CANSO Global Approach to Safety Performance Measurement

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Agenda

- Measures and targets
- CANSO Safety Strategy
- ICAO Aviation Safety Index

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Why set targets?

- Provide common direction
- Motivate people
- Allow direct comparison

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The Issues...

Targets set direction

...they set people in the direction of meeting the numerical target, not necessarily providing the quality of service required _from the end-user's perspective._

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The Issues...

Targets motivate people

...to do anything _to (be seen to) achieve the target_, not to achieve the purpose from the end-user's perspective. They motivate _the wrong sort of behaviour_.

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The Issues…

Targets allow comparison

…but experience shows it allows _comparing false, manipulated or meaningless data._

Measures and Targets

Measures and Targets

theguardian

Mid Staffs report is right: NHS targets went too far

"Over the past 20 years, there has been a **drive to import a commercial mentality into the NHS, which has given rise to a new managerialism and a focus on finance and targets**. "

Mid Staffs shows everything that's rotten in the house of management

Targets always result in gaming. When it does, the knee-jerk reaction on the part of everyone from politicians to top managers is to tighten supervision to identify and root out offenders. Unfortunately, performance management has a poor record – partly because **in overall performance, <u>individuals are far less important than the system in which they operate</u>**.

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Measures and Targets

Measures and Targets

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Teachers 'fiddled school roll'

"The government is to investigate truancy at a Newcastle comprehensive after allegations that **teachers fiddled the attendance figures** by persuading parents of persistent absentees to sign forms saying they intended to educate their children at home.

Educational welfare officers were reported to have made a formal complaint about the practice at Firfield school in Newcastle. They suggested that **the school was trying to meet targets for cutting truancy by removing "serial truants" from the roll."** 11 Dec 1999

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Targets and measures

- Measures are good
- But, be very careful when setting targets
- Avoid setting too few targets (difficult to game since cannot draw relationship between the targets)
- Regulators and service providers need to ensure that targets drive the right behaviour
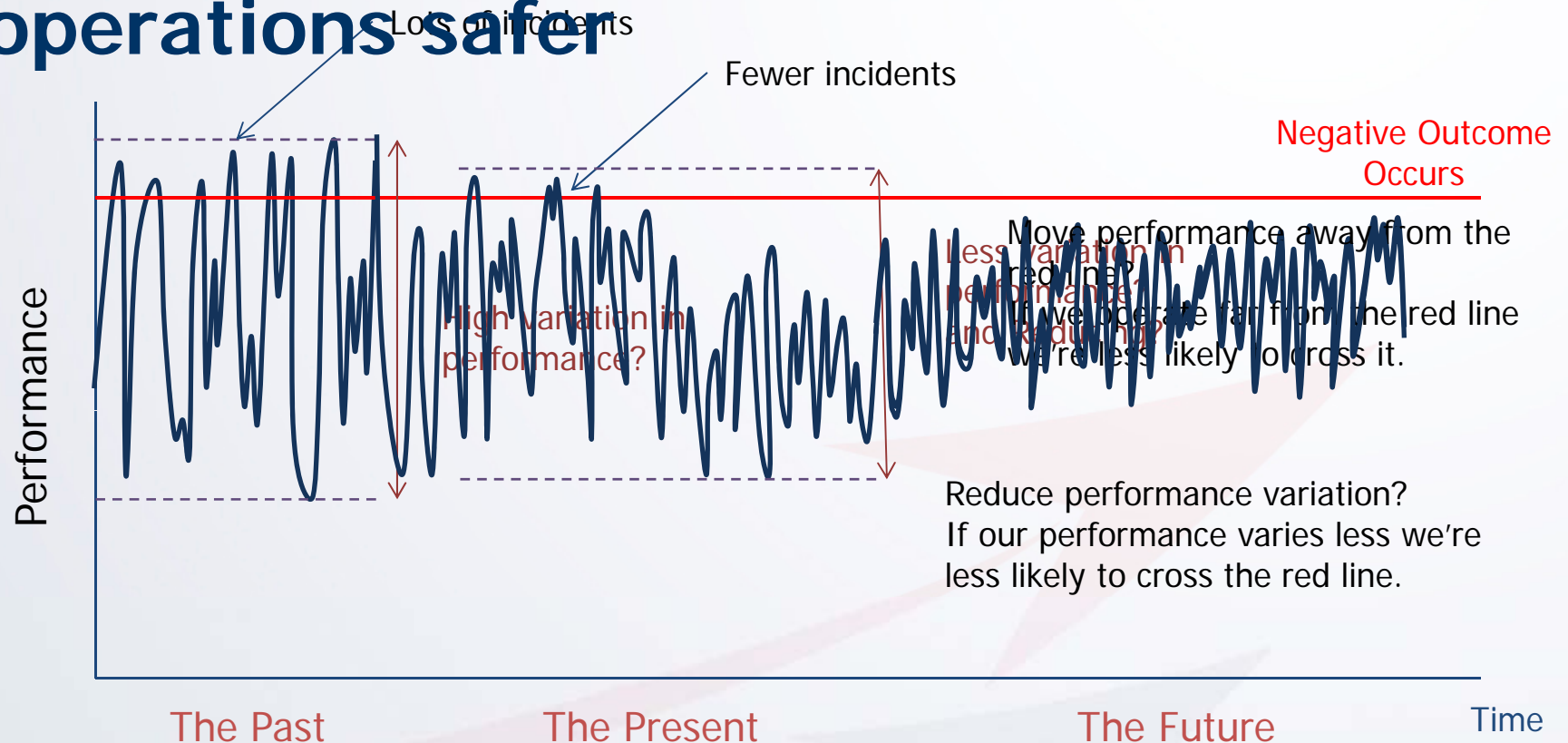- "When a measure becomes a target, it ceases to be a good measure." Prof. Marilyn Strathern.

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Proposed CANSO Vision

In 2025, safety is:

Challenging, cooperating and learning

Human focused

Tailored and Proportionate

Success based

As a result there will have been no increase in the rate of risk bearing ATM incidents despite increases in traffic density and complexity

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Understanding what makes everyday operations safer

Lots of incidents

Fewer incidents

Negative Outcome Occurs

Performance

High variation in performance?

Less variation in performance, and less outcomes?

Move performance away from the red line?
If we operate far from the red line we're less likely to cross it.

Reduce performance variation?
If our performance varies less we're less likely to cross the red line.

The Past

The Present

The Future

Time

How to stop performance

risk

- Can't use incident data to inform us on how to achieve this
- Need measures of our performance based on how we deliver a safe service, day-in, day-out, to inform us of...
  - our performance variation, and
  - our 'distance' from the incident

Understanding what makes everyday operations safer

TODO we monitor safety:
- LOSs
- Runway incursions

TOMORROW we will:
- Develop real time safety metrics to monitor everyday safety performance
- Provide GMs with real time safety dashboards

In the future ATM will become complex
Unwanted events will become less and less frequent
Safety will no longer be understood from one off unwanted events

Future Safety Dashboard

Defensive Controlling | Active Listening | Monitoring & scanning

Rate of knock-on conflicts | Effectiveness of clearances | Rate at which safety nets are triggered

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Understanding what makes everyday operations safer

Defensive Controlling

Active Listening

Monitoring & scanning

Future Safety Dashboard
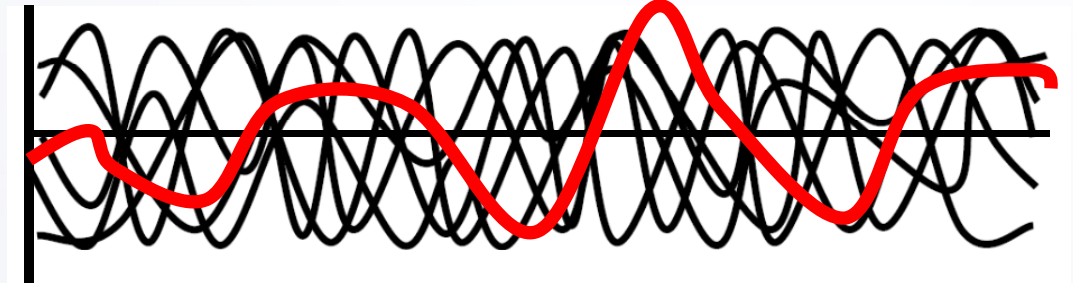
Rate of knock-on conflicts
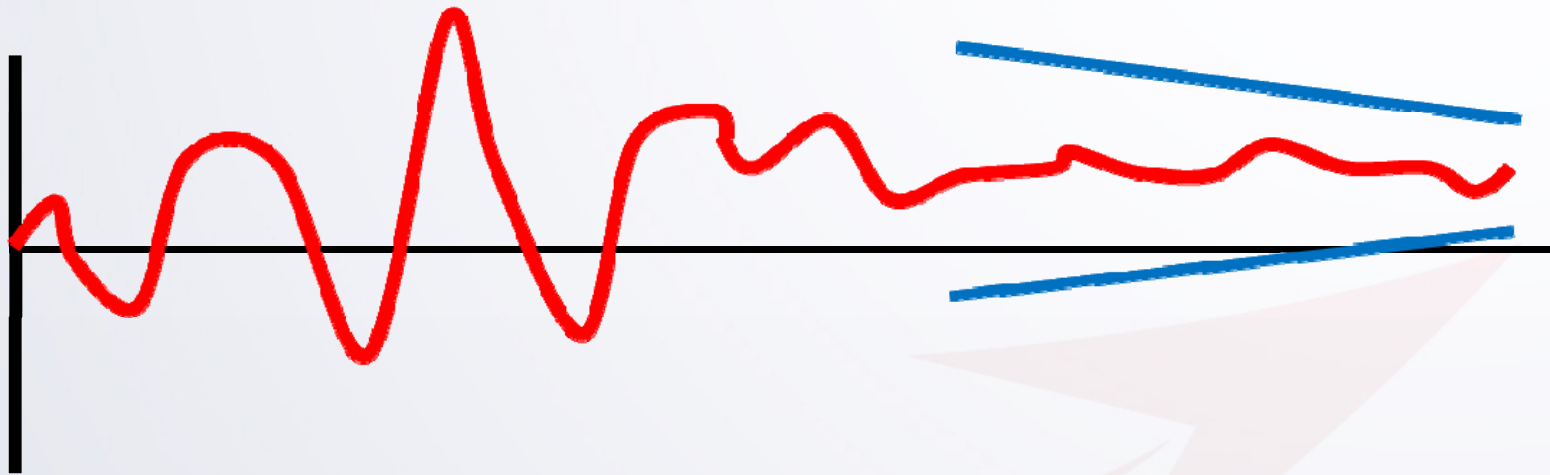
Effectiveness of clearances

Rate at which safety nets are triggered

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Understanding what makes everyday operations safer

Future Safety Dashboard

Defensive Controlling · Active Listening · Monitoring & scanning · Rate of knock-on conflicts · Effectiveness of clearances · Rate at which safety nets are triggered

We will understand the link between everyday performance and safety

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Controlling how safe we are

↗ We will set safety targets to control safety at the sector and individual level

↗ We will dynamically control risks in real time

↗ We will know what action to take to normalise our operations to a consistent level of risk

↗ We will understand the trade-off between capacity and safety

↗ We will know which safety improvements best align with our future needs

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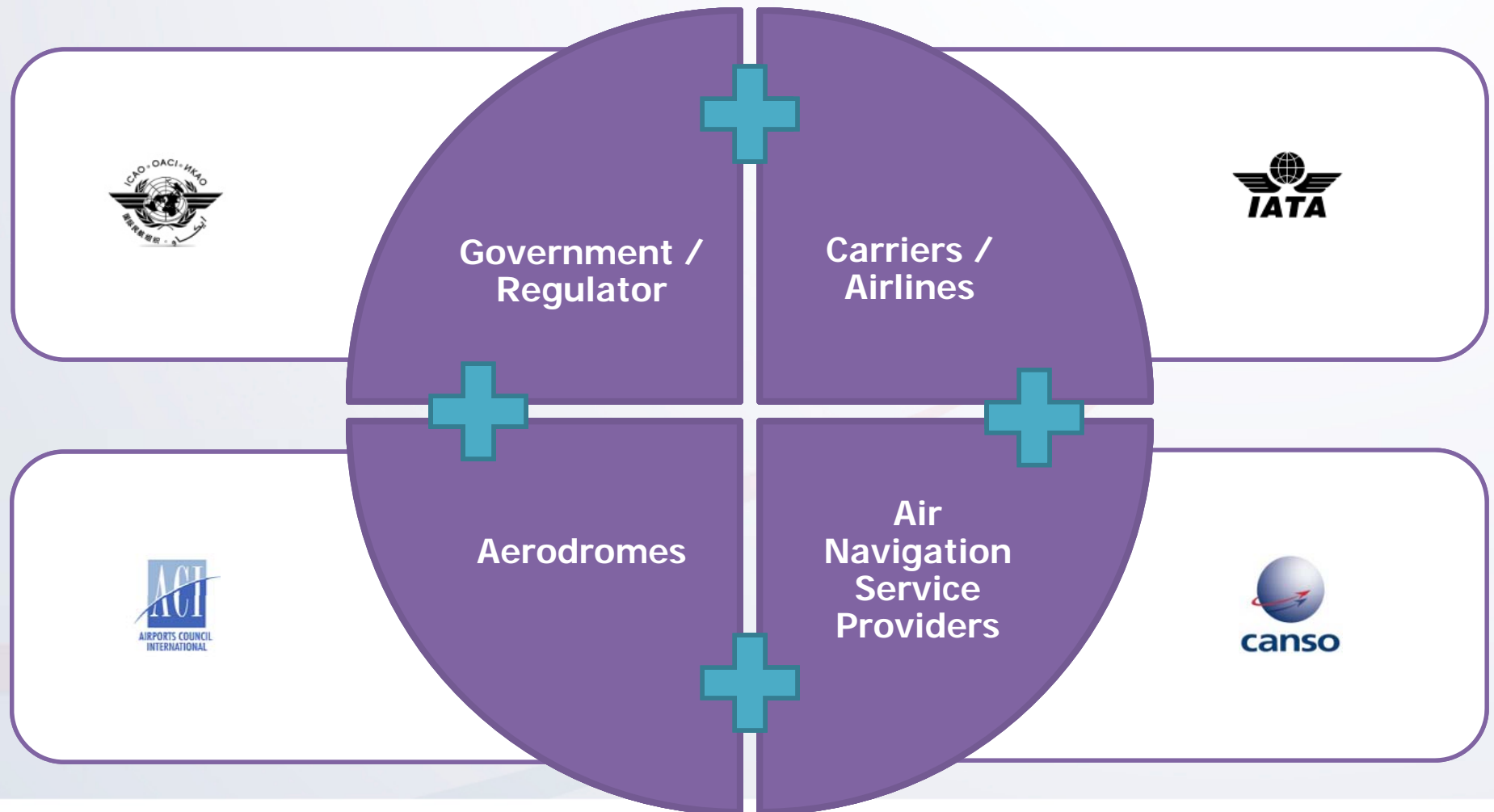# ICAO Aviation Safety Index
Vision

- It will provide an easy-to-read measurement of the overall health of the aviation system in a given State

- It will also allows for the ability to drill-down into each domain of the States aviation system, and then further into each identified indicator, as may be required to identify and address specific problems in a State, region or across groups of States.

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ICAO Aviation Safety Index
Vision

- The ASI will provide a multi-dimensional assessment of safety risk through the use of indicators related to various domains within a State's aviation system.

- Application of the ASI will lead to a measurable improvement in global aviation safety and reduce the risk of loss of life through better utilisation of limited resources and targeted assistance strategies.

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ASI Conceptual Framework

Safety Intelligence inputs

Certification

- USOAP
- IOSA
- CANSO SMS Effectiveness

Exposure

- Departures
- Leasing Activity
- Over-flights
- Fleet Growth

Occurrences

- Loss of separation
- Runway incursion
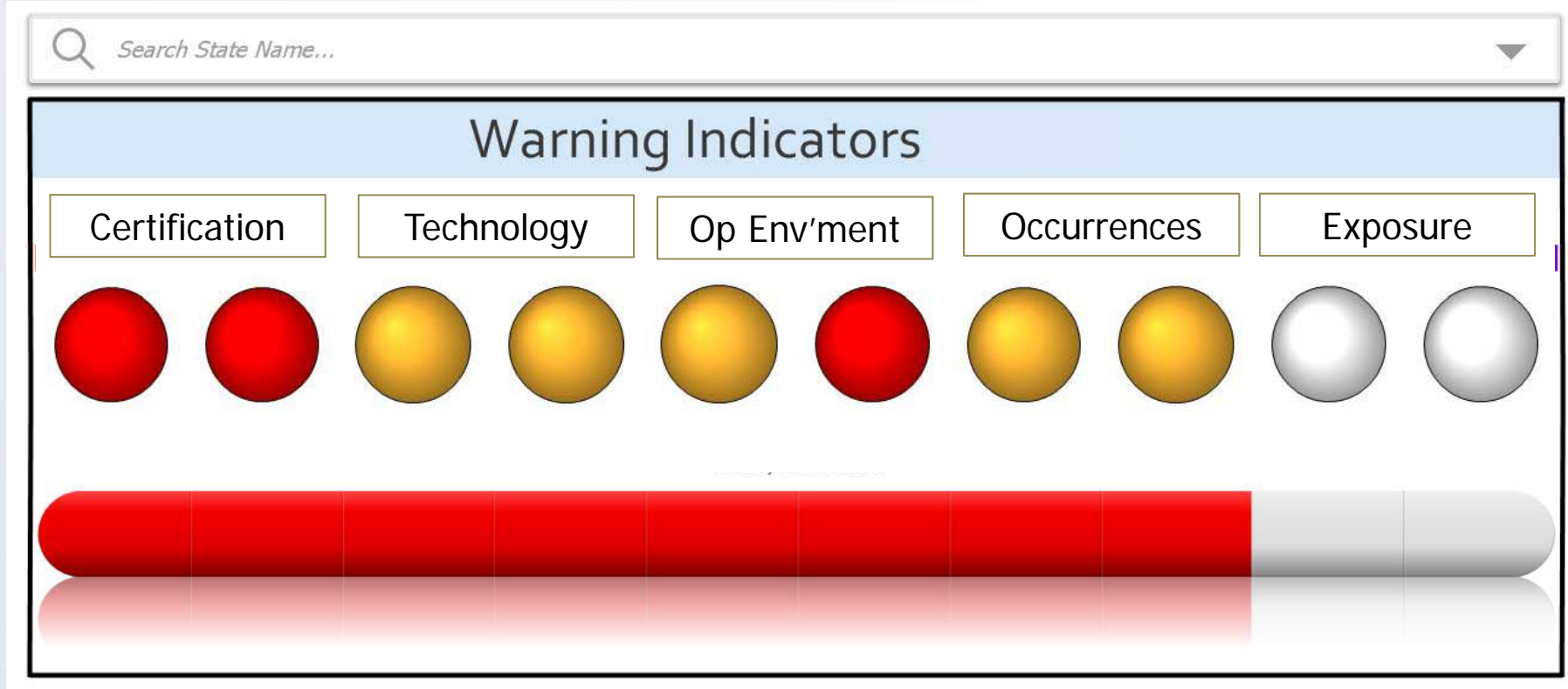- Runway excursion
- Airspace infringers

Technology

- Fleet Age
- CNS Infrastructure
- PBN Implementation
- Aircraft Equipage

Ops Environment

- Airspace complexity
- Terrain
- Weather
- Remote area ops

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Safety Dashboard Prototype

ASI – The Current Position

➤ The Aviation Safety Intelligence initiative is still very much in its development stage

➤ CANSO SSC is playing a significant part helping shape the initiative

➤ It will generate more data input for CANSO and hence improved benchmarking

➤ It will drive continuing improvement in data quality and consistency

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Conclusions

- Working at global level
- Setting targets is difficult
- Trying to change the way we think and talk about safety
- Moving towards much more predictive indicators of safety
- Understanding safety at much more granular level in real time
- Driving safety benefit into the system design

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