State Safety Programme Implementation Tools

Mexico City, Mexico, 20 – 22 November 2018

ICAO | SAFETY
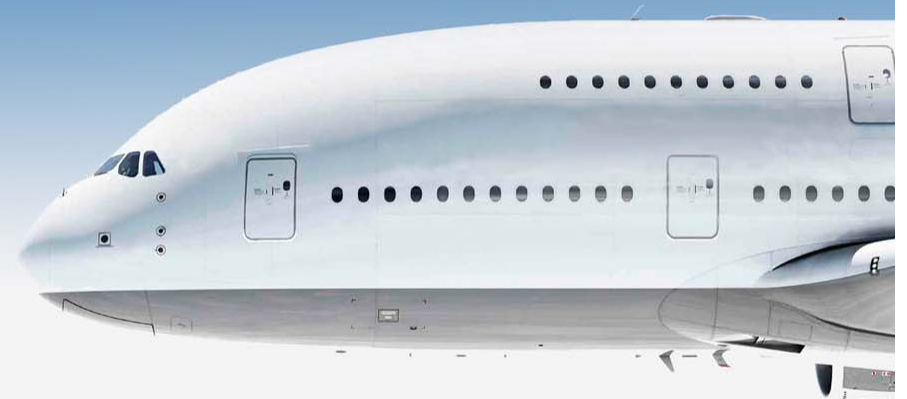
GASP 2017-2019 Objectives

States with an EI above 60%

✓ States having achieved a mature safety oversight system should perform an SSP gap analysis (iSTARS).

✓ The results of the SSP gap analysis and PQ self-assessment should then be used to plan the remaining tasks required to implement an SSP.

States with an EI below 60%

✓ Once a State is actively making progress to address the prioritized actions in its USOAP CAP (corrective action plan) and

✓ Achieves a rate of EI of its safety oversight system of 60%, it should then proceed with the steps outlined for States with an EI above 60%.

Effective safety oversight	SSP implementation	Predictive risk management
RASGs and other fora: mechanisms for sharing of safety information	RASGs: mature regional monitoring and safety management programmes	All States: implement advanced safety oversight systems, including predictive risk management
States with EI > 60%: SSP implementation		
	All States: SSP implementation	
All States: achieve 60% EI of CEs		
2017 (near term)	2022 (mid term)	2028 (long term)

ICAO SAFETY

Issues with 60% threshold in the GASP

cannot begin implementing SSP???

30%

timid about crossing

58%

60%

62%

85%
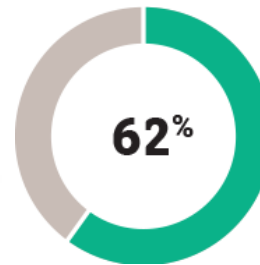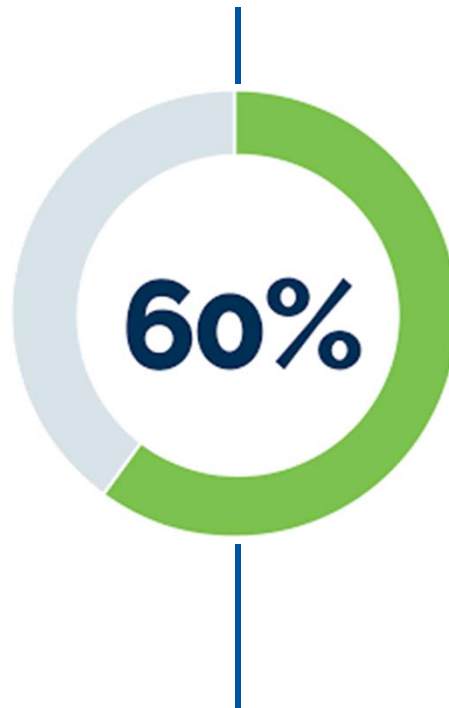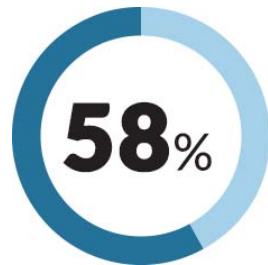
may still have issues that impact the SSP implementation

ICAO   SAFETY

SSP Foundation PQs

➤ **A sub-set of 311 PQs** out of 1,099 PQs have been identified as **directly related to an effective** State Safety Programme (SSP) implementation.

➤ **The SSP Foundation PQs** are considered important **for effective SSP implementation.**

USOAP CMA PQs (1099)

| SSP Foundation PQs (311) | SSP-related PQs (122) |

Revised Message

States are encouraged to begin their *journey* with **clear identification of the SSP Foundation PQs** to enable effective SSP implementation. **You can get started today!**

ICAO | SAFETY

iSTARS

Integrated Safety Trends Analysis and Reporting System

Some of the Apps that are useful for our subject:

- ✓ SSP Foundation
- ✓ SSP Gap Analysis
- ✓ Safety Margin
- ✓ State Safety Briefing 2018

SSP Foundation Tool now available on iSTARS*

✓ To address the need to identify the **REAL GAP**, the SSP Foundation Tool complements the SSP Gap Analysis; and

✓ Assist States to build a solid safety oversight foundation for SSP implementation.

✓ States can prioritize and address the weaknesses in their safety oversight system as part of the SSP implementation/action plan.

*Subscribe to iSTARS group on the ICAO Secure Portal

ICAO   SAFETY

SSP Foundation

✓ Displays the status of **a sub-set of 311 Protocol Questions** (PQs) out of the 1,099 PQs (of 2014) used to calculate the USOAP Effective Implementation (EI).

✓ Status is shown as either **validated by USOAP** or submitted as **completed*** through the Corrective Action Plans (CAP) **on the USOAP CMA Online Framework**.

✓ Aims to assist States to build **a solid safety oversight foundation** for the implementation of SSP

SSP Gap Analysis

- ✓ Create, view, update, and share a **State Safety Programme (SSP) Project** with your Team

- ✓ **55 Questions** to be completed **to determine gap** and support the development of an SSP Implementation Plan

- ✓ Should be used **in combination with the SSP Foundation App**

- ✓ Sharing with others is optional, but **information is used for ICAO to monitor SSP implementation.**

Safety Margin

✓ Supports a risk-based prioritization of operational, air navigation and related USOAP areas.

✓ For each functional area a State is given a target effective implementation (EI) score which is calculated based on a global linear regression of traffic versus effective implementation of all ICAO Member States.

✓ A State with a positive safety margin is considered to have sufficient regulatory controls in place for its existing level of activity.

✓ A State with a negative safety margin is considered to have an insufficient oversight system for its level of activity.

State Safety Briefing

✓ **Summary** of State Safety Indicators

✓ **All information** in the State Safety Briefings is available in other applications **on iSTARS/SPACE**.

✓ Can view **State within a Group** by using both drop down menus

✓ Email as PDF to your registered e-mail address

ICAO SAFETY

Conclusions

1. **Revised message to the community:** States are encouraged to begin their journey toward effective SSP implementation, starting with ensuring a solid safety oversight foundation is established. → *You can get started today!*

2. Tools are available on iSTARS to support the **resolution of safety oversight deficiencies related to effective SSP implementation** and for performing a **Gap Analysis.**

3. The Safety Margin APP on iSTARS helps States **to prioritize their efforts** at improving their oversight capabilities **in accordance with their level of activity.**

4. The State Safety Briefing provides a **summary of important indicators.**

ICAO SAFETY

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

ICAO   SAFETY

iSTARS Catalogue

- ✓ 30 Apps available to date

- ✓ Browse Apps by Tab at the top

- ✓ Click "To My Apps" to select and install customized Apps

- ✓ Go to "My Apps" to see what you have installed

- ✓ Suggestions for new Apps are welcome

ICAO   SAFETY

iSTARS Group Manager

Create and Edit Groups of States and Territories for iSTARS/SPACE Applications

- ✓ View the composition of existing groups by clicking the plus icon next to each group.

- ✓ To create a new group, click the Add button in the left column.

- ✓ Name and describe the group and select to share the custom group with your colleagues.

- ✓ Drag and drop States from the Available Options (right side) to the Selected Options (left side).

- ✓ Click Create to return to the Group Manager.

Add New

Create a new group.
Add

ICAO SAFETY
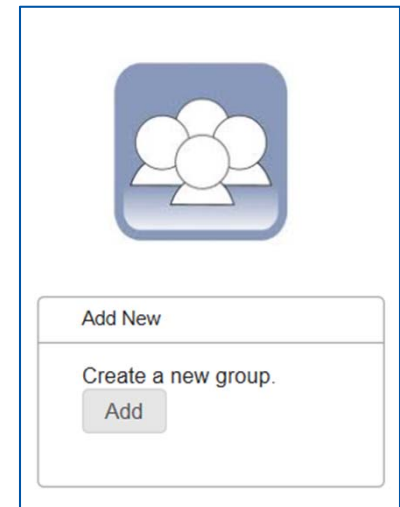
Online Airworthiness Information Network

- ✓ Online Version of Circular 95 - The Continuing Airworthiness of Aircraft in Service

- ✓ Contains useful information for States of Registry and States of Operator to ensure the continuing airworthiness of aircraft

- ✓ Contact information for CAA Airworthiness focal point – do you know who this is for your State?

ICAO   SAFETY

Protocol Question (PQ) Tester

✓ View, filter, and sort USOAP Protocol Questions (PQ) results by group, by PQ or by State.

✓ Use the drop down menu to select the group or Member State to display.

✓ Use the filters to select a particular Area or CE

✓ From the list of PQs, click the Toggle button to select all or select each PQ you want to test

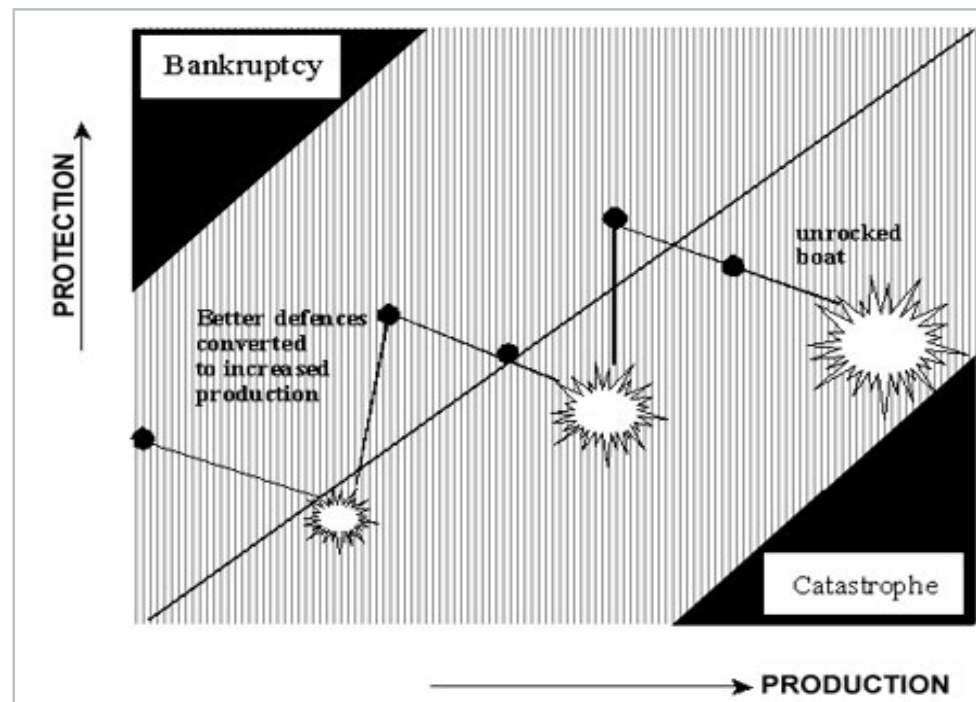✓ Limit the display by ticking box "Show selected PQs only" box near the Group/State drop down. Click Run Test.

Problem Statement

Given a **set of States/assistance projects**, which States or projects should **be given priority** base on certain **criteria**?
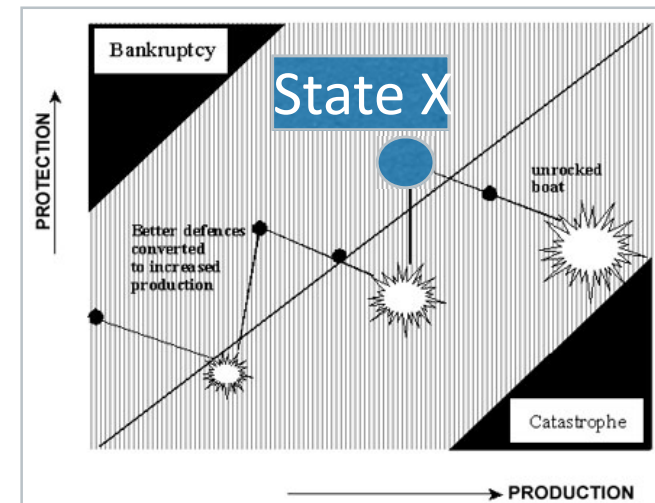
The Safety Model

Reason, James. *Managing the Risks of Organizational Accidents,* 1997.

ICAO's Reason Model

- **Protection = Implementation of SARPs**
  Metric: ICAO USOAP effective implementation (EI) score

- **Production = Flights**
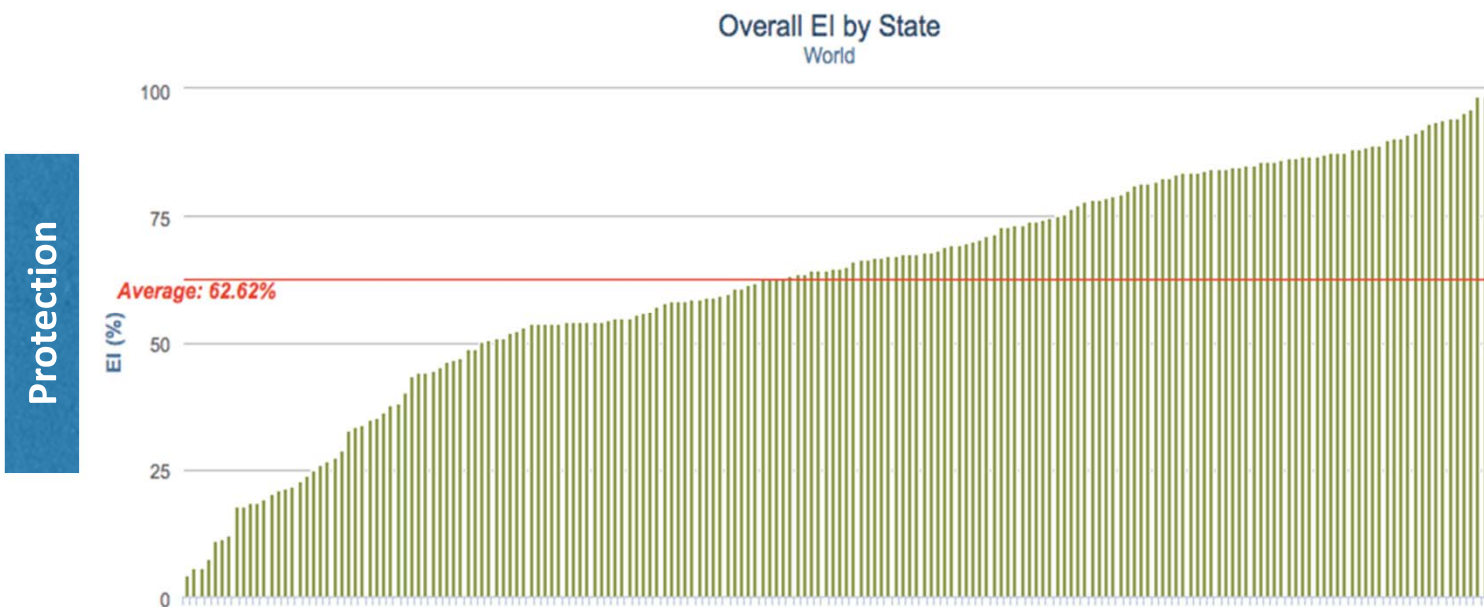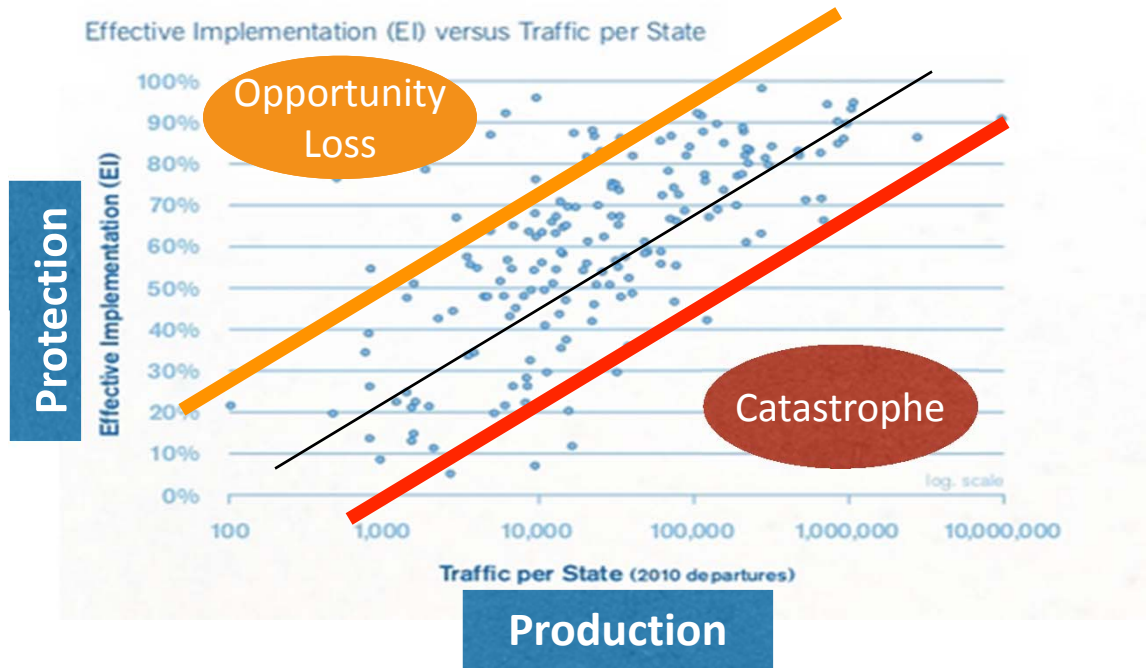 Metric: Number of scheduled commercial international departures

Protection Only

Protection

Overall EI by State
World

EI vs Traffic

Effective Implementation (EI) versus Traffic per State

Opportunity Loss

Catastrophe

Protection

Production

ICAO SAFETY
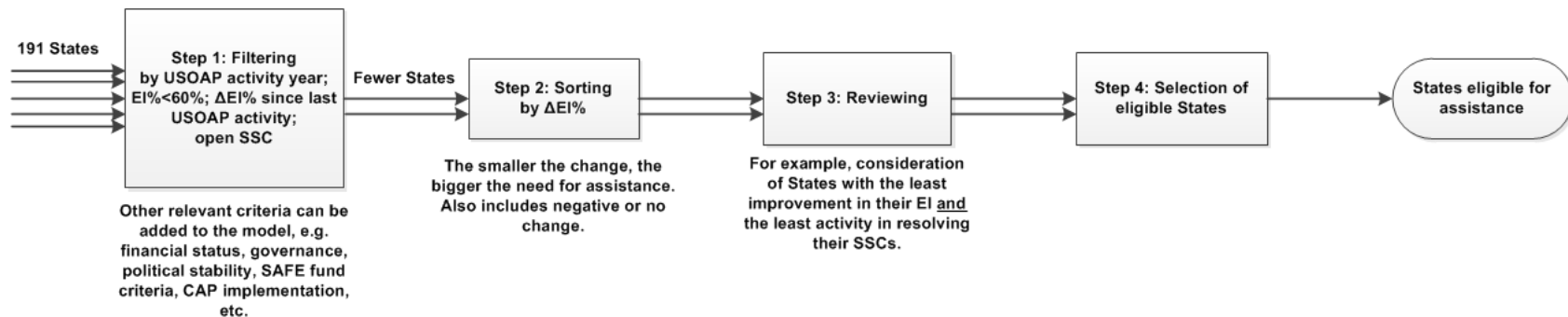
Proposed Prioritization Methodology

- Filtering (using USOAP indicators)
- Sorting (focus on States with no or little improvement in EI and open SSCs)
- Review and selection

Prioritization Methodology

- A similar methodology was used to select States eligible for the ICAO Council President certificate of recognition.

- The focus was on the highest change in EI (+ΔEI%) for States with no or resolved SSCs.
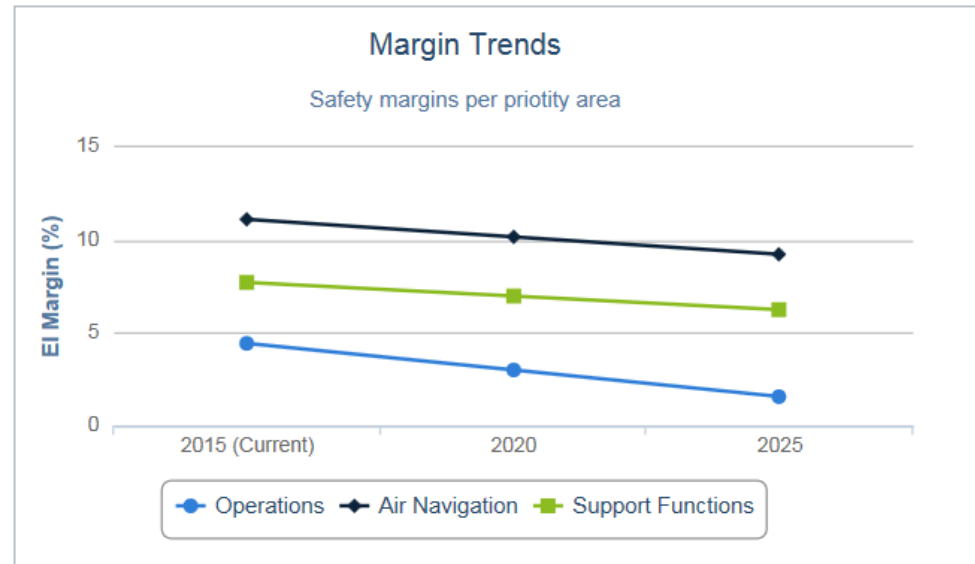
Area-Specific Priorities: State A

- These graphs show the EI vs traffic for "State A" in 3 areas: operations, air navigation and support functions.

- In all areas, the State has healthy **safety margins**. This means that traffic can increase without a negative impact on safety.

ICAO   SAFETY

Safety Margins: State A

- This graph shows a forecast for traffic increase vs EI for "State A".

- Without any improvement in its safety oversight, the State will continue to have acceptable safety margins despite increasing traffic until 2025.

Margin Trends

Safety margins per priotity area

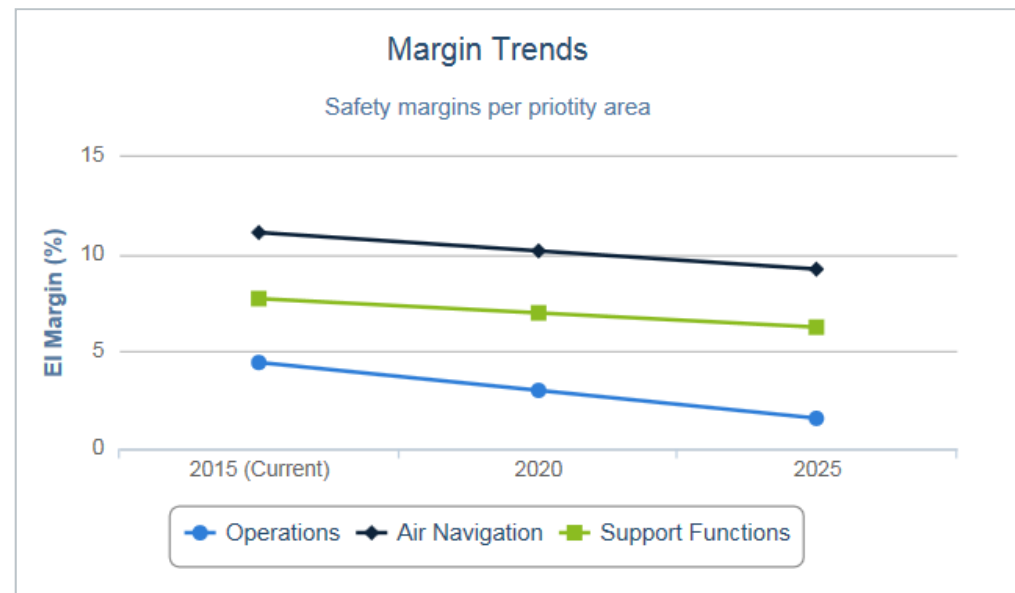ICAO SAFETY

Area-Specific Priorities: State B

- In this example, "State B" has even larger safety margins than "State A".

- This indicates loss of opportunity.

Safety Margins: State B

- "State B" can safely increase capacity and traffic with larger safety margins and without impact on safety until 2015 and beyond.

Margin Trends

Safety margins per priotity area
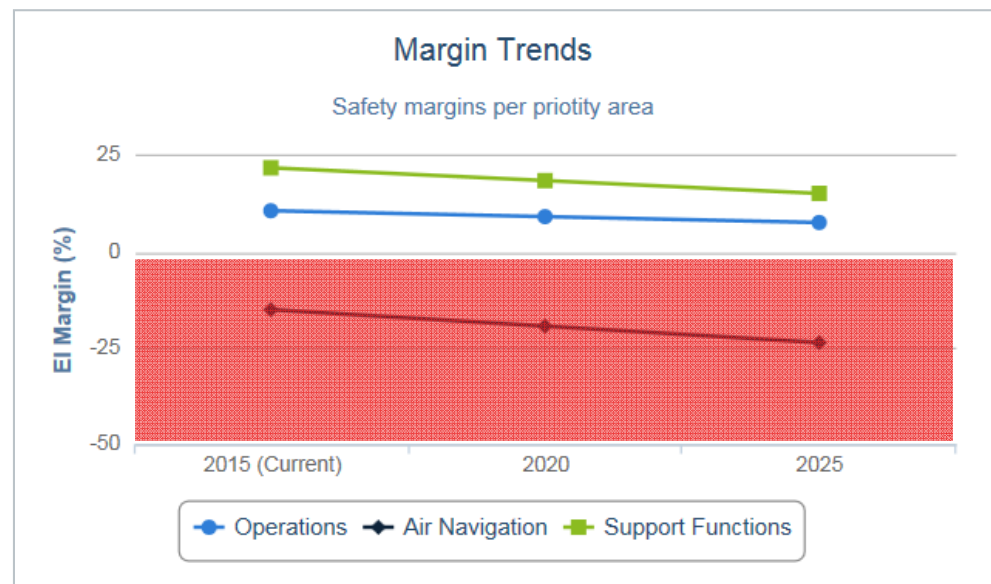
Area-Specific Priorities: State C

- In "State C", the EI in air navigation is below where it should be at this level of traffic.

- This may indicate a need for assistance in air navigation in this State.
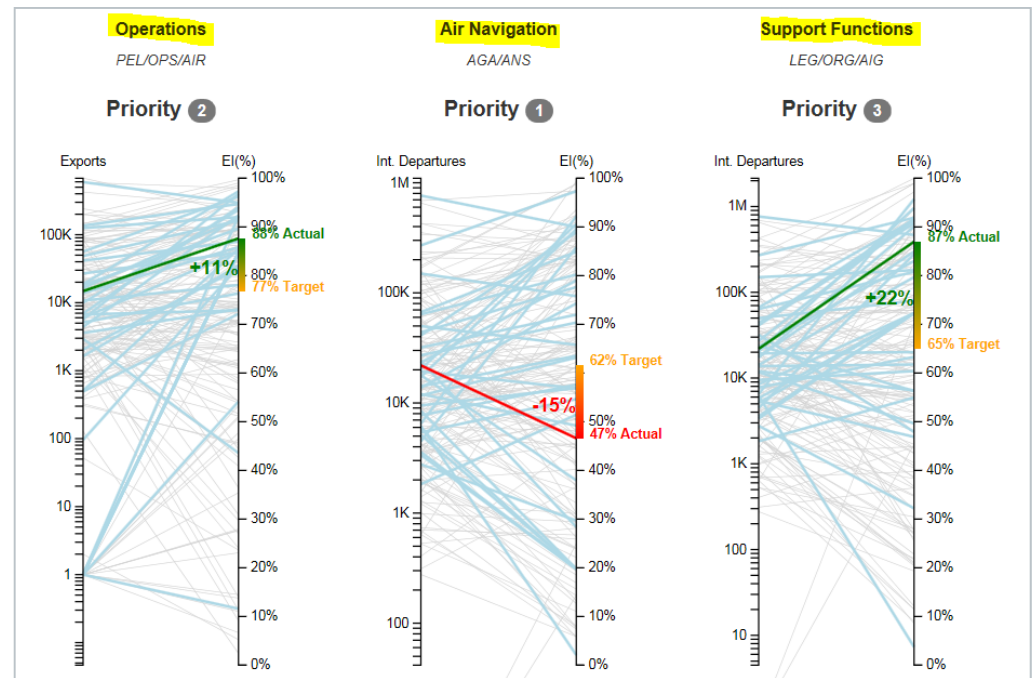
Safety Margins: State C

- The graph for safety margin trends shows how (and how fast) the gap in the safety margin gets bigger in "State C" over the next 10 years as traffic increases.
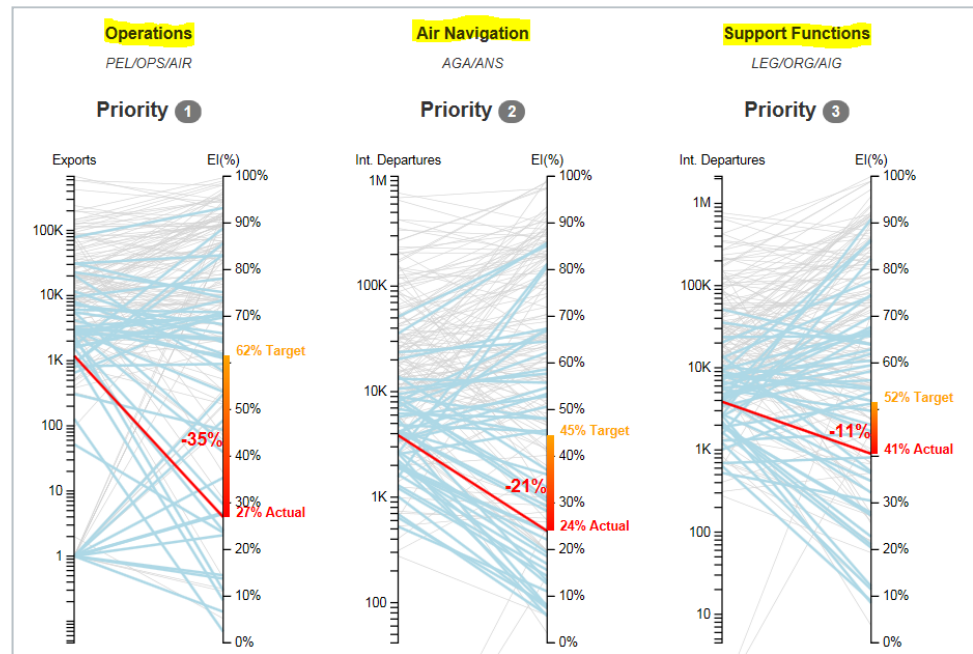

(Red area shows negative safety margin.)
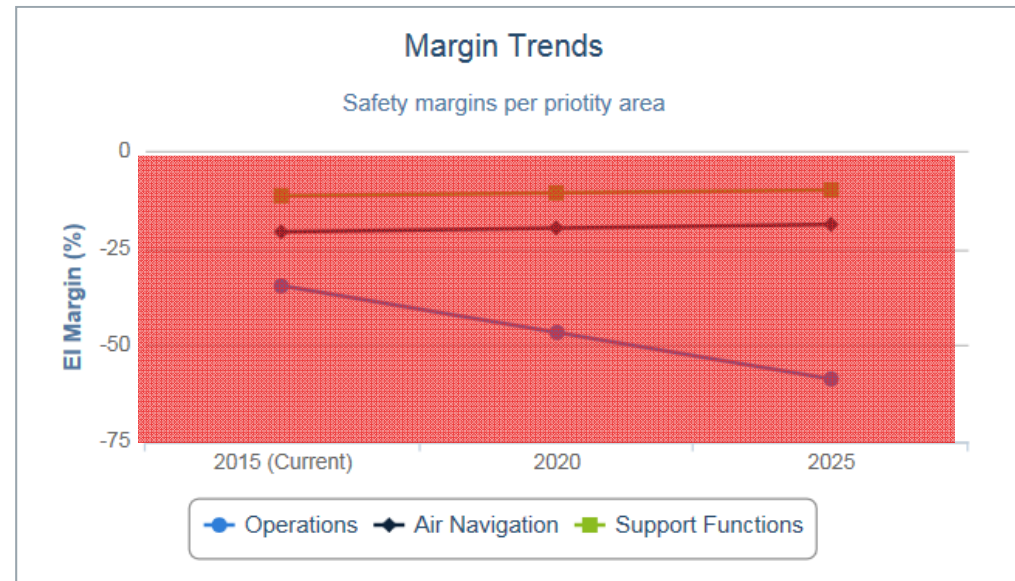
Area-Specific Priorities: State D

- "State D" has large gaps in its safety margins in all 3 areas.

- This flags the State as a potential candidate for assistance; particularly if the State meets other criteria, e.g. open SSC.

Safety Margins: State D

- Over the next 10 years the safety margin gaps remain unchanged in air navigation and support functions.

- However, the gap grows rapidly in the area of operations, indicating this area as a potential priority for assistance.

Margin Trends

Safety margins per priotity area

(Red area shows negative safety margin.)

ICAO SAFETY

Prioritization Tools

- A combination of area-specific priority graphs and the methodology described above can be used to select and prioritize States for assistance.

- Priority and safety margin trend graphs will soon be available on ICAO's **Solution Centre** (on iSTARS).

- Prioritization criteria and methodology will be built into a prioritization app.