



ICAO

UNITING AVIATION

CELEBRATING 70 YEARS OF
THE CHICAGO CONVENTION

70



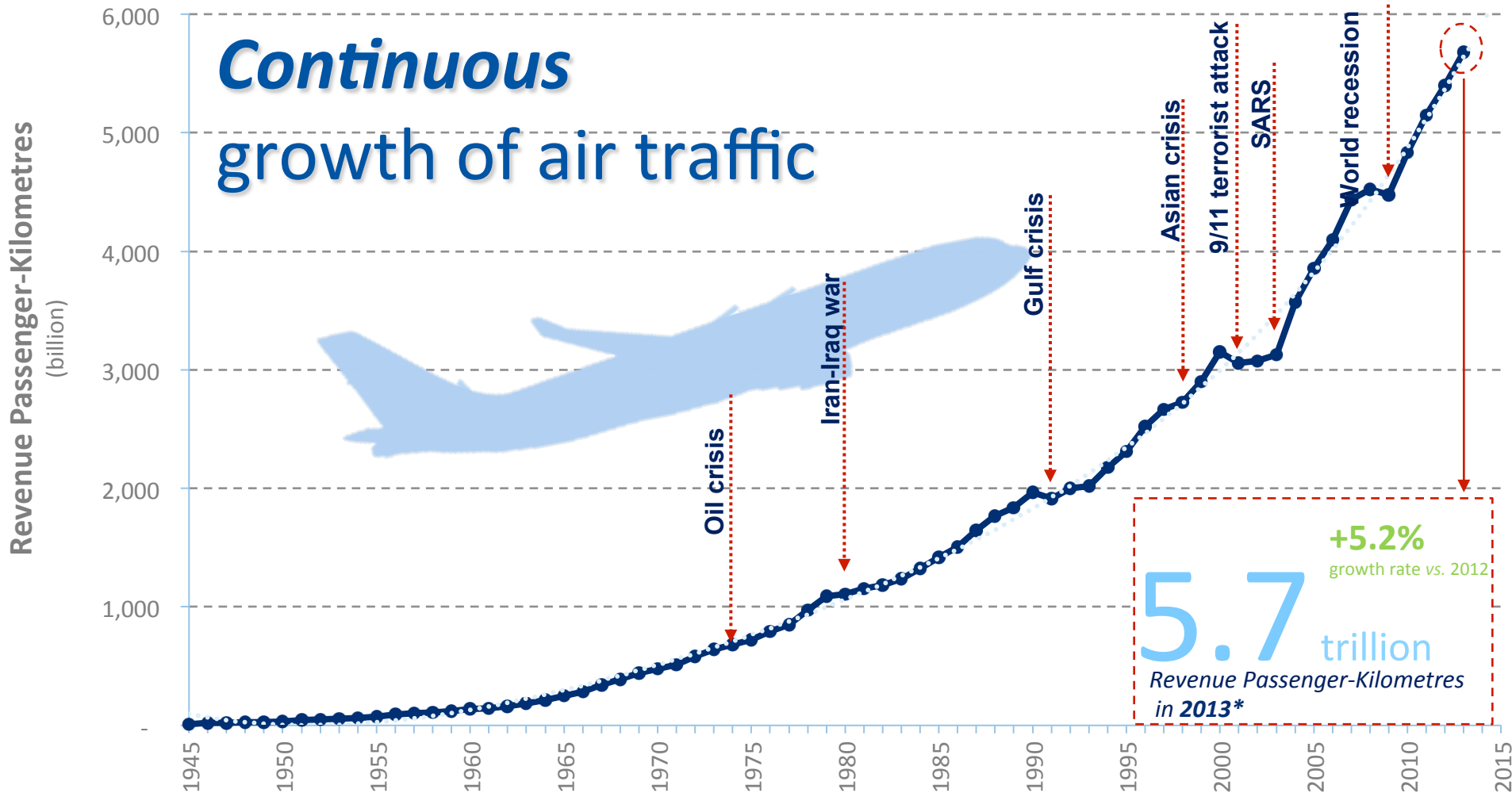
Global Air Navigation Plan: Innovation and Best Practices

Chris Dalton

Chief, Airspace Management and Optimization
International Civil Aviation Organization

*Global Aviation Cooperation Symposium
1 October 2014*

Continuous growth of air traffic



Note: world total scheduled services

*preliminary results



Air Transport in 2013*

3.1 billion
+5%
vs 2012

Passengers carried

32 million
vs 31 million
in 2012

Aircraft departures

5.7 trillion
+5.2%
vs 2012

Revenue Passenger-Kilometres

184 billion
+1%
vs 2012

Freight Tonne-kilometres

Note: world scheduled services

*preliminary results

Challenges

- Current and projected **traffic growth**
- Rapid evolution of **technology** and complex SARPs
- **Training and re-training** of personnel
- Insufficient **financial and human resources** worldwide
- Existing **deficiencies**
- Political, institutional and legal



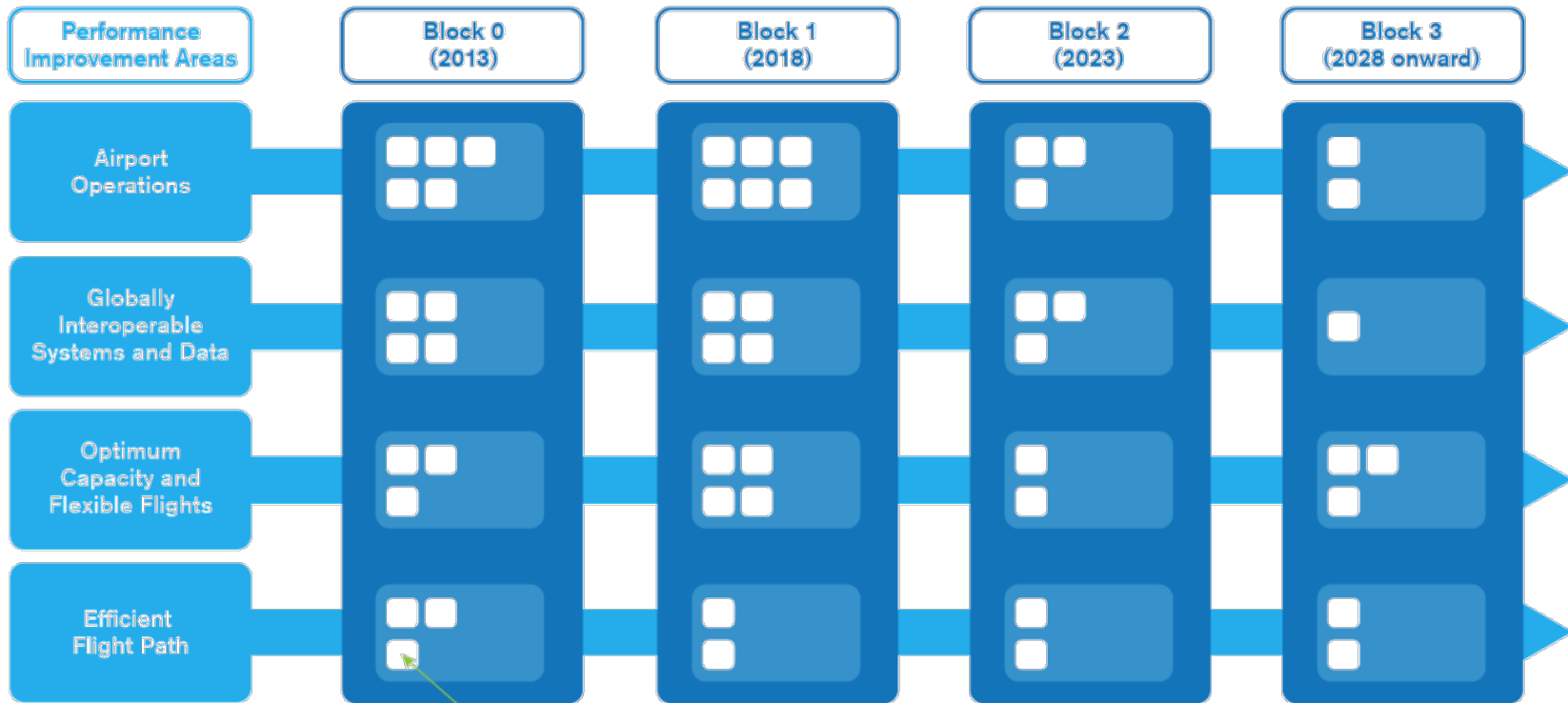


Global Air Navigation Plan: Innovation and Best Practices

CREATE A PLAN

Global Air Navigation Plan (GANP)

Objectives and Priorities



PRIORITIES

PERFORMANCE BASED NAVIGATION (PBN)

CONTINUOUS DESCENT AND CLIMB OPERATIONS (CDO/CCO)

COLLABORATIVE DECISION-MAKING (CDM & A-CDM) & ATFM

ICAO's Role in ATM Modernization

STRATEGIC OBJECTIVE ②



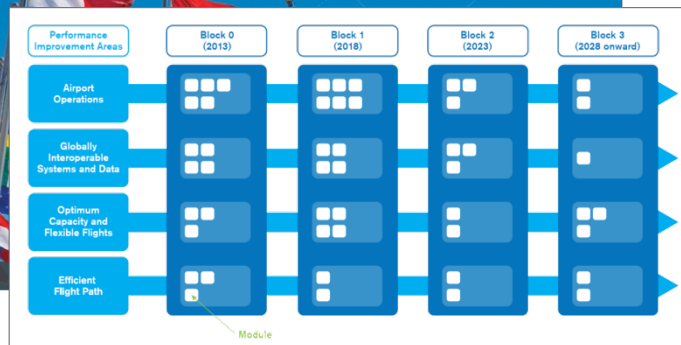
ICAO

CAPACITY AND EFFICIENCY

2013–2028
Global Air Navigation Plan

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

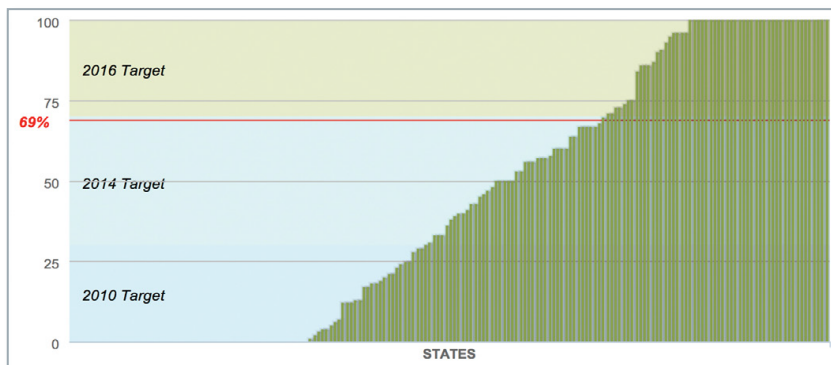
- Through the **GANP**, offer a **long-term vision** to assist **all aviation stakeholders**, and ensure **continuity** and **harmonization** among modernization programmes
- Through the **Aviation System Block Upgrades (ASBU)**, provide a consensus-driven **modernization strategy** for integrated planning



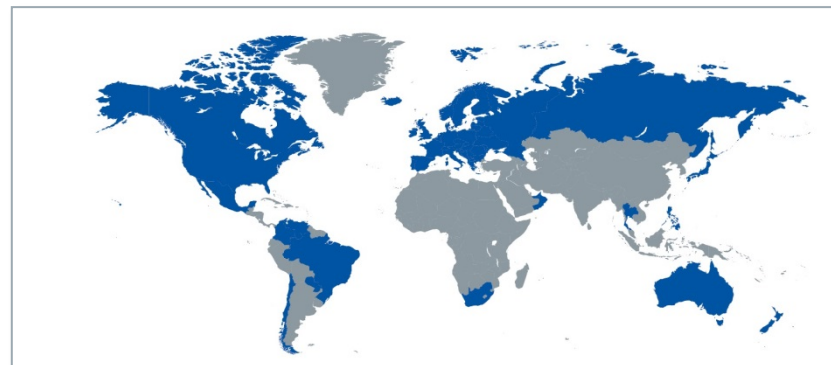
Regional Targets

AIR NAV. REGION	REGIONAL OFFICE	SAFETY	AIR NAVIGATION
AFI	ESAF	ADOPTED ✓ (Abuja Ministerial – July 2012)	ADOPTED ✓ (APIRG/19 – October 2013)
	WACAF		
MID	MID	ADOPTED ✓ (DGCA-MID/2 May 2013) (Review – 27-29 April 2014)	MSG Meeting (November 2014)
ASIA/PAC	APAC	RASG-APAC/4 (November 2014)	ADOPTED ✓ (APANPIRG/25 - September 2014)
NAM	NACC	US CAST/Canada	ADOPTED ✓ (NACC/DCA/5 – April 2014)
CAR		ADOPTED ✓ (NACC/DCA/5 – April 2014)	
SAM	SAM	ADOPTED ✓ (RAAC/13 - December 2013)	ADOPTED ✓ (RAAC/13 - December 2013)
EUR	EUR/NAT	ADOPTED ✓ (RASG-EUR/03 - February 2014)	ADOPTED ✓ (EANPG/55 - November 2013)
NAT		ADOPTED ✓ (NAT SPG/49-June 2013)	TBA

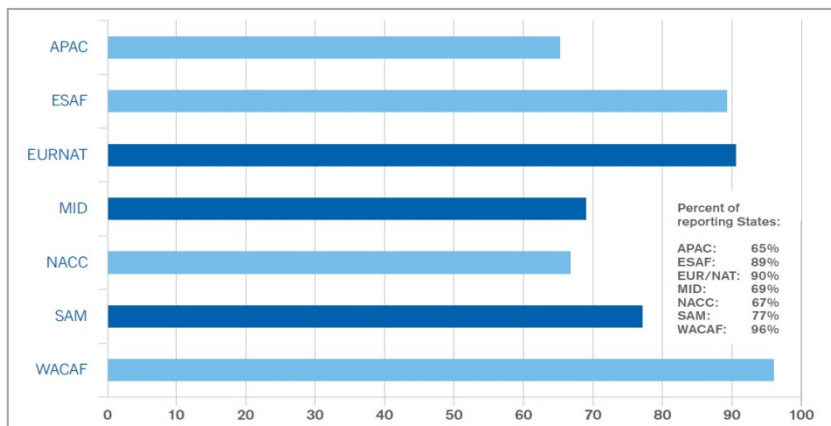
State of Global AIR NAVIGATION



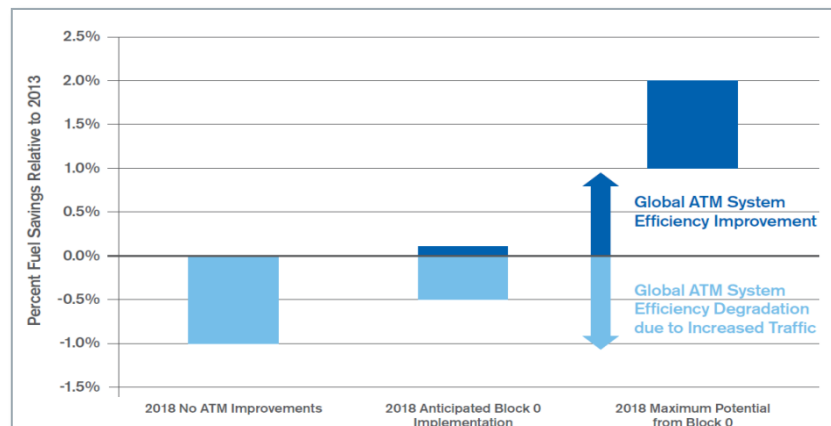
PBN RUNWAY IMPLEMENTATION CONTINUES TO RISE



ATFM IS CURRENTLY BEING USED IN AREAS OF TRAFFIC CONGESTION



AIM CONSOLIDATION PHASE IS ONGOING



STUDY ON POTENTIAL ENV BENEFITS OF ASBU B0 SHOWS NET GAIN

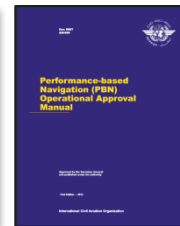
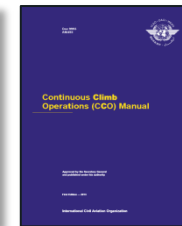
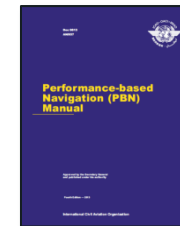
Key Priorities - *Performance-Based Navigation*

PBN Implementation Programme

- Led by ICAO with 9 Partners
- Multi-disciplinary and collaborative approach

Achievements in 2012-2013

- **PBN GO Teams Phase I** in 9 locations covering all regions, involving more than 300 PBN experts worldwide
 - Focused on raising a champion State
- Establishment of the **FPP/RSO in Beijing**
- Launched the **1st iKIT** during the PBN Symposium (2012)
- 4th Edition of the **PBN Manual**, **OPS Approval Manual**, and **CCO Manual** delivered
- First set of computer-based training modules delivered



Achievements in 2014

- Establishment of the **PBN AFPP Office in Dakar**
- Finalization of **PBN GO Teams phase II**
 - Educating regions by means of regional implementation example
- Updated Flight procedures and Separation minima to support PBN
- PBN Endorsements and PBN revenue generating programme established



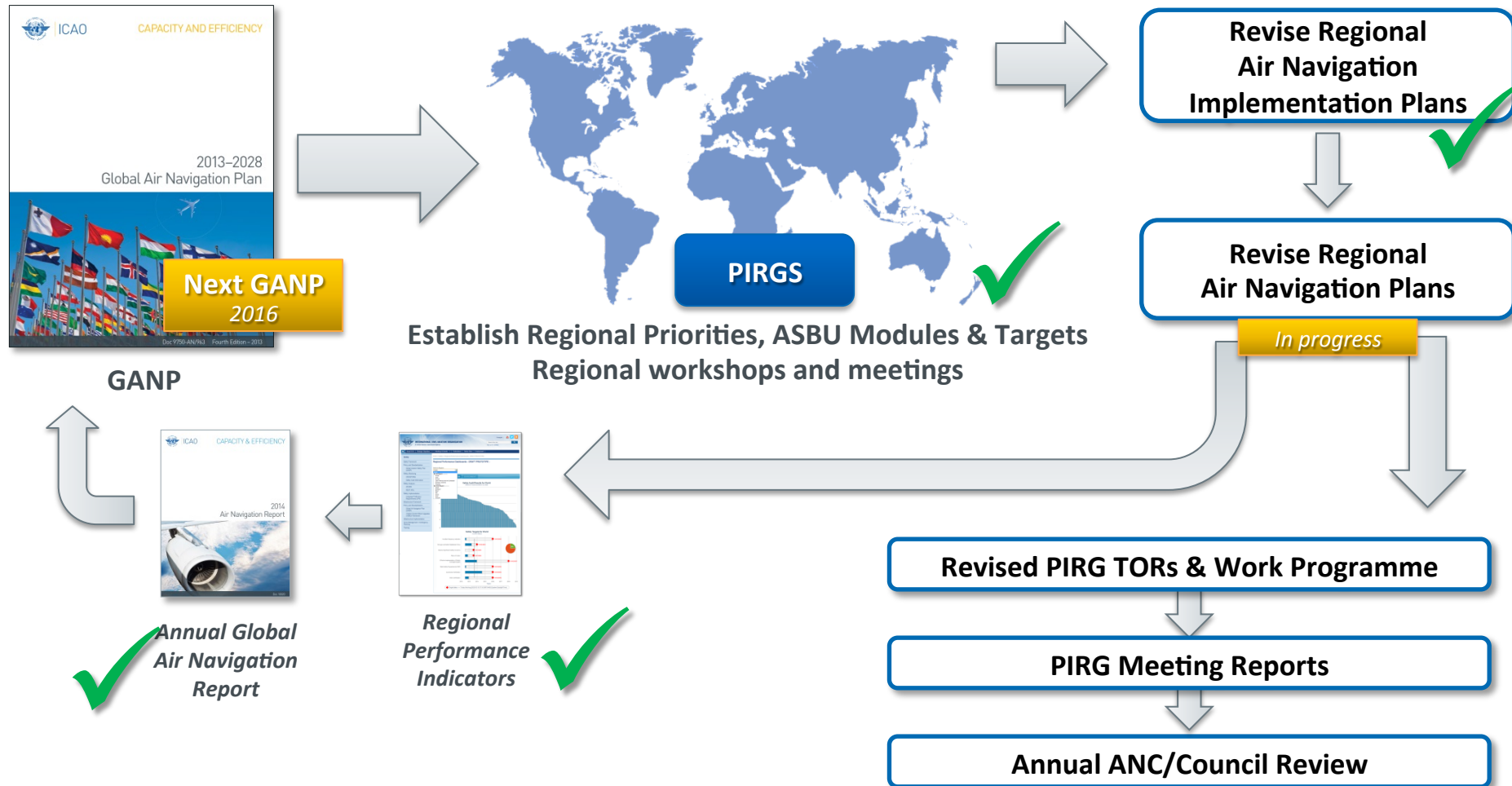


- **Objective:**
 - Understand how using today's technology and skills can result in reduced emissions.
- **Focused on:**
 - Air traffic flow management (ATFM)
 - Collaborative Decision Making (CDM), including Airport CDM (A-CDM),
 - Continuous descent and climb operations (CDO/CCO).
- Jointly organized by **ICAO, CANSO, IATA, EUROCONTROL** and the **FAA**
- Provided participants **operational knowledge** on how to implement techniques
- **8th Global ATFM Conference (Cancun, Mexico, 4 to 6 November 2014)**



Global Air Navigation Plan: Innovation and Best Practices
WORK WITH YOUR REGION

Regional Implementation – *Air Navigation*



Regional Implementation Support Mechanisms

- **PIRGs:**
 - Sets regional **air navigation priorities and targets**
 - Supports **regional implementation** of the GANP
 - Reviews air navigation **plans and deficiencies**
 - Involves **all aviation stakeholders** in the region
 - States, ICAO, and international organizations
- **Regional Offices**
 - **Technical** evaluation, follow-up and assistance missions to States
 - **Training** courses, seminars and workshops
 - **Regional** technical cooperation and assistance projects - FPPs
 - **Regional mechanisms** – RASGs and PIRGs

Air Navigation Priority - *PBN*

- **Beijing, China Regional Sub-office (RSO)**
 - To **improve airspace organization** and **maximize ATM performance and capability** in Asia and the Pacific
 - Entrusted by ICAO Council to **support States for implementation** of efficient management of airspace and air traffic flow in the APAC Region through
 - Collaborative Decision Making (CDM),
 - Air Traffic Flow Management (ATFM),
 - Flexible Use of Airspace (FUA) and
 - Performance-Based Navigation (PBN)
 - The RSO was inaugurated in Beijing, China on **27 June 2013**



Air Navigation Priority - *PBN*

- **African Flight Procedures Programme (FPP)**
 - A **regional center of excellence** in procedure/airspace implementation, focusing on PBN
 - Provides **direct design and implementation support** as needed, and the necessary capacity building for States and other stakeholders for sustainable development
 - In **Dakar, Senegal**, hosted by ASECNA
 - Run by **ICAO ESAF/WACAF** offices
 - Open for business - **2 June 2014**





ICAO

UNITING AVIATION

CELEBRATING 70 YEARS OF
THE CHICAGO CONVENTION

70



Upcoming Global

KEY EVENTS





*Making **SPACE** Travel a **REALITY***

- This international symposium will revolve around **uniting the entire community** to achieve the common objective of space travel
- **Themes:**
 - Uniting the community
 - Ensuring the safe launch and evolution of space
 - Space as a catalyst for aviation



Remotely piloted or piloted: sharing one aviation system

- **A unique opportunity for all to:**

- Identify how existing aviation rules **need to evolve** to meet the challenges involved in welcoming the RPAS community
- Examine **alignment** between ongoing RPAS development and supporting regulatory provisions.
- Showcase the **opportunities** created by the integration of RPAS into the global civil aviation system.



From Global Plan to Local Benefits

- **Intent:** To reach out to those States who need to upgrade their ATM systems to take advantage of block 1 capabilities.
- **Message:**
 - Be part of the symposium – ***We will build the stage, the show is yours***
 - Bringing States together and securing active involvement and participation
 - Proof of concept and experiments
 - Thinking out of the Block 0 box
 - Opening up the planning focus to Block 1 techniques



ICAO

UNITING AVIATION

CELEBRATING 70 YEARS OF
THE CHICAGO CONVENTION

70



ICAO

North American
Central American
and Caribbean
(NACC) Office
Mexico City

South American
(SAM) Office
Lima

ICAO
Headquarters
Montréal

Western and
Central African
(WACAF) Office
Dakar

European and
North Atlantic
(EUR/NAT) Office
Paris

Middle East
(MID) Office
Cairo

Eastern and
Southern African
(ESAF) Office
Nairobi

Asia and Pacific
(APAC) Sub-office
Beijing

Asia and Pacific
(APAC) Office
Bangkok



THANK YOU