



State of Global and Regional Aviation Safety and Air Navigation

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*Air Navigation Bureau - ICAO
Chief of the Integrated Aviation Analysis Section*

**20th Meeting of the Africa-Indian Ocean
Planning and Implementation Regional Group (APIRG/20)**
3 0 November – 2 December 2015, Yamoussoukro, Cote d'Ivoire

**3rd Meeting of the Africa-Indian Ocean
Regional Aviation Safety Group (RASG-AFI/3)**
3 – 4 December 2015, Yamoussoukro, Cote d'Ivoire





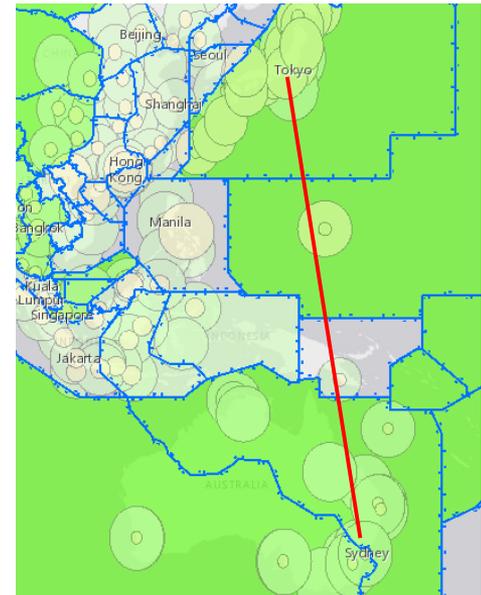
Global Events / Issues

- Global Aircraft Tracking
- Risks to Civil Aviation Arising from Conflict Zones



Normal Tracking Implementation Initiative

- The theater of operations is the ASIA/PAC.
 - Chosen as a representative area
- The implementation initiative was conducted in a multi-national context
 - Led by ICAO with support from States and industry stakeholders
 - NATII SC and WG held over 30 telecoms and 1 meeting over the summer
 - Held a communications and aircraft tracking service provider Workshop
- The implementation initiative helped craft the SARP proposal.





Upcoming Normal Tracking SARPs

Performance-based Standards and recommended practices for normal flight tracking

- No change to ATC procedures
- Not technology-specific
- Establish operator responsibility to track
- Recommendation to automatically track **everywhere** where ATC gets position information at more than every 15 min
- Standard to automatically track in **oceanic areas** where ATC gets position information at more than every 15 min
- Data retention for last known aircraft location purposes
- Complementary provisions to be developed to facilitate a practical implementation

Timelines

- ✓ **January 2015**
 - Preliminary review by ICAO ANC
- ✓ **March 2015**
 - State Letter
- ✓ **October 2015**
 - ANC final review
 - ANC Rec to Council
- **November 2015**
 - Council for adoption
- **November 2018**
 - Expected applicability



CONFLICT ZONES

High Level Safety Conference 2015

The HLSC 2015 recommended the establishment of a simple centralized web-based repository of risks over or near conflict zones

State Letter on web-based repository

ICAO issued State letter SMM 1/4-15/16, informing ICAO Member States as to the development of the conflict zone information repository and interim procedures.

Repository Review Group (RRG)

The President of ICAO Council established the RRG to periodically review the implementation and progress of the CZIR.

Deadline for comments on CZIR (SMM 1/4-15/16)

States to share their experience working with the repository and highlight any identified policy and/or technical issues related to the repository and procedures

Interim procedure approved by Council

During its 204th Session, ICAO Council approved in an interim procedure to disseminate information on risks to civil aviation arising from conflict zones.

ICAO Conflict Zone Information Repository (CZIR) Launched

ICAO launched the CZIR system through the ICAO public site

No comments received to date

3rd Meeting of the RRG

End of the one-year evaluation for the CZIR





Conflict Zone Information Repository (CZIR) Public interface

The screenshots illustrate the user interface of the Conflict Zone Information Repository (CZIR) on the ICAO website. The first screenshot shows the main navigation menu and a sidebar with various aviation-related links. The second screenshot displays the 'Conflict Zone Information Repository' header and a disclaimer section. The third screenshot shows a search and filter interface for the repository. The fourth screenshot is a detailed view of the data table.

Reporting State	Information Source Type	Information Title	Valid From	Valid To
United Kingdom	NOTAM	POTENTIAL RISK FROM DEDICATED ANTI-AVIATION WEAPONRY	2015-09-08	2015-12-06
United Kingdom	NOTAM	POTENTIAL RISK FROM ANTI-AVIATION WEAPONRY	2015-09-08	2015-12-06
United Kingdom	NOTAM	POTENTIAL RISK FROM ANTI-AVIATION WEAPONRY	2015-09-08	2015-12-06
United Kingdom	NOTAM	POTENTIAL RISK FROM DEDICATED ANTI-AVIATION WEAPONRY	2015-09-08	2015-12-06
France	Aeronautical Information Circular (AIC)	Request to French carriers not to penetrate airspace of Iraq	2014-07-31	2017-07-31
France	Aeronautical Information Circular (AIC)	Request to French carriers for flights over Afghanistan	2015-01-17	2016-01-17
France	Aeronautical Information Circular (AIC)	Information to French airlines for flights over Pakistan	2015-01-17	2016-01-17

<http://www.icao.int/czir/>

MH17 Report by the Dutch Safety Board (DSB)

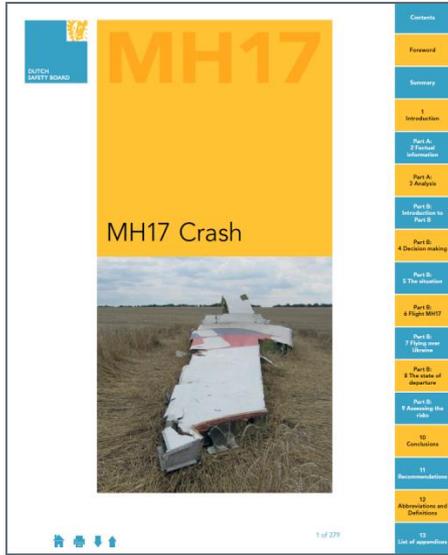


6 Safety Recommendations to ICAO

• Level 1: Airspace management in conflict zones

- Rec 1: Incorporate in Standards that States dealing with an armed conflict in their territory shall at an early stage **publish information that is as specific as possible regarding the nature and extent of threats of that conflict and its consequences for civil aviation**. Provide clear definitions of relevant terms, such as conflict zone and armed conflict
- Rec 2: **Ask States dealing with an armed conflict for additional information if published aeronautical or other publications give cause to do so**; offer assistance and consider issuing a State letter if, in the opinion of ICAO, States do not sufficiently fulfil their responsibility for the safety of the airspace for civil aviation; and
- Rec 3: **Update Standards and Recommended Practices related to the consequences of armed conflicts for civil aviation**, and convert the relevant Recommended Practices into Standards as much as possible so that States will be able to take unambiguous measures if the safety of civil aviation may be at issue.

MH17 Report by the Dutch Safety Board (DSB)



6 Safety Recommendations to ICAO

• Level 2: Risk Assessment

- Rec 5: Encourage **States and operators who have relevant information about threats within a foreign airspace to make this available in a timely manner to others** who have an interest in it in connection with aviation safety. Ensure that the relevant paragraphs in the ICAO Annexes concerned are extended and made more strict;
- Rec 6: **Amend relevant Standards so that risk assessments shall also cover threats to civil aviation in the airspace at cruising level, especially when overflying conflict zones.** Risk increasing and uncertain factors need to be included in these risk assessments in accordance with the proposals made by the ICAO Working Group on Threat and Risk; and
- Rec 9: In addition to actions already taken, such as the website (ICAO Conflict Zone Information Repository) with notifications about conflict zones, **a platform for exchanging experiences and good practices regarding assessing the risks related to the overflying of conflict zones** is to be initiated.



Needs Analysis / Validation

Global Plans

Global & Regional

SARPs & PANS

Implementation Planning

Training & Guidance

Assess & Measure

Compliance & Verification

if needed

Review 2015

SAFETY

2014-2016
Global Aviation Safety Plan

**Next GASP
2016**

Doc. 10004

Timelines



October 2015

- Preliminary review by ICAO ANC

November 2015

- State Letter

February 2016

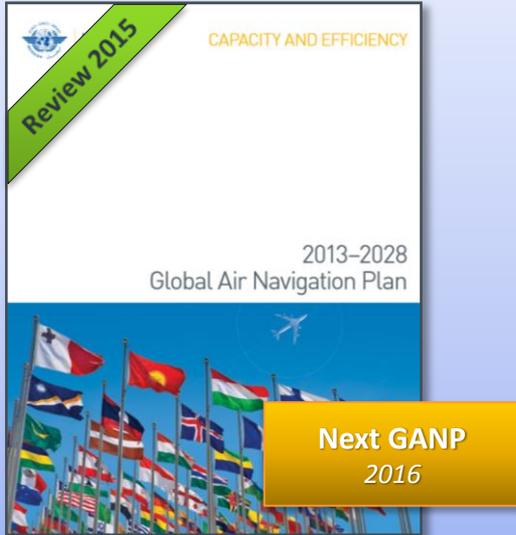
- Review of feedback
- Safety Roadmap ready

April 2016

- Final review by ICAO ANC

October 2016

- Adoption by the 39th Assembly



Major changes:

- Change the order of the modules in all figures, tables, text,... to match the one of the ASBU document
- Updates of all roadmaps to match the changes of the ASBU document

Major additions:

- Performance-based approach for the ASBUs -> Performance indicators
- Guidance on financial aspects (promised in GANP 2013)
- Minimum path
- Standardization roadmap
- Global ATM logical architecture (12th Air Navigation recommendation promised in GANP 2013)
- NGAP



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Global & Regional

SARPs & PANS

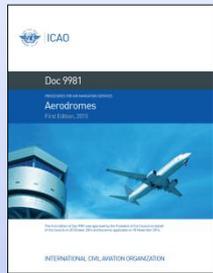
Implementation Planning

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In 2015 (to date)

- 2** Annex Amendments
- 1** PANS Amendments

For 2016

- 19** Annex Amendments
- 7** PANS Amendments

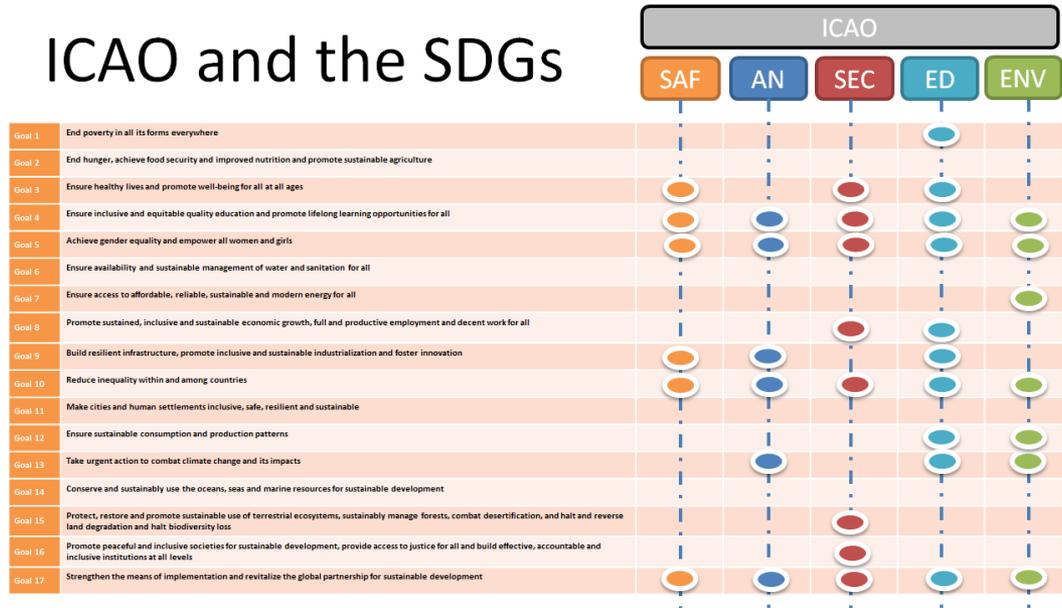
Safety and Air Navigation **INTEGRATED** Work Programme



Sustainable Implementation

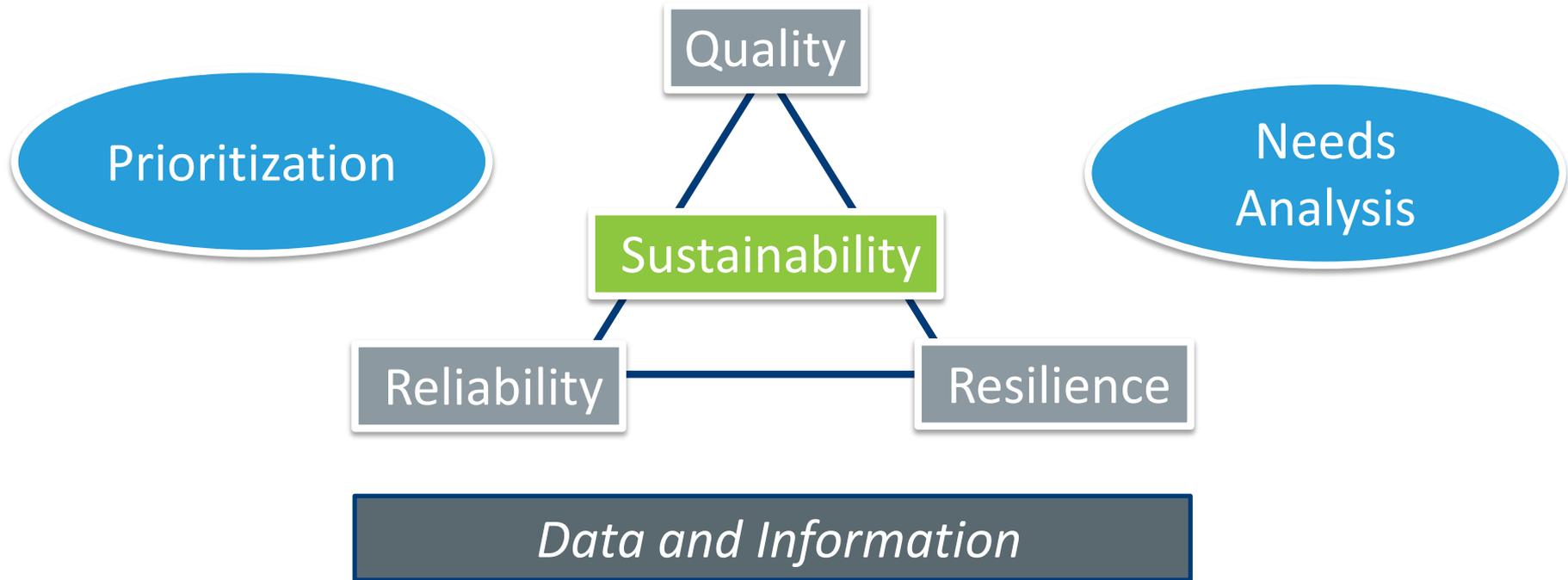
- UN Adopted Sustainable Development Goals (SDGs)
- ICAO Mapped activities against SDGs
- Aviation has an impact on 15 of the 17 UN goals
- ICAO proposed connectivity and USOAP AGA EI as indicators to UN group

ICAO and the SDGs





Sustainable Implementation

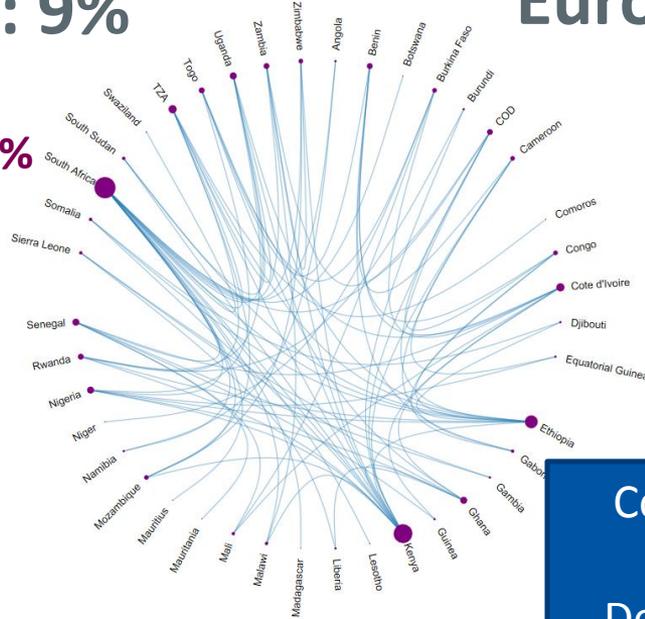




Connectivity

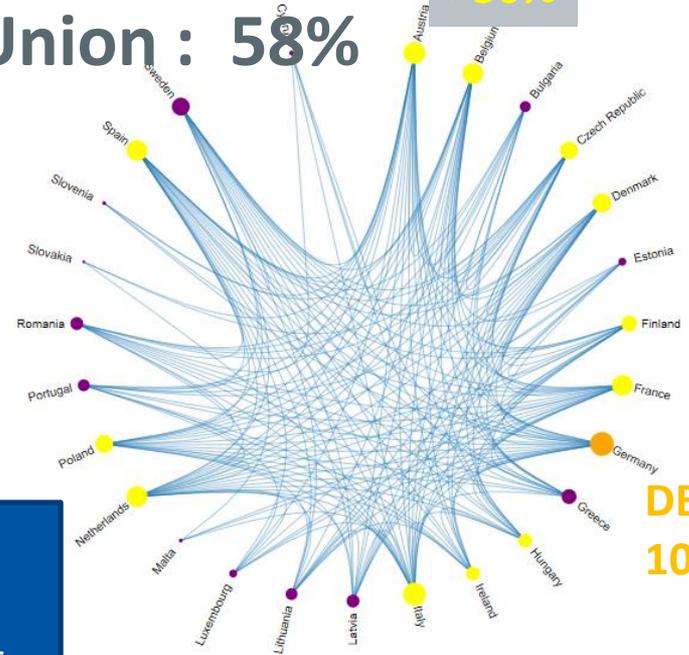
AFI : 9%

SAF: 42%



European Union : 58%

>50%

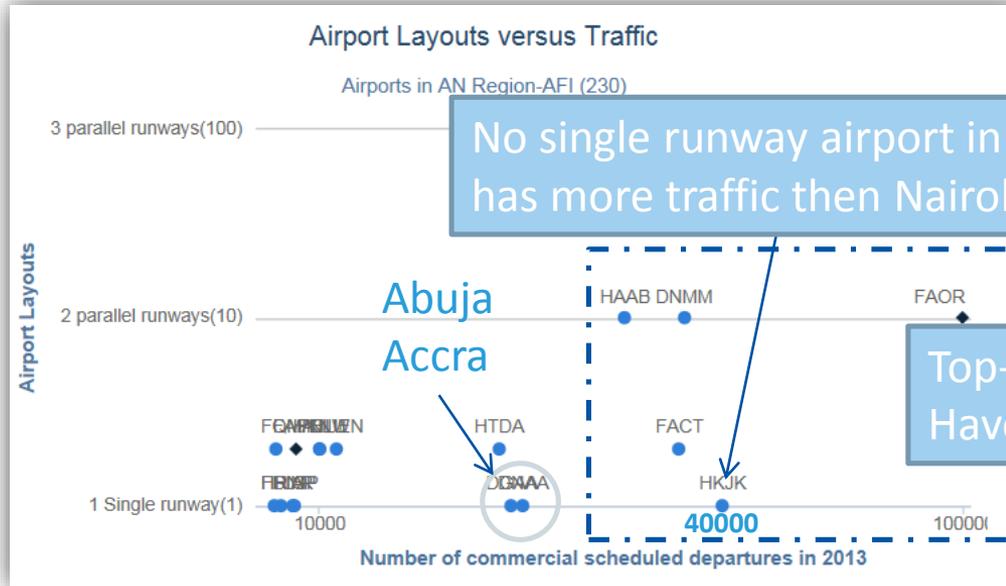


DEU:
100%

Connectivity
brings
Development



Prioritization Air Navigation

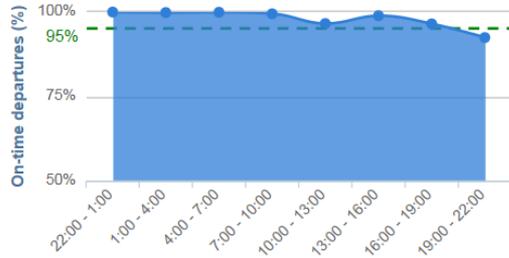


Top-5 Airports in AFI
Have 35% of total traffic

- Johannesburg 14%
- Nairobi 6%
- Lagos 5%
- Cape Town 5%
- Addis Abeba 4%

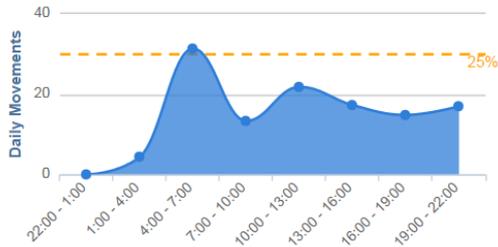


Punctuality



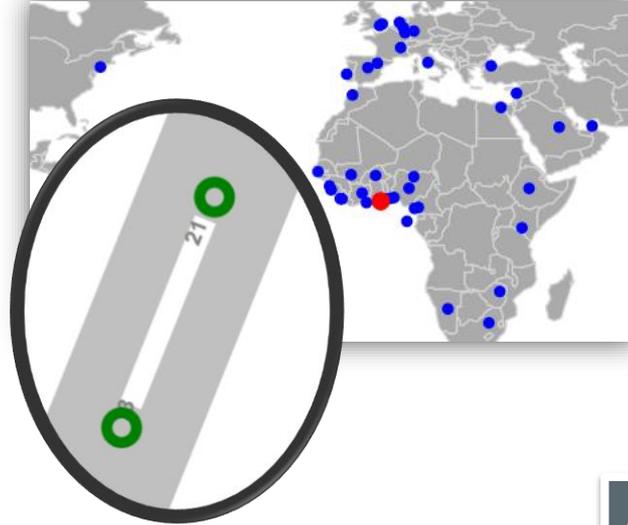
Punctuality OK

Capacity and Usage



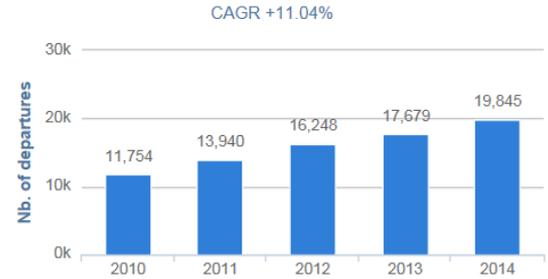
Capacity Margin OK

Accra



Full PBN

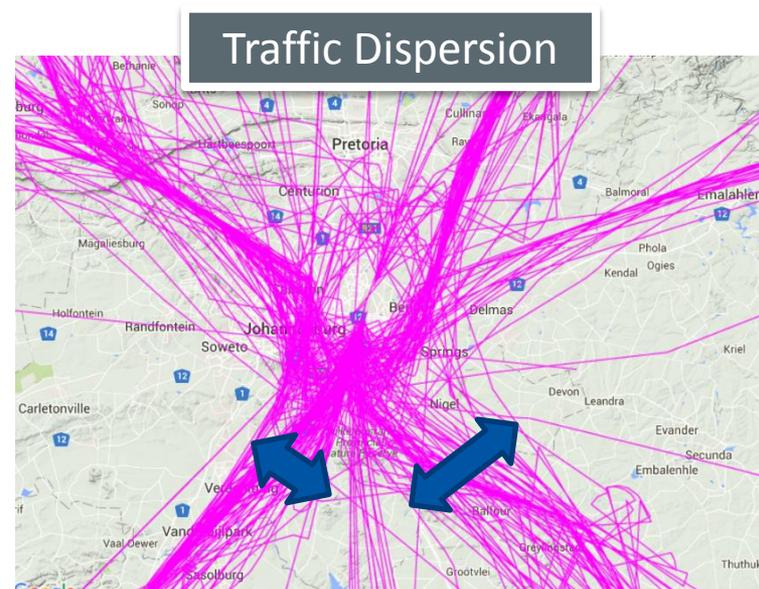
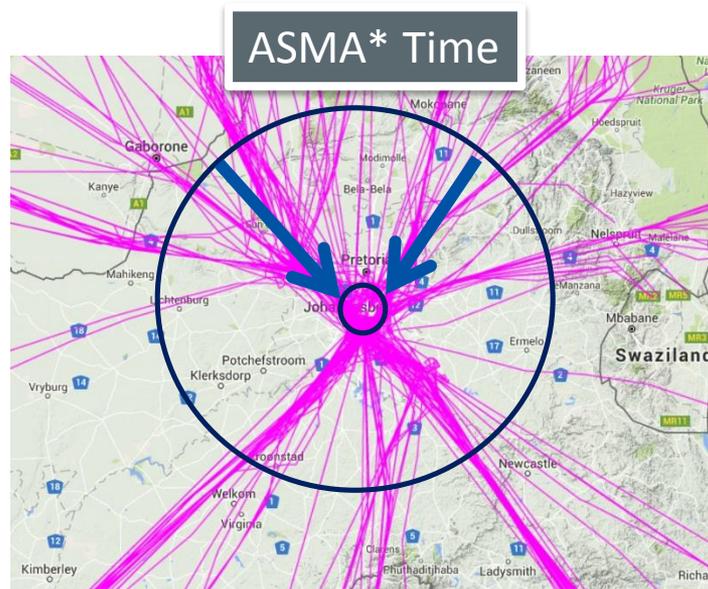
Annual Departures



Accra will Double Traffic by 2021
Hence need for 2nd runway by 2021



Performance Metrics for Needs Analysis



*ASMA=Arrival Sequencing and Metering Area

Example on Johannesburg Airport



IMPLEMENT is

- An No Country Left Behind initiative
- A set of tools as decision aids for implementation
- Integrated into the iSTARS System
- Providing **relevant** and **sustainable** solutions



State Safety Briefing (SSB)*



Import / Export Risks*



Solution Center*



Civil Aviation Authority - Human Resources (CAA-HR) Toolkit*



Airport Briefing*



Regional Briefing*



ASBU Performance Assessment Interactive Tool (PAINT)



Security and Facilitation



Environment



Training Needs Analysis (TNA)



Global Cost Database (GCDB)*



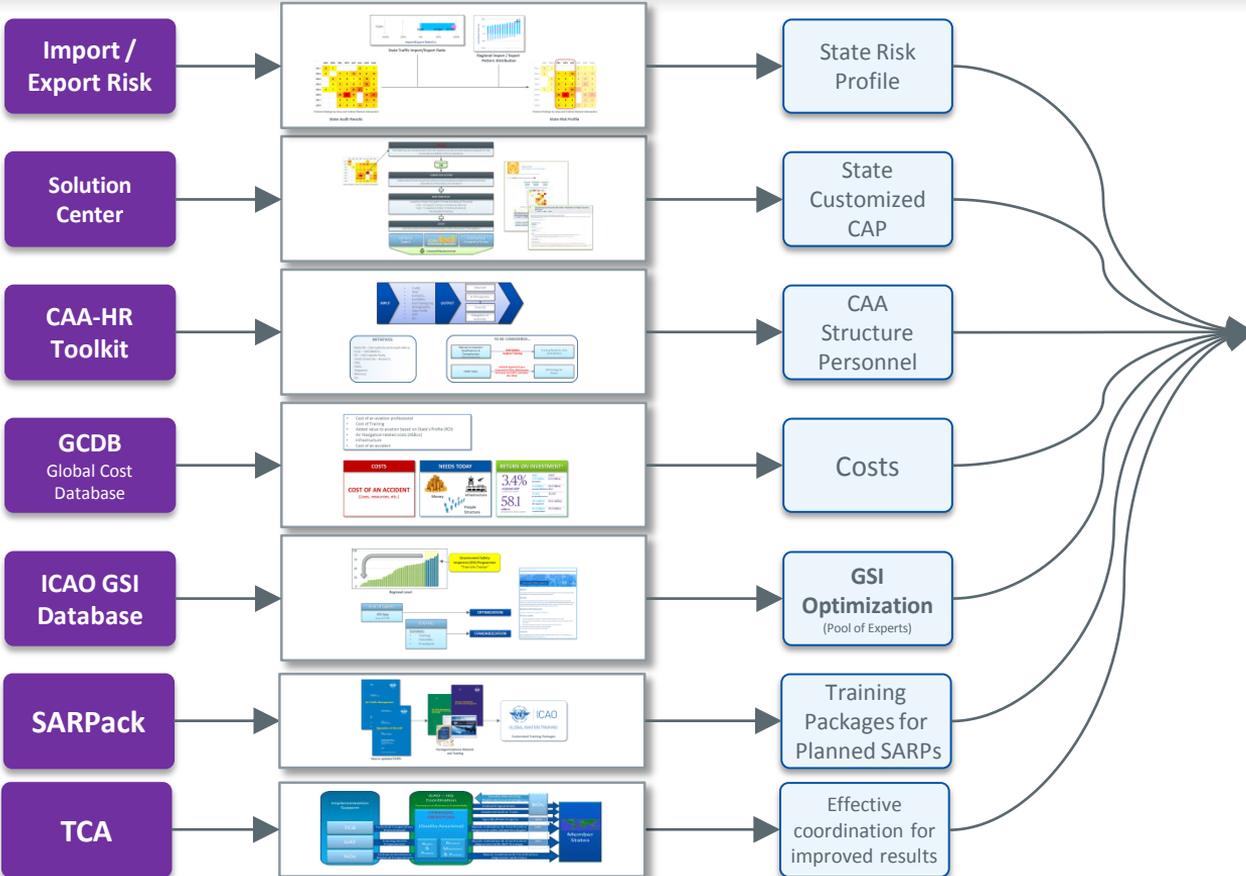
Enhanced State Briefing*



IMPLEMENTATION



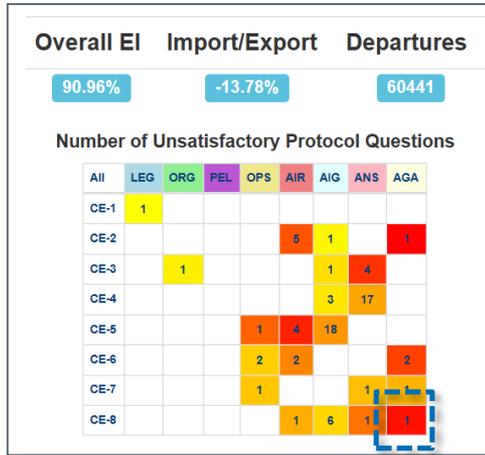
State Safety Briefings (SSB)





Solution Center

Help and guidance on Protocol Questions



PQ and Guidance

Area Lack, Benefit and Ease

2.122 Aerodromes and Ground Aids (AGA) - Resolution of Safety Concerns (CE-8) (1)

Area Lack ●●○○○ Benefit ●●●○○○ Ease ●●○○○○

8,329 (CE-8) - Does the State collect and forward wildlife strike reports to ICAO?

1) Review national procedure for recording wildlife strikes. 2) Review established requirements. 3) Evaluate mechanism to ensure effective implementation of the reporting and rectification action. 4) Review evidence to confirm.

Ref: STD A14, Vol. 19 4.2 GM Doc 9332 1.2.1

Adopt Best Practices ← Best Practices Available (Templates, Other State's, Industry)

Standards and Recommended Practices

Annex 14: Aerodromes Volume I - Aerodrome Design and Operations Current edition (consolidated)
Doc 9332: Manual on the ICAO Bird Strike Information System (IBIS) Third edition

Buy a tool ← Software tools available

List of available software tools coming soon...

Get Staffed ← CAA-HR Toolkit

List of required staff coming soon...

Get Fit ← Training

The following courses are available and related to the subject. For further information, please contact globalaviationtraining@icao.int for further help

ICAO - Safety Management System/State Safety Programme (SMS/SSP) by International Civil Aviation Organization (ICAO)

Join a Program

List of available programs coming soon...

Consult with others

In the Regional Aviation Safety Group (RASG-EUR) of Romania, the following States (30) have solved this question (the States in **bold** have similar traffic than Romania)

Austria, Azerbaijan, Belgium, Bulgaria, Bosnia and Herzegovina, Switzerland, **Czech Republic**, Germany, Denmark, Spain, Finland, France, United Kingdom of Great Britain and Northern Ireland, Georgia, Greece, Ireland, **Israel**, Italy, Luxembourg, Latvia, **Morocco**, Republic of Moldova, Netherlands, Norway, Poland, San Marino, Sweden, Tunisia, Turkey, Uzbekistan

Regional/Global Initiatives

States that have resolved the current protocol question (with highlight on States with similar traffic)



Needs Analysis / Validation

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Global & Regional

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Implementation Planning

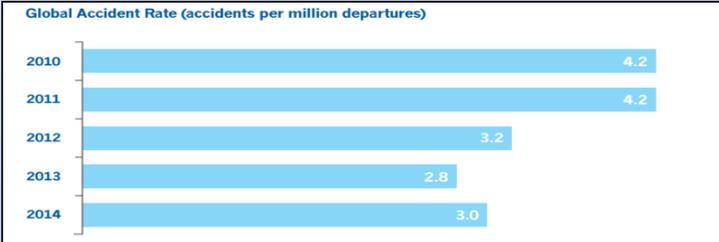
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Figures from 2015 SAFETY REPORT



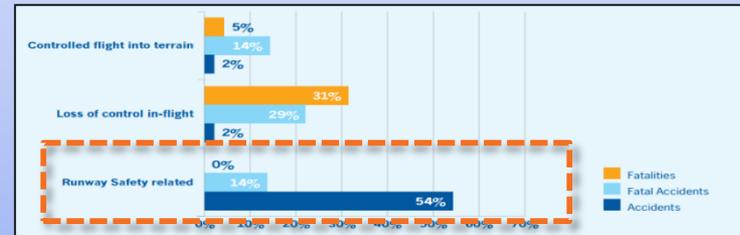
GLOBAL ACCIDENT RATE CONTINUES TO BE STABLE

RASG	Estimated Departures (in millions)	Number of accidents	Accident rate (per million departures)	Fatal accidents	Fatalities
AFI	0.7	6	8.6	1	118
APAC	10.2	18	1.8	3	449
EUR	8.9	26	2.9	1	298
MID	3.0	7	2.3	2	39
PA	9.9	41	4.1	0	0
WORLD	33	98	3.0	7	904

REGIONAL ACCIDENT RATES REMAIN LOW



AN UPTICK OF FATALITIES IN THE LAST YEAR



TOP HIGH-RISK OCCURRENCE CATEGORIES REMAIN TO BE RS, LOC-I, CFIT

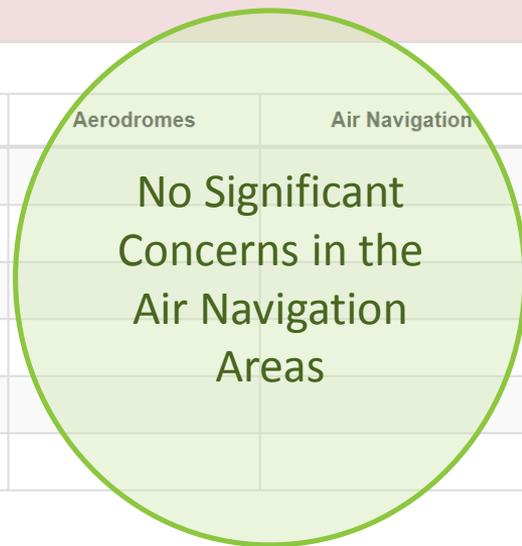


Significant Safety Concerns (SSCs)

SSCs indicate that a State is not providing sufficient safety oversight to ensure the effective implementation of applicable ICAO Standards. SSCs may be issued in the area of operations, air navigation services, aerodromes, airworthiness or licensing.

RASG-AFI has 6 States with a total of 7 SSCs.

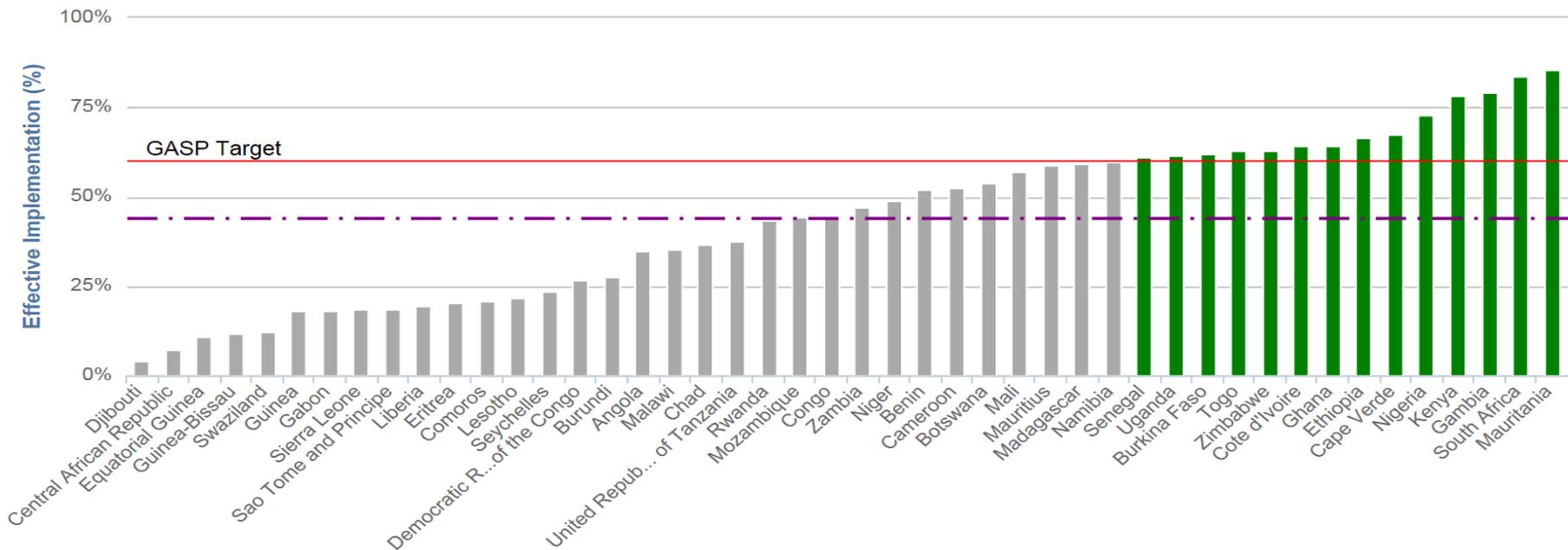
State	SSCs	SSC Areas				
		Airworthiness	Operations	Licensing	Aerodromes	Air Navigation
Angola	1		x			
Botswana	2	x	x			
Djibouti	1		x			
Eritrea	1		x			
Malawi	1		x			
Sierra Leone	1			x		





ICAO Safety Audit Results for RASG-AFI

Effective implementation of safety oversight systems by State





ICAO

UNITING AVIATION

NO COUNTRY LEFT BEHIND



Needs Analysis / Validation

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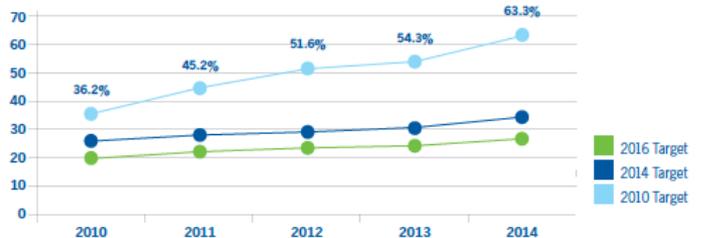
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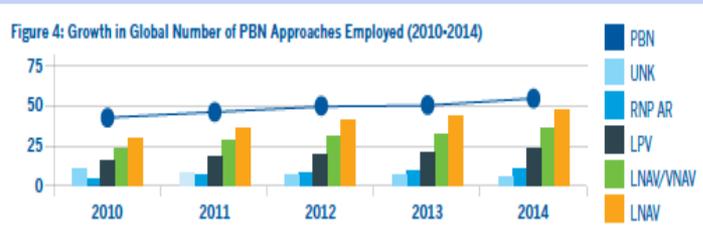
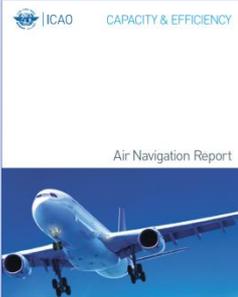
Figures from 2015 AN REPORT



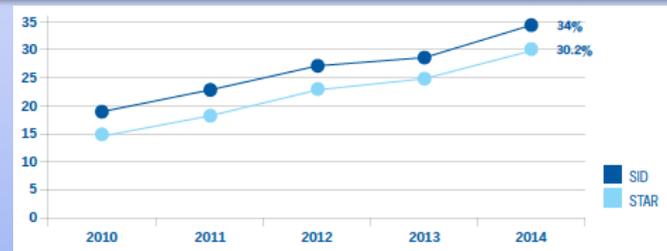
STATES MEETING THE PBN RESOLUTION TARGETS



STATES WITH PBN IMPLEMENTATION PLANS (55%)



GLOBAL NUMBER OF PBN APPROACHES (55.8)



SID AND STAR IMPLEMENTATION



PBN Implementation in AFI

States in RASG-AFI

48

PBN Runway Ends

120

Δ60

Intr. Runway Ends

180

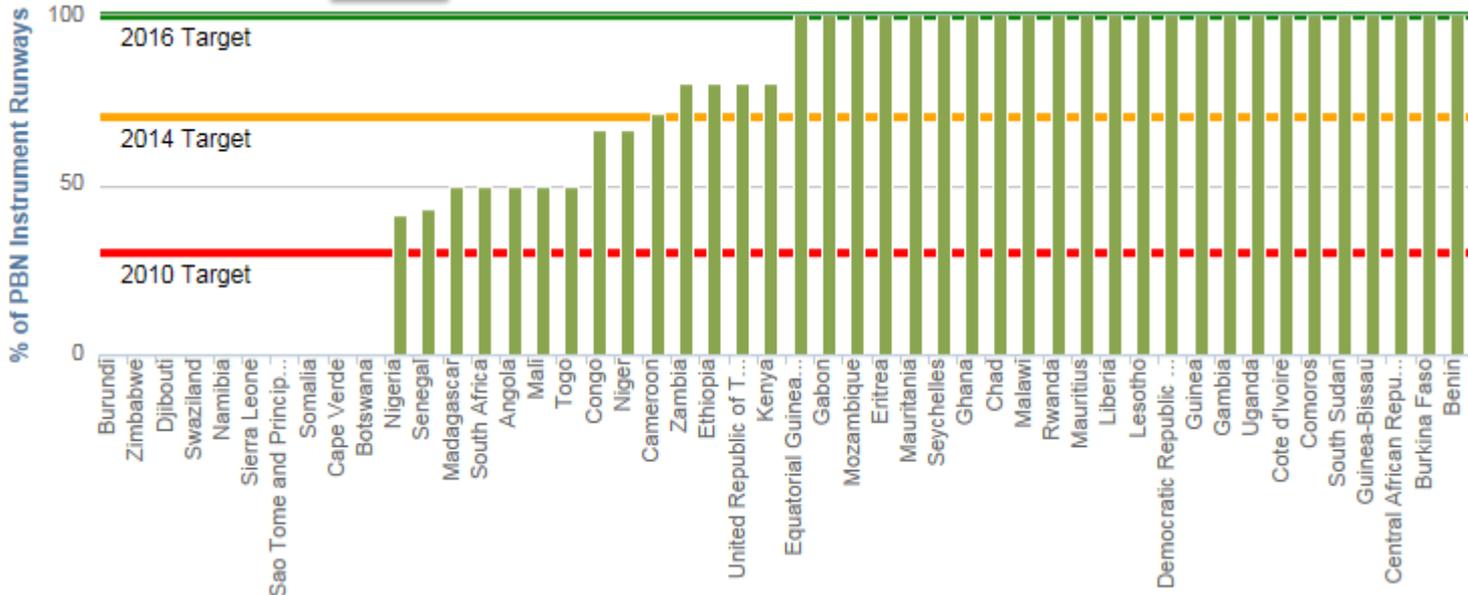
PBN Runway Ends (%)

66.7%

79.2%
2010

60.4%
2014

50%
2016





Needs Analysis / Validation

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Global & Regional

SARPs & PANS

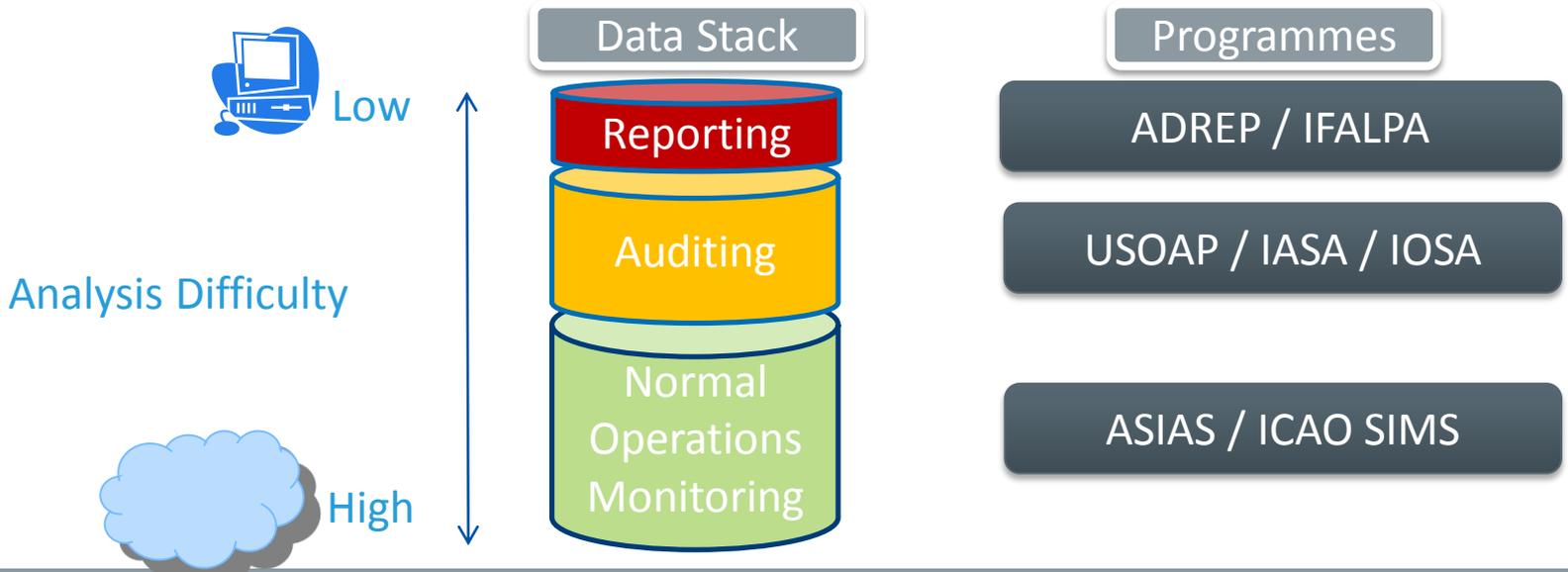
Implementation Planning

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Assess & Measure

Compliance & Verification

if needed





Safety Information Monitoring Service (SIMS)

- ICAO SIMS supports States and service providers in the process of collecting, monitoring, visualizing and thus, sharing progress of their State Safety Programme (SSP) and Safety Management System (SMS).
- States, International Organizations and service providers who are willing and able to contribute to the design and development of the early stages of this effort should submit their expression of interest through the website



ICAO Safety Information Monitoring Service
*Required



Expression of Interest for the ICAO Safety Information Monitoring Service

Organization Name *
please enter the full official name of the organization you are representing

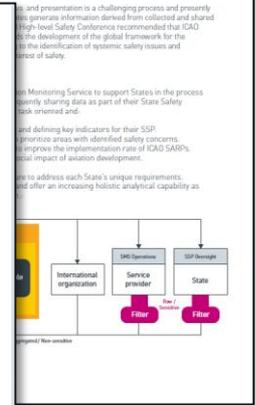
Type of organization *
please select the type of organization you are representing

Civil Aviation Authority
 Other State agency
 Service provider
 International organization

Type of service provider
If your organization is a service provider please select the appropriate type

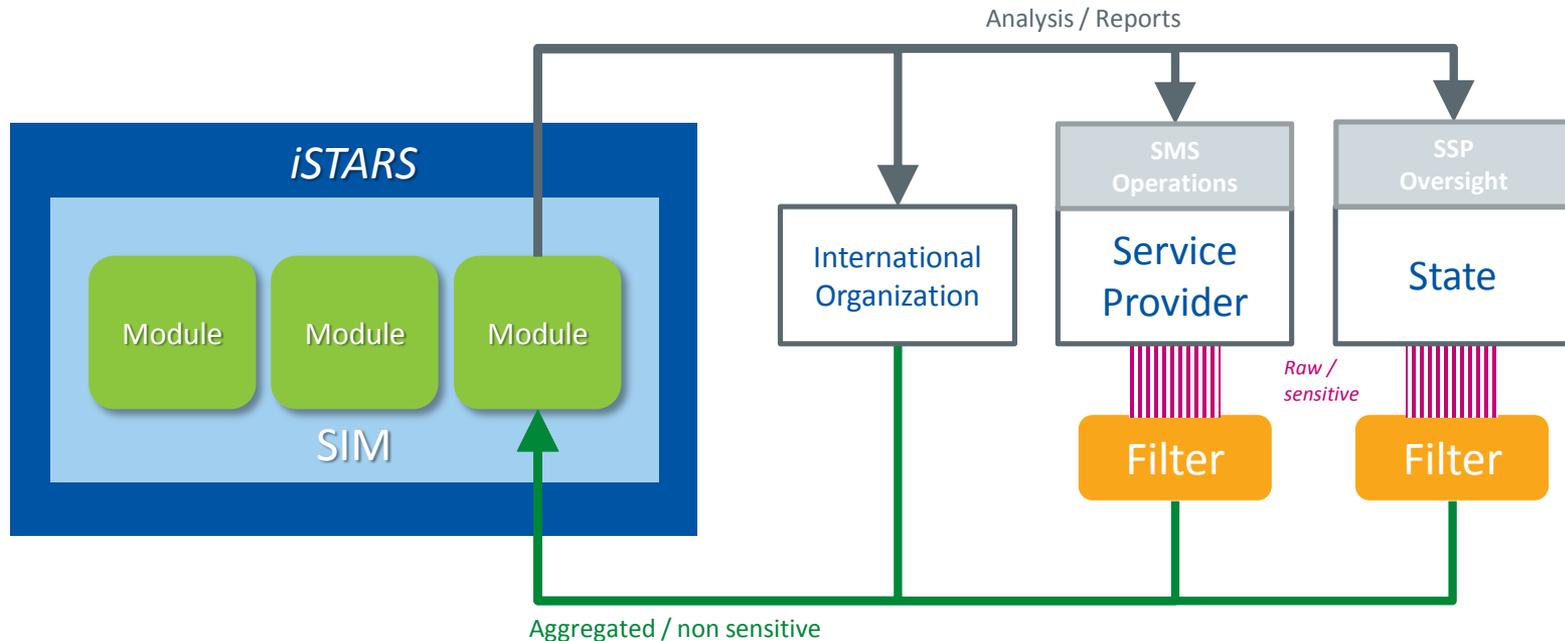
Air Operator (holder of an Air Operator Certificate)
 Air Traffic Service Provider
 Approved Training Organization
 Approved Maintenance Organization
 International General Aviation Operator

For which SIMS Module(s) are you expressing an interest? *
please select the SIMS Module(s) your organization is expressing an interest for (multiple selections are possible)





Safety Information Monitoring Service





ICAO

UNITING AVIATION

NO COUNTRY LEFT BEHIND



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

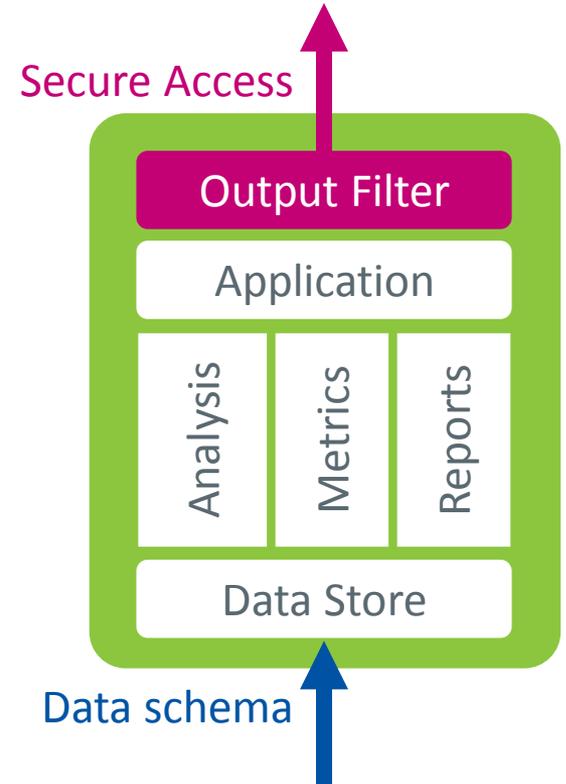


THANK YOU



SIMS Module

- The SIM Service provides access to several modules
- Each module provides services related to a specific oversight and monitoring function
- Each module has its own terms of use
- Data can be provided automatically or manually through electronic forms





How will States benefit from SIMS

- Track key indicators for State Safety Programs (SSP)
- Prioritize areas with identified safety concerns
- Address and improve effective implementation (EI) of ICAO Standards and Recommended Practices (SARPs)
- Illustrate bottom line economic and social impacts of aviation development, and
- Communicate (to approved audience) status reports and progress towards agreed goals.



BACKUP SLIDES



ICAO UPCOMING EVENTS

NO COUNTRY LEFT BEHIND



SAVE THE DATE!

THE ICAO WORLD AVIATION FORUM

Aviation Partnerships for Sustainable Development

23–25 November 2015, ICAO HQ, Montréal



An ICAO **NO COUNTRY LEFT BEHIND** event bringing together States and the global donor/development community