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Safety Information Monitoring System

Presented at: SEIG/3 Virtual Meeting, MID Region

Presented by:

Ruviana Zimmerman, Associate Analysis Officer, ICAO HQ

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A complex network diagram consisting of numerous white nodes connected by thin white lines, set against a dark blue background. The nodes are distributed across the frame, with a higher density on the right side. The lines represent connections between the nodes, creating a web-like structure.

Why data matters



Common data related challenges within CAAs

- No standardization for reporting
- Data quality (missing data, incorrect type)
- Lack of automation
- Data storage capacities
- What to do with the collected data
- Limited resources





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How can we process, and analyze the collected data when resources are limited?



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SIMS Safety Information Monitoring System



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SIMS Safety Information Monitoring System



Connect

(States, service providers)



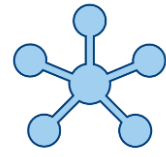
Monitor

(performance indicators)



Identify

(hazards, risks)



Share

(safety information)



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Who can connect to SIMS

ICAO Member State

Service Providers

Air operators

Air traffic
services (ATS)
providers

Operators of
certified
aerodromes

Approved
maintenance
organizations

Approved Training Organizations

Type design or manufacture of
aircraft, engines or propellers



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Who can contribute to SIMS

ICAO Member State

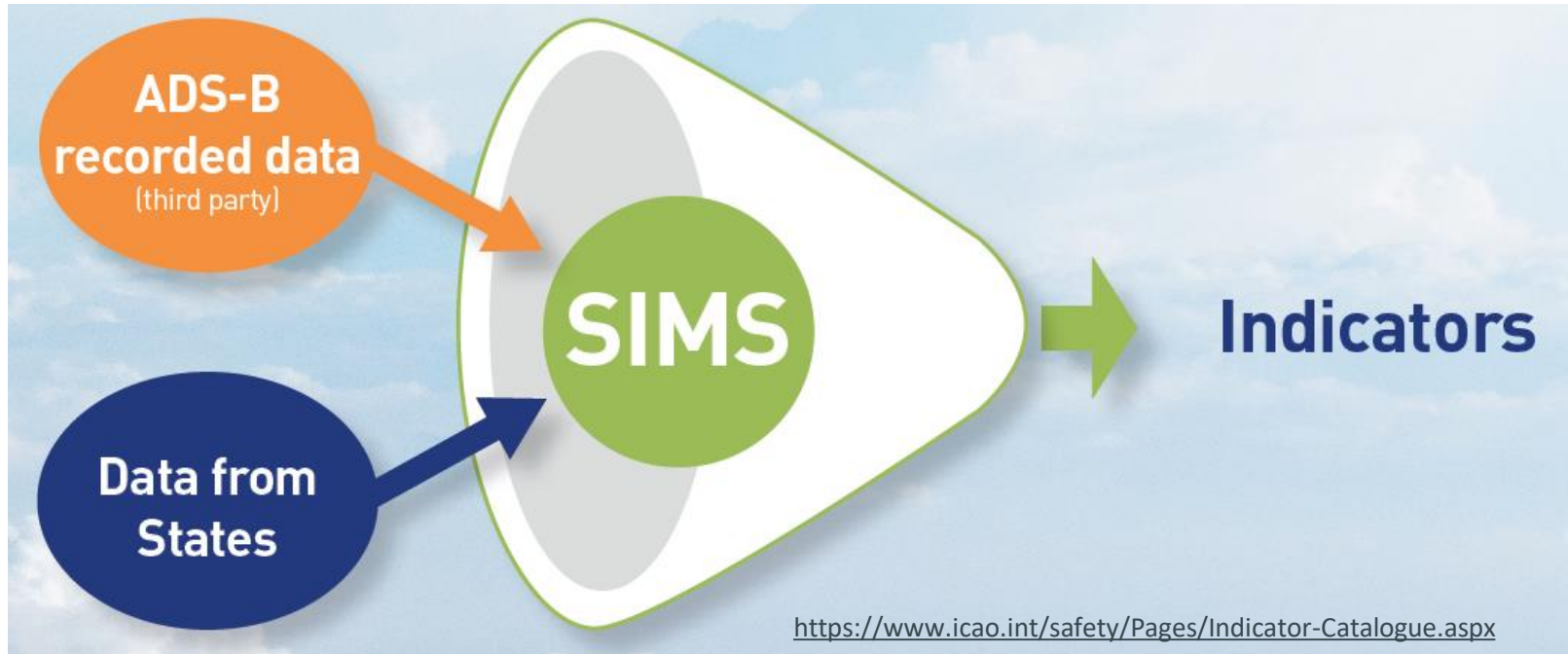
Service Providers

External parties





SIMS data processing



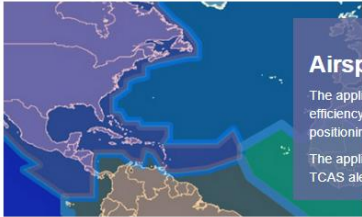


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SIMS Applications



Airspace Monitoring

The application allows for the monitoring of performance through horizontal flight efficiency (HFE) indicators. Indicators are calculated by FIR, using ADS-B positioning data.

The application also contains indicators related to airspace occurrences such as TCAS alerts.



Approach Monitoring

The purpose of this application is to monitor vertical flight efficiency such as continuous descent operations (CDO).

For each airport, the application also monitors approach related events such as missed approaches.



Occurrences

This application is using occurrences reported to States through their mandatory and voluntary reporting systems.

Indicators include number of severe occurrences as well as a reporting index.



Runway Safety

The application monitors landings with tailwind exceeding 5 knots as well as other runway safety related leading indicators.



Ramp Inspections

This application uses foreign ramp inspection data collected from inspecting States. The application allows for prioritization of ramp inspections and monitoring of air operator's compliance.



ADS-B Coverage

This application allows for selection of any airspace and airport and determines the current ADS-B coverage of that zone. It is used to evaluate if an airspace or airport is suitable to be monitored under SIMS.



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More about the applications



Approach Monitoring

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Ramp Inspections

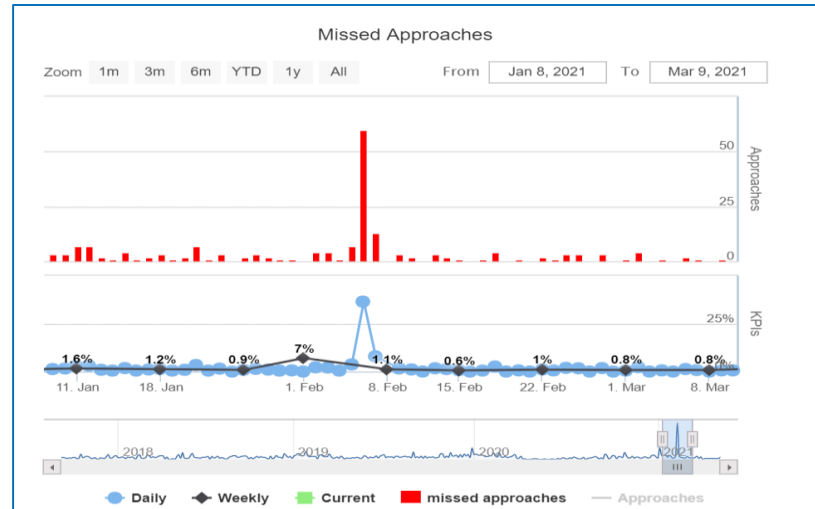
This application uses foreign ramp inspection data collected from inspecting States. The application allows for prioritization of ramp inspections and monitoring of air operator's compliance.



Approach Monitoring

- Identify vertical flight efficiency with a focus on continuous descent operations during the decent phase and measure missed approaches on approach phase for airports.
- State and service provider access
- ADS-B data as source

Indicator	Value
Vertical Flight Efficiency During Descent <i>Actual distances flown in CDO versus total descent distance</i>	94.1%
Missed Approaches <i>Percent of approaches resulting in a missed approach</i>	0.7%





(Foreign) Ramp Inspections



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Regional Aviation Safety Groups

Welcome to the Ramp Inspections Sharing Project. [Click here to access.](#)

The ramp inspections sharing application allows for ICAO Member States participating in SIMS to monitor and share ramp inspection data on this secured platform within their respective Regional Aviation Safety Groups (RASGs) in support of Safety Management.



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Ramp Inspections Steering Committee

FAA & EASA

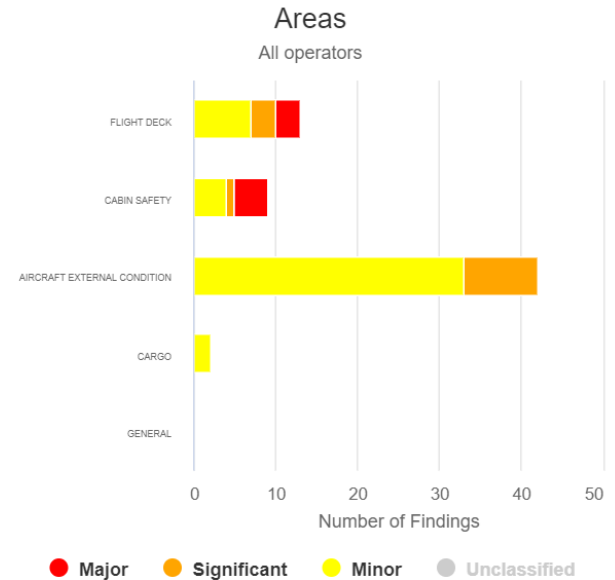


Brazil, Israel, Japan, Saudi-Arabia, Singapore, Togo



Ramp Inspections Sharing Project

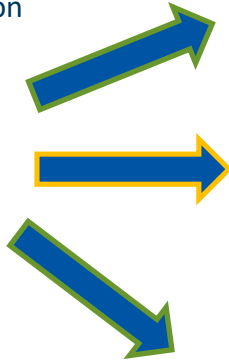
- Monitor foreign ramp inspections within own RASG region
- Insights on own operators
- Indicators to monitor performance
- Risk-based surveillance approach
- Increase collaboration among States cross region
- Regional and global app
- Access only to ICAO Member State





Who sees what

Approved inspector
within MID Region



Aircrafts inspected
by RASG-MID
participating States

Add inspection
option

MID Region Aircrafts
inspected within and
outside of the region

Aircraft inspected by
APAC States on APAC
operators



Data input and output

Standardized form

Date of inspection*
The date when the ramp inspection was conducted

Inspection Location Code*
The code of aerodrome where the ramp inspection was performed

State of Inspection*

Aircraft Registration*
The registration mark of the aircraft inspected during the ramp inspection

Aircraft Type*
The type of the aircraft inspected during the ramp inspection

Operator Name*
The name of the operating agency holding an air operator certificate

Operator Code*
The code of the operating agency holding an air operator certificate, if unknown write ZZZ

State of Operator*
The State issuing the relevant Air Operator Certificate to the operator

Findings

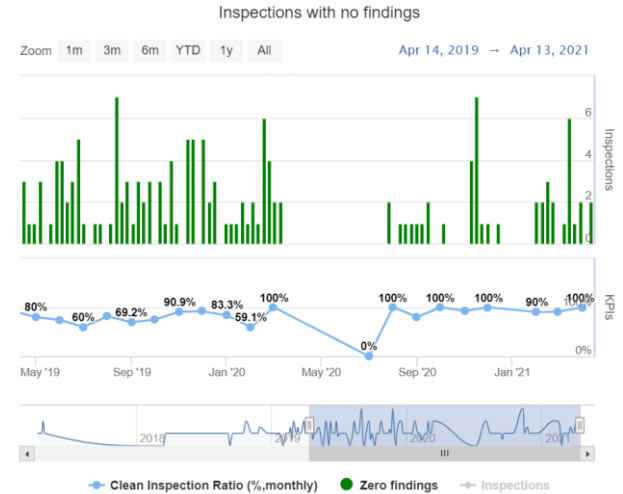
I confirm that the above inspection was conducted as per the applicable provisions of ICAO DOC3335 - Manual of Procedures for Operations Inspection, Certification and Continued Surveillance

Key SMS Indicators

Monthly aggregated

Indicator	Value
Clean Inspection Ratio <i>Percentage of inspections having resulted in no findings</i>	58.3%
Finding Ratio <i>Weighted number of findings per inspection</i>	0.771

Key indicators



Interactive charts

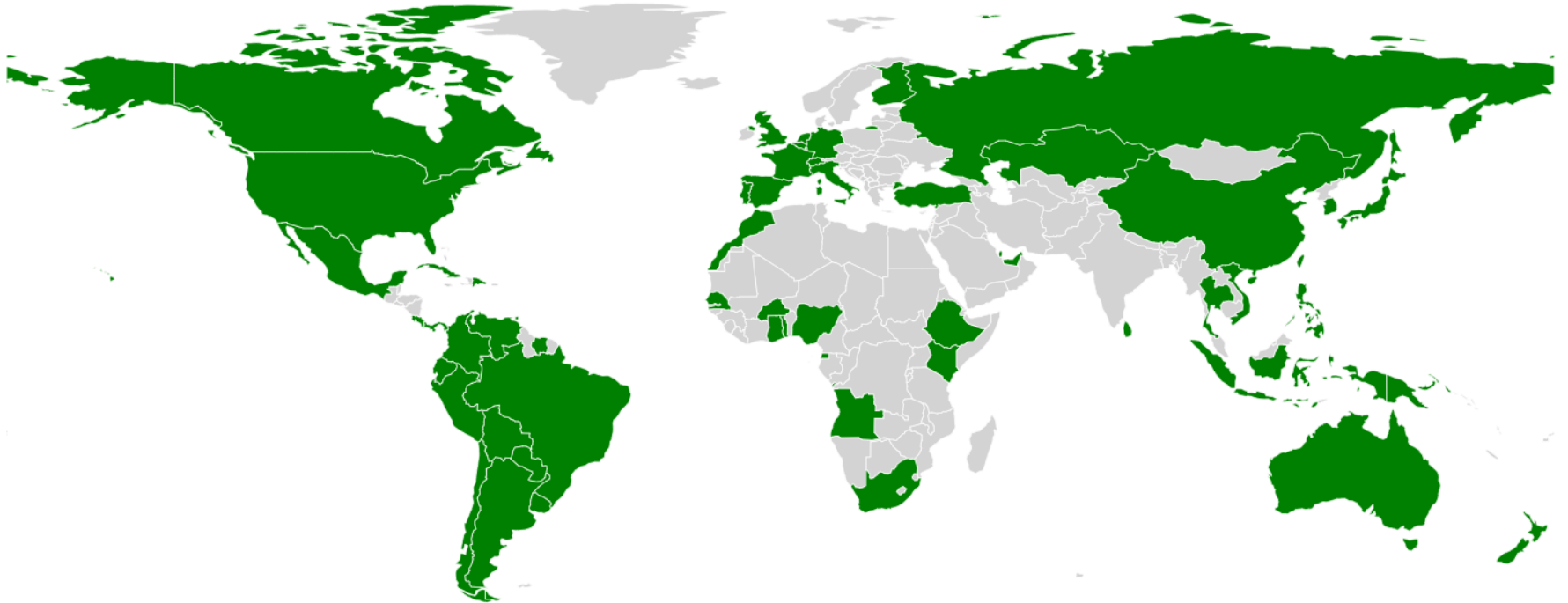


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SIMS all RI States





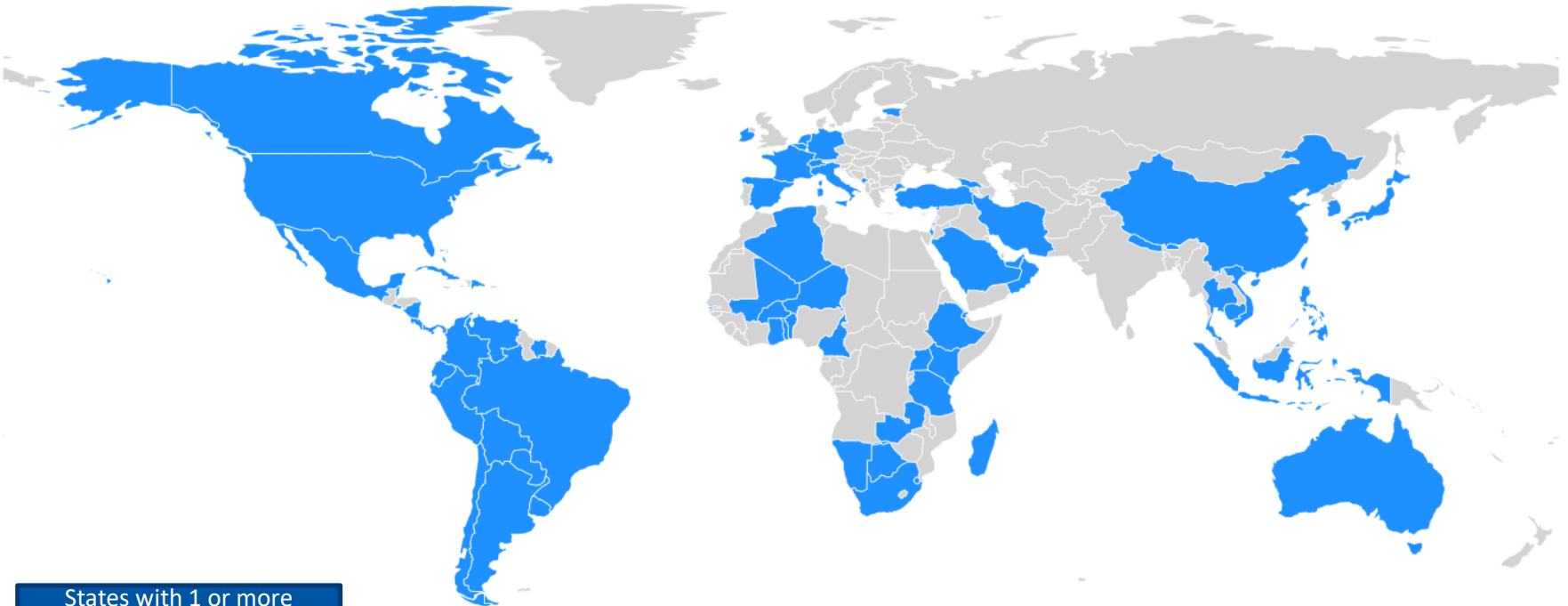
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SIMS users

 623



States with 1 or more users with access to SIMS



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Main steps to join SIMS





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Conclusion



Supports
the identification of
hazards and risks



Allows
monitoring of safety
performance



Resolves
need for in-house
analytics technology



Facilitates
data-driven
decision making



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Thank you!

Contact sims@icao.int



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Thank You