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# ASRG/4

## MID Annual Safety Report

11th Edition-Draft

Virtual Meeting 25 July 2022





## Welcome and Introduction





# ASRG/4 virtual Meeting

**Agenda Item 1:** Election of Chairpersons for ASRG & Adoption of the Provisional Agenda

**Agenda Item 2:** Follow up on the outcome of RASG-MID/9

**Agenda Item 3:** Review of 11<sup>th</sup> ASR Draft-PPT1

**Agenda Item 4:** Future work Programme

## MID Region Annual Safety Report



## 1 Election of Chairpersons for the ASRG and Adoption of the Provisional Agenda

1.1 The Provisional Agenda for the Second virtual meeting of the Annual Safety Report Group (ASRG/4) was submitted to States and concerned Organizations, as attachment to the ICAO MID Regional Office Invitation Letter Ref: ME 4/1.6–22/120 dated 8 June 2022. The Provisional Agenda is at Appendix A.

### Action by the Meeting

- a. Elect a Chairperson and vice Chairperson for the ASRG; and
- b. Adopt the Provisional Agenda at **Appendix A**

## 2

### Follow up on RASG-MID/9 Conclusions & Decisions

The RASG-MID/9 meeting endorsed seven (7) Conclusions and three (3) Decisions as at **Appendix A.**

#### Action by the Meeting

- a. The meeting is invited to note the follow-up on the outcome of the RASG-MID/9 meeting; and take action, as appropriate



- Objective of ASRG**
- Reactive safety information**
- Proactive safety information**
- MID Region Safety Performance**
- MID Region Safety Priorities**
- Sharing of Safety Data Analysis and safety information**
- Challenges**

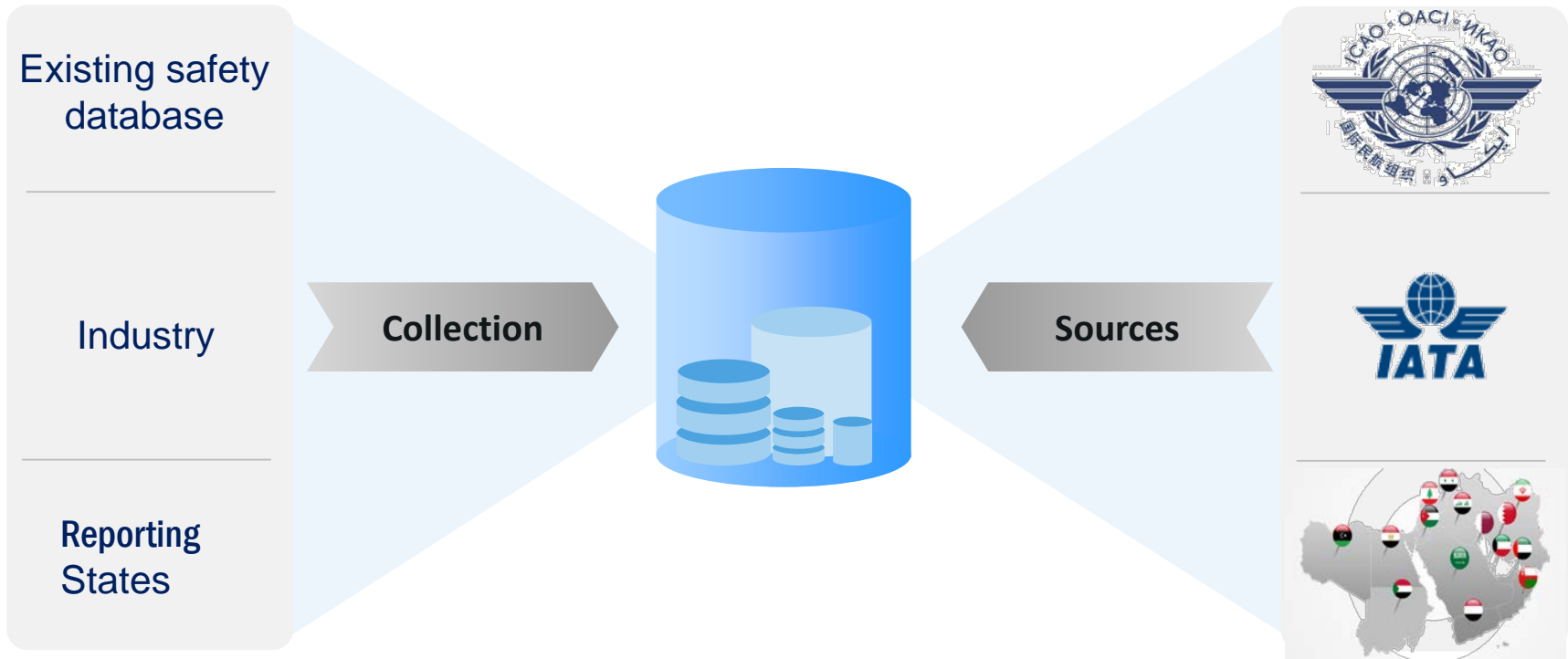


- ❑ Gathering and Analyzing safety information
- ❑ MID Region Safety Priorities
- ❑ Production of the annual safety report

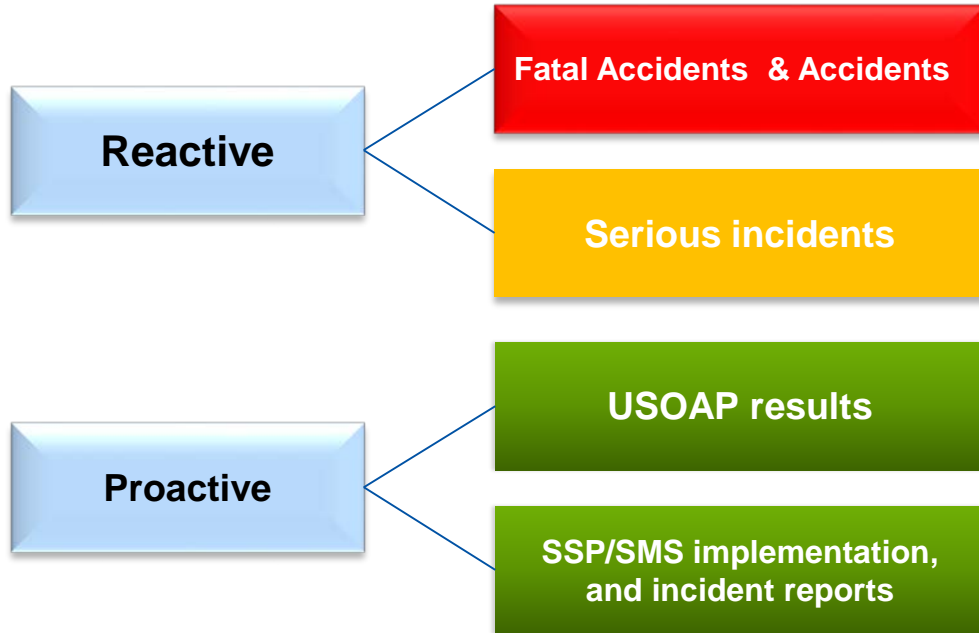
- 1<sup>st</sup> Edition, Nov 2012
- 2<sup>nd</sup> Edition, Jan 2014
- 3<sup>rd</sup> Edition, March 2015
- 4<sup>th</sup> Edition, May 2016
- 5<sup>th</sup> Edition, Jan 2017
- 6<sup>th</sup> Edition, June 2018
- 7<sup>th</sup> Edition, April 2019
- 8<sup>th</sup> Edition, April 20
- 9<sup>th</sup>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



## Data for MID ASR (11<sup>th</sup> Edition)



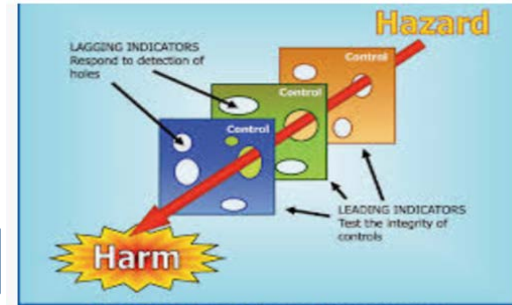




## MID Region Safety Performance – Safety Indicators

### Goals

- 1 Achieve a Continuous Reduction of Operational Safety Risks
- 2 Strengthen States' Safety Oversight Capabilities
- 3 Ensure Appropriate Infrastructure is available to Support Safe Operations
- 4 Expand the use of Industry Programmes
- 5 Implementation of Effective SSPs and SMSs
- 6 Increase Collaboration at the Regional Level to Enhance Safety





One of the GASP goals is for States to improve their effective safety oversight capabilities and to progress in the implementation of SSPs. Thus, GASP calls for States to put in place robust and sustainable safety oversight systems that should progressively evolve into more sophisticated means of managing Safety. In addition to addressing organizational issues, GASP addresses high-risk categories of occurrences, which are deemed global safety priorities:

Regional Operational Safety Risks

Organizational Issues

Emerging Safety Risks



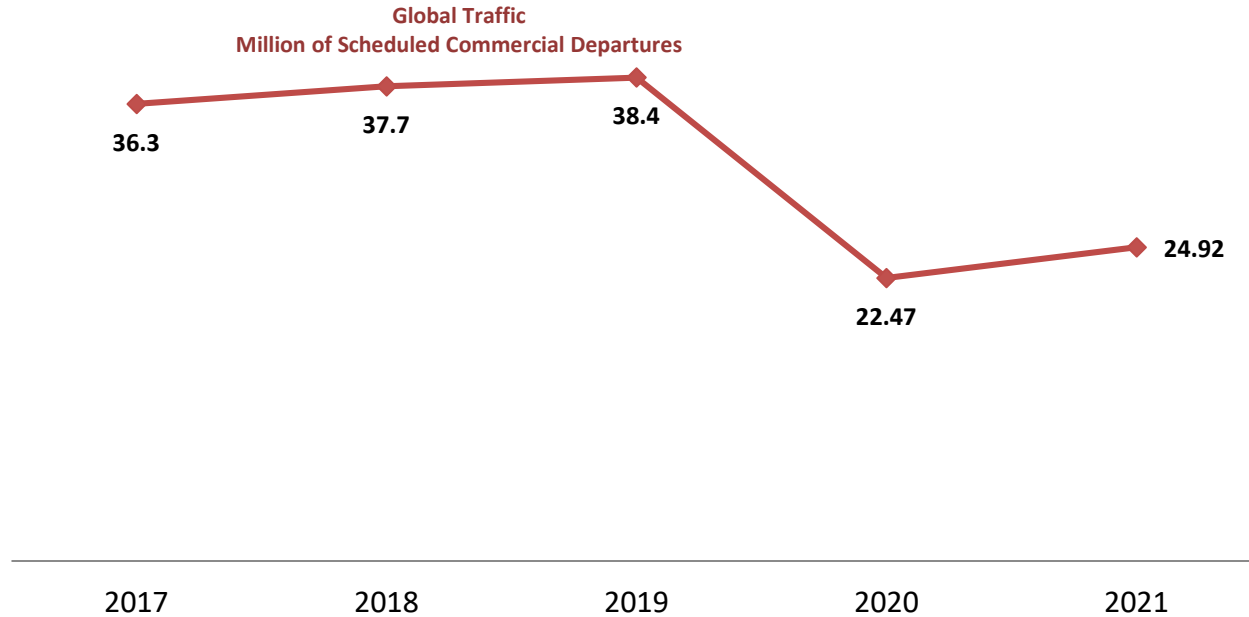
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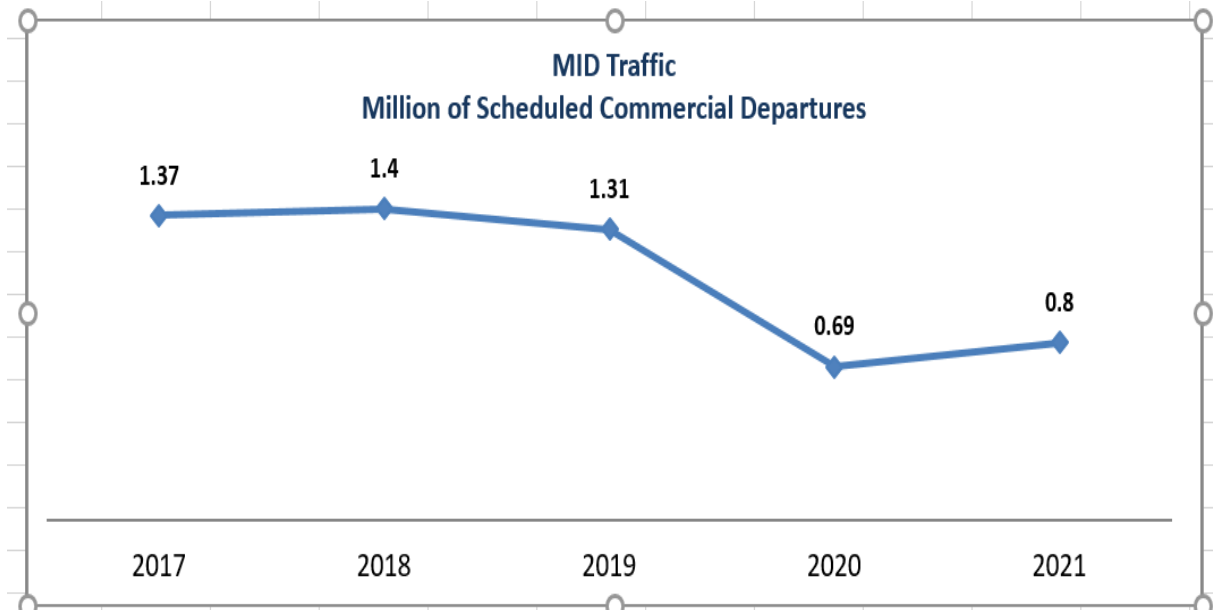
# TRAFFIC VOLUMES



# Global Traffic



(Source ICAO Safety Report 2022)



(Source ICAO Safety Report 2022)

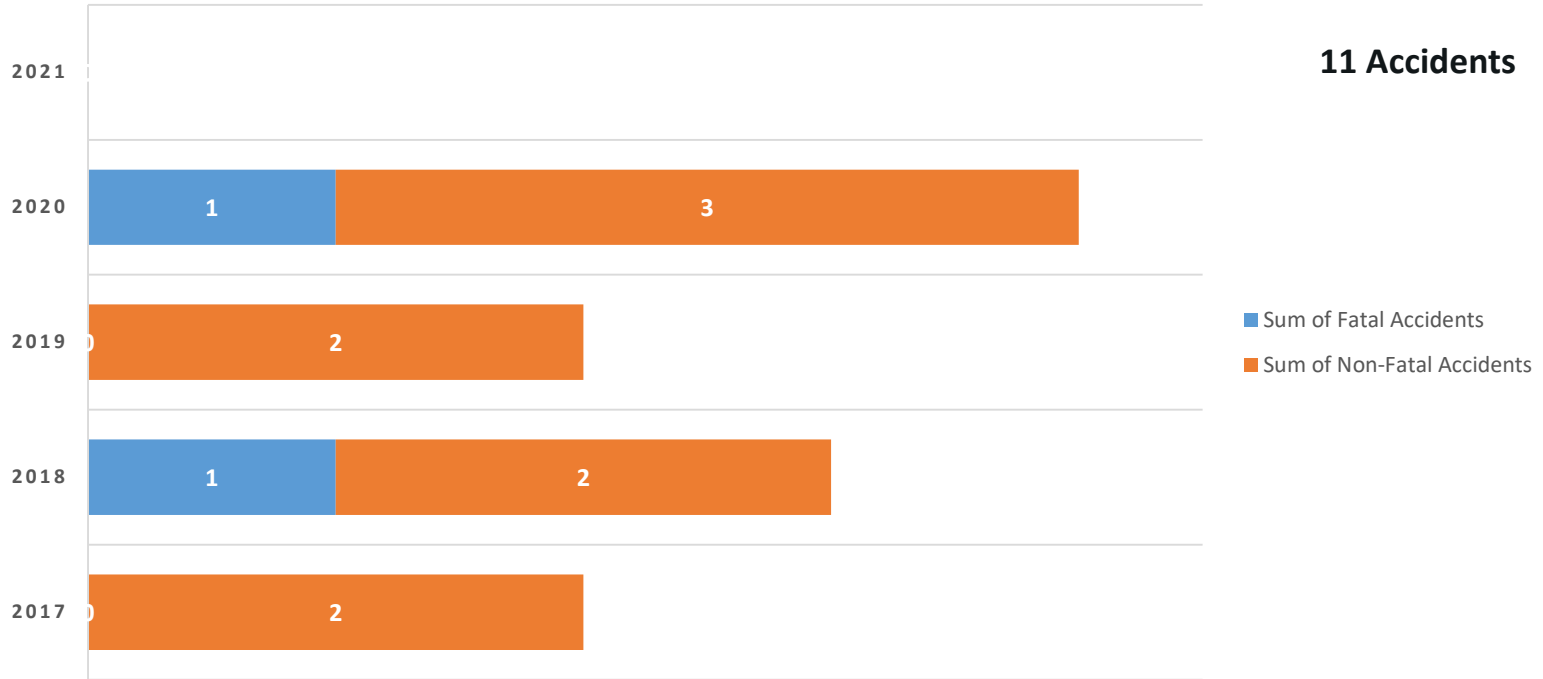


# REACTIVE SAFETY INFORMATION

## STATE OF OCCURRENCE



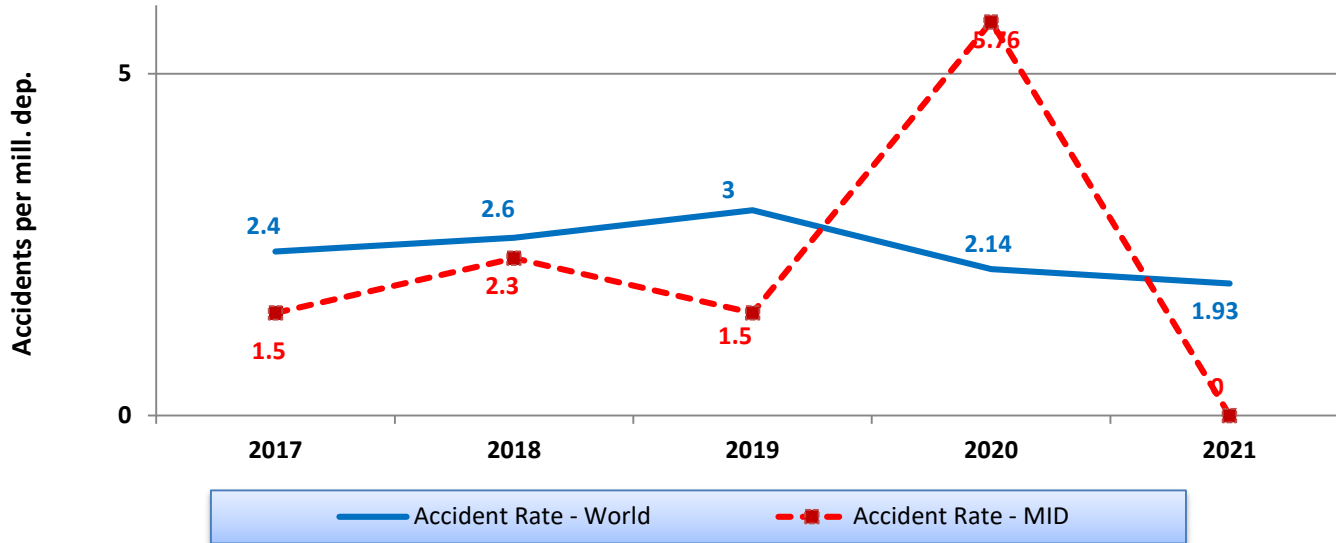
# Number of Fatal Accidents & Accidents



*(Source OVSG Data & ICAO ASR 2022)*



## Accident Rate Scheduled Commercial above 5700 kg



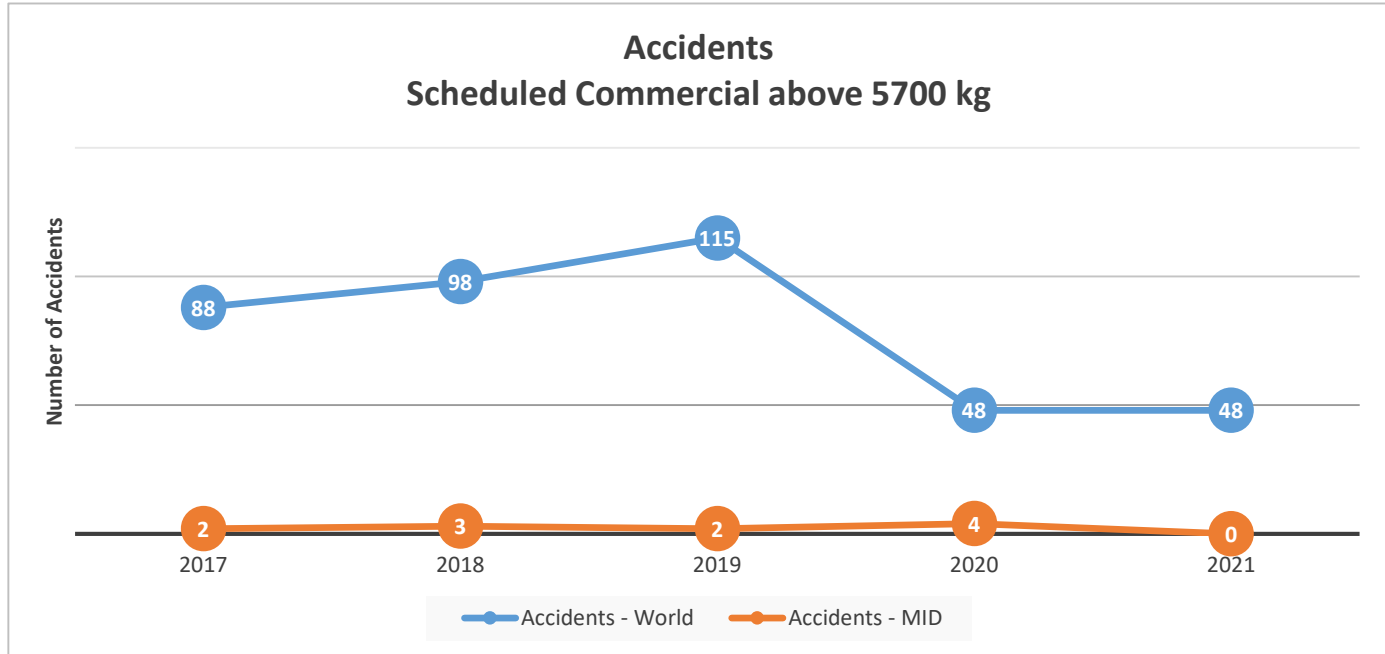
Average 2017-2021

Average MID  
**2.21**

Average Global  
**2.41**

*(Source OVSG Data & ICAO ASR 2022)*

# MID Accidents Vs. Global Accidents

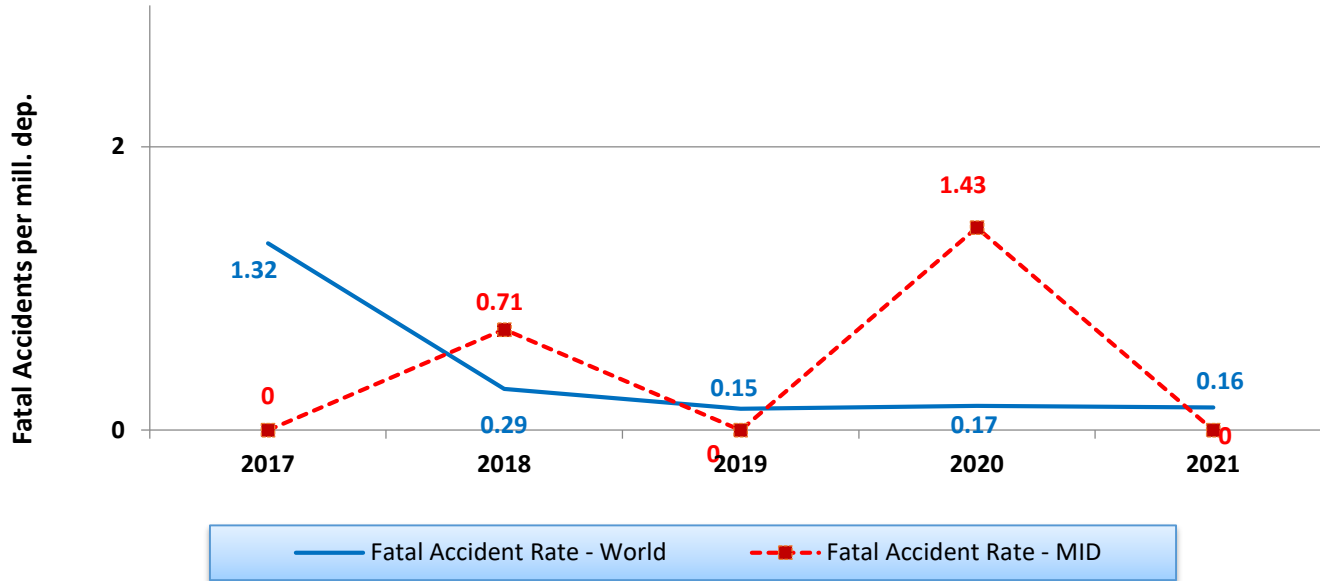


*Number of MID Accidents Vs. Number of Global Accidents Per Year (Source OVSG Data & ICAO ASR 2022)*



# Fatal Accident Rate

Fatal Accident Rate  
Scheduled Commercial above 5700 kg

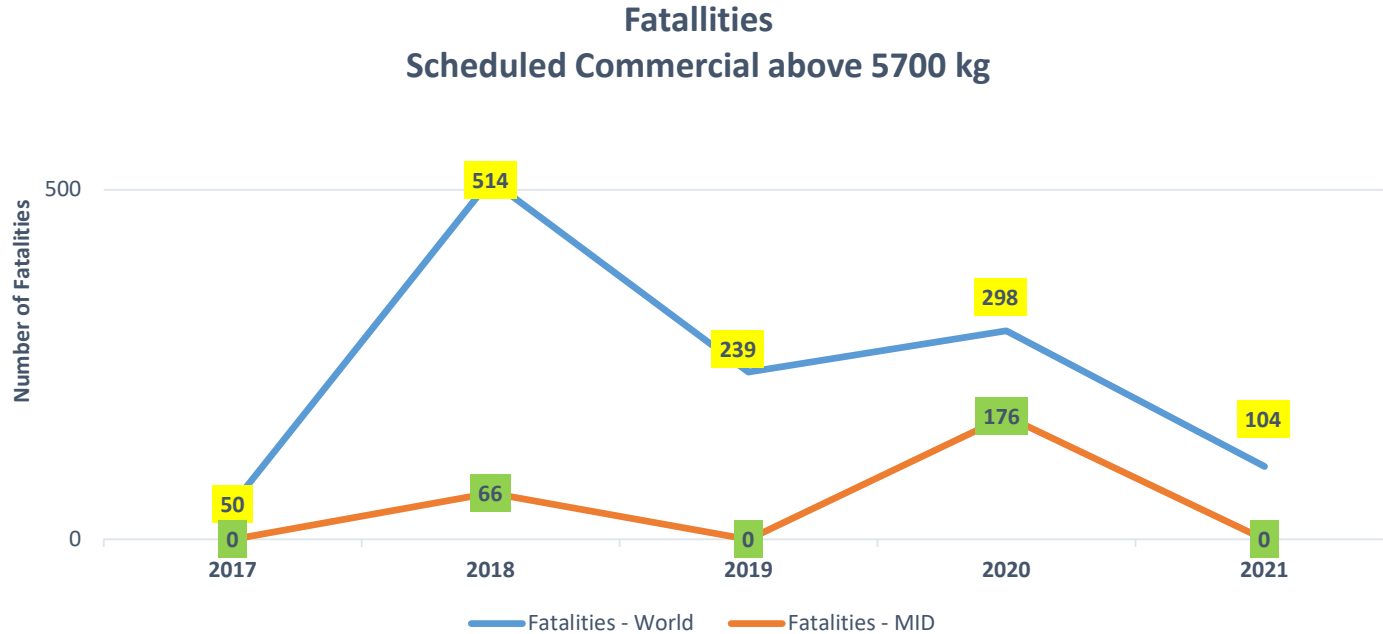


Average 2017-2021

Average MID  
0.42

Average Global  
0.41

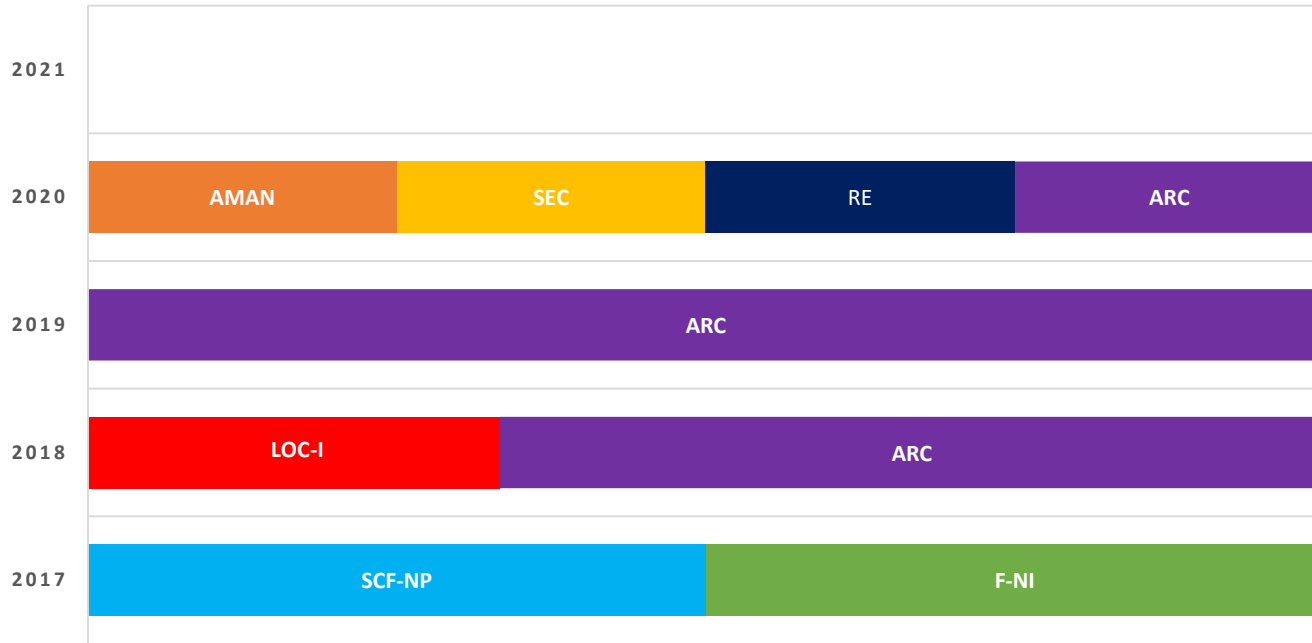
Source OVSF Data & ICAO ASR 2022



*(Source OVSG Data & ICAO ASR 2022)*



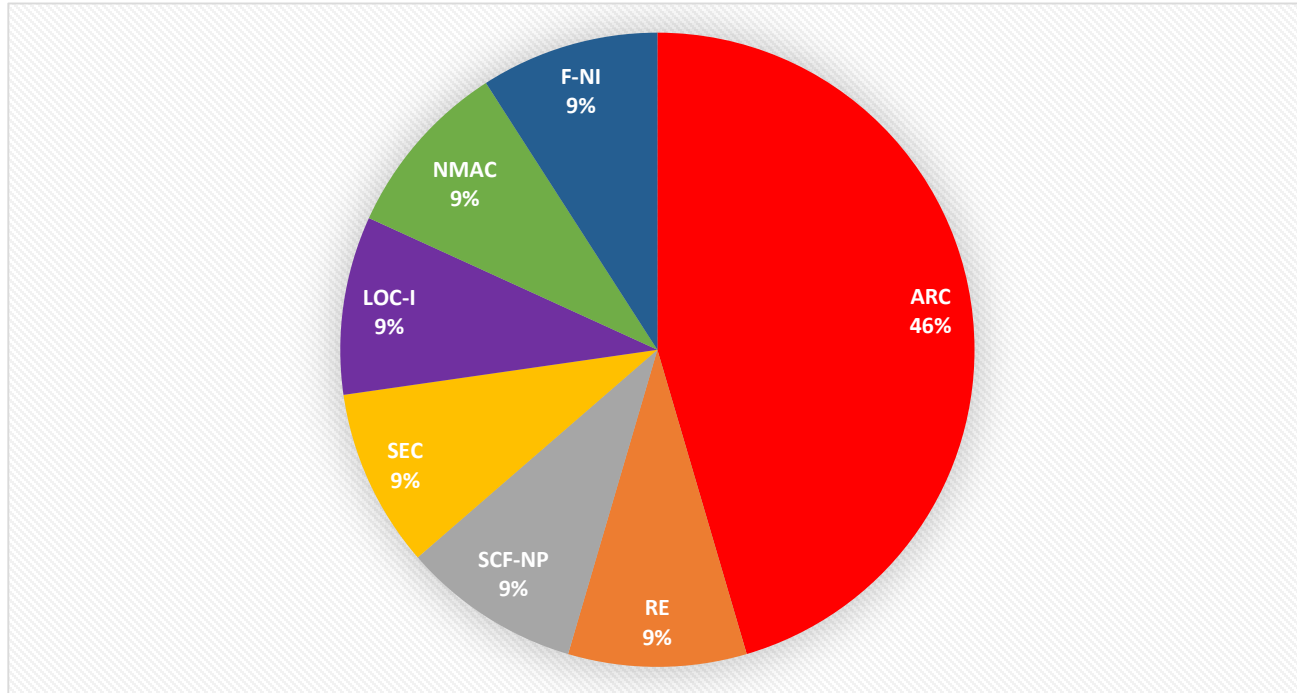
# Distribution of Occurrence Category



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)



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# Reactive Safety Information

## State of Registry & Operator







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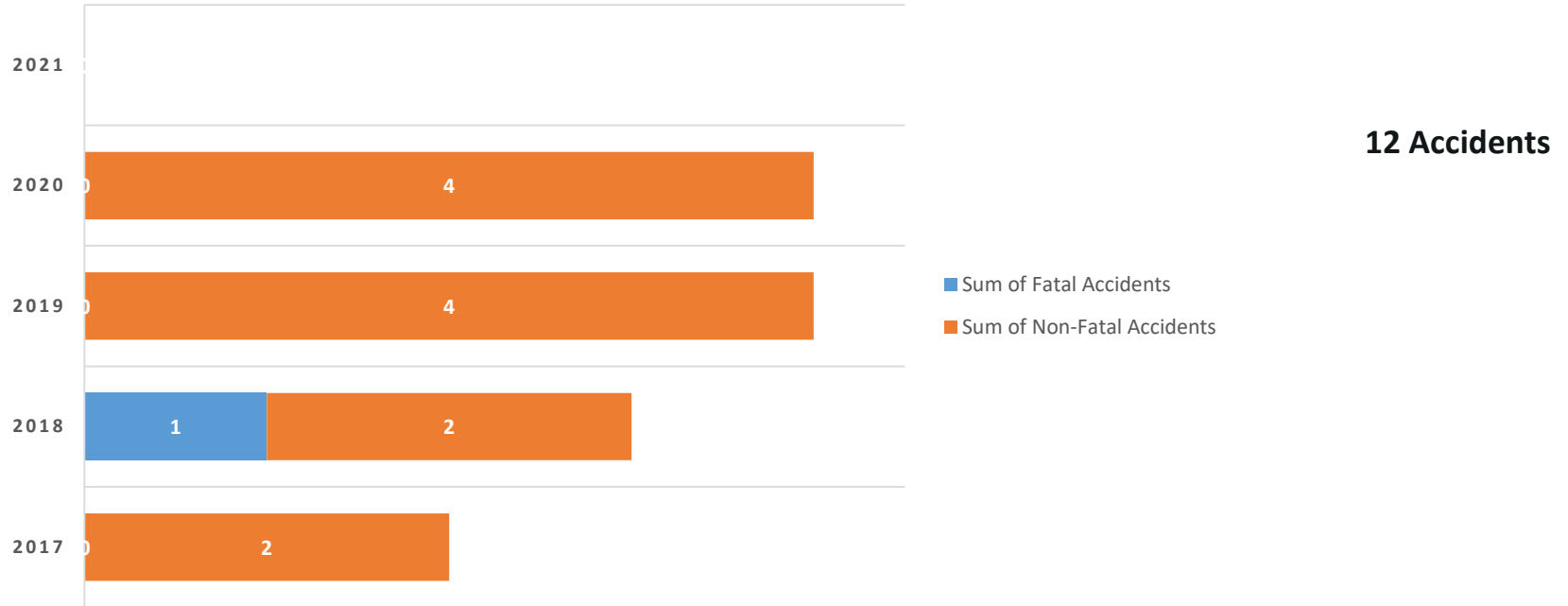
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# REACTIVE SAFETY INFORMATION

## STATE OF REGISTRY & OPERATOR



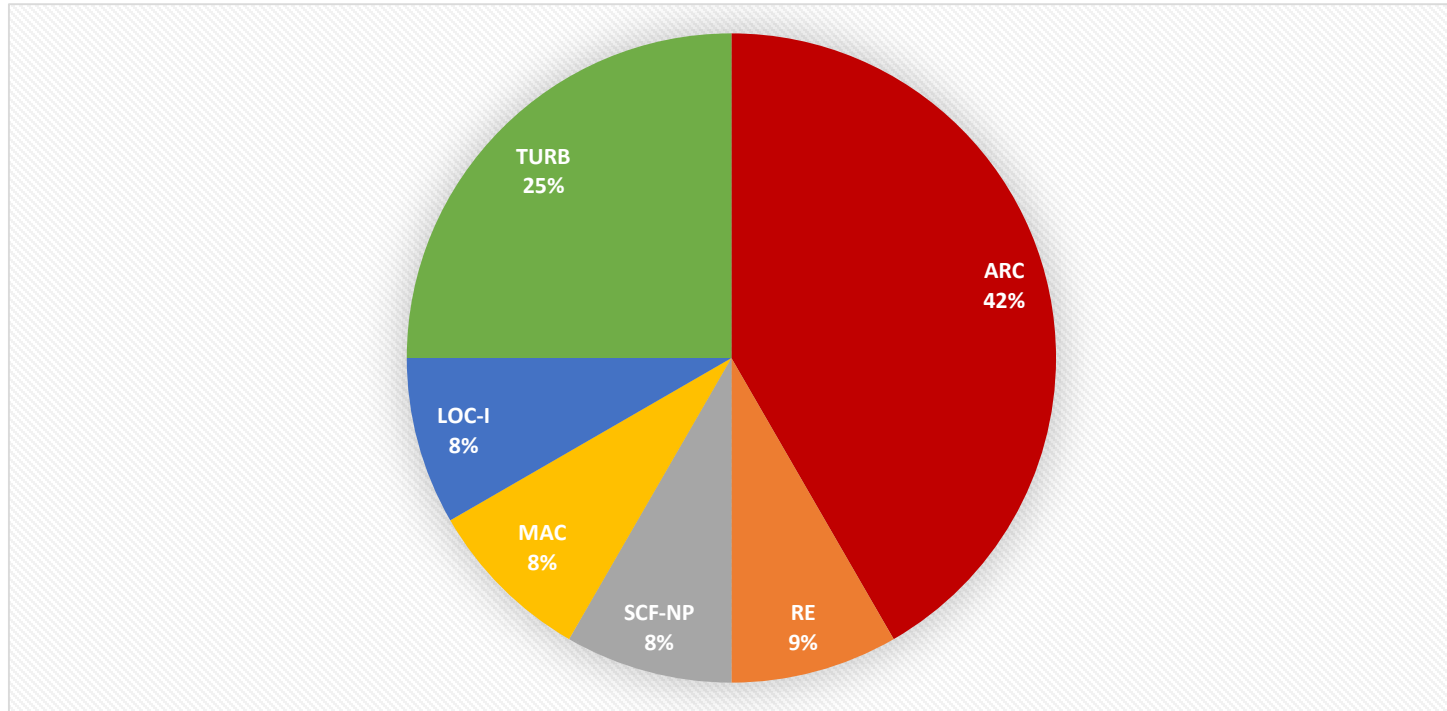
# Number of Fatal Accidents & Accidents



*(Source OVSG Data & ICAO ASR 2022)*



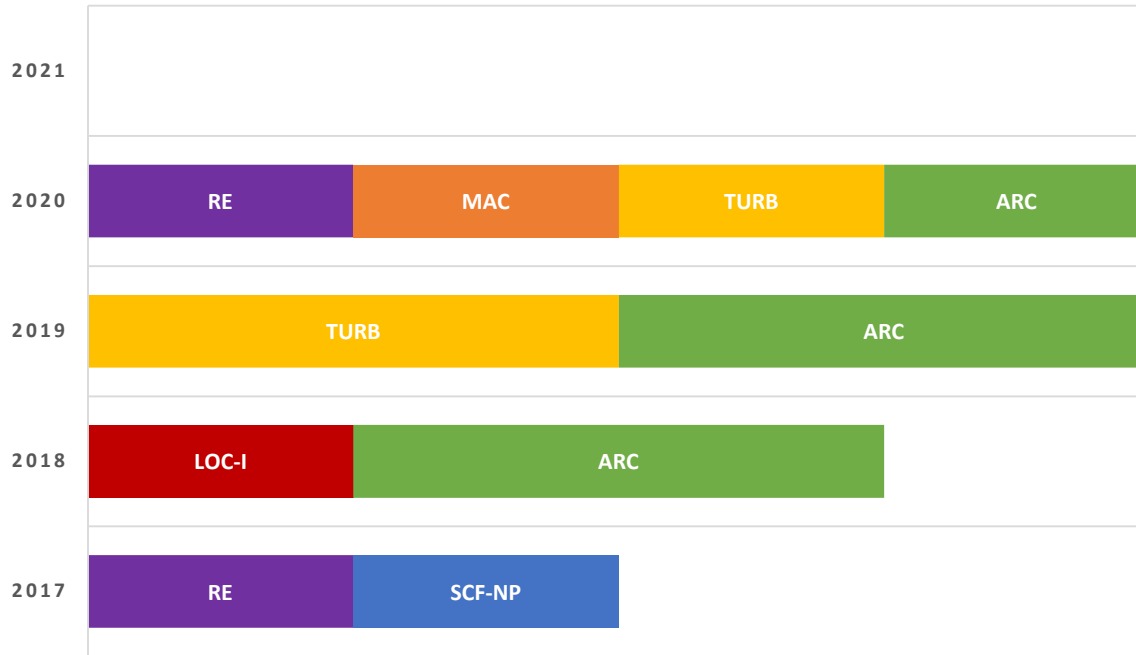
# Accident Distribution as Percentage per Occurrence Category



Source OVSG Data & ICAO ASR 2022



# Distribution of Occurrence Category



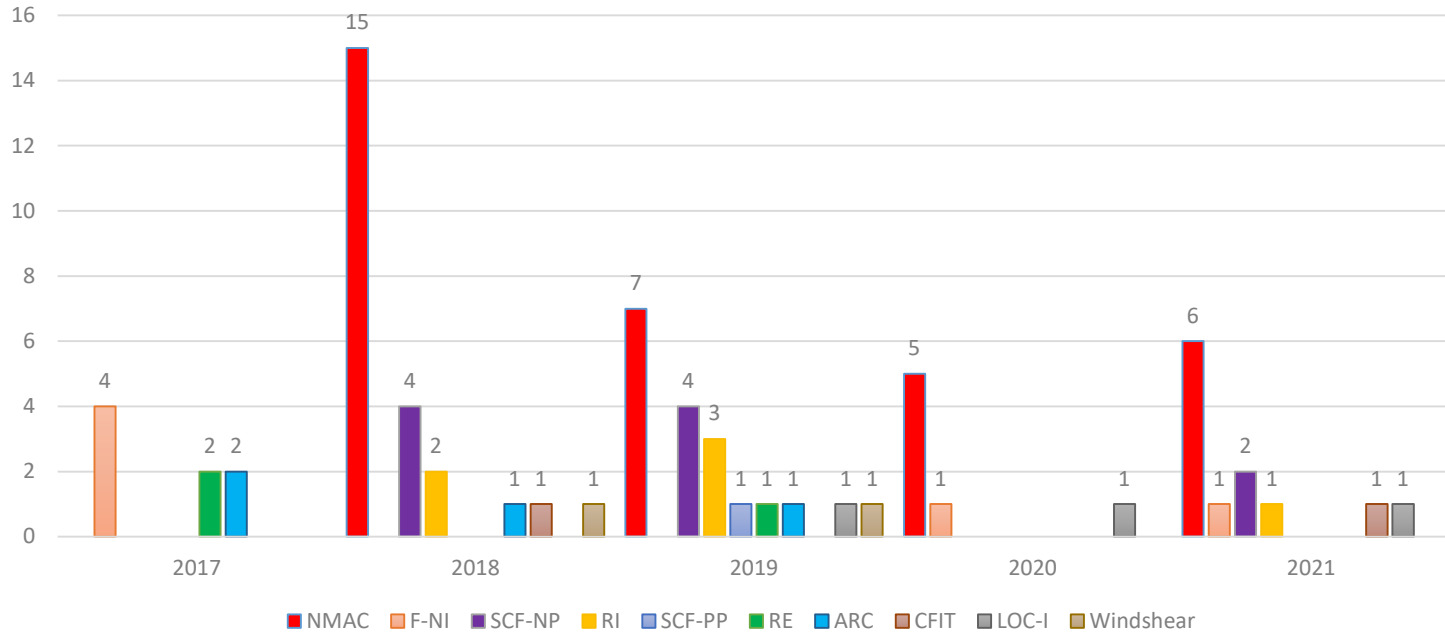
Source OVSF Data & ICAO ASR 2022

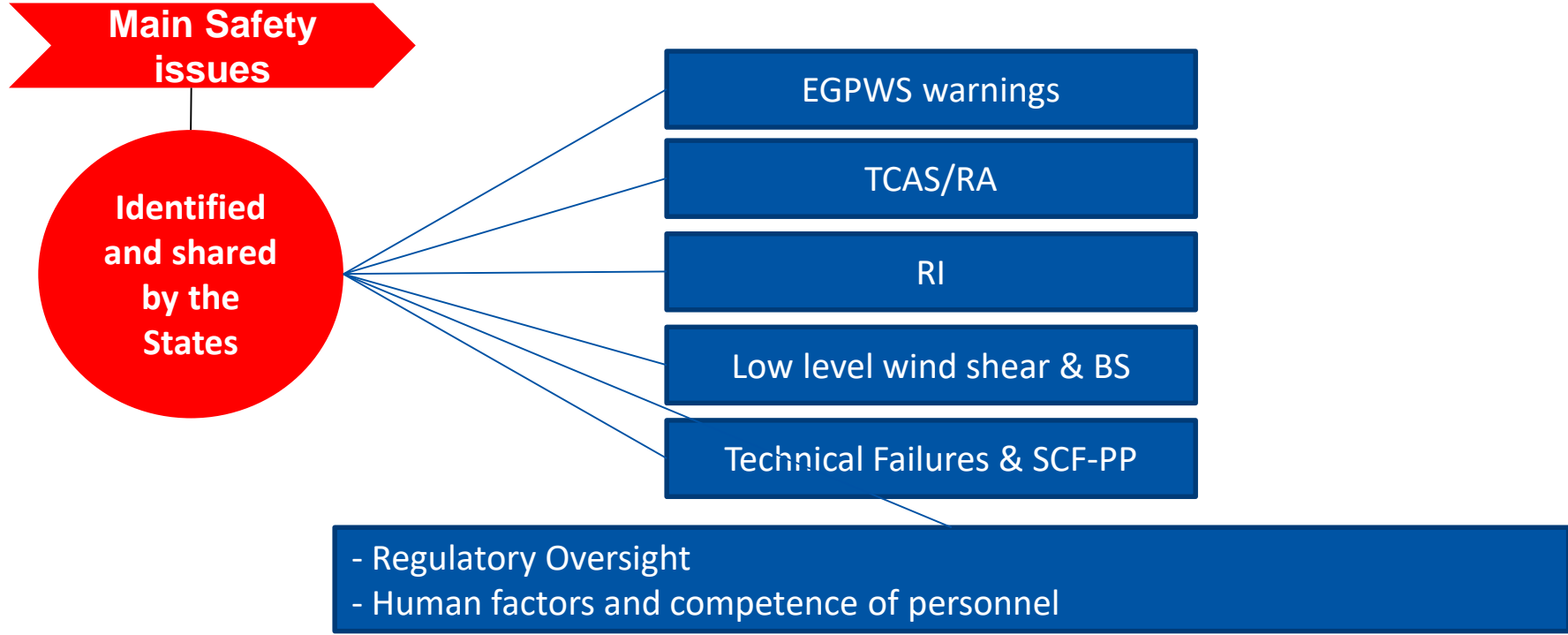


The key risk area identified according to the State of occurrence's accidents data are:

- 1 Loss of Control – Inflight – (LOC-I)
- 2 Runway Excursion (RE) and Abnormal Runway Contact (ARC) during landing
- 3 MID Air Collision-(MAC)

MID-Serious incident 2017-2021







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# PROACTIVE SAFETY INFORMATION

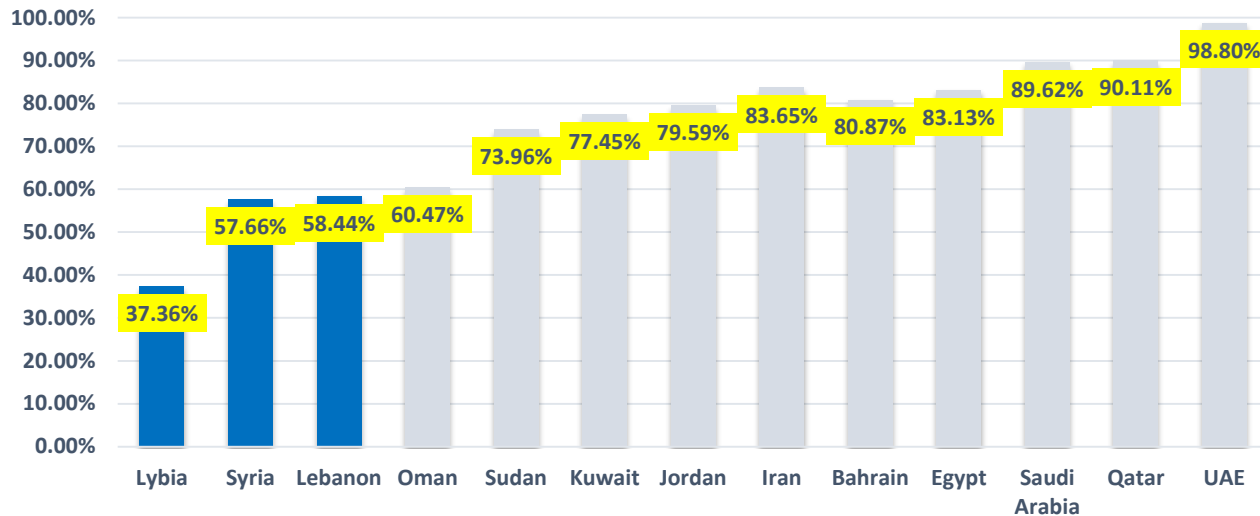




State/organization	Type of activity	Date	Status
Iran (Islamic Republic of)	Audit	29 Nov to 11 Dec 2021	Postponed Planned for 2022
Lebanon	ICVM	19 to 26 Oct 2022	Planned for 2022



## Effective Implementation (EI)

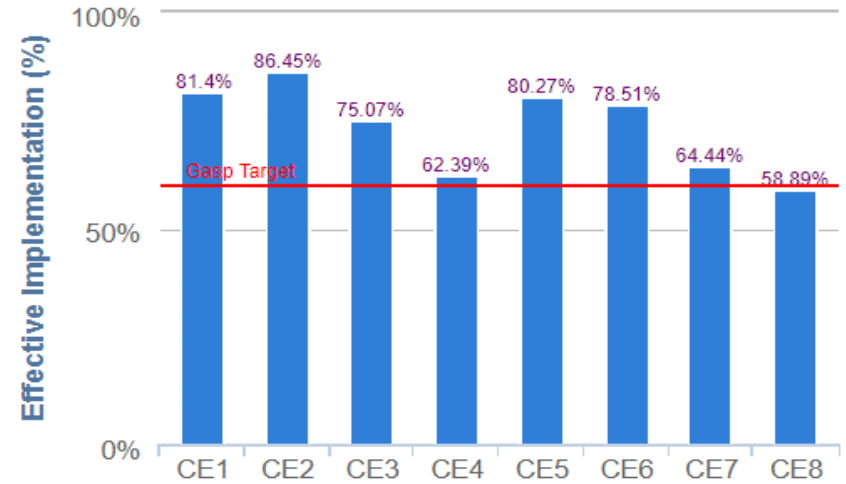
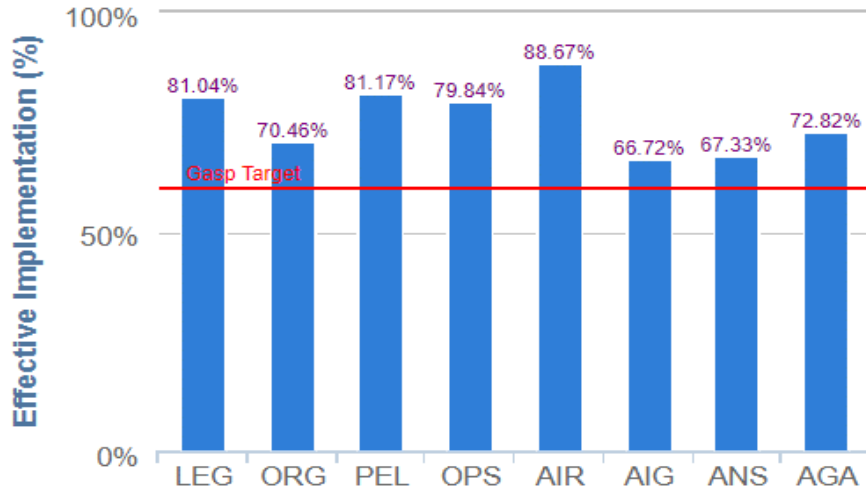


13 out of 15 States have been audited

**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**



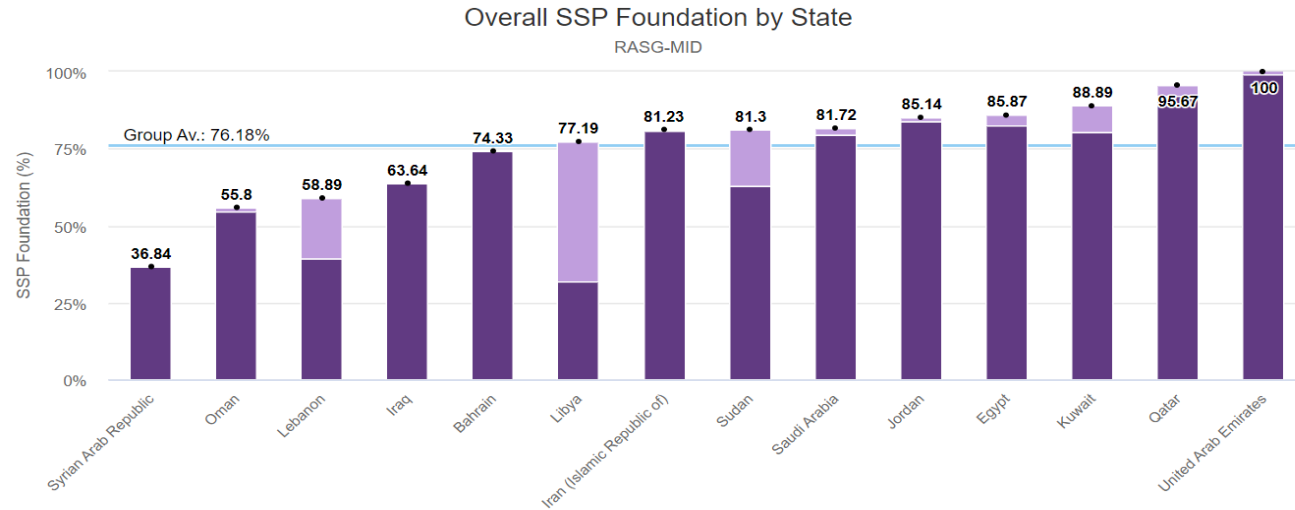
8 areas and 6 critical elements are above the target of 60%

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

## 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%**.

Source: iSTARS as of 30 May 2022)



- The application was updated in 2019 to reflect Amendment 1 to Annex 19 and the fourth edition of the SMM.
- It now comprises 62 questions, which cover all the requirements of an SSP; and
- provides project owners the opportunity to develop an implementation plan to address the gaps identified.
- States can use the ICAO iSTARS online to perform an SSP Gap Analysis-SMM 4th Edition.



**SSP Gap Analysis - SMM 4th Ed.**

State Safety Programmes



- *Reflect* Annex 19 Amdt 1, SMM 4<sup>th</sup> edition and lessons learnt from the voluntary assessments conducted.
- *Form* a dedicated list of *PQs* and *associated maturity levels*.
- *Are not linked to Critical Elements (CEs)* but rather to the applicable SSP component (e.g. State Safety Risk Management and State Safety Assurance).
- *Are not assessed* as “satisfactory/non-satisfactory”, but in terms of *maturity levels*.
- *Are supported by references* from ICAO manuals.



## Broken down into 8 areas:

1. SSP general aspects (GEN);
2. safety data analysis general aspects (SDA);
3. personnel licensing and training (PEL);
4. aircraft operations (OPS);
5. airworthiness of aircraft (AIR), approved maintenance organization (AMO) aspects only;
6. air navigation services(ANS) (air traffic services) (ATS) aspects only;
7. Aerodromes and ground aids; and
8. aircraft accident and incident investigation (AIG).



- *Complement*, and *do not impact*, the State's Effective Implementation (*EI*) score.
- Do not generate findings, nor require the State to submit a “corrective action plan” (CAP).
- Are conducted by a *limited pool of assessors*, to ensure consistency.





- The amended SSP-related PQs have as a *'background'* the following key questions related to SSP implementation:
  - *What are the State's main/top safety risks?*
  - *How does the State know it?*
  - *What is the State doing about it?*
  - *Is it working?*



## 5 maturity levels have been determined:

- *0: not present and not planned;*
- *1: not present but being worked on;*
- *2: present;*
- *3: present and effective; and*
- *4: present and effective for years and in continuous improvement*

# Example

PQ No.	Protocol Question	References in ICAO Guidance Material	SSP Component	Maturity Levels			
				Not Present and Not Planned	Not Present but Being Worked On	Present	Present and Effective
SSP.SDA.01	What safety data collection and processing systems has the State established to support safety data analysis at the State level?	SMM Ch. 5	State Safety Risk Management	Based on current situation in State	Based on State's work in progress	<ol style="list-style-type: none"> <li>1. There is a mechanism in place to ensure the collection, processing and analysis of safety data at the State level.</li> <li>2. The sources for safety data and safety information include data and information derived from accident and incident investigations, mandatory occurrence reporting systems and other sources, including voluntary reporting.</li> <li>3. There is a mechanism in place at the State level to ensure the categorization of safety data and an agreed upon taxonomy at the State level, with supporting definitions.</li> </ol>	<ol style="list-style-type: none"> <li>1. The safety data that are collected, processed and analyzed contain all relevant data that might be collected.</li> <li>2. The safety data at the State level are categorized using an agreed upon taxonomy and supporting definitions, in a way that supports analysis of the safety data.</li> </ol>



# SSPIA vs. Audit

Characteristics	SSPIA	Audit
Methodology	Performance-based	Compliance-based (prescriptive)
Protocol questions	Open ended	Closed ended
Based on	Four SSP components	Eight Critical elements
PQ outcome	Maturity level	Sat / Not Sat
Period of interest	"The journey"	Current snapshot
Evidence based	✓	✓

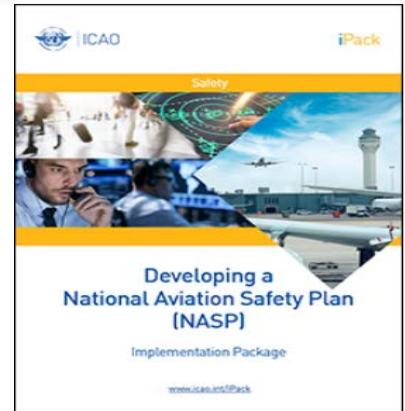


Characteristics	SSPIA	Audit
Affects the EI	X	✓
State's self-assessment, including submitted evidence	✓	✓
CAP needed	X	✓
Industry visits	✓	✓
Driver for determining the industry visits	"SMS champion"	Risk of low EI



- SSPIA is conducted on a PQ by PQ basis.
- Each PQ and each maturity level criteria item have their own merit.
- In order to achieve a maturity level of 2 (“present”) or 3 (“present and effective”), the State has to meet all the criteria items detailed under the specific maturity level.
- There is **no overall SSPIA, nor technical area maturity level.**
- The **technical areas’ assessment focuses on SMS** aspects.

- On 17 July 2020, ICAO issued Electronic Bulletin 2020/40 informing States of the availability of implementation packages (iPacks) to support States in their response, recovery and resilience efforts following the COVID-19 outbreak.
- Guidance material; standardized training; tools; subject matter expertise; and guidance for procurement
- NASP and UAS iPacks are being deployed to support States in the MID region.





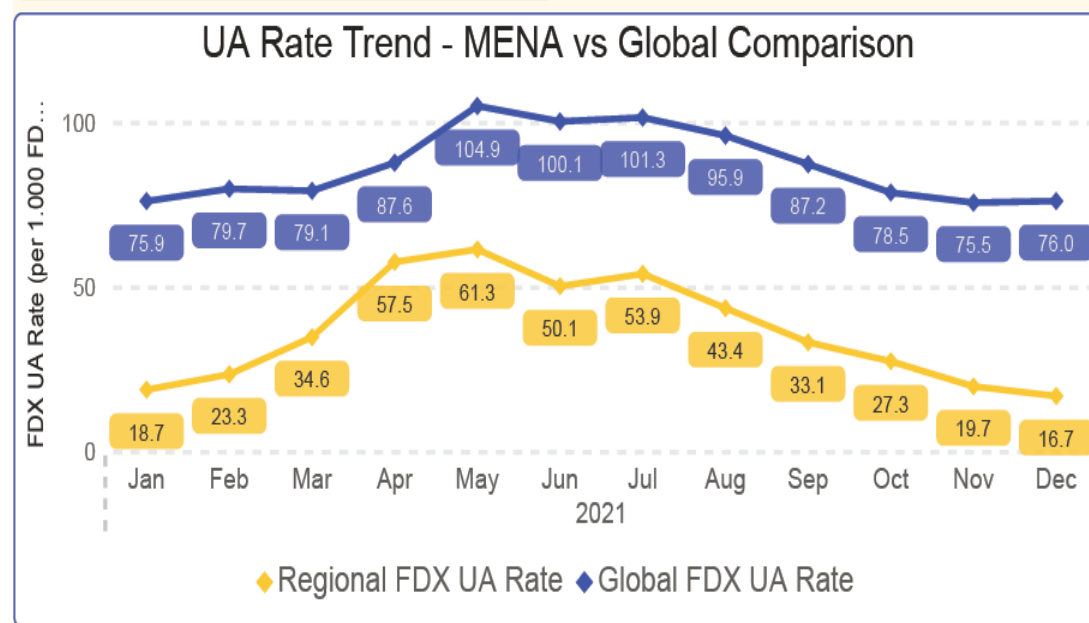


- Global civil aviation ecosystem is accelerating towards more digitalization.
- Aware of the complexity of the aviation system and of the need to manage the cybersecurity risk the MID Region needs to consider and address information security risks in a comprehensive and standardized manner across all 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.



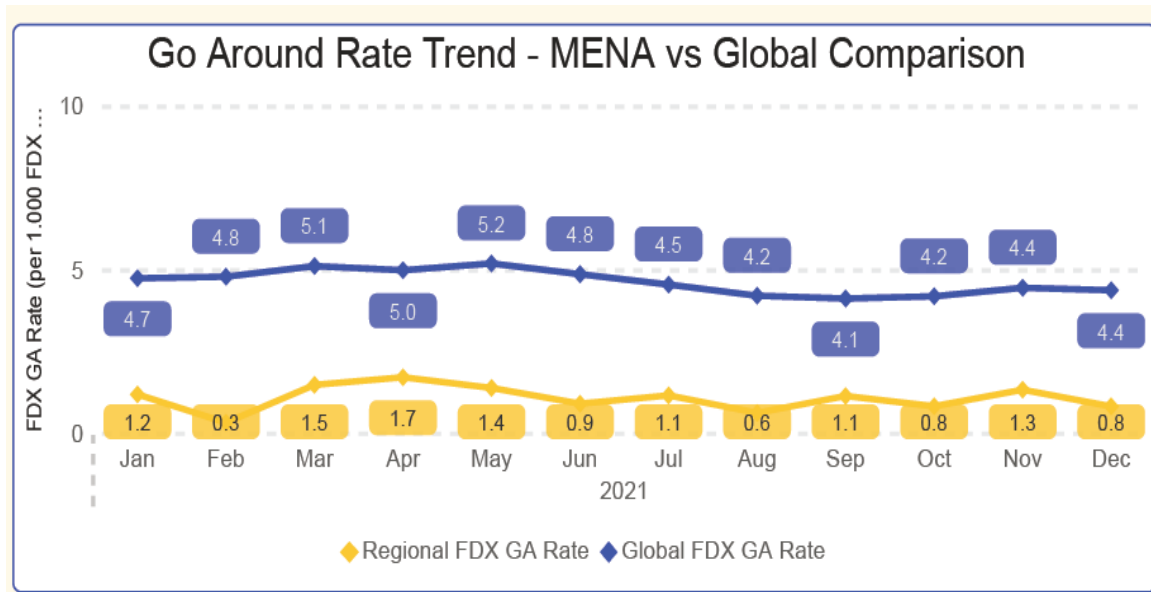
## Unstable Approaches

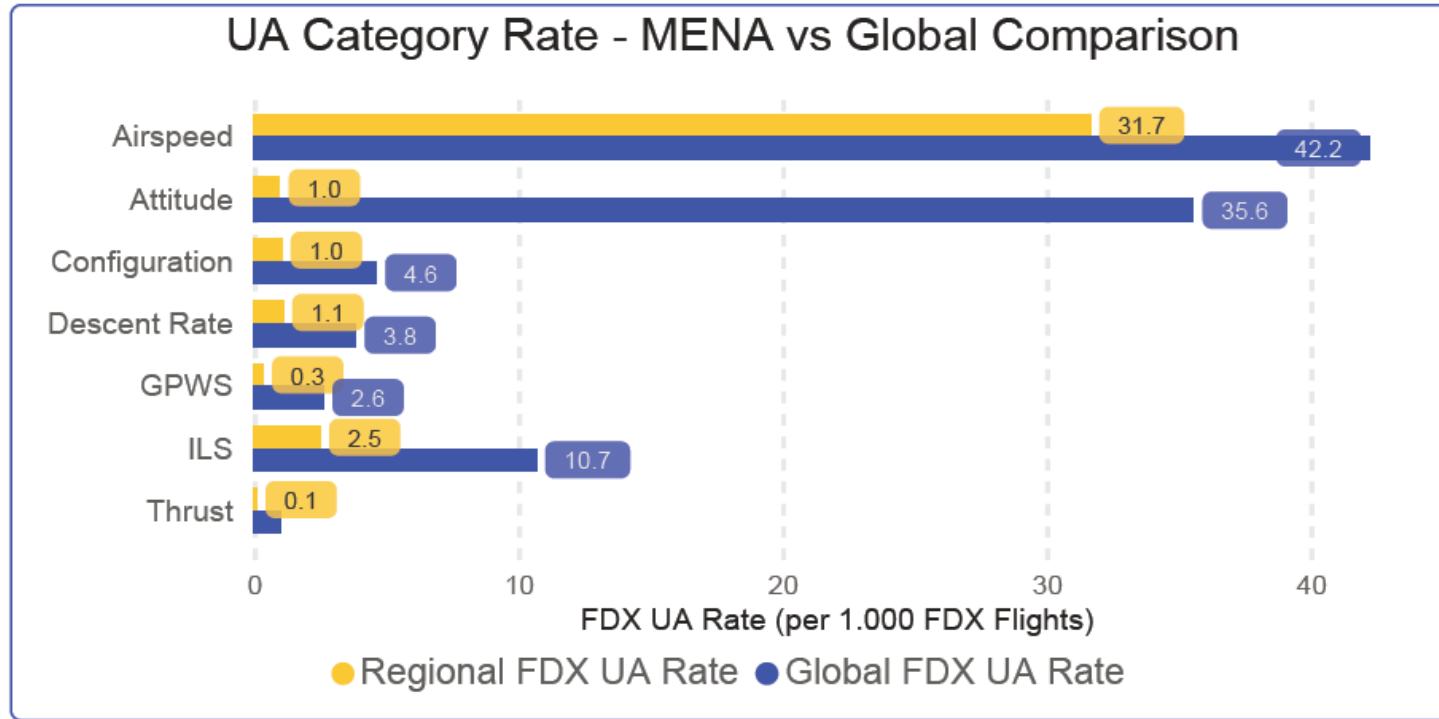
- Unstable Approaches/Go Around Flight Period: Jan 2021 - Dec 2021.
- Q4 2021 rate in MENA was -44.52 % lower than previous 12 months

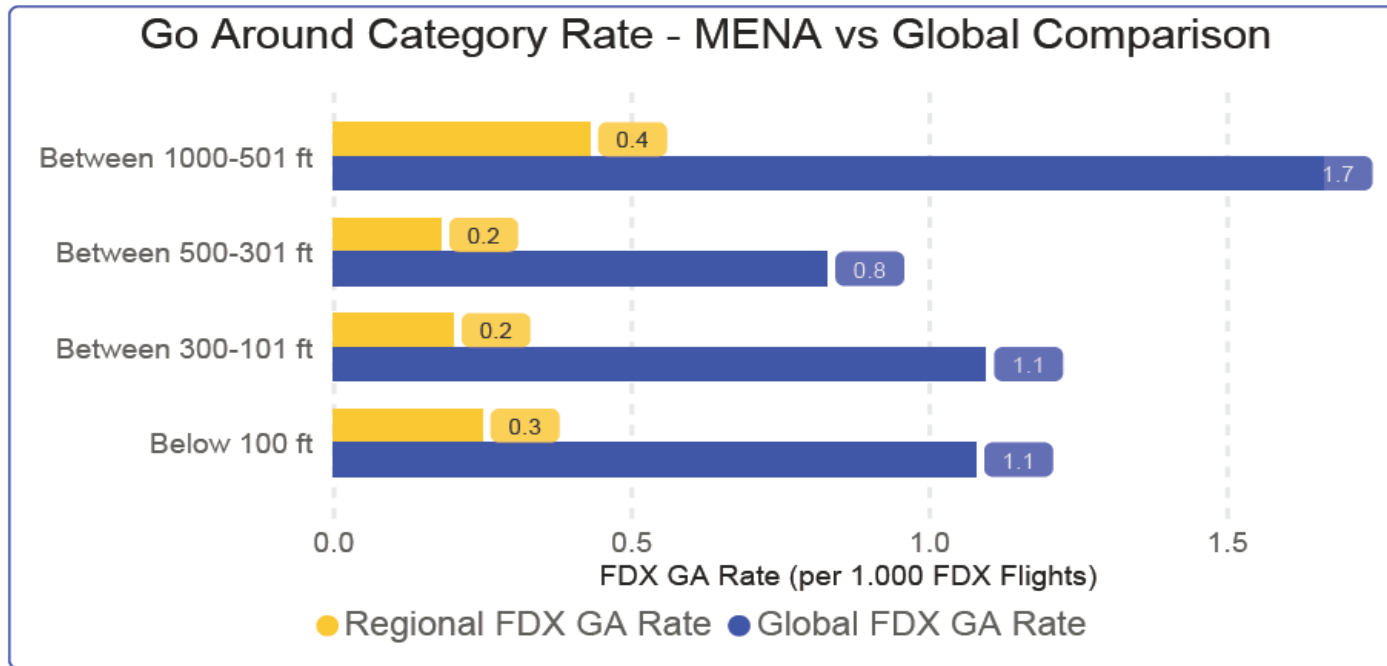


## Unstable Approach followed by GoA

1% of MENA UA followed by GoA while 2.3% of Global UA followed by GoA









# MID REGION SAFETY PERFORMANCE



		Average 2017-2021		2021	
Safety Indicator	Safety Target	MID	Global	MID	Global
Number of accidents per million departures	Reduce/Maintain the regional average rate of accidents to be in line with the global average rate by 2016	2.21	2.41	0	1.93
Number of fatal accidents per million departures	Reduce/Maintain the regional average rate of fatal accidents to be in line with the global average rate by 2016	0.42	0.41	0	0.16
Number of Runway Excursion related accidents per million departures	Reduce/Maintain the regional average rate of Runway Excursion related accidents to be below the global average rate by 2016	0.28	0.3	0	0
Number of Runway Incursion accidents per million departures	Regional average rate of Runway Incursion accidents to be below the global average rate	0	0.08	0	0.04
Number of LOC-I related accidents per million departures	Reduce/Maintain the regional average rate of LOC-I related accidents to be below the global rate by 2016.	0.14	0.07	0	0.08
Number of CFIT related accidents per million departures	Reduce/Maintain the regional average rate of CFIT related accidents to be below the global rate by 2016.	0	0.02	0	0.08
Number of Mid Air Collision (accidents)	Zero Mid Air Collision accident	0	0	0	0



Safety Indicator	Safety Target	MID	Remark
A. Regional average EI	a. Increase the regional average EI to be above 70% by 2020	74.67	Target Achieved
B. Number of MID States with an overall EI over 60%.	11 MID States to have at least 60% EI by 2020	10 States	
C. Regional average EI by area	c. Regional average EI for each area to be above 70% by 2020	6 areas	
D. Regional average EI by CE	d. Regional average EI for each CE to be above 70% by 2020	5 CEs	
E. Number of Significant Safety Concerns	MID States resolve identified Significant Safety Concerns as a matter of urgency and in any case within 12 months from their identification.  No significant Safety Concern by 2016.	None	Target Achieved





Safety Indicator	Safety Target	MID	Remark
Number of certified International Aerodrome as a percentage of all International Aerodromes in the MID Region	A. 50% of the international aerodromes certified by 2015.	58.62%	
	B. 75% of the international aerodromes certified by 2017.		
Number of established Runway Safety Team (RST) at MID International Aerodromes.	50% of the International Aerodromes having established a RST by 2020	68.97%	Target Achieved



Safety Indicator	Safety Target	MID	Remark
Use of the IATA Operational Safety Audit (IOSA), to complement safety oversight activities.	A. Maintain at least 60% of eligible MID airlines to be certified IATA-IOSA at all times.	A. 57% (As of Sep 2017)	
	B. 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 out of 10 States (60%)	
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 out of 10 signed ISAGO MOU 60%	



Safety Indicator	Safety Target	MID	Remark
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	76.18%	Target achieved
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	



Safety Indicator	Safety Target	MID	Remark
Number of States attending the RASG-MID meetings	At least 12 States from the MID Region	15 States	
Number of States providing required data related to accidents, serious incidents and incidents to the MID-ASRTASRG	All States from the MID Region	6 States	
Number of States that received assistance/support through the RASG-MID, MENA RSOO and/or other NCLB mechanisms	All States having an EI below 60% to be member of the MENA RSOO	TBD	
	All States having an EI below 60% to have an approved NCLB Plan of Actions for Safety (agreed upon with the ICAO MID Office)	3 States	



# 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

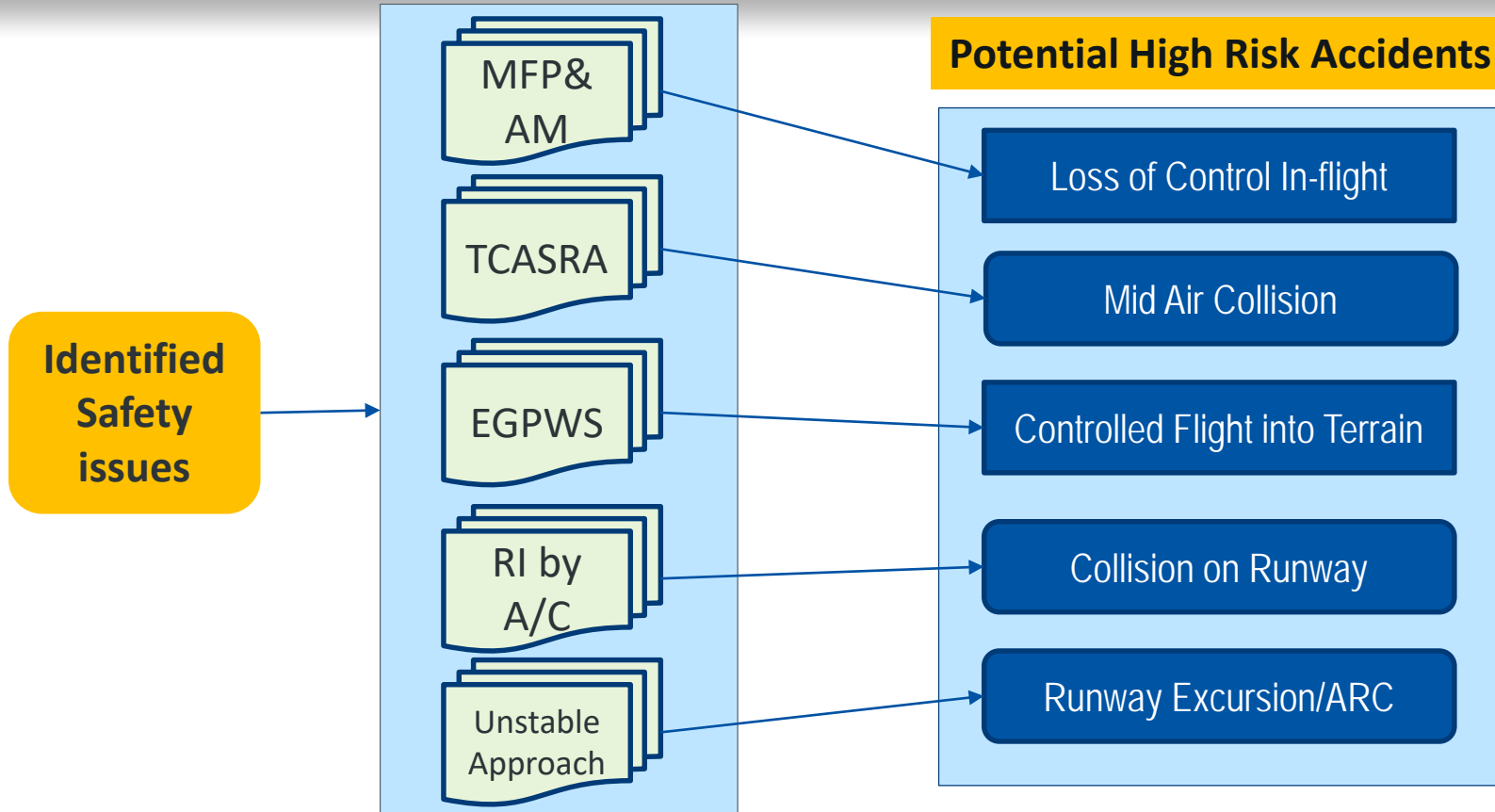


Runway Incursion



Safety Issues	Accident Severity	Potential Accident Outcome						Injury Damage inflight	Injury Damage on Ground
		CFIT	LOC-I	MAC	GCOL	RE/ARC			
Monitoring of flight parameters and automation modes	Catastrophic	x	x				x		
Adverse Convective weather	Catastrophic	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

## Organizational issues

- Human Factors
- Competence of personnel
- SSP/SMS implementation
- States' Safety Oversight capabilities
- Commercial Pressure
- New Business models
- Impact of socio-economic factors on safety

### Identified Safety issues

- MFP& AM
- TCASRA
- EGPWS
- RI by A/C
- Handling of technical failure

## Potential High Risk Accidents

- Loss of Control In-flight
- Mid Air Collision
- Controlled Flight into Terrain
- Collision on Runway
- Runway Excursion/ARC

## 1 States' Safety Oversight capabilities

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



## 2 Safety Management

Implementation of SSP is one of the main challenges faced by the State in the MID Region



## 3 Human Factors and Competence of Personnel

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



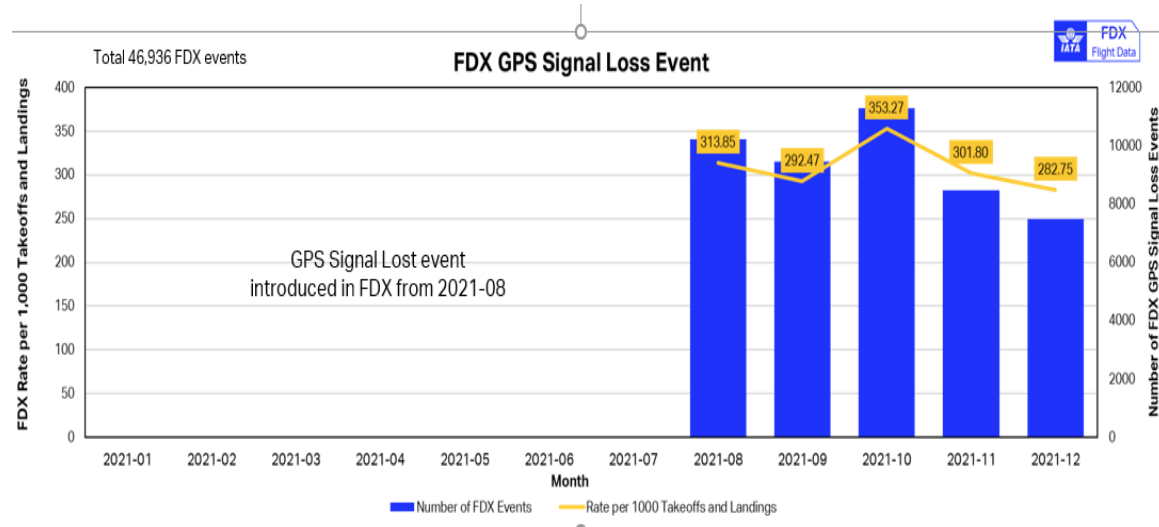
## 4 Cybersecurity

Mange the cybersecurity risks



## 1. GNSS/GPS vulnerability

- 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).





## MID RPTF Framework & Composition



**Public Health  
Requirements**



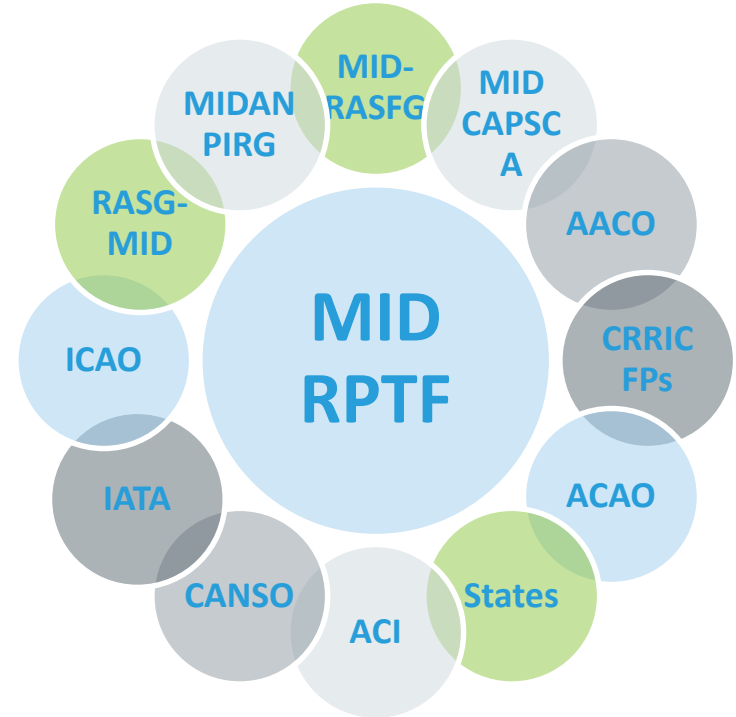
**Operational Safety  
Measures**



**Aviation Security &  
Facilitation**



**ANS/ATM**



## 3. Ensure the Safe Operations of UAS (drones)

- 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



## 4. Impact of Security on Safety

- 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.



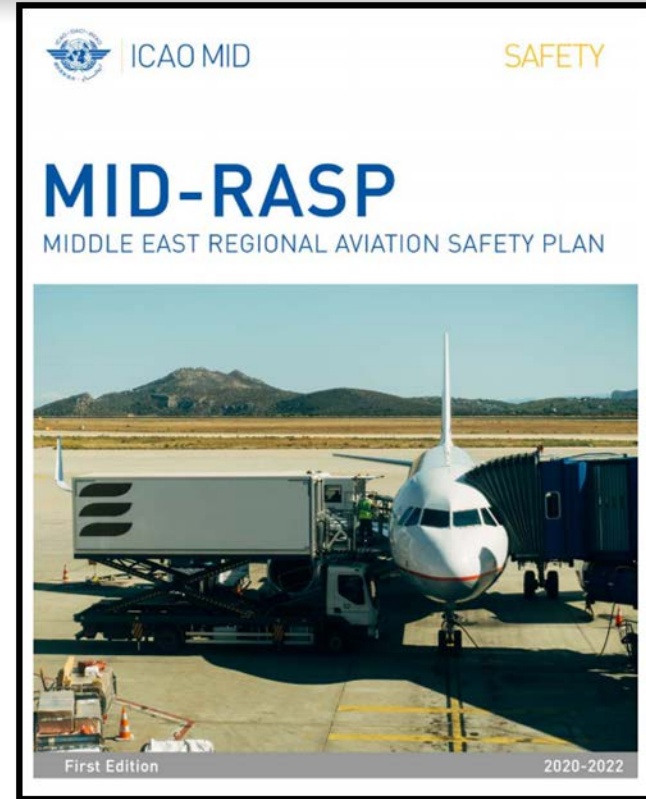
PS 752: Accident site scheme







- The Middle East Regional Aviation Safety Plan (MID-RASP) 2020-2022 Edition considers and supports the objectives and priorities of GASP 2020-2022 Edition.
- MID-RASP also emphasizes the importance of identifying and mitigating risks at MID region level.
- MID-RASP is to create a common focus on regional aviation safety issues as a continuation of the MID region work to improve aviation safety





## Organizational Challenges/Issues

States' Safety Oversight

Safety Management

Human Factors &  
Competence of personnel

Accident and incident  
investigation

## Regional Operational Safety Risks-CAT Aeroplane

LOC-I

CFIT

RE

RI

MAC

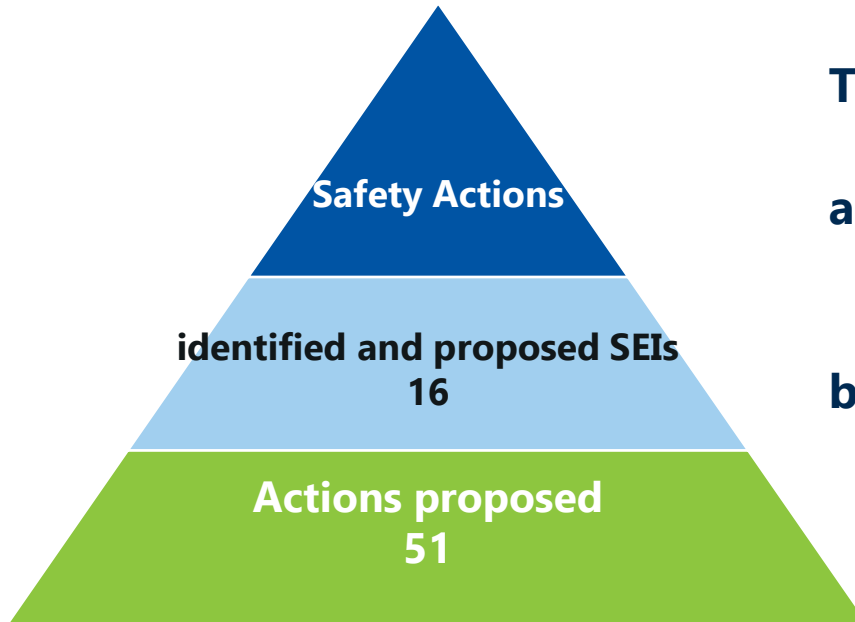
## Emerging Risks

COVID-19 Pandemic  
Outbreak

GNSS Outages/  
Vulnerability

Civil Drones (UAS/ RPAS)

Impact of security on  
safety



To address:

- a. Regional operational risks: 6 SEIs & 17 actions
- b. Organizational issues and emerging risks: 11 SEIs and 33 actions

## 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 outbreak
- GNSS/GPS Vulnerability
- Ensure Safe ops of UAS (Drones)
- Impact of security on safety

### 11<sup>th</sup> MID Annual Safety Report Draft



SAFETY

### MID Region Annual Safety Report



11<sup>th</sup> Edition  
Reference Period (2017 - 2021)

2022



## 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).



## Challenges

**01 Challenge:** Low level of safety information, analysis and safety recommendations shared by States (confidentiality concerns); and



1. Review and update as deemed necessary, the Draft version of the 11th MID-ASR at Appendix C, in order to be presented to the RASG-MID/10 meeting for endorsement;

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2. Encourage States and all Stakeholders to provide necessary safety data analysis and safety information to the MID-ASRG for the development of the next Edition of the Annual Safety Report; and

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3. Endorse the following Draft Conclusion:

## ***DRAFT CONCLUSION 4/1: SHARING OF SAFETY DATA ANALYSIS***

States are encouraged to provide ICAO MID Office by April 2023 with the number of accidents, serious incidents and incidents, safety data analysis, and their associated safety recommendations related to each occurrence category in Appendix A for the past 5 years (2018 – 2022) and using the template in Appendix B



## 4

### Future work Programme

The meeting may wish to note that the ASRG/5 meeting is planned to be held virtually July 2023.

#### Action by the Meeting

The meeting is invited to agree on the dates and venue of the ASRG/5 meeting.





**AOB**

Any other Business



THANK YOU!