INTERNATIONAL CIVIL AVIATION ORGANIZATION

TWENTY FIFTH MEETING OF THE ASIA/PACIFIC AIR NAVIGATION PLANNING AND IMPLEMENTATION REGIONAL GROUP (APANPIRG/25)

Kuala Lumpur, Malaysia, 8 – 11 September 2014

Agenda Item 2: Global and Inter Regional Activities

ANB GLOBAL UPDATE

(Presented by Secretariat)

SUMMARY

The paper presents information on the Air Navigation Bureau's Global update on air navigation matters.

Strategic Objectives:

*A: **Safety** – Enhance global civil aviation safety*

B: ***Air Navigation Capacity and Efficiency**—Increase the capacity and improve the efficiency of the global aviation system*

E***: Environmental Protection** — minimizes the adverse environment effects of civil aviation activities.*

1. ACTION BY THE MEETING

1.1 The Meeting is invited to note the progress on air navigation matters.

— — — — — — — —

ANB Global Update

Michiel Vreedenburgh

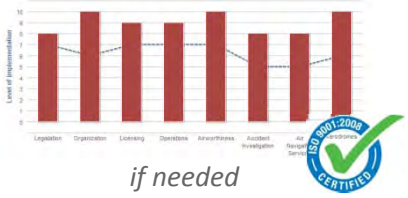
Chief, Implementation Planning and Support

Air Navigation Bureau, ICAO

APANPIRG/25

Needs Analysis / Validation

Compliance & Verification



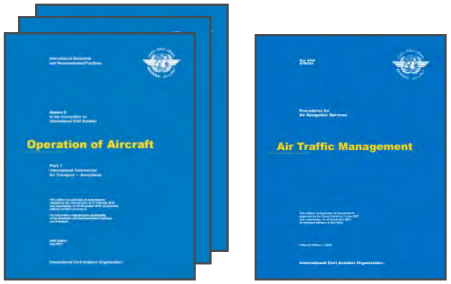
if needed

Global Plans

Global & Regional

Measurement & Reporting

SARPs & PANS



Implementation Planning/Supp.

Training & Guidance

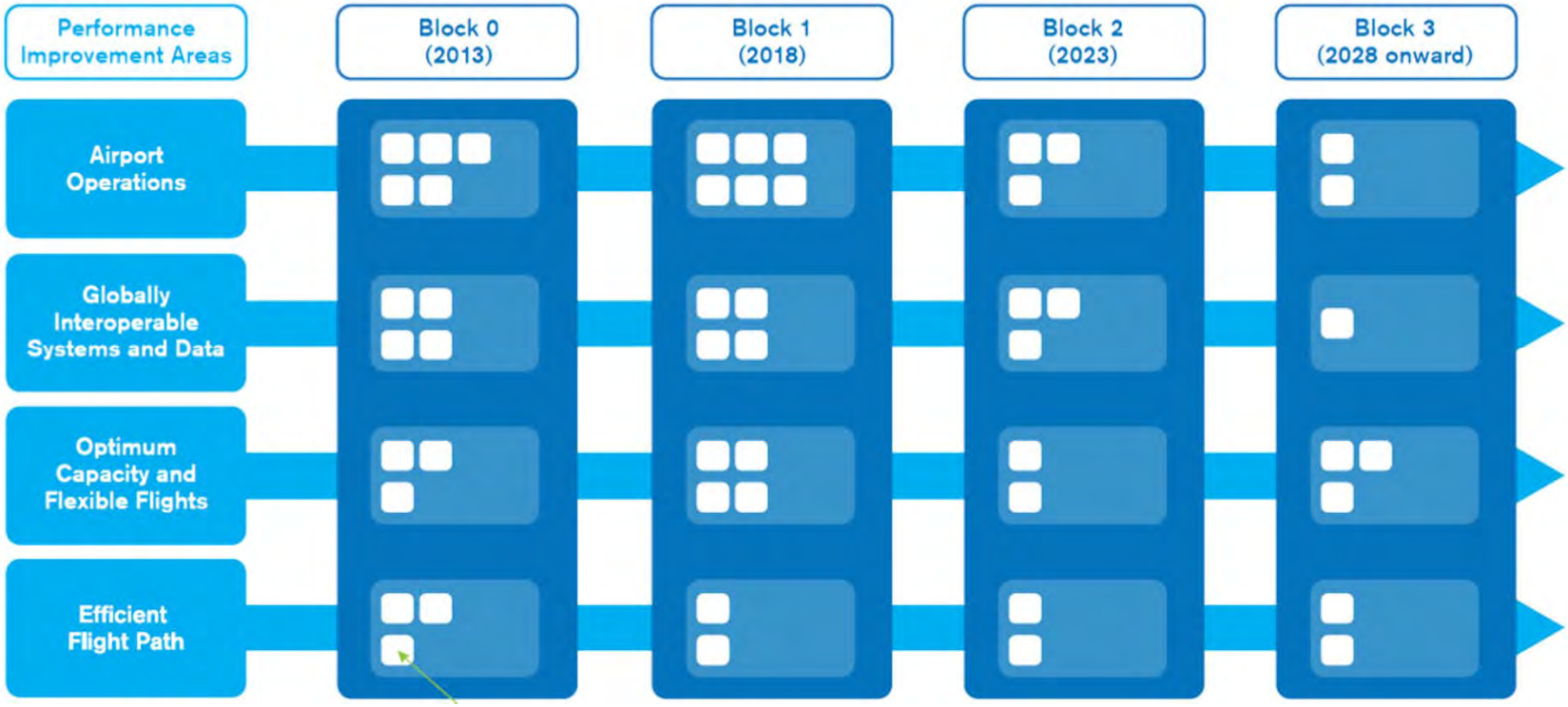
ICAO's Role in ATM Modernization

*"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

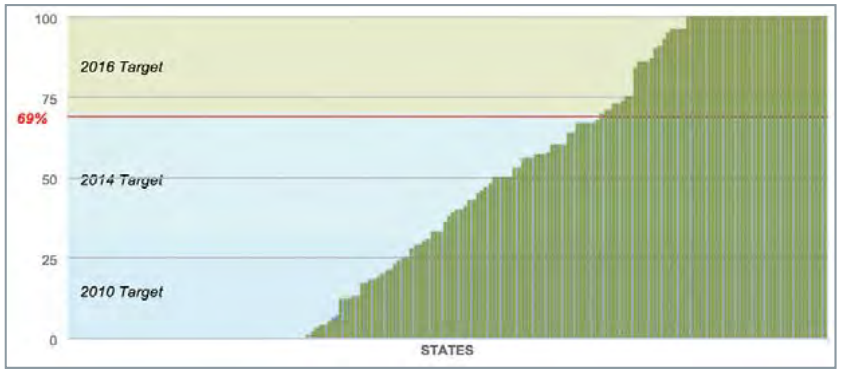
Global Air Navigation Plan (GANP)

Objectives and Priorities



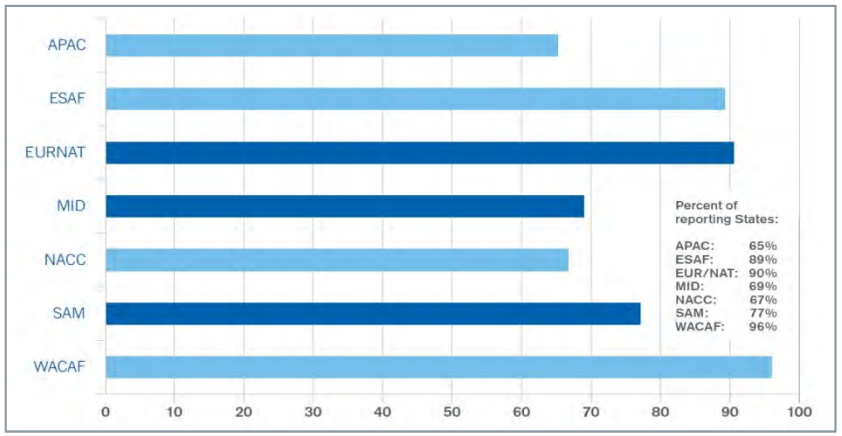
PRIORITIES	
	PERFORMANCE BASED NAVIGATION (PBN)
	CONTINUOUS DESCENT AND CLIMB OPERATIONS (CDO/CCO)
	COLLABORATIVE DECISION-MAKING (CDM & A-CDM) & ATFM

State of Global AIR NAVIGATION

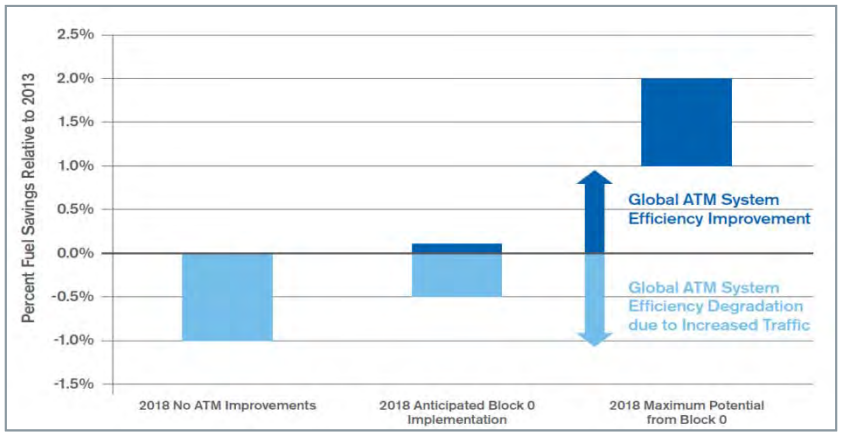


PBN RUNWAY IMPLEMENTATION CONTINUES TO RISE

ATFM IS CURRENTLY BEING USED IN AREAS OF TRAFFIC CONGESTION

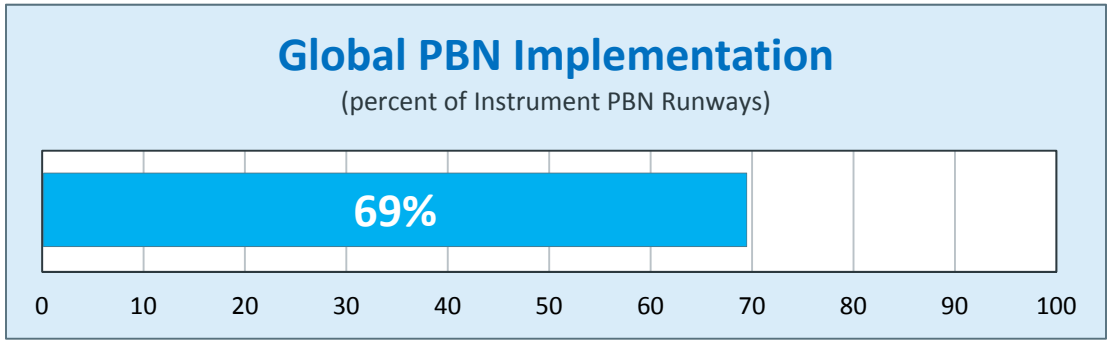


AIM CONSOLIDATION PHASE IS ONGOING



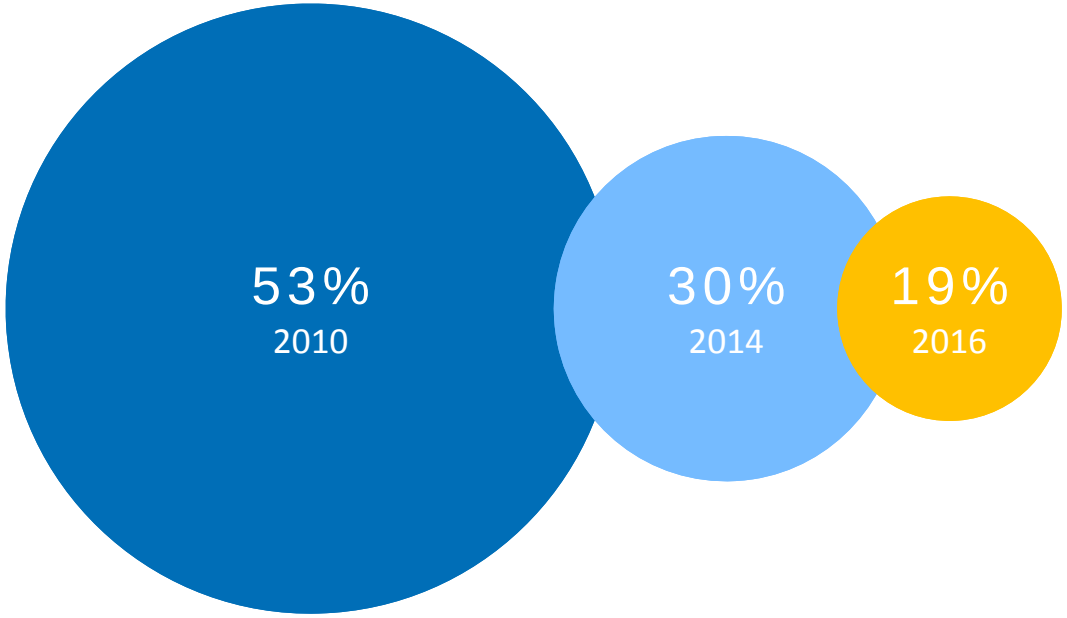
STUDY ON POTENTIAL ENV BENEFITS OF ASBU B0 SHOWS NET GAIN

Key Priorities - *Performance-Based Navigation*

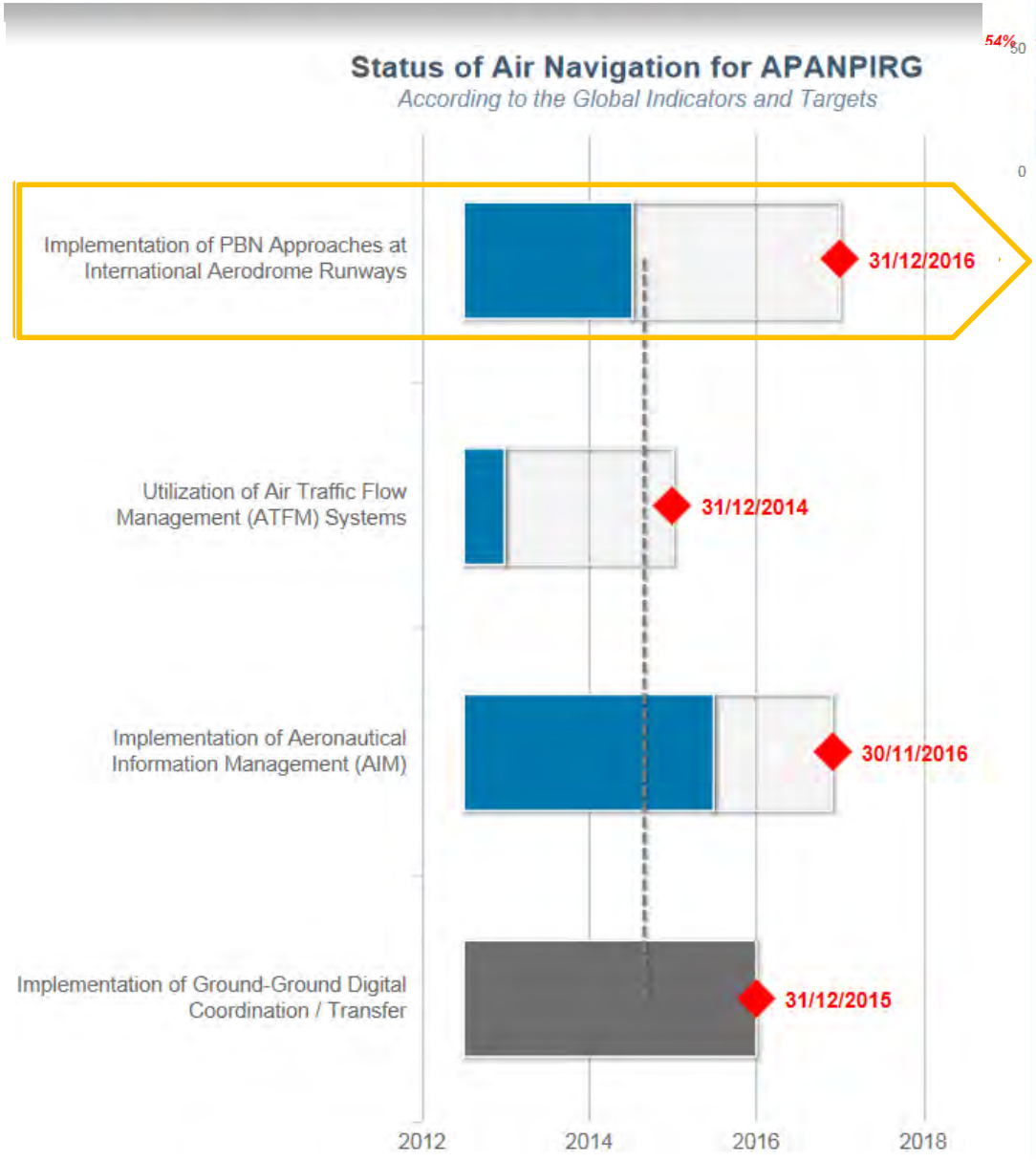


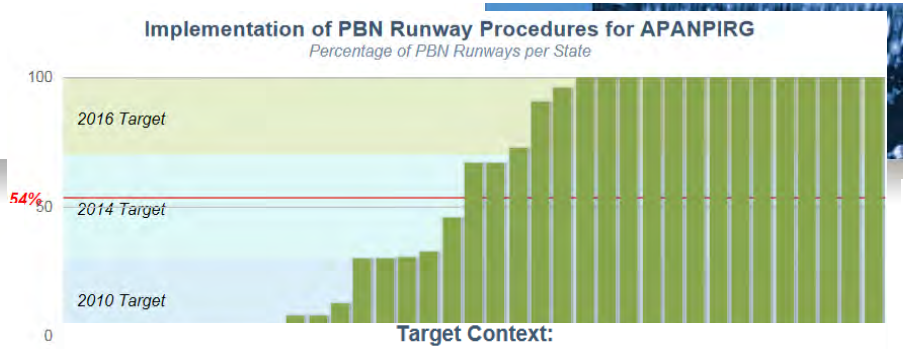
*Although **69%** of all instrument runways have at least 1 PBN approach…*

*Only **30%** of ICAO Member States are on track to meet the 2014 targets of Assembly Resolution A37-11*



ICAO UNITING AVIATION



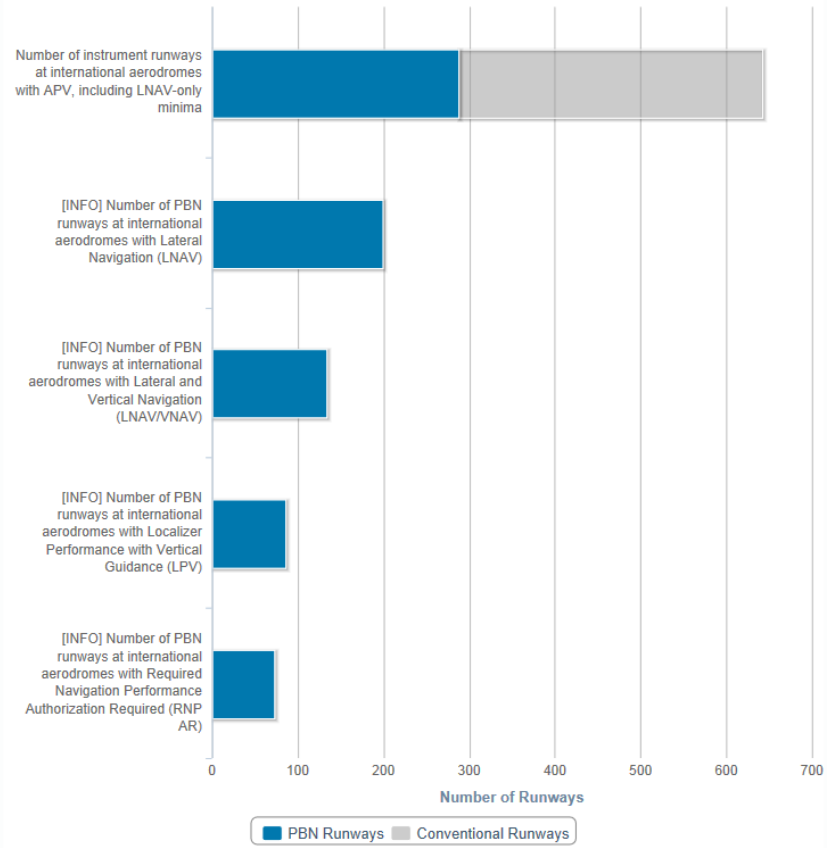


Target Context:

Implementation of approach procedures with vertical guidance (APV), including LNAV-only minima, for all instrument runway ends by 2016

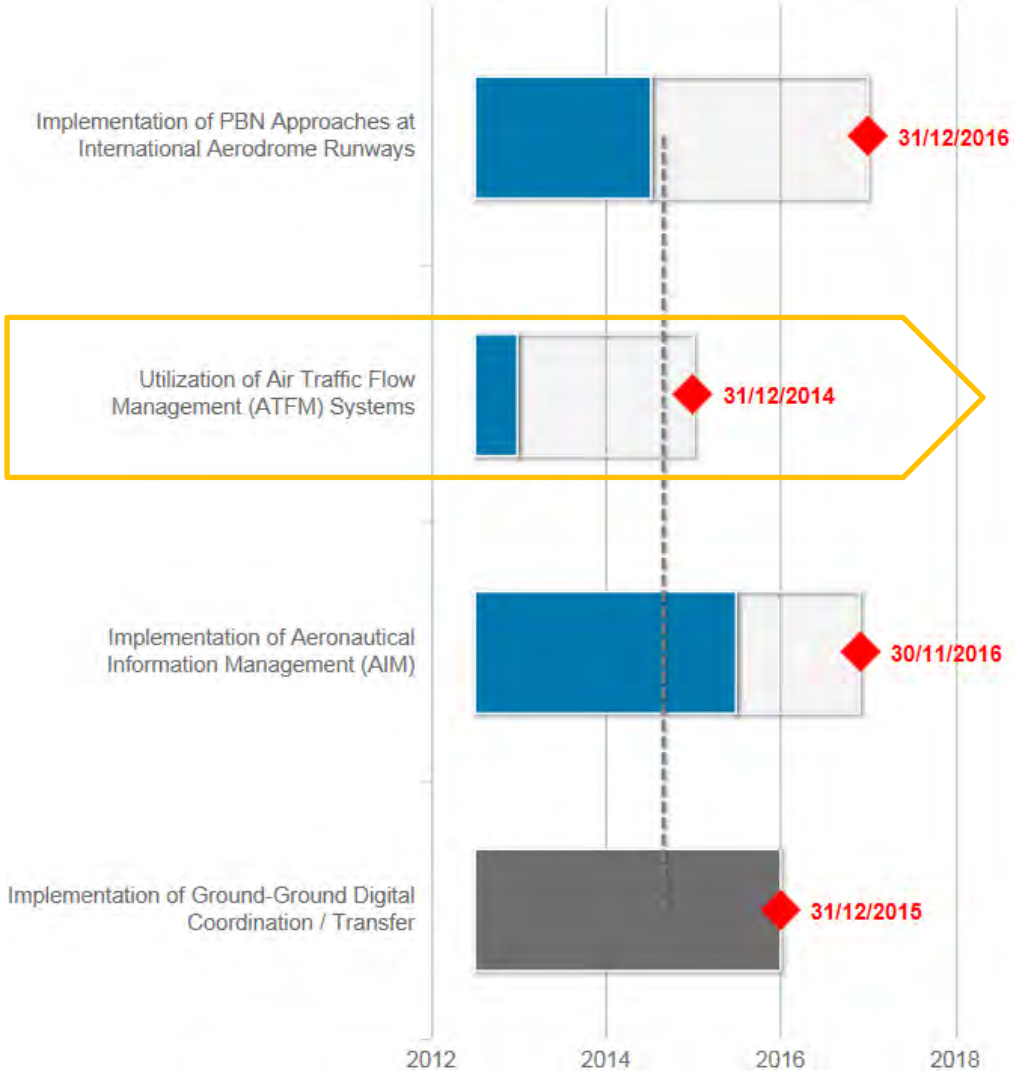
Metric: *Percentage of instrument runways at international aerodromes with APV, including LNAV-only minima*

(More information about this metric)



Status of Air Navigation for APANPIRG

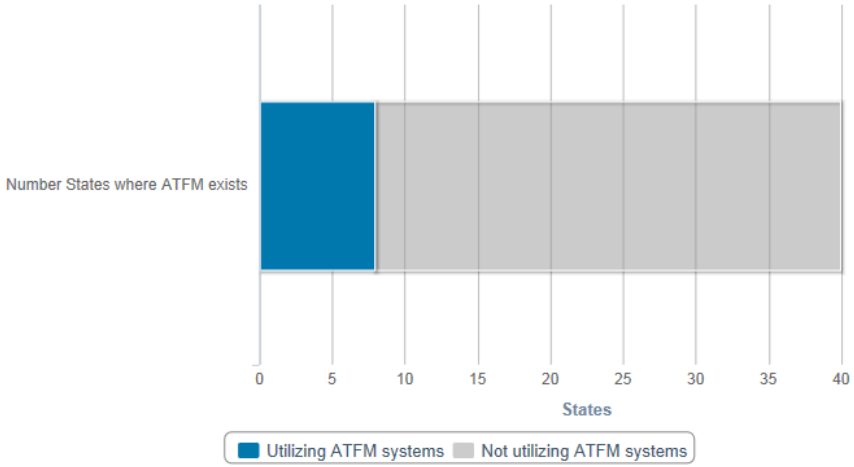
According to the Global Indicators and Targets



Target Context:

Utilization of Air Traffic Flow Management (ATFM) Systems

Metric: *Percentage of States where ATFM exists*



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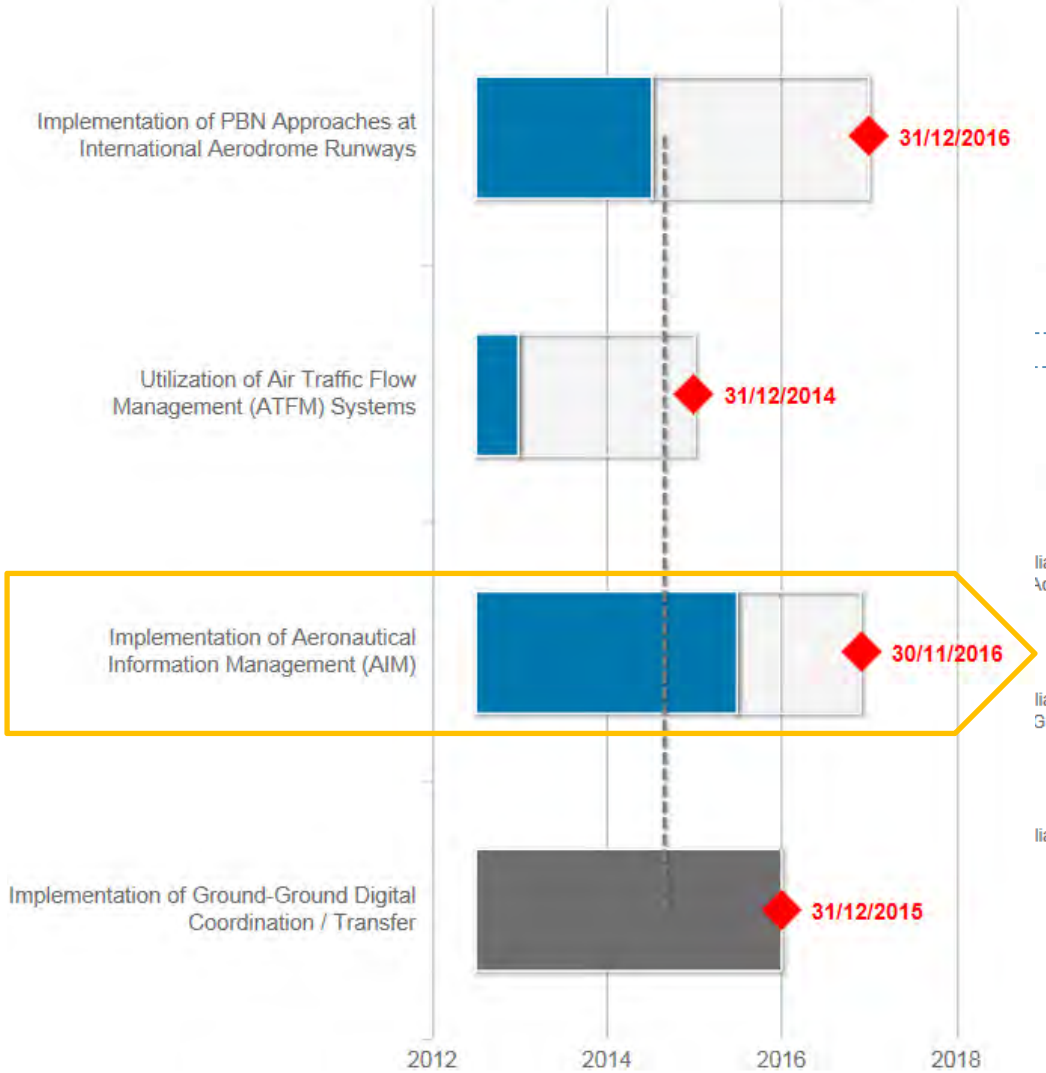
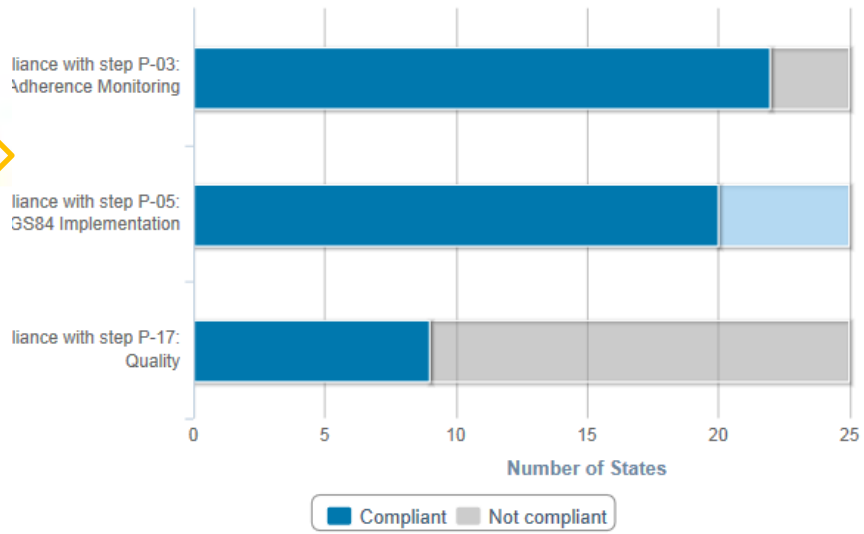


Target Context:

Implementation of Aeronautical Information Management (AIM)

Metric: *Status of Implementation of selective steps*

(More information about this metric)



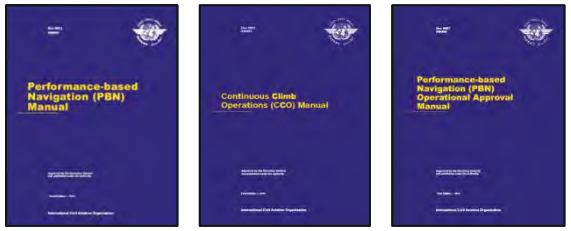
Performance-based Navigation

PBN Implementation Programme

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

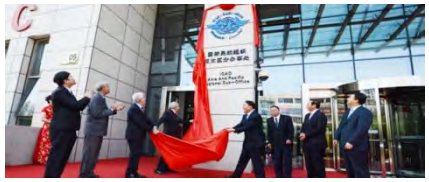
Achievements in 2012-2013

- **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

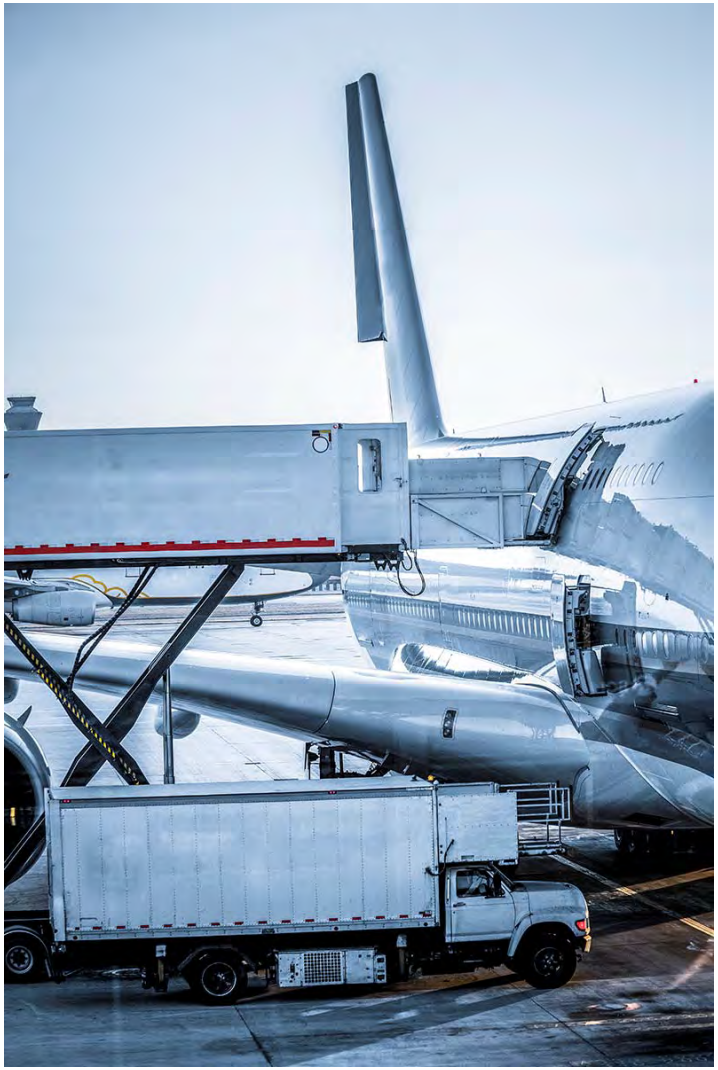
- Establishment of the **PBN AFPP Office in Dakar**
- Finalization of **PBN GO Teams phase II**
  - Educating regions by means of regional implementation example
- Updated Flight procedures and Separation minima to support PBN
- PBN Endorsements and PBN revenue generating programme established



- **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 and Regional Planning for

IMPLEMENTATION



Traditional Methods

Annex and PANS Amendments to States

Global Plans

"What"

SARPs & PANS

Annex 1

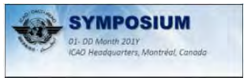
Annex 6

Annex 8

Guidance Material

DOC 9735

DOC 9946

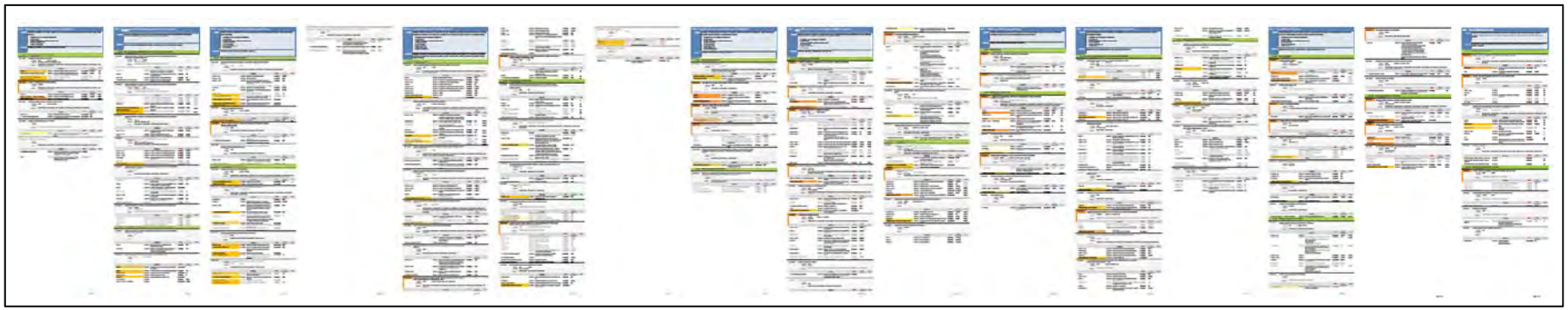


Seminars, Workshops and Symposia

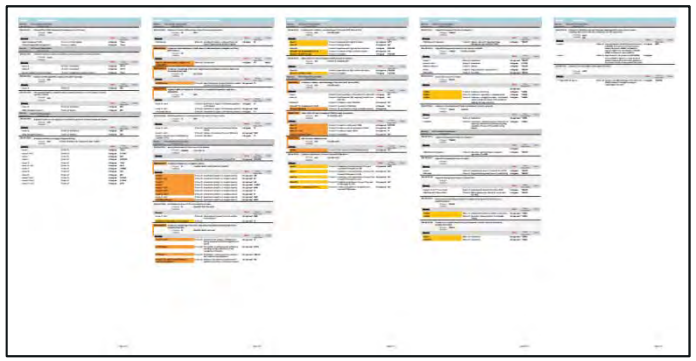
Computer-Based Training

Training and guidance are often ***not synchronized*** with amendments

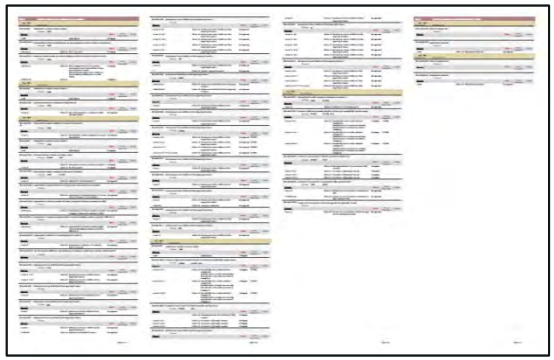
AIR NAVIGATION *INTEGRATED* WORK PROGRAMME



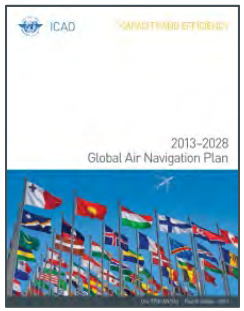
Safety and Air Navigation Regulatory Operational Improvements (ROI)



Enablers



Recurrent Activities



Regulatory Operational Improvements

1. Optimize airspace and airport usage through demand/capacity balancing
2. Increase harmonization of the regulatory approach to air operators' approvals and recognition
3. Improve efficiency of surface operations, in particular at congested aerodromes
4. Improve safety performance at and in the vicinity of aerodromes
5. Improve throughput at aerodromes through integration of landside/airside
6. Improve efficiency of en-route operations through the availability of user-preferred routing
7. Facilitate access by RPA to non-segregated airspace
8. Optimize aerodrome departure/arrival rates in all meteorological conditions
9. Improve efficiency of TMA operations
10. Improve in-flight safety performance

Hierarchy of the revised work programme

- **ROI** (regulatory operational improvement)
- **I-Kit** (implementation kit - package of deliverables available on web site and USB) released every 2 years in 2014, 2016 and 2018 (based on new 2-yearly amendment cycle for new SARPs) for each group of new provisions (SARPs and PANS)
- **Deliverables** (group of elements) prioritised as critical, major and desirable
- **Elements** (SARPs, PANS, manual, circular, training, and other roll-out implementation support items such as workshops, seminars, training courses, symposia, web site/page, tools/applications, ICAO-only State missions, ICAO & partners go-team missions, etc.)

Integration for Implementation

- Amendments to ICAO documentation **do not stand on their own**, but once packaged in clear deliverables, provide a tangible operational benefit
- The air navigation **integrated** work programme provides:
  - **Transparent** overview of all activities
  - **Prioritization** of deliverables
  - **Plain language** intention that provides a clear message to the States and all aviation stakeholders and partners (IATA, ACI, CANSO, etc.)
  - Outcomes **for implementation**

Integrated Planning for Implementation

*Using the point of view of the **implementer***

*Provision of a **singular package** for implementation*

Global Plans

"What"

SARPs & PANS

Annex 1 Annex 6 Annex 8

Implementation Planning

Guidance material

Seminars, workshops and Symposia

Computer-Based Training

Assess & Measure

"When"

Compliance & Verification

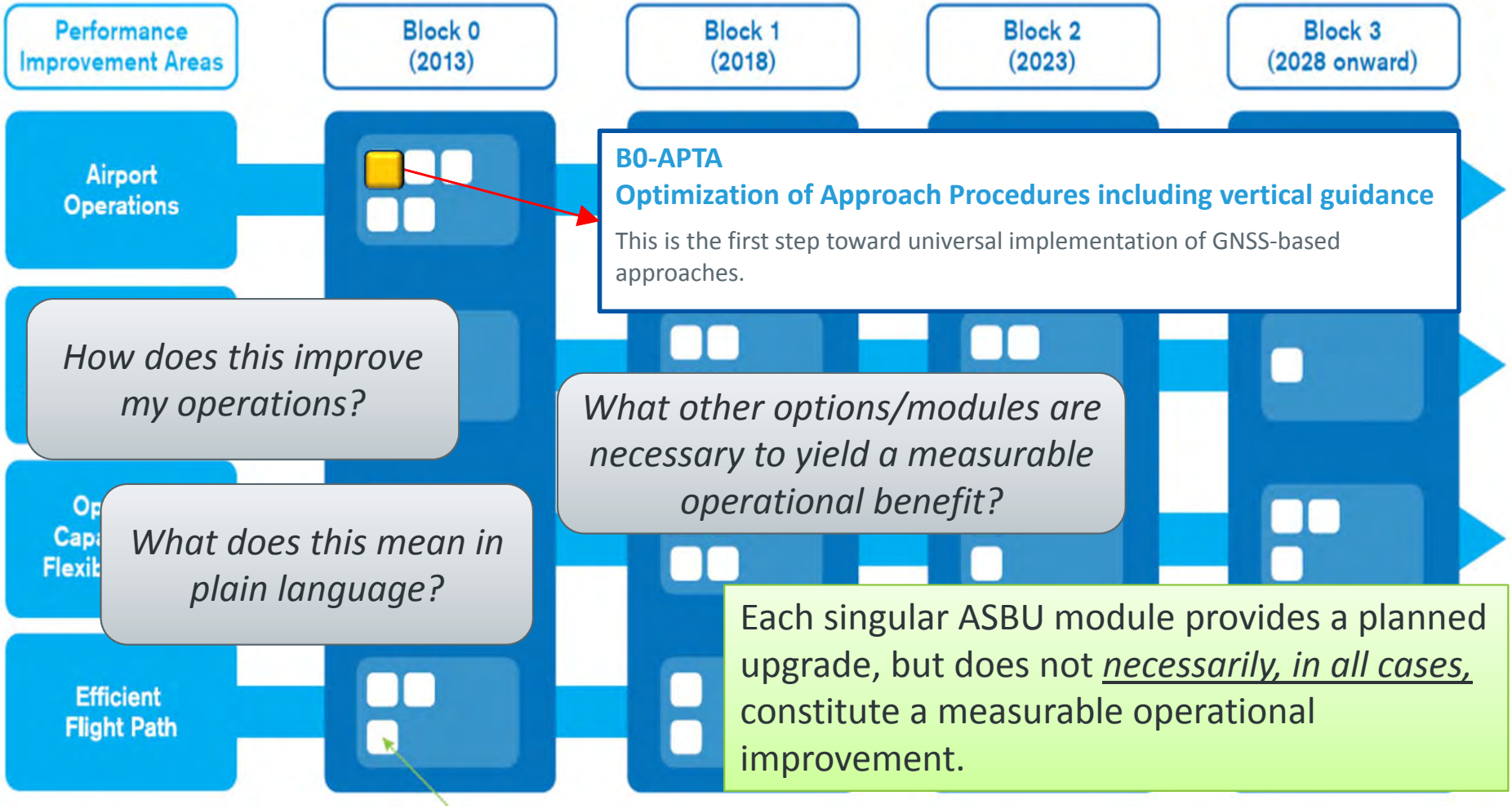
USOAP Protocol Questions
(if needed)

Actions for improved implemention

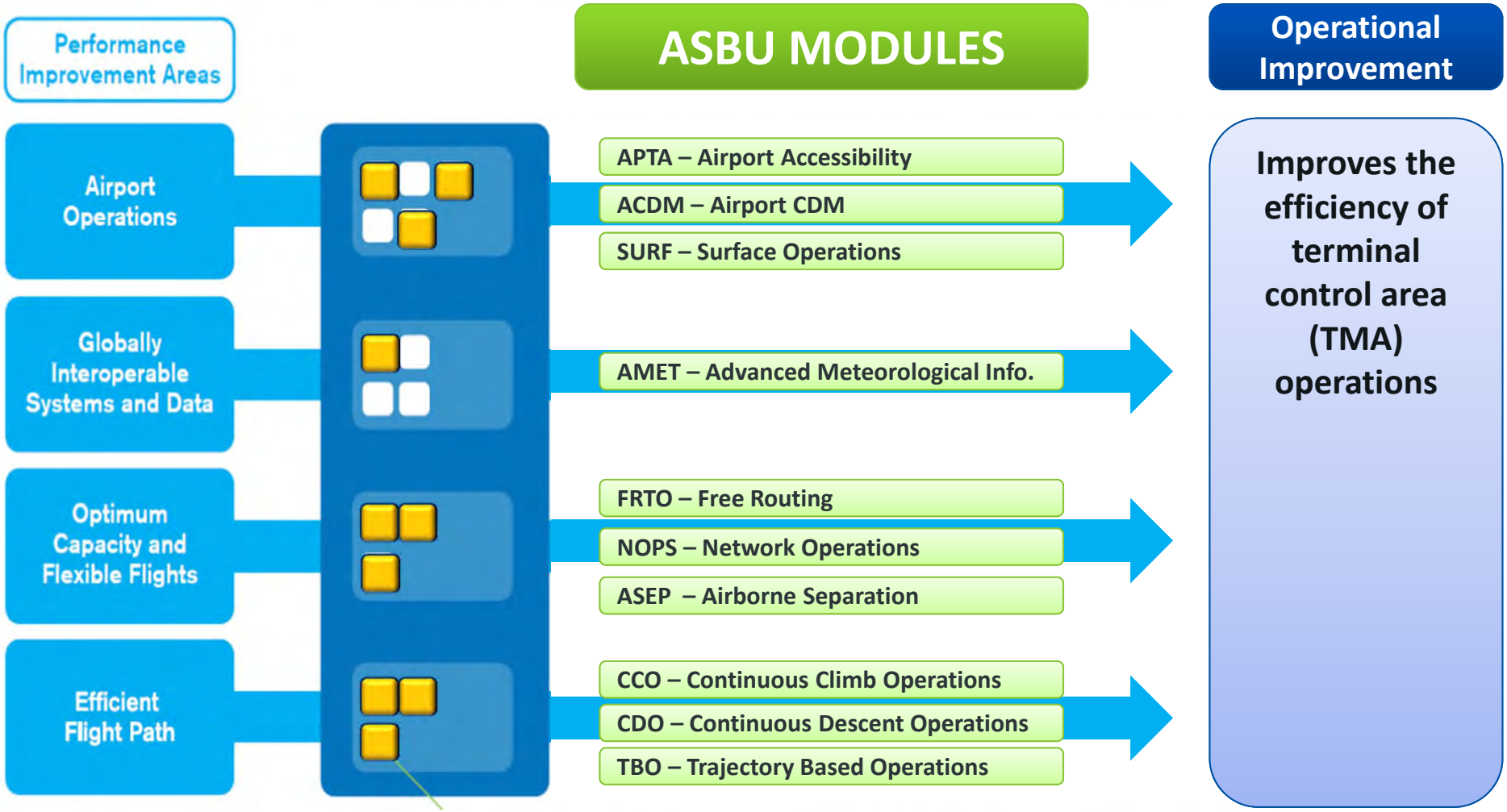
- impact assessments considering implementation requirements and roll-out plan for new SARPs prior to adoption, as applicable;
- Annex amendments on a two-year cycle and an associated realistic schedule for notification, adoption and applicability of the new SARPs;
- availability of implementation assistance prior to applicability;
- a communication strategy, plan and methods to raise awareness of new SARPs;
- A coordinated programme for assistance to States between ANB, Regional Offices, TCB, and regional organizations and groups;
- enhanced monitoring of implementation to identify and prioritize targeted assistance; and
- more timely updating of USOAP protocol questions.

IMPLEMENTATION

Extending Modules to Tool Kits



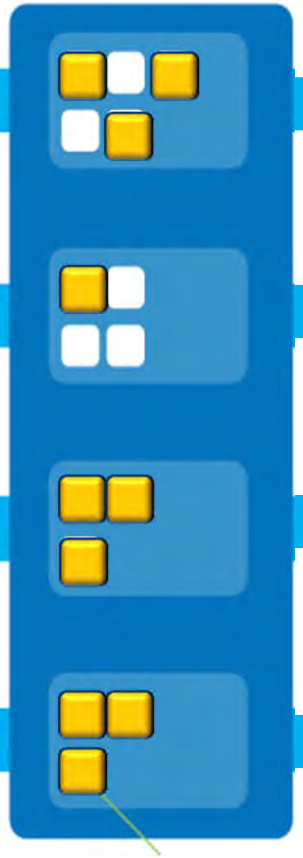
Extending Modules to Tool Kits



Extending Modules to Tool Kits

Performance Improvement Areas

- Airport Operations
- Globally Interoperable Systems and Data
- Optimum Capacity and Flexible Flights
- Efficient Flight Path



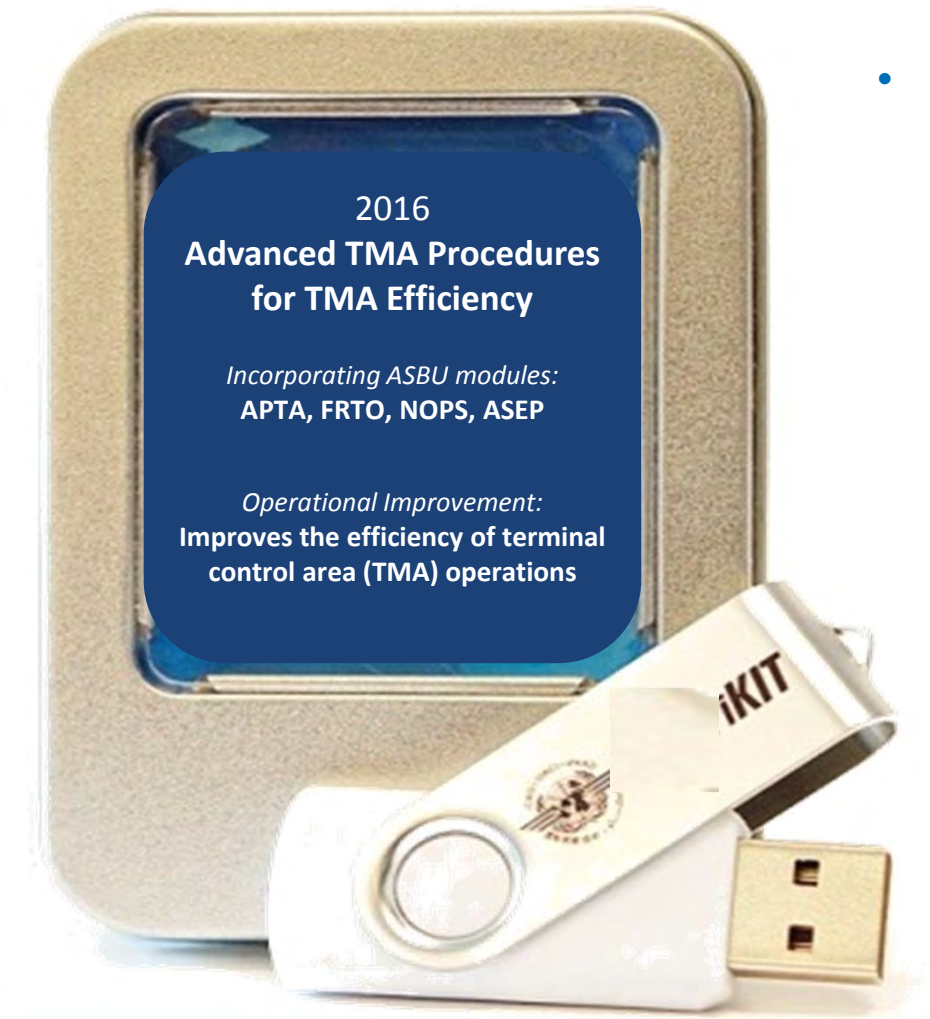
ASBU MODULES

- APTA – Airport Accessibility
- ACDM – Airport CDM
- SURF – Surface Operations
- AMET – Advanced Meteorological Info.
- FRTO – Free Routing
- NOPS – Network Operations
- ASEP – Airborne Separation
- CCO – Continuous Climb Operations
- CDO – Continuous Descent Operations
- TBO – Trajectory Based Operations

Operational Improvement

Improves the efficiency of terminal control area (TMA) operations

Extending Modules to Tool Kits



- **Updated PBN Flight procedures to complement the PBN NAVSPECs**
  [APTA – Airport Accessibility]
  - Harmonization of Charting Criteria, Databases of Criteria, and Avionics Systems with IFP design *(Annexes 4, 11 and 15; AIS Manual, Aeronautical Chart Manual)*
  - Amended SARPs to differentiate NAVSPECs that require operational approval and those that do not *(Annex 6 Parts I, II and III)*
  - GBAS Landing System (GLS) approaches to parallel runway operations *(PANS-ATM)*
  - PANS-OPS procedures connecting PBN with XLS final approach and APV; Procedure criteria for PinS route visual segment; Missed approaches; Visual procedures utilizing PBN *(PANS-OPS Volume I; Aeronautical Chart Manual)*

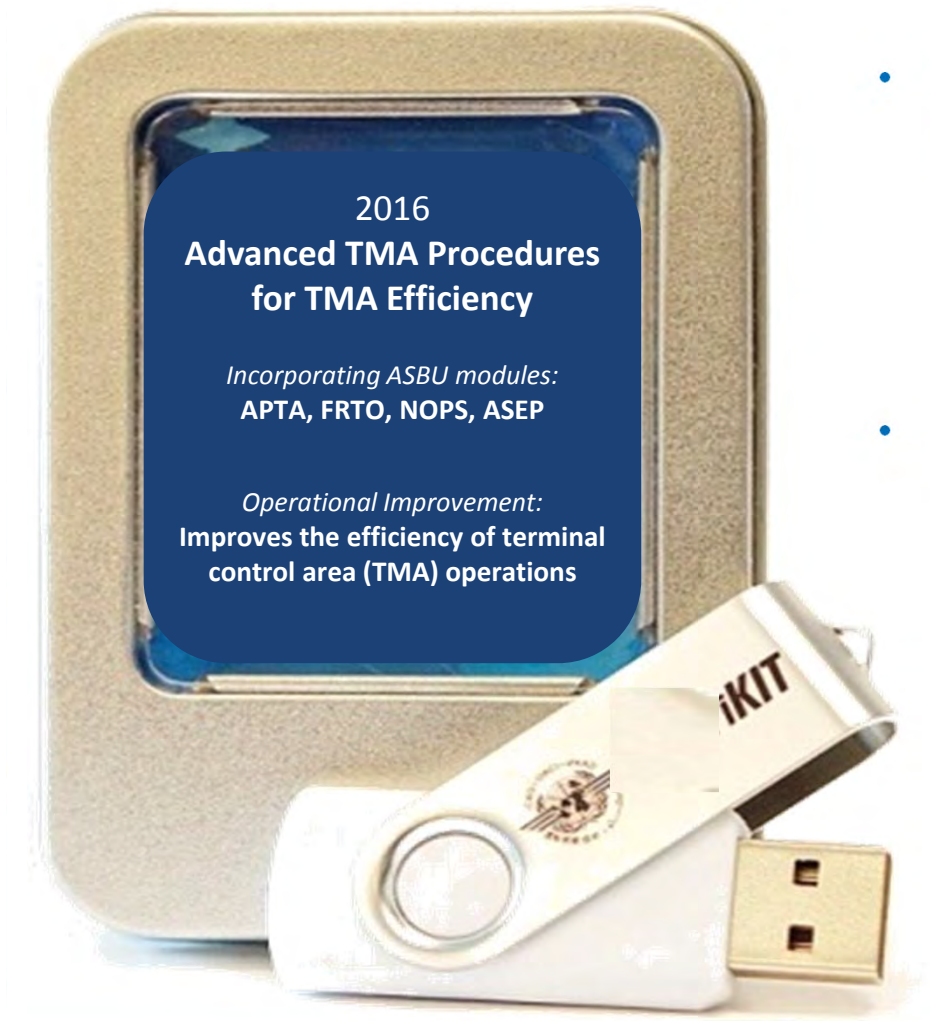
Continued in next slide…

Extending Modules to Tool Kits

- **Guidance on planning of airspace and ATS facilities [APTA – Airport Accessibility]**
  - Procedures for application of GLS parallel approaches *(Manual on Simultaneous Operations on Parallel or near-parallel Instrument Runways)*
- **ATM separation procedures and phraseologies [APTA – Airport Accessibility]**
  - Clarification of procedures when being vectored for final approach *(PANS-ATM)*
  - Enhanced separation minima addressing: VOR/GNSS lateral separation; 5nm RNP 1 terminal separation & Circular 324; 45 degree RNAV arrival and departure separation; PBN based separation for terminal airspace; PBN based lateral separation minima to special use airspace; separation of aircraft fly-by, radius to fix *(PANS-ATM)*
  - Limits of a vector – review the intent of specifying a limit of vector and suitability of current PANS *(PANS-ATM)*

Continued in next slide…

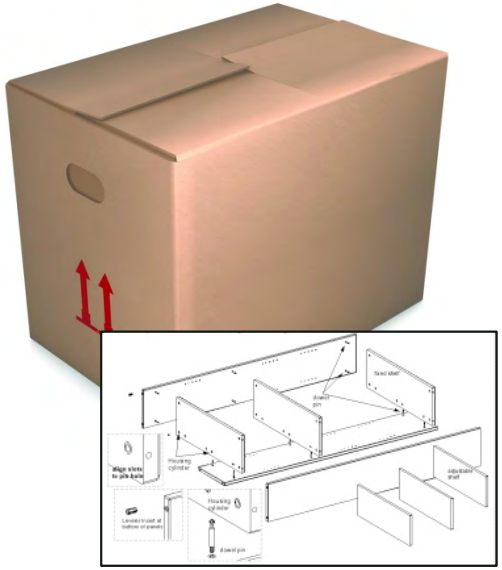
Extending Modules to Tool Kits



- **Provisions on Interval Management procedures (merging and spacing)**
  [ASEP – Airborne Separation]
  - Initial guidance to support interval management for flight crew and ATS units
    (Airborne Surveillance Manual)
- **Guidance on Flexible use of airspace**
  [FRTO – Free Routing, NOPS – Network Operations]
  - Guidance on cooperation on ATM between civil and military entities – improvement of circular towards an ICAO manual
    (Circular 330)

Extending Modules to Tool Kits

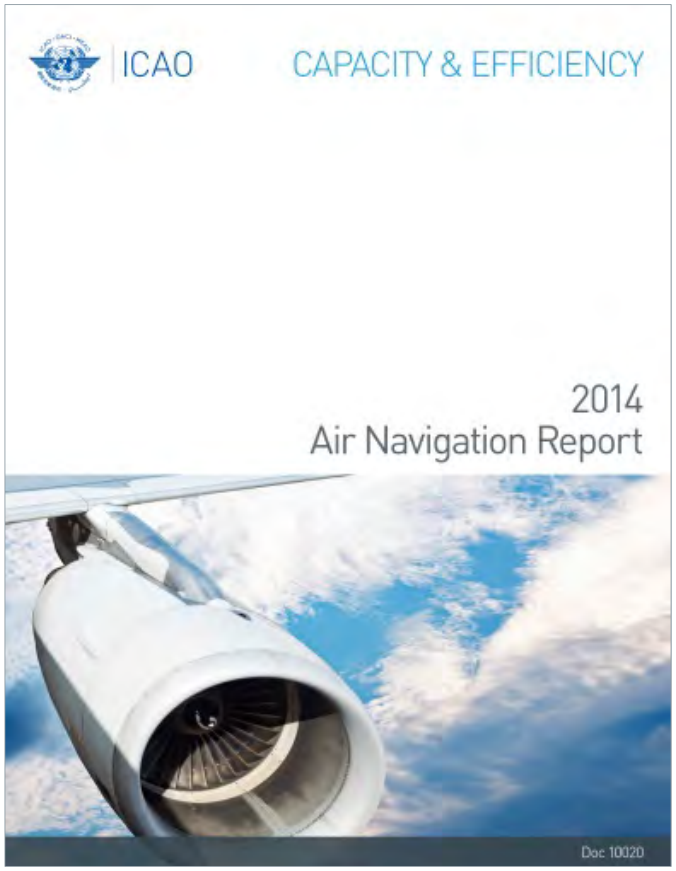
ASBU Modules



Implementation Kit

Regulatory and Operational Improvement

Reporting


ICAO
CAPACITY & EFFICIENCY
2014
Air Navigation Report
Doc 10020

Regional Implementation – *Air Navigation*

Next GANP
2015

GANP

Establish Regional Priorities, ASBU Modules & Targets
Regional workshops and meetings

Revise Regional Air Navigation Implementation Plans

Revise Regional Air Navigation Plans

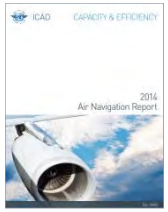
In progress

Revised PIRG TORs & Work Programme

PIRG Meeting Reports

Annual ANC/Council Review

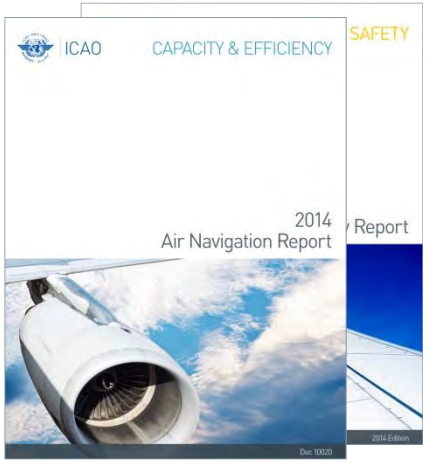
Regional Performance Indicators



Annual Global Air Navigation Report

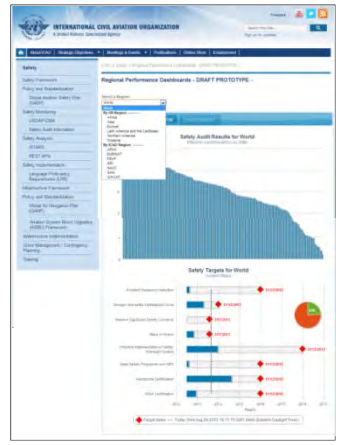
Global and Regional Reporting

Global Plans



Annual Global Reports

Annual Regional Reports



Regional Status

Information Feed

Air Navigation Reporting - Process

- PIRGs are progressing with planning and implementation of ASBUs
- The next step calls for an air navigation performance measurement, monitoring and reporting strategy.
- Methodology for reporting
  - States to send data to RO through Air Navigation Report Form (ANRF) or equivalent form/on ongoing basis
  - RO will consolidate data from all States and publish through Regional Performance Dashboard /on ongoing basis
  - HQ will consolidate data from all ROs and publish Global Air Navigation Report/annually

Air Navigation Reporting - What is ANRF?

- The previous Performance Framework Form (PFF) has been redesigned and aligned with ASBU framework and renamed the Air Navigation Report Form (ANRF)
- ANRF is the basis for performance reporting of the ASBU implementation
- The ANRF templates for all the 18 Modules of ASBU Block 0 will be available in the new Regional eANP.

PFF re-designated as ANRF

REGIONAL/NATIONAL PERFORMANCE OBJECTIVE – B0-CDO: Improved Flexibility and Efficiency in Descent Profiles (CDO) Performance Improvement Area 4: Efficient Flight Path – Through Trajectory-based Operations					
ASBU B0-CDO: Impact on Main Key Performance Areas (KPA)					
	Access & Equity	Capacity	Efficiency	Environment	Safety
Applicable	N	N	Y	Y	Y
ASBUB0- CDO: Implementation Progress					
Elements	Implementation Status (Ground and Air)				
1. CDO					
2. PBN STARs					
ASBU B0-CDO: Implementation Roadblocks/Issues					
Elements	Implementation Area				
	Ground Implementation	Air Implementation	Procedures Availability	Operational Approvals	
1. CDO					
2. PBN STARs					

PFF re-designated as ANRF

ASBU B0-CDO: Performance Monitoring and Measurement (Benefits)	
Key Performance Areas	**Performance Metrics**
Access & Equity	Not applicable
Capacity	Not applicable
Efficiency	Kilograms of fuel saved per flight
Environment	Kilograms of CO_2 emissions reduced per flight (= KGs fuel saved per flight x 3.157)
Safety	Number of controlled flight into terrain (CFIT) incidents/accidents

ASBU B0-CDO: Performance Monitoring and Measurement (Implementation)	
Elements	**Implementation Indicators/Metrics**
1. CDO	Percentage of international aerodromes/TMAs with CDO implemented
2. PBN STARs	Percentage of international aerodromes/TMAs with PBN STARs implemented

Regional Dashboards - Objectives

- Provide a more regular implementation monitoring and reporting mechanism to complement annual reports
- Raise awareness and focus of all stakeholders on implementation of safety and air navigation priorities provided in global and regional plans
- Provide high level global and public information – more detailed information managed by ROs and PIRGs/RASGs

Regional Dashboards

- **Measuring against the Global Plans through regional indicators**
  - ***Now Available:***
    www.icao.int/safety/pages/regional-targets.aspx
  - Shows the progress against **regionally-agreed indicators, ASBU modules and targets**
  - Shows the implementation status and performance by **regional grouping** - by UN Region, ICAO accreditation, PIRG, RASG, COSCAP, RSOO, etc.
  - Ability to **drill-down on each indicator** to see **specific details** on metric and data used

Regional Dashboards

Dynamic Query Selection

Able to filter results by:

- **Any region**
  (UN, ICAO Accreditation, PIRG, RASG, COSCAP, RSOO, etc.)
- **Any agreement**
  (with defined indicators and targets)

Implementation Highlight

For Safety:
Effective Implementation
USOAP Targets

For Air Navigation:
PBN Implementation
ASBU Environmental Benefits

Regional Performance by **Strategic Objective**

Global and Region-specific **Metrics and Targets**

Global Priorities for Regional Indicators

(dashboards harmonised with global plans and reports)

SAFETY	AIR NAVIGATION
State Safety Oversight System	Performance-based Navigation
Significant Safety Concerns	Air Traffic Flow Management
Accidents	Aeronautical Information Management
Aerodrome Certification	Ground-Ground Digital Coordination/Transfer *(coming soon – 2014)*
State Safety Programme	ASBU Environmental Benefits *(coming soon - 2015)*

(more to be added in the future by regions)

Regional Safety & AN Priorities & Targets

- **Priorities**
  - *"What is most important?" – based on Global Plans*
- **Indicators**
  - *"What are you measuring?"*
- **Metrics**
  - *"How are you measuring it?"*
- **Targets**
  - *"When and at what level would you like to achieve it?"*

Regional Safety & AN Priorities & Targets

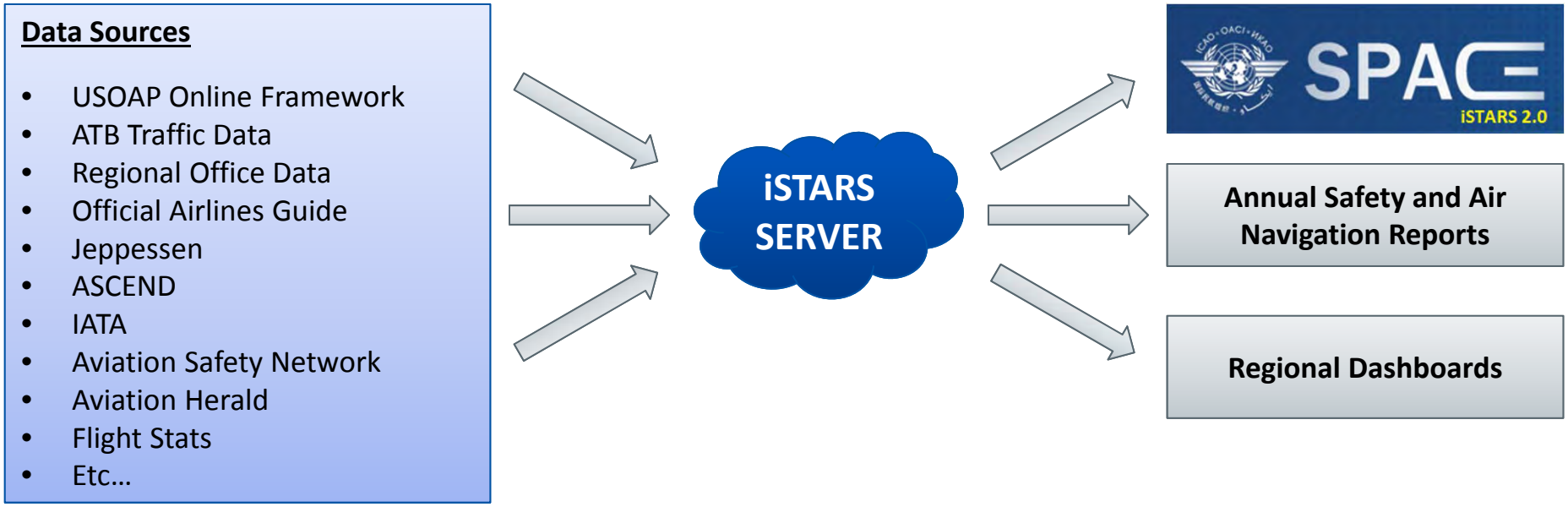
- **Regional dashboards (Priorities, indicators, metrics, targets)**
- **Safety example**
  - **Priority** – Runway safety
  - **Indicator** – Reduction of runway related fatal accidents
  - **Metric** – Number of runway related fatal accidents per million departures
  - **Target** – annual 50% reduction
- **AN example**
  - **Priority** – PBN Implementation
  - **Indicator** – Implementation of PBN runway approach procedures
  - **Metric** – Number of instrument runway thresholds at international aerodromes with APV
  - **Target** – 70% implementation by end of 2014, 100% by end of 2016

Regional Targets

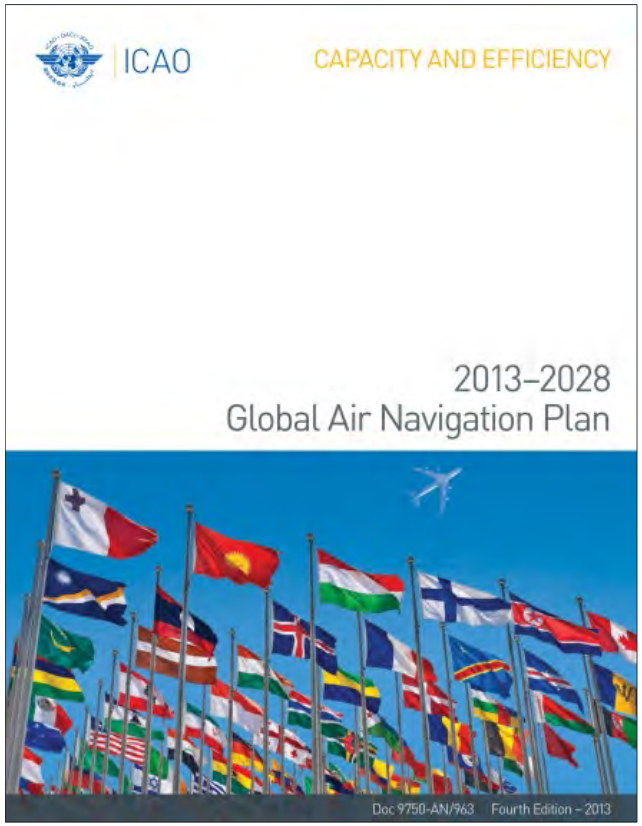
AIR NAV. REGION	REGIONAL OFFICE	SAFETY	AIR NAVIGATION
AFI	ESAF	**ADOPTED** ✓ (Abuja Ministerial – July 2012)	**ADOPTED** ✓ (APIRG/19 – October 2013)
	WACAF		
MID	MID	**ADOPTED** ✓ (DGCA-MID/2 May 2013) (Review – 27-29 April 2014)	**MSG Meeting** (November 2014)
ASIA/PAC	APAC	**RASG-APAC/4** (November 2014)	**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*

- **Website**
  - http://www.icao.int/safety/pages/regional-targets.aspx

- **Overview of Data Structure/relationship with iSTARS**



GANP Update


ICAO
CAPACITY AND EFFICIENCY
2013–2028
Global Air Navigation Plan
Doc 9750-AN/963 Fourth Edition – 2013

ICAO UNITING AVIATION

CELEBRATING 70 YEARS OF THE CHICAGO CONVENTION

2015											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

2016											
JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

C/204 & ANC/198 (12 Jan – 13 Mar)

C/205 & ANC/199 (27 Apr – 26 Jun)

C/206 & ANC/200 (21 Sep – 20 Nov)

C/207 & ANC/201 (11 Jan – 11 Mar)

C/208 & ANC/202 (11 Apr – 20 Jun)

C/209 & ANC/203 (17 Oct – 16 Dec)

Input from RASGs & PIRGs Feb

2nd HLSC 2-5 Feb

A39

Development of GASP/GANP (13 Mar – 26 Jun)

AH-WG/ CT meeting (Early Sep)

Consultation Period (Nov - Jan)

Secretariat review of SL replies (Feb)

A39 Endorse Plans (Oct)

Translation (6 Weeks; Jul - Aug)

Translation (4 Weeks; Sep –Oct)

Translation (2-3 Weeks)

ANC and ANB to agree on proposed process **(March)**

D/ANB approval of AN-WPs **(July)**

State Letter posted **(Late Oct)**

Deadline for SL Replies **(End Jan)**

C-WPs (ANC reports to Council) posted **(Late May)**

GASP/ GANP to DMO for translation **(July)**

D/ANB approval of AN-WPs **(Mid March)**

Council adoption of GASP and GANP (and A39 WPs) **(Early June)**

AN-WPs posted (All languages) **(August)**

AN-WPs posted **(Late March)**

A39 working papers posted **(Late June)**

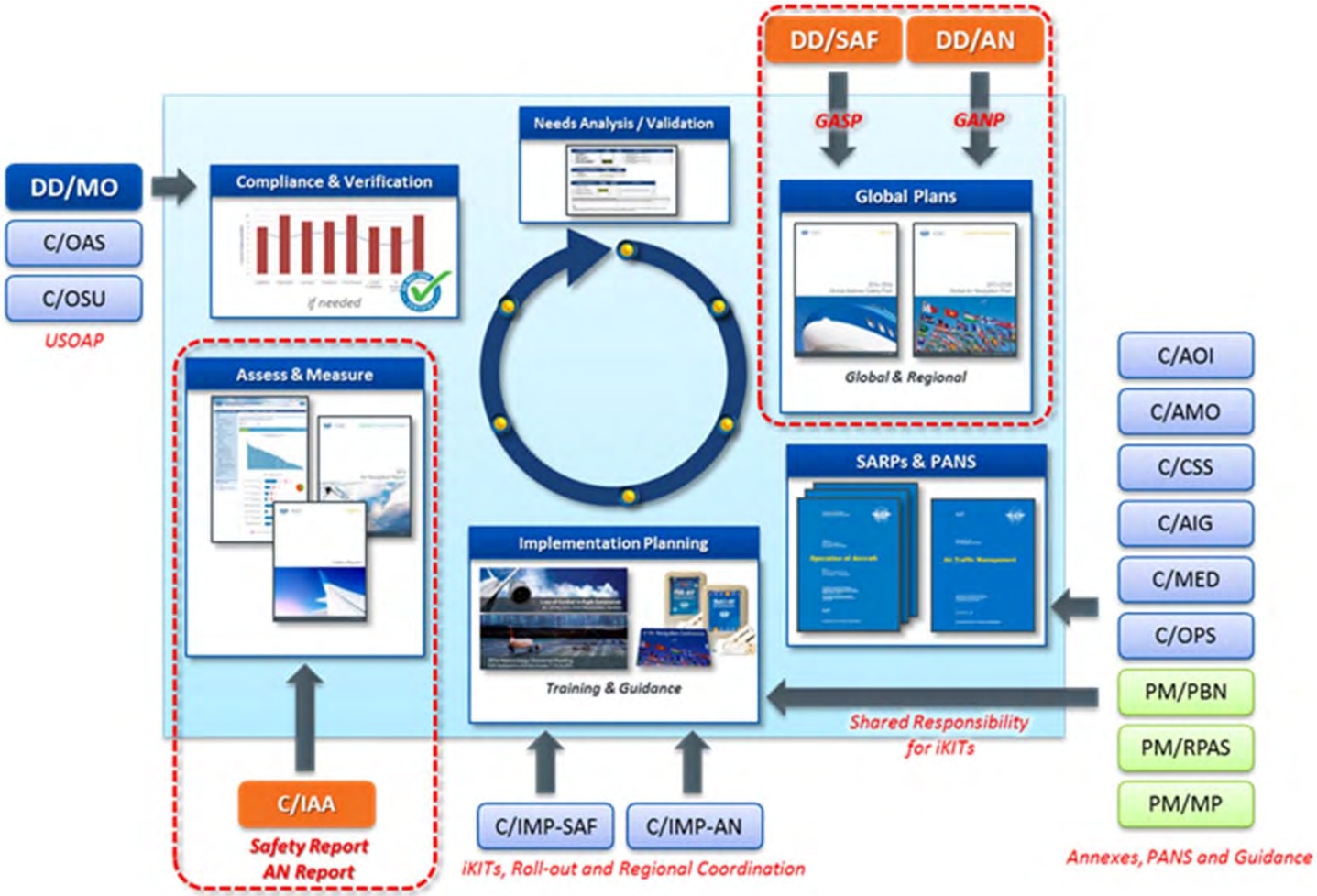
AN-WG/PDP meetings on GASP/GANP **(Week of 21 Sep)**

Final ANC reviews **(Mid April)**

ANC consideration of draft Plans **(Week of 28 Sep)**

C-WPs with GASP and GANP to DMO for translation **(Late April)**

ANB Sections Responsabilities



Aviation's

EMERGING ISSUES

Emerging Issues

Global Tracking

Cyber Security

Next Generation of Aviation Professionals

Cargo Safety

Commercial Space

Conflict Zones Risks

Global Tracking

- **Multi-disciplinary** meeting with States, Industry, Chairs and co-chairs of several panels, and related specialists – 12 - 13 May 2014
  - Established an **ICAO Adhoc Working Group** consisting of panel chairs, secretariat experts, air navigation commissioners, and SAR experts
  - Establishment of a short-term **IATA Task Force** to support the global tracking initiative
- **Short term** recommendations to use available equipment for aircraft tracking, based on industry best practices
- **Mid – Long term**, development of flight tracking SARPs based on the concept of operations (CONOPS)

ICAO Provisions

May 2014
Creation of AHWG
AHWG composed of ANC, ICAO Secretariat, chairs of ATMRPP, ATMOPSP, FLTOPSP, FLIRECP and OPLINKP, and SAR Experts

June
AHWG development of a ***High-level*** **ConOps on the sequence of events** (v0.1) before and after occurrence of an accident, from existing ICAO documentation

August
AHWG Development of *DRAFT* ConOps (v0.x)

August – September
Coordination: Input from various disciplines & panels (ASP, ACP, and DGP)

September 2014
- **AHWG Development of a *MATURE* ConOps** (v1.0)
- **Deadline for HLSC SEC-WPs for translation**

2nd High Level Safety Conference
February 2015

Development of ICAO Provisions to support ConOps

Coordination

IATA Task Force

June 2014
IATA TF Meeting

Mid June – End August
IATA TF near-term solutions for flight tracking:
Assessment of all possible solutions for flight tracking on a voluntary basis, including integration with normal aircraft operations

September 2014
IATA TF near-term solutions for flight tracking:
Solutions for flight tracking on a voluntary basis, including integration with normal aircraft operations

Risks to Civil Aviation Associated with Conflict Zones

- **ICAO/ACI/CANSO/IATA Joint Statement – 29 July 2014**
- **Establishment of Task Force (TF RCZ)**
- **1st meeting on 14 – 15 August 2014**
  - Approved Terms of Reference
  - Drafted Expected Outcomes
- **2nd meeting on 25 - 26 August 2014**
  - Agreed TF objectives, expected outcomes and work programme
  - NOTAM system to be better used to share urgent and critical conflict zone risk information between States and operators
  - a new centralized system to be established for the prompt sharing of conflict zone risk information
- **TF Chairman's report due on 15 September 2014**
- **Presentation to Council on 27 October 2014**

Upcoming Global

KEY EVENTS

Key Global Events – *2014 & 2015*

Global Aviation Cooperation Symposium
ICAO Headquarters, Montréal, 30 Sept–3 Oct 2014

GACS2014

UPCOMING

"Building Cooperation for the Future of Civil Aviation: Innovation, Growth, and Technical Co-operation"

Meet and greet with high-level decision makers and learn about the latest safety and security strategies, challenges facing ICAO Member States, technological trends, and future opportunities, including:

- ➔ How ICAO's Technical Co-operation Programme assists its Member States.
- ➔ Responses to shared Aviation Safety and Security deficiencies found through ICAO audits.
- ➔ New Air Navigation technology trends and the facilitation of Air Navigation Systems.
- ➔ Airport Management strategies and industry best practices.
- ➔ What the future holds for aviation economic growth and development.

WHO SHOULD ATTEND

- ➔ Civil Aviation Authorities and ICAO Member States
- ➔ Airport Operators and Government Bodies
- ➔ Air Navigation Service Providers
- ➔ Aviation Industry Partners and Associations
- ➔ Industry Experts and Other International Organizations

ICAO BUSINESS CLASS 2014 (IBC2014)

Technology Propelling the Future of Aviation

Montréal, Canada 14 to 16 October 2014

About business, for business, with business

ICAO is a key player in the use of aviation information and analysis for the purpose of monitoring safety and operational efficiency performance. Because aviation is such a rich data environment, ICAO has organized a symposium that brings together all key organizations to address aviation issues related to information and data, applications and infrastructure.

The Symposium will provide an opportunity to:

- ✓ Interact with potential systems and technologies, at an international level, to support, know and understand ICAO.
- ✓ Identify the opportunities in working together for the future of aviation.

http://www.icao.int/Meetings/ibc2014/Pages/Registration.aspx

- **Date and Location:** 3-4 December 2014, ICAO Headquarters
- **Website:** http://www.icao.int/meetings/ngap2014/
- **Participants:** Regulators, Air Navigation Service Providers, Airlines, Industry, Aviation Associations, International Organizations, Aviation Universities and Training Institutions and Students
- **Taking stock:** Lessons learned from Phase 1 of NGAP
- **Objectives:**
  - Establish partnerships with stakeholders to support NGAP activities
  - Identify a work programme to support NGAP initiatives at a regional level
  - Develop competencies for aviation professions

High Level Safety Conference 2015

- http://www.icao.int/meetings/HLSC2015/Pages/default.aspx
- Updated Agenda
  - Reviewing the Current Situation
    - Achievements and Remaining Work
  - Future Approach to mange aviation safety
    - State Safety Programme
    - Safety Information Protection
    - Safety Information Sharing
    - Evolution of the GASP
  - Facilitating increased regional cooperation
    - Effective and Efficient Regional Collaboration
  - Emerging Safety Issues

Bring together *senior management within States' CAAs* ***to formulate decisions*** *for the effective and efficient progress of* ***key safety activities***

*Commercial **SPACE** Travel **FOR ALL***

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

Remotely piloted or piloted: sharing one aviation system

- **http://www.icao.int/meetings/rpas/**
- **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.

- **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

THANK YOU