# MID REGION SAFETY PRIORITIES & PERFORMANCE

## SEIG/5 Meeting

***Doha, Qatar, 15-17 Oct 2023***

***Mohamed Chakib, MSc***

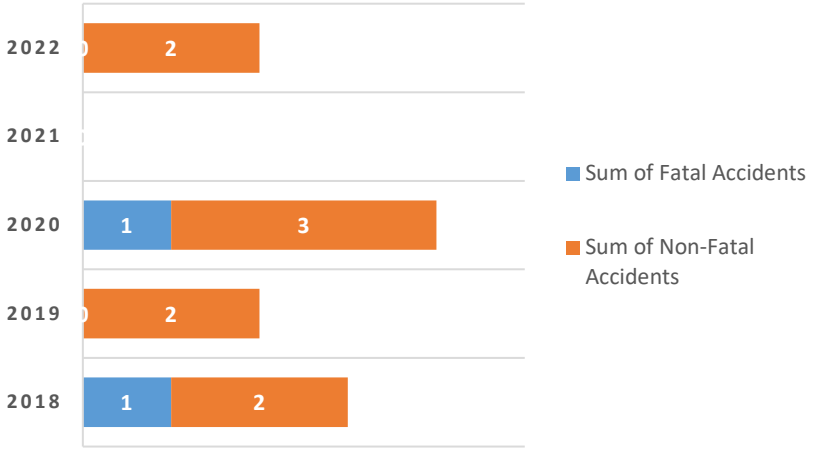
*Regional Officer, Safety Implementation, ICAO*

# MID Region Safety Priorities

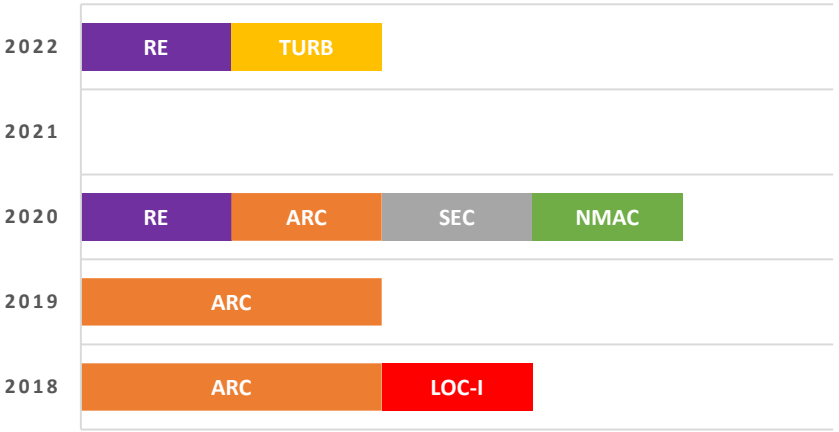
# REACTIVE SAFETY INFORMATION

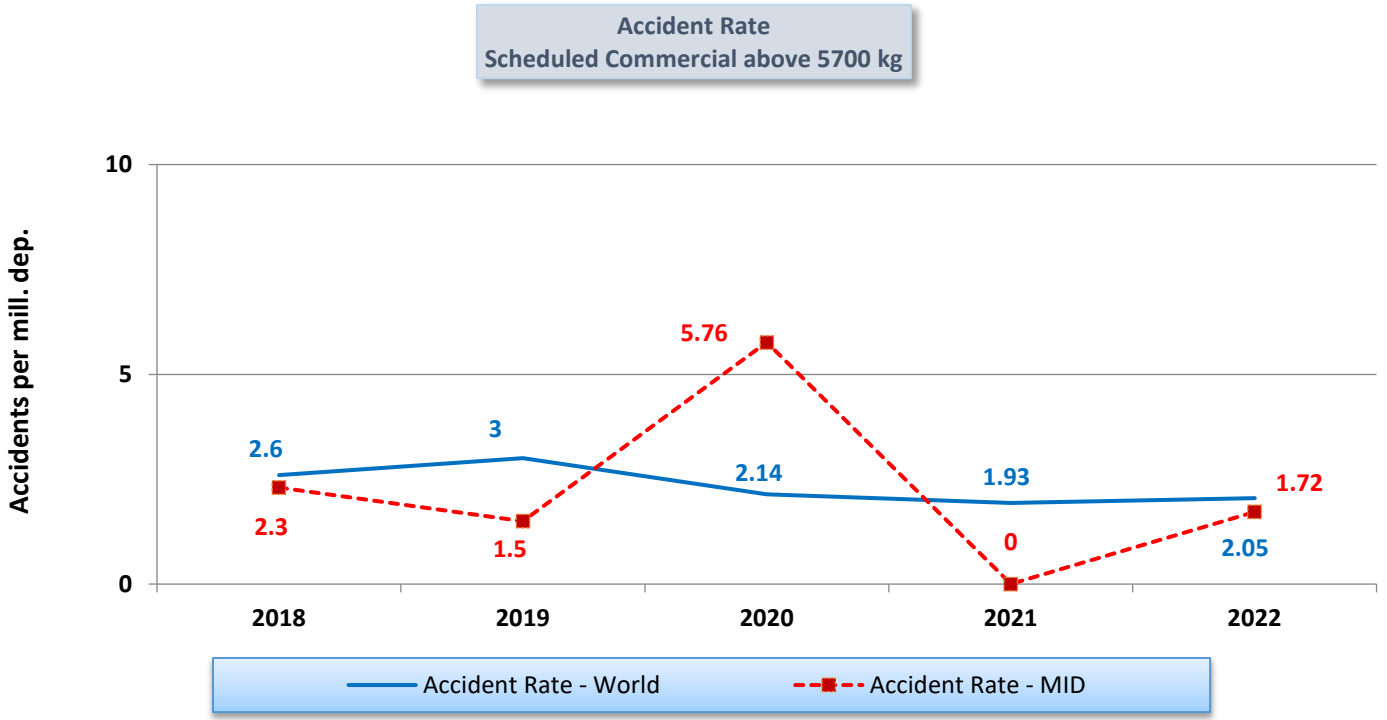
# STATE OF OCCURRENCE-ACCIDENTS
# SCHEDULE COMMERCIAL ABOVE 5700 KG

## Number of Fatal Accidents Vs Accidents



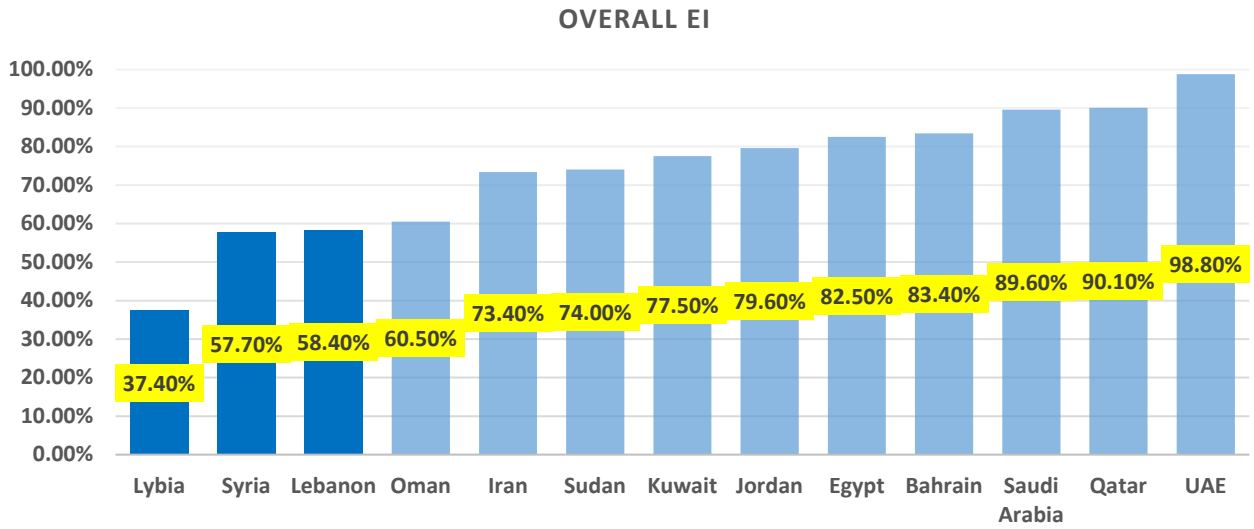

## Distribution of Occurrence Category




Accident Rate
Scheduled Commercial above 5700 kg
Accidents per mill. dep.
10
5
0
2.6
3
2.14
1.93
1.72
2.3
1.5
5.76
0
2.05
2018
2019
2020
2021
2022
Accident Rate - World
Accident Rate - MID

# PROCATIVE SAFETY INFORMATION

# USOAP




13 out of 15 States have been audited

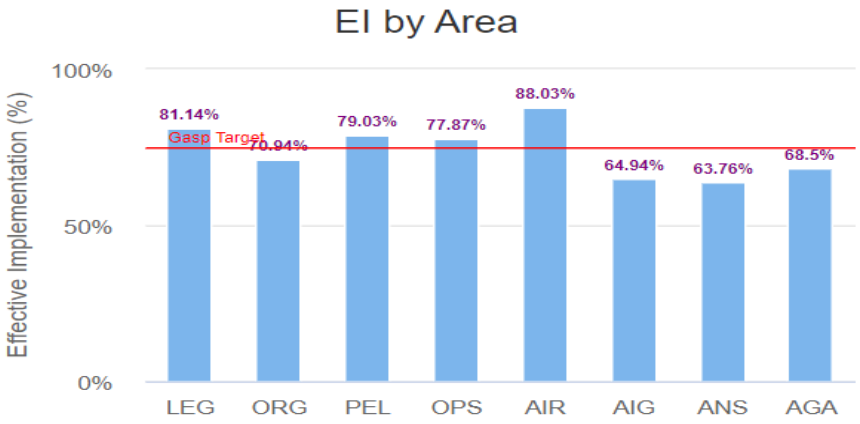
**Overall MID EI = 74, 07%** which is above Global average (68.81%)

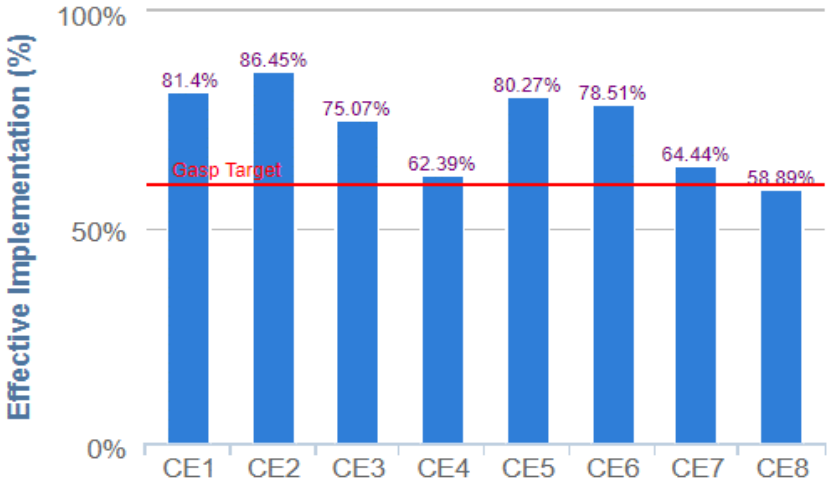
3 states are below 60% (Libya, Syria, Lebanon)

**NO SSC in MID Region**

*Source: ICAO USOAP CMA On Line Framework (OLF), as of 20 July , 2023*

# USOAP



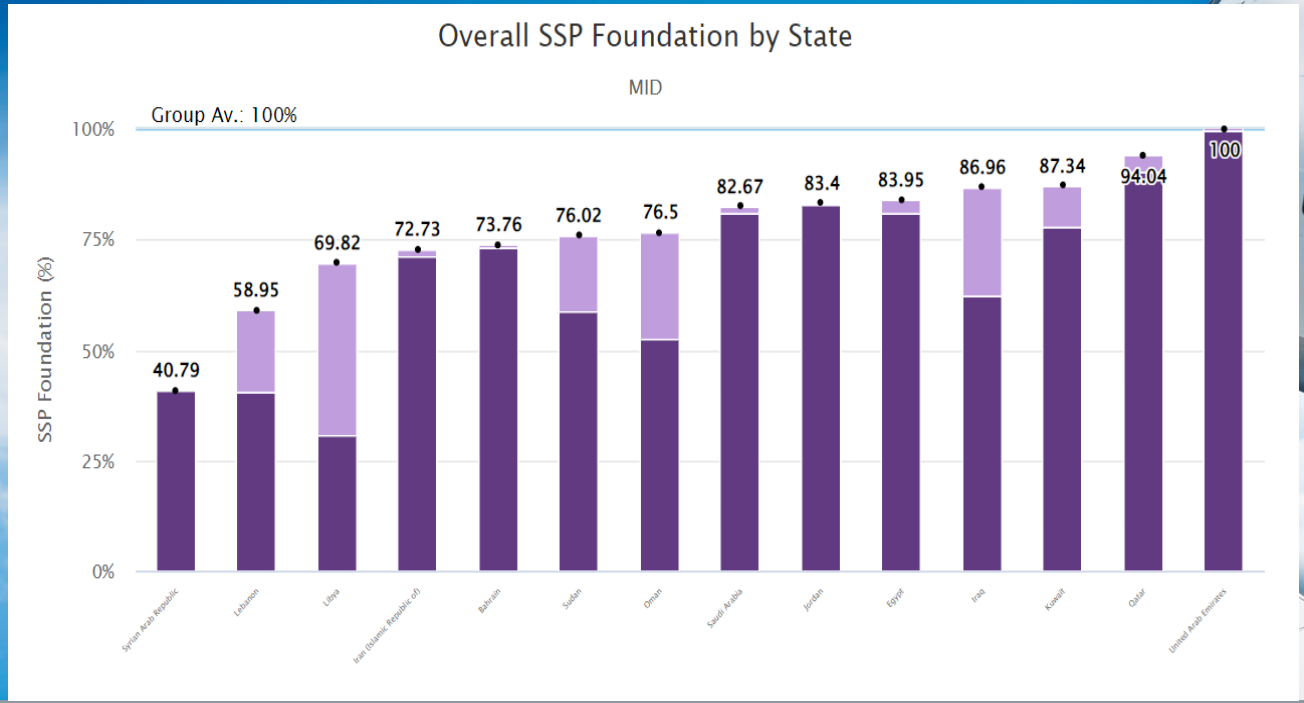




5 areas and 5 critical elements are above 70%

CE4, CE7, & CE8 are the lowest in terms of EI (below 70%)

*Source: ICAO iSTARS, as of 11 June 2023*

# MID Region State Safety Programme (SSP) Foundation





Average EI for SSP foundation PQs for States in the MID Region is **76, 18%.**

*Source: iSTARS as of 18 June 2023)*

## Human Factors and Human Performance

- As the aviation system changes, human factors and its impact on human performance to be taken into consideration, both at service provider and regulatory levels
- The emerging of new technologies and the complexity of the system continues increasing, the right competencies and adapted training methods to be put in place to cope with new challenges.

## Competence of Personnel

- Availability of well-trained and competent aviation personnel is paramount to the safety and resilience of the aviation industry.
- Some of States in MID Region has a mature and detailed regulatory framework in place to ensure proper training, licensing, adequacy of training devices and oversight.

# MANAGE RISK INTERDEPENDENCIES

- Cybersecurity Risks
- GNSS Interference/Spoofing Risks
- 5G interference with Radio Altimeter Risks
- Security Risks with an Impact on Aviation Safety
- Risks Arising from Conflict Zones
- Aviation Health Safety (AHS) Risks


# CYBERSECURITY RISKS

- The global civil aviation ecosystem is accelerating towards more digitalization. This implies that any exchange of information within any digital workflow of the aviation community needs to be resilient to information security threats which have consequences on the safety of flight.

- MID Region needs to consider and address information security risks in a comprehensive and standardized manner across all aviation domains.

- The aviation industry and civil aviation authorities share knowledge and learn from experience to ensure systems are secure from individuals/organizations with malicious intent.

# SECURITY RISKS WITH AN IMPACT ON AVIATION SAFETY

- The implementation of aviation security measures can have a direct impact on safety aspects of aerodrome or aircraft operations.

- Airport security, aircraft security or in-flight security are the areas where the interdependencies are highly visible and where any security requirements should also consider potential impacts on aviation safety.


- An integrated approach to the management of safety and security risks across the spectrum of aviation activities would bring benefits such as a complete overview of risks, a better sharing of security information and the closure of gaps in the security system while focusing on increasing the overall level of safety.

# RISKS ARISING FROM CONFLICT ZONES

- Some fatal accidents on conflicted areas raised the question why the aero plane was flying over an area where there was an ongoing armed conflict. Similar events had occurred in the MID Region.

- Thus, military or unlawful interference conflicts may occur in any State at any time and pose risks to civil aviation.

- This is why it's important states, aircraft operators, and other airspace users such as air navigation service providers (ANSPs), to work together to share the most up-to-date conflict zone risk-based information possible to assure the safety of civilian flights

# AVIATION HEALTH SAFETY (AHS) RISKS

- The COVID-19 pandemic has shown that the harmonization of health policies affecting aviation, and in particular in the CAT domain, has become an important topic to help overcome the pandemic. The objective is to minimize the impact of health safety threats in CAT.

- COVID-19 is unlikely to be the last pandemic we will be faced with.

- It is crucial to continue supporting the MID Region aviation industry competitiveness by offering the safest aircraft interior environment to reduce the risk of disease transmission between continents and States

- restore public trust and facilitate future responses to events of similar nature.

# GNSS INTERFERENCE RISKS

- Satellite navigation signals are weak and can easily be compromised by a range of growing threats, including intentional or unintentional signal interference, jamming, spoofing, and/or the manipulation of position and timing information.

- The effects of such threats vary greatly. Satellite signal jamming can have a serious effect on the accuracy of navigation systems and, in some cases, results in unusual system behavior.

# EMERGING ISSUES

## 1. UAS and manned VTOL-capable aircraft

- The safe integration on the basis of granting fair access to airspace of all new entrants into the airspace network will be one of the main challenges in relation to the integration of UAS technologies and related concepts of operation.

- Enabling the safe integration of UAS, being a fast evolving and emerging market segment, as well as of (VTOL-capable aircraft, also intended for urban air mobility (UAM) operations, continue to be priority activities.

## 2. Artificial intelligence (AI) in Aviation

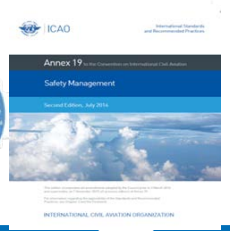
- The next generation of automation in aviation systems is enabled and accelerated by the use of AI technologies.
- Whilst the trend towards increasing automation has resulted overall in improved safety, the introduction of AI will likely be modifying the paradigm of interaction between the Human and the AI-based systems (reduced crew operations),
- and in parallel even open the path towards more autonomous types of operations urban air mobility (UAM).

## 3. Digitalization in the aviation field

- Aviation is moving fast to digitalize all areas, as there are demonstrated tangible benefits in safety, economics, operations, traffic management and control, manufacturing, training and maintenance.

- Automation, remote control, machine-to-machine communication, robotics: 3D printing, virtual and augmented reality, block chain, AI/cognitive computing, and sensors are among the technologies that will increasingly be used in aviation and that will impact the activity of regulators and aviation authorities.

# MID Region Safety Priorities


**Operational safety risks**

**Organizational issues**

**Emerging issues**

# Conclusion

# MID Region Safety Priorities

**Regional Operational Safety Risks**

**LOC-I, RE/ARC, MAC, CFIT, and RI**

**Organizational Issues**

- **States' Safety Oversight capabilities**
- **Safety Management**
- **Human Factors & Human Performance**
- **competence of personnel**
- **Risk interdependencies**

Cybersecurity risks
GNSS Interference Risks
5G interference with Radio Altimeter
aviation health safety (AHS) risks
Risks arising from conflict zones, and
Security risks with an impact on aviation safety.

**Emerging Issues**

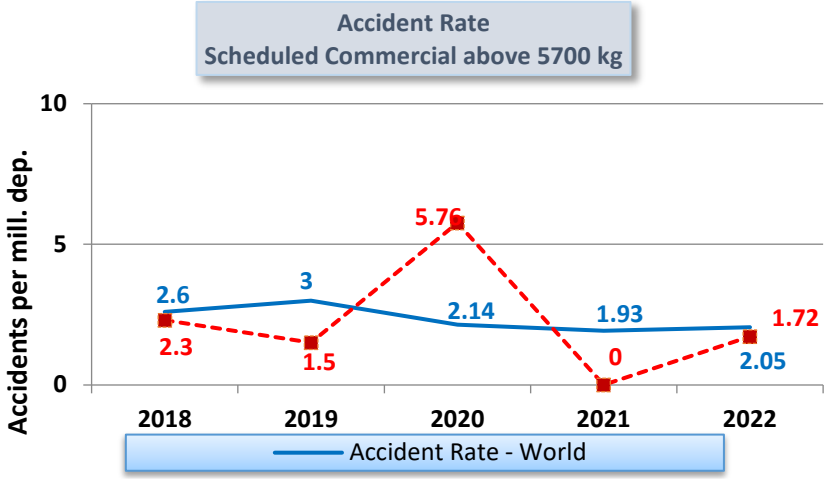
- **UAS and manned VTOL-capable aircraft;**
- **Artificial intelligence (AI) in Aviation; and**
- **Digitalization in the aviation field.**

6 October 2023

**12th MID Annual Safety Report Draft**

# MID Region Safety Performance

## Goal 1: Achieve a Continuous Reduction of Operational Safety Risks

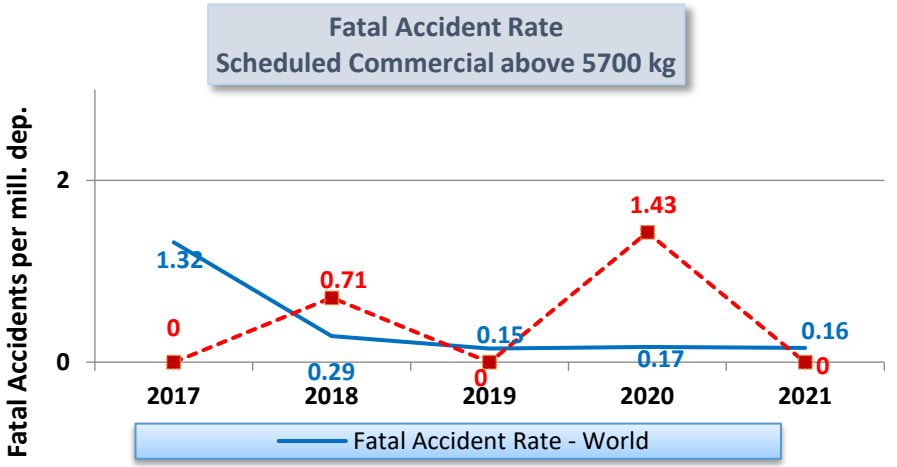



Safety Target

Reduce/Maintain the regional average rate of accidents to be in line with the global average rate

**Average 2018-2022**

| Average MID | Average Global |
|---|---|
| 2.25 | 2.34 |




Safety Target

Reduce/Maintain the regional average rate of fatal accidents to be in line with the global average rate

**Average 2018-2022**

| Average MID | Average Global |
|---|---|
| 0.42 | 0.19 |

# Goal 1: Achieve a Continuous Reduction of Operational Safety Risks

**Runway Excursion (RE)**

Average MID
**0.85**
**Average 2018-2022**

Average Global
**0.29**
**Average 2018-2022**

**Runway Incursion (RI)**

Average MID
**0**
**Average 2018-2022**

Average Global
**0.02**
**Average 2018-2022**

**Loss of Control Inflight (LOC-I)**

Average MID
**0.14**
**Average 2018-2022**

Average Global
**0.07**
**Average 2018-2022**

**Controlled Flight into Terrain (CFIT)**

Average MID
**0**
**Average 2018-2022**

Average Global
**0.02**
**Average 2018-2022**

**MID- Air Collision (MAC)**

Average MID
**0**
**Average 2018-2022**

Average Global
**0**
**Average 2018-2022**

# Goal 2: Strengthen States' Safety Oversight Capabilities

| Safety Indicator | Safety Target | MID |
|---|---|---|
| A. Regional average EI | a. Increase the Regional average EI to be above 80 by 2025 | 74.07 |
| B. Number of MID States with an overall EI over 60%. | b. All MID audited States to be above 60% EI by 2025 | 10 States |
| C. Regional average EI by area | c. Regional average EI for each area to be above 70% by 2025 | 5 areas |
| D. Regional average EI by CE | d. Regional average EI for each CE to be above 70% by 2025 | 5 CEs |
| E. Regional average EI of PPQs | E. Regional average EI PPQs above 75% by 2025 | 66% |

# Goal 3: Implementation of Effective SSP

| Safety Indicator | Safety Target | MID |
|---|---|---|
| Regional Average SSP Foundation | 85% by 2025 | 76.18% |
| Number of States having an SSP that is present* | At least 4 States | TBD |
| Number of States that have developed and published a national aviation safety plan (NASP) | All States by 2025 | 4 |
| Number of States that require applicable service providers under their authority to implement an SMS | All States | TBD |

# Goal 4: Increase Collaboration at the Regional Level

| Safety Indicator | Safety Target | MID |
|---|---|---|
| Percentage of safety enhancement initiatives (SEIs) completed | 80% by 2025 | TBD |
| Number of States seeking/receiving assistance, to strengthen their Safety Oversight capabilities through NCLB MID Strategy/Technical assistance | States with SSC as a first priority<br>All States as a second priority having EI below 80% | 7 States |
| Number of States seeking assistance to facilitate SSP & NASP implementation through NCLB MID Strategy/Technical assistance | All States | 3 States |
| Number of States sharing safety information including operational safety risks and emerging issues to support the development of MID ASR | All States | 10 |

# Goal 5: Expand the use of Industry Programmes

| Safety Indicator | Safety Target | MID |
|---|---|---|
| Use of the IATA Operational Safety Audit (IOSA), to complement safety oversight activities. | All MID States with an EI of at least 60% use the IATA Operational Safety Audit (IOSA) to complement their safety oversight activities by 2018 | 6 states (40%) |
| Use of the IATA Safety Audit for Ground Operations (ISAGO) certification, as a percentage of all Ground Handling service providers | The IATA Ground Handling Manual (IGOM) endorsed as a reference for ground handling safety standards by all MID States by 2020 | 6 states (40%) |
| MID RASP developed in consultation with industry | MID-RASP 2023-2025 Edition TARGET ACHIEVED | Completed |

# Goal 6: Ensure Appropriate Infrastructure is available to Support Safe Operations

| Safety Indicator | Safety Target | MID |
|---|---|---|
| Percentage of Certified International Aerodromes* | 65% by 2025 | 58,62% |
| Percentage of established Runway Safety Team (RST) at MID International Aerodromes. | 80% by 2025 | 68,97% |
| Percentage of Global reporting Format (GRF) Plans implemented for International Aerodromes* | 70% by 2025 | 65.33% |

# Action by the meeting

The meeting is invited to:

- note the MID Region safety priorities and safety targets

# Thank you!

Email: mchakib@icao.int