



**INTERNATIONAL
CIVIL AVIATION
ORGANIZATION**



Eighth Meeting of the Directors General of Civil Aviation-Middle East Region (DGCA-MID/8)

Aviation Safety and Air Navigation Global Developments

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Overview

01 Strategic Direction and Planning

02 Programmes and Initiatives

03 Upcoming Events

Strategic Planning



Aspirations

- Zero Fatalities
- Net-Zero Carbon Emissions
- Connected Transport System

Strategic Goals

- Every flight is Safe and Secure
- Aviation Delivers Seamless, Accessible, and Reliable Mobility for All
- No Country Left Behind

Programmes

1. Active and Emerging Safety Risks
2. CAPSCA
3. AAM / New Entrants
4. Air Navigation Performance Improvement
5. Crisis Preparedness and Response
6. USOAP
7. Regional Safety Cooperation
8. Implementation Support

Strategic Direction

- Continuously increase safety and efficiency of global air navigation system performance while integrating new entrants, new technologies and innovation
- Modernize and improve the process for development of the global civil aviation regulatory framework and associated safety oversight audit program
- Continue to prioritize standardization and implementation efforts as agreed to in the Global Aviation Safety Plan (GASP) and Global Air Navigation Plan (GANP)
- Ensure that flight operations are reliable, and highly efficient
- Enhance aviation resiliency and crisis preparedness



Global Air Traffic Management Operational Concept (Doc 9854)

Integrated Vision and Concept

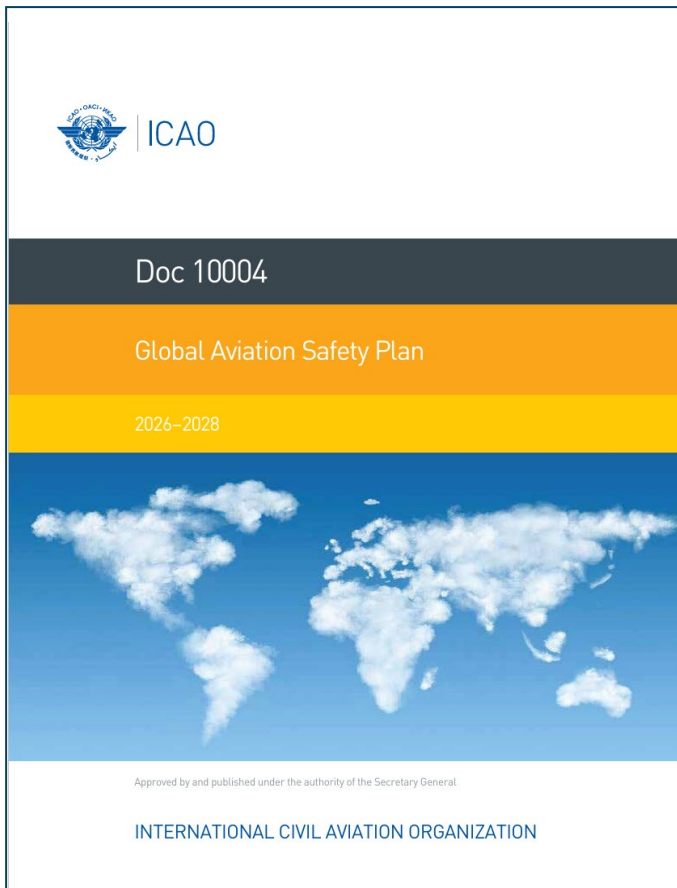


03 Programmes



Active and Emerging Aviation Safety Risks

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Five Global-High Risk Categories



Controlled flight into terrain (CFIT)



Loss of control in-flight (LOC-I)



Mid-air collision (MAC)



Runway excursion (RE)



Runway incursion (RI)

Three other Risk Categories

Abnormal runway contact (ARC);

System/component failure or malfunction (non-powerplant) (SCF-NP);

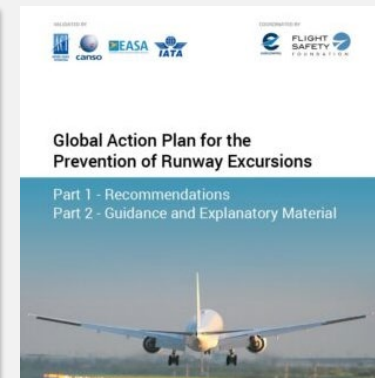
Turbulence encounter (TURB)

2. Radio Frequency Interference

- Safety critical CNS systems need to be free from harmful interference:
 - Robust standards for resilient CNS systems
 - Frequency Management
 - Aeronautical Spectrum Defense
- GNSS Vulnerability
 - GNSS signals are susceptible to interference, both intentional and unintentional, which can compromise system reliability and accuracy
 - **Jamming** is intentional broadcasting of radio signals to disrupt the GNSS services, posing a significant threat to navigation and timing applications.
 - **Spoofing** is the broadcast of GNSS-like signals that cause avionics to calculate erroneous positions and provide false guidance. This sophisticated form of interference can be particularly dangerous as it may go undetected by the receiver.

1. Runway Safety

- Global runway safety action plan (GRSAP) is the main guiding document, complemented by two industry plans
 - Global Action Plan for the Prevention of Runway Incursions (GAPPRI)
 - Global Action Plan for the Prevention of Runway Excursion (GAPPRE)
- GRSAP describes contributing factors and recommended actions on Runway Excursion and Runway Incursion (which are G-HRCs)
 - Other risk categories considered include:
 - Abnormal Runway Contact (ARC)
 - Collision With Obstacle(s) During Takeoff and Landing (CTOL)
 - Ground Collision (GCOL)
 - Loss of Control on the Ground (LOC-G)
 - Undershoot/Overshoot (USOS)



ICAO GRSAP complemented by GAPPRI and GAPPRE

3. Lithium Batteries

Rising fire risks in aircraft

- Increasing incidents of **fires in the cabin involving lithium batteries**

Diverse safety measures

- States and airlines imposed varied restrictions to mitigate risks

Need for global harmonization to address growing risk

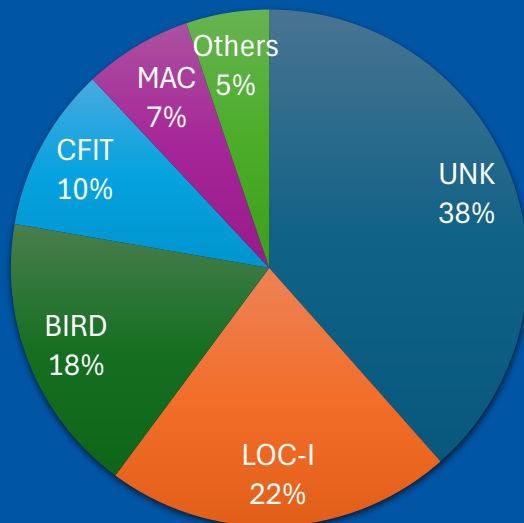
- Addendum to Technical Instructions approved by Council on 27 March 2026 aimed at globally harmonized preventive measures to reduce both likelihood and impact of onboard events

Power banks: incident data from UL Thermal Runaway Incident Programme (TRIP)

- Thermal events trending upward
- Number one cause of thermal incidents on aircraft in 2025, surpassing all other device types

4. Accident Investigation

Total fatalities by occurrence category (2021-2025)



Expected Improvements

- Strengthened independence and capability of accident investigation authorities
- Improved timeliness, availability and accessibility of final accident reports
- Enhanced quality, credibility and effectiveness of accident investigations
- Improved sharing of safety lessons and investigation findings

8. Safety Management

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*Annex 19, Amdt 2, becomes applicable in **November 2026** bringing the concepts of Safety Management to a mature stage. However, there remains a challenge to **institutionalize** safety management through the implementation of SSP and SMS*



Unlocking the path towards successful implementation



Collaborative Arrangement for the Prevention and Management of Public Health Events in Civil Aviation (CAPSCA)

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Objectives and ongoing activities

- Mitigate impact of health emergencies on aviation
- Flexible and agile approach to emergencies
- Inter- and intra-sectoral collaboration
- Risk-based and evidence informed guidance
- Global, regional & national implementation assistance
- Innovative strategies

Current priorities

1. Align WHO IHR and ICAO SARPs
2. Manual: Regional Coordinators
3. Develop training for National CAPSCA focal points

Hanta and Ebola Virus





Advanced Air Mobility / New Entrants

Leveraging ICAO Experience Integrating RPAS, UAS and AAM

AAM – Designing the Future Ecosystem

- AAM Study Group (2023–current) shaping global approach
- Vision for the global AAM ecosystem
- Gap analysis of ICAO provisions
- Recommendations for future ICAO work
- ICAO Strategy for AAM

1. ICAO expertise in delivering regulatory frameworks for unmanned aviation (intl', IFR, ctrl a/s)
2. Strategic approach: Vision, gaps, rec. for work
3. Active ICAO expert groups (RPASP, AAM SG)

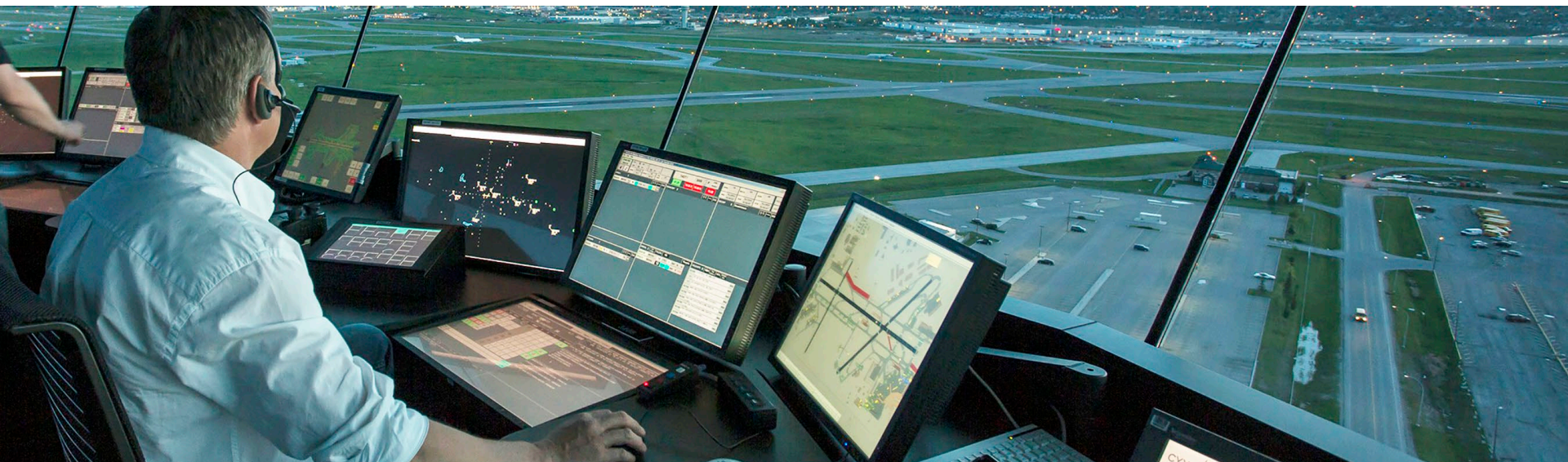
RPAS – Delivered Regulatory Foundation

- Adopted SARPs & PANS across multiple Annexes (1, 2, 6, 8, 10, 14, 19...)
- Operational regulatory framework enabling safe integration
- Evidence-based provisions developed over a decade (2014-current)
- Supporting State and industry implementation today



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is Safe and Secure**

**Aviation Delivers
Seamless,
Accessible and
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Air Navigation Performance Improvement

Air Navigation Performance Improvement - Global Developments

- **Air Traffic Management (ATM) Operational Concepts and Key Enablers**
 - Implementation of time based flow management (TBFM)
 - Implementation of Flight and Flow Information for a Collaborative Environment (FF-ICE)
 - Refinement and guidance on trajectory-based operations (TBO)
 - High altitude operation (HAO) global vision and concept
 - Update to the Connected Aircraft concept
 - Information Management in support of Air Traffic Flow Management



Crisis Preparedness and Response

Ongoing Activities

1. Development of ICAO Crisis Management Framework

3. Management and coordination of Contingency Coordination Teams (CCTs)



2. Harmonization of Regional ATM Contingency Management Frameworks

4. Capacity building and awareness campaign through global and regional forums



Universal Safety Oversight Audit Programme (USOAP)

Plans for 2026-2027-2028

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Evolve USOAP into an outcome-driven, integrated and sustainable entity that delivers value and is adapted to future needs



Risk-based and safety-oriented Audit Model

- Data-driven audit scope and prioritization
- Audit follow-up policies focus on safety relevant improvements
- Audit results/scores with limited validity
- Leverage RSOOs/RAIOs to reduce burden on small States



Enhance Data Mgmt

- Generate safety relevant insights from USOAP and EFOD
- Feed insights to support Member States, Auditor Training, Standards development



Programme Sustainability

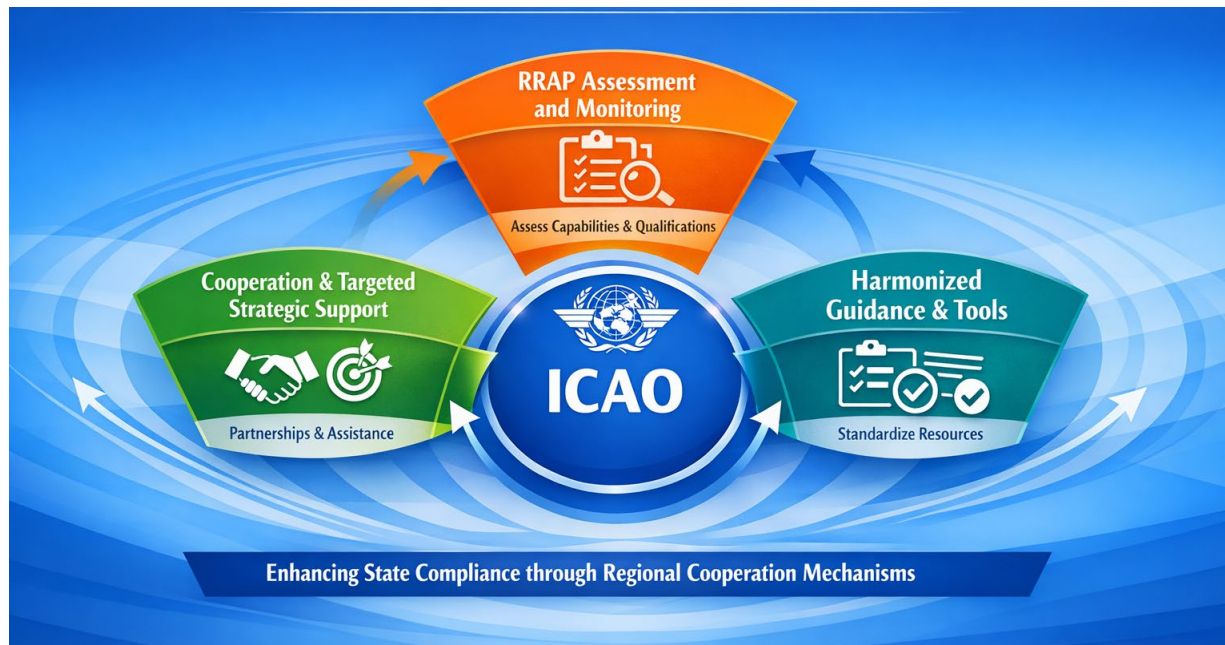
Programme funding model aligned with its cost model to ensure sustainability



Regional Cooperation

1. ICAO Regional Cooperation Framework

Core Pillars of the ICAO Regional Cooperation Framework



03 Upcoming Events

2026-2027



2026



2027



Third Global Runway Safety
Symposium
May 17-19, 2027



Enhanced Aeronautical
Meteorology Symposium
May 20-21, 2027



Air Navigation World – Global
Navigation Satellite System (GNSS)
Resilience (TBD)



Third High-Level Safety
Conference
Nov 15-19, 2027

Thank You

