



**INTERNATIONAL
CIVIL AVIATION
ORGANIZATION**



ICAO Global Approach – Contingency Management

ICAO APAC Region ATM Contingency Framework Workshop
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The International Civil Aviation Organization (ICAO), a United Nations Specialized Agency, was established in 1944 based on the outcome of the International Civil Aviation Conference (ICAC, Chicago, United States, 1 November - 7 December 1944)

ICAO's support countries to diplomatically and technically realize a uniquely rapid and dependable network of global air mobility, connecting families, cultures, and businesses all over the world, and promoting sustainable growth and socio-economic prosperity wherever aircraft fly.



States

General Assembly

Council

**Air Navigation Commission
Committees**

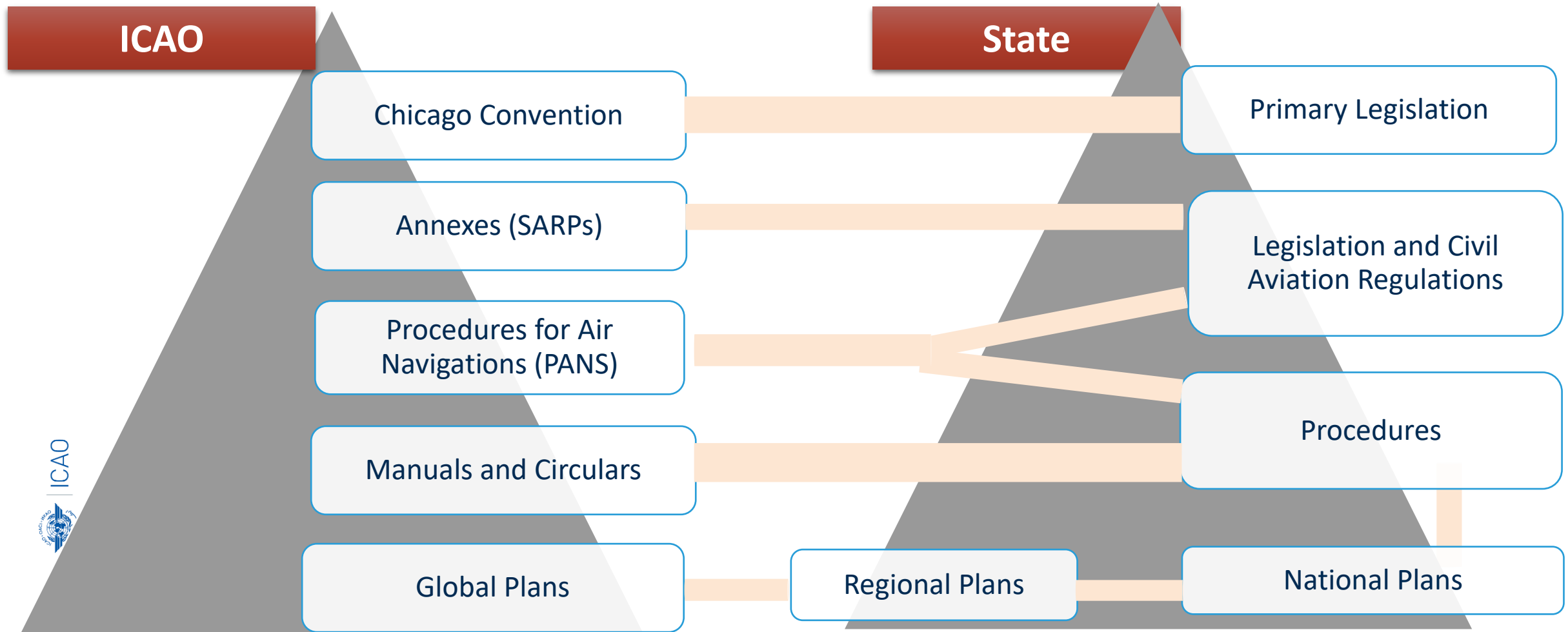
**Regional Groups
(PIRGs, RASGs, RASFGs)**

Secretariat

Headquarters:

1. Air Navigation Bureau
2. Air Transport Bureau
3. Legal Affairs and External Relations Bureau
4. Capacity Building and Implementation (CDI) Bureau
5. Administration Bureau (ADB)
6. Regional Offices

Documentation



ICAO Strategic Plan 2026-2050



ICAO Vision

A safe, secure and sustainable international civil aviation system that connects the world for the benefit of all nations and people. (3 aspirational goals)

ICAO Mission

To lead international civil aviation as a key driver of social and economic development while enhancing aviation safety, security, economic development and environmental sustainability for a growing aviation system by advancing air law, developing policies, plans and standards, monitoring and auditing, and supporting States' capabilities for the benefit of all nations and people.

01

The goal of Zero fatalities in international aviation from accidents and acts of unlawful interference.

02

The aspirational goal of Net-zero carbon emissions by 2050 for international aviation operations.

03

The goal of aviation to serve as an integral part of a thriving, connected, accessible, inclusive, and affordable transport system for people and goods, contributing to socio-economic development, while ensuring no country is left behind.

Strategic Goals

Every Flight Is Safe and Secure

Achieve zero fatalities and ensure continuous protection for air passengers, cargo, and staff.

No Country Left Behind

Enable achievement of safety, security, efficiency, and sustainability goals through collaboration and support

Aviation Is Environmentally Sustainable

Achieve net-zero carbon emissions by 2050 and mitigate aircraft noise and emissions.

The International Civil Aviation Convention and Other Treaties, Laws and Regulations Address All Challenges

Maintain responsive international air law addressing current and emerging challenges.

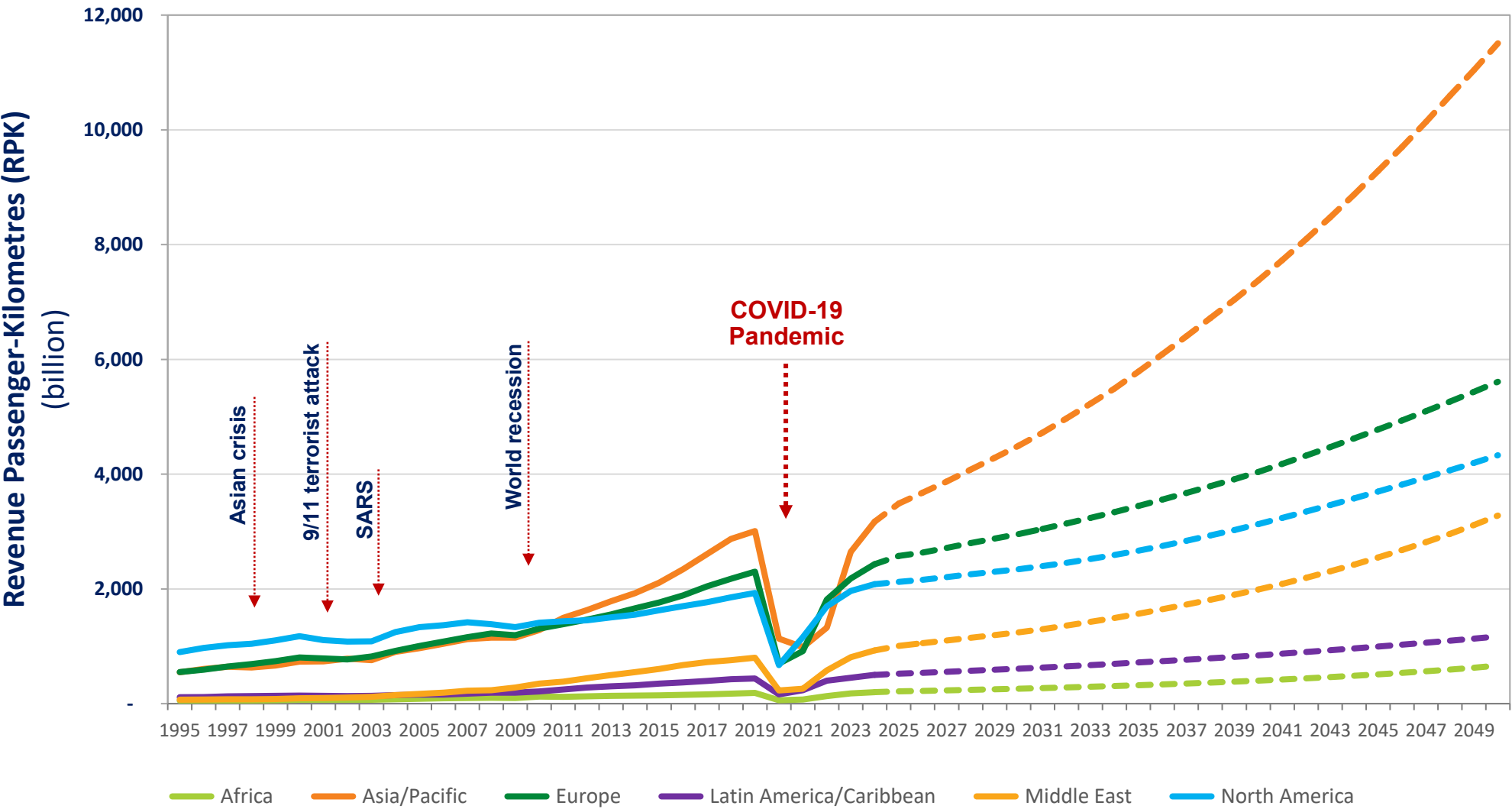
Aviation Delivers Seamless, Accessible, and Reliable Mobility for All

Facilitate seamless air navigation and travel through well-coordinated and affordable services.

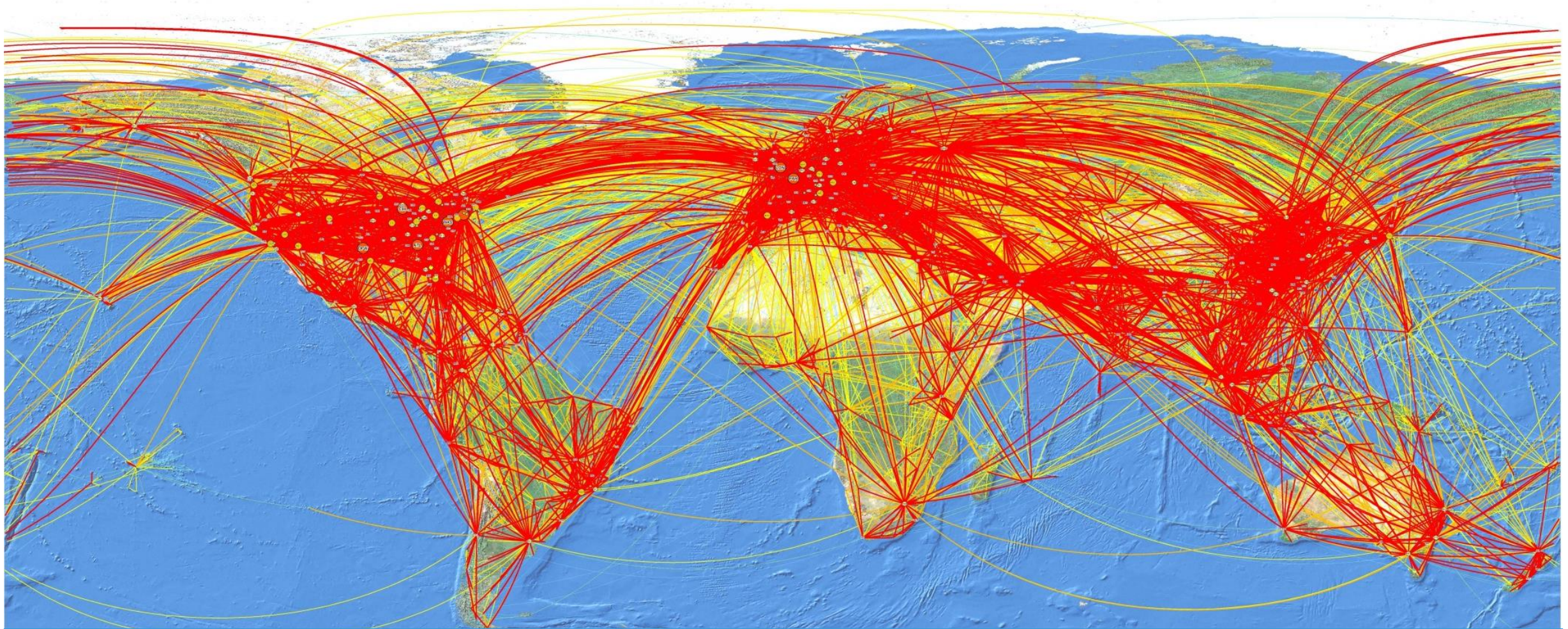
The Economic Development of Air Transport Assures the Delivery of Economic Prosperity and Societal Well-Being for All

Foster development of an economically viable aviation system delivering prosperity for all.

Global Traffic: The Pandemic and Recovery



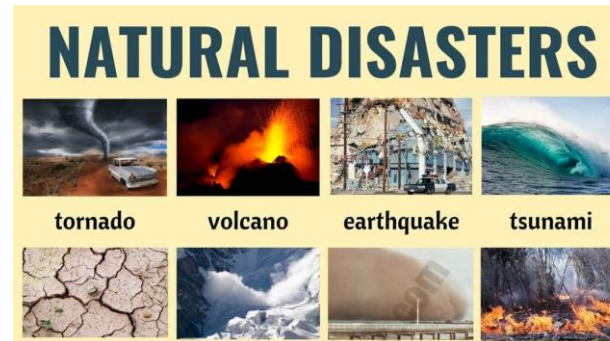
2040



TRAFFIC DENSITY

Crisis and Contingency Management

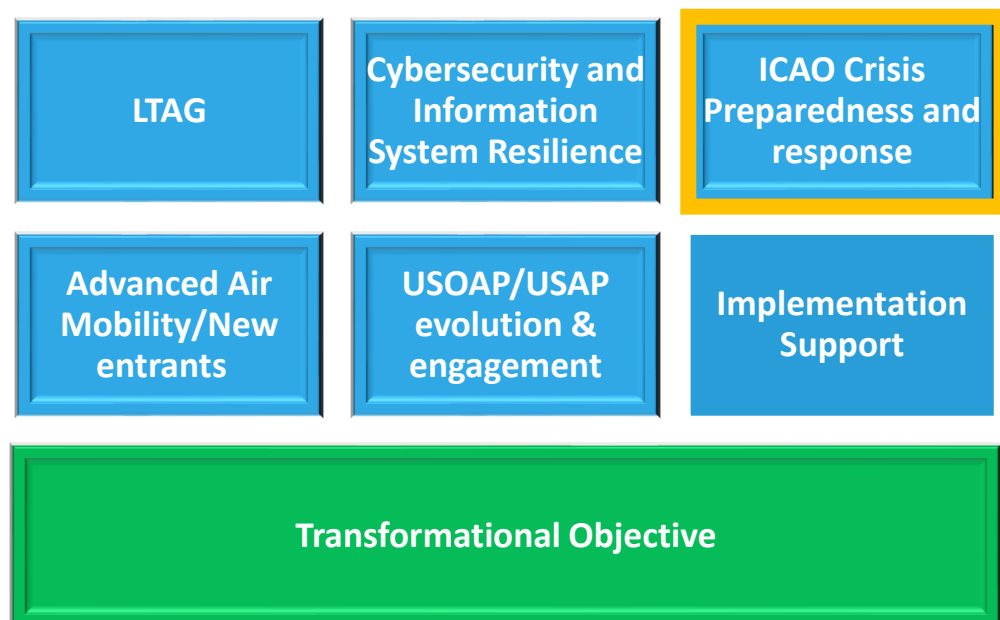
A crisis/contingency event can happen anywhere and
disrupt flight operations



In the ICAO Business Plan

Triennium 2023-2025

Priority Focus Areas approved by the ICAO Council



Current Triennium (2026-2028)

One of the Programmes under One Strategic Goal



**AVIATION DELIVERS
SEAMLESS,
ACCESSIBLE, AND
RELIABLE MOBILITY
FOR ALL**

Crisis Preparedness and Response

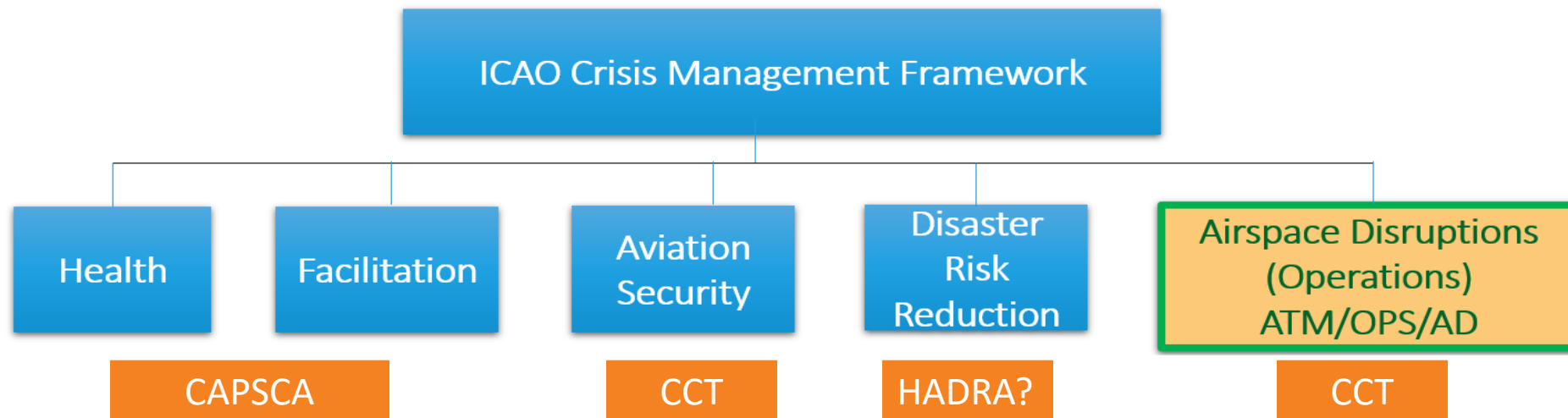
This programme envisages to create a comprehensive and adaptable crisis response programme within ICAO to help States meet obligations under the Chicago Convention and other sectors, improving crisis response capabilities for ATM disruptions, health emergencies, and humanitarian crisis

Purpose

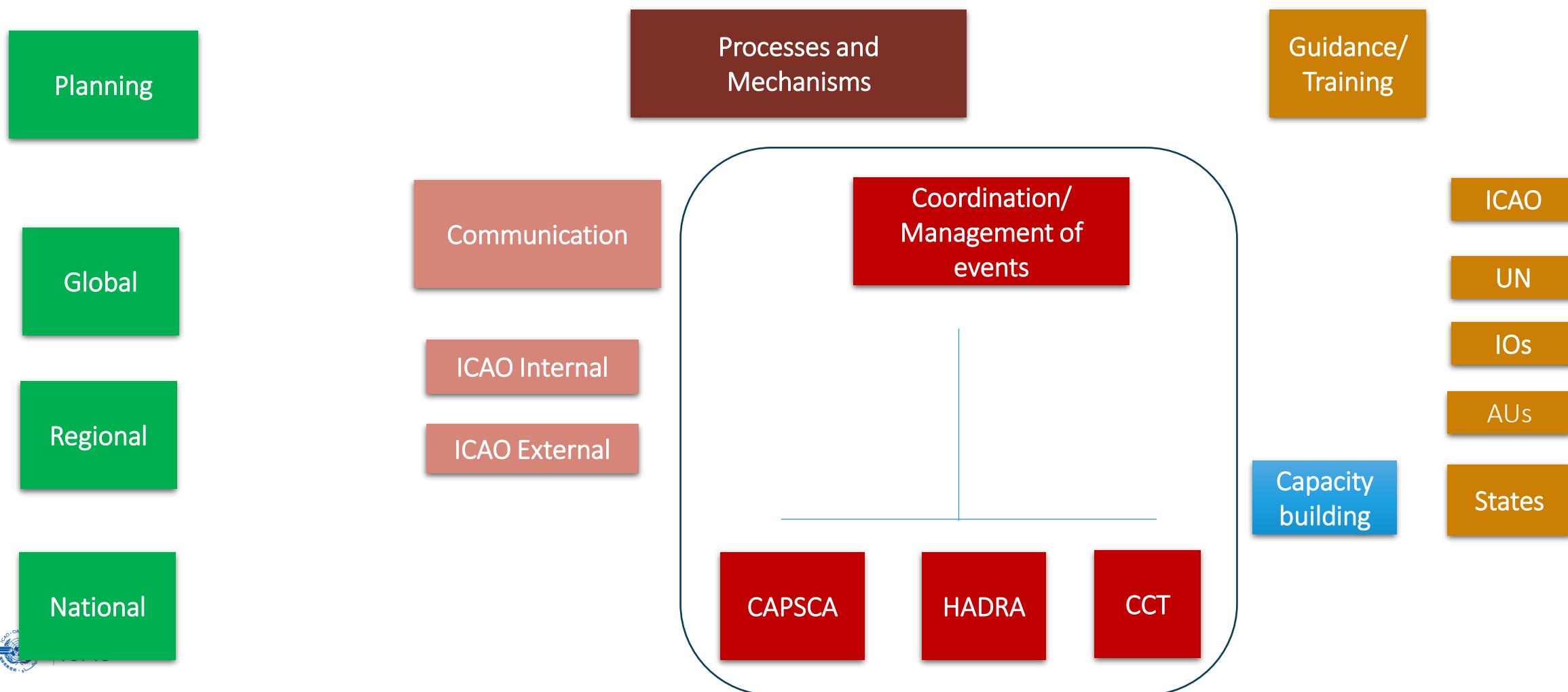
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- ✓ **Address the current crisis response challenges**, in such areas as governance, coordination and communication.
- ✓ **Improve response capabilities by States** in the face of various crises (e.g., pandemics, natural disasters) causing disruption, or potential disruption, of airport, air traffic and other related support services,
- ✓ **Improve preparedness of ICAO and the aviation-related entities** to respond to these diverse crises in a timely, efficient, coordinated and effective manner.

Initial proposed structure



ICMF



03

Harmonized Regional ATM Contingency Frameworks





Recommendation 1.1/2 – *Resilience of the air navigation system*

that ICAO:

c) together with States and industry, develop global guidance on air traffic management contingency management, including the recovery phase, as well as regional frameworks, to support the implementation of Annex 11 — Air Traffic Services.

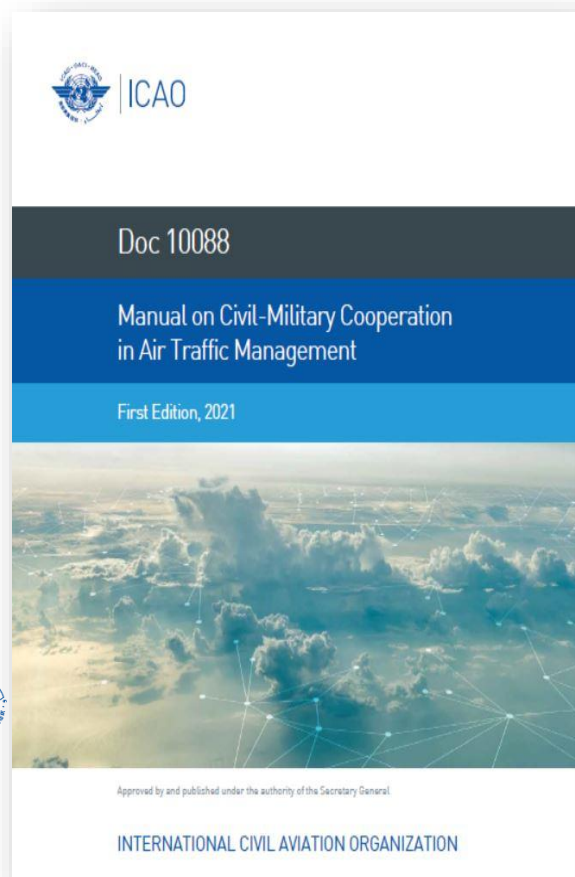
ICAO Global Requirement for Contingency Planning

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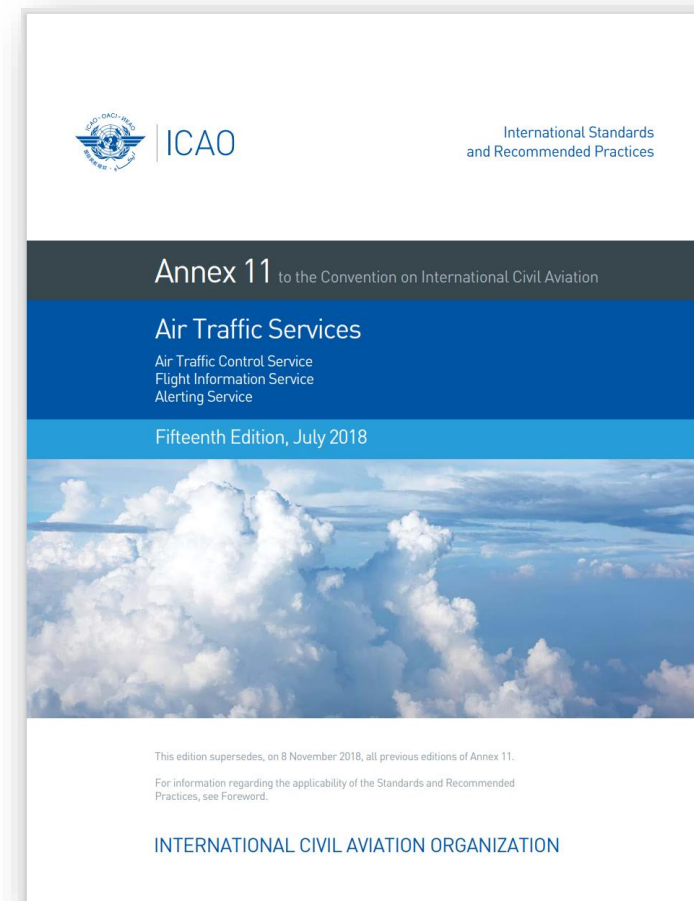
STANDARD in Annex 11 – *Air Traffic Services*

Guidance Material contained in **Attachment C** to Annex 11

But also other Manuals support the implementation of contingency arrangements



Regional ATM Contingency Plans

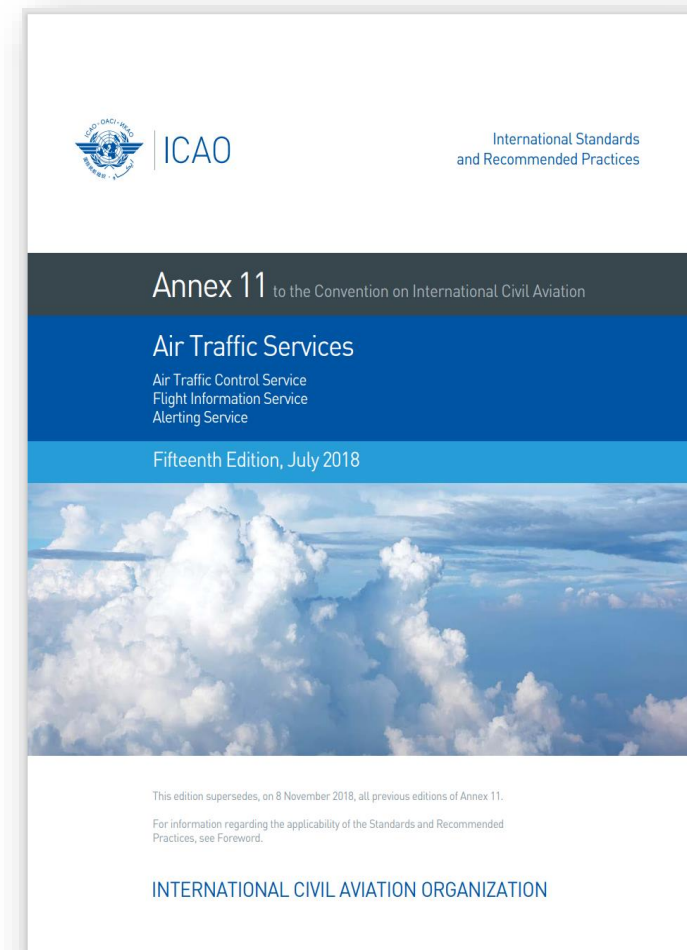


Annex 11 - 2.32 Contingency arrangements

Air traffic services authorities shall **develop and promulgate contingency plans** for implementation in the event of **disruption, or potential disruption**, of air traffic services and related **supporting services** in the airspace for which they are responsible for the provision of such services. Such contingency plans shall be developed **with the assistance of ICAO** as necessary, in **close coordination with** the air traffic services authorities responsible for the provision of services in **adjacent** portions of airspace and with airspace users concerned.

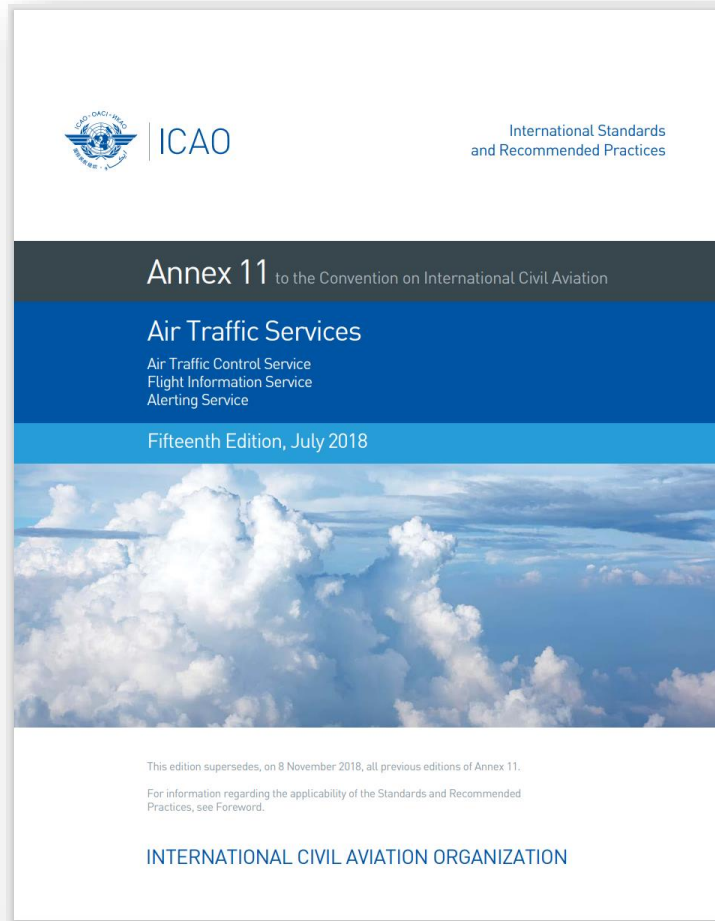
*Note 1.— **Guidance material** relating to the development, promulgation and implementation of contingency plans is contained in **Attachment C**.*

*Note 2.— Contingency plans may constitute a temporary deviation from the approved regional air navigation plans; such **deviations are approved**, as necessary, **by the President of the ICAO Council on behalf of the Council**.*



The CCT

Contingency Coordination Team



Described in Annex 11 Attachment C

A **coordinating team** should be designated within, or in association with, a central agency for the purpose of coordinating activities during the disruption.

1. Introduction

The **purpose** of the guidelines is **to assist** in providing for the **safe and orderly flow of international air traffic** in the event of **disruptions** of air traffic services and related supporting services and in **preserving** the availability of **major world air routes** within the air transportation system in such circumstances.

They set forth the **allocation of responsibility among States and ICAO for the conduct of contingency planning and the measures to be taken into consideration** in developing, applying and terminating the application of such plans.

The guidelines are **based on experience** which has shown, inter alia, that the effects of disruption of services in particular portions of airspace are likely to affect significantly the services in adjacent airspace, thereby creating a requirement for international coordination, with the **assistance of ICAO** as appropriate. Hence, **the role of ICAO** in the field of contingency planning and coordination of such plans is described in the guidelines.

They also reflect the experience that **ICAO's role in contingency planning must be global and not limited to airspace over the high seas and areas of undetermined sovereignty**, if the availability of major world air routes within the air transportation system is to be preserved.

They further reflect the fact that **international organizations concerned**, such as the International Air Transport Association (**IATA**) and the International Federation of Airline Pilots' Associations (**IFALPA**), are valuable advisers on the practicability of overall plans and elements of such plans.

2. Status of contingency plans

Contingency plans are intended to provide **alternative** facilities and services to those provided for in the regional air navigation plan when those facilities and services are temporarily not available.

Contingency arrangements are therefore **temporary in nature**, remain in effect only until the services and facilities of the regional air navigation plan are **reactivated** and, accordingly, **do not constitute amendments** to the **regional plan** requiring processing in accordance with the “Procedure for the Amendment of Approved Regional Plans”.

Instead, in cases where the contingency plan would **temporarily deviate from the approved regional air navigation plan**, such deviations are **approved**, as necessary, by the **President of the ICAO Council** on behalf of the Council.

3. Responsibility for developing, promulgating and implementing contingency plans

The State(s) responsible for providing air traffic services and related supporting services in particular portions of airspace is (are) also **responsible**, in the event of disruption or potential disruption of these services, for instituting measures to **ensure the safety of international civil aviation operations** and, where possible, for making provisions for **alternative facilities and services**. To that end the State(s) should **develop, promulgate and implement** appropriate contingency plans.

Such plans should be developed **in consultation with other States and airspace users** concerned and with **ICAO**, as appropriate, whenever the effects of the service disruption(s) are likely to affect the services in adjacent airspace.

The responsibility for appropriate contingency **action** in respect of airspace **over the high seas** continues to rest with the **State(s) normally responsible** for providing the services until, and **unless**, that responsibility is **temporarily reassigned by ICAO** to (an)other State(s).

4. Preparatory action

Time is essential in contingency planning if hazards to air navigation are to be reasonably prevented.

States should take **preparatory action**, as appropriate, for facilitating timely introduction of contingency arrangements. Such preparatory **action should include**:

- preparation of **general contingency plans** for introduction in respect of generally foreseeable events;
- **assessment of risk to civil air traffic** due to military conflict or acts of unlawful interference with civil aviation as well as a review of the likelihood and possible consequences of natural disasters or public health emergencies;
- **initial development** of special contingency plans in respect of **natural disasters, public health emergencies, military conflicts or acts of unlawful interference** with civil aviation that are likely to affect the availability of airspace for civil aircraft operations and/or the provision of air traffic services and supporting services;
- **monitoring of any developments** that might lead to events requiring contingency arrangements to be developed and applied;
- States should consider **designating persons/administrative units** to undertake such monitoring and, when necessary, to initiate effective follow-up action; and
- **designation/establishment of a central agency** which, in the event of disruption of air traffic services and introduction of contingency arrangements, would be able to provide, **24 hours a day**, up-to-date information on the situation and associated contingency measures until the system has returned to normal. A coordinating team should be designated within, or in association with, such a central agency for the purpose of coordinating activities during the disruption.

4. Preparatory action (Cont'd)

ICAO will be **available for monitoring** developments that might lead to events requiring contingency arrangements to be developed and applied and will, as necessary, assist in the development and application of such arrangements.

During the emergence of a potential crisis, a **coordinating team** will be established in the **Regional Office(s)** concerned and at **ICAO Headquarters** in Montreal, and arrangements will be made for competent staff to be available or reachable 24 hours a day.

The tasks of these teams will be to:

- **monitor continuously** information from all relevant sources;
- **arrange for the constant supply** of relevant information received by the State aeronautical information service at the location of the Regional Office and Headquarters;
- **liaise with international organizations** concerned and their regional organizations, as appropriate; and
- **exchange up-to-date information** with States directly concerned and States which are potential participants in contingency arrangements.

Upon analysis of all available data, authority for initiating the action considered necessary in the circumstances will be obtained from the State(s) concerned.

5. Coordination

A **contingency plan** should be **acceptable** to **providers and users of contingency services** alike, i.e. in terms of the ability of the providers to discharge the functions assigned to them and in terms of safety of operations and traffic handling capacity provided by the plan in the circumstances.

Accordingly, **States** which anticipate or experience disruption of air traffic services and/or related supporting services should **advise, as early as practicable, the ICAO Regional Office** accredited to them, and **other States** whose services might be affected. Such advice should include information on associated contingency measures or a request for assistance in formulating contingency plans.

Detailed **coordination requirements** should be determined by **States and/or ICAO**, as appropriate, keeping the above in mind. In the case of contingency arrangements not appreciably affecting airspace users or service provided **outside** the airspace of the (**single**) State involved, coordination requirements are naturally few or non-existent. Such cases are believed to be few.

In the case of **multi-State ventures**, detailed coordination leading to **formal agreement of the emerging contingency plan** should be undertaken with each State which is to participate. Such detailed coordination should also be undertaken with those States whose services will be significantly affected, for example by re-routing of traffic, and with international organizations concerned who provide invaluable operational insight and experience.

Whenever necessary to **ensure orderly transition** to contingency arrangements, the coordination referred to in this section should include agreement on a detailed, **common NOTAM text** to be promulgated at a **commonly agreed effective date**.

6. Development, promulgation and application of contingency plans ²⁵

Development of a sound contingency plan is dependent upon circumstances.

Sovereign airspace can be used only on the initiative of, or with the agreement or consent of, the authorities of the State concerned regarding such use. Otherwise, the contingency arrangements must involve bypassing the airspace and should be developed by adjacent States or by ICAO in cooperation with such adjacent States.

Airspace over the high seas or of undetermined sovereignty, development of the contingency plan might involve, depending upon circumstances, including the degree of erosion of the alternative services offered, temporary reassignment by ICAO of the responsibility for providing air traffic services in the airspace concerned.

Development of a contingency plan presupposes as much information as possible on current and alternative routes, navigational capability of aircraft and availability or partial availability of navigational guidance from ground-based aids, surveillance and communications capability of adjacent air traffic services units, volume and types of aircraft to be accommodated and the actual status of the air traffic services, communications, meteorological and aeronautical information services.

Notification, by NOTAM, of anticipated or actual disruption of air traffic services and/or related supporting services should be dispatched to users of air navigation services as early as practicable. The NOTAM should include the associated contingency arrangements. In the case of foreseeable disruption, the advance notice should in any case not be less than 48 hours.



Notification by NOTAM of discontinuance of contingency measures and reactivation of the services set forth in the regional air navigation plan should be dispatched as early as practicable to ensure an orderly transfer from contingency conditions to normal conditions.

Contingency Coordination Teams (CCTs)

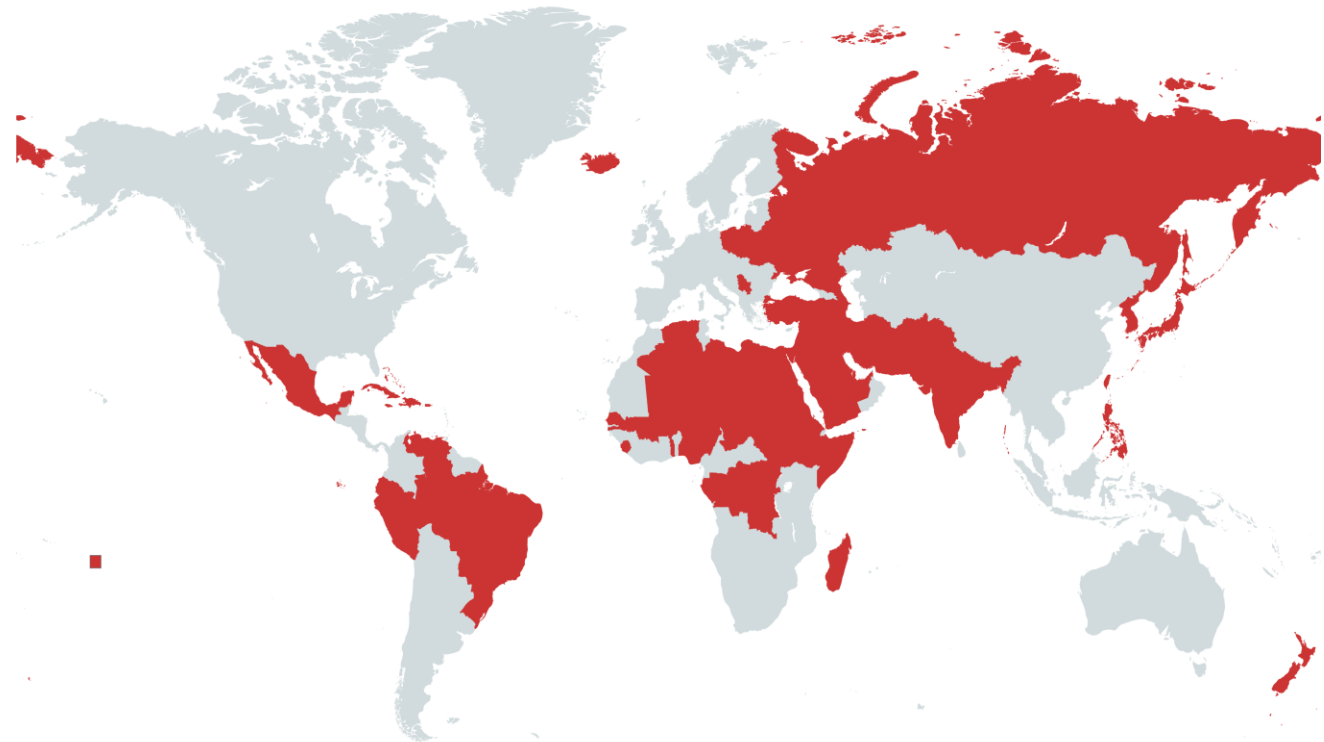
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CCTs objectives

- ✓ Part of the ATM Regional Contingency Plan endorsed by Planning and Implementation Regional Groups (PIRGs)
- ✓ Forum for **coordination** and **sharing** of information between stakeholders;
- ✓ Agree on **contingency arrangements**.
- ✓ Ensure the **safety** and **continuity** of flight operations in the event of **disruption** of ATS.

CCTs are:

- ✓ Established with specific **scope** and **size** depending on contingency event;
- ✓ Also **activated** in cases when **airspace users decide to circumnavigate** airspace(s) due to **conflict zones, weather**, etc., which might significantly increase the air traffic in other airspace(s).
- ✓ Used for the implementation of **recovery plans** for the **normalization** of flight operations.



Experience indicates a variety of issues:

Contingency response activities often:

- *without specific set priorities amongst the overall activities, and without specific resources;*
- *without active leadership, a command structure, coordination or communication strategy;*
- *sometimes starting with a blank sheet of paper or worse, an old out-of-date contingency plan;*
- *often utilizing staff without training and/or basic competencies.*

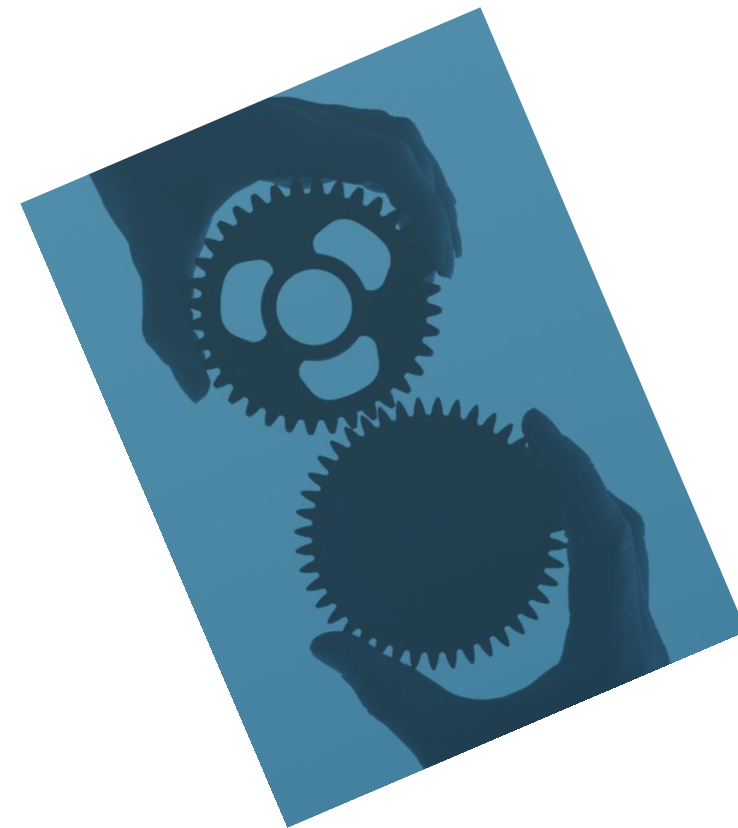
Leading to:

- *Uncoordinated, untimely, confused and even fruitless action.*
- *Non-compliance with ICAO Provisions.*
- *Reputational risk, or worse.*

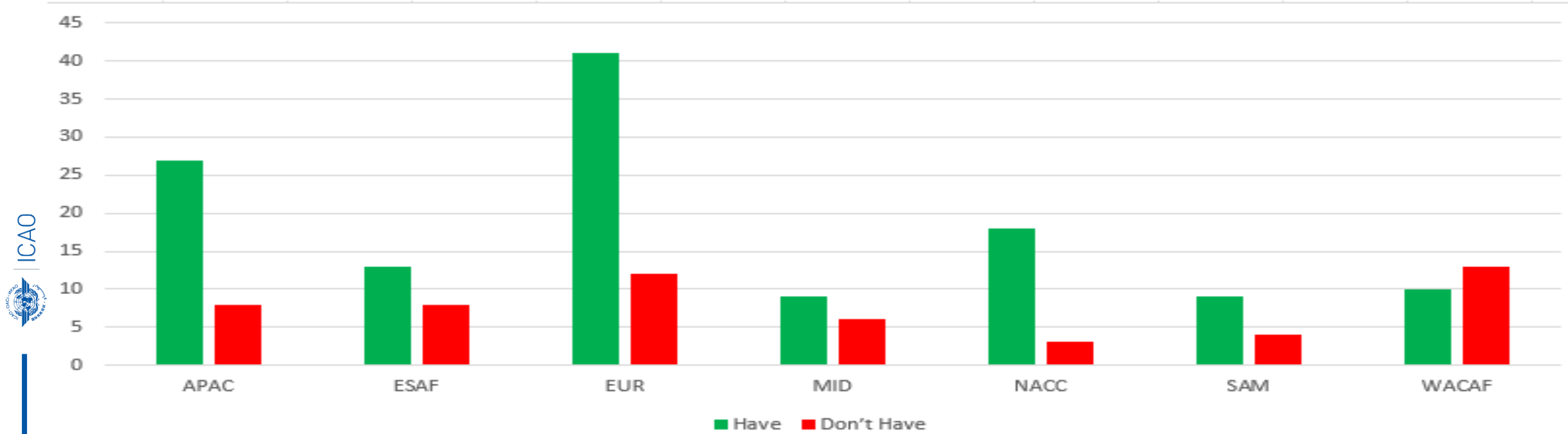
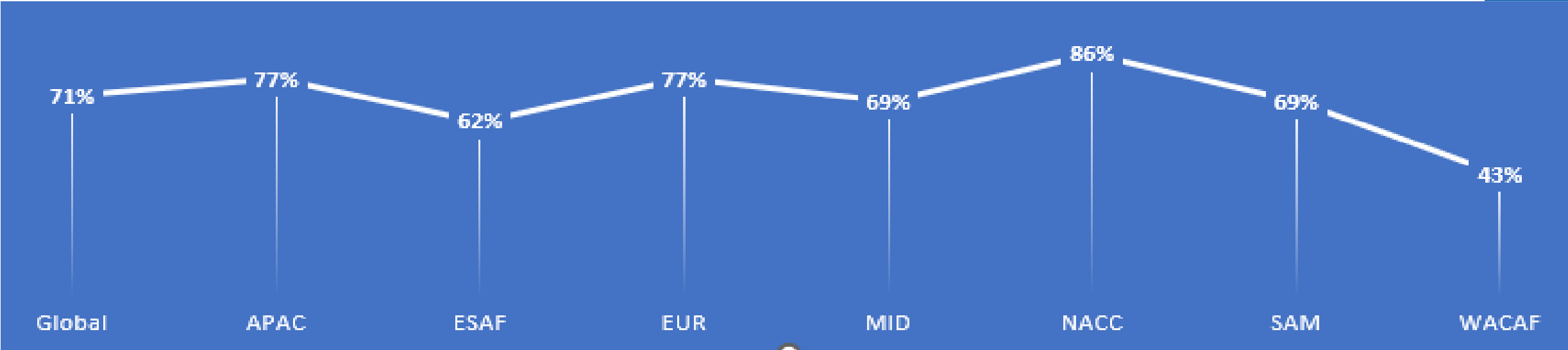


Many contingency plans – cover all the bases, but.....:

1. *Class G and no ATC, contingency routes activated.
And PANS-ATM separations will be applied
. And ATC services are to be provided by the adjacent ACC.*
2. *Normal ATC communications
and Traffic Information Broadcast by Aircraft (TIBA)
...and IATA Inflight Broadcast Procedure (IFBP).*
3. *Good contingency plan, but never activated. No or late NOTAMs, aircraft report major disruption.*
4. *Prior permission required (PPR) procedures are in effect but not available.
And Aircraft with PPR approval have ATC clearance cancelled on reaching the boundary or confusing instructions.*



ATS Contingency Plans Status



What makes a Contingency Plan useful ?

*Set of agreed **arrangements** to be applied during a contingency situation*

*Set of **procedures** for implementation under specific circumstances*

- It's a contingency playbook – and it needs to be designed as such.*
- It is a “procedures” document.*
- It's a pre-agreed measures*
- Keep it very, very simple.*

So we should **STOP calling it a plan and..**



From Planning to Arrangements and Procedures

Established **collaboratively** between adjacent ATS Units in consultation with AUs
They should provide for a timely response to a contingency event



Control is not enough

Management is a must.



Points to be considered

- ATS authorities shall develop contingency plans in the event of disruption or potential disruption of ATS and related services to ensure the continuity of the safe and orderly flow of international air traffic.
- Scope of contingency management: ATS vs ATM?
- Agreement with CM Cycle (Prepare, respond, recover, review)
- CM in the context of, crisis and disaster relief, airport operations/accessibility
- Resources should be allocated for CM
- Crisis/contingency response must be timely.
- Contingency Procedures and Arrangements should be established collaboratively
- Include Contingency Procedures and Arrangements in Training
- CCT and its role ensure collaboration between all parties concerned

Terms

ATM Contingency Plan – ATM includes ATS, ATFM and ASM

Contingency to refer to airspace disruption

Crisis to refer to something bigger or the major events

impacting traffic flows

Emergency: impacting facility or aircraft

Contingency Events

ACG: ATM Contingency Group

CCC: Contingency Coordination Committee

CCT: Contingency Coordination Teams

Framework vs Plan

Level 1, 2 and 3 refer to the scale of a contingency event.

Categories A to F identify the scope of the event and its potential impact on traffic flows.

ATM Contingency Planning Principles

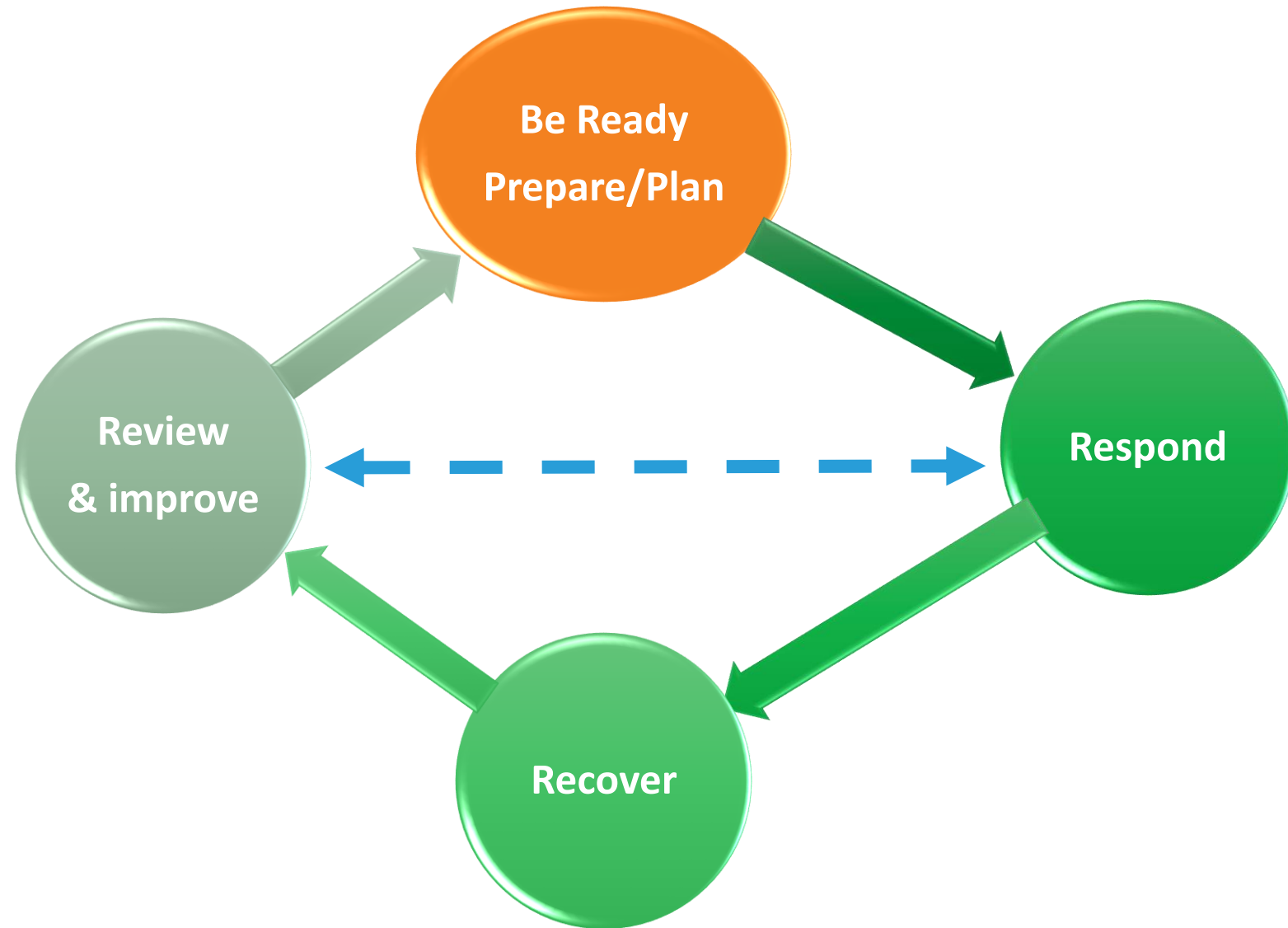
Basic Plan Elements

Contingency Events

- ATM system failure
- GNSS spoofing
- Industrial action
- Pandemic
- Facility incidents
- Military activity
- Earthquake
- Nuclear emergency
- Adverse weather
- Volcanic Ash
- Etc.

Proposed ATM Contingency Management (CM) Cycle

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Two main conditions defining the scope, scale, and impact of contingency events:

1- ATS (Normal, Degraded, or Zero)

2- Airspace (Available, Limited, Not available)

Levels of Contingency Response

The following are the three levels describing the management **scale** of a contingency event in a Region:

- **Level 1:** contingency within the State's delineated FIR(s) that can be managed locally;
- **Level 2:** cross-border contingency requiring collaboration between two adjacent States; and
- **Level 3:** sub-regional or regional contingency requiring collaboration of more than two States.

The following are the categories that identify the scope of a contingency event and its potential impact on traffic flows.

These categories are based on combinations of airspace availability and status of air traffic services:

- Events that would affect to some extent the provision of ATS. In this kind of events traffic will have access to the whole FIR, however, ACC will have a limitation in providing services as normal.
- Events that would limit access to a portion of the airspace, accordingly, ATS will have to accommodate the traffic in the available airspace through the introduction of changes to the ATS route structure.
- Events that will have major limitation on the airspace availability. This kind of event require procedures to circumnavigate traffic away from the affected airspace taking into consideration the limitation of the ATS..
- Events impacting the provision of ATC services but other ATS will remain available or arranged for.
- Events that result in no ATS could be provided, however, traffic might still have access or operate within, to or from the affected airspace. This will require arrangements by neighboring ACCs to reroute traffic avoiding the affected airspace.
- Events render the whole FIR not available.

Category A – Airspace Available and ATS Degraded – ATC available with limitations.

Category B – Airspace Partially Available and ATS Normal.

Category C – Airspace Partially Available and ATS Degraded – ATC available with limitations.

Category D – Airspace Available or Partially Available and ATS Degraded – FIS and Alerting service available.

Category E – Airspace Available or Partially Available and ATS Degraded – ATS Zero

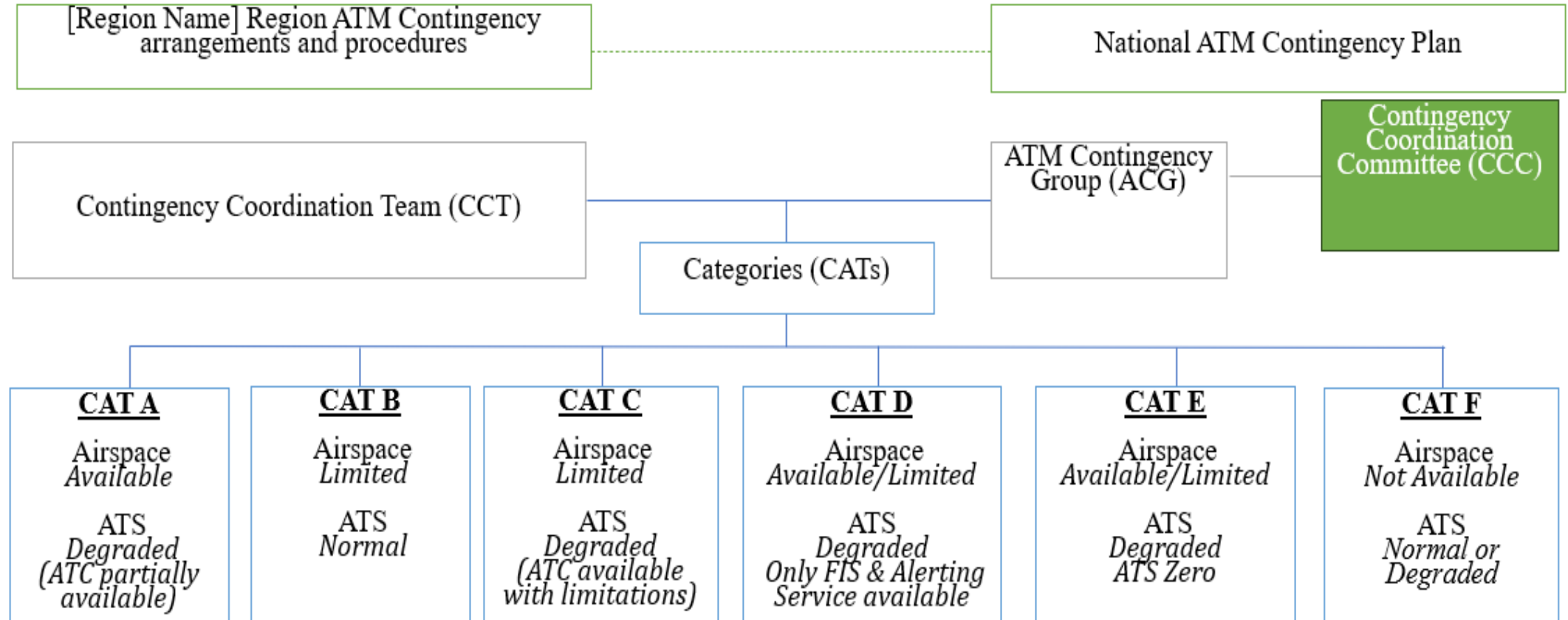
Category F – Airspace Not Available or Avoided by airlines and ATS Normal or Degraded

	ATS Normal	ATS Degraded – ATC Available with Limitations	ATS Degraded – FIS and Alerting Service Available	ATS Degraded – ATS Zero
Airspace Available	Normal Situation	CAT A	CAT D	CAT E
Airspace Partially Available	CAT B	CAT C	CAT D	CAT E
Airspace NOT Available	CAT F	CAT F	CAT F	CAT F

APAC Region ATM Contingency Framework

Regional

National



Contingency Arrangements and Procedures (CA) to be established for each category to be denoted as CA-A1, CA-A2, CA-B1, CA-D3, etc.

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1. Development of the Contingency Plan:

- How the plan is developed, agreed to and authorized
- Is it developed in collaboration with airspace users, military authorities, and adjacent FIRs.

2. Airspace arrangements:

- Utilizing existing ATS routes during disruptions, or contingency routes, FLAS, ATFM measures, etc. ?

3. ATS Contingency Procedures:

- Specific procedures for ATS during disruptions (e.g., volcanic ash, severe weather, military activity).

4. Pilots and Operator Procedures:

- Guidance for pilots and operators during contingency situations.

5. Communication Procedures:

- How information is disseminated to relevant parties.

6. Aeronautical Support Services:

- Support services available during contingencies (AIS, CNS, MET, SAR, etc).

7. TRAINING and more TRAINING and EXERCISES

Milestones

- ✓ Regional ATM CM Workshops for 2026
 - MID: February 2026
 - NACC and SAM: June 2026
 - APAC: July 2026
 - AFI: Sep 2026
- ✓ Finalization of the framework and presentation to relevant PIRGs for endorsement in 2026-2027
- ✓ The draft Global Crisis Management Framework is envisaged to be ready by end of 2026.

Thank You

