
- ICAO Insider Risk Workshop
- ICAO *Aviation Security Training Manual* (Doc 10207) (expected in 2024)
- ICAO Security Culture: discussion cards, customizable resources, films, e-learning training package
- Cybersecurity Culture in Civil Aviation

*Not restricted to ICAO resources as other material may also be utilized

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Global Priority 2

**Maintain a strong effective
security culture**



1. Obtain high-level endorsement of policies that define security culture
2. Develop communication strategies to raise the general public's awareness
3. Build security culture and threat awareness locally and nationally
4. Include provisions in quality control and assurance processes to monitor the effective implementation of a robust security culture
5. Encourage staff and the general public to report aviation security-related concerns and issues without fear of negative repercussions
6. Organize and conduct aviation security and aviation cybersecurity awareness programmes and campaigns

Thank You



Session 3

Develop and promote the role of human factors

Mr. Hussain Qabbani

Regional Officer
Aviation Security
ICAO MID

Mr. Yaser Abdulhalim

Head of Aviation Security
Central Administration
CAA Egypt

Mr. George Nader

Aviation Security
and Facilitation Expert
CAA Lebanon

Mr. Mouad Gefairi

Aviation Security Inspector
CAA Libya

Global Priority 3

Develop and promote the
role of human factors



- Invest in people
- Integrate human factors principles into aviation security policies and operational measures

ICAO resources*:

- ICAO human factors resources, available on the [Security Culture website](#), including:
 - ICAO Starter Pack on Human Factors and Human Performance – Strengthening Security Culture in Aviation Security
- ICAO *Manual on Human Performance (HP) for Regulators* (Doc 10151)
- Human Performance video on [ICAO TV](#)
- ICAO Human Factors Workshop (expected in 2025)
- ICAO *Aviation Security Training Manual* (Doc 10207) (expected in 2024)

*Not restricted to ICAO resources as other material may also be utilized

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Global Priority 3

Develop and promote the role of human factors



1. Assess the impact of human factors
2. Support the motivation and performance of staff (reporting security concerns and displaying positive security behaviours)
3. Build, develop and integrate the principles of human factors into national level policies and operational reality
4. Evaluate the role human factors plays in aviation security job roles in order to professionalize the workforce and maintain optimal performance
5. Ensure sufficient recruitment and retention of qualified and competent aviation security professionals

Session 4

Improve technological resources and foster innovation

Mr. Hussain Qabbani

Regional Officer
Aviation Security and Facilitation
ICAO MID

Mr. Ahmed Kamal, Aviation Security Director - CAA Egypt

Global Priority 4

Improve technological resources and foster innovation



- Promote and apply technological solutions and innovative techniques that can provide the tools for enhancing aviation security effectiveness while ensuring operational efficiency and the integration of human factors principles

ICAO resources*:

- [AVSECPaedia](#)
- ICAO *Aviation Security Manual* (Doc 8973 – Restricted)
- ICAO Aviation Cybersecurity Training Courses
- ICAO Training on Technology: Course Outlines and Course Design Blueprints
- ICAO *Aviation Security Training Manual* (Doc 10207) (expected in 2024)

*Not restricted to ICAO resources as other material may also be utilized

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Global Priority 4

**Improve technological
resources and foster
innovation**



1. Encourage and support development and research
2. Foster a culture of innovation and new ways of thinking
3. Organize and support innovation events and challenges including start-ups and entrepreneurial companies
4. Conduct outreach activities with industry to promote the use of appropriate technologies, including human factors considerations
5. Link research and development activity to specific and identified risks to aviation
6. Encourage the application of machine learning and artificial intelligence to accelerate OEM algorithm development
7. Encourage the alignment of open architecture core components to foster innovative approaches, standardization and interoperability

Session 5

Improve oversight and quality assurance

Ms. Samiha Al Busaidi

Regional Officer
Aviation Security and Facilitation
ICAO MID

Ms. Khuloud Al Balooshi

Aviation Security Specialist
GCAA, UAE

Mr. Ibrahimh Al Buainain

Head of AVSEC Section
Qatar CAA

Mr. Elnour Yousif AbdelKarim

AVSEC Director
Sudan CAA

Global Priority 5

Improve oversight and quality assurance



- Establish and maintain effective quality control and oversight processes globally, nationally and locally, which are critical in delivering sustained and effective aviation security

ICAO resources*:

- ICAO *Universal Security Audit Programme Continuous Monitoring Manual* (Doc 9807)
- ICAO *Aviation Security Oversight Manual – The Establishment and Management of a State Aviation Security Oversight Programme* (Doc 10047)
- ICAO AVSEC Auditors Course
- ICAO *Aviation Security Manual* (Doc 8973 – Restricted)
- ICAO Aviation Security Training Packages and Workshops (such as AVSEC National Inspectors, National Civil Aviation Quality Control Programme Workshop, etc.)
- ICAO Aviation Cybersecurity Oversight Course

*Not restricted to ICAO resources as other material may also be utilized

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Global Priority 5

**Improve oversight and
quality assurance**



1. Provide the appropriate authority for aviation security with sufficient enforcement powers and financial and human resources
2. Develop processes and procedures to conduct and coordinate aviation security quality control (QC) within a State
3. Develop best practices on conducting QC activities and peer review activities
4. Establish a framework to rectify gaps and implement sustainable response measures
5. Analyze national quality control data
6. Develop and implement corrective actions
7. Enhance the standard of training and guidance on quality assurance

Session 6

Increase cooperation and support

Ms. Agnieszka Maja Mizgalska

AVSEC Technical Officer
ASP Section
ICAO

Mr. Ahmed Kamal

Aviation Security Director,
CAA
Egypt

Mr. Adnan Alghamdi

Advisor to the EVP Aviation
Security
Saudi Arabia

Mr. Ali Nasser

Head of Quality Control
Department, CAA
Iraq

Global Priority 6

Increase cooperation and support



- Integrate effective cooperation and capacity-building between and within States, including all relevant stakeholders and industry, to enable the achievement of key security outcomes more effectively and efficiently

ICAO resources*:

- ICAO AVSEC Assistance, Capacity-Building and Training Programme
- ICAO Aviation Security Training Packages and Workshops
- ICAO Aviation Training
- ICAO-Certified AVSEC Instructors, Auditors and Experts
- Measuring the Effectiveness of AVSEC Training: Summary Document of Best Practices, Guidance, Performance Indicators and Tools
- ICAO Guidance and Assessment Templates for the Quality Assurance of Training Material
- ICAO *Aviation Security Training Manual* (Doc 10207) (expected in 2024)

*Not restricted to ICAO resources as other material may also be utilized

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Global Priority 6

Increase cooperation and support



1. Share AVSEC related knowledge
2. Ensure assistance and its delivery is subject to a robust process to ensure its effectiveness
3. Actively support the work of ICAO global and regional aviation security groups, including the implementation of regional road maps
4. Provide assistance to other States, as appropriate, considering internal resources and expertise
5. Engage and inform senior policy makers and decision makers on aviation security risks and their role and responsibility in increasing cooperation and information sharing

Session 7

Experience sharing mechanism

Mr. Hussain Qabbani

Regional Officer
Aviation Security and Facilitation
ICAO MID

Mr. Mr. Atef Ajili

AVSEC Consultant, Ministry of
Transportation and
Communication, Bahrain

Mr. Fahad Alanzi

Civil Aviation Security Director
DGCA Kuwait

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SAFE SKIES.
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Day 3

Risk Assessment Processes and Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones

Welcome remarks and introduction

Mr. Hussain Qabbani

Regional Officer, Aviation Security and
Facilitation, ICAO MID

Key note

Ms. Katia Canciani

Head, Conflict Zone Information Office, Transport Canada
and Chair, Safer Skies Consultative Committee

Session 1

Global and regional threat landscape

Ms. Agnieszka Maja Mizgalska

AVSEC Technical Officer, ASP
Section, ICAO

Ms. Samiha Al Busaidi

Regional Officer, Aviation Security
and Facilitation, ICAO MID

Threat faced by aviation industry

Persons

- illegal entry
- documents fraud
- human trafficking
- suspected terrorists
- criminals
- FTFs

Weapons

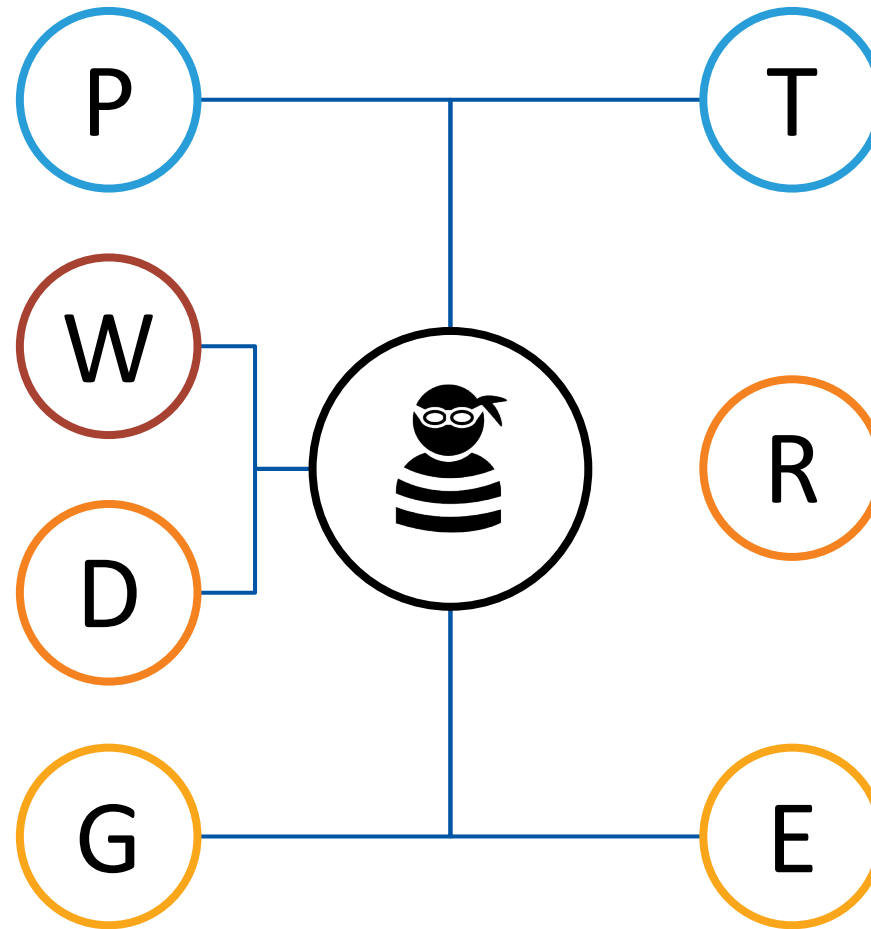
- arms
- ammunition
- explosives

Drugs

- Illicit drugs and precursors

Goods

- contraband
- cash
- hazardous materials
- stolen items



Traditional

- Artfully concealed complex IEDs and homemade explosives
- Use of small arms
- Attacks targeting the plane
- Plane used as a weapon

Recent

- Attacks at a distance
- IEDs, small arms, vehicle-borne attacks
- Landside attacks
- Chemical threats
- Insider/non-passenger threat
- RPAS (UAS)

Emerging

- Cyber attacks
- Biological and radiological threats
- Violent extremism and perimeter breaches
- Unruly behavior and airport disruptions
- Communication of false information

Historical global response to aviation threats



1960s



1970s-1990s

- Preboarding screening
WTMD/x-ray
- Pax/bag reconciliation
- Aircraft searches
- High-risk flights procedures



2000s

- Background checks
- Cockpit security
- Shoes, LAGs
- Hold baggage screening (HBS)
- Body scanners



2010s

- Cargo enhanced security/supply chain
- Staff screening
- Cyber security
- UAS measures
- Landside security
- Artfully concealed IEDs



2020s

Aviation Security Global Risk Context Statement

Risk picture is regularly published in the Aviation Security Global Risk Context Statement document

(Doc 10108, Restricted)



Approved by and published under the authority of the Secretary General

INTERNATIONAL CIVIL AVIATION ORGANIZATION



A dedicated WG produces global risk advice, for States and ICAO governing bodies



Risk picture is updated yearly, based on a pre-established risk assessment methodology, which considers a number of threat scenarios



Threat, consequences and vulnerability information are inputs to the assessment

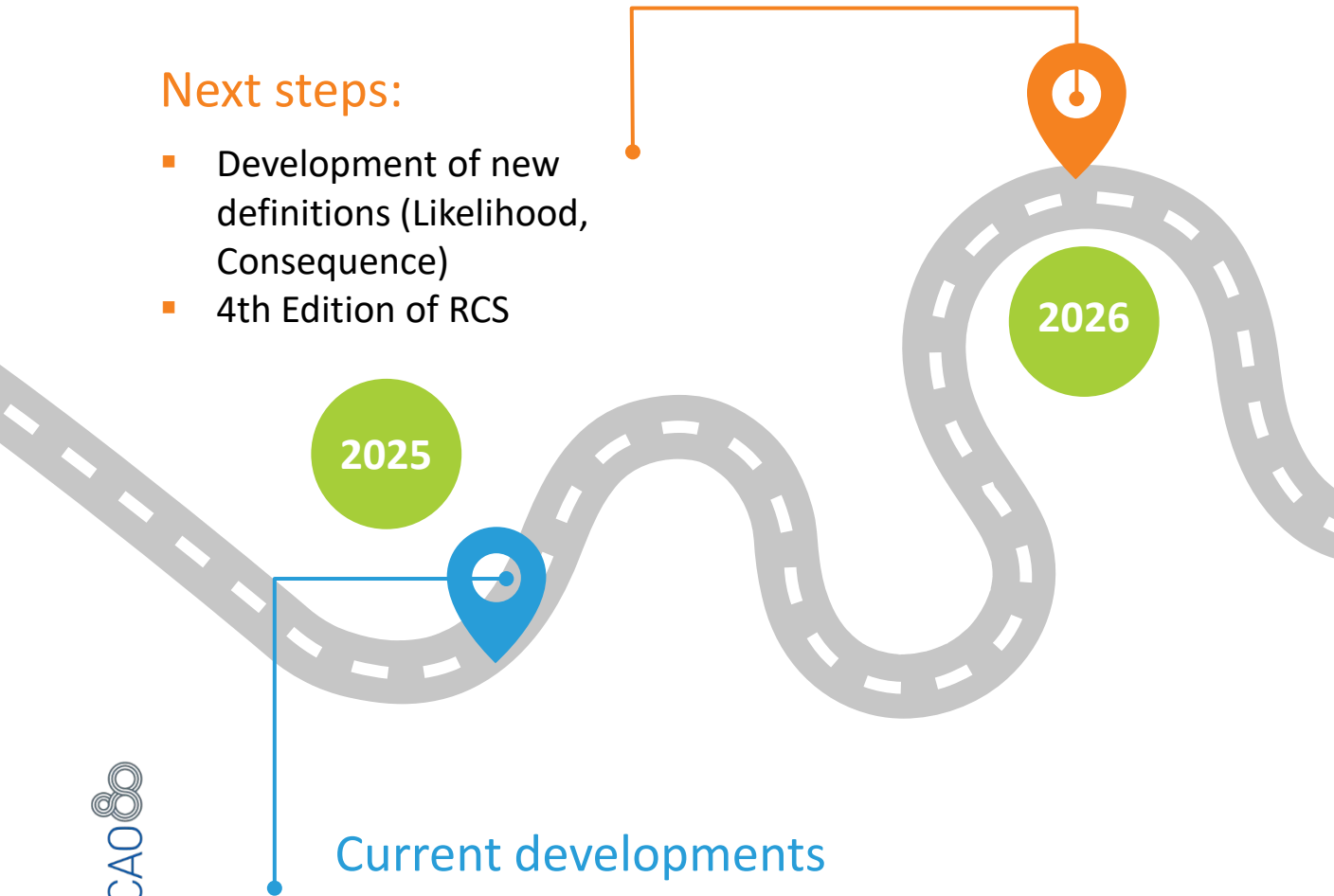


SARPs are created or amended based on risk advice by this WG

AVSEC Global Risk Context Statement - Doc 10108

Next steps:

- Development of new definitions (Likelihood, Consequence)
- 4th Edition of RCS



Current developments

- Addendum to the 3rd Edition to be published in Q2 2025
- Risk Management Manual – end of 2025



Addendum to the Aviation Security Context Statement (Doc 10118)

This addendum contains a global aviation security risk assessment intended to help inform and support ICAO Member States' risk assessments.

References to threat, risk and incidents with security threats, aviation security risks and acts of unlawful interference (AU).

This addendum is an update to Chapter 3 and 4 of the *Global Risk Context Statement* (Doc 10108) - responsible for conducting national and international decision makers, practitioners and other relevant stakeholders of this document must be applied in aviation security information.

This document supports Global Priority Area *Aviation Security Plan* (Doc 10118).

May 2025

VEHICLE-BORNE AIRSIDE ATTACKS

Vehicle-borne airside attacks could be an IED concealed by an insider with legitimate airside access and detonated inside a vehicle targeting an airport facility or a parked or moving aircraft; an attack by the ramming of a vehicle into an airport facility airside where passengers are present; or the use of a fake emergency or liveried vehicle to pass a vehicle checkpoint with the intent of attacking parked or moving aircraft on the airside.

Likelihood	Consequence	Residual Vulnerability	Residual Risk	Trend
MEDIUM-LOW	MEDIUM-HIGH	MEDIUM	MEDIUM	—

Mitigation: Integration of security considerations into the design and construction of airport facilities, or modification of existing ones, use designs and materials to mitigate the destructive impact of a bomb blast, effective detection and response measures in place, checkpoint screening of staff and vehicles and airside vehicle management and background checks.

CYBER AUIS

A cyber-attack refers to an attack on civil aviation critical systems, data or information; this assessment only applies to attacks on critical systems. The cyber domain may be seen as a target for attack or as a vector or facilitator for physical aviation security attacks. This assessment only applies to attacks on critical systems that may result in an AUI.

Likelihood	Consequence	Residual Vulnerability	Residual Risk	Trend
LOW	HIGH	MEDIUM-LOW	MEDIUM	—

Mitigation: For information on how to manage risks in civil aviation, please refer to Doc 10213, *Global Cyber Risk Considerations*, which will be issued in 2025.

CONVENTIONAL HIJACK

This type of threat covers the commandeering of an aircraft to perpetrate a conventional hijack where hostages are taken and demands made which may be resolved by negotiation or force.

Likelihood	Consequence	Residual Vulnerability	Residual Risk	Trend
MEDIUM-LOW	MEDIUM-LOW	MEDIUM-LOW	MEDIUM-LOW	—

Mitigation: Lockable reinforced cockpit doors, security screening of passengers and staff and access control, consideration given to aircraft which may be exempt from certain measures, lockable flight crew compartment doors, installation of secondary cockpit doors, deployment of in-flight security officers, employment checks and enhanced background checks (initial and reoccurring), training of crew on appropriate response procedures, promote passenger awareness and reporting, train staff in behavioural detection and response planning and preparedness.

Risks identified:

- Attacks using cargo and mail consignments
- Attacks at a distance, especially in conflict zones
- Attacks using unmanned aircraft systems (UAS)
- Threat posed by insiders
- Violent extremism, which may include politically motivated acts
- Cyber-attacks
- Acts attributed to unrest and attacks in, or near, conflict zones
- Attacks at airport landside areas
- Communication of false information



Risks under in-depth assessment:

- Liquids, Aerosols and Gels (LAGs)
- Cargo
- Artificial Intelligence (AI)





" WE COULDN'T HIRE THE CYBERSECURITY CANDIDATE YOU SENT US, HE WAS SAYING TOO MANY SCARY THINGS ABOUT OUR COMPUTERS, "



Doc 10213 — Restricted

Global Cyber Risk Considerations

(FIRST EDITION, 2025)

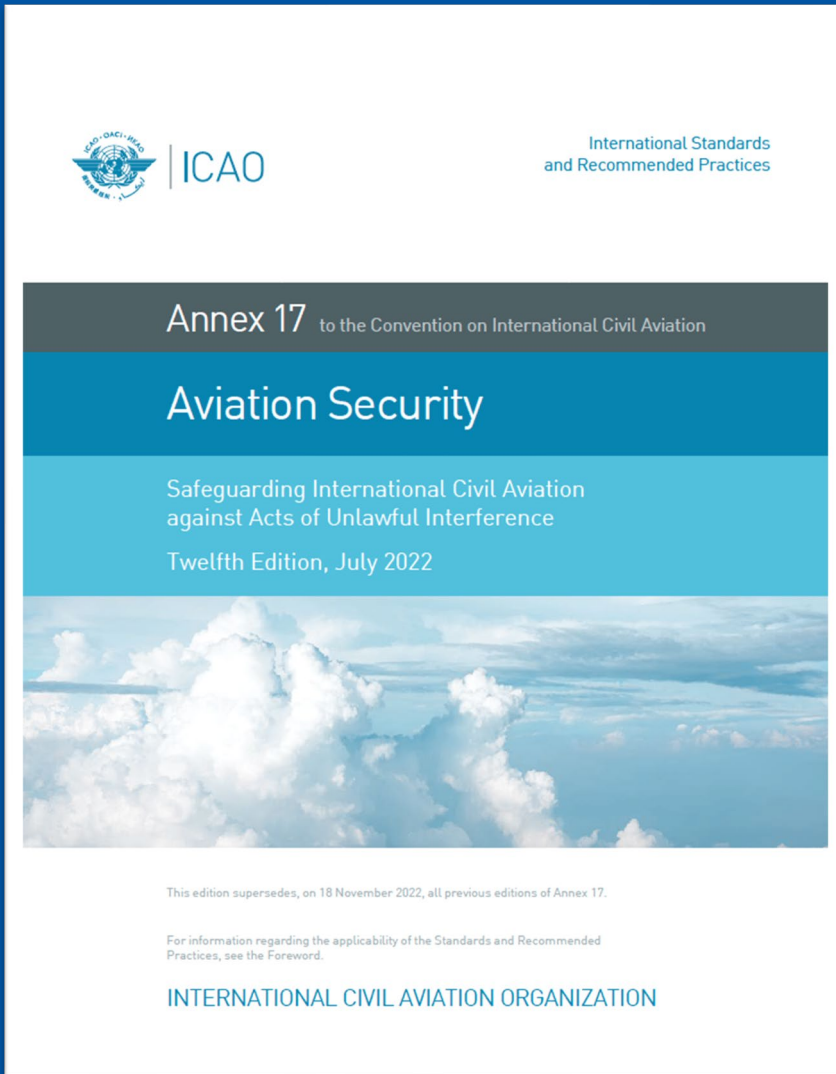
Approved by and published under
the authority of the Secretary General

First Edition — 2025

International Civil Aviation Organization

Annex 17

12th Edition – July 2022



Standards:

- Domestic operations
- Review the level of threat to civil aviation
- Procedures to share with airport and aircraft operators, air traffic service providers or other entities
- Priorities and frequency of monitoring activities
- Establishing security restricted areas
- Vehicles/items access to security restricted areas
- Aircraft security check or a search
- Mitigation measures against MANPADS
- Decision to deploy in-flight security officers (based on threat assessment)
- Procedures to deal with unidentified baggage
- Security measures are established for landside areas
- Measures relating to cyber threats

Recommended Practices:

- Measures for the protection of critical systems and/or data

—
MID

Regional threat landscape

ICAO MID Region Background

- 15 States
- 15 Civil Aviation Authorities (CAAs)
- 15 Flight Information Regions (FIRs)

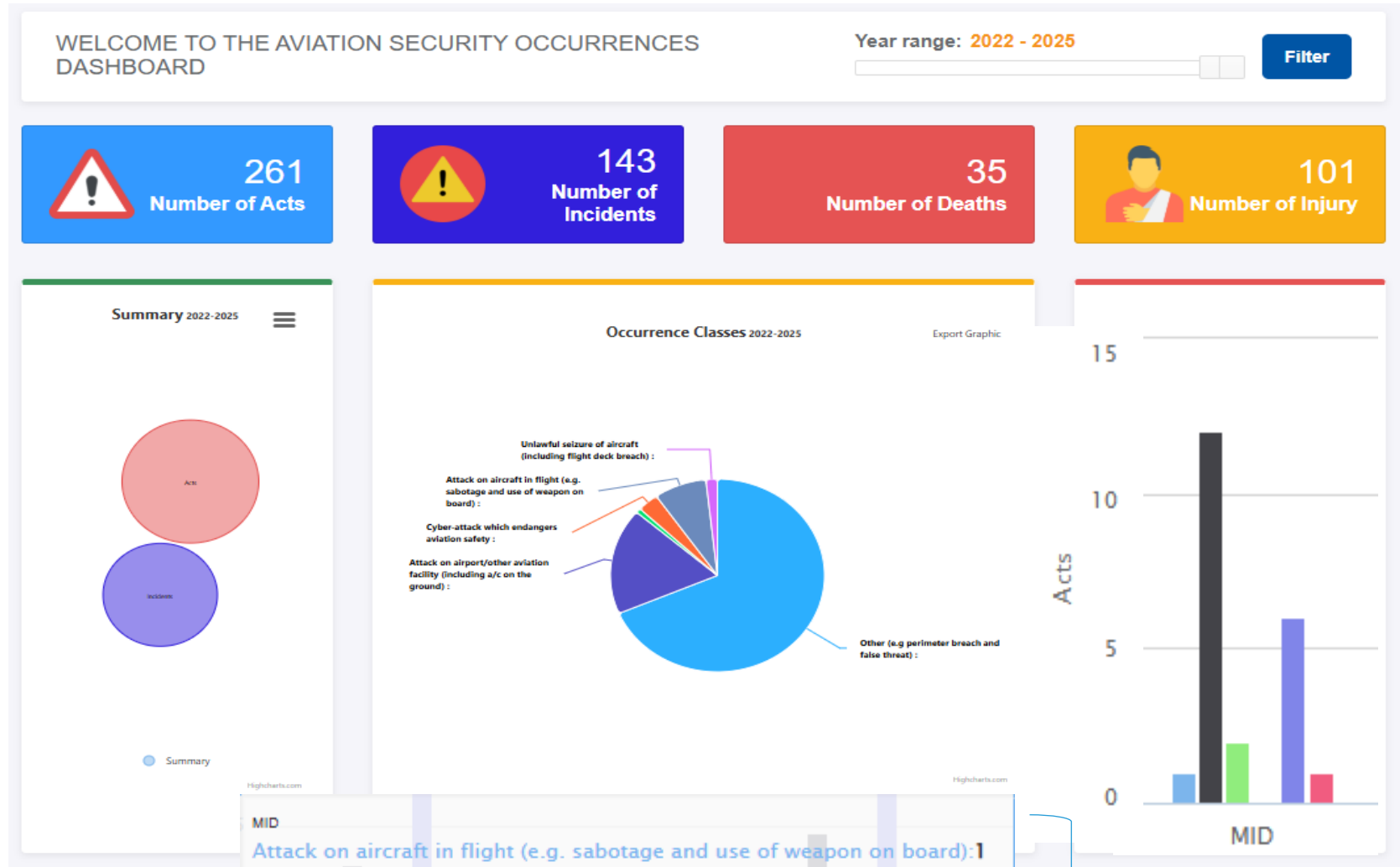
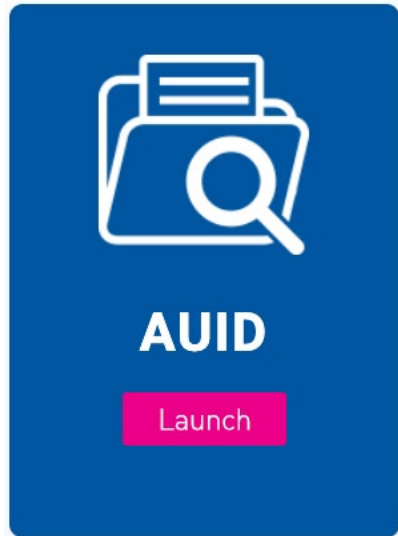
- ✈ 25% RPKs share of the Air Passenger Market
- ✈ International traffic heavily concentrated in 8 States

Major events:

- AVSEC Week
- Global Facilitation Conference
- Cybersecurity Symposium
- API/PNR Seminars
- USAP-CMA Seminars



AUID – 2022-2025



MID

Attack on aircraft in flight (e.g. sabotage and use of weapon on board)	1
Attack on airport/other aviation facility (including a/c on the ground)	12
Attack using aircraft as a weapon (including UAS)	2
Cyber-attack which endangers aviation safety	0
Other (e.g. perimeter breach and false threat)	6
Unlawful seizure of aircraft (including flight deck breach)	1

MID 21
(15 acts, 6 incidents)



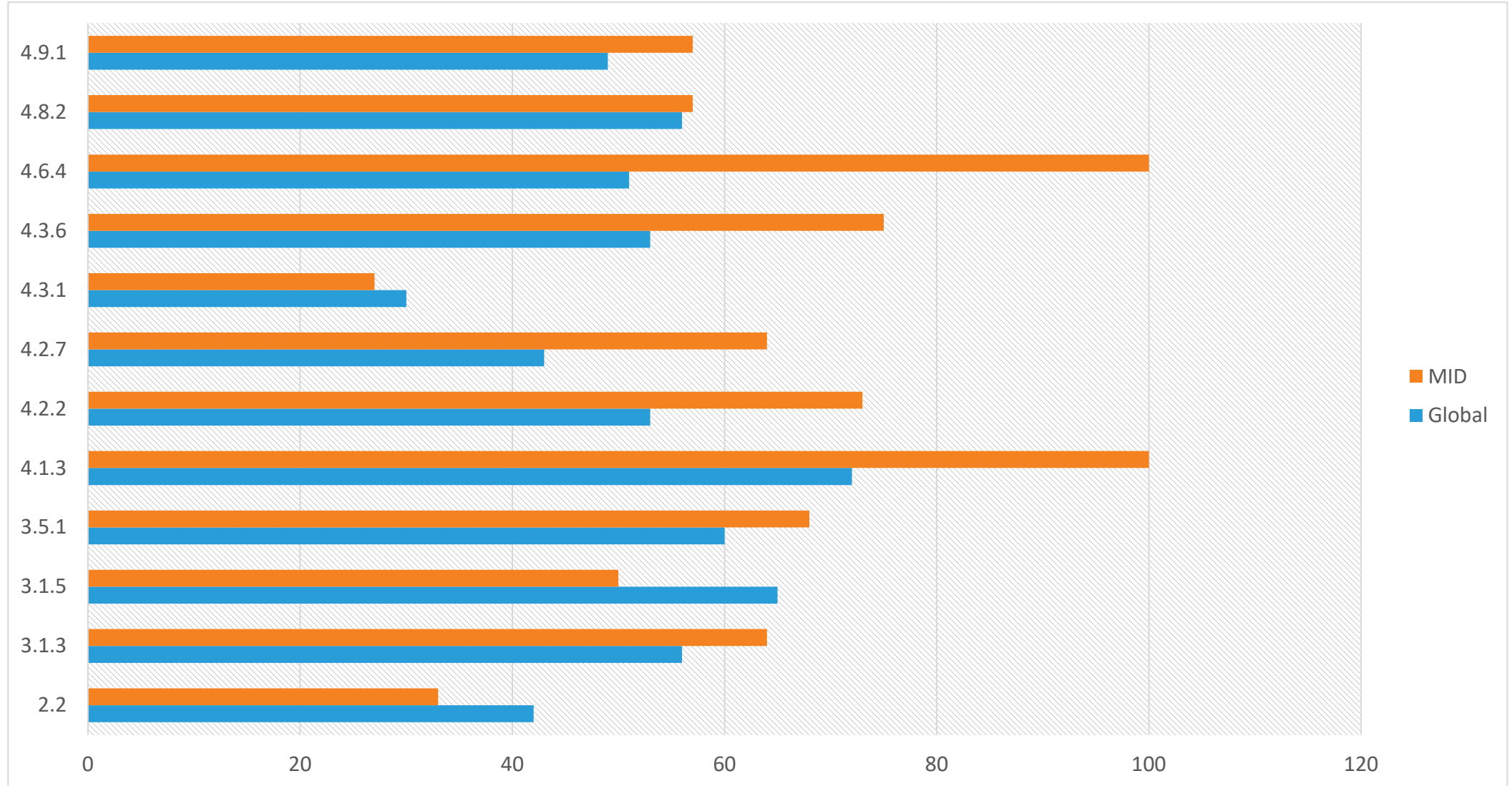
Threats identified:

- Insider threat
- Drones
- Civil unrest and protests
- Cybersecurity

Challenges in the region:

- Conflict Zones
- Financial Recourses
- Risk Management
- Annex 17 Implementation
- Cybersecurity Policy

MID USAP-CMA - risk related SARPs



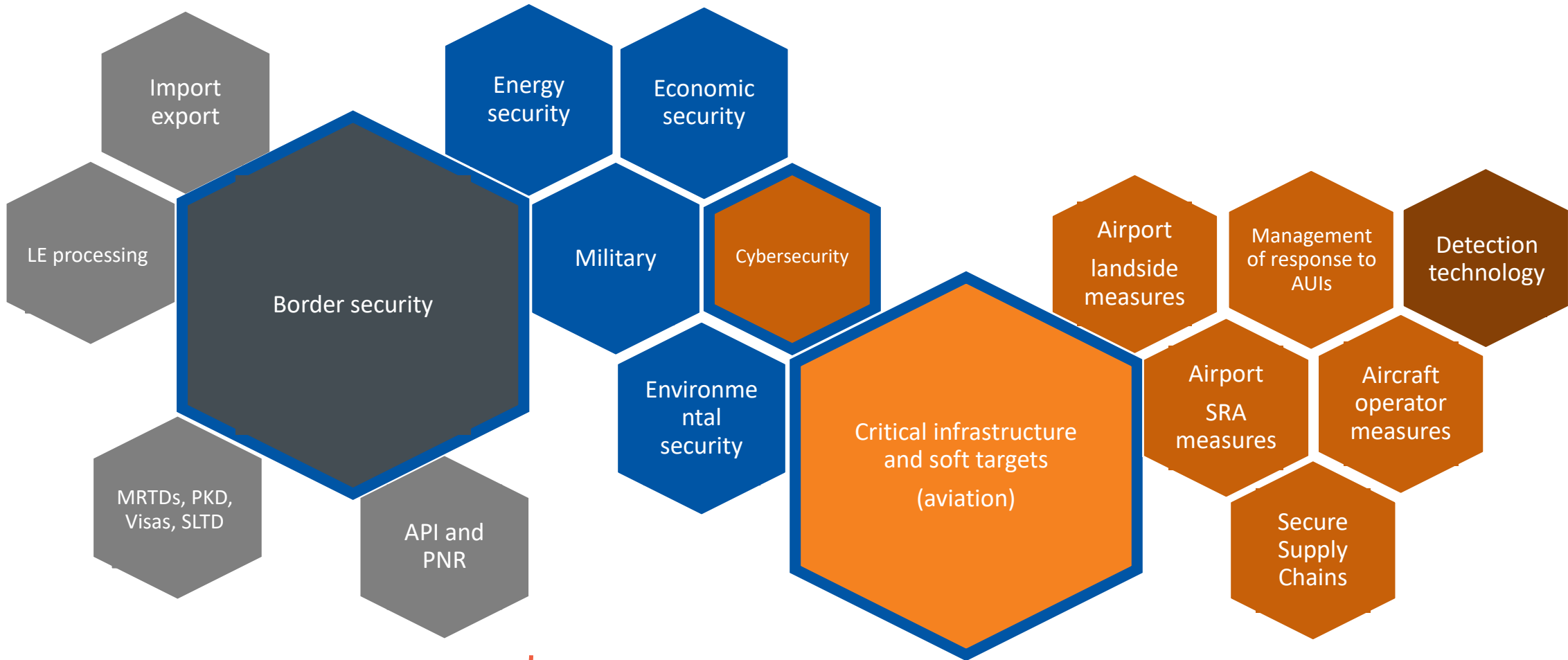
Discussion

What is your national threat picture?

Session 2

Common approach to risk assessment
inter-agencies cooperation

Dimensions of national security



Passenger Data Exchange Systems
Entry and departure of **persons, their baggage and cargo**
Annex 9 – *Facilitation* 1949: 16th edition

Measures applied to **infrastructure, staff, persons, their items carried and cargo**
Annex 17 – *Aviation Security 1974: 12th edition*

ISO definitions*



risk - effect of uncertainty on objectives



threat/likelihood - chance of something happening



consequence - outcome of an event affecting objectives



vulnerability - weakness in an information system, system security procedures, internal controls, or implementation that could be exploited or triggered by a threat

*SOURCE: ISO 31000:2018 | ISO/IEC 27000]



AVSEC Panel

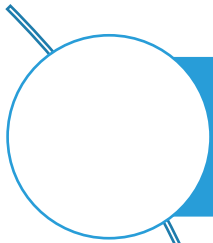
- ✓ **Threat:** The capability and intent of a perpetrator to attack civil aviation with the potential to harm life, systems, information, environment and/or property
- ✓ **Security Risk:** The level of exposure to an attack against civil aviation taking into account the likelihood, consequence, and the vulnerability that remains following an evaluation of the effective implementation of the existing aviation security mitigation measures

RCS 3rd Edition

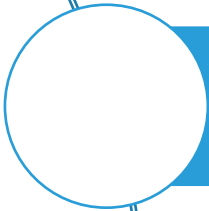
- ✓ **Consequences:** the nature and scale of the impact of the specific attack, in human, economic, political, and reputational terms under a reasonable worst-case scenario
- ✓ **Current mitigation measures:** the relevant SARPs, which may not all be in Annex 17, and guidance – both of which are assumed to be effectively implemented (where that is clearly not the case, the residual risk will be higher). It is assumed that no threat can be entirely eliminated
- ✓ **Vulnerability:** the extent of the remaining vulnerabilities once the current mitigating measures have been taken into account
- ✓ **Residual risk:** the overall risk of a successful attack, taking into account the likelihood and consequences of the threat scenario, and considering the remaining vulnerabilities after assuming current mitigating measures have been implemented
- ✓ **Possible additional mitigation:** identified measures, not formally included in ICAO SARPs, that could be implemented to further mitigate residual risks where necessary

ICAO definitions*

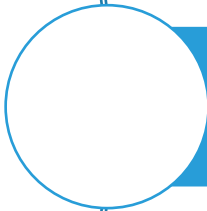
Doc
10084



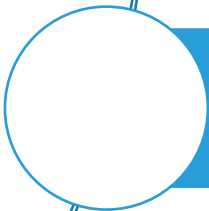
Risk index matrix. A matrix that is used during safety risk assessment to define the level of risk by considering the category of probability or likelihood against the category of consequence severity. This is a simple mechanism to increase visibility of risks and assist management decision-making



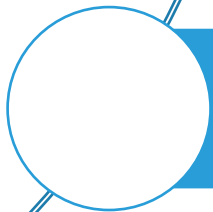
Risk mitigation. The process of incorporating additional measures to lower the vulnerability to a specific scenario.



Security risk. Identification of the level of exposure to a successful attack being carried out on a specific target, taking into account the assessed threat and consequences, as well as an assessment of the remaining vulnerabilities after evaluating the effectiveness of the aviation security measures currently in place

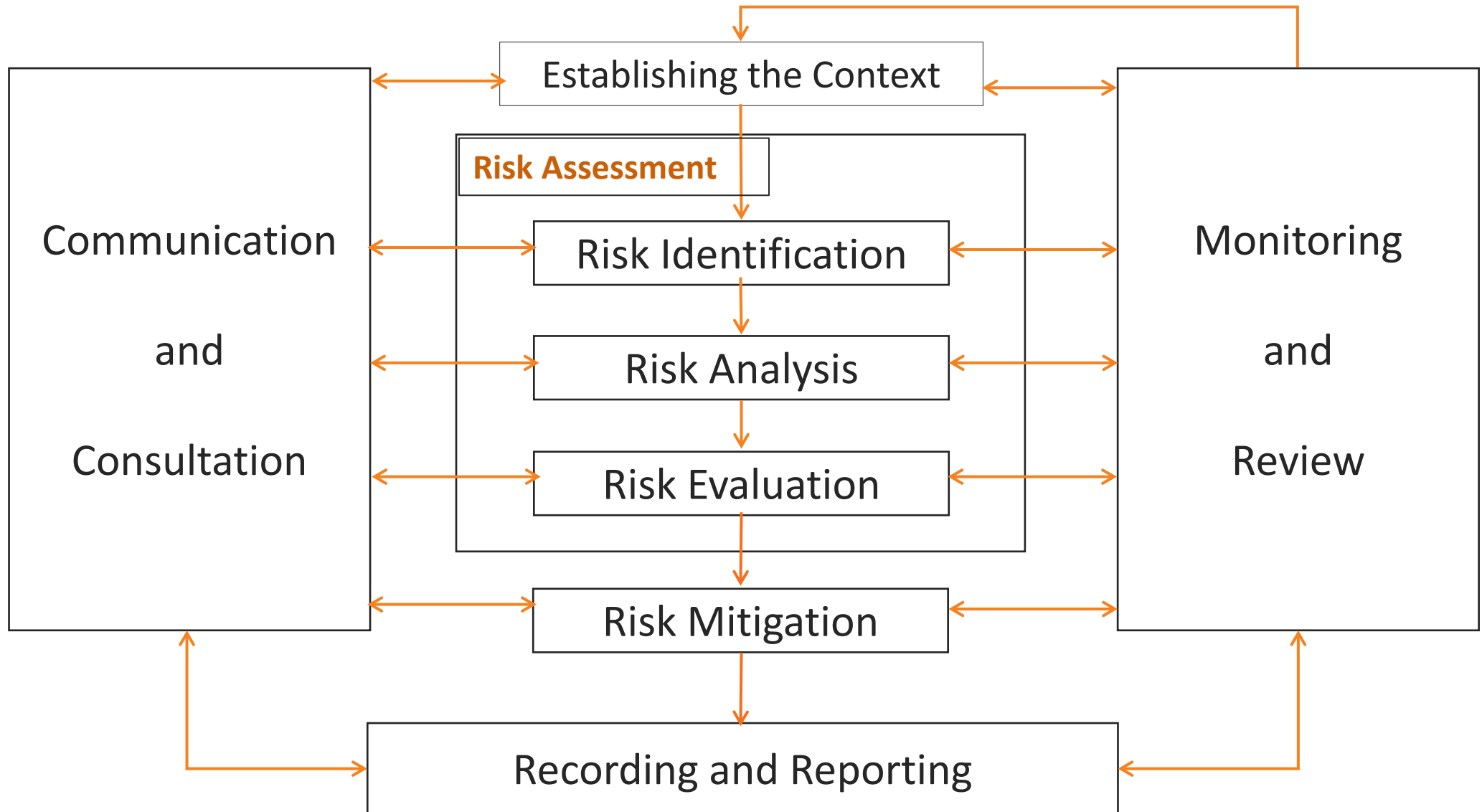


Threat. The likelihood of a credible attack being attempted, based on the intentions and capabilities of perpetrators but not taking into account current security measures.



Vulnerability. Factors or attributes that render an entity, asset, system, network or geographic area open to successful exploitation or attack, or susceptible to a given threat or hazard

Risk management*

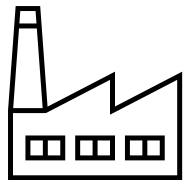


Threat Assessment

Assessment of the threat to target

Preventive security measures

Crisis management



Identified target

Focuses on attacks known or currently happening or attacks being threatened by



Primarily focuses on identifying and analyzing threats, their likelihood

Quite often connected with assessment of consequence and understanding of weaknesses of target



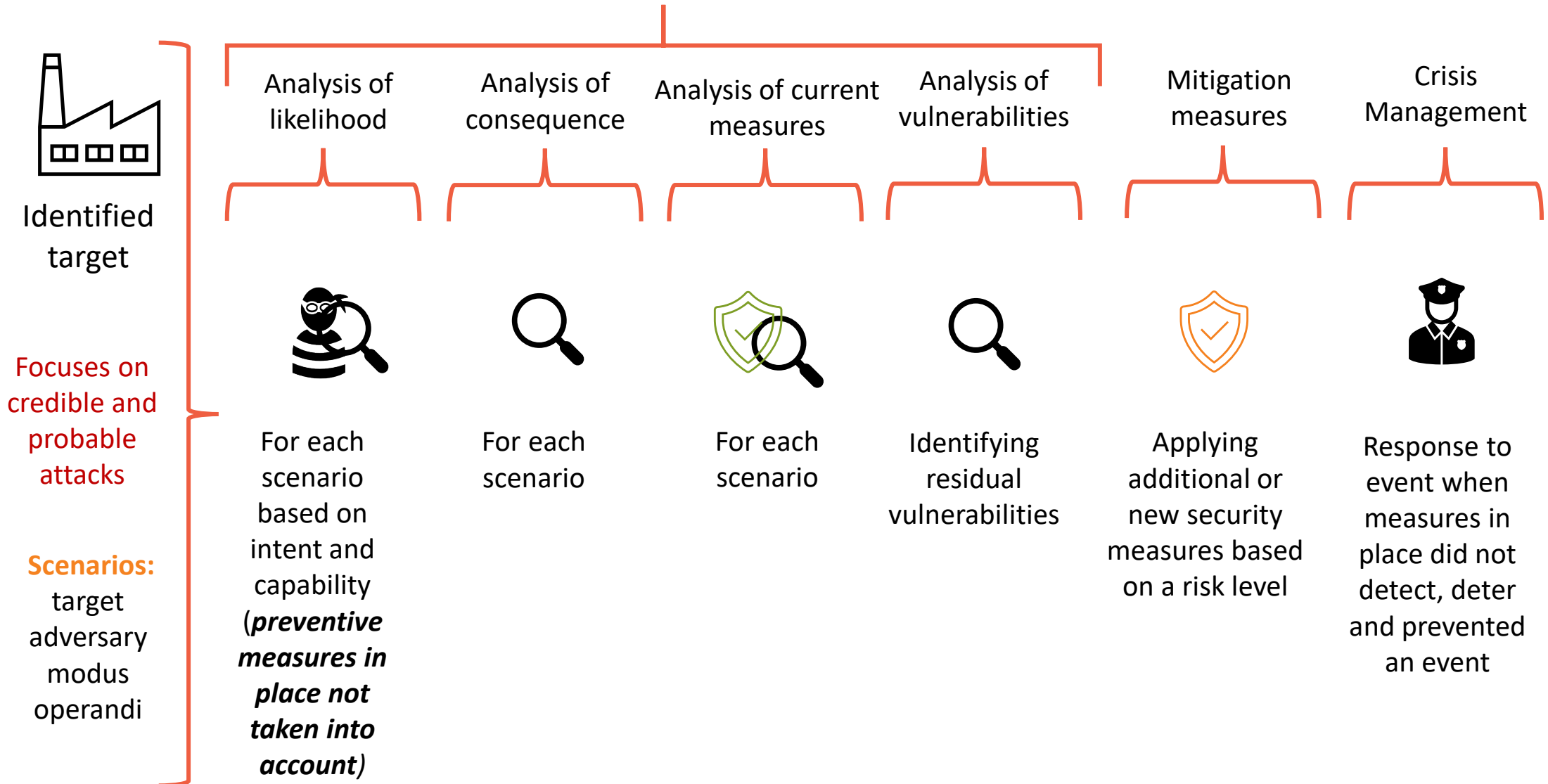
Applying security measures to detect, deter and prevent event to happen
Applying additional security measures based on threat level



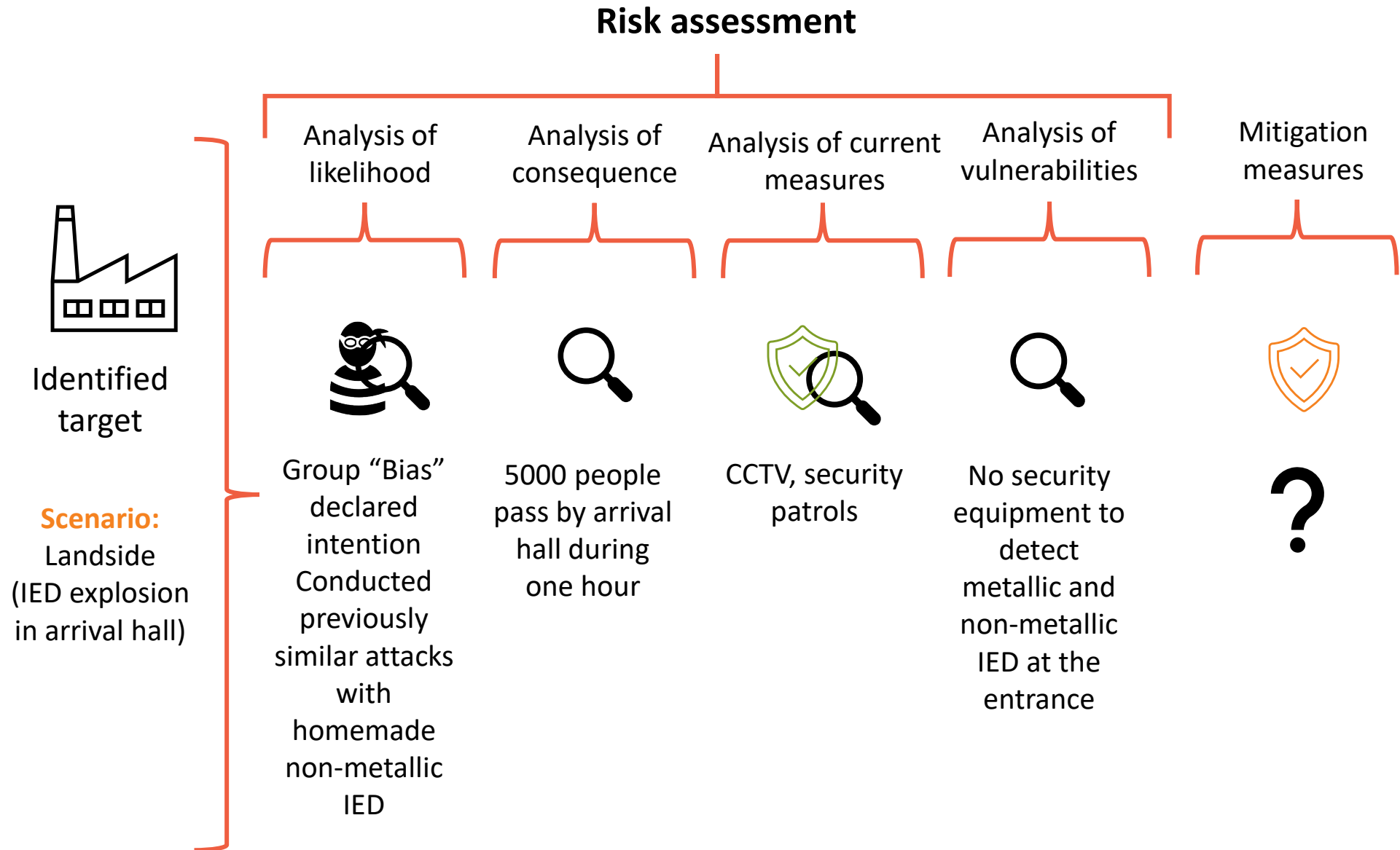
Measures to respond to an event when measures in place did not detect, deter and prevented an event

Risk assessment based on scenario

Risk assessment



Risk assessment based on scenario - example



Risk Assessment is part of the Risk Management process

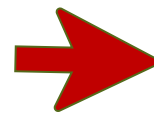
R Risk assessment

Risk assessment is the overall process of risk identification, risk analysis and risk evaluation*

T Likelihood of threat

C consequence

V vulnerability



Risk Management

coordinated activities to direct and control an organization with regard to risk* which involves systematic application of policies, procedures and practices the activities of:

- ✓ communicating and consulting
- ✓ establishing the context
- ✓ **assessing**
- ✓ treating (mitigating)
- ✓ monitoring and reviewing
- ✓ recording and reporting

*SOURCE: ISO 31000:2018

Benefits of a common interagency risk management methodology



Provides a systematic approach to examine the key components of risk and produce a risk assessment



Assesses your security environment focusing on keeping vulnerabilities at an acceptable level



Informs the effective allocation of limited resources



Establishes a common frame of reference for examining a system, communicating issues, and determining priorities



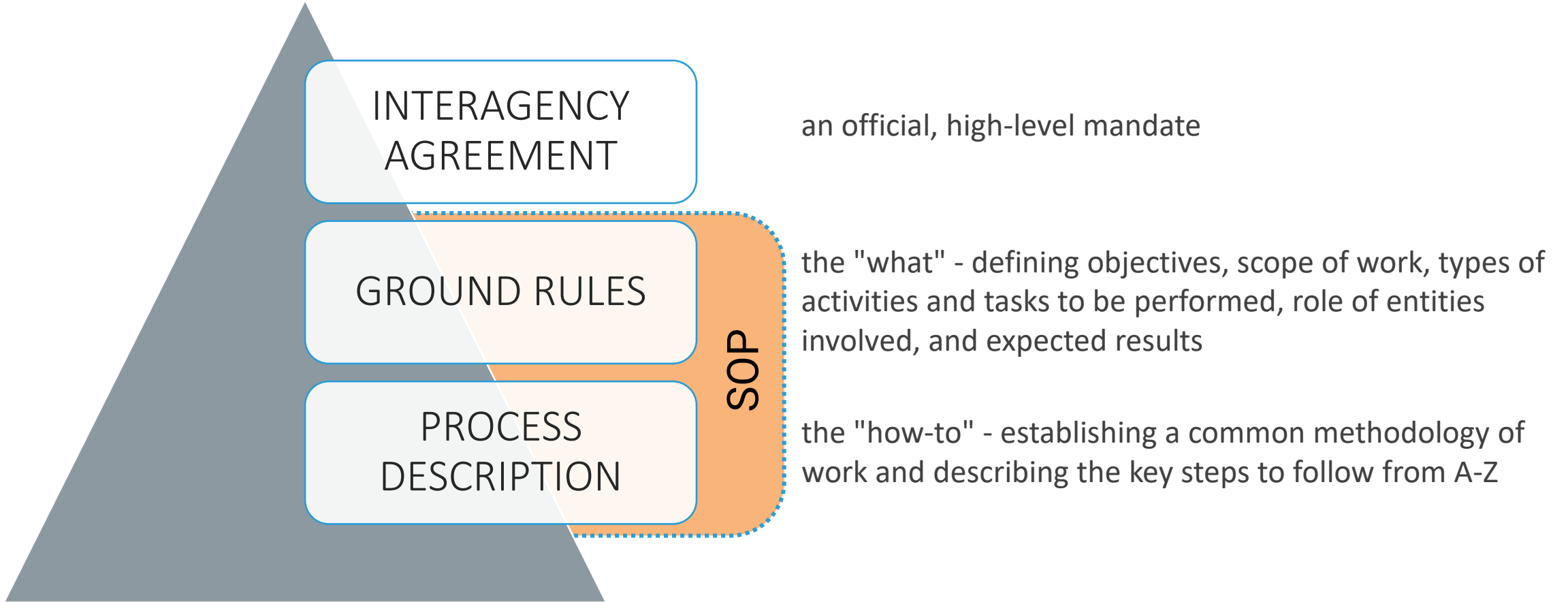
Provides basis for prioritizing mitigation strategy alternatives



Provides the basis for compliance with applicable regulations

Inter-agencies cooperation

Key elements structuring interagency cooperation

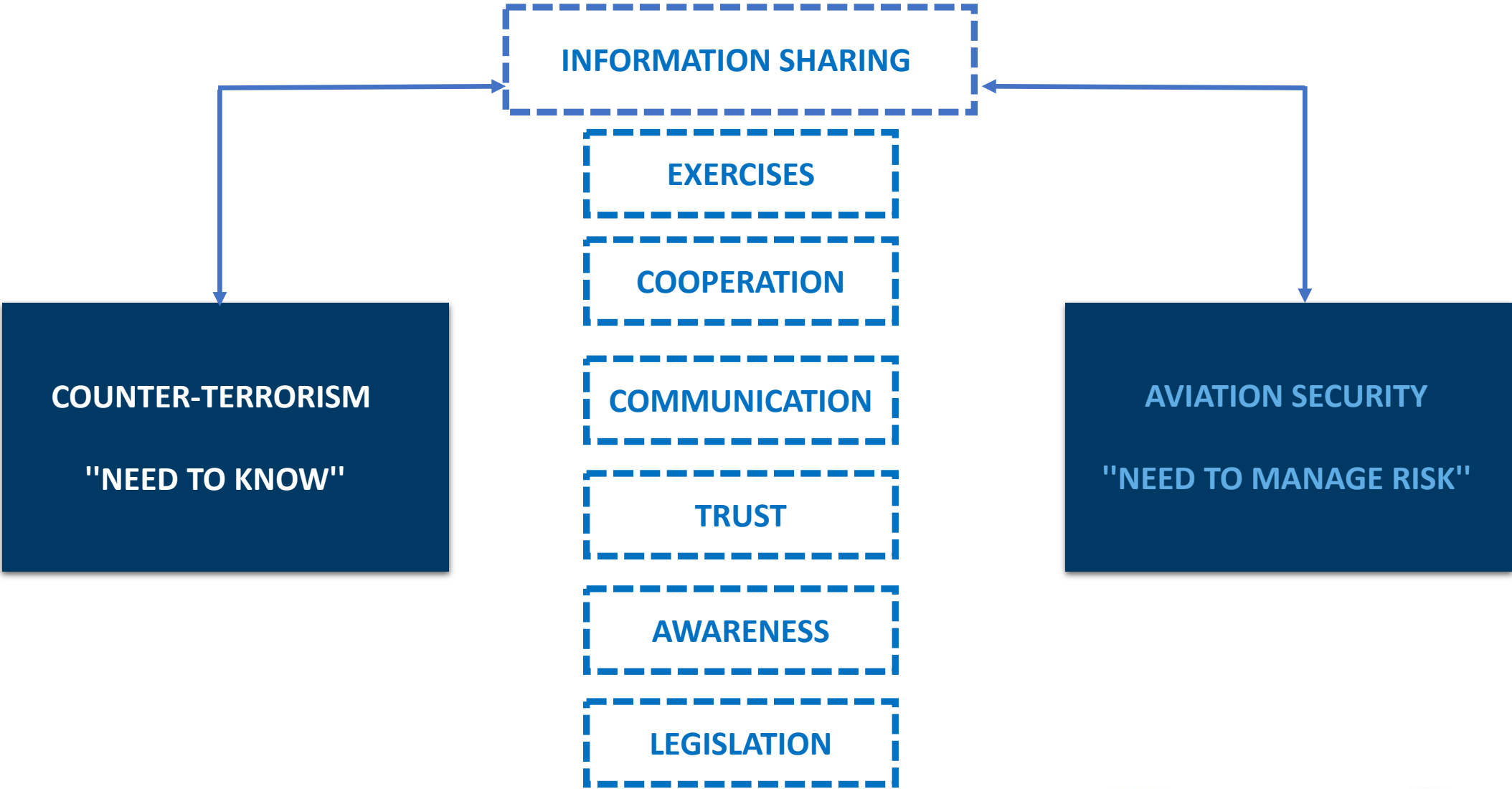


Common language and scoring

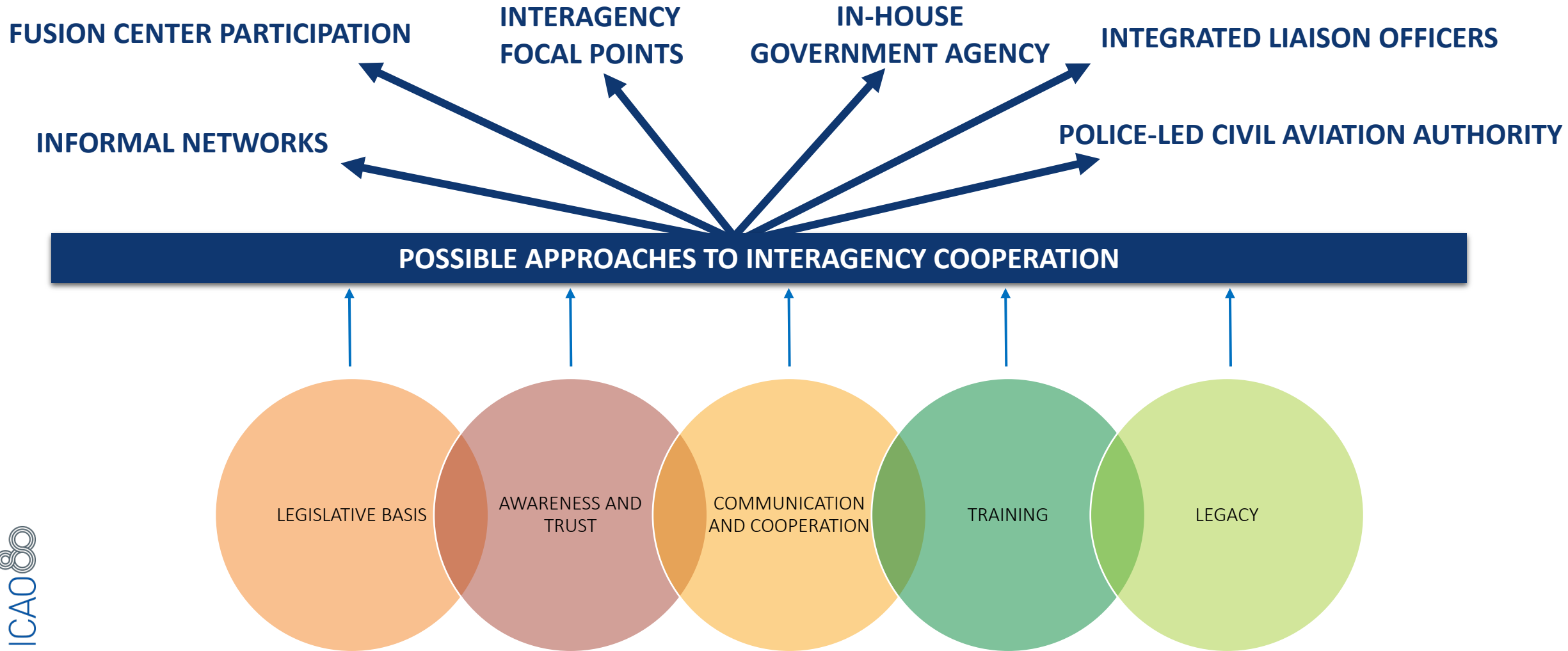
- Threat
- Intent
- Capability
- Opportunity
- Risk
- Vulnerability
- Consequence
- Scenario
- Assessment
- Methodology
- Score levels*
- AVSEC
- AVSEC operators
- Mitigation measures
- Classification
- Sanitization

* consider table of equivalencies

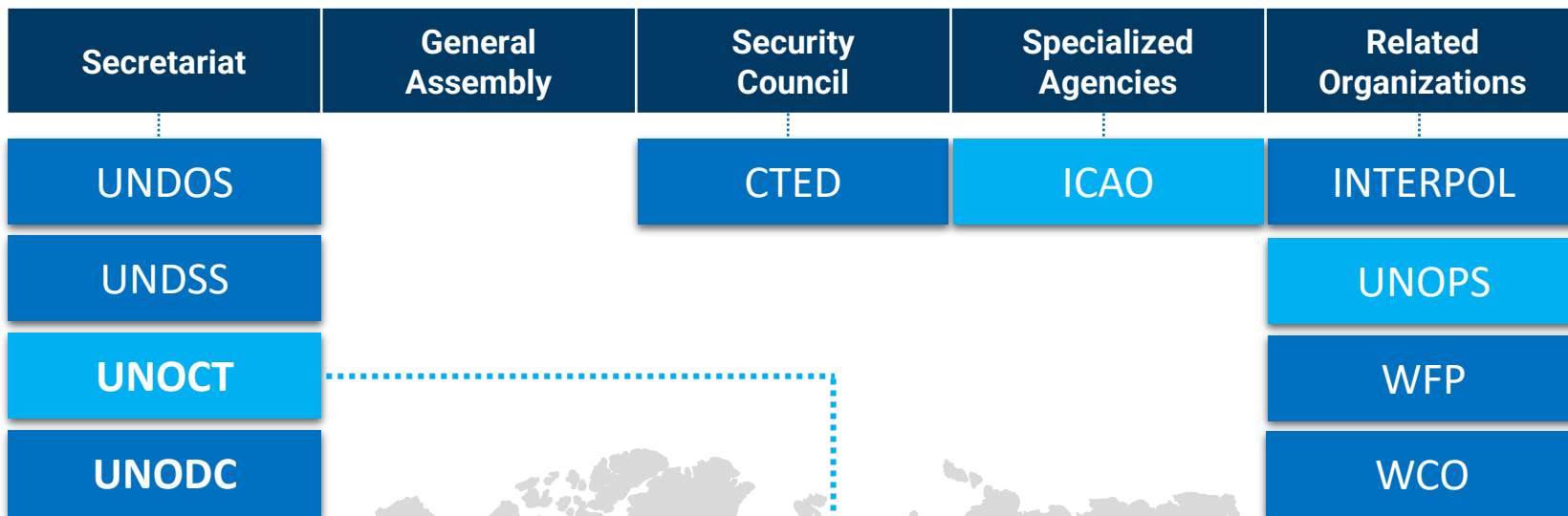
Transparent and interconnected elements



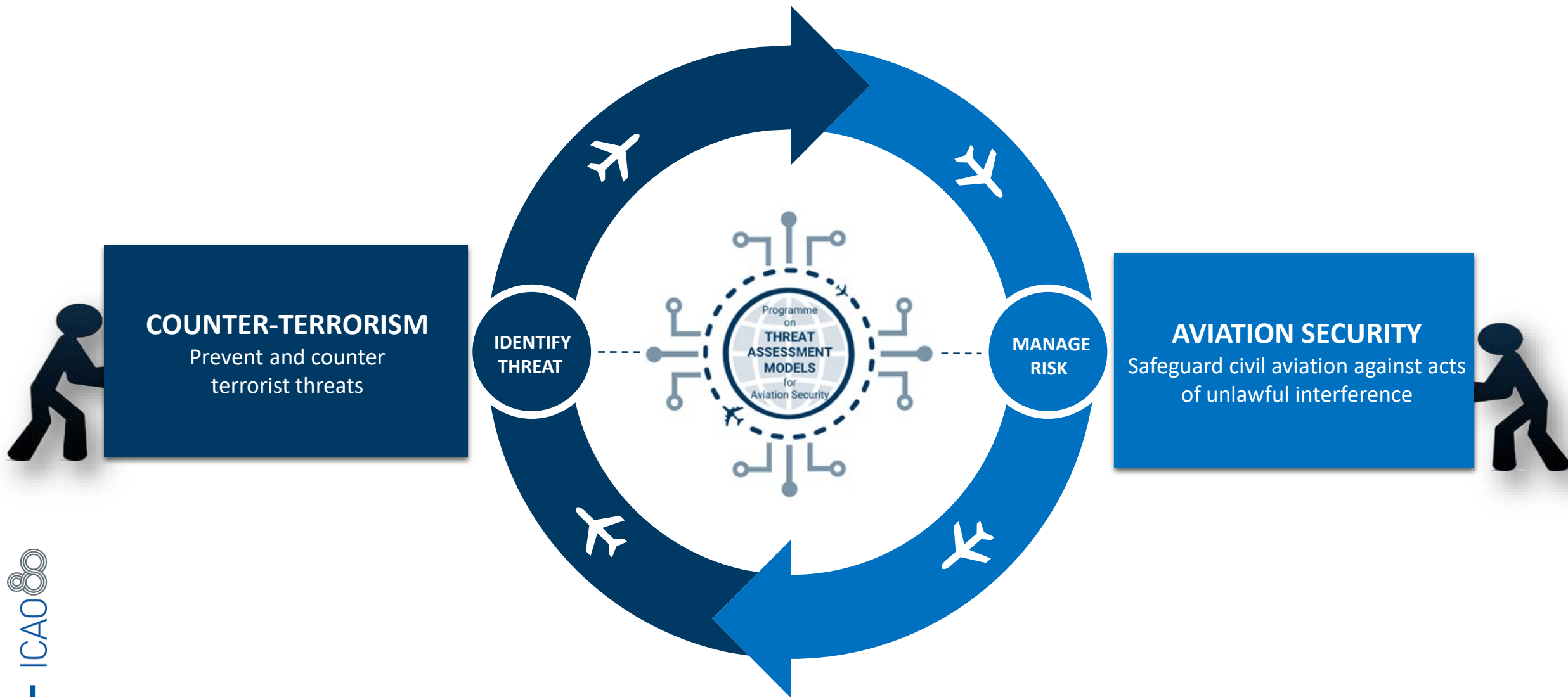
Results of TAM Programme global scan



UNOCT-ICAO TAM Programme orientation



Solution: harmonizing points of mutual interest



Session 3

Exchange of threat-related information
– table-top exercise

STEP 2

- Identify the possible owner of the intel data and through what channel it derived (i.e. where was it collected from – open source, closed source)
- Classify the information (sensitive, unclassified)

STEP 1

Identify and develop a description of the possible scenario from the information data sheet (including adversary and modus operandi)

STEP 3

- Identify data relevant as feedback information to allow the development of threat assessment products and data relevant for the conduct of risk assessment
- Identify examples of any possible challenges in sharing any of the data points

Session 4

Effective exchange of threat and risk related information at regional and international level

Mr. Hussain Qabbani

Regional Officer Aviation Security
and Facilitation, ICAO MID

Mr. George Nader

Aviation Security and Facilitation Expert
CAA Lebanon



International Standards
and Recommended Practices



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

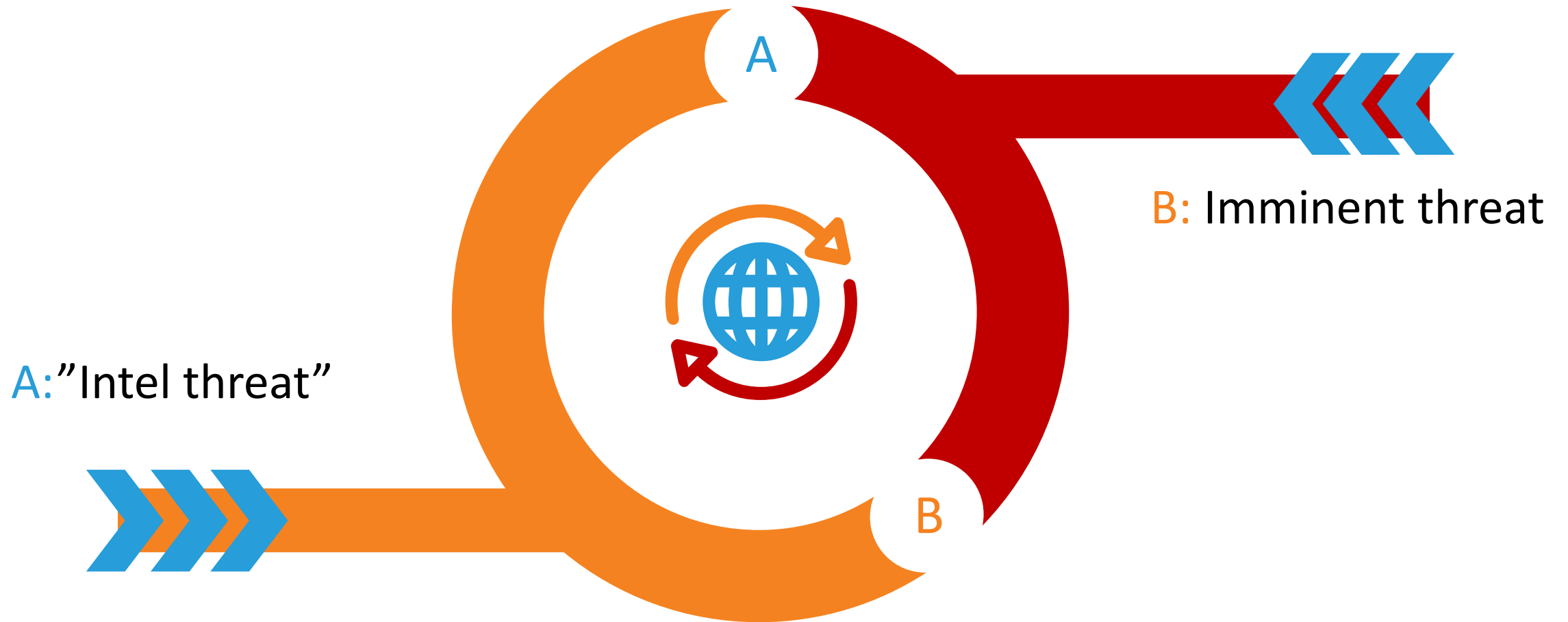
Annex 17 - Standard 2.4.4

Each Contracting State shall establish and implement procedures to share with other Contracting States, in a timely manner, threat information that applies to the aviation security interests of those States, to the extent practicable

United Nations Security Council Resolution 2309 6 (f)

Further engage in dialogue on aviation security and cooperate by sharing information, to the extent possible, about threats, risks, and vulnerabilities, by collaborating on specific measures to address them and by facilitating, on a bilateral basis, mutual assurance about the security of flights between their territories

“Types” of threat information



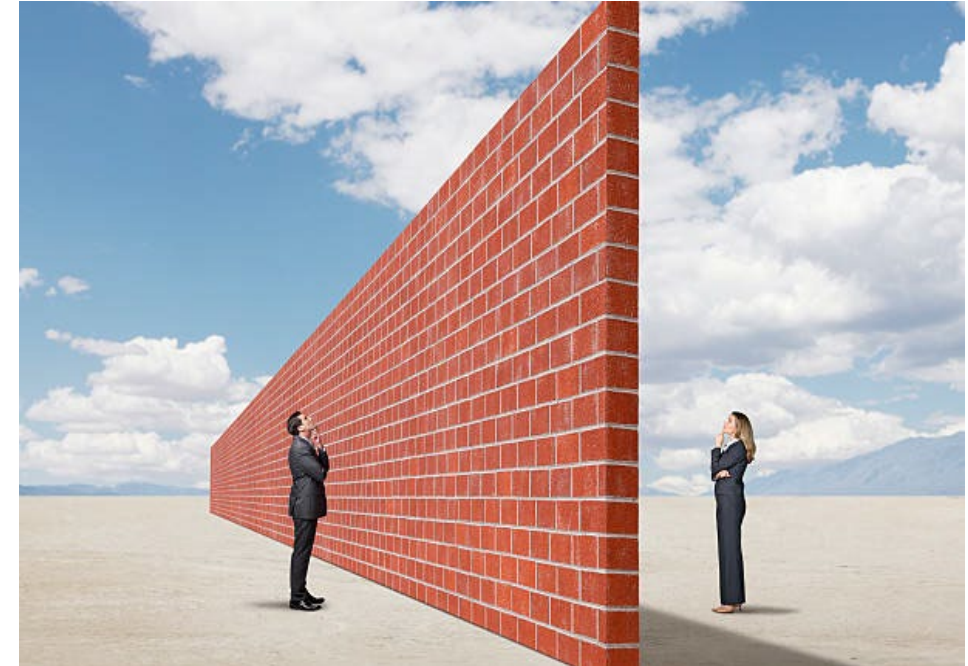
Types of Cyber Information



- Cyber Threat Intelligence (CTI)
- Indicators of Compromise (IoCs)
- Tactics, Techniques, and Procedures (TTPs)
- Vulnerabilities
- Cyber Incident Report
- Cyber Mitigations
- Situational Awareness
- Best Practices

Barriers to communication and cooperation

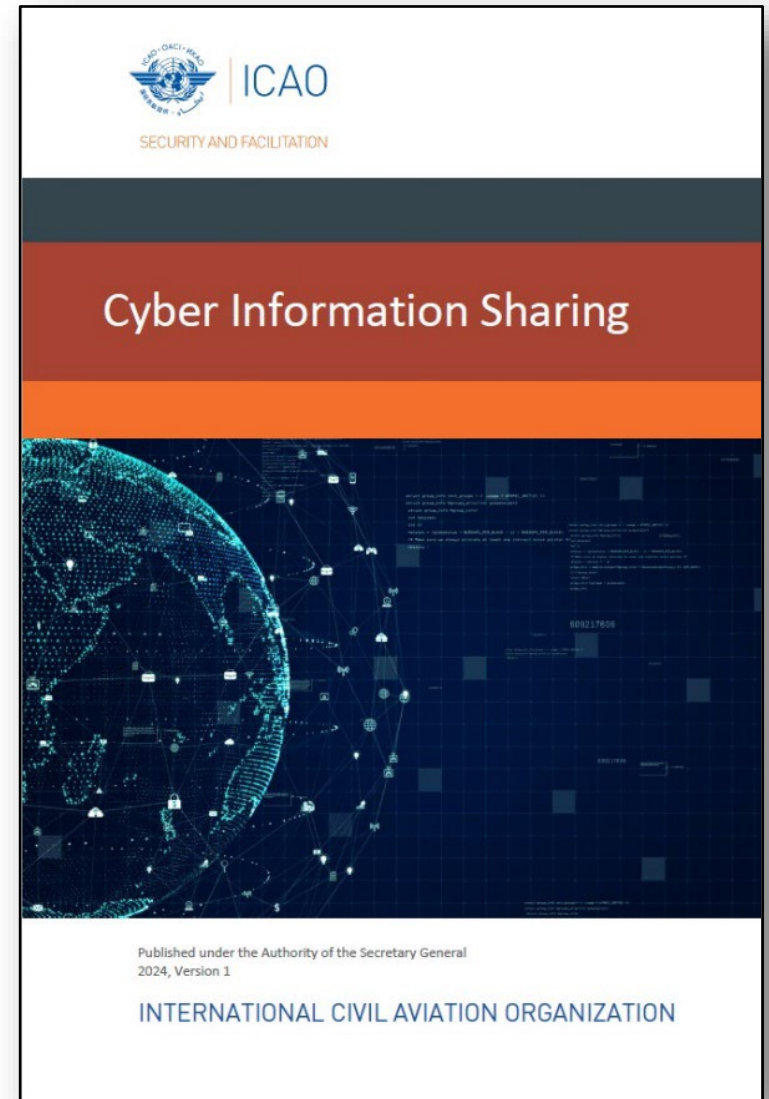
- Lack of trust
- Lack of flexibility
- Lack of feedback
- Limited availability
- Lack of expertise knowledge
- History of friction and/or conflict
- Overlapping functions/mandates
- Purely transactional relationships
- Lack of political will and top cover
- Challenges to tech interoperability



Cyber Information Sharing



" MAYBE WE SHOULD TRY A DIFFERENT SECURITY APPROACH THIS YEAR. "



Cyber Information Sharing: Why is it Important?

Importance

- Provides better visibility into the cyber threat landscape to civil aviation
- Supports management of aviation cyber risks
- Promotes a collaborative approach and robust cybersecurity culture

Benefits

- **Strategic Planning:** Builds cybersecurity capabilities
- **Situational Awareness:** Enhances understanding of cyber threats, risks and vulnerabilities
- **Risk Management:** Improves operational and tactical management of cyber risks
- **Crisis Management:** Supports effective response to cyber incidents

Considerations

- Legal and regulatory challenges
- Resource limitations

ICAO communication channels



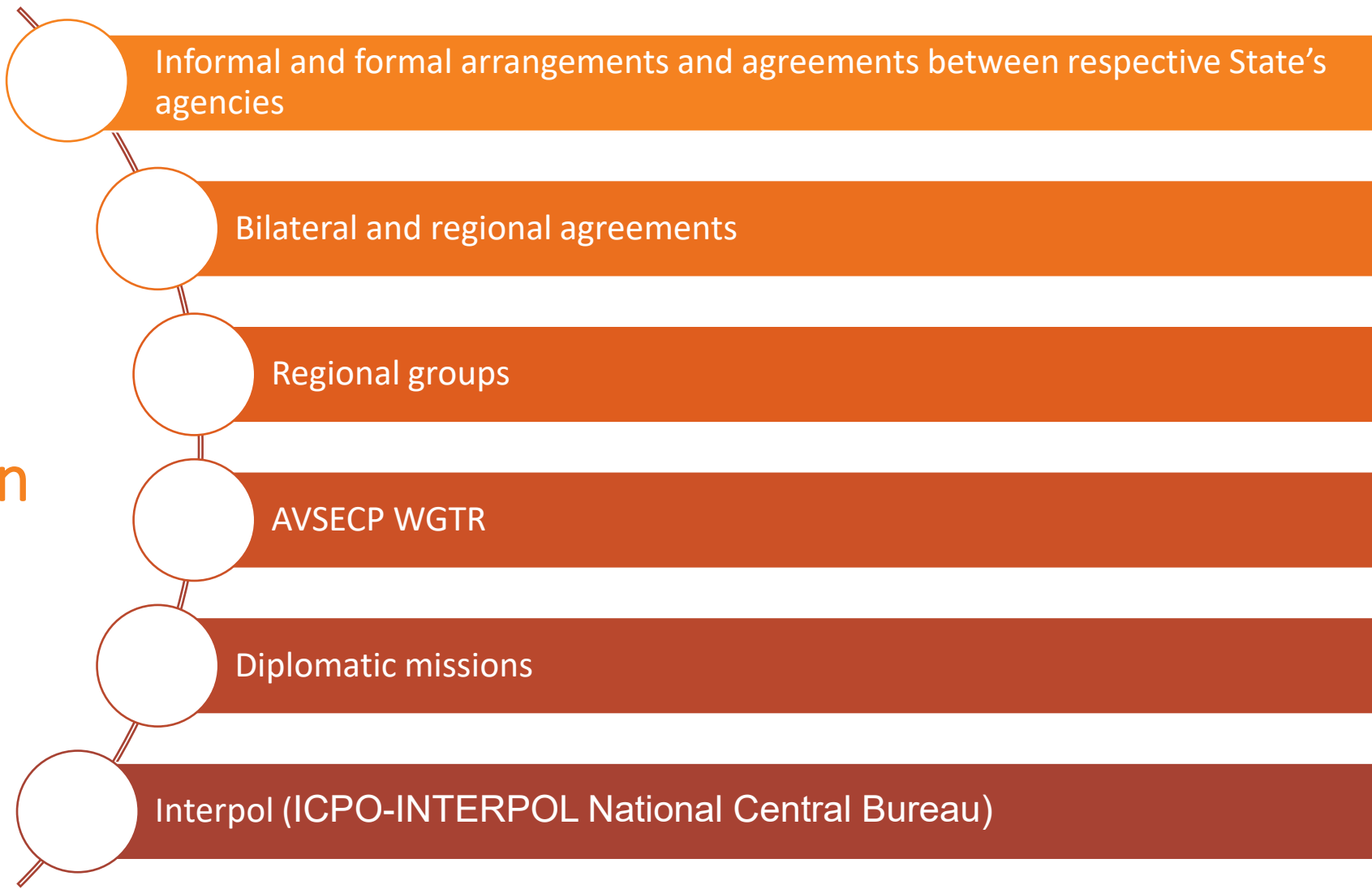
AUID



**POC
Network**

Launch

Examples of international communication channels



Establishment of information sharing framework

- Memoranda of understanding on information sharing, detailing principles, procedures, roles and responsibilities of all parties concerned
- the identification of a trusted group of security-cleared individuals to act as trusted communication channels, and the provision of regular threat briefings for these individuals
- promoting dialogue and interchange between national security agencies and industry
- the rapid dissemination of information about new threats or incidents to the maximum extent possible
- avoiding overly-strict use of the “need to know” principle and developing a “need to share” culture

Discussion and Questions

Day 4

Introduction to the Safer Skies Initiative

Ms. Katia Canciani

Head, Conflict Zone Information Office, Transport Canada
and Chair, Safer Skies Consultative Committee



Canada

Outline



- I. Safer Skies Initiative
- II. Safer Skies Consultative Committee
 - Composition
 - Function
 - Workplan
- III. Safer Skies Forum

Safer Skies Initiative

- Established by Canada following the downing of Ukraine International Airlines Flight PS752 in January 2020
- **Mission**
- Brings together States, international organizations, the civil aviation industry, and the International Civil Aviation Organization (ICAO) to enhance the level of safety and security for commercial airlines travelling over or near conflict zones

Safer Skies Initiative

Safer Skies Consultative Committee - Composition

- Established as a core element of the Safer Skies Initiative, dedicated to advancing global efforts to mitigate risks posed by conflict zones
- Composed of subject-matter experts from key states, organizations and industry partners, working in close collaboration with the ICAO on conflict zone initiatives
- Led by Canada as Chair, with the United Kingdom as Vice-Chair
- Includes 18 Members and an unlimited number of Observers (currently 9), ensuring a diverse network of Representatives from all regions around the world

Safer Skies Initiative

Safer Skies Consultative Committee - Functions

1. To **support the work** of individual States, regional State mechanisms, the International Air Transport Association regional coordination groups, air operators, industry associations and international organizations on all matters pertaining to conflict zones
2. To **promote best practices** to regulators, ANSPs and Air Operators regarding risk assessments and mitigation strategies for conflict zones
3. To **enable information-sharing and a broader dialogue** between relevant parties on current issues and way-forward for mitigation strategies; and
4. To **advocate for** the consideration of, modifications to, and **implementation** of ICAO SARPs and/or other ICAO conflict zone-associated guidance documents

Safer Skies Initiative

Safer Skies Consultative Committee – Workplan

Completed

- Gap analysis
- Working Paper – 41st ICAO Assembly
- Review of Doc 10084, including:
 - Principles for reassessing airspace post-conflict
 - Guiding principles for airspace closure
 - Rapid info sharing mechanism & baseline awareness
 - Mitigation strategy inventory
- Safer Skies Forum (202/22/23/25)
- Critical element of risk assessment
- Information Paper in support of ICAO’s Contingency Coordination Team (CCT)

Under development

- Development and delivery of Regional Awareness Seminars on Doc 10084– in collaboration with ICAO (2024-25)
- Working Paper on Conflict Zones (Sept 25)

Future dated

- Review of ICAO material on civ-mil deconfliction
- Review of Doc 10084 (pending approval)
- Develop ‘Exercise-in-a-Box’
- Knowledge Exchange Program



Safer Skies Initiative

Safer Skies Forum

- Global event solely dedicated to bringing together civil aviation stakeholders to discuss the processes required to better manage the shared risks conflict zones pose to global civil aviation operations
- Canada hosted the first two Forums (2020 and 2022) and co-hosted the third with the Dutch Ministry of Infrastructure and Water Management in 2023
- 4th Forum held in Marrakech, Kingdom of Morocco in April 2025



4th SAFER SKIES FORUM
SAVE THE DATE

April 8-10, 2025
Marrakech, Morocco

**OVERFLYING CONFLICT ZONES:
CONTINGENCY PLANNING AND MITIGATION STRATEGIES**

The Kingdom of Morocco and Canada, together with the Safer Skies Consultative Committee, are pleased to be co-hosting the 4th Safer Skies Forum.

FORMAT
Interactive in-person event with online plenary sessions.

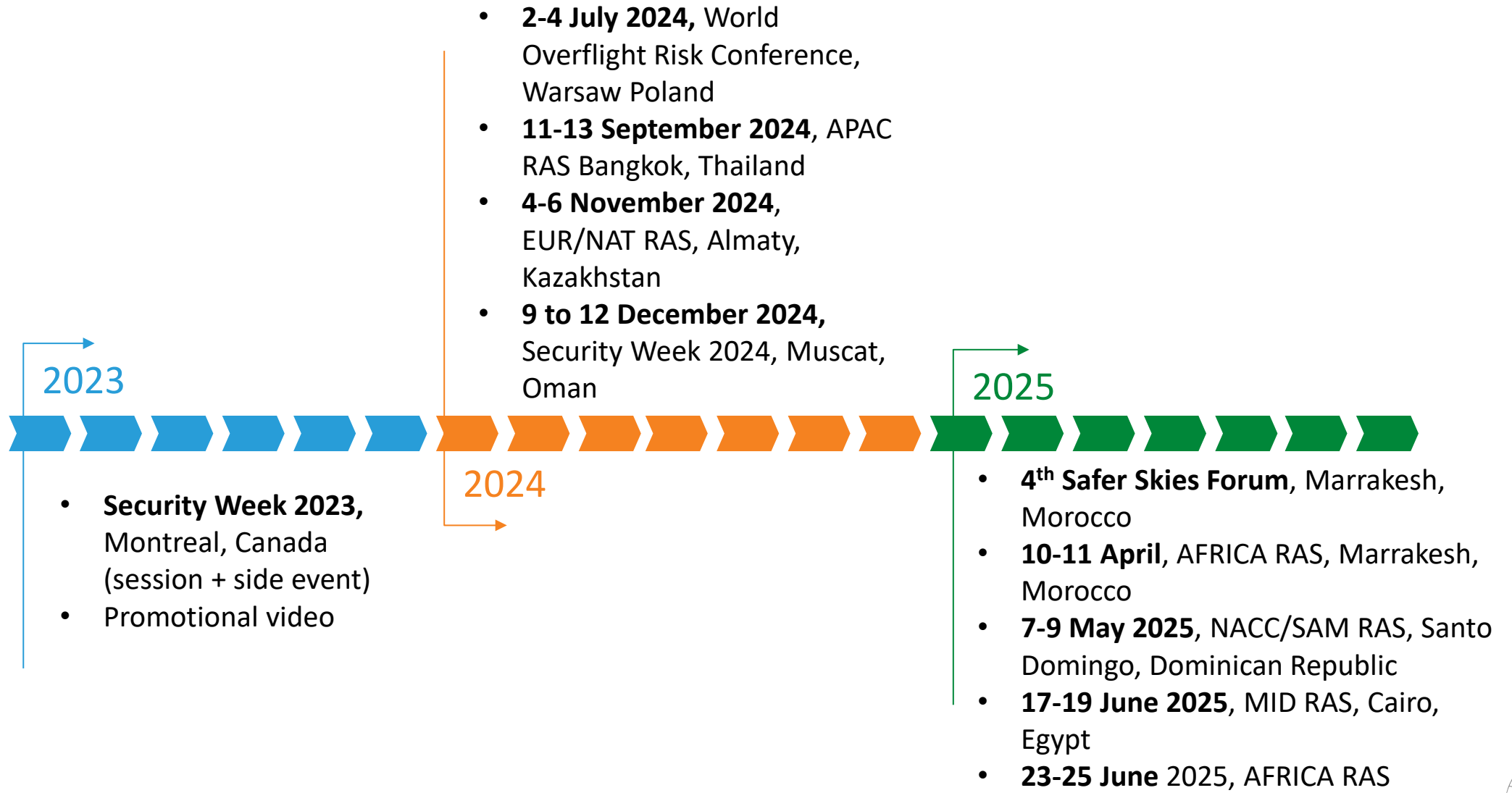
REGISTRATION
A registration link will be shared in the coming months along with a program outline.

CONTACT
For more information, please contact us:
SaferSkiesForum-ForumSurLaSecuriteAerienne@tc.gc.ca

 المملكة المغربية
وزارة النقل والسياحة
KINGDOM OF MOROCCO
MINISTRY OF TRANSPORT AND LOGISTICS

 **Government of Canada** **Gouvernement du Canada**

Doc 10084 – Global and Regional Awareness activities



01

Key Components

expert consultation, guidance material, training and tools

02

Who can benefit?

Appropriate Authorities, Airports, ANS, aviation industry

03

Sponsorship opportunities

development and implementation, SME

Safer Skies Consultative Committee Secretariat

SSCC.Secretariat-CCSA.Secretariat@tc.gc.ca

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Vice-Chair of the Safer Skies Consultative Committee

Head of Global Risk & Response, Aviation Security, Strategy & Policy (ASSP), Transport

Security Directorate, Department of Transport, UK

richard.cave@dft.gov.uk





Session 5

Historical context: aviation incidents related to conflict zones and lessons learnt

Session 5

OUTLINE

AIM

Explain historical events that led to ICAO developing guidance documents on risk to civil aviation operations associated with conflict zone

MOTIVATION

To gain better understanding of why proactive mitigation planning is key to increasing safety of aviation operations

ICAO **OUTLINE**

- Before 2014
- 2014 to 2020
- Since 2020



EVENTS PRIOR TO 2014

The background is a solid blue color. In the lower half, there are several overlapping, semi-transparent blue shapes. These shapes include a large central circle, two large curved shapes on the left and right sides, and several smaller rounded shapes at the bottom, creating a layered, abstract effect.

HISTORICAL CONTEXT

EVENTS PRIOR TO 2014



August 1, 1981 Shoot down of C47, over Mozambique

- Hit by two surface-to-air SA-7 missiles by State actor while in flight
- All six occupants were killed
- **Misidentification**



September 1, 1983 Shoot down of Boeing 747 Korean Airlines Flight 007, over USSR

- State MiG-23 fighters sent to intercept and shot two K-8 air-to-air missiles after deviating into Soviet airspace
- All 269 passengers and crew were killed
- **Navigation Error**



July 3, 1988

Shoot down of Airbus A300 Iran Air flight 655, Iran

- Hit by two SAM missiles while in flight, shot from a foreign warship
- All 290 people on board were killed
- **Weapons operator misidentification**



September 29, 1998

Antonov An-24 Lionair Flight 602, Sri Lanka

- Shot down by a non-State actor using a man-portable surface-to-air missile
- All 55 people on board were killed
- **Deliberate action**

HISTORICAL CONTEXT

EVENTS PRIOR TO 2014



August 29, 1999

Shoot down of Learjet 35A Corporate Jets, Ethiopia

- Shot down by a State actor after straying into a no-fly zone.
- Both crew on board were killed.
- **Air navigation error/misidentification**



October 4, 2001

Shoot down of TU-154 Siberia Airlines Flight 1812, Black Sea

- Shot down by a 5V28 surface-to-air missile that missed its intended target during a military exercise.
- All 78 people on board were killed.
- **Weapon acquisition error**

EVENTS FROM 2014 – 2020

MALAYSIA AIRLINES FLIGHT 17

HISTORICAL CONTEXT

MALAYSIA AIRLINES FLIGHT 17

111

July 17, 2014

The Downing of Boeing 777 Malaysia Airlines Flight 17 (MH17), Ukraine

WHAT HAPPENED?

- Surface-to-air missile launched at aircraft while in flight over an area of hostilities
- All 298 occupants were killed
- **Deliberate action**



“None of the parties involved adequately identified the risks to civil aviation brought about by the armed conflict in the eastern part of Ukraine”

Dutch Safety Board – Investigation report

HISTORICAL CONTEXT

MALAYSIA AIRLINES FLIGHT 17

112

RESPONSES TO THE DOWNING OF MH17

International Civil Aviation Organization (ICAO)

2014	International Civil Aviation Organization (ICAO), Airports Council International (ACI), the Civil Air Navigation Services Organization (CANSO) and the International Air Transport Association (IATA) joint statement
2014	Task Force on Risks to Civil Aviation arising from Conflict Zones
2015-2017	Conflict Zone Information Repository (CZIR)
2016	Civil Aircraft Operations Over Conflict Zones (first edition of Doc 10084 - Restricted)
2018	Doc 10084, 2 nd edition, renamed Risk Assessment Manual for Civil Aircraft Operations over or near Conflict Zones (non-restricted)
2015, 2018, 2020	Annex 17 information sharing updates
2020	Amendments to Annex 6, 11 and 15 and Doc 10088 (civil/military de-confliction)
2022	Safety linked in Annex 17 update

RESPONSES TO THE DOWNING OF MH17 (Continued)

State	
2014-2015	Dutch Safety Board – MH17 Final Investigation Report
2016	United Nations Security Council Resolution 2309 calling for all States to ensure protection against interference for all citizens in their territory at any given time
2019	Dutch Safety Board follow-up report on the MH17 safety recommendations
2019	Establishment of the Expert Group Risk Information overflying Conflict Zones (EGRICZ)
Industry	
2015	IATA Operational Safety Audit (IOSA) - flight dispatch planning now includes security risk assessment from conflict zones (+400 airlines on the IOSA registry)

EVENTS SINCE 2020

UKRAINE INTERNATIONAL AIRLINES FLIGHT 752

HISTORICAL CONTEXT

UKRAINE INTERNATIONAL AIRLINES FLIGHT 752

115

January 8, 2020

The Downing of Boeing 737 Ukraine International Airlines flight 752 (PS752), Iran

WHAT HAPPENED?

- Two surface-to-air missiles hit flight PS752 during a period of heightened tensions
- All 176 passengers and crew were killed
- **Airspace control**



“The mitigating measures and defense layers in risk management proved to be ineffective due to the occurrence of an unanticipated error in threat identifications, and ultimately failed to protect the flight safety against the threats caused by the alertness of defense forces”

The Aircraft Accident Investigation Board of the Islamic Republic of Iran – Flight PS752 Accident Investigation Final Report

HISTORICAL CONTEXT

UKRAINE INTERNATIONAL AIRLINES FLIGHT 752

RESPONSES TO THE DOWNING OF PS752

A Collaborative Response	
2020	Safer Skies Initiative launched by Canada
2020	Safer Skies Consultative Committee (SSCC)
2020, 2022, 2023	Safer Skies Forums
2021	ICAO Gap Analysis
2021	Dutch Safety Board report <i>Safe flight routes – Responses to escalating conflicts</i>
2022	ICAO 41 st General Assembly – Safer Skies Consultative Committee (SSCC) working paper recommending the review of Doc 10084
2023	Publication of Doc 10084 Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones , 3 rd edition
2024, 2025	Joint SSCC/ICAO Regional Awareness Seminars

HISTORICAL CONTEXT

AZERBAIJAN AIRLINES FLIGHT 8243

December 25, 2024

The crash of the Embraer 190 operating the Azerbaijan Airlines, during the aircraft's approach to Grozny

WHAT HAPPENED?

- Out of 67 people, 38 died, 29 people survived with injuries
- J2-8243 – Preliminary report
 - ✓ Damage appears to be from anti-aviation weaponry
 - ✓ GNSS interference
 - ✓ Drone incursion



Missiles Are Now the Biggest Killer of Airline Passengers

Passenger flights are extraordinarily safe—except near conflicts, which are spreading

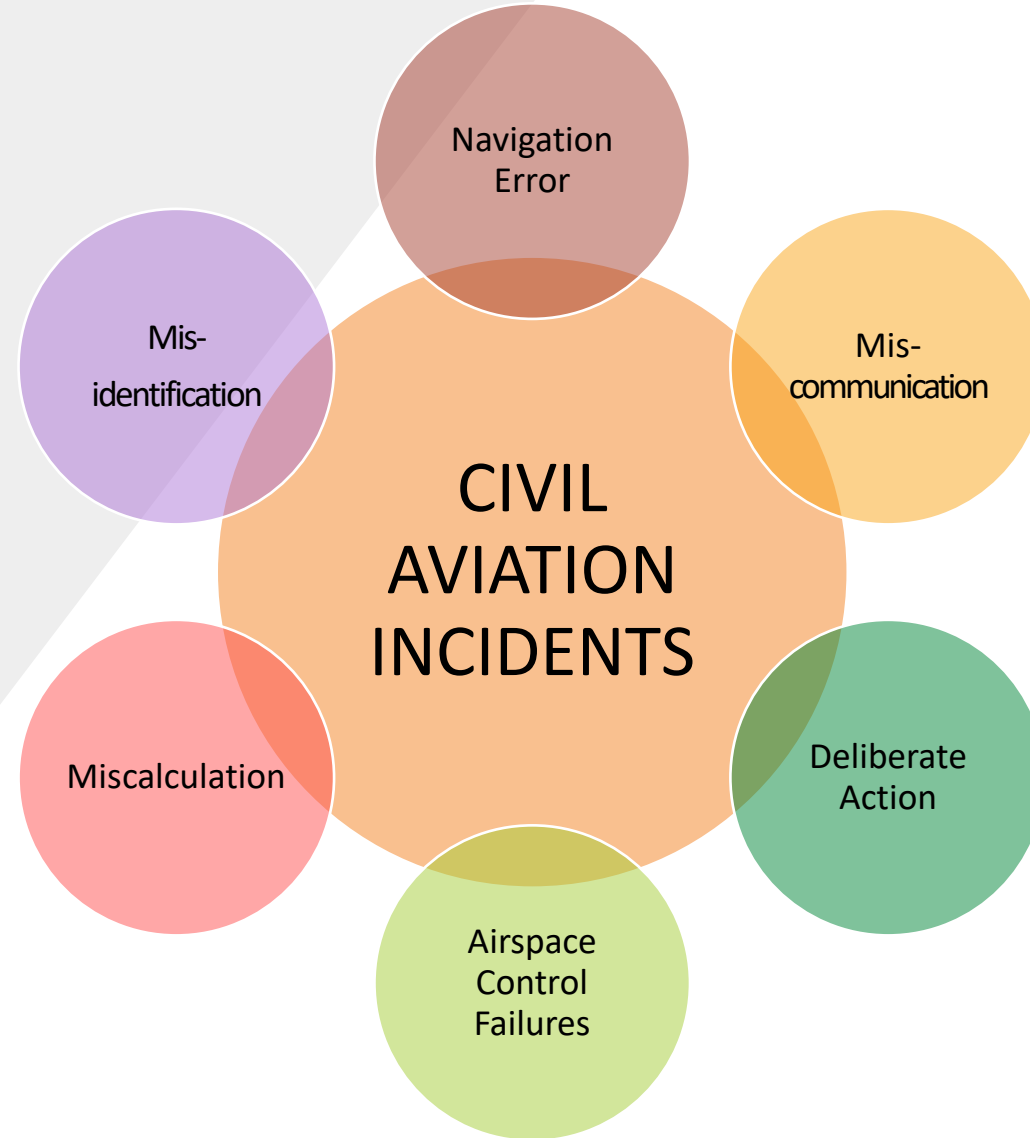


Preliminary results of an investigation indicate the jetliner that crashed this week in Kazakhstan was hit by Russian fire. PHOTO: ISA TAZHENBAYEV/ZUMA PRESS

HISTORICAL CONTEXT

QUESTIONS / DISCUSSION POINTS

Can you identify any parallels between those incidents and scenarios you've experienced in your professional capacities?





Session 6

Introduction to Doc 10084: Risk Assessment
Manual for Civil Aircraft Operations Over or Near
Conflict Zones

SESSION 6

OUTLINE

AIM

To provide an overview of ICAO's Doc 10084: Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones

MOTIVATION

To better understand how Doc 10084 can be useful in providing guidance for conflict zone risk assessment and mitigation

OUTLINE

- What is Doc 10084?
- Table of content
- Overview of each chapter
- Discussion



Risk Assessment Manual for Civil Aircraft Operations Over or Near Conflict Zones (Doc 10084)

What

- Guidance to manage the risk during episodes of heightened military tension, or when a conflict break
- Methodology aligned with that in ICAO's Risk Context Statement (Doc 10108, Restricted)
- Guidance for airspace closures
- NOTAM standardized format to communicate relevant information

Where

- Available to States and Stakeholders for downloading on ICAO-NET ([ICAO-NET Home](#))

Objective

- Making available up-to-date and current information that helps States, and all involved stakeholders, manage the risk arising from flying over or near conflict zones

Doc 10084 revision process

Promotion and best practices collection

Regional Awareness Seminars
Security Week 2024

2023

3rd Edition

Revised jointly by ICAO safety and security experts
Published on ICAO website
Security Week 2023, side event
Promotional video

2024

2025

Promotion, best practices collection and revision

Regional Awareness Seminars,
ICAO and safety and security
expert work on revision

2026

4th Edition

Edition available at the end
of 2026

Key updated to the 3rd Edition

01

Glossary of terms

amendments to the manual's terminology and definitions

02

Roles and responsibilities

explicit roles and methods through which crucial decision-informing communication

03

Risk Assessment Guidance

enhancement of guidance designed to carry out risk assessments in a logical, consistent and clear manner



04

Risk mitigation inventory

tool for stakeholders looking to build a stronger posture regarding conflict zone risk mitigation

05

Closing airspace

criteria and recommendations for closing airspace when operators are over or near a conflict zone

06

Reassessment of changing risk levels

monitoring criteria to support States' and aircraft operator's risk assessment and decision-making processes

Key elements of future updates - Doc 10084



WHAT IS IN DOC 10084



1

Introduction

2

Risks to civil aircraft from operations over or near conflict zones

3

Roles of parties concerned and promulgation of information

4

Conducting security risk assessment for flying over or near conflict zones

5

Conducting conflict zone airspace closures

6

Reassessing post-conflict zone airspace

A

Security risk assessment factors, information, sources, methodology and concept

B

Example of a safety risk assessment methodology

C

Differences between the guidance provided by States in the risk assessment processes

D

Examples of how organizations or States share information between States, aircraft operators, and service providers for exchange and promulgation of information

E

Risk mitigation inventory for flying over or near conflict zones

F

Compendium of guidelines for information sharing

G

Guidelines for harmonization of risk assessments and risk communication

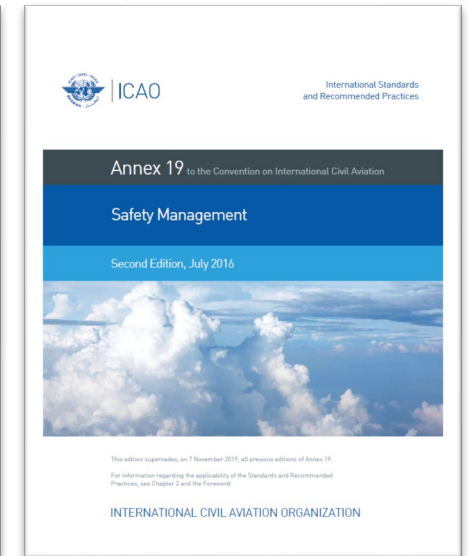
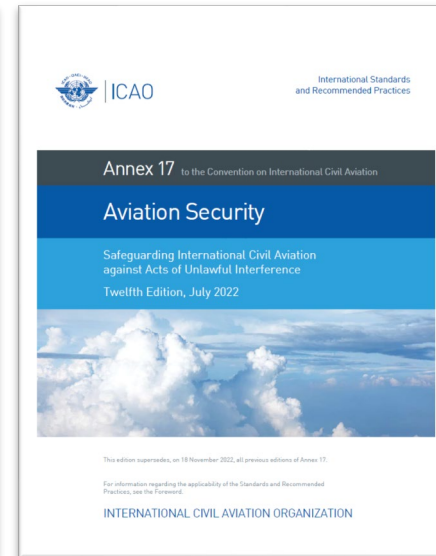
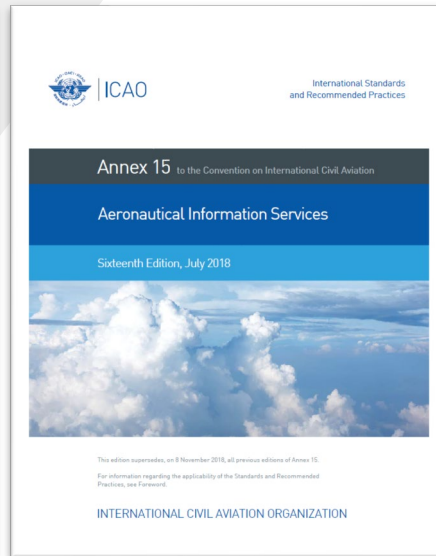
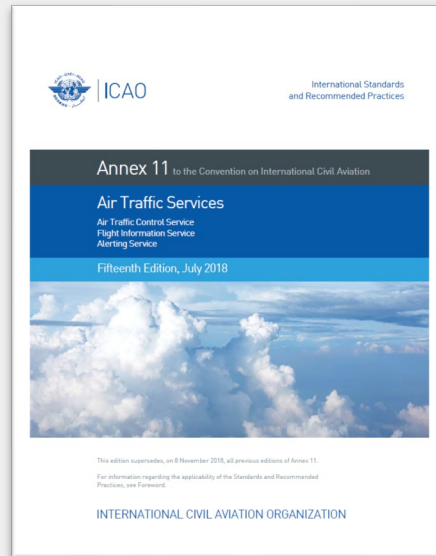
CHAPTER 1

INTRODUCTION

CHAPTER 1

CONFLICT ZONE RELATED SARPs

- Conflict Zone risk management is also supported by a number of Standards and Recommended Practices (SARPs) set by ICAO.
- These sit across a number of different Annexes:



Annex 6 – Operation of Aircraft

4.1.2 The operator shall ensure that a flight will not commence or continue as planned unless it has been ascertained by every reasonable means available that the airspace containing the intended route from aerodrome of departure to aerodrome of arrival, including the intended take-off, destination and en-route alternate aerodromes, can be safely used for the planned operation. When intending to operate over or near conflict zones, a risk assessment shall be conducted and appropriate risk mitigation measures taken to ensure a safe flight

Annex 11 – Air Traffic Services

2.19.3 The appropriate ATS authority shall ensure that a safety risk assessment is conducted, as soon as practicable, for activities potentially hazardous to civil aircraft and that appropriate risk mitigation measures are implemented

Note 1.— Such risk mitigation measures may include, but would not be limited to, airspace restriction or temporary withdrawal of established ATS routes or portions thereof

Note 2.— Guidance on safety risk management can be found in the Safety Management Manual (SMM) (Doc 9859)

2.19.3.1 States shall establish procedures to enable the organization or unit conducting or identifying activities potentially hazardous to civil aircraft to contribute to the safety risk assessment in order to facilitate consideration of all relevant safety significant factors

Annex 15 – Aeronautical Information Services

6.3.2.3 A NOTAM shall be originated and issued concerning the following information:

n) conflict zones which affect air navigation (to include information that is as specific as possible regarding the nature and extent of threats of that conflict and its consequences for civil aviation)

Annex 17 – Aviation Security

3.1.3 Each contracting State shall keep under constant review the level and nature of threat to civil aviation within its territory and airspace above it, and establish and implement policies and procedures to adjust relevant elements of its national civil aviation security programme accordingly, based upon a security risk assessment carried out by the relevant national authorities

3.1.5 Each Contracting State shall establish and implement procedures to share, as appropriate, with relevant airport operators, aircraft operators, air traffic service providers or other entities concerned, in a practical and timely manner, relevant information to assist them to conduct effective security risk assessments relating to their operations

Annex 19 – Safety Management

2.2 Safety risk assessment and mitigation: The service provider shall develop and maintain a process that ensures analysis, assessment and control of the safety risks associated with identified hazards

Other related guidance

Docs 8126, 8973 (Restricted), 9426, 9433, 9554, 9859, 9985, 10088, and 10108 (Restricted))

CHAPTER 2

RISKS TO CIVIL AIRCRAFT FROM OPERATIONS OVER OR NEAR CONFLICT ZONES

CHAPTER 2

THE THREATS

Man-Portable Air Defense Systems
Up to 25,000 feet



Ballistic and Cruise Missiles
Up to and above cruising altitude



Heavy Weapons and Anti-Aircraft Artillery (AAA)
Up to and above cruising altitude



Surface to Air Missile systems (SAMs)
Up to and above cruising altitude



Other aircraft: drones, fighters, formations, etc.
Up to and above cruising altitude



Capability

Presence of anti-aircraft/air defense systems, as well as the level of technical knowledge/expertise regarding the use of the system

Intent

Level of interest in attacking civil aviation

In conflict zones, the capability to target aviation assets may be high and widespread, but historically there has been little to no intent by States to target civil aircraft



Involvement of a state sponsored entity or proxy group armed **with anti-aircraft weapons**, provided **limited training** and operating **outside the authority of a state** increases risk of unintentional impact



Although an **unintended target**, civil aviation is at **higher risk** when flying over or near conflict zones, due to potential for **misidentification**, **miscommunication** or **miscalculation**

CHAPTER 3

ROLES OF PARTIES CONCERNED AND PROMULGATION OF INFORMATION

CHAPTER 3

KEY STAKEHOLDERS

138

State that
manages the
airspace

Aircraft
operator

Air navigation
services
provider

State of the
Operator

Aeronautical Information Publication (AIP)

- Information of a permanent nature as well as temporary changes of long duration

Notice to Airmen (NOTAM)

- Information concerning the establishment, condition or change in aeronautical facility, service, procedure or hazard, the timely knowledge of which is essential to flight operations

Aeronautical Information Circular (AIC)

- Notice containing information that does not qualify for the origination of a NOTAM or inclusion in the AIP, but relates to flight safety, air navigation, technical, administrative or legislative matters

Other

- Civil Aviation Directive
- Other communication means (email, call, etc.)

CHAPTER 4

CONDUCTING SECURITY RISK ASSESSMENTS FOR FLYING OVER OR NEAR CONFLICT ZONES

Doc 10084 provides the key characteristics of conflict zone risk assessment methodology*. It does not provide a “one-size fits all” approach, rather baseline factors that should be taken into consideration

While the methodology presented is consistent with ICAO’s *Aviation Security Manual* (Doc 8973 – restricted) and ICAO’s *Aviation Security Global Risk Context Statement* (Doc 10108 – restricted), it also accounts for the specific nature of the risks posed by conflict zones

*Detailed Security Risk Assessment Methodology can be found in Appendix A, and a detailed Safety Risk Assessment Methodology in Appendix B

Risk assessments should be a **continuous cycle**

Carefully identified and defined **scenarios** should be the foundation of a risk assessment

Risk is identified as the level of exposure to a successful attack being carried out on a specific target, taking into account:

- The assessed threat and consequences
- An assessment of the remaining vulnerabilities after evaluating the effectiveness of the measures in place



Doc 10084 highlights the importance of bridging *safety* and *security* risk assessments in the context of conflict zone risk mitigation. Section 4.8.4 states that mitigation measures identified in the security risk assessment "can cause indirect 'spillover' issues or unintended consequences". A safety risk assessment should therefore be conducted "to identify any additional safety risks arising from these mitigations"

For example, re-routing flights or restricting airspace may result in additional traffic in other flight routes or air corridors, requiring an aircraft to operate at a higher altitude over a conflict zone, which may result in increased fuel requirement and a decrease in the aircraft payload for that flight route

CHAPTER 5

CONDUCTING CONFLICT ZONE AIRSPACE CLOSURES

States experiencing heightened tensions/military activities

- Should ultimately consider taking precautionary steps by proactively assessing risks, identifying contingency plans and implementing adequate mitigations
- A temporary airspace closure is recommended to proactively safeguard civil aviation

Aircraft Operators

- Annex 6 requires aircraft operators to ensure the airspace containing the intended route can be safely used
- When intending to operate over or near conflict zones, a risk assessment shall be conducted, and appropriate mitigation measures taken, including avoiding the airspace temporarily

State of the Operator

- Should engage in assisting aircraft operators to evaluate the safety and security of civil aviation in the airspace relevant to the operator's intended route and endeavour to collect applicable information in a timely manner

- Contingency Coordination Teams (CCTs) aim to ensure coordination and sharing of information between stakeholders and to agree on contingency arrangements and routes in case of disruption of air traffic services (due to conflict, weather, etc.)
- The CCT is a proven and effective tool in ensuring the safety of civil aviation with minimal disruption to air traffic. Several ICAO Regions, such as Asia-Pacific and the Middle East, have successfully developed and implemented CCTs on numerous occasions and their expertise on the matter serves as a model

CHAPTER 6

REASSESSING POST-CONFLICT ZONE AIRSPACE

- Guidance on assessing conflicts as they start to de-escalate
- Establish indicators to determine when a reassessment of the mitigation measures is appropriate
- Assess de-escalation, cessation, stabilization of hostilities

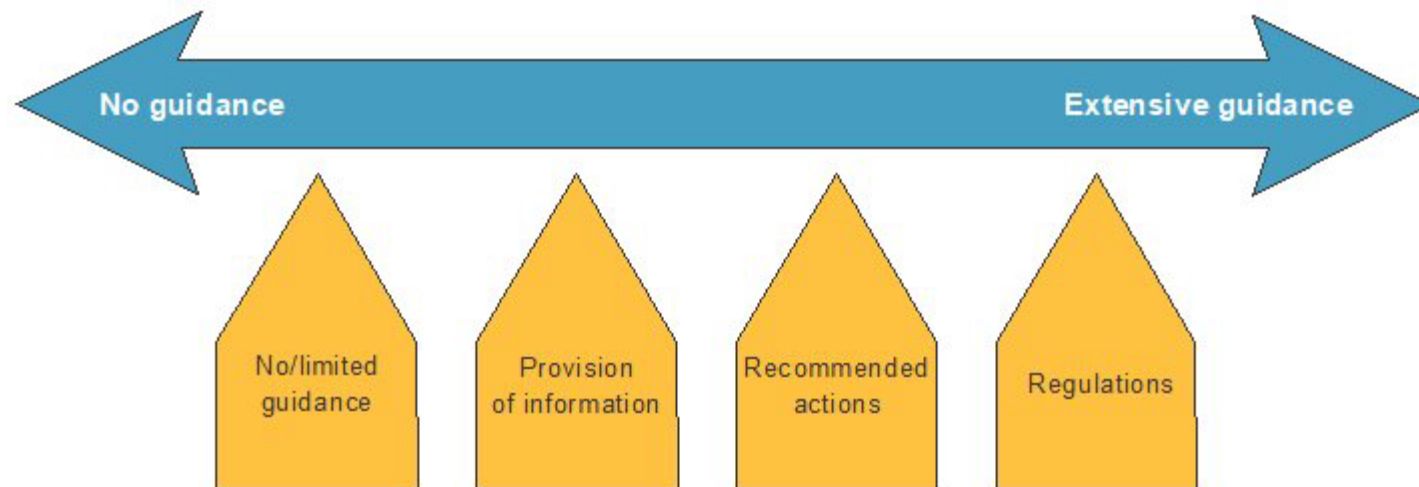


DISCUSSION

The background is a solid medium blue color. In the lower half, there are several overlapping, organic, rounded shapes in a lighter shade of blue. These shapes are centered horizontally and appear to be part of a larger, abstract design, possibly representing a globe or a stylized face.

States play a major role in decision-making processes related to conflict zones because they usually have a more extensive ability to aggregate intelligence than aircraft operators, ANSPs, and other concerned organizations

There are different models for the level of guidance provided by States, as illustrated by the figure below. Where would you say your State currently stands on this continuum?





Session 7

Discussion about current challenges

CURRENT CHALLENGES

- Continue to see a rise in global conflict – and different types of conflict
- Increasingly complex and more capable weapons systems being developed/deployed
- Increasing risk of “conflict overspill” impacting other countries in the region
- Potential for localised conflicts to become regional conflicts remains

November 2024




A number of aircraft were struck by small arms fire on approach and departure from Port-au-Prince airport in Haiti. This includes some damage to the inside of the cabin. The incidents were linked to ongoing gang violence around the Haitian capital



Electronic Interference – Jamming and Spoofing

- **Jamming:** The intentional use of radio frequency interference (RFI) to disrupt or prevent GNSS receivers from locking onto satellite signals
- This tactic renders GNSS systems unusable or degrades their performance, making it difficult or impossible for users to obtain accurate position, navigation, and timing information

- **Spoofing:** Involves broadcasting counterfeit GNSS signals to trick receivers into believing they are in a different location or time
- This tactic can lead to incorrect position, navigation, and timing data, potentially causing navigation systems to lead users astray or make them believe they are in a different location



JOINT STATEMENT

by

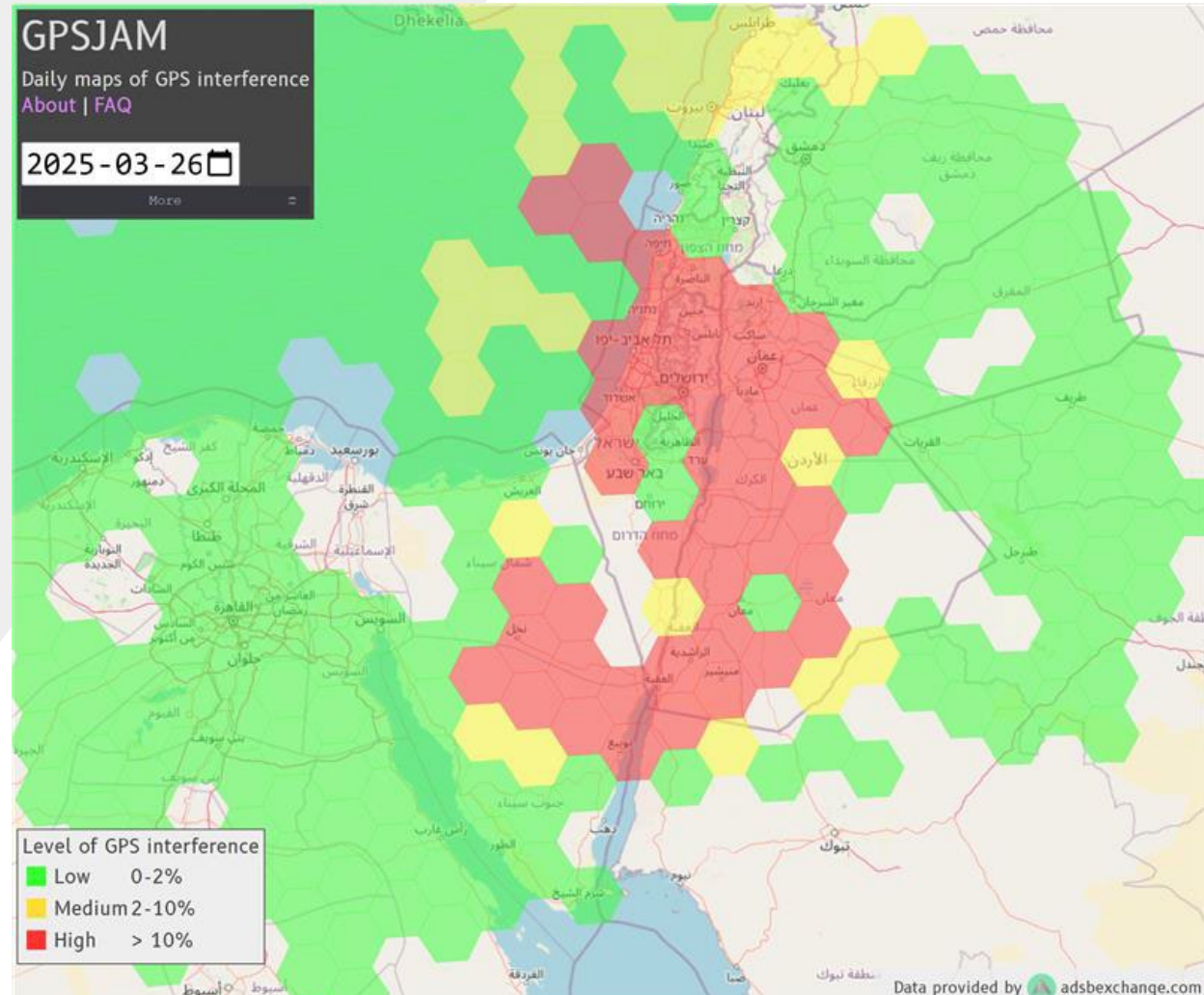
The Secretary General of the International Telecommunication Union,

The Secretary General of the International Civil Aviation Organization,

The Secretary General of the International Maritime Organization

regarding

PROTECTION OF THE RADIO NAVIGATION SATELLITE SERVICE FROM HARMFUL INTERFERENCE



Are there other current challenges **you** think we collectively face?



Session 8

International and regional conflict zone
risk management perspective



Session 9

Table-top Exercise: Risk assessment and mitigation

TABLE-TOP EXERCISE (INTRODUCTION)

- During the exercise, new information, referred to as an “inject” will be added to the scenario at pre-determined intervals.
- You will be asked to provide input at each stage of the scenario, either from the perspective of your real-life role, or as general thoughts on the implication(s) of each inject.
- Keep in mind:
 - There are no right or wrong answers!
 - You can propose multiple courses of action to a specific inject.
 - Do not hesitate to interact with the facilitators and your fellow participants

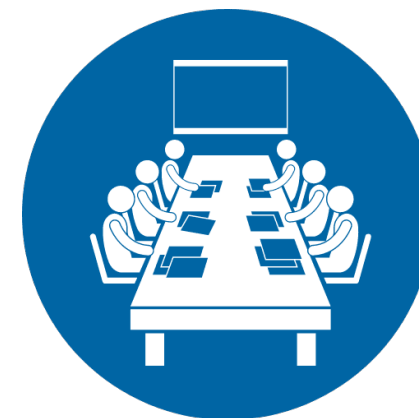


TABLE-TOP EXERCISE (INTRODUCTION)

- The exercise will focus on the three primary phases of a conflict
 1. **Pre-Conflict Phase**
 2. **Conflict Phase**
 3. **Post-Conflict Phase**

- Aim is for **you** to consider what actions you would take at different points in the conflict cycle.

- This is an opportunity to learn from each other and understand how others approach this complicated area of decision making.

- The region of Bluver is host to the nation-states of the Kingdom of Blue and the Republic of Silver, which share a border defined by the Wet River
- Direct air routes to the region are critical to key financial interests for many countries around the world; without access to the Bluver airspace, air operators would be faced with costly diversions
- The relationship between the countries is one of uneasy peace with sporadic conflict, as there is a long-standing disagreement over the land ownership of the Moria region
- The last conflict was in 2022 when diplomatic tension led to cross-border military operations. The conflict was short but inflicted a lot of casualties and caused infrastructure damage in both nations. The ceasefire saw boundaries of the contested region returned to their pre-conflict state



- The 2022 conflict left both governments with depleted military forces. The inability of either nation to gain territory in the Moria region has caused embarrassment and significant injury to national pride
- A ceasefire and uneasy peace have settled over the Bluver region, accompanied by a period of rapid de-escalation of military activity. This enabled both nations to reopen their respective airspace and resume cross-border commercial services and air traffic operations
- Rebel groups contesting the ceasefire are emerging on both sides of the border, with political aims covering a spectrum of interests from protectionism to nationalism to regional autonomy



SCENARIO BACKGROUND



- All nations have robust airspace structure with FIR zones that include both overland and oceanic airspace
- There are multiple jet airways that overfly each nation, including the contested Moria region, that connect their FIRs to Shire Oceanic FIR in the south and Marvel Oceanic FIR in the north
- Key reporting points and airway routings are indicated on the map
- Each nation's capital has an international airport. Other aerodromes that receive domestic and international traffic have been noted on the map

SCENARIO BACKGROUND



Blue	Country Name
Diamond FIR	Flight Information Region (FIR)
▲ WINE	Reporting Point
★	Capital City
J444	Airway Route and Identifier
●	Moria – contested border region
—	Water/water feature
- . -	International Border
.....	12NM Boundary
✈	Airport Locations
● ● ●	Scenario Inject Locations

- Government and military planners have been focusing on replenishing and replacing lost combat power
- The Kingdom of Blue reinvested in its air force, making up for conflict losses with the purchase of several new aircraft, thus maintaining its air superiority
- The Republic of Silver has built a dominance in the number of artillery and indirect fire systems it possesses
- Each country is also investing in new capabilities and emerging technologies (passive and active systems) that include signals jamming, cyber operations, and UAS platforms that present the potential for further weaponization



This stage can be indicated by:

- *increased political rhetoric*
- *increased tensions between groups*
- *movement of military forces and/or deployment of equipment and weapons systems.*
- *There may be instances of limited clashes or armed incidents within a contested area.*
- *This phase may include cycles of escalation and de-escalation*

Inject 1

- Despite the ceasefire, as of late the Republic of Silver has begun to state claims of ownership over the Moria region, including during international meetings, which draws criticism within the Kingdom of Blue, both from political officials and the general population
- This renews the cycle of increased tensions between the two neighbours. Blue attempts to gather the support of likeminded states in the region and internationally. The intensifying rhetoric between the two countries is amplified by radicalized groups who use the situation to criticize the ceasefire
- The Active Guard (AG), a Republic of Silver based group, has been publicly blaming their government for agreeing to the ceasefire and jeopardizing their hold over the Moria region, thus endangering the local populations and limiting their access to the rich Morian resources.

Inject 2

- In response to Blue's increasing attempts at building a regional and global coalition, Silver begins to deploy some military resources along the shared border. Most notably the introduction and use of a number of multi-role UAS, for surveillance operations

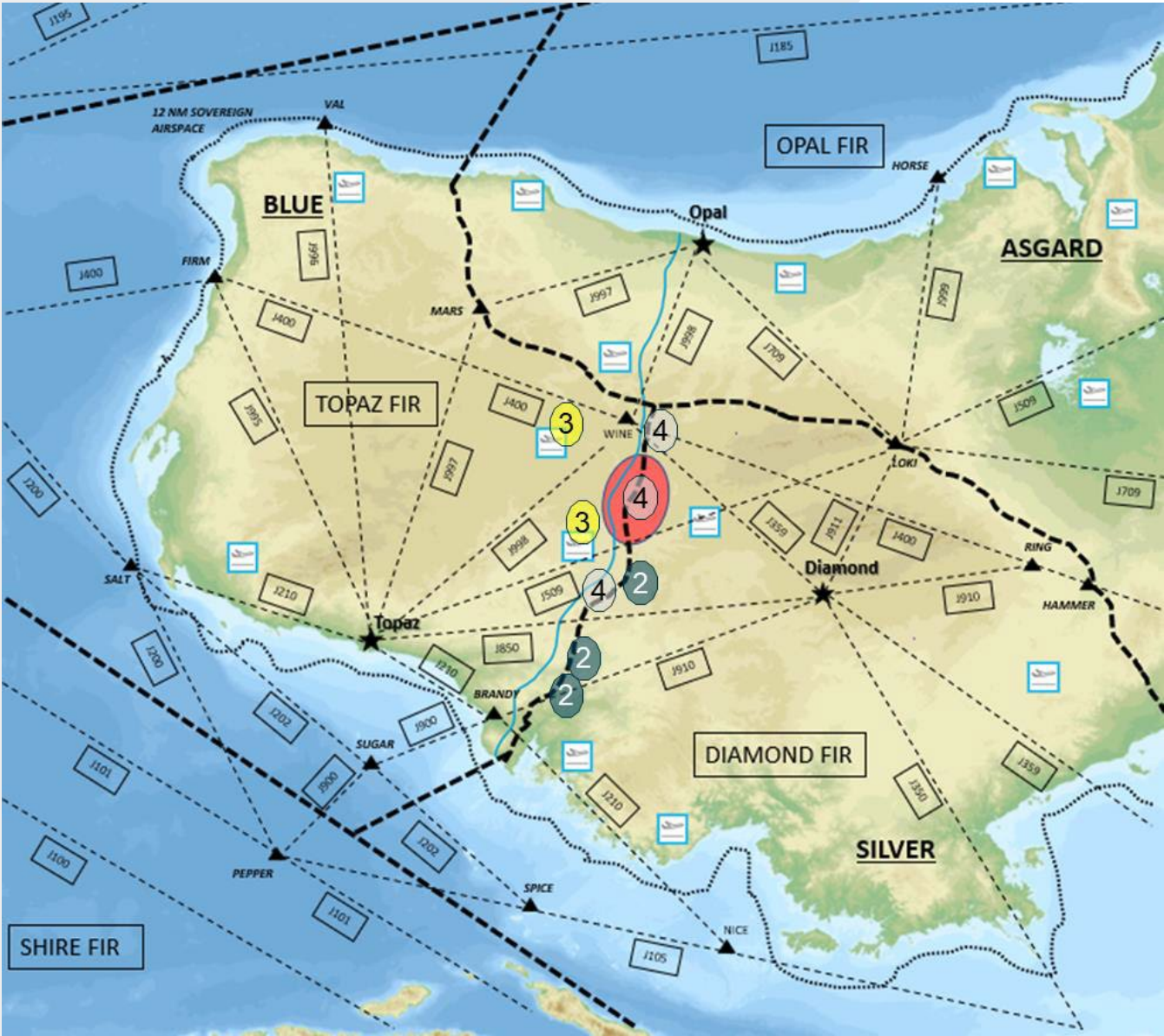
Inject 3

- Increased misinformation is being broadcast in open-source media and appears to target regional populace
- A key regional logistics center reported a Distributed Denial of Service (DDoS) attack on the public facing airport management website
- Airport display boards in two terminals were manipulated to broadcast pro-war propaganda messages calling for renewed actions and conflict in the region
- The AG radicalized group later takes responsibility for the attacks
- Both citizens and tourists begin departing the area, increasing the demand for flights and delays which are frustrating passengers and operators

Inject 4

- As Silver's UAS surveillance operations increase along the shared border, Blue accuses its neighbor of airspace violations and issues an official diplomatic complaint to the Republic of Silver
- In addition, Blue begins its own multi-role UAS surveillance operations along the shared border
- In response, Silver issues a declaration that any Blue UAS violating its airspace would be at risk of being shot down

PRE-CONFLICT PHASE



Inject 5

- Civil air operators overflying the region begin reporting incidents of GPS and communications jamming. This results in numerous incidents including inaccurate GPS clocks showing the wrong time, and ADS-B showing aircraft at incorrect airports and air routes that make no sense
- Airports and seaports report increased DDoS attacks on public websites and government transportation sites. Cyber activities have been attributed to AG as an indication that their targeting is expanding

Inject 6

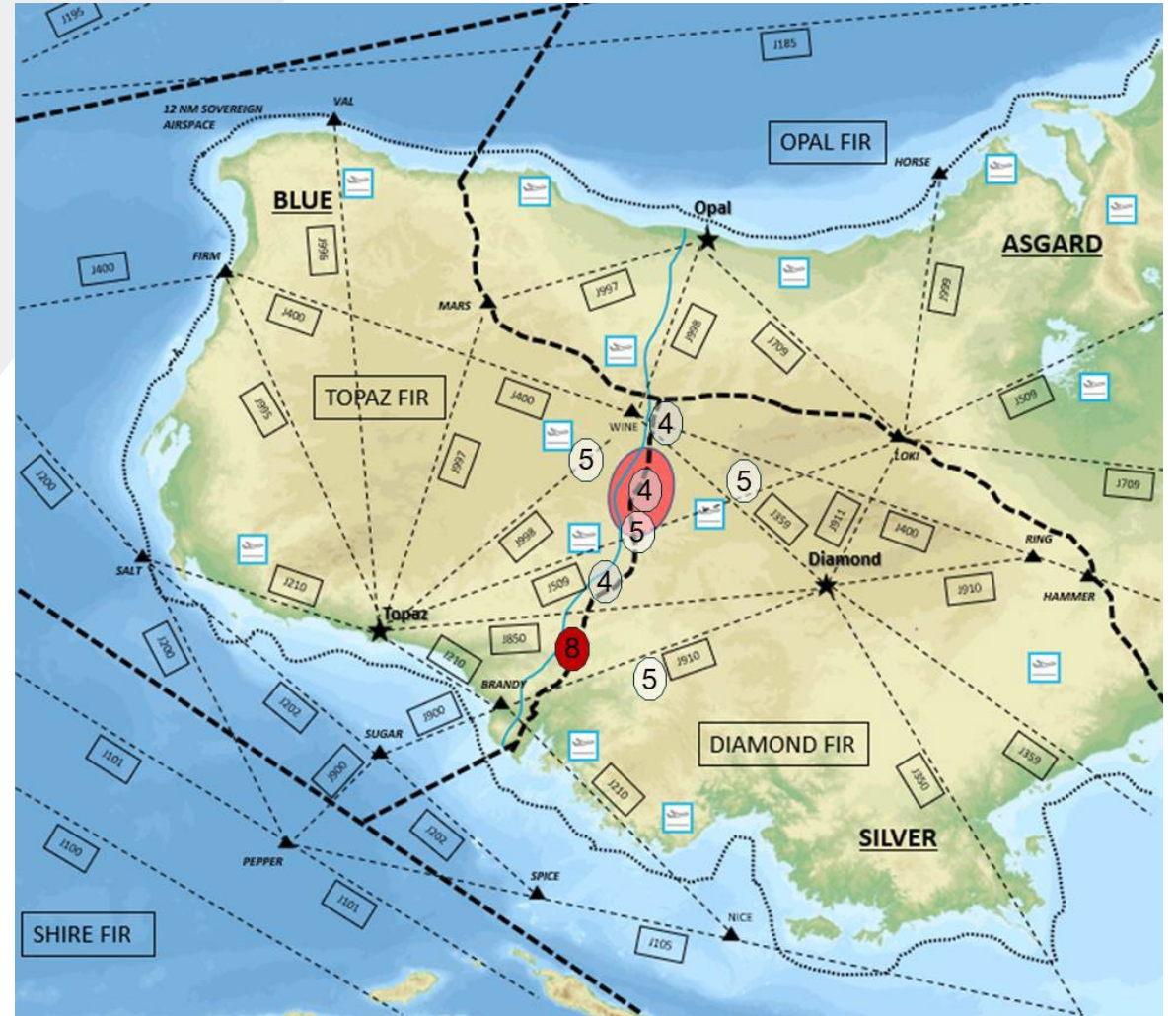
- Print and social media are reporting that commercial imagery is being shared with both countries from external/foreign sponsors. Citing their sovereign rights over their own airspace, the Kingdom of Blue states that they have the obligation to protect their airspace from interference by Silver
- The Republic of Silver responds that any attack on their assets will give them the moral justification to respond in kind

Inject 7

- Foreign governments advise their respective citizens to leave the Republic of Silver and Kingdom of Blue

Inject 8

- Tired of Silver's weak response to the Kingdom of Blue's rhetoric, the AG conducts a small-scale attack on a Blue border checkpoint, which leads to the death of two Blue border patrol officers



Inject 9

- The Republic of Silver announces the deployment of additional military forces and commencement of military exercises in and around the Moria region to bring stability to the region and as a display of force
- The forces deployed will be primarily focused on practicing defensive tactics and conducting air defence training

Inject 10

- Given the deployment of military forces to the region as well as the heightened rhetoric, international stakeholders reach out to authorities from Silver and Blue asking if there will be any airspace closures or airspace management direction provided to air operators. Both countries reply that the situation does not warrant a change in posture regarding airspace

This stage can be indicated by:

- *increased intensity of military engagements (there may have been limited instances pre-conflict)*
- *statements of intent, political posturing, and rationalization*
- *punctuated by armed conflict and violence between groups, and/or force on force engagements.*

Inject 11

- In retaliation for AG's attack on the border checkpoint and Silver's perceived complicity, Blue conducts an attack on a Silver air defense site near the shared border of the Wet River, damaging a number of air defense launchers
- True to its previous threats, Silver conducts retaliatory strikes on Blue, targeting critical infrastructure near the border region, and issues a public statement that any further unidentified UAS in its airspace would be shot down

Inject 12

- Reporting of GPS jamming and communications interference in the Moria region has tripled, focused predominantly during dusk, nighttime, and dawn hours

Inject 13

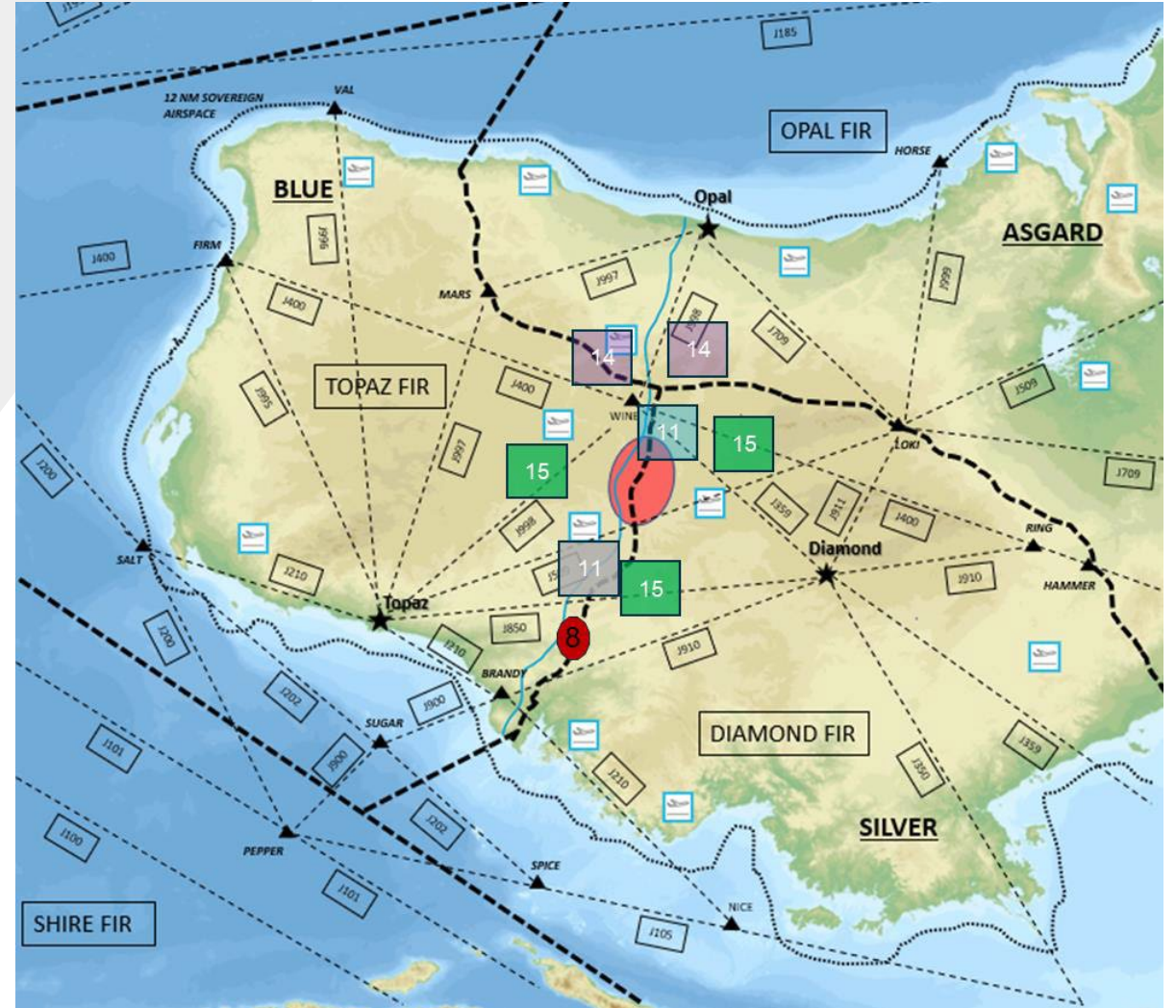
- As tensions intensify, daily cross border weaponized UAS attacks conducted by both sides are occurring
- Blue has been implicated in numerous UAS “friendly fire” events, calling into question the competence of Blue operators
- Internet hacktivism group “The Who C’estQui” releases classified materials online that indicate a reluctance by military leaders of both countries to deploy large military formations in the Moria region and focus deployments instead on newly acquired UAS capabilities

Inject 14

- Silver has followed through on its threats and has begun shooting at UAS operating in its airspace. Despite a 70% success rate, several missiles have gone errant, flying beyond their intended target into adjacent airspace
- Neighbouring countries condemn these incidents and threaten to intervene if the belligerents remain unable to reach a peace agreement quickly
- Silver and Blue's most influential neighbour, Asgard, begins to increase its military readiness and is building up military resources near the border

Inject 15

- Intermittent longer range UAS attacks continue on both sides, especially along the contested boundary and Moria region
- There are reports of high intensity lasers and range finders being used to disrupt UAS sensors
- Social media posts confirm that MANPADs are being employed



This stage can be indicated by:

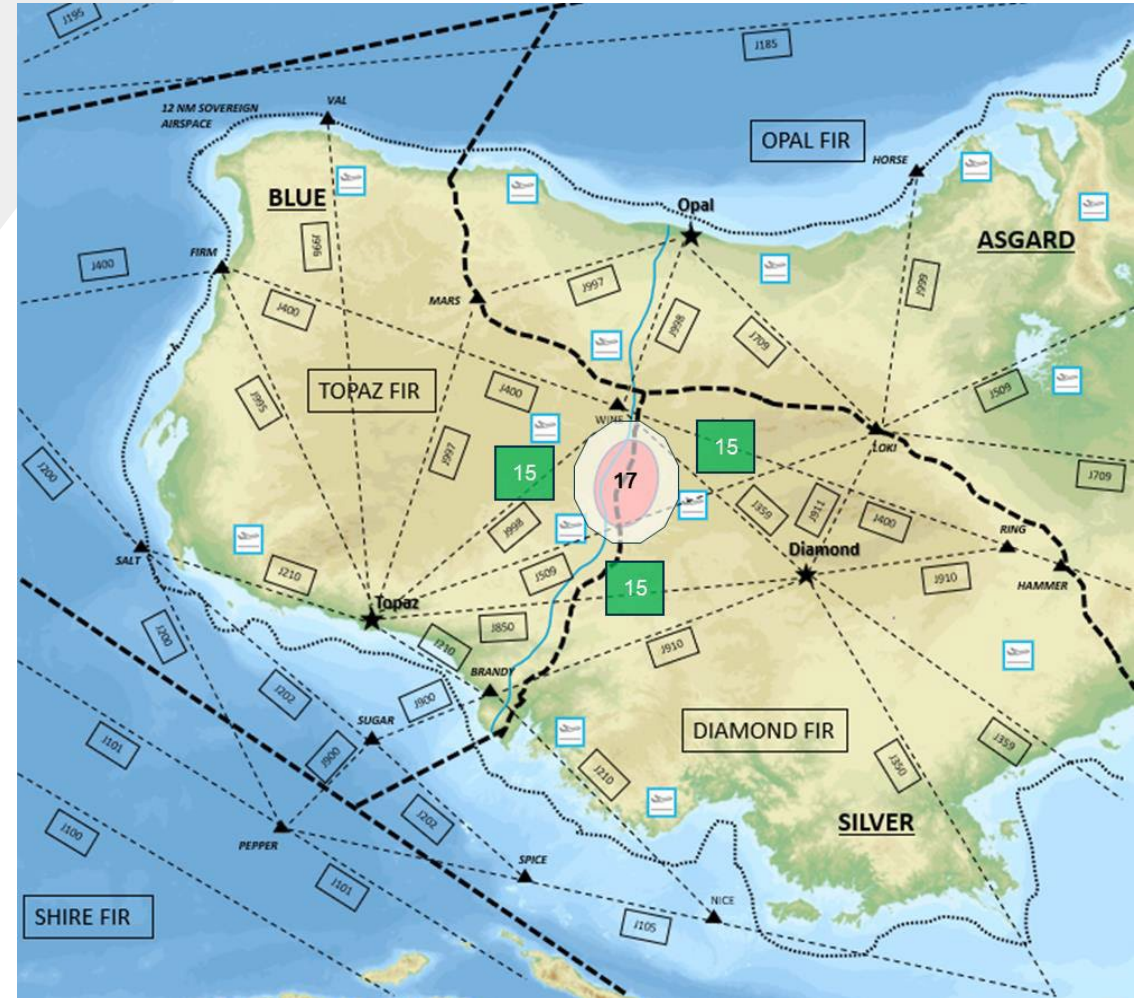
- *cycles of de-escalation and escalation; likely an overall decrease in the intensity of actions*
- *transition of operations from offense to defence as well*
- *redeployment or removal of key weapon systems.*
- *likely periods of negotiation and/or successful cease-fire implementation.*

Inject 16

- In response to several local Moria region officials, the intensity of Silver GPS jamming and communications interference reduces significantly but continues to occur in close proximity to military deployment areas
- As the conflict reaches a stalemate, Silver and Blue agree to meet with UN representatives to negotiate a ceasefire agreement

Inject 17

- After a few failed attempts, regional leadership, with the support of the UN team, reaches a ceasefire agreement. As part of the agreement, the UN approves the deployment of a limited ceasefire monitoring mission
- Military forces on both sides begin to reduce deployed forces in the region, returning to pre-crisis garrisons and alert status
- However, both sides continue to operate UAS as surveillance platforms to monitor the contested border region. GPS jamming operations continue but are limited to the contested border region



Any immediate reflections on the exercise?



Session 10

Discussion on setting up a regional coordination mechanism

- Highlighted in this seminar the importance of effective co-ordination and information sharing
- **How can this be done effectively on a region level?**
- Builds on (not replaces) the excellent work of the MID Region CCT in a crisis.
- Existing European/North American regional model – known as the “Expert Group on Risk Identification for Conflict Zones” (EGRICZ) *might* provide a blueprint

What can a regional group offer?

- Forum for regional experts to meet on a regular basis – developing regional networks with partners.
- Information exchange and horizon scanning outside of crisis mode.
- Enhanced situational awareness of developing issues both in and outside the region.
- A peer group for less experienced, resource limited states to learn from.
- Longer term:
 - potential mentoring/capacity development opportunities between states
 - Regional initiatives/guidance on key issues



Session 11

Next steps and regional and state level



Closing session



THANK YOU



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