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What is the GASP?

- Global strategy for safety improvement
- Framework for regional & national plans
- Promotes harmonization & coordination of efforts





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Comprehensive Process

GASP-SG
AHWG

SANIS

**State
Consultation**

AN-Conf

ANC

Council

**State
Consultation**

Assembly





Basic Principles for 2020-2022 Edition

- Contains vision, mission and values
- Restructured in different parts
- Clearly delineates responsibilities
- Aspirational Goal + Goals, Targets & indicators
- Applies risk-based approach (HRC)
- Roadmap more predominant





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GASP Vision

To achieve and maintain the goal of zero fatalities in commercial operations by 2030 and beyond



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GASP Mission

To continually enhance international aviation safety performance by providing a collaborative framework for States, regions and industry



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GASP Values

GASP values include:

- ✓ promoting positive safety culture
- ✓ promoting sharing & exchange of safety information
- ✓ taking data-driven decisions
- ✓ prioritizing actions through risk-based approach



GASP Goals, Targets & Indicators





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6 Proposed GASP Goals

1. Achieve continuous reduction of ops safety risks
2. Strengthen States' safety oversight capabilities
3. Implement effective State safety programmes
4. Increase collaboration at regional level
5. Expand the use of industry programmes
6. Ensure appropriate infrastructure is available to support safe ops





**ZERO
FATALITIES**

Our
Aspirational
Safety Goal

Conte



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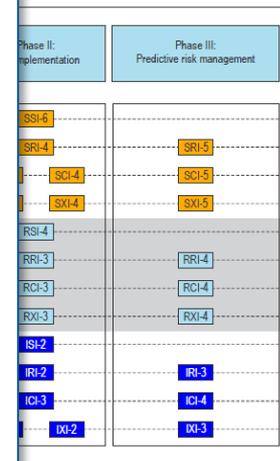
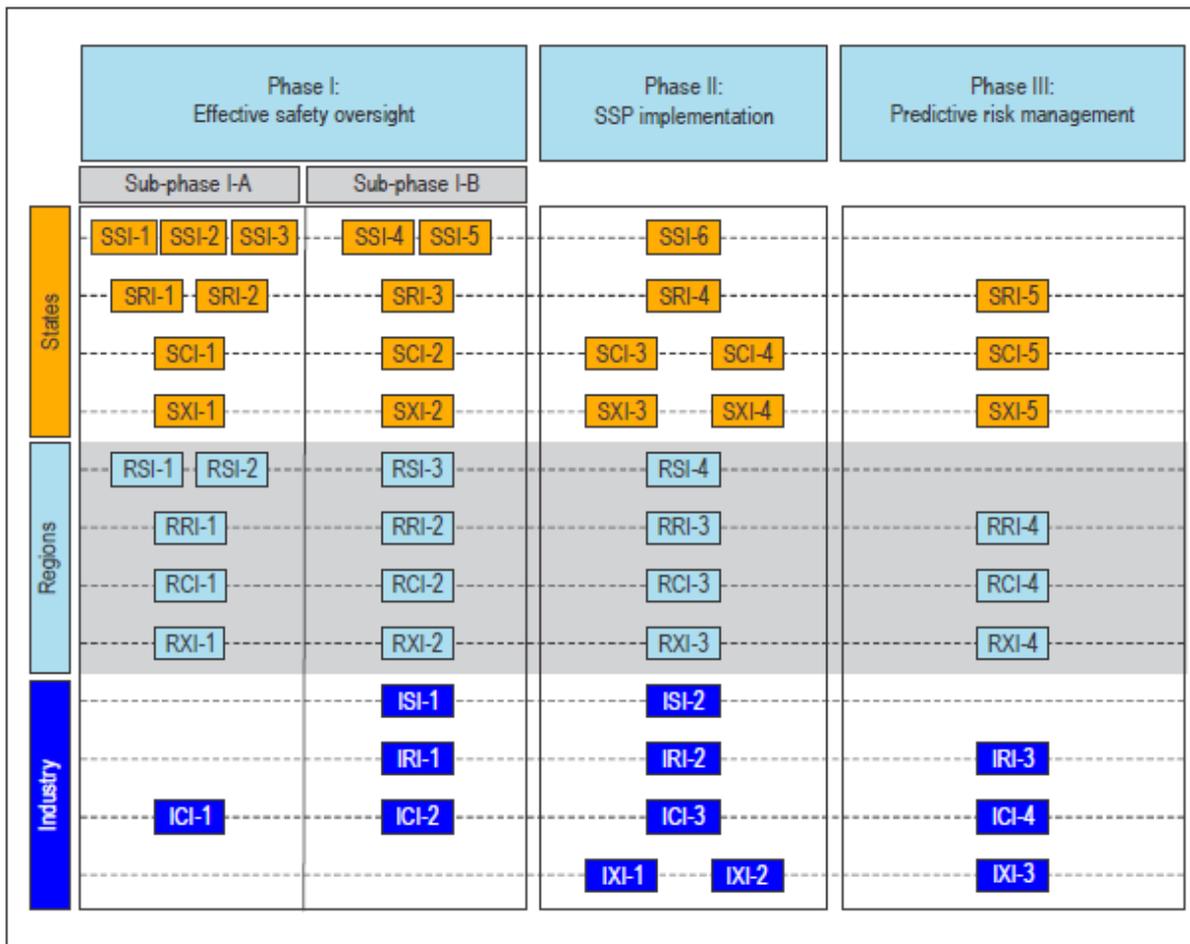
Global Aviation

2017-2019



Approved by and published under the authority of the

INTERNATIONAL



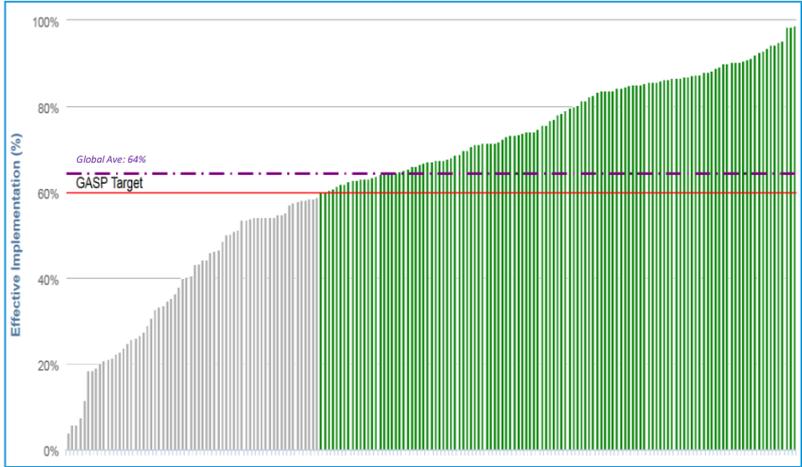
ion safety diagram

Figure A-2. Global aviation safety roadmap diagram



PROPOSAL FOR NEXT GASP

Effective Implementation

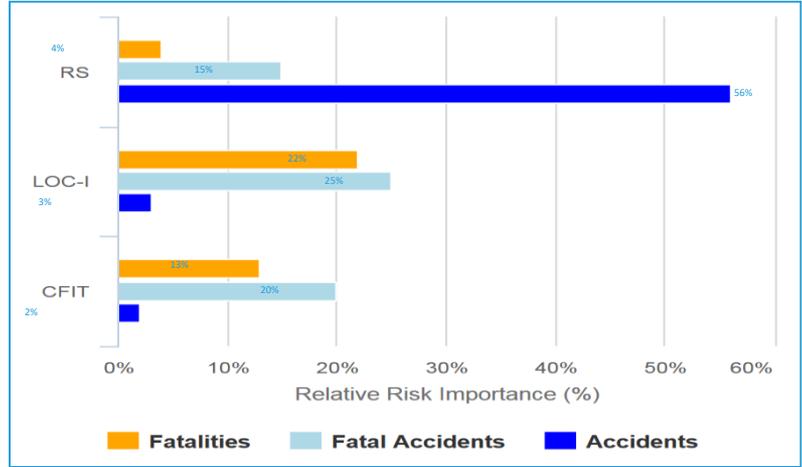


USOAP Audit Results



GANP
ASBU
BBBs

Operational Risks



Scheduled Commercial flights on airplanes above 5.7t 2012-2016

TARGET 4.1	TARGET 2.1	TARGET 2.2	TARGET 3.1	TARGET 3.2	TARGET 6.1	TARGET 1.1	TARGET 5.1	TARGET 5.2	TARGET 4.2	TARGET 4.3
ICAO Recognized functions	Implement Safety Oversight	Positive Safety Margin	Sustainable SSP	Effective SSP	Appropriate Infrastructure	Reduced Accident rate	INDUSTRY assessment programmes	Harmonized KPIs in SMS	Safety risk information to RASG	RASG Risk mgmt. activities
2020	2022+	2022	2022	2025	2022	Yearly	2020	2022	2022	2022



PROPOSAL FOR NEXT GASP

Effective Implementation

BBBs

Operational Risks

States that need support in areas with safety margins below zero, to use a RSOO mechanism or another recognized	All States to improve their score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system as follows:	All States to reach a positive safety margin, in all categories	All States to implement the foundation of a State Safety Programme (SSP)	All States to implement an Effective SSP, as appropriate to their aviation system complexity	All States to implement the air navigation and airport core infrastructure	Maintain a decreasing trend of global accident rate	Increase the number of service providers participating in the corresponding, ICAO-recognized industry	All service providers to use globally harmonized SPIs, as part of their safety management systems (SMS)	All States to contribute information on safety risks, including SSP performance indicators (SPIs), to their respective Regional (RASG)	All States with a positive safety margin, and an Effective SSP, to actively engage in RASG's risk management
TARGET 4.1	TARGET 2.1	TARGET 2.2	TARGET 3.1	TARGET 3.2	TARGET 6.1	TARGET 1.1	TARGET 5.1	TARGET 5.2	TARGET 4.2	TARGET 4.3
ICAO Recognized functions	Implement Safety Oversight	Positive Safety Margin	Sustainable SSP	Effective SSP	Appropriate Infra-structure	Reduced Accident rate	INDUSTRY assessment programmes	Harmonized KPIs in SMS	Safety risk information to RASG	RASG Risk mgmt. activities
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Recent Developments

- **ANC Final Review**
 - April 2019
- **Council Approval**
 - May 2019
- **Issue WP for A40 (WP/51)**
 - June 2019
 - With final 2020-2022 GASP
- **Feedback, email: GASP@icao.int**



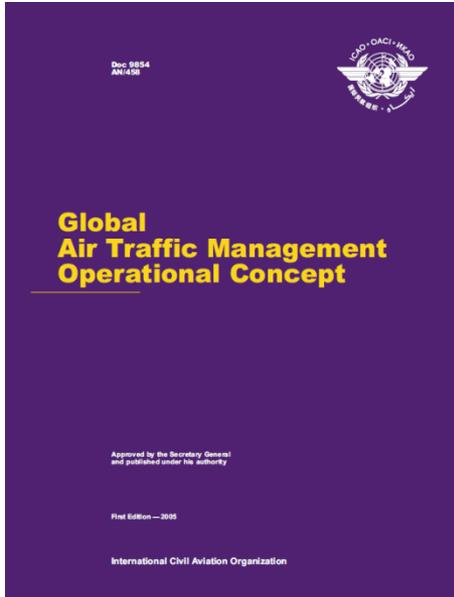


Global Air Navigation Planning (GANP)

- The vision
- A Plan to realize the vision
- Collaboration
- A look to the future
- Opportunity
- Conclusion



The Vision



To achieve an **interoperable** global air traffic management system, **for all users during all phases of flight**, that meets agreed levels of **safety**, provides for **optimum economic operations**, is **environmentally sustainable** and meets **national security requirements**



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CONVENTION
ON
INTERNATIONAL
CIVIL AVIATION
DONE
AT CHICAGO
ON THE
7TH DAY OF DECEMBER
1944





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Global Air Navigation Planning

A PLAN TO REALIZE THE VISION





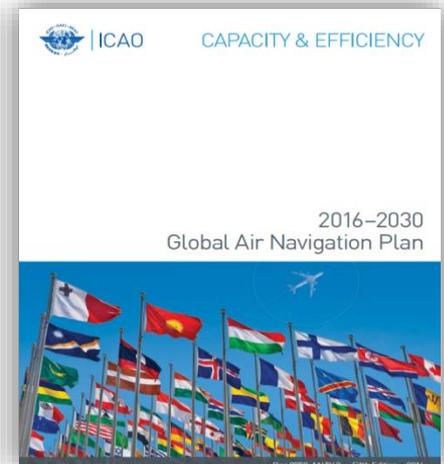
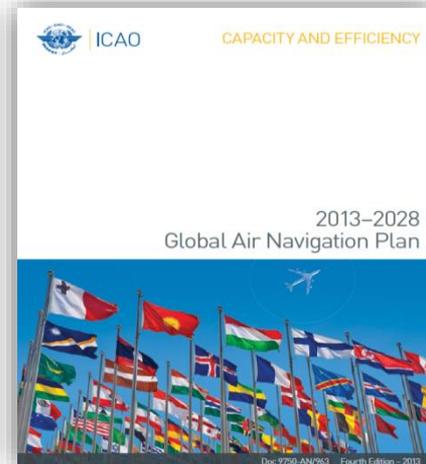
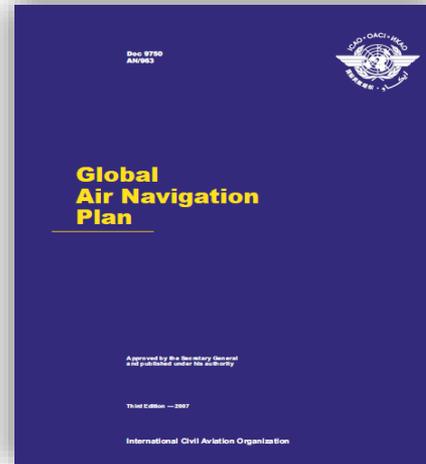
Global Air Navigation Planning

2002

2007

2013

2016





GANP 2013

“Increase the capacity and improve the efficiency of the global civil aviation system”

- Through the **GANP**, offer a long-term vision to assist all aviation stakeholders, and ensure continuity and harmonization among modernization programmes
- Through the **Aviation System Block Upgrades (ASBU)**, provide a consensus-driven modernization framework for integrated planning based on performance

The image shows the cover of the 2013-2028 Global Air Navigation Plan (GANP) and a diagram of the Aviation System Block Upgrades (ASBU) framework. The GANP cover features the ICAO logo, the title "CAPACITY AND EFFICIENCY", and the subtitle "2013-2028 Global Air Navigation Plan". The ASBU diagram is a grid with four rows representing Performance Improvement Areas and four columns representing Block Upgrades (Block 0, Block 1, Block 2, and Block 3). The rows are: Airport Operations, Globally Interconnected Systems and Data, Optimum Capacity and Flexible Flights, and Efficient Flight Paths. The columns are: Block 0 (2015), Block 1 (2018), Block 2 (2020), and Block 3 (2028 onward). The diagram shows a progression of improvements across the blocks, with Block 3 representing the most advanced state.

Performance Improvement Area	Block 0 (2015)	Block 1 (2018)	Block 2 (2020)	Block 3 (2028 onward)
Airport Operations	2x2 grid	3x2 grid	3x2 grid	3x2 grid
Globally Interconnected Systems and Data	2x2 grid	3x2 grid	3x2 grid	3x2 grid
Optimum Capacity and Flexible Flights	2x2 grid	3x2 grid	3x2 grid	3x2 grid
Efficient Flight Paths	2x2 grid	3x2 grid	3x2 grid	3x2 grid



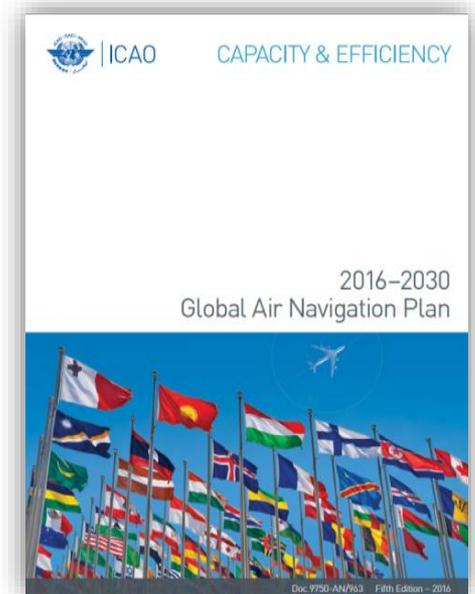
GANP 2016

- **Objectives**

- **International and overarching framework** of a global investment plan: make it more usable towards implementation
- Keep it **stable** while making the necessary updates/additions
- Adjust the **periodicity** to the Assembly and ICAO editing cycles

- **A Planning Document for Implementation**

- GANP should serve as a comprehensive planning tool to **support the development and implementation** of a harmonized global air navigation system

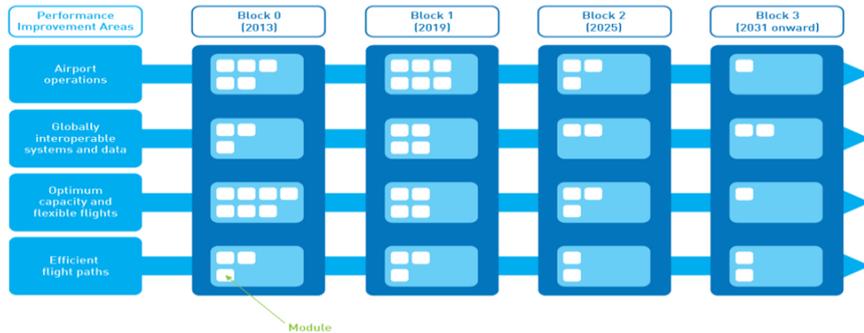




Aviation System Block Upgrades Framework

- Global interoperable scalable implementation enabled by technological innovation

“ONE SIZE DOES NOT FIT ALL”





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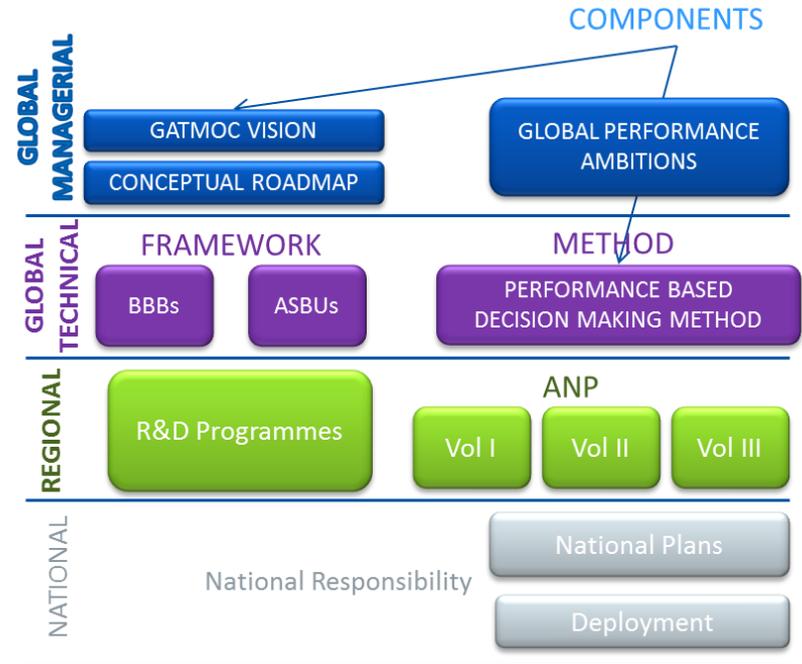
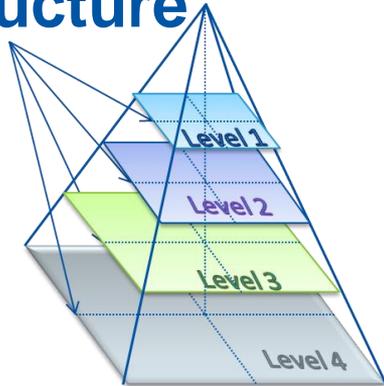




Proposals for Enhancement

2019 Update of GANP:

Creating a Multilayer Structure





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Main Goals of the 2019 GANP

- **Evolution of the global air navigation system**
 - Promote investment in **innovation** through research and development activities
 - Align Regional **Research and Development Programmes**
- **Support implementation**
 - **ASBU framework**
 - Alignment global, regional and national planning
 - **Performance-based** decision making method
 - Optimize **allocation and use of resources** for air navigation



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Main Purpose

- **ENHANCE THE PERFORMANCE OF THE AIR NAVIGATION SYSTEM**
 - High social visibility
 - Safety
 - Security / Resilience
 - Environment
 - Medium social visibility: Operational
 - Capacity
 - Efficiency
 - Predictability
 - Flexibility
 - Cost- Effectiveness
 - Low social visibility: basis
 - Access and equity
 - Interoperability
 - Participation by the ATM community

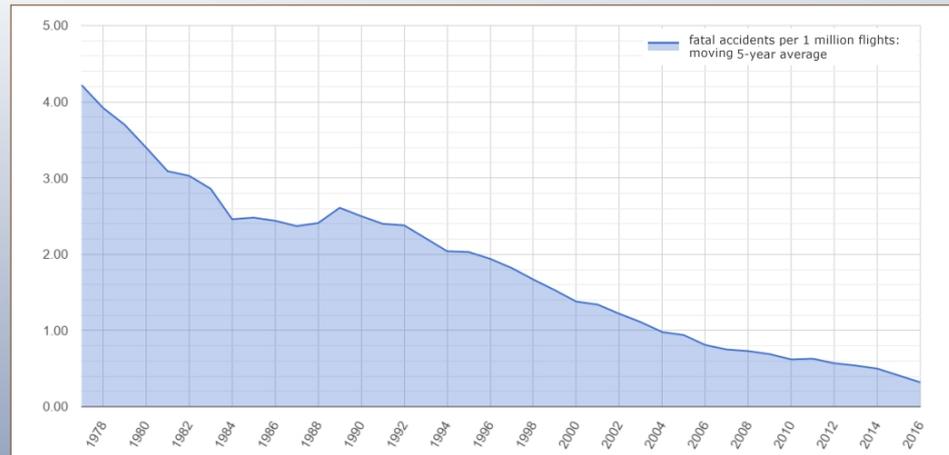


social well-being all peoples of the world

- More quiet
- Cleaner
- Safer
- More resilient
- More profitable



Airliner Accidents Per 1 Million Flights 1977-2016



Statistics are based on all worldwide fatal accidents involving civil aircraft with a minimum capacity of 14 passengers, from the ASN Safety Database <https://aviation-safety.net>





Collaboration is key to succeed

- **“No State or stakeholder left behind”**
 - Regulators, air navigation service providers, aerodrome operators, airspace users
- **Advantages**
 - Achievement expected results
 - Maximize benefits
 - Optimum use and allocation of resources





A future full of opportunities

- **Upper atmosphere**
 - Balloons, RPAS, space activities
 - Single homogenous region
- **Low density areas**
 - Different type of aircraft
 - Different missions
- **High density areas**
 - Traffic will continue to increase
 - Same or enhanced level of performance expected





Manned vs. Unmanned traffic



- + 362,000 aircraft
- 23,000 airliners
- Growth of 750 /year



- + 4,000,000 drones
- Expected 400k commercial
- Growth of 150,000 /year



In a time of change...

- Transformational change is needed

- Information Management
 - Digital data MET, AI, FICE,...
 - Information exchange over IP
- Management by trajectory
 - Time based management
 - Synchronization
 - Automation





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Global Aviation Safety & Air Navigation Update

Upcoming Event

40th Assembly

Montreal, Canada

24 September – 4 October 2019



ICAO UNITING AVIATION

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THANK YOU!