MID Annual Safety Report

11th Edition

ICAO MID

Objective of ASRG

❑ Gathering and Analyzing safety information
❑ Define MID Region Safety Priorities
❑ Production of the annual safety report

➢1st Edition, Nov 2012
➢2ndEdition, Jan 2014
➢3rd Edition, March 2015
➢4th Edition, May 2016
➢5th Edition, Jan 2017
➢6th Edition, June 2018
➢7th Edition, April 2019
➢8th Edition, April 20
➢9th Edition, March 2021
➢10th Edition, March 2022
➢11th Edition, in progress

Data for MID ASR (11th Edition)

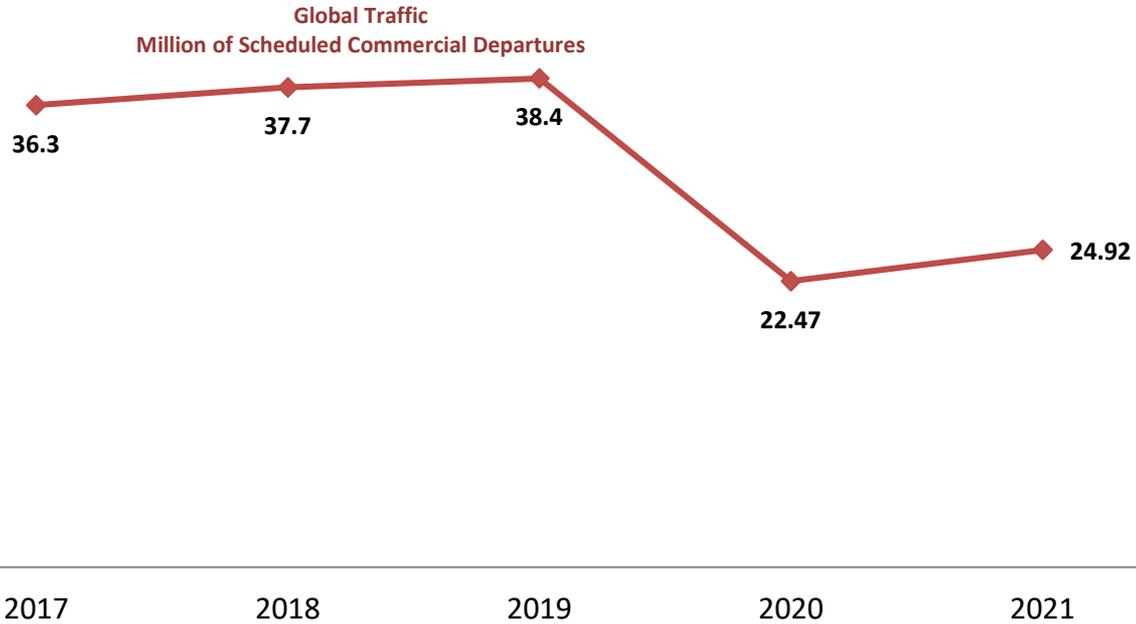Existing safety database

Industry

Reporting States

Collection

Sources

ICAO MID

RECONNECTING THE **WORLD**
MIDANPIRG/20 & RASG-MID/10

TRAFFIC VOLUMES

Global Traffic

Global Traffic
Million of Scheduled Commercial Departures

| 2017 | 2018 | 2019 | 2020 | 2021 |

- 36.3
- 37.7
- 38.4
- 22.47
- 24.92

(Source ICAO Safety Report 2022)

MID Traffic

MID Traffic
Million of Scheduled Commercial Departures

1.37   1.4   1.31   0.69   0.8

2017   2018   2019   2020   2021
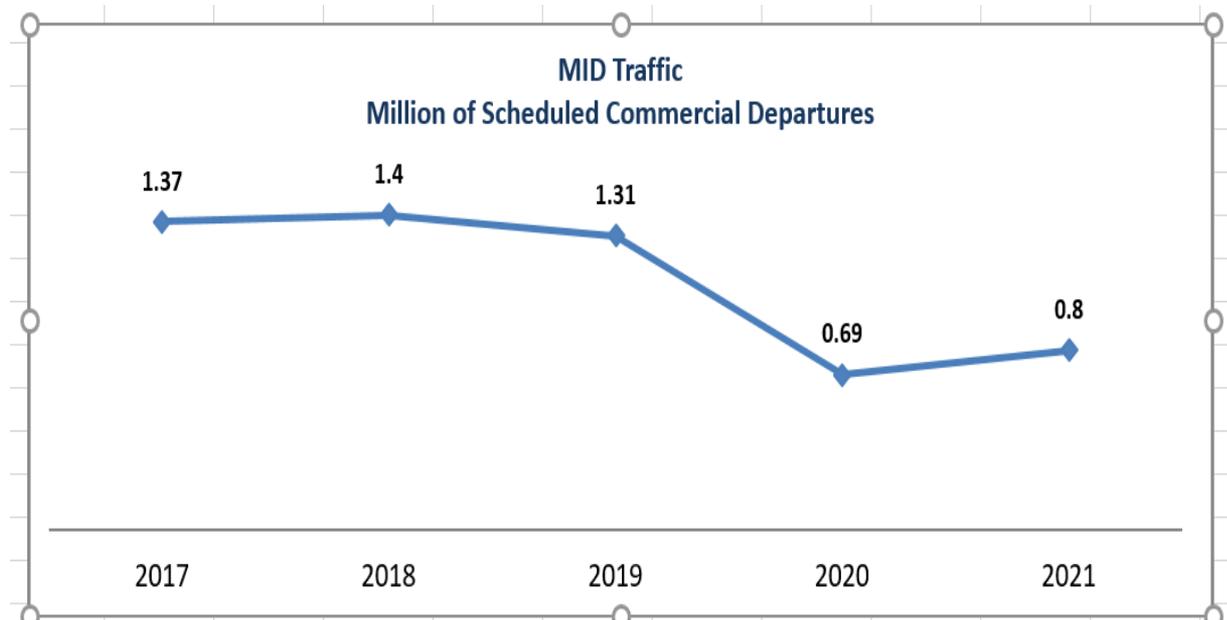
(Source ICAO Safety Report 2022)

REACTIVE SAFETY INFORMATION
STATE OF OCCURRENCE

Fatal Accidents & Accidents

11 Accidents

- Sum of Fatal Accidents
- Sum of Non-Fatal Accidents
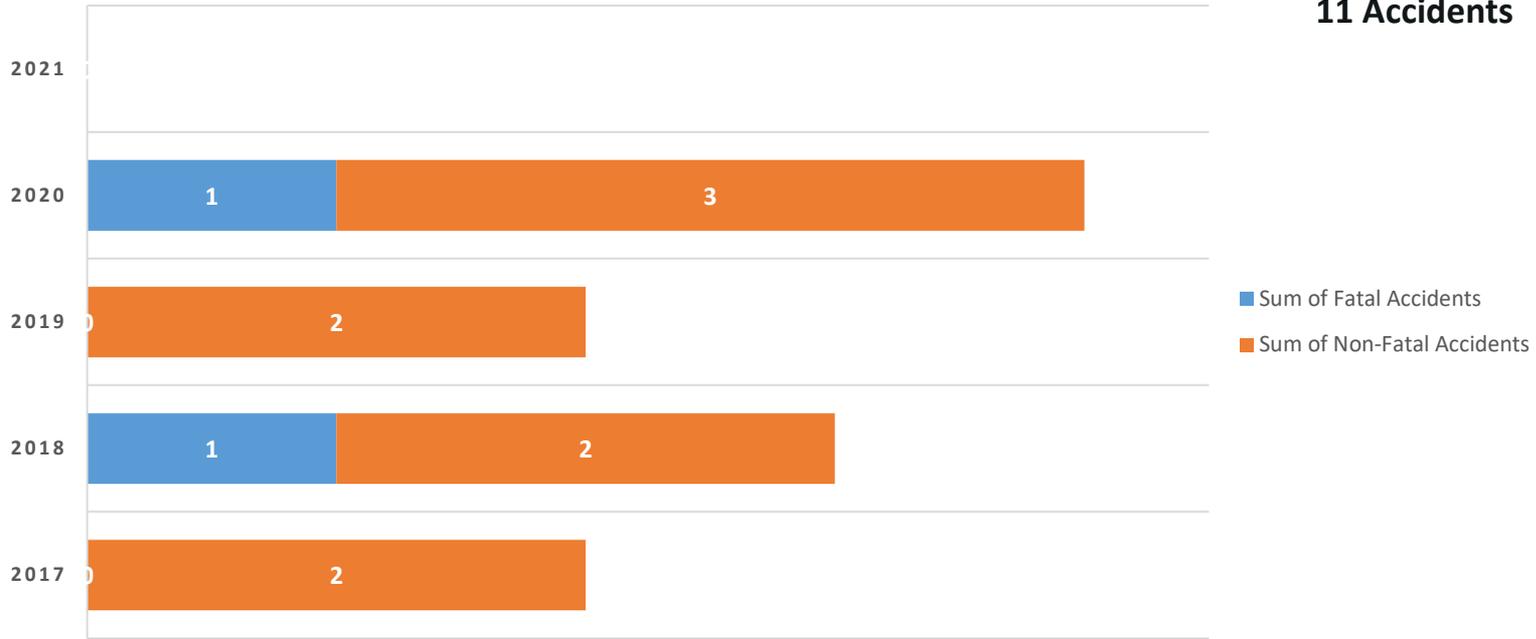
(Source OVSG Data& ICAO ASR 2022)

Accident Rate
Scheduled Commercial above 5700 kg

Accidents per mill. dep.

5

3

2.4

2.6

2.14

1.93

1.5

2.3

1.5

5.76

0

2017   2018   2019   2020   2021

— Accident Rate - World   - ■ - Accident Rate - MID
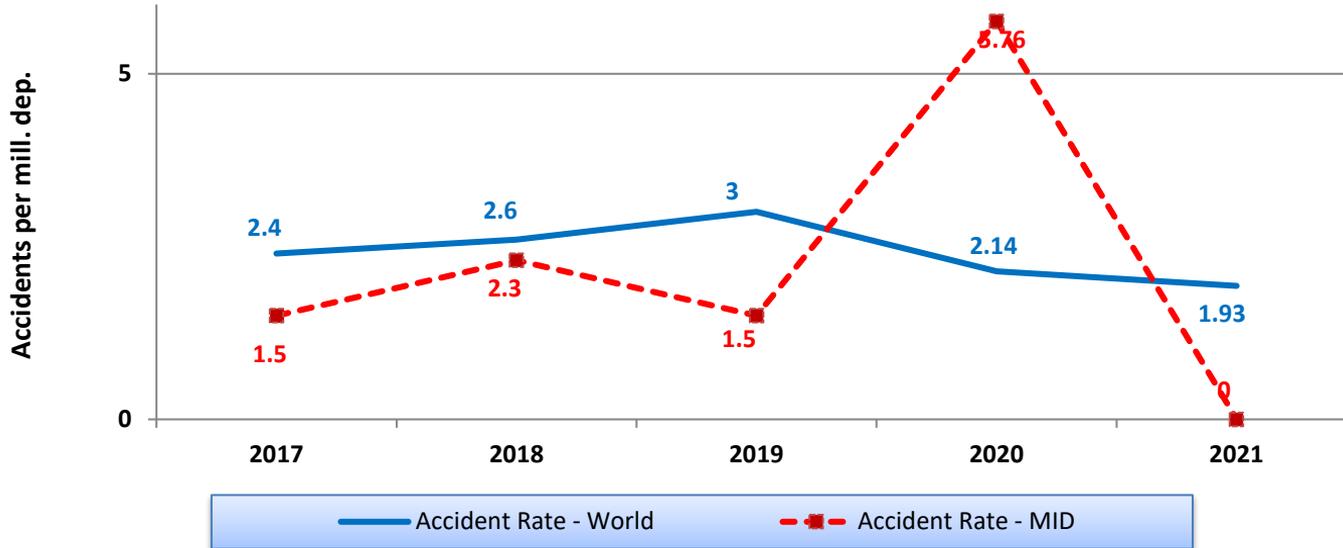
Average 2017-2021

Average MID
2.21

Average Global
2.41

(Source OVSG Data& ICAO ASR 2022)

MID Accidents Vs. Global Accidents

Accidents
Scheduled Commercial above 5700 kg

Number of Accidents

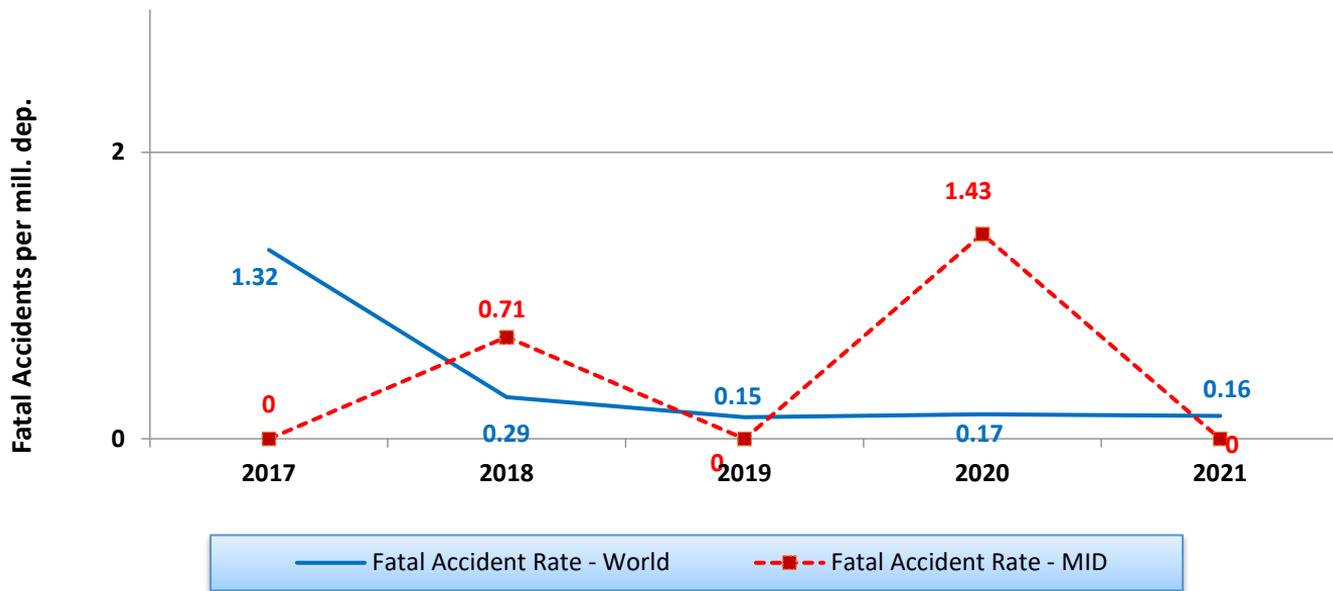| Year	Accidents - World	Accidents - MID
2017	88	2
2018	98	3
2019	115	2
2020	48	4
2021	48	0

— Accidents - World   — Accidents - MID
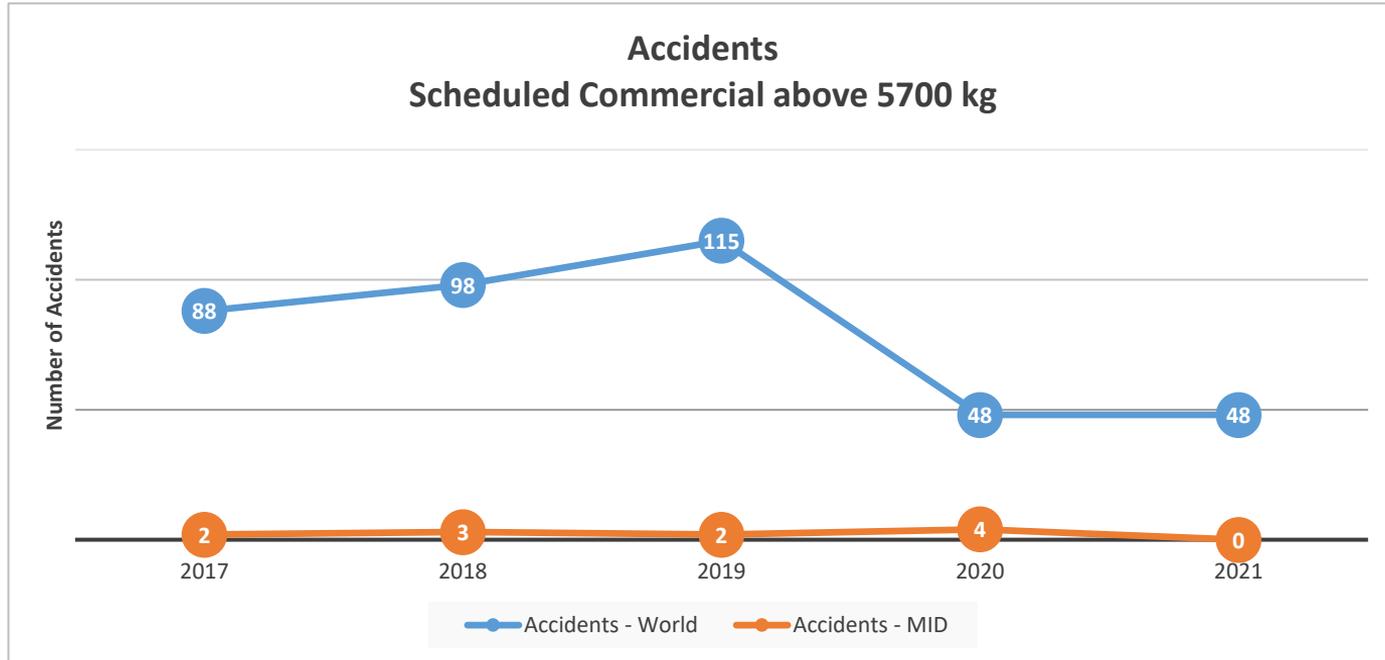
Number of MID Accidents Vs. Number of Global Accidents Per Year (Source OVSG Data& ICAO ASR 2022)

Fatal Accident Rate

Fatal Accident Rate
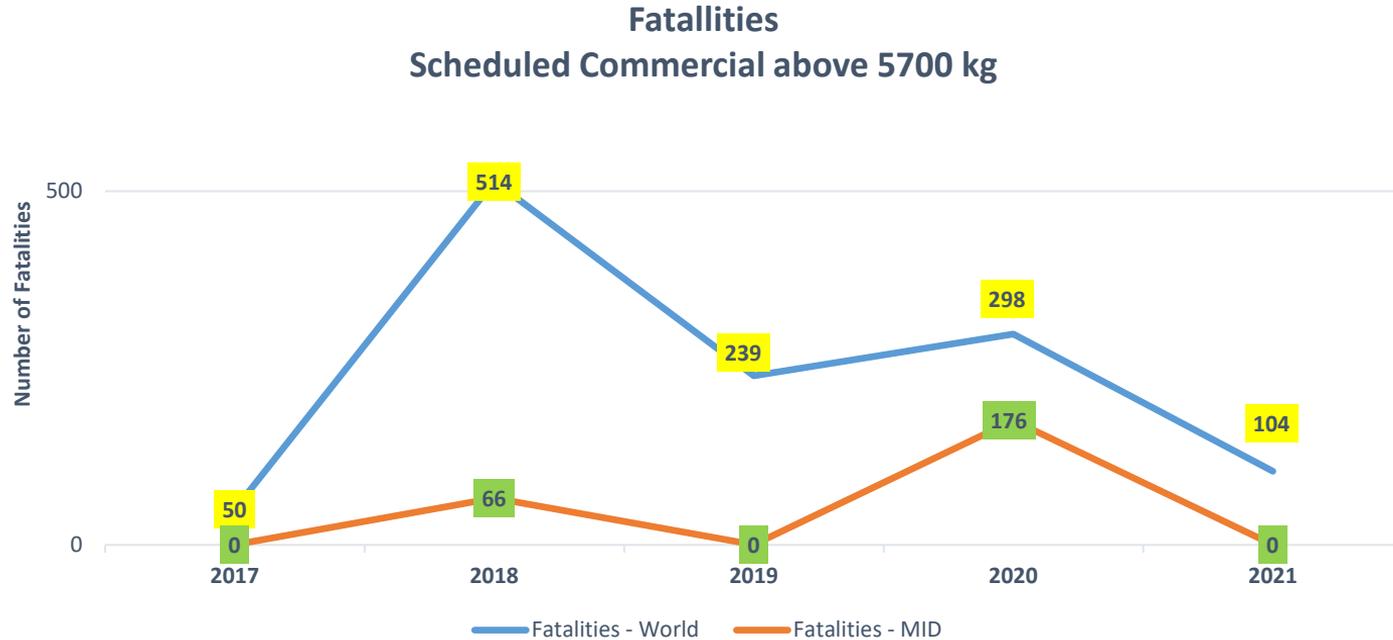Scheduled Commercial above 5700 kg

Average 2017-2021	
Average MID	0.42
Average Global	0.41

Fatal Accidents per mill. dep.

1.32
0
0.71
0.29
0.15
0
1.43
0.17
0.16
0

2017   2018   2019   2020   2021

Fatal Accident Rate - World   Fatal Accident Rate - MID

Source OVSG Data& ICAO ASR 2022

MID Fatalities Vs. Global Fatalities

Fatallities
Scheduled Commercial above 5700 kg

(Source OVSG Data& ICAO ASR 2022)

Distribution of Occurrence Category

Year				
2021				
2020	AMAN	SEC	RE	ARC
2019	ARC			
2018	LOC-I	ARC		
2017	SCF-NP	F-NI		
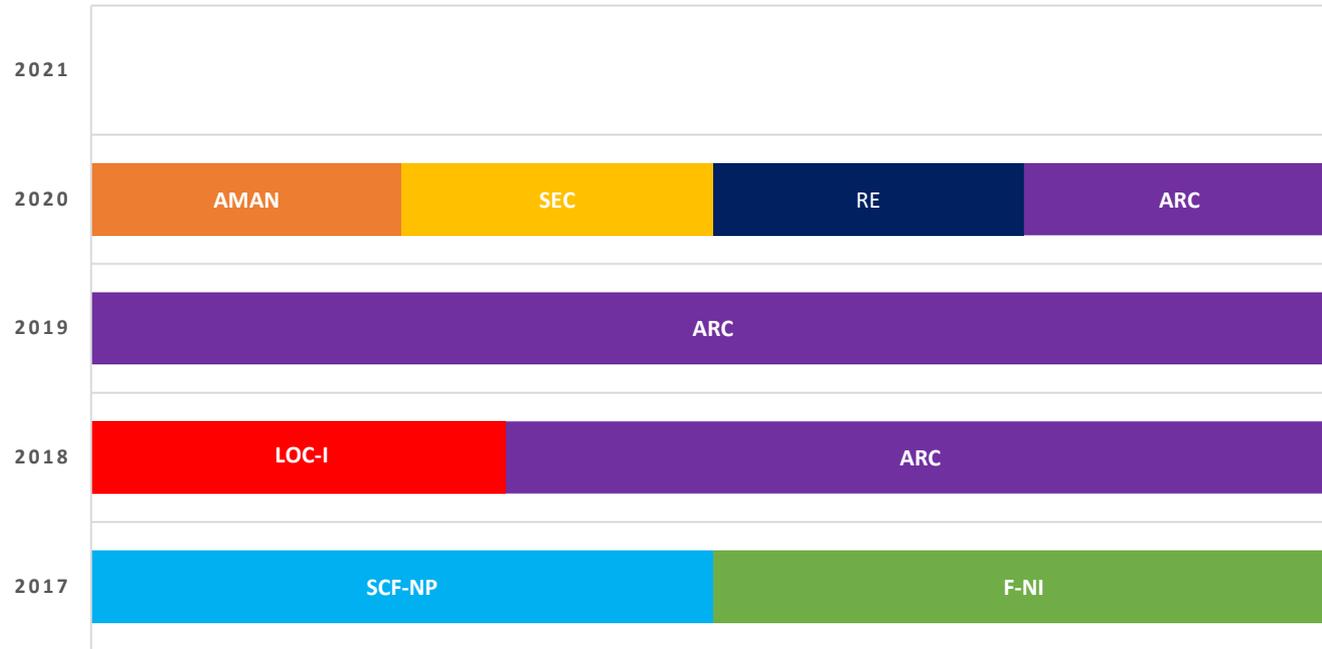
Source OVSG Data& ICAO ASR 2022

Occurrence Category Distribution as Percentage

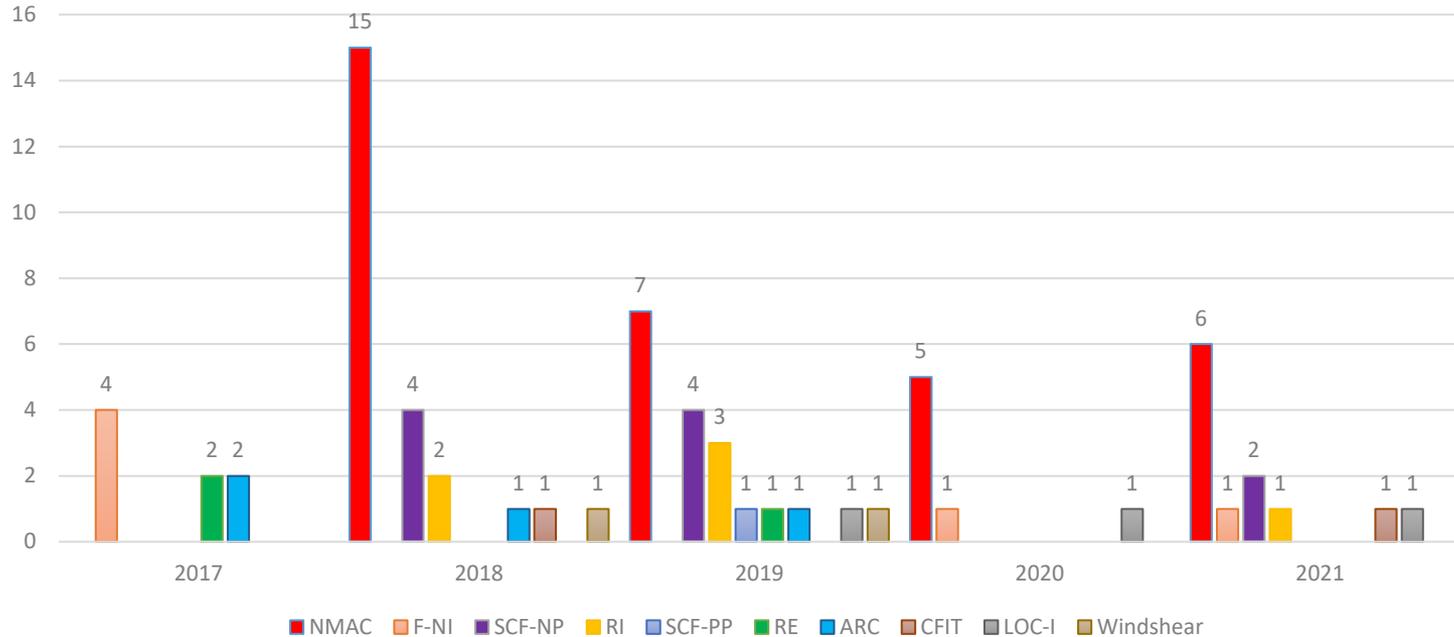

Source OVSG Data& ICAO ASR 2022

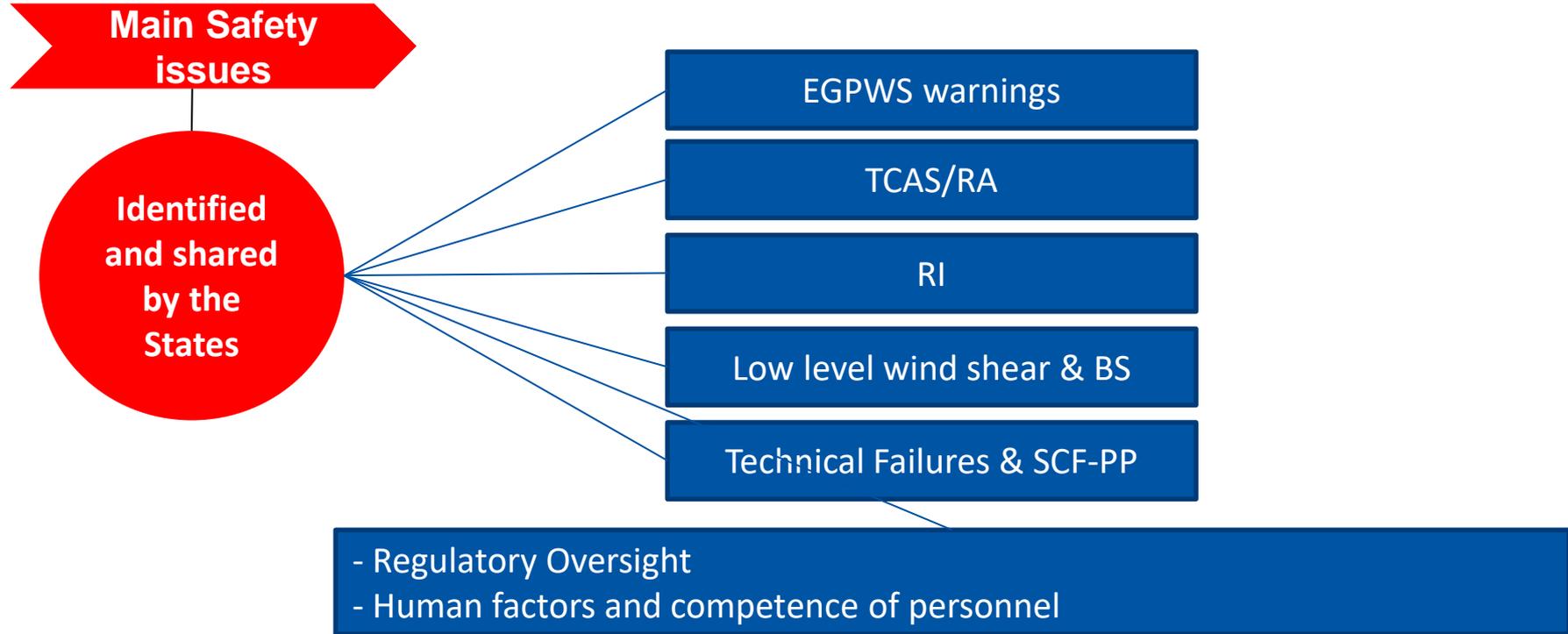The Key risk area identified according to the State of occurrence's accidents data are:

1 Loss of Control – Inflight – (LOC-I)

2 Runway Excursion (RE) and Abnormal Runway Contact (ARC) during landing

3 Security related-(SEC)

4 MID Air Collision-(MAC)

Serious Incidents reported by States

MID-Serious incident 2017-2021

Serious Incidents

Main Safety issues

Identified and shared by the States

EGPWS warnings

TCAS/RA

RI

Low level wind shear & BS

Technical Failures & SCF-PP

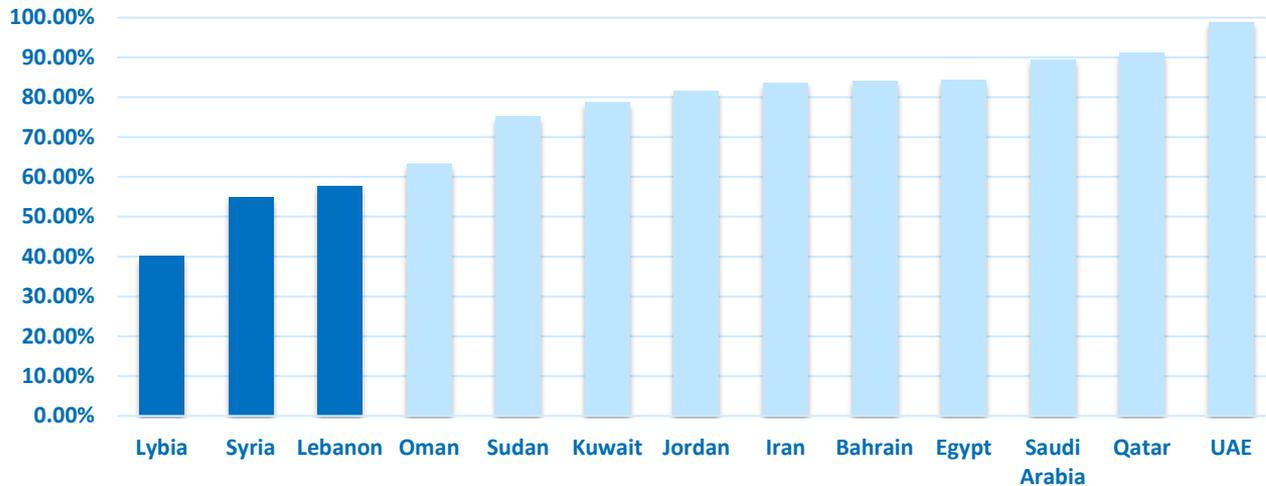- Regulatory Oversight
- Human factors and competence of personnel

PROACTIVE SAFETY INFORMATION

ICAO USOAP

Effective Implementation (EI)

13 out of 15 States have been audited

Overall MID EI = 74, 67% which is above Global average (69.32%)

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

NO SSC in MID Region

ICAO USOAP
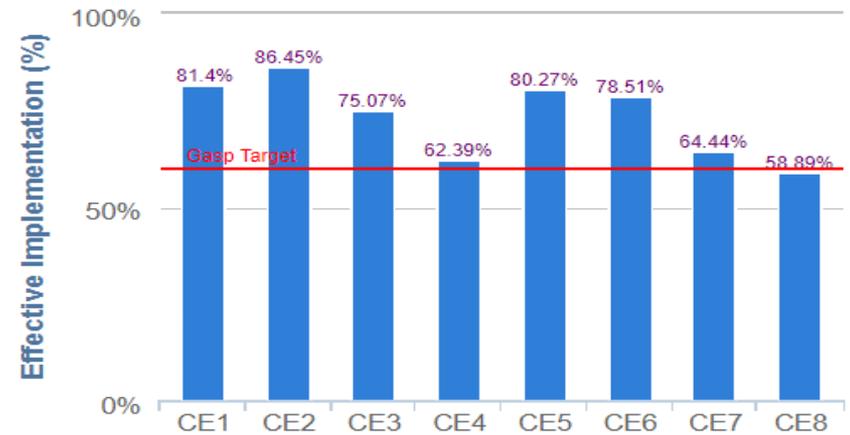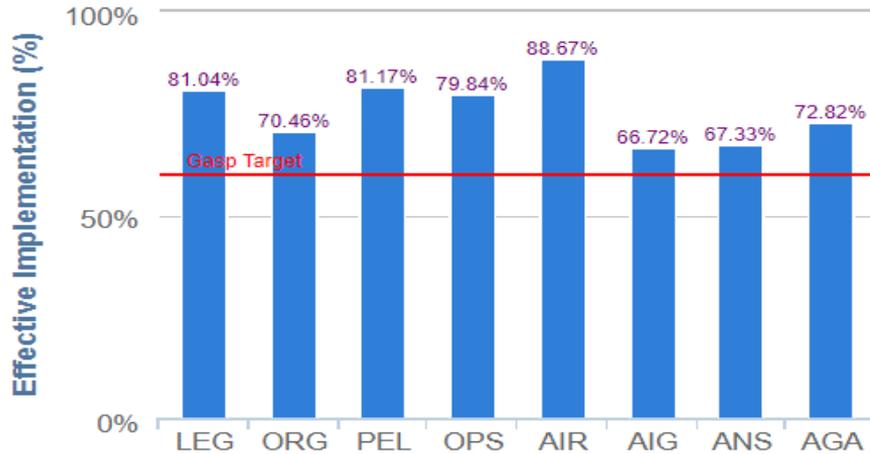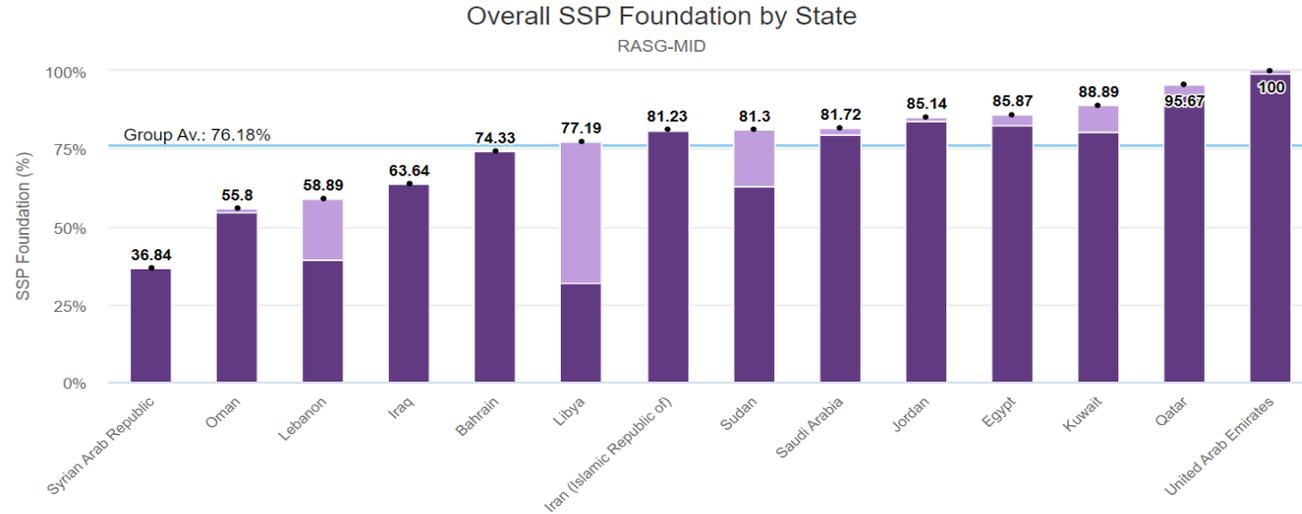

8 areas and 7 critical elements are above the target of 60%

Critical element CE8 (Resolution of Safety issues) is the lowest in terms of EI (below 60%)

Source: ICAO iSTARS, as of 30 May 2022

MID Region State Safety Programme (SSP) Foundation

SSP Foundation
Status of SSP Foundation Protocol Questions

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

Human Factors and Competence of Personnel

- As the aviation system changes, it is imperative to ensure that human factors and the impact on human performance are taken into account, both at service provider and regulatory levels

- As new technologies emerge on the market and the complexity of the system continues increasing, it is of key importance to have the right competencies and adapt training methods to cope with new challenges.

- Crew Resource Management (CRM) has been identified as a safety issue in the domain of commercial air transport.

Cybersecurity

- Global civil aviation ecosystem is accelerating towards more digitalization.

- Aware of the complexity of the aviation system and of the need to manage the cybersecurity risk the MID Region needs to consider and address information security risks in a comprehensive and standardized manner across all aviation domains.

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

MID REGION SAFETY PERFORMANCE

Goal 1: Achieve a Continuous Reduction of Operational Safety Risks

Average MID	Average MID	Average MID	Average MID	Average MID
0.28	**0**	**0.14**	**0**	**0**
Average 2017-2021	Average 2017-2021	Average 2017-2021	Average 2017-2021	Average 2017-2021
Average Global	Average Global	Average Global	Average Global	Average Global
0.30	**0.08**	**0.07**	**0.02**	**0**
Average 2017-2021	Average 2017-2021	Average 2017-2021	Average 2017-2021	Average 2017-2021
Runway Excursion (RE)	Runway Incursion (RI)	Loss of Control Inflight (LOC-I)	Controlled Flight into Terrain (CFIT)	MID- Air Collision (MAC)

Goal 2: Strengthen States' Safety Oversight Capabilities

13 out of 15 States have been audited

Overall MID EI = 74.67% which is above Global average (68.68%)

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

NO SSC in MID Region

Effective Implementation (EI)
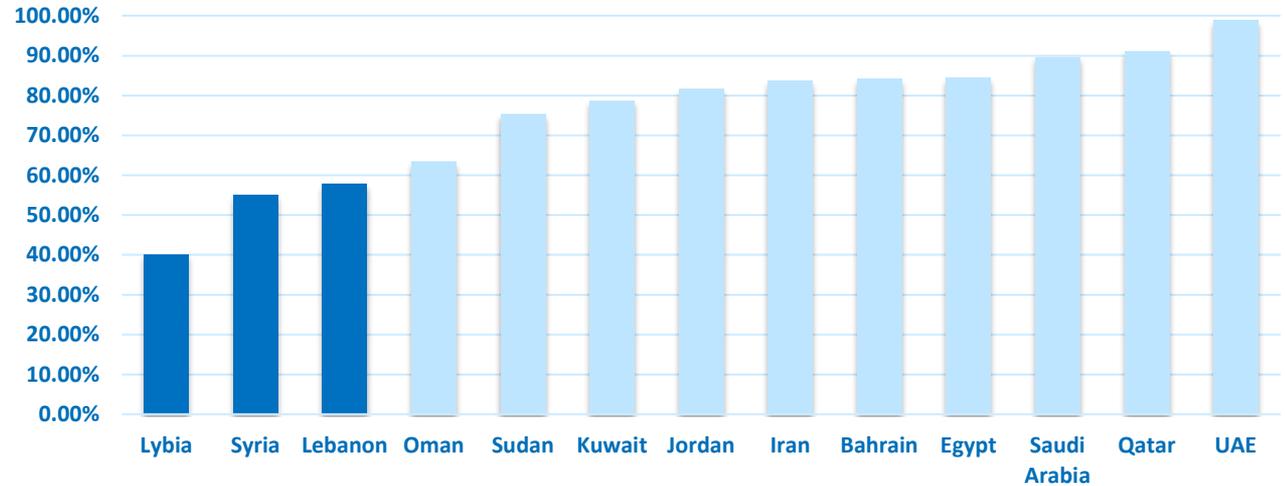
Goal 3: : Ensure Appropriate Infrastructure is available to Support Safe Operations

Aerodrome Certification

Runway Safety Team (RST) at MID International Aerodromes

Status
58.62%

Status
72.41%

Goal 5: Implementation of Safety Management

Safety Indicator	Safety Target	MID
Number of States that have completed the SSP Gap Analysis on iSTARS	13 MID States by 2020	**9 States**
Number of States that have developed an SSP implementation plan	13 MID States by 2020	**9 States**
Regional Average overall SSP Foundation (in %)	70% by 2022	**TARGET ACHIEVED** **76.1%**
Number of States that have published a national aviation safety plan	13 MID States by 2022	**4**
Number of States that have implemented an effective SSP	7 MID States by 2025	**TBD**

MID REGION SAFETY PRIORITIES

MID Region Safety Priorities

Operational safety risks

Organizational issues

Emerging safety risks

Regional Operational Safety Risks

Loss of Control In-flight

Runway Excursion/ARC

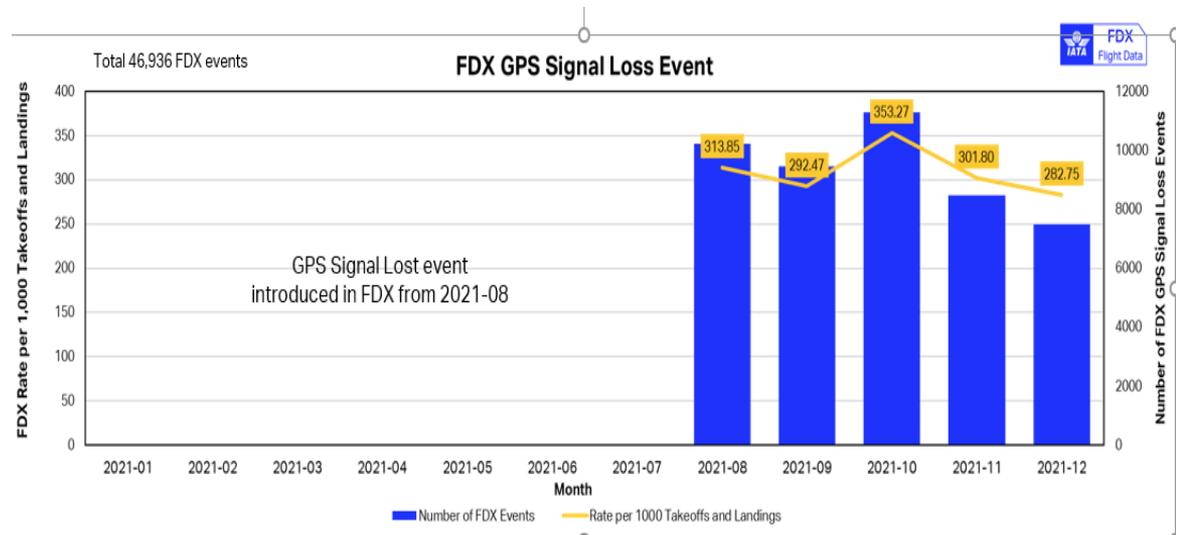Controlled Flight into Terrain

Mid Air Collision

Runway Incursion

Safety Issues	Accident Severity	Potential Accident Outcome						
		CFIT	LOC-I	MAC	GCOL	RE/ARC	Injury Damage inflight	Injury Damage on Ground
Monitoring of flight paremeters and automation modes	Catastrophic	x	x			x		
Adverse Convective weather	Catastrophic	x	x			x	x	
Un-stabilized Approach	Catastrophic		x			x		x
Flight planning and preparation	Catastrophic	x	x	x	x	x		
Crew Resource Management	Catastrophic	x	x	x	x	x		
Handling of technical failure	Catastrophic	x	x		x	x		x
Handling and execution of GOA	Catastrophic	x	x			x		
Loss of separation in flight/ and/or airspace/TCAS RA	Catastrophic			x			x	
Experience, training and competence of Flight Crews	Catastrophic	x	x	x		x		
Deconfliction between IFR and VFR traffic	Catastrophic			x				
Inappropriate flight control inputs	Catastrophic		x			x		

Organizational issues

1 States' Safety Oversight capabilities

Establishment and Effective implementation in certification, surveillance, and resolution of Safety concerns need to be improved

2 Safety Management

Implementation of SSP & SMS including NASP

3 Human Factors and Competence of Personnel

CRM has been identified as most important human factors issue in the domain of commercial air transport

4 Cybersecurity

Mange the cybersecurity risks

GNSS/GPS vulnerability

Emerging Safety risks

- GNSS/GPS vulnerability, including intentional and unintentional signal interference, has been identified as a major safety issue.

- Flight Data Exchange analysis showed that the majority of GPS Signal Lost was detected within or in vicinity of Turkish airspace (Ankara FIR and Istanbul FIR), and in Eastern Mediterranean area.

- identified hot spots have been expanded into entire Anatolian peninsula, including Istanbul FIR (LTBB).

FDX GPS Signal Loss Event

Total 46,936 FDX events

GPS Signal Lost event introduced in FDX from 2021-08

313.85   292.47   353.27   301.80   282.75

ICAO MID

MID RPTF Framework & Composition

Public Health Requirements

Operational Safety Measures

Aviation Security & Facilitation

ANS/ATM

MIDANPIRG

MID-RASFG

MID CAPSCA

AACO

RASG-MID

MID RPTF

CRRIC FPs

ICAO

ACAO

IATA

States

CANSO

ACI
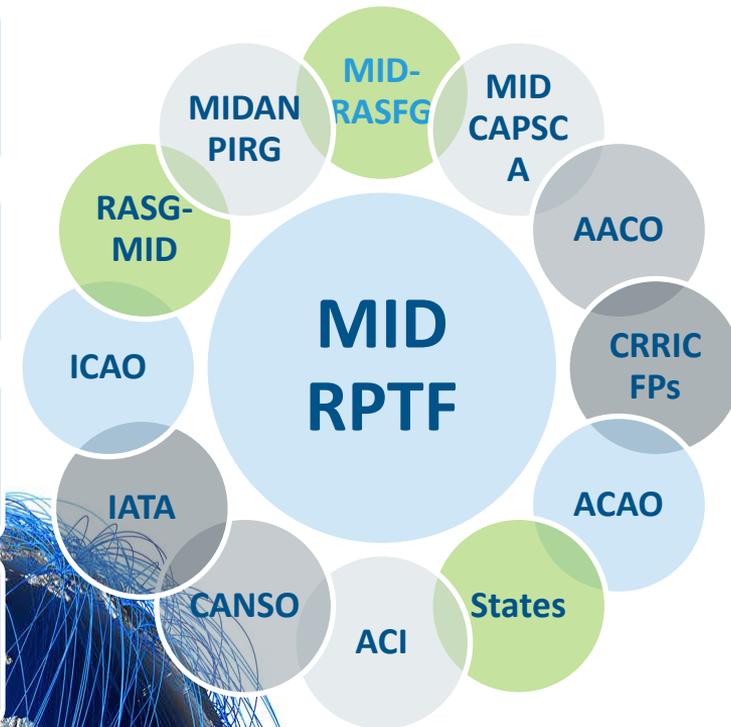
Emerging Safety risks

Ensure the Safe Operations of UAS

- The number of drones at the global level has increased

- Available evidence demonstrates an increase of drones coming into close proximity with manned aviation and the need to mitigate the associated risk

- The civil aviation authority is responsible for, inter alia, ensuring aviation safety and protecting the public from aviation hazards

- However, additional safety data and safety information are needed for further analysis to identify the underlying safety issues

Impact of Security on Safety

Emerging Safety risks

- The crash of flight MH17 immediately raised the question why the aero plane was flying over an area where there was an ongoing armed conflict.

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

- Similar events had occurred in the MID region

- This is why it's important for governments, 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.

PS 752: Accident site scheme

Conclusion

MID Region Safety Priorities

Regional Operational Safety Risks

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

Organizational Challenges/ Issues

- States' Safety Oversight capabilities
- Safety Management
- Human Factors & competence of personnel
- Cybersecurity

Emerging Risks

- COVID-19 Pandemic
- GNSS interference
- Ensure Safe ops of UAS
- Impact of security on safety
- 5G interference with Radio Altimeter

11th MID Annual Safety Report Draft

ICAO   SAFETY

MID Region Annual Safety Report

11th Edition   2022
Reference Period (2017 – 2021)

39

Sharing of Safety Data Analysis & safety information

States are encouraged to provide necessary safety information to the ICAO MID Office, by April 2023

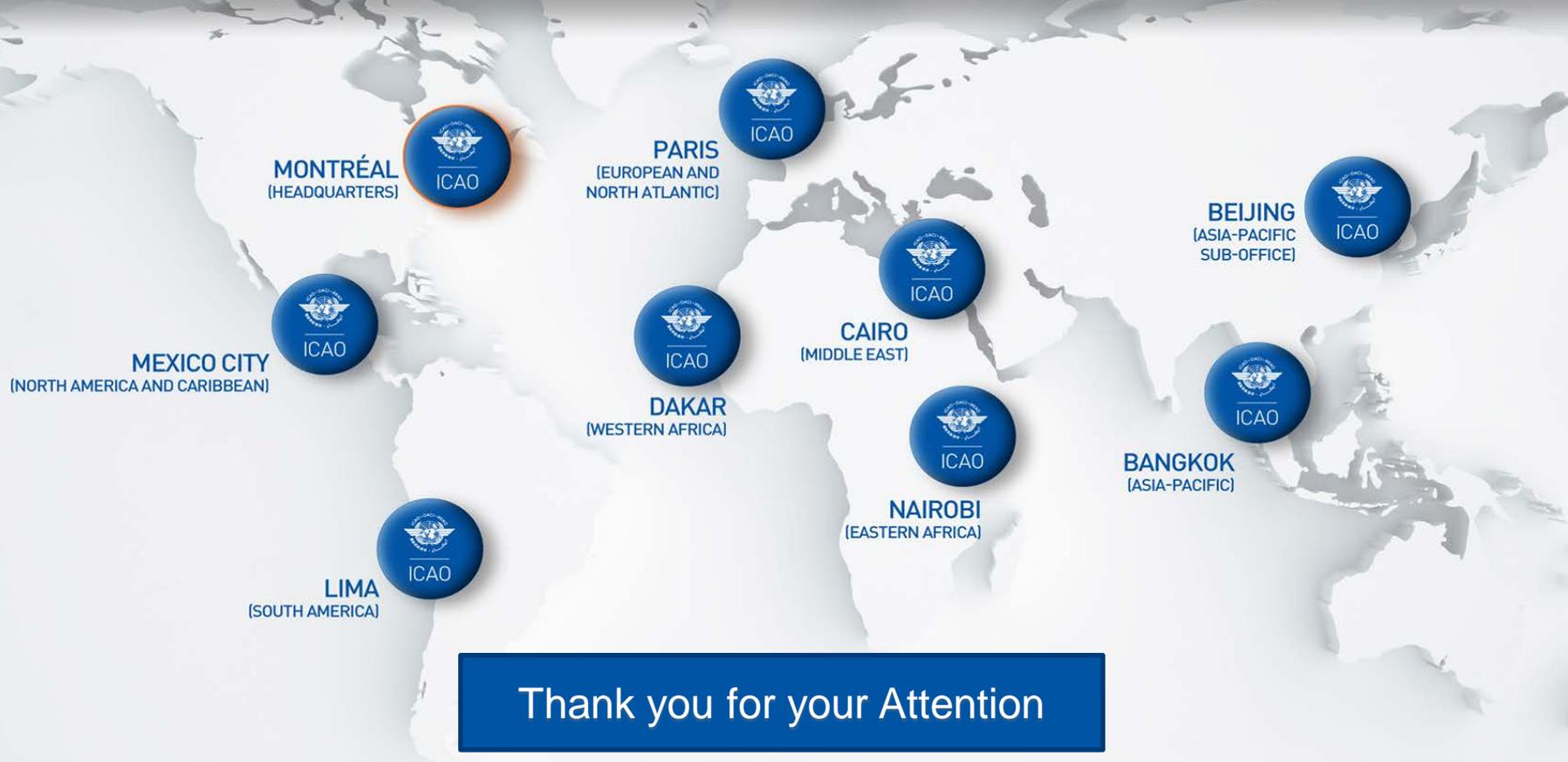The Draft of the 12th edition of the MID ASR will be presented to the ASRG/5 meeting for review (July 2023).

ICAO MID

Challenges

- limited sharing of safety information and safety data analysis

- low participation in the meetings from the States and organizations.