



ICAO

UNITING AVIATION

CELEBRATING 70 YEARS OF
THE CHICAGO CONVENTION

70



Status of Aviation Safety in Asia and the Pacific

Nancy Graham

Director, Air Navigation Bureau
International Civil Aviation Organization (ICAO)

*51st DGCA Asia and the Pacific, Hong Kong, China
24-27 November 2014*

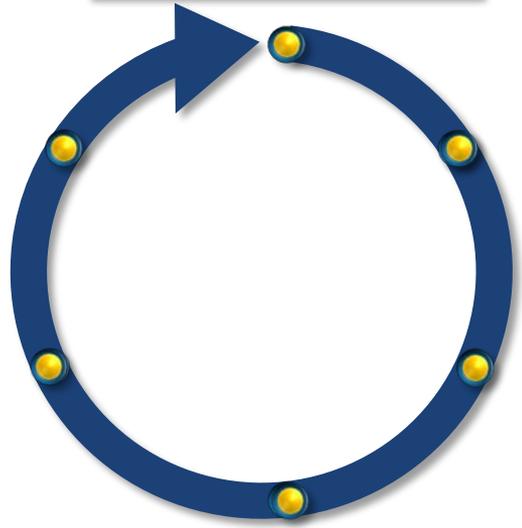


Needs Analysis / Validation

Global Plans

Global & Regional

Assess & Measure



Implementation Planning

Training & Guidance

SARPs & PANS

ICAO as your Regional 'Mirror'

CLARITY

Information Sharing

Regulatory
Authorities

Airlines

Airport
Operators

ANSPs



IMPROVEMENT

Safety Priorities

Oversight
Capabilities

Operational
Issues



State of Global
**AVIATION
SAFETY**





2014 – 2016 Global Aviation Safety Plan (GASP)

Objectives and Priorities

Near-term

2017

- All States establish **effective safety oversight systems**
- States with effective safety oversight (over 60% EI) **fully implement SSP**
- States / Stakeholders support RASGs with the **sharing of safety information**

Mid-term

2022

- All Member States **fully implement the ICAO SSP Framework**
- RASGs incorporate **regional monitoring and safety management** programmes

Long-term

2027

- Member States implement **safety capabilities** as necessary to support future Air Navigation Systems

PRIORITIES

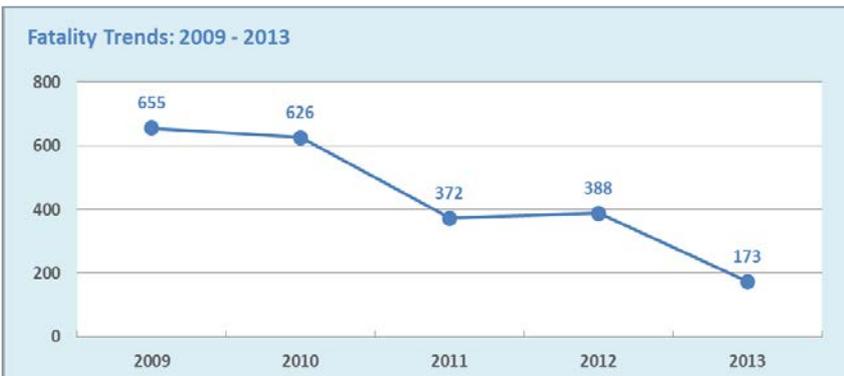
RUNWAY SAFETY

CONTROLLED FLIGHT INTO TERRAIN (CFIT)

LOSS OF CONTROL IN-FLIGHT (LOC-I)



State of Global Aviation SAFETY (Q1)

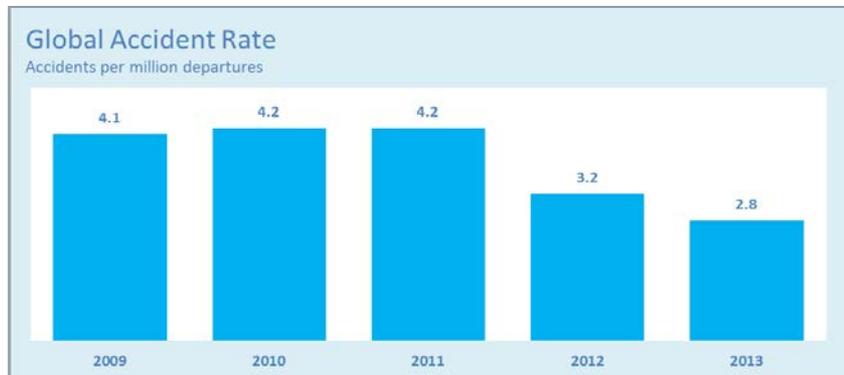


NUMBER OF FATALITIES ARE *DECREASING*

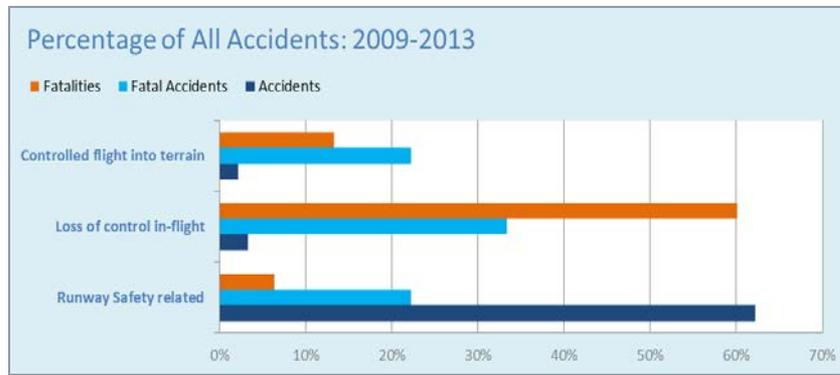
Accident Statistics and Accident Rates: 2013

RASG Region	Estimated Departures (in millions)	Accidents		Fatal Accidents
		Number	Rate (per million departures)	
AFI	0.7	9	12.9	1
APAC	8.6	19	2.2	1
EUR	7.9	21	2.7	2
MID	1.1	2	1.8	0
PA	13.8	39	2.8	5
World	32.1	90	2.8	9

REGIONAL ACCIDENT RATES REMAIN *LOW*



GLOBAL ACCIDENT RATE CONTINUES TO *DECLINE*



LOSS OF CONTROL IN-FLIGHT WARRANTS ATTENTION

Source: **Safety Report** (<http://www.icao.int/safety/Pages/Safety-Report.aspx>)



State of Global Aviation SAFETY (Q1)



Accident description

Status: Preliminary - official
 Date: Saturday 8 March 2014
 Time: ca 08:11

Type: Boeing 777-2H6ER
 Operator: Malaysia Airlines
 Registration: 9M-MRO
 C/n / msn: 28411/84
 First flight: 15/07/2002
 Total airframe hrs: 3322
 Cycles: 11
 Engines: 2 Rolls-Royce Trent 892
 Crew: Fatalities: 12 / Occupants: 12
 Passengers: Fatalities: 227 / Occupants: 227
 Total: Fatalities: 239 / Occupants: 239
 Airplane damage: Destroyed
 Airplane fate: Destroyed (airframe beyond repair)
 Location: within Indian Ocean (Indian Ocean) show on map
 Phase: En route (ENR)
 Nature: International Scheduled Passenger

GLOBAL FLIGHT TRACKING MEETING
 Montreal, Canada, 12 - 13 May 2014

Global Tracking



**DGCA/51
DP/3.3A/1**

GLOBAL ACCIDENT RATE CONTINUES TO DECLINE



Criminal Occurrence description

Status: Preliminary
 Date: Thursday 17 July 2014
 Time: 16:21

Type: Boeing 777-2H6ER
 Operator: Malaysia Airlines
 Registration: 9M-MRO
 C/n / msn: 28411/84
 First flight: 15/07/2002
 Total airframe hrs: 3322
 Cycles: 11
 Engines: 2 Rolls-Royce Trent 892
 Crew: Fatalities: 15 / Occupants: 15
 Passengers: Fatalities: 283 / Occupants: 283
 Total: Fatalities: 298 / Occupants: 298
 Airplane damage: Destroyed
 Airplane fate: Destroyed (airframe beyond repair)
 Location: Hrabove (Ukraine) show on map
 Phase: En route (ENR)
 Nature: International Scheduled Passenger
 Departure airport: Amsterdam-Schiphol International Airport (AMS/EHAM), Netherlands
 Destination airport: Kuala Lumpur Subang International Airport (KUL/WMKK), Malaysia
 Flightnumber: 17
 Narrative:
 A Boeing 777-200 passenger plane, operating Malaysia Airlines Flight 17, was destroyed in Hrabove. All 298 on board were killed. Flight MH17 departed the gate at Amsterdam-Schiphol at 12:30 hours local time, bound for Kuala Lumpur, Malaysia. It was airborne at 12:30 (10:30 UT) cruising altitude of FL310 at 12:53 (10:53 UTC). Ninety minutes into the flight, at 12:00 (10:00 UT) over Ukrainian airspace, the flight climbed to FL330. This altitude was maintained until last tracking websites, about 13:21 UTC.
 The airplane apparently broke up in mid-air as debris was found in a large area. The components of the horizontal and vertical stabilizers was found near Hrabove. The cockpit and parts of the fuselage were found in a sunflower field in Rozsypne, nearly four miles (6.5 km) west-southwest of Hrabove. The

Conflict Zones

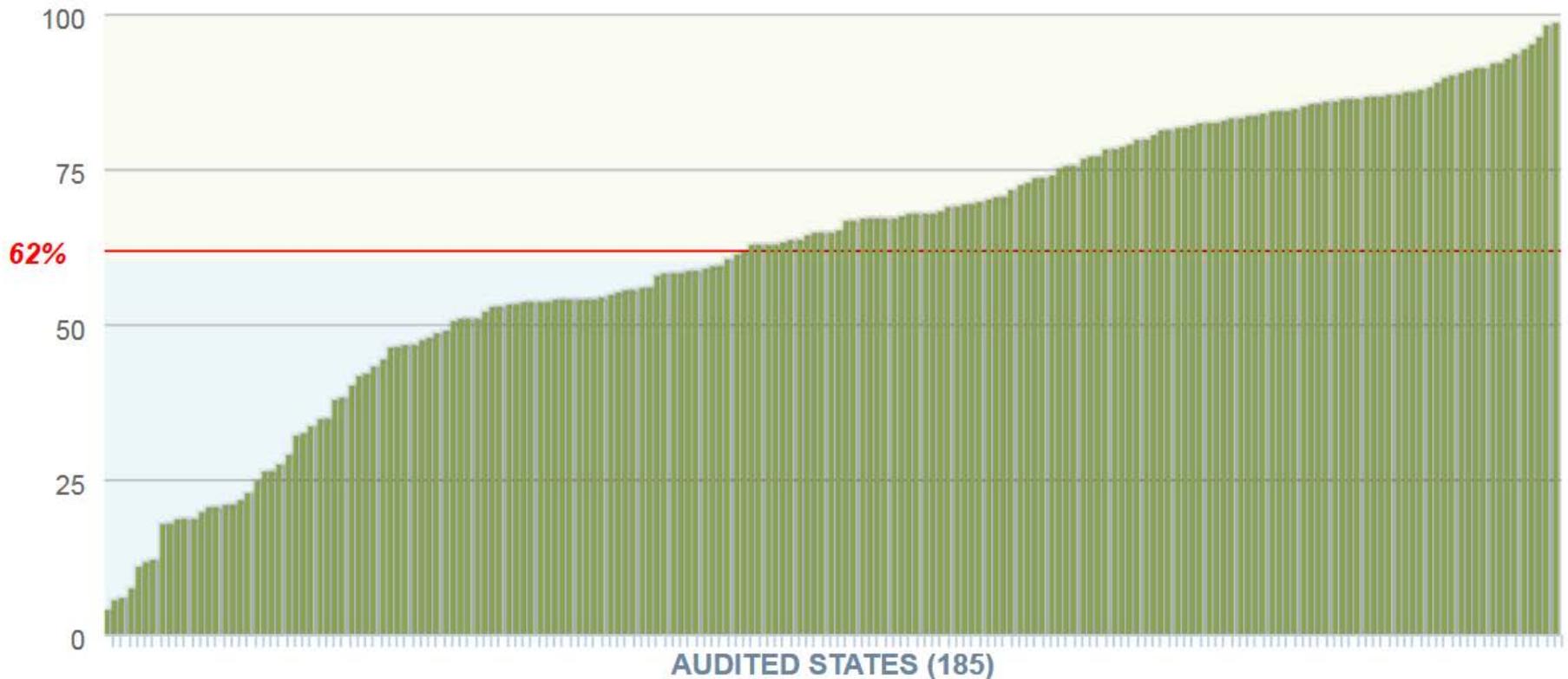
**DGCA/51
DP/3.3A/3**

LOSS OF CONTROL IN-FLIGHT WARRANTS ATTENTION



Current **GLOBAL** Implementation

ICAO Safety Audit Results for World-ICAO Member States
Effective Implementation of safety oversight systems by State



Source: [Regional Dashboards](http://www.icao.int/safety/pages/regional-targets.aspx) (www.icao.int/safety/pages/regional-targets.aspx)



State of Regional Aviation Safety in the **ASIA AND THE PACIFIC**

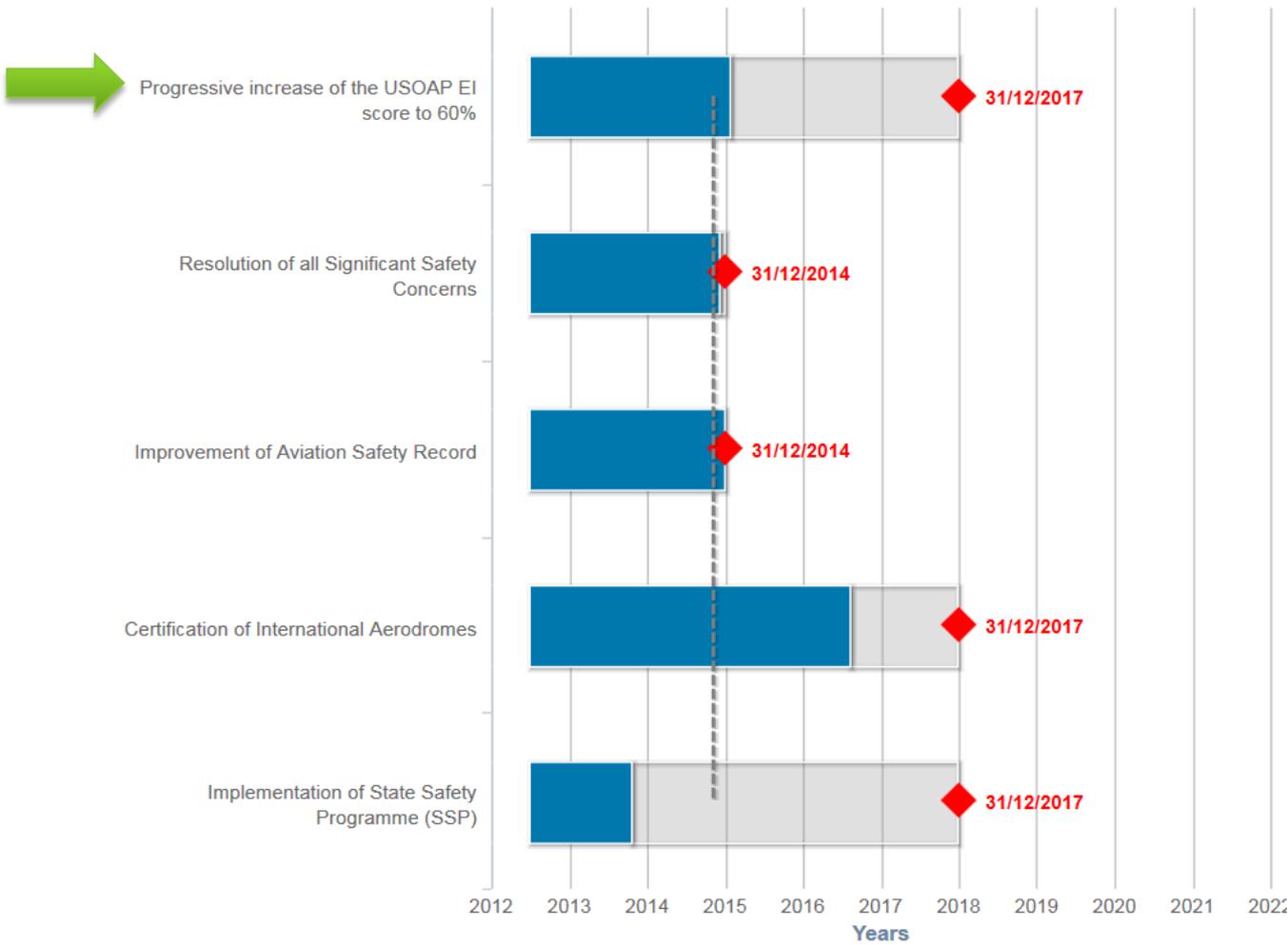


Setting Regional Targets Based on the GASP/GANP

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



Regional Progress Against Global Indicators & Targets

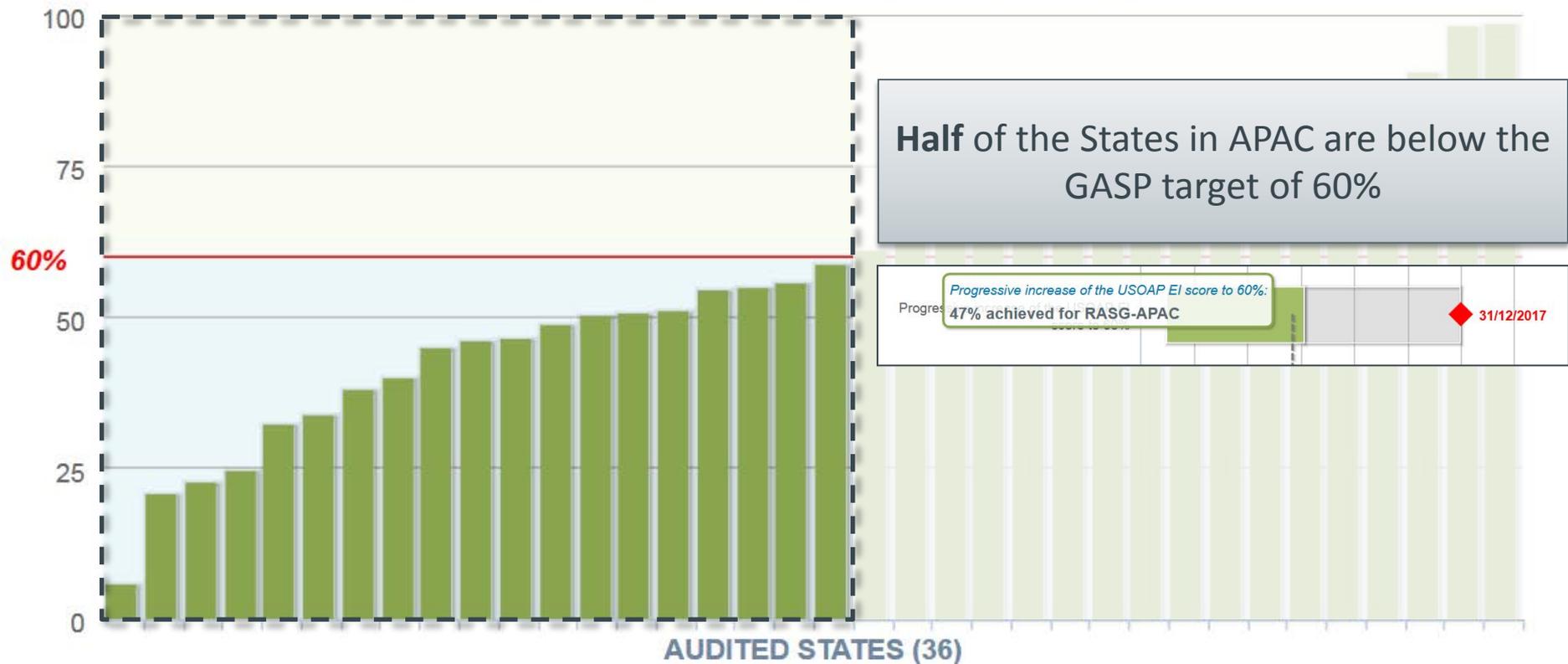


Progressive increase of the USOAP EI score to 60%



Current **REGIONAL** Implementation

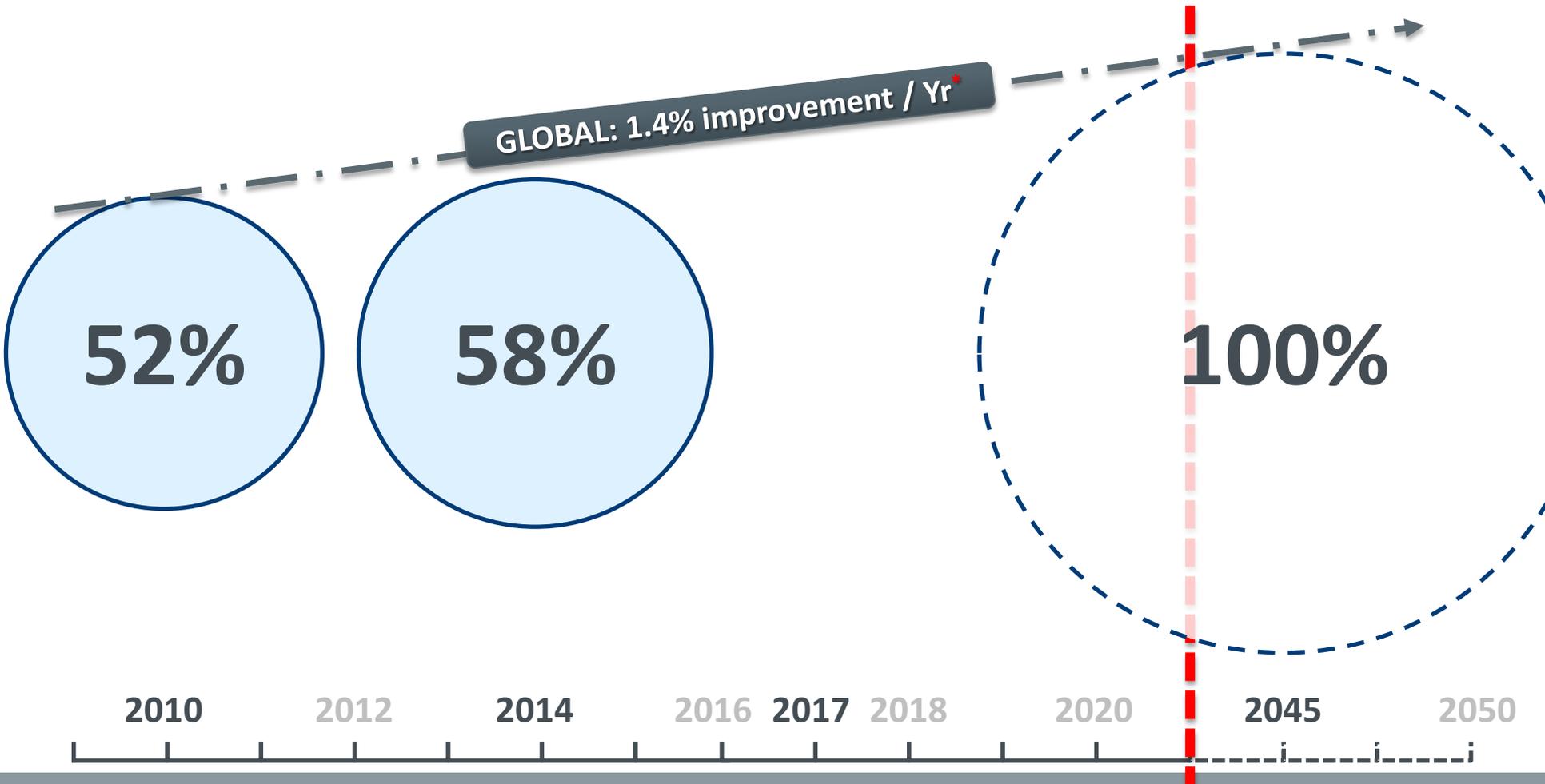
ICAO Safety Audit Results for RASG-APAC *Effective Implementation of safety oversight systems by State*



Source: [Regional Dashboards](http://www.icao.int/safety/pages/regional-targets.aspx) (www.icao.int/safety/pages/regional-targets.aspx)

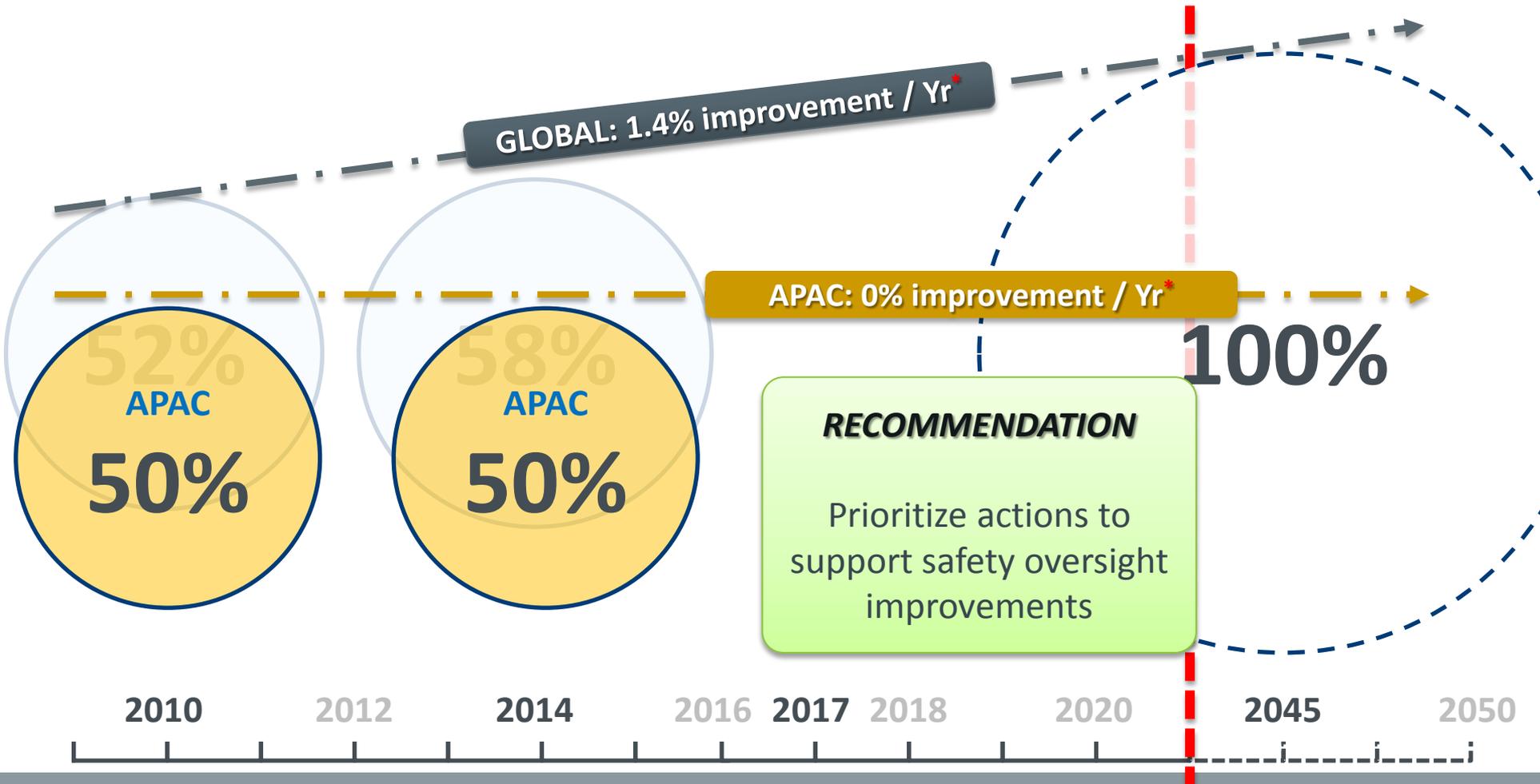


Preview of Progress Achieved by States





Preview of Progress Achieved by States





***Recommendation:* Regional Alignment**

- **Alignment of implementation work plans**

- GASP Priorities and Targets + any specific to your Region
- COSCAPS should be prioritizing activities on States below 60% EI and assisting States and Regional Office in the development of overall State Action Plans as needed
- USOAP CMA workshop is available if needed

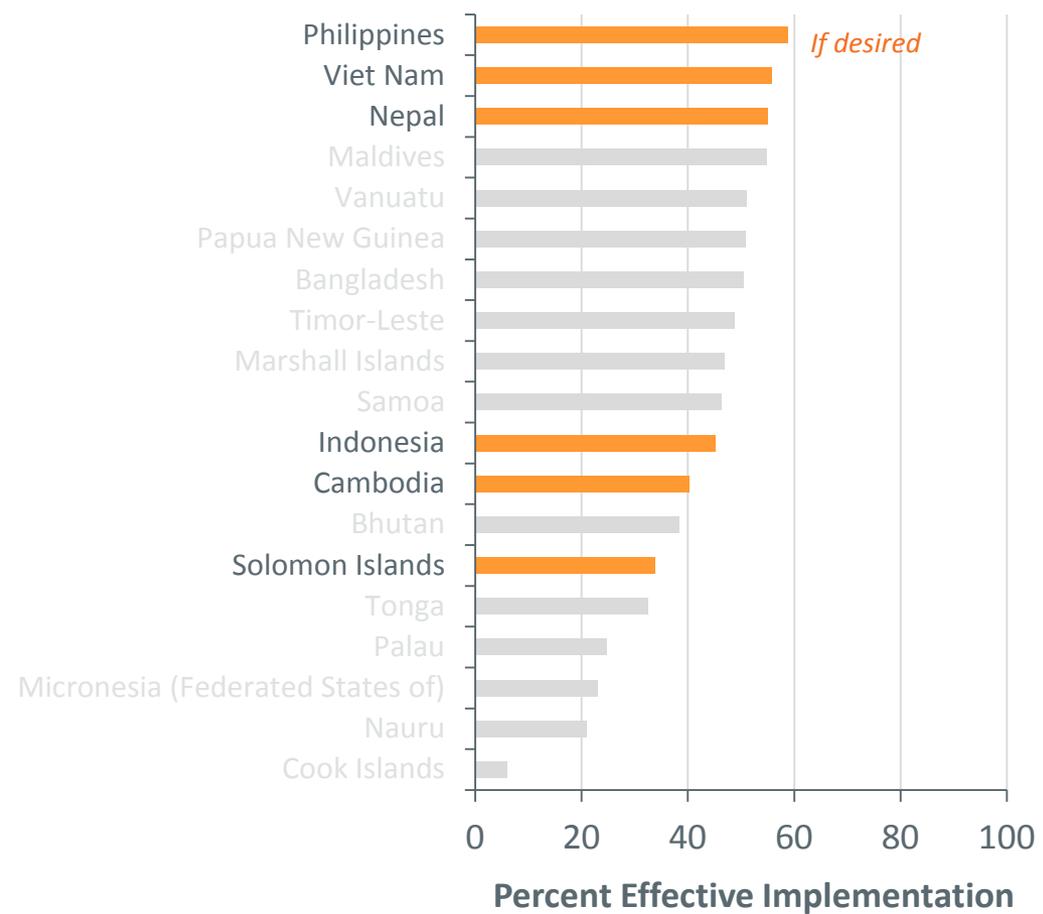
- **Plan well ahead**

- Focus Meetings with specific outcomes
- Joint assistance missions to States
- Share reports
- Prioritize hands on workshops





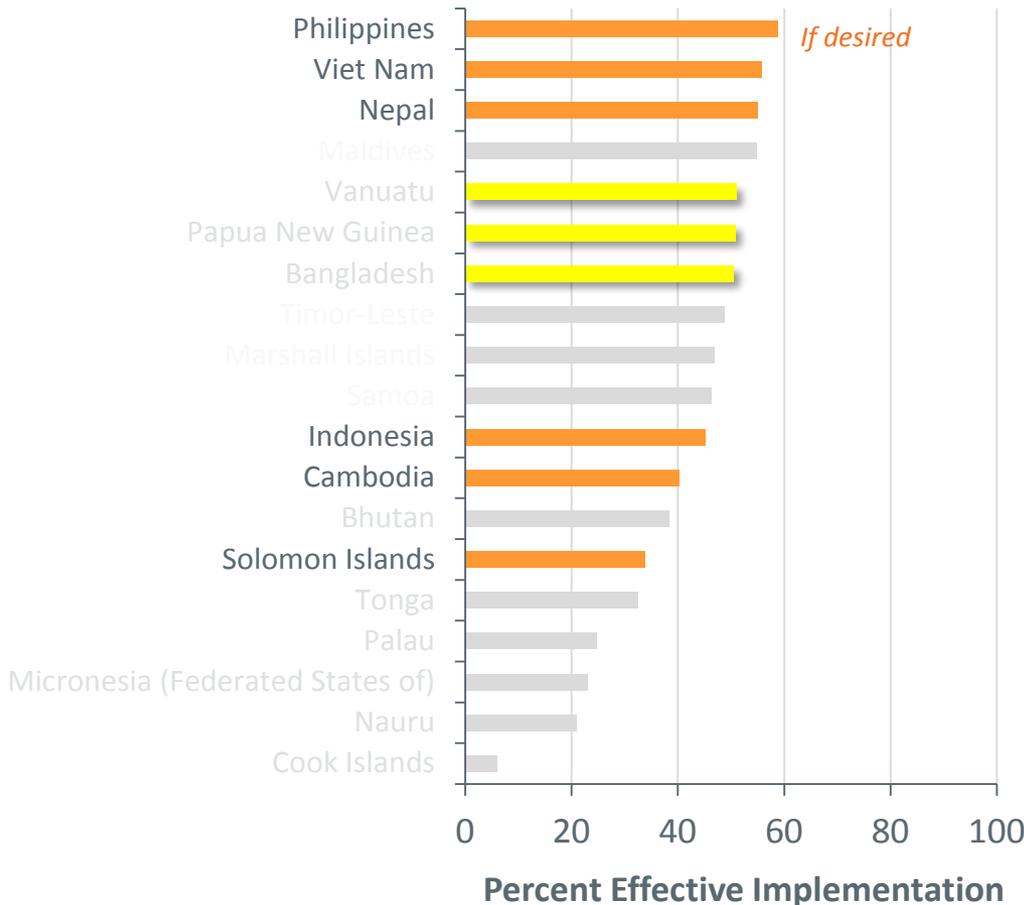
Recommendation: Priority for Action Plans



- **State Plans of Action should be created based on a combination of risk factors:**
 - States that have an EI below 60%
 - High traffic volume with respect to overall EI
- **ICAO CAN assist in the development of these plans, and samples from other States are available**
- **Once Plans of Action are in place, political assistance can also be provided**



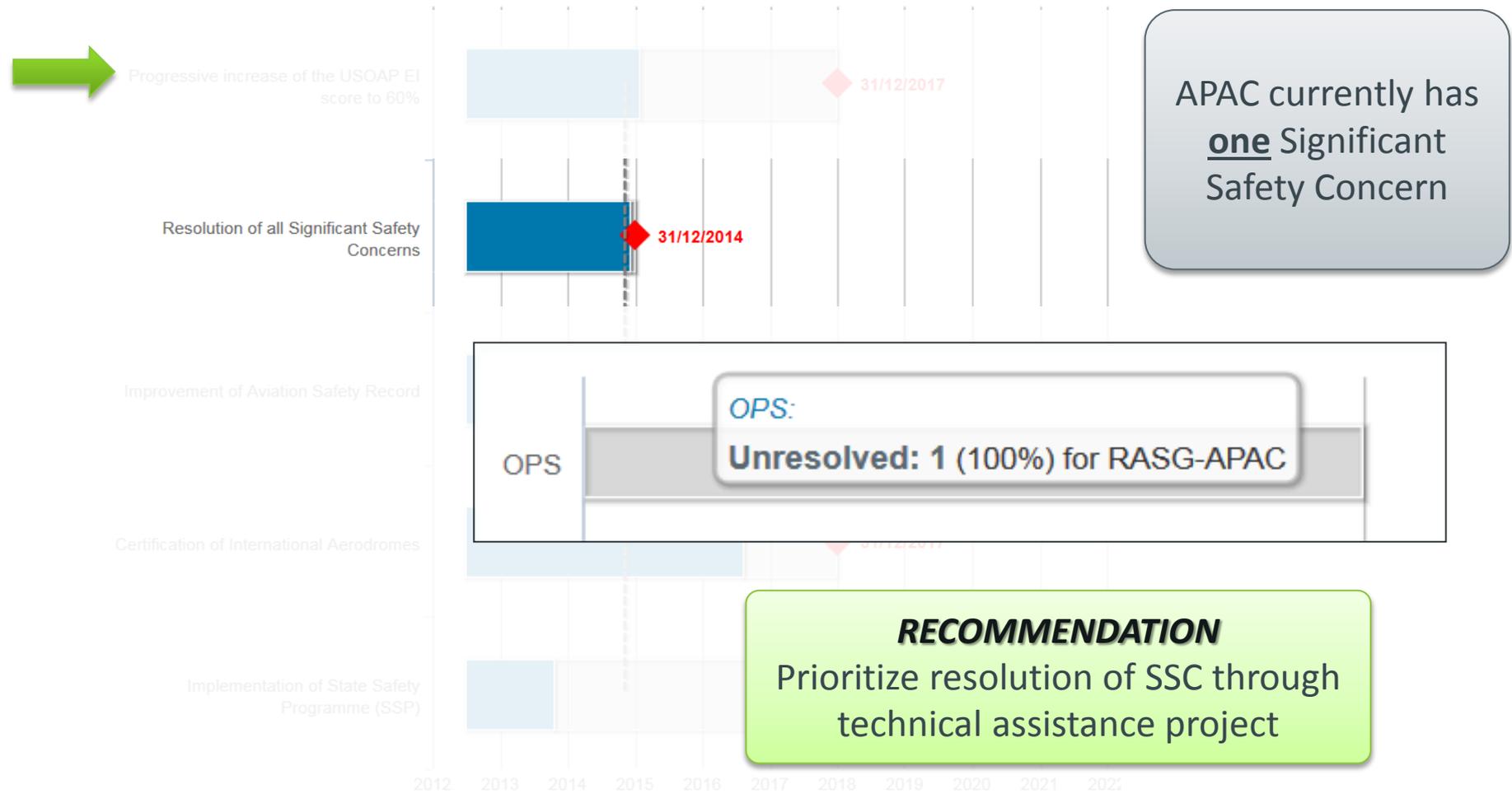
Recommendation: Priority for Action Plans



- **State Plans of Action should be created based on a combination of risk factors:**
 - States that have an EI below 60%
 - High traffic volume with respect to overall EI
- **ICAO CAN assist in the development of these plans, and samples from other States are available**
- **Once Plans of Action are in place, political assistance can also be provided**
- **Some States are just below the risk threshold**



Regional Progress Against Global Indicators & Targets



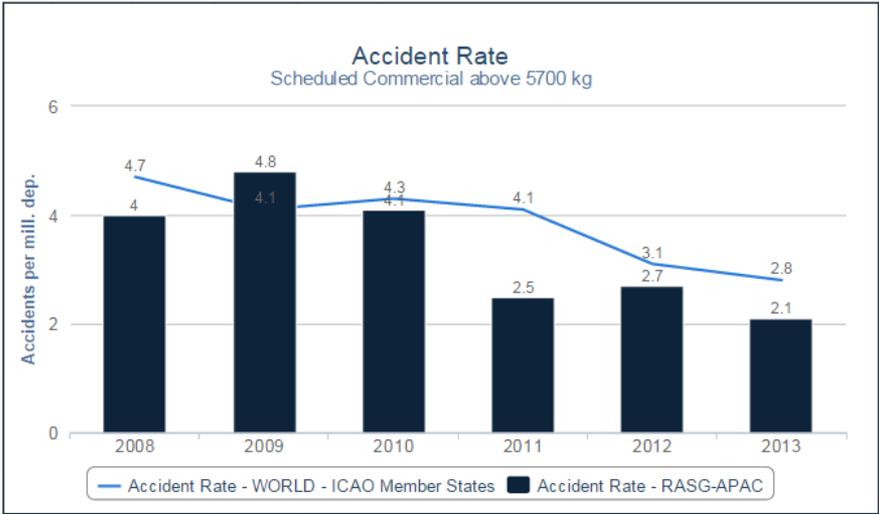
Source: [Regional Dashboards \(www.icao.int/safety/pages/regional-targets.aspx\)](http://www.icao.int/safety/pages/regional-targets.aspx)



Regional Progress Against Global Indicators & Targets



APAC accident rate is **better** than the world average – However, 2014 may change this



RECOMMENDATION:
Keep vigilant and continue the good work

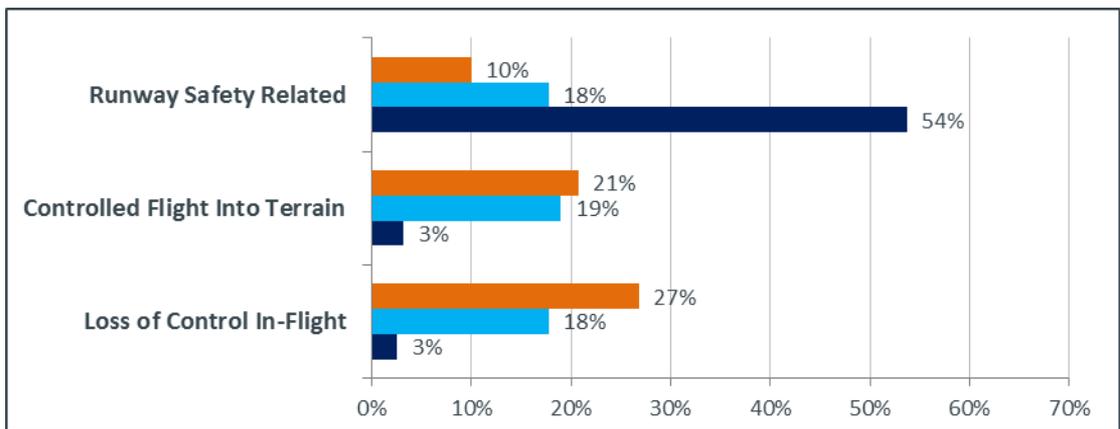
Source: **SPACE (iSTARS v2)** (<https://portal.icao.int/space>)



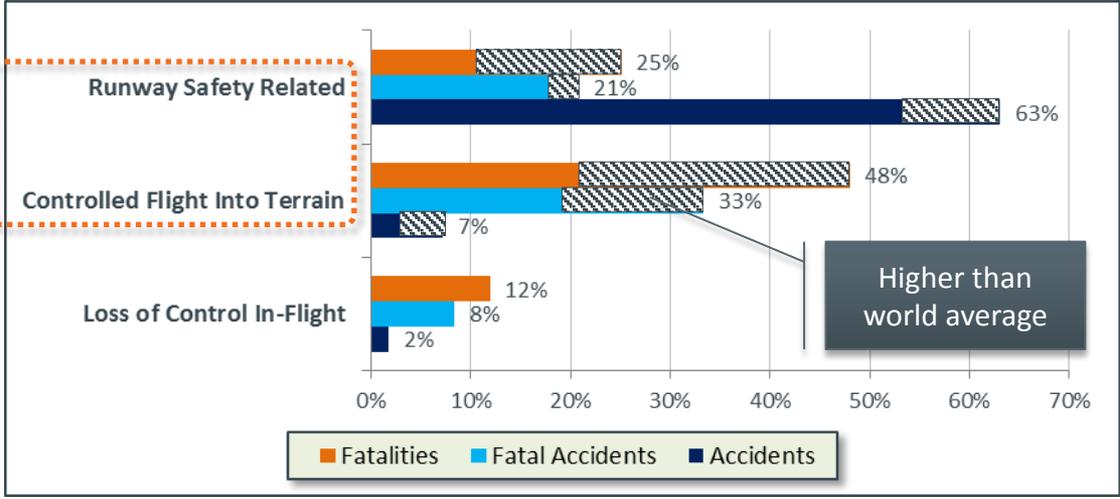
Risk Distribution for the Top 3 Safety Priorities

Scheduled commercial above 5 700kg for 2009 - 2013

WORLD



RASG-APAC



RECOMMENDATION

More focus is needed particularly in **Runway Safety** and **CFIT** for APAC

Source: **SPACE (iSTARS v2)** (<https://portal.icao.int/space>)



Recommendations

- **Runway Safety**

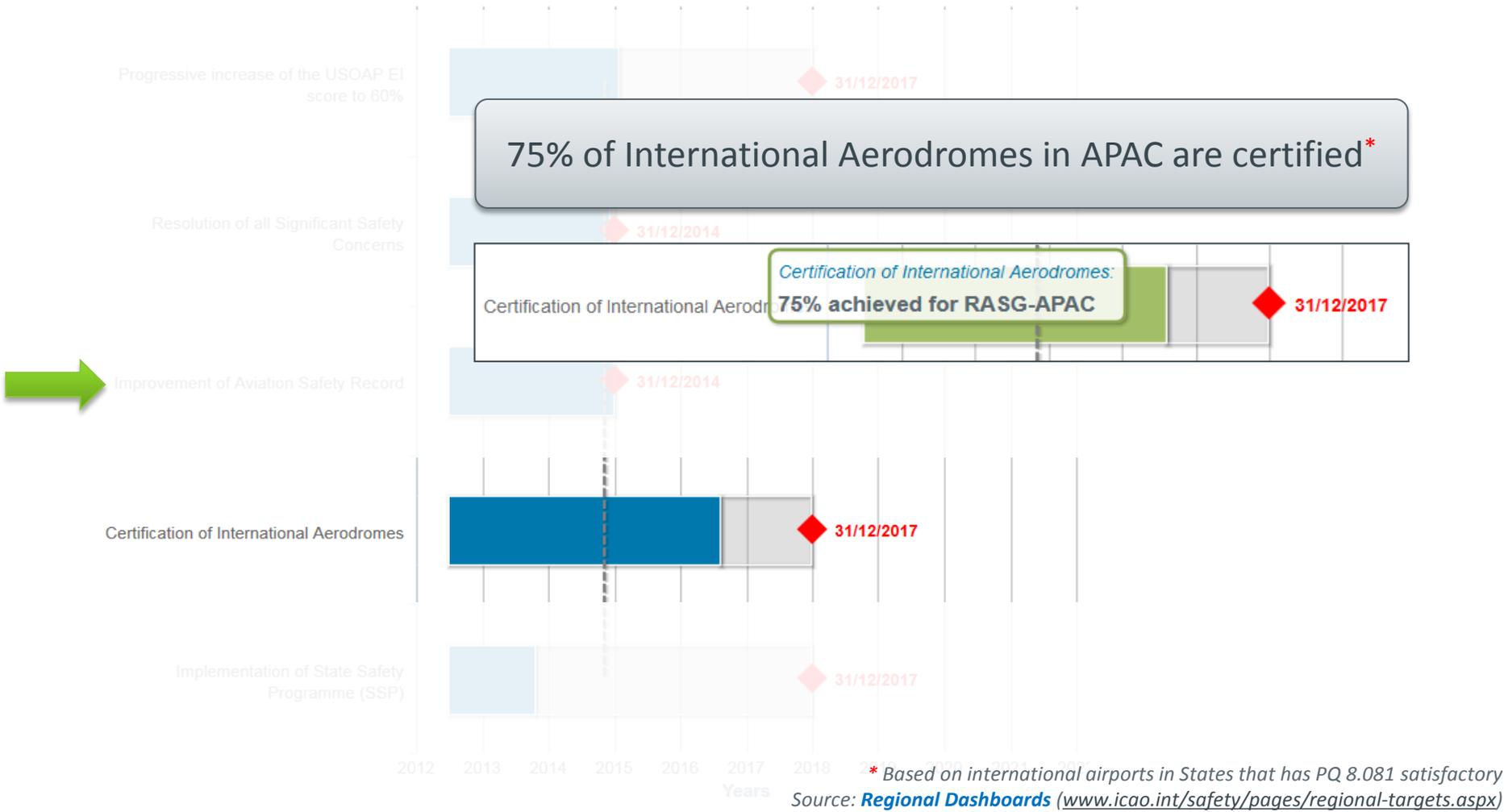
- RASG-APAC to analyze regional runway safety data and develop related **Safety Enhancement Initiative & Detailed Implementation Plan**
- Airports to implement **Runway Safety Teams (RST)** and SMS
- Airports make use of the **ICAO Runway Safety iKit and RST Handbook**
- Airports to request ICAO Runway Safety **Go-Team visits** and/or ACI **APEX Airport Safety Review**

- **Controlled Flight Into Terrain**

- RASG-APAC to analyze regional CFIT events and develop related **Safety Enhancement Initiative & Detailed Implementation Plan**
- **Information-sharing and analysis** on regional Terrain Avoidance and Warning System alerts might be beneficial for safety management



Regional Progress Against Global Indicators & Targets





Regional Progress Against Global Indicators & Targets



▼ Manage my Projects

Add projects or modify their properties.

New Edit

SSP Gap Analysis

State Safety Programmes

Questionnaire Result **SSP Statistics**

Click on a component button to display its elements and related questions.

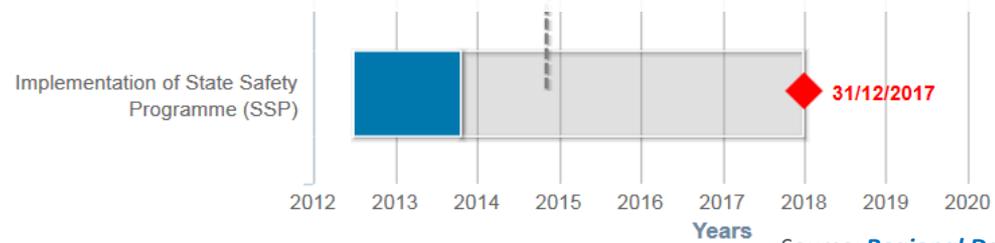
All Components Safety Policies and Objectives Safety Risk Management Safety Assurance Safety Promotion

Search:

Number	Question	References	Component	Element	Status
+ 1.1-01	Has [State] promulgated a national safety legislative framework and specific regulations that define the management of safety in the State?	[4.2.1, Element 1.1; 4.3.2; 4.4.4]	STATE SAFETY POLICIES AND OBJECTIVES	State safety legislative framework	Action to be defined
+ 1.1-02	Are the legislative framework and specific regulations periodically reviewed to ensure that they remain relevant to the State?	[4.2.1, Element 1.1; 4.4.4 b)]	STATE SAFETY POLICIES AND OBJECTIVES	State safety legislative framework	Action in progress



Only **4 States** that have an EI > 60% have started using the SSP gap analysis in iSTARS



RECOMMENDATION

- Register on iSTARS for SSP Gap Analysis Tool
- Attend the HLSC Sidebar on SSP Gap Analysis Tool

Source: [Regional Dashboards \(www.icao.int/safety/pages/regional-targets.aspx\)](http://www.icao.int/safety/pages/regional-targets.aspx)



Your Regional Indicators for Endorsement

- **Maintain 60% of applicable APAC airlines to be IOSA certified by end of 2017**
 - **Current Level: 38%** of APAC airlines are IOSA certified

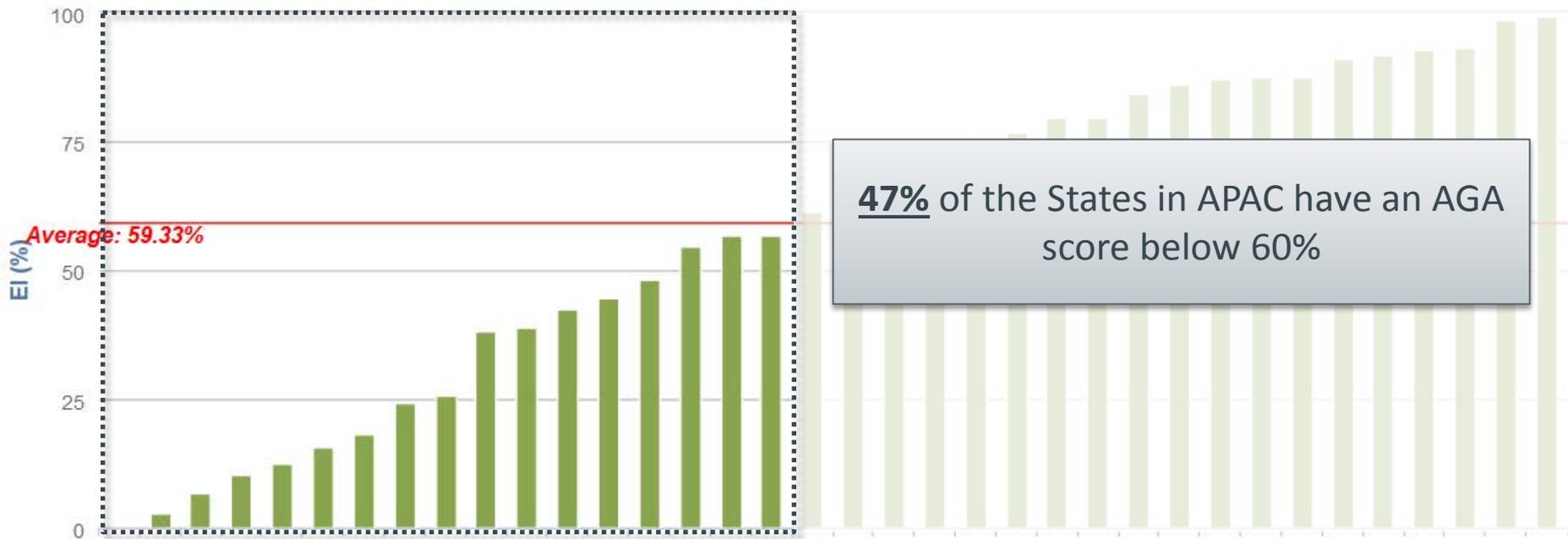


Source: **Regional Dashboards** (www.icao.int/safety/pages/regional-targets.aspx)



Your Regional Indicators for Endorsement

- States achieve at least 60% EI in AGA of USOAP CMA by 2017

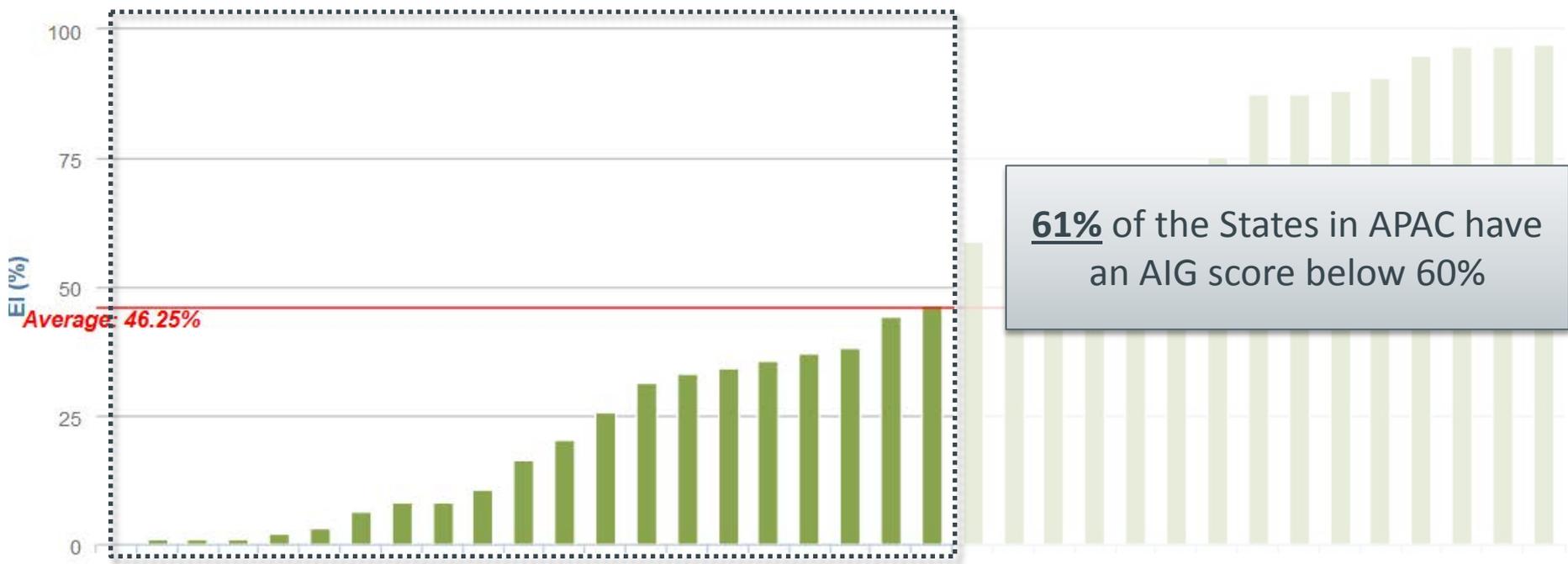


Source: **SPACE (iSTARS v2)** (<https://portal.icao.int/space>)



Your Regional Indicators for Endorsement

- States achieve at least 60% EI in AIG of USOAP CMA by 2017



Source: **SPACE (iSTARS v2)** (<https://portal.icao.int/space>)



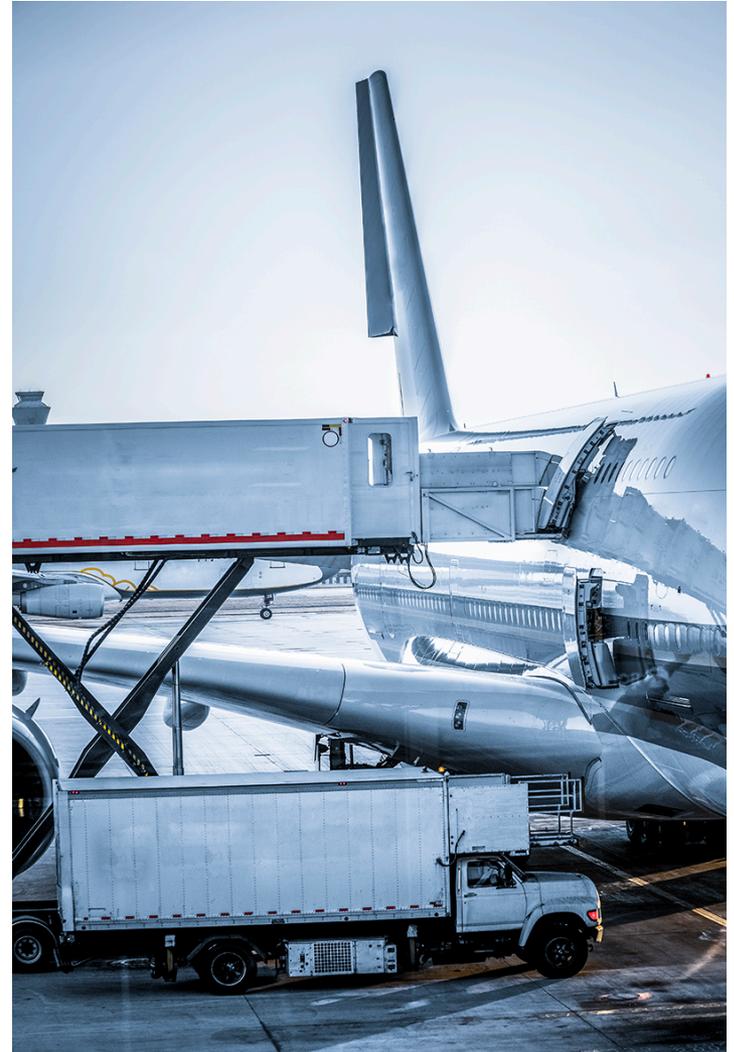
Summary Recommendations for APAC States

- **State Plans of Action (PoA)** for priority States based on risk
- **Alignment** of RASG, COSCAP and PASO regional actions against priority states and PoAs
- Prioritize actions to **support safety oversight improvements** (EIs < 60)
- Prioritize **resolution of SSC** through technical assistance project
- ICAO – Cambodia SAFE-funded **Technical Assistance** project to be accepted/implemented
- ICAO – PASO **Memorandum of Cooperation** signing
- States to **request Technical Assistance** from ICAO if required
- States to **request ICVM and/or off-site validation** once ready to improve EI score by validation of actions





Recent deliverables to assist in global
IMPLEMENTATION





ICAO

UNITING AVIATION

CELEBRATING 70 YEARS OF THE CHICAGO CONVENTION



NEW MANUALS

Doc 10011
AN/11

Manual on Aeroplane Upset Prevention and Recovery Training

Approved by the Secretary General and published under his authority

First Edition – 2014

International Civil Aviation Organization

Doc 10055
AN/55

Manual on the Digital Exchange of Aeronautical Meteorological Information

Approved by the Secretary General and published under his authority

First Edition – 2014

International Civil Aviation Organization

Doc 10099
AN/99

Manual on Flight Data Analysis Programmes (FDAP)

Approved by the Secretary General and published under his authority

First Edition – 2014

International Civil Aviation Organization

NEW UPDATES

Doc 10211
AN/211

Manual on Collaborative Air Traffic Flow Management

Approved by the Secretary General and published under his authority

Second Edition – 2014

International Civil Aviation Organization

Doc 10219
AN/219

Manual of Aircraft Accident and Incident Investigation

Part IV: Reporting

Approved by the Secretary General and published under his authority

Second Edition – 2014

International Civil Aviation Organization

Doc 10082
AN/82

CABIN CREW SAFETY TRAINING MANUAL

Approved by the Secretary General and published under his authority

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Doc 10094
AN/94

Manual on Airborne Surveillance Applications

Advanced edition (Level 2)

International Civil Aviation Organization

Doc 10216
AN/216

Handbook on Radio Frequency Spectrum Requirements for Civil Aviation

Volume I: ICAO spectrum strategy, policy statements and related information

Approved by the Secretary General and published under his authority

First Edition – 2014

International Civil Aviation Organization

Doc 10218
AN/218

Manual of Aircraft Accident and Incident Investigation

Part I: Operational Investigation

Approved by the Secretary General and published under his authority

Second Edition (Level 2) – 2014

International Civil Aviation Organization

Doc 10218
AN/218

Airworthiness Manual

Approved by the Secretary General and published under his authority

First Edition – 2014

International Civil Aviation Organization

NEW CIRCULARS

Doc 10222
AN/222

Guidelines for the Implementation of GNSS Lateral Separation Minima based on VOR Separation Minima

Approved by the Secretary General and published under his authority

International Civil Aviation Organization

Doc 10223
AN/223

In-Trail Procedure (ITP) Using Automatic Dependent Surveillance – Broadcast (ADS-B)

Approved by the Secretary General and published under his authority

International Civil Aviation Organization

Doc 10224
AN/224

Guidelines for the Implementation of Lateral Separation Minima

Approved by the Secretary General and published under his authority

International Civil Aviation Organization

Doc 10225
AN/225

Air Traffic Management Service Delivery Management (ATM SDM)

Approved by the Secretary General and published under his authority

International Civil Aviation Organization

Doc 10226
AN/226

Implementation of strategic lateral offset procedures

Approved by the Secretary General and published under his authority

Advanced edition (Level 2)

International Civil Aviation Organization

NEW IMPLEMENTATION KITS (IKITS)

2014
Safety Management

Enhanced SSP and SMS implementation and assessment tools

2014
Runway Safety

Operational Improvement: Improves safety performance at and in the vicinity of aerodromes

2014
PBN and TMA Efficiency

Implementing ASBU modules: XXXX, XXXX, XXXX

Operational Improvement: Improves the efficiency of terminal control area (TMA) operations

2014
Introduction to Remotely Piloted Aircraft Systems (RPAS)

Implementing ASBU modules: XXXX, XXXX, XXXX

Operational Improvement: Facilitates access by Remotely Piloted Aircraft to non-segregated airspace

COMING SOON

See more at: www.icao.int/safety/Implementation/Pages/iKITS.aspx



NEW ONLINE TOOLS



NOTAM

Global repository of actual NOTAMS

This application provides search and analysis capabilities of NOTAM messages. NOTAMS are released on a 12h schedule from the US Defense Information NOTAM Service and identified NOTAMS are provided to Europe and can be retrieved using keywords.

Messages where the title is in blue with a left blue bar are new, meaning created in the preceding 72 hours.

Select State or Group: **Canada**

Limit search to NOTAM "message" type only (0)

Select a search combination from the list: **Select** Delete search entry or provide a list of keywords: **Please**

Start the results by: **By Date Created** | **By Location Code** | **By State Name**

Show All Search Save Email me as PDF

Messages: **State/Group Analysis**

Active Notams

280 NOTAMS Found

- B495114 - CYXX (Canada): ILS Category I Unserviceable**
- Period: 2014-10-30T19:04:00.000Z - 2014-10-30T23:00:00.000Z
- Q-Code (ICAO): **QNS (Detuned and inaccurate landing systems) Availability: ILS Category I (Unserviceable)**
- 633 IFR USE CREATED: 30 Oct 2014 16:08:00 SOURCE: CIVIAC/INVI

Locations ++

DOC 7910 Location Indicator Browser

The below list contains all currently allocated location indicators as published in ICAO DOC 7910. You can select a region or state from the drop-down list or click on a region on the map to filter the list.

Use the Zoom link in information window to zoom to the ground. Click on the Back link to zoom up again.

Toggle ranges will plot ISO distance circles around the airport. You can change the circle steps and maximum range in the map upper right corner lists.

Each airport will now display the distance and bearing to the selected airport.

NOTAMS are provided for information only and should not be used for operational purposes.

The filtered list can be printed to PDF using a paywall, token-based system.

Select a State: **Canada** Show APTN connected only (0)

Location filter: **Airports only**

Print | PDF generation is subject to a list of 8 domains per request. You can buy keys from the ICAO Web Store. Enter the key on which to change the list. Apply | Done

Doc	Location	Status/Notes
0200	ALBERTA, BC	Canada
0201	ALBERTA, BC	Canada

Airworthiness

Online Airworthiness Information Network

Online Version of Chapter 95 - The Continuing Airworthiness of Aircraft in Service (Version 1.0)

Circular 95 contains useful information for States of Registry and States of Operator to ensure the continuing airworthiness of aircraft, particularly when an aircraft is transferred from one Registry to another and when issuing the Certificate of Airworthiness to an aircraft.

ICAO has now moved the emphasis from Standards making to Standards implementation. This has highlighted a need to upgrade, in its widest context, the content of ICAO Circular 95. Therefore the additional information is presented in the form of a repository to assist States in implementing the continuing airworthiness of aircraft. It is assumed that the enhanced Circular 95 will be a key element in assisting States meet their continuing airworthiness responsibilities and facilitate the import and export as well as the exchange of aircraft for lease, charter or interchange and to facilitate the operation of aircraft in international air navigation.

The information contained herein will provide reference to regulations, procedures, instructions and forms that should be available in electronic or paper format. Instruction should be provided on how to obtain the documents that are referred to in this publication.

The information contained in this circular is published as provided by States.

Circular 95 Contents

- Foreword, Introduction, and Section Descriptions
- Contents of sections A to L, listed alphabetically by State (see dynamic list below)

State	Version	Type	CAA Name	CAA AIR Contact Name	CAA AIR Contact Email	Classification
Algeria	1.0	Directive	Directorate and Technical Authority	Abdelhak	abdelhak@caad.dz	9/2014/01
Australia	1.0	Directive	Directorate General of Civil Aviation Chief Executive Officer Airworthiness, Flight Operations Operations Services, Chief of Inspections	Neil Phillip	neil.phillip@caas.gov.au	9/2014/01
Austria	1.0	Directive	Directorate of Civil Aviation and Air Navigation	Michael	michael@caad.at	9/2014/01

ADREP et al.

Statistics and Data on Accidents and Incidents

This application contains an aggregation of different accident and incident data sources including ADREP, Aviation Safety Network and Aviation Herald. Data is merged-in and automatically classified on a daily basis to provide quasi-real-time accident statistics.

Under the **Yearly Statistics** tab you can find current and past year indicators and their evolutions. Indicators can be displayed per risk category as well.

Under the **Trends** tab, trended accident statistics are presented graphically as published in the ICAO Safety Report. The graphs are clickable and will display the actual accidents for each point at the bottom of the page. Each graph can be personalized to a specific region or risk category.

Under the **Data Search** tab, all merged data can be searched. The result can be exported in a CSV file. Text search inside the narratives is also possible.

This application provides the official ICAO accident statistics and should be used as the sole source for that information.

Yearly Statistics | Trends | Data Search

Select Group or State: **World** | Year: **2014** | and Rev: **All**

Accidents

74 (-1)

(2014 compared to 2013)

Fatalities

739 (+664)

(2014 compared to 2013)

Accident Rate (Rate: 2014 per mil) | Fatal Accidents



REGIONAL DASHBOARDS

INTERNATIONAL CIVIL AVIATION ORGANIZATION

A United Nations Specialized Agency

ICAO eTOOLS | Home | How it works | News | Catalogue | My Account | My Apps | Contact

Apps

All | States (5) | Airports (2) | Airlines (2)

States ADREP

This application contains an aggregation of different accident and incident data sources including ADREP, Aviation Safety Network and Aviation Herald. Data is merged-in and automatically classified on

Activate

Airports Airport Punctuality

The airport punctuality is a real time averaged indicator that expresses the number of daily departures which were on-time or delayed less than 15 minutes. Specifically, these indicators represent a s

Activate

SPACE APPLICATIONS

ICAO eTOOLS (In collaboration with ATB)



Upcoming Key

GLOBAL EVENTS





Key Global Events – 2014 & 2015



70 CELEBRATING 70 YEARS
of the Chicago Convention

ICAO | **NEXT GENERATION OF AVIATION PROFESSIONALS**
Celebrate the Past, Prepare for the Future
Montréal, Canada, 3 - 4 December 2014



UN / ICAO Commercial AeroSPACE Symposium
18-20 March 2015, ICAO Headquarters, Montréal



2nd High-level Safety Conference
2 - 5 February 2015, ICAO Headquarters, Montréal



Remotely Piloted Aircraft Systems (RPAS) Symposium
23 - 25 March 2015, ICAO Headquarters, Montréal



**Block Upgrade Demonstration
Showcase and Symposium
(BUDSS)**

19 - 21 May 2015
ICAO Headquarters, Montréal



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