



INTERNATIONAL CIVIL AVIATION ORGANIZATION

A United Nations Specialized Agency

Air Navigation Monitoring and Reporting ANRF, Dashboard and Annual Report

ICAO NACC Regional Office

ANI/WG/01 Meeting
(Mexico, 29 Jul- 1 August 2013)

The Safety and AN System

A Better Way for the Future?



GLOBAL PLANS

Pending Council Approval

Outlines Global Priorities and Targets
*Reviewed by ANC; Approved by Council
 Endorsed by Assembly*



*Feedback loop for
 continuous
 improvement*

GLOBAL PERFORMANCE REPORTS

Reporting against Global Priorities
*Global Reports (online) Annually
 Special Version (print) for Assembly*

PIRG-RASG agreed to establish by certain dates:

Safety
(As soon as possible)

Air Navigation
(May 2014)



REGIONAL PERFORMANCE DASHBOARDS

Africa – Aug 2013

All Regions - Mar 2014

Adopts Global Priorities, sets additional as needed
Used by PIRGs and RASGs to Measure Performance
Regional Office Updates Dashboard (online) semiannually



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 current Performance Framework Form (PFF) has been redesigned and aligned with ASBU framework and called the Air Navigation Report Form (ANRF)
- ANRF will be 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 upcoming 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 Implementatio n	Air Implementatio n	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 Reporting

Regional Performance Dashboard



- Transparency and sharing of information are fundamental to a safe and efficient global air transportation system.
- Consistent with this principle, the Organization is introducing “Regional ‘Performance Dashboard’” - the homepages for every public website of the ICAO Regional Offices.
- These dashboards will illustrate the regional implementation status relating to the strategic objectives on Safety, Air Navigation Capacity and Efficiency, and Environmental Protection.

Regional Performance Dashboard Definition



- The Dashboard will show targeted performance at the regional level and will, initially, contain graphics and maps with a planned expansion to include the Aviation System Block upgrades (ASBU) Block 0 Modules.
- This new interactive online system will be in place in August 2013 for AFI region and March 2014 for the remaining regions and will be updated at regular intervals.
- Dashboard will be user friendly and able to deliver the message at glance.

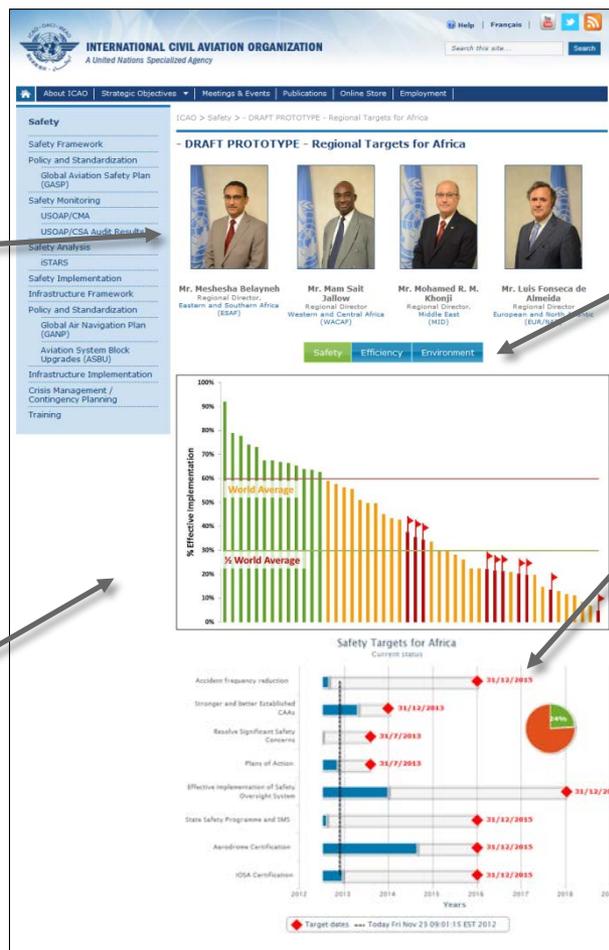
Regional Performance Dashboard Proposed Format – Home page of ICAO RO website



GENERAL FORMAT

Regional Directors responsible for the selected UN Region

For Safety:
Effective Implementation
(No State names)
For Efficiency:
Air Navigation Implementation
(by State)
For Environment:
Fuel savings and CO2 reduction
(by State)



Regional Performance by Strategic Objective

Regional Performance Indicators

Message:
Provide the status of Safety, Efficiency, and Environment for the Region

Regional Performance Dashboard Indicators/metrics for Safety



SAFETY

Metrics

- 1. Safety Oversight**
Effective Implementation by State
- 2. Accidents and serious incidents**
Number of accidents per million departures
- 3. Runway Excursions and Incursions**
Runway excursion and incursion accidents as a percentage of all accidents
- 4. Aerodrome certification**
Number of certified international aerodromes
- 5. SSP/SMS Implementation**
Implement Phase 1 of State Safety Programmes (SSP) and ensure that all Service Providers implement a Safety Management System (SMS)



Regional Performance Dashboard Indicators/metrics for Air Navigation



AIR NAVIGATION

Metrics

1. **PBN TERMINAL**
% of international aerodromes with APV
2. **PBN ENROUTE**
% of PBN routes/airspaces
3. **CDO**
% of international aerodromes/TMAs with CDO
4. **CCO**
% of international aerodromes/TMAs with CCO
5. **Estimated Fuel Savings/ CO2 Emissions Reduction Based on IFSET**
6. **ATFM**
% of ATS Units/international aerodromes providing ATFM service
7. **AIM**
% of needed elements (from AIS to AIM Roadmap) facilitating the transition from AIS to AIM that have been implemented – PHASE I



Regional Performance Dashboard Roll-out plan



- **Step 1: identify a set of indicators for safety, efficiency and environment**
 - Initial set of indicators was agreed by PIRG-RASG Chairs in a coordination meeting held in Montreal on 19 March 2013.
- **Step 2: Seek endorsement from the 38th Session of ICAO Assembly in September 2013**
- **Launch initial version of the Dashboard in August 2013 for AFI region and March 2014 for the remaining regions**

Air Navigation Reporting Current



REPORTS



PAPER

DATA

CC	Country	ICAO	FAA	ICAO	FAA
AE	United Arab Emirates	AE	AE	AE	AE
AF	Afghanistan	AF	AF	AF	AF
AG	Guatemala	AG	AG	AG	AG
AI	Anguilla	AI	AI	AI	AI
AL	Albania	AL	AL	AL	AL
AM	Armenia	AM	AM	AM	AM
AN	Netherlands Antilles	AN	AN	AN	AN
AO	Angola	AO	AO	AO	AO
AQ	Antarctica	AQ	AQ	AQ	AQ
AR	Argentina	AR	AR	AR	AR
AS	Samoa	AS	AS	AS	AS
AT	Austria	AT	AT	AT	AT
AU	Australia	AU	AU	AU	AU
AW	Aruba	AW	AW	AW	AW
AX	Aland Islands	AX	AX	AX	AX
BA	Bosnia and Herzegovina	BA	BA	BA	BA
BB	Barbados	BB	BB	BB	BB
BC	Cuba	BC	BC	BC	BC
BD	Bangladesh	BD	BD	BD	BD
BE	Belgium	BE	BE	BE	BE
BF	Burkina Faso	BF	BF	BF	BF
BG	Bulgaria	BG	BG	BG	BG
BH	Bahrain	BH	BH	BH	BH
BI	Burundi	BI	BI	BI	BI
BJ	Benin	BJ	BJ	BJ	BJ
BK	Botswana	BK	BK	BK	BK
BL	Belize	BL	BL	BL	BL
BM	Bermuda	BM	BM	BM	BM
BN	Brunei Darussalam	BN	BN	BN	BN
BO	Bolivia	BO	BO	BO	BO
BR	Brazil	BR	BR	BR	BR
BS	Bahamas	BS	BS	BS	BS
BT	Bhutan	BT	BT	BT	BT
BV	Bouvet Island	BV	BV	BV	BV
BW	Botswana	BW	BW	BW	BW
BY	Belarus	BY	BY	BY	BY
BZ	Belize	BZ	BZ	BZ	BZ
CA	Canada	CA	CA	CA	CA
CC	Cocos (Keeling) Islands	CC	CC	CC	CC
CD	Congo	CD	CD	CD	CD
CE	Cape Verde	CE	CE	CE	CE
CF	Cote d'Ivoire	CF	CF	CF	CF
CG	Congo	CG	CG	CG	CG
CH	Switzerland	CH	CH	CH	CH
CI	Cote d'Ivoire	CI	CI	CI	CI
CK	Cook Islands	CK	CK	CK	CK
CL	Chile	CL	CL	CL	CL
CM	Cameroun	CM	CM	CM	CM
CN	China	CN	CN	CN	CN
CO	Colombia	CO	CO	CO	CO
CR	Costa Rica	CR	CR	CR	CR
CU	Cuba	CU	CU	CU	CU
CV	Cape Verde	CV	CV	CV	CV
CX	Hong Kong	CX	CX	CX	CX
CY	Cyprus	CY	CY	CY	CY
CZ	Czechia	CZ	CZ	CZ	CZ
DD	Germany	DD	DD	DD	DD
DE	Germany	DE	DE	DE	DE
DF	Finland	DF	DF	DF	DF
DG	Dominican Republic	DG	DG	DG	DG
DH	Dominica	DH	DH	DH	DH
DI	Dominican Republic	DI	DI	DI	DI
DJ	Djibouti	DJ	DJ	DJ	DJ
DK	Denmark	DK	DK	DK	DK
DM	Dominica	DM	DM	DM	DM
DO	Dominican Republic	DO	DO	DO	DO
DR	Dominican Republic	DR	DR	DR	DR
DT	Dominican Republic	DT	DT	DT	DT
DU	Dominican Republic	DU	DU	DU	DU
DV	Dominican Republic	DV	DV	DV	DV
DW	Dominican Republic	DW	DW	DW	DW
DX	Dominican Republic	DX	DX	DX	DX
DY	Dominican Republic	DY	DY	DY	DY
DZ	Algeria	DZ	DZ	DZ	DZ

ELECTRONIC / PAPER

ANALYSIS



ELECTRONIC / PAPER

Air Navigation Reporting Future



REPORTS

Attributes

ACTIVITY: AIR, ANS, LEG, OPS, PEL

1) STATE: Sample State

2) CITIES: Sample City

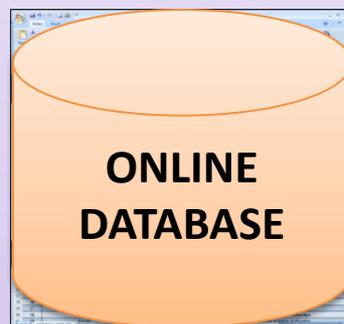
4) PROVIDER: Sample Provider

5) FUNDING: Sample Funding

Delete OK

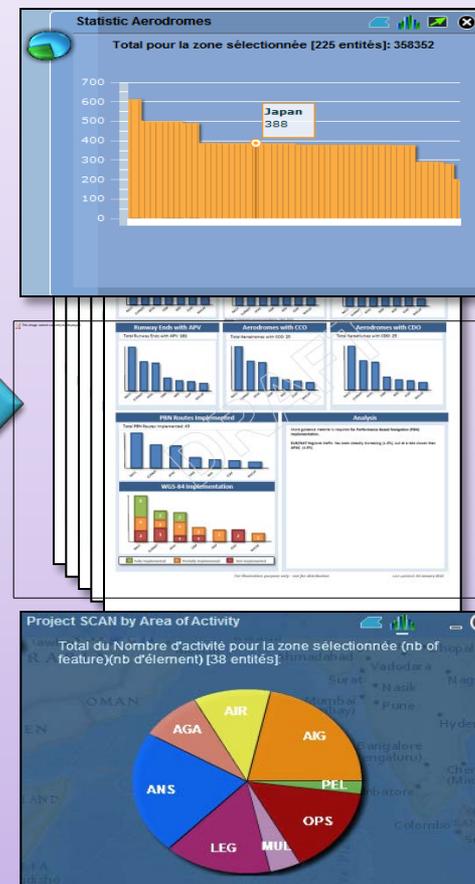
ONLINE

DATA



ONLINE

ANALYSIS



ONLINE

Measuring Against the Global Plans Reporting Mechanism and Tools



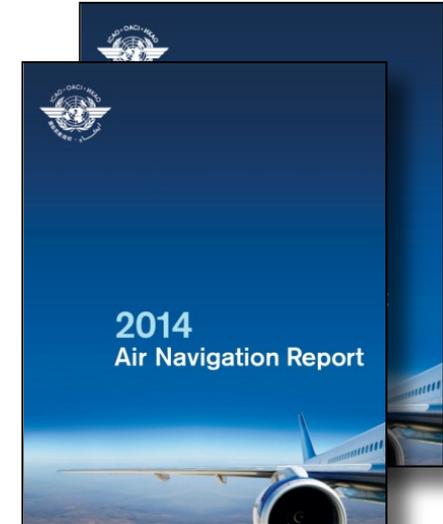
Regional Bodies



Web Portal



Report



- **Visualize** the status of implementation through dynamic and interactive charts
- Provide **feedback** on the data (qualification of the data)
- Perform **self-assessments**, generate ad-hoc **reports** and **export** data
- Provide a venue for data collection towards the **Annual Reports**

Annual Global Air Navigation Report

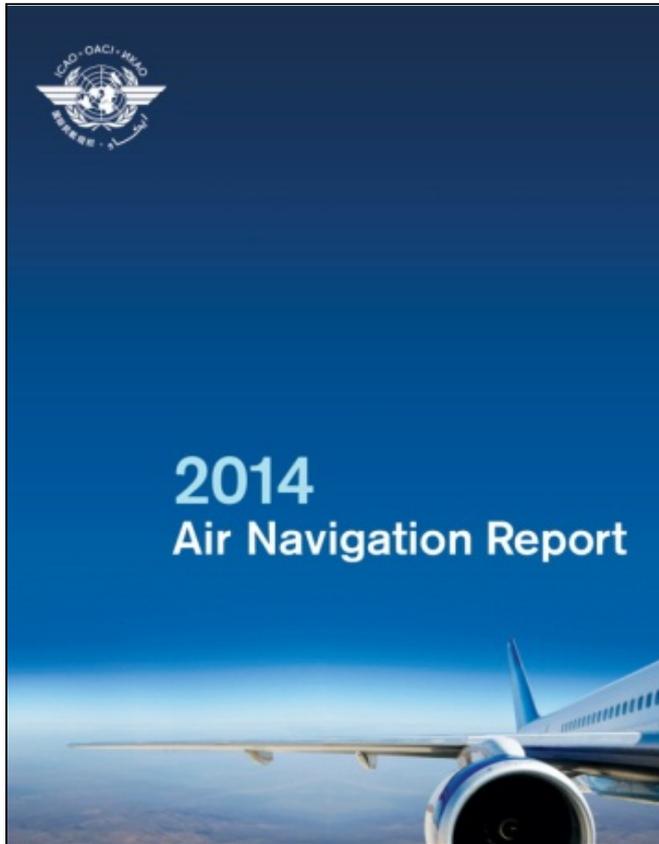
Purpose



- Transparency and sharing of information are fundamental to a safe and efficient global air transportation system.
- Consistent with this principle and much like the existing annual Safety Report, the proposed annual Global Air Navigation Report will assist PIRGs and States in understanding which areas require special attention to effectively improve air navigation performance worldwide . **First Report in April 2014**
- Help propagate information on implementation success stories.
- Provide an opportunity for the civil aviation community to evaluate progress across different ICAO regions.
- Facilitate more effective interregional harmonization planning
- The outcomes of the Report could also help to identify annual tactical adjustment priorities for regional work programmes, as well as informing longer-term policy adjustments.

Annual Global Air Navigation Report

Proposed contents



- global air navigation challenges;
- measuring against those challenges;
- status of operational measures for performance improvement;
- implementation progress of selected priority ASBU Block 0 Modules.
- sharing of successful initiatives and key demonstrations

Annual Global Air Navigation Report

An initial dataset



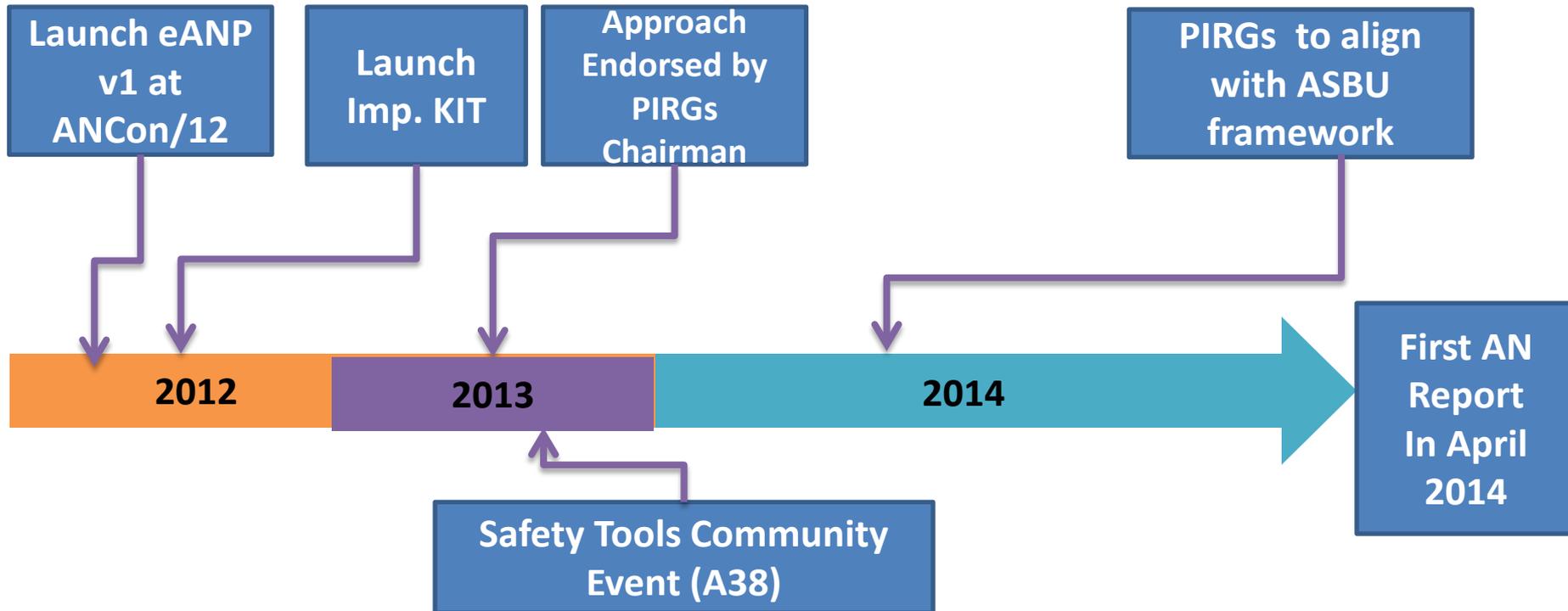
This initial dataset for both Regional Performance Dashboard and the Global Air Navigation Report was recently agreed by the PIRG Chairs in a coordination meeting held on 19 March 2013



- 1. Performance Based Navigation (PBN) - Terminal**
% of international aerodromes with APV
- 2. Performance Based Navigation (PBN) - Enroute**
% of PBN routes/airspace
- 3. Continuous Descent Operations (CDO)**
% of international aerodromes/TMAs with CDO
- 4. Continuous Climb Operations (CCO)**
% of international aerodromes/TMAs with CCO
- 5. Estimated Fuel Savings/ CO2 Emissions Reduction Based on IFSET**
- 6. Air Traffic Flow Management (ATFM)**
% of ATS Units/international aerodromes providing ATFM service
- 7. Aeronautical Information Management (AIM)**
% of needed elements (from AIS to AIM Roadmap) facilitating the transition from AIS to AIM that have been implemented – PHASE I

Annual Global Air Navigation Report

Initial tasks and Roll Out



PIRG-RASG Global Coordination Meeting

Objective



- A Planning and Implementation Regional Groups (PIRGs) and Regional Aviation Safety Groups (RASGs) Global Coordination Meeting (GCM) was held in Montreal on 19 March 2013 under the Chairmanship of the President of the ICAO Council.
- The main objective of the meeting was to exchange views on the readiness and ability of the PIRGs and RASGs to set priorities and targets in line with the new versions of the GANP and the Global Aviation Safety Plan (GASP).
- A secondary objective was to share successful initiatives of each of the PIRGs and RASGs to ensure the best possible synergy. The outcome of the meeting includes

PIRG-RASG Global Coordination Meeting Outcome



- Establishing regional priorities and targets for air navigation by May 2014 consistent with the GANP/ASBU framework;
- Need to measure performance improvements to help demonstrate their positive impact on the environment;
- Endorsed regional performance dashboard prototype and determination of an initial set of indicators and metrics for air navigation;
- Confirmation of the need for a coordination mechanism in each region between the RASG and
- PIRG to ensure consistency of action and avoid overlap;
- Encouragement of the sharing of successful initiatives among each other;
- Identification of the need for training to determine priorities for the aviation system block upgrades; and
- agreement on utilizing specific interface groups where required for addressing the harmonization of air navigation plans in adjacent areas of PIRGs.

It was decided to convene the PIRG-RASG global coordination meeting in this format once every two years with the next one planned for spring 2015.



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

South American
(SAM) Office
Lima

ICAO
Headquarters
Montreal

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) Office
Bangkok

Thank You

A world map is shown in a light blue color. Eight colored dots are placed on the map, each connected by a thin line to a text label describing an ICAO regional office. The ICAO Headquarters in Montreal is marked with an orange dot, while all other regional offices are marked with blue dots. A large, rounded rectangular box with a grey gradient and a black border is centered over the map, containing the text "Thank You" in a bold, dark blue font.