ITF Roundtable for SMS

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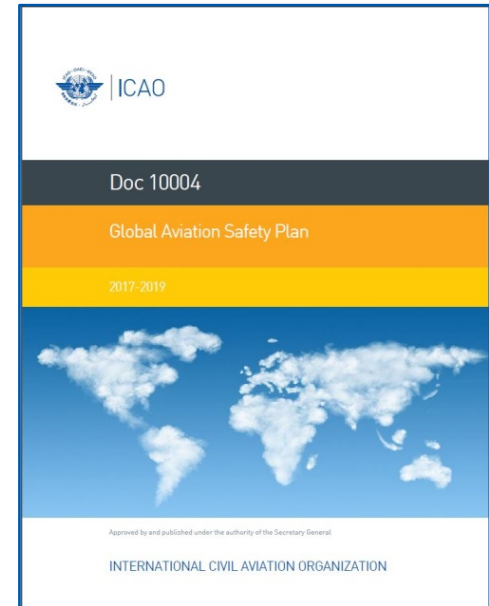# Modernizing How We Manage Safety

Proactive

Data informed

Global Aviation Safety Plan (GASP)

- The Global Aviation Safety Plan (GASP) outlines objectives and priorities for civil aviation and it sets forth a strategy which supports the prioritization and continuous improvement of aviation safety.

- It promotes coordination and collaboration among international, regional and national initiatives aimed at delivering a harmonized, safe and efficient international civil aviation system.

ICAO

Doc 10004

Global Aviation Safety Plan

2017-2019

Approved by and published under the authority of the Secretary General

INTERNATIONAL CIVIL AVIATION ORGANIZATION

Annex 19 – *Safety Management*

Standards and Recommended Practices (SARPs) intended to assist States in proactively managing aviation safety risks

This proactive strategy is built upon a foundation of compliance with prescriptive requirements

Includes provisions for the Protection of safety data, safety information and related sources.
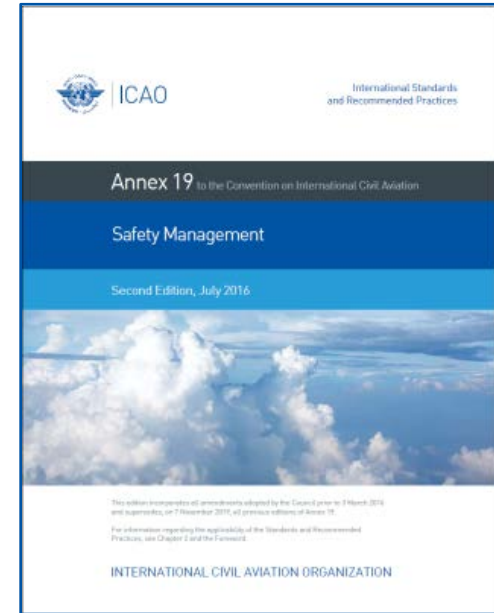
Safety Management System (SMS)

As part of the implementation of a State Safety Programme (SSP), States shall require Aviation Service Providers to implement **SMS 4 components** and **12 elements.**

1. Safety policy and objectives

1.1 Management commitment

1.2 Safety accountability and responsibilities

1.3 Appointment of key safety personnel

1.4 Coordination of emergency response planning

1.5 SMS documentation

2. Safety risk management

2.1 Hazard identification

2.2 Safety risk assessment and mitigation

3. Safety assurance

3.1 Safety performance monitoring and measurement

3.2 The management of change

**3.3** Continuous improvement of the SMS

4. Safety promotion

4.1 Training and education

4.2 Safety communication

System Description and Interfaces

- There is no "one size fits all" method for SMS implementation

- A system description that identifies organizational structures, processes, and business arrangements is needed

- The system description includes the SMS interfaces within the organization, as well as pertinent interfaces with other external organizations such as subcontractors
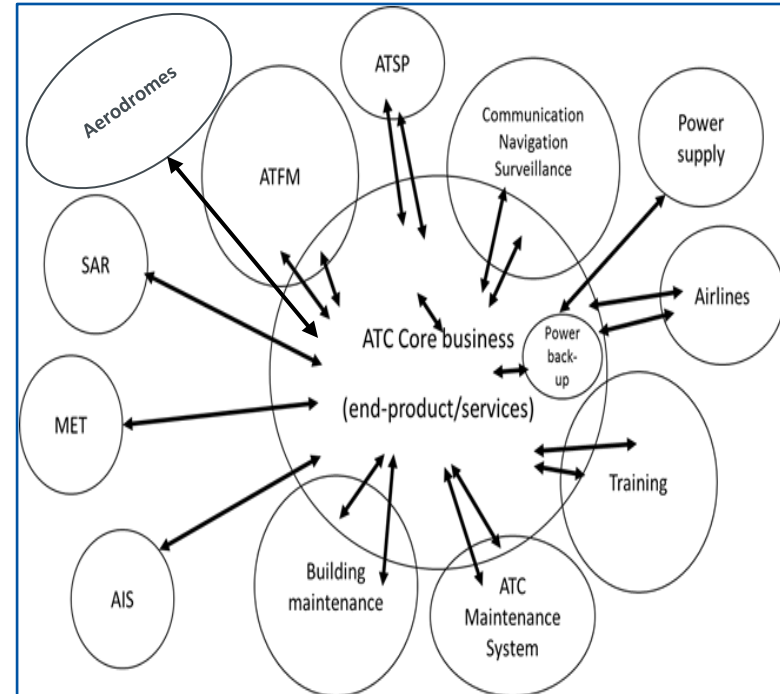
SERVICE PROVIDERS

Airports	ANSP	Airlines	Business Aviation	Manufacturers

SPI	SPI	SPI	SPI	SPI

SMS

STATES

**Acceptable Level of Safety Performance**

SPI

SSP

Measuring and Monitoring Performance

- Maintain and continually improve safety.

- Determine the impact of any changes to the system on safety performance.

Review

1) **Modernizing** How We Manage Safety

2) **GASP** Objectives and priorities for civil aviation

3) **Annex 19** – ICAO Safety Management SARPs

4) **SMS** – 4 components and 12 elements

5) **System** Description and Interfaces

6) **Measurement** and monitoring
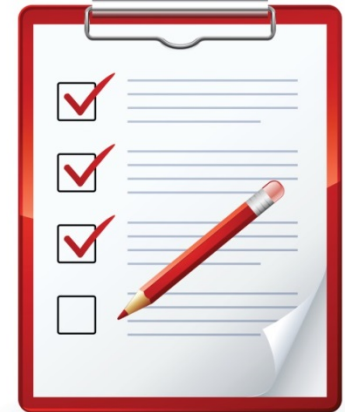
Questions?

BACKUP SLIDES

Economic rationale for safety

- *"Our job is far from done"*: https://aviation-safety.net/

- Center for Aviation Safety Research *Aviation Safety Management Systems ROI Study*

  – Economic rationale for safety management at the macro, mid and micro levels

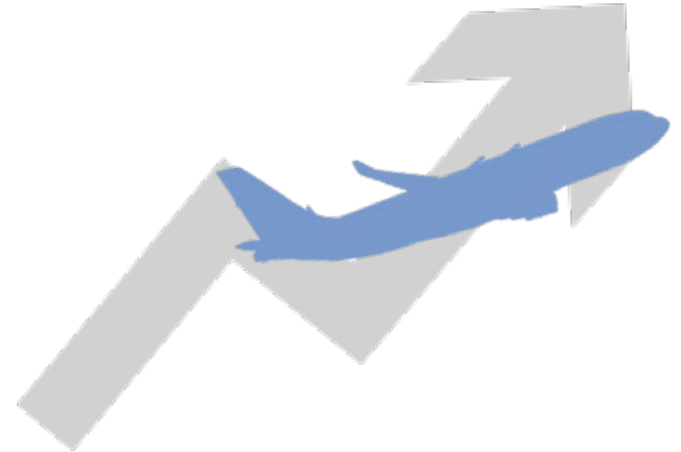 – Safety improvement is financially defensible at every level

Global Air Traffic Forecast

- Air traffic is predicted to **double** in the next 15 years

- Our collective responsibility is to *enable* **the aviation system to** *safely* **realize this growth**
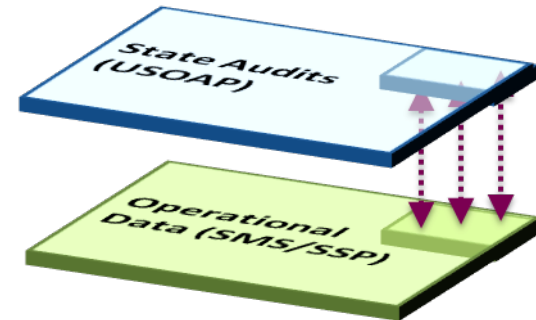
Universal Safety Oversight Audit Programme (USOAP)

ICAO carries out USOAP audits to determine its Member States' safety oversight capabilities.

USOAP to include State Safety Programmes:

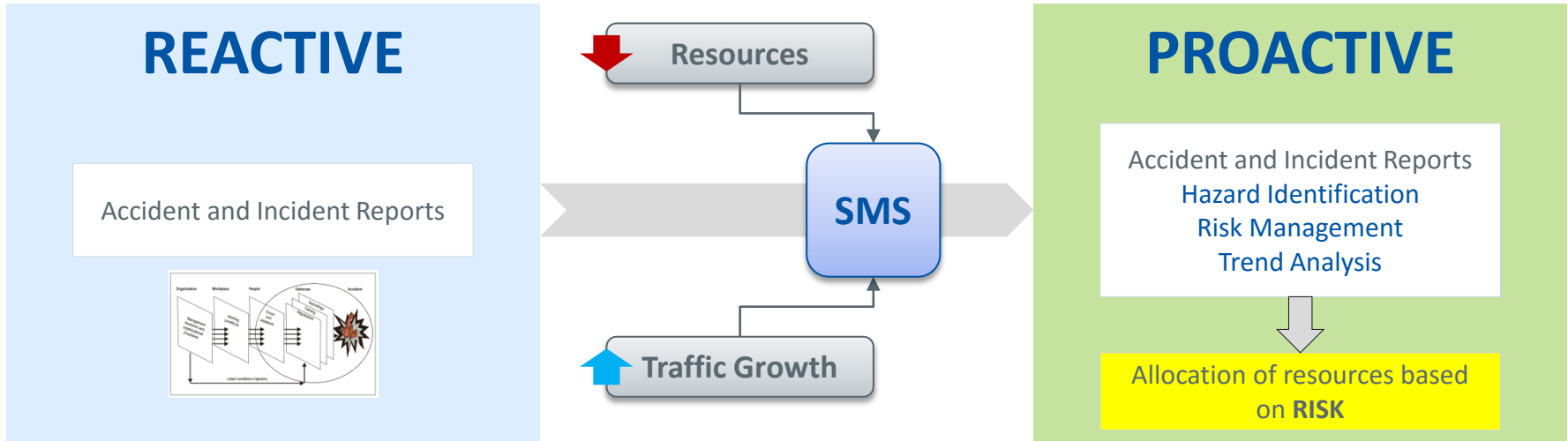✓ Voluntary and confidential from 2017

✓ Voluntary from 2018

✓ GASP criteria from 2020

The Need for Safety Management

➢ Transition from a **reactive** *system*, to a **proactive** *system*

➢ **Increased efficiencies** with an **effective SMS**

Safety Management Manual, 4th Edition

Guidance material on Safety Management principles and concepts, State Safety Programme (SSP) and Safety Management System (SMS) implementation are contained in the **ICAO Safety Management Manual (SMM) – Doc 9859**. The **4th edition** of the ICAO SMM will be published in **July 2017**.

Guidance Material is taking a new direction:

- ✓ *Less prescriptive and more **focused on the intended outcomes** and the "How?"*

- ✓ *Published document complemented by a Safety Management Implementation Website*

Safety Management Training Programme

Phase 2 – July 2017

✓ **Phase 1** - released in September 2016 and **reflected the Amd 1 to Annex 19**

✓ **Phase 2** - will further **reflect the 4th edition of the SMM** and will include **an additional module on safety information protection (SIP)**

✓ **New competencies** are required

- Safety risk management and safety assurance
  - Safety risk assessment
  - Safety data/safety information analysis
  - Safety performance indicators
- More judgement and experience

✓ **Training needs analysis** performed taking into account the required competencies

✓ **Different approaches to address these needs** are being considered: online training, workshops, videos and other modern approaches.

Safety Management Assessment Tools

- ✓ The HLSC 2015 Recommended States use the **SSP Gap Analysis** on **iSTARS** and the **SSP-related USOAP PQs** to progress SSP implementation and communicate to ICAO.

- ✓ There is a project underway to consolidate the SSP Gap Analysis Tool and the SSP related protocols with the current work on the SM ICG SSP Assessment Tool into **one multi-layered tool for multiple uses: gap analysis, implementation planning and ongoing assessment**.

- ✓ Consideration is being given to **measuring SSP using a maturity model separate from EI**.

- ✓ **Beginning in January 2020**, the **threshold for the applicability of the SSP-related PQs will be based on 2020-2022 GASP objectives – 60% threshold to be revisited**….

Evolution of Safety Analysis

- **Combining** State audits with State/Industry operational data
  - Through SMS and SSP
  - Protection of information/operational data through Amendment 1 to Annex 19

- ICAO **Safety Information Monitoring Service (SIMS)** as a tool to help States and Industry for collecting, monitoring, visualizing and sharing progress of their SSP and SMS
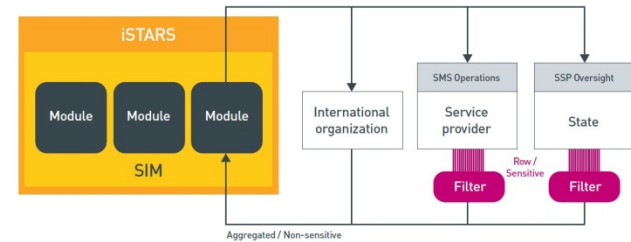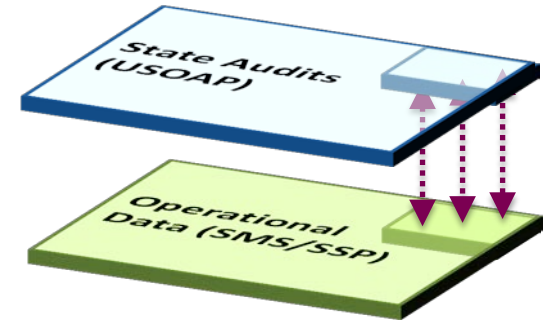
Safety Performance Indicators

- New appendix in the GASP

- Provides guidance regarding safety and level of activity indicators

- First step towards the development and implementation of harmonized global indicators
  - Can be adapted at the regional, sub-regional, and national levels

#	Indicators and metrics	Type	Usage
1.	**Effective implementation of State safety oversight system** *Metrics:* • USOAP EI Scores overall • USOAP EI Scores by technical area • USOAP EI Scores by critical element	Predictive	Target
2.	**Progress in SSP implementation** *Metrics:* • Percentage of completed gap analysis questions • Percentage of implemented gap analysis questions overall • Percentage of implemented gap analysis questions by element	Predictive	Target
3.	**Progress in SMS implementation** *Metrics:* • Percentage of completed gap analysis questions by operator • Percentage of implemented gap analysis questions overall by operator • Percentage of implemented gap analysis questions by element and by operator	Predictive	Target
4.	**Frequency and severity of accidents and incidents** *Metrics:* • Number and distribution of occurrences by severity level (accident, serious incidents, etc.) and the ICAO Accident/Incident Data Reporting System (ADREP) occurrence category • Number and distribution of fatalities by ADREP occurrence category • Occurrence per number of departures (rate) *Note.— Occurrences should be limited to specific categories of aircraft and operations, such as aircraft above 5 700 kg operating scheduled commercial flights.*	Reactive/ proactive	Target

Global Aviation Safety Plan (GASP)

- **2017-2019 Edition**
  - **Maintains** the framework, objectives and safety performance enablers of the 2014-2016 edition
  - New **global aviation safety roadmap** ensures that safety initiatives deliver the intended benefits associated with the GASP objectives through enhanced coordination
    - Reducing inconsistencies and duplication of efforts

- **Cooperative, collaborative, and coordinated approach**
  - Together with all stakeholders and under the leadership of ICAO, the GASP offers a long-term vision in developing a harmonized safety strategy.

GASP Roadmap

- **Goals:**
  - Ensure that safety initiatives deliver the intended benefits associated with the GASP objectives
  - Reduce inconsistencies and duplication of efforts

- **Specific safety initiatives aimed at States, Regions and Industry**

- **Complements the GANP**

Effective safety oversight	SSP	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)**

Aviation Tools to Support Implementation

A 'NO COUNTRY LEFT BEHIND' Initiative:

iMPLEMENT

*Facilitating **Data-Driven** Decisions for Aviation*

ICAO iSTARS iMPLEMENT

State Safety Briefing

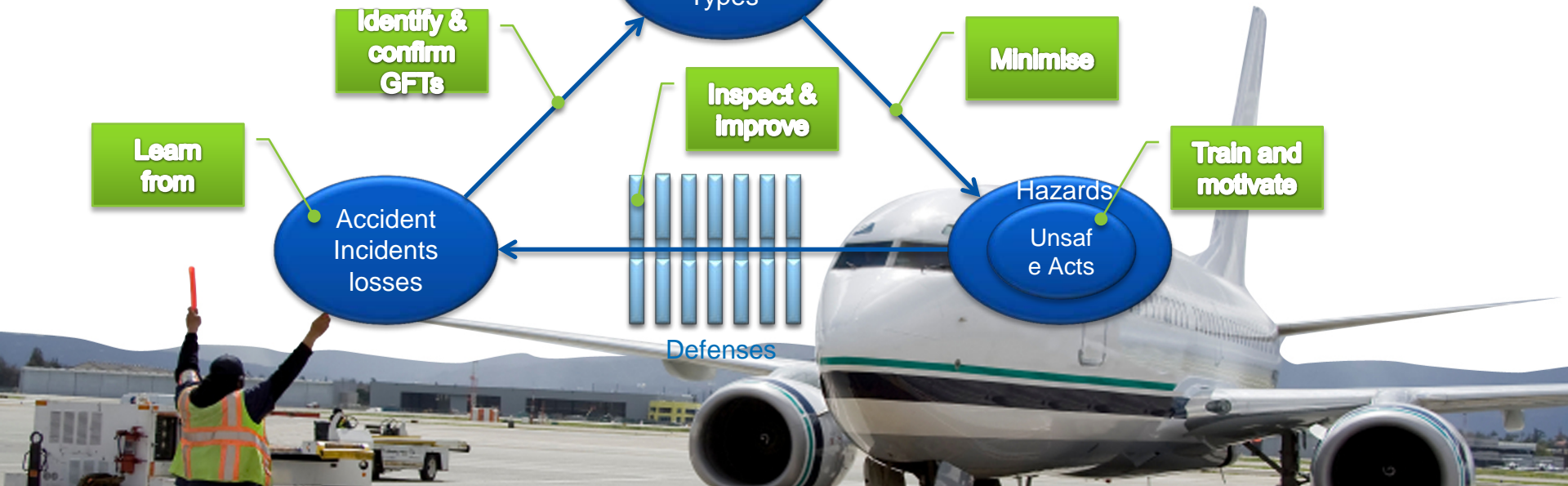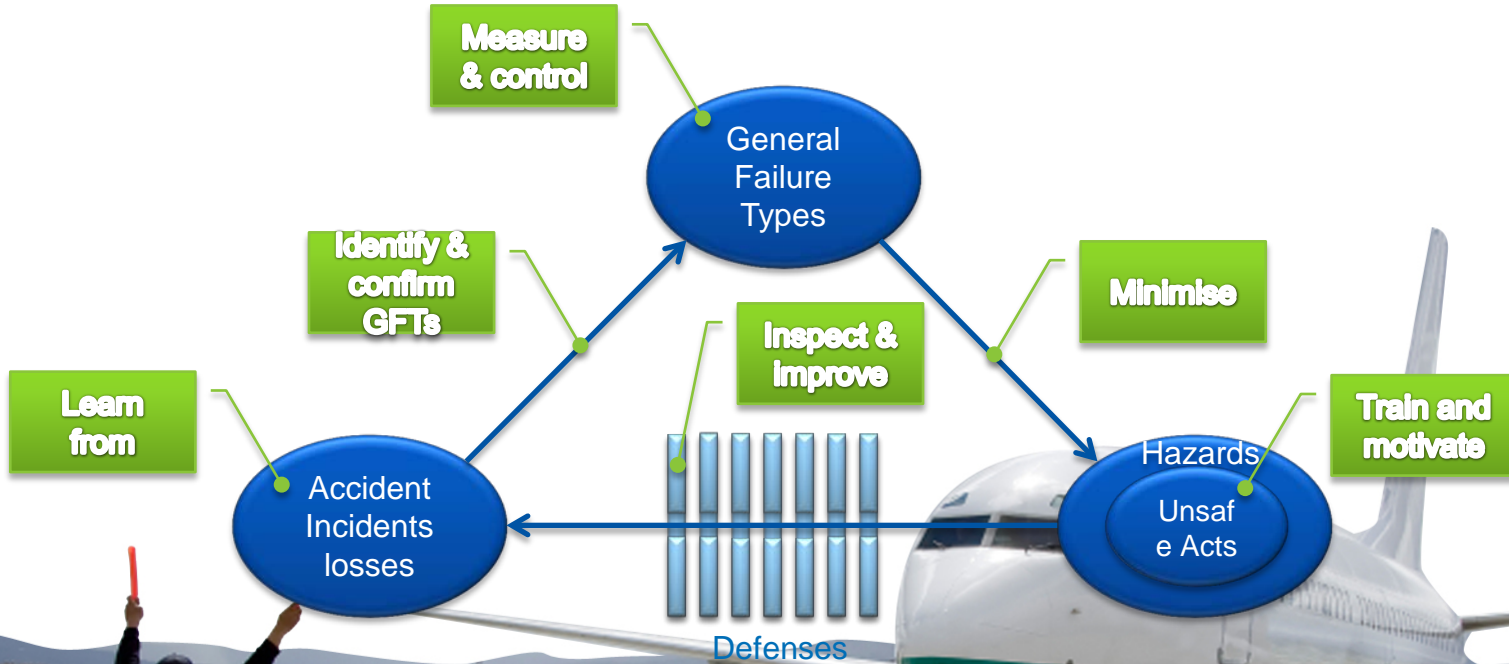Regional Safety Briefing

Aerodrome Briefing

Solution Center

State Safety Briefing

Solution Center

CAA HR Benchmark

Economic Dev. Indicators

Dashboards

Regional Safety Briefing

Approach Paths

Airport Briefing

OVER 30 Applications in iSTARS for Safety Analysis and Information

MORE THAN 2000+ Users registered in iSTARS

Recordings: privacy vs. safety

- Cockpit Voice Recording (CVR) proven critical aircraft accident investigations

- The quality of recordings - CVR and ATC - much better

- Strict rules apply to protect this information

- Rules have been reviewed, refined and strengthen

- Cornerstone of Amendment 1 to A19.