National aviation Safety Plan

Civil Aviation Authority I.R. of Iran
(CAA.IRI)

SEIG/5 - Qatar(Oct 2023)

OUTLINES

- Structure of National Aviation Safety Plan-Iran
- NASP Development Process
- Self evaluation
- Challenges - Safety Oversight
- Challenges - SSP & SMS
- Operational Safety Risks
- Emerging Risks
- Challenges in NASP development

The Iran NASP link to the GASP and Mid-Rasp

GASP

Mid-RASP

IASP (NASP)

Structure of National Aviation Safety Plan-Iran

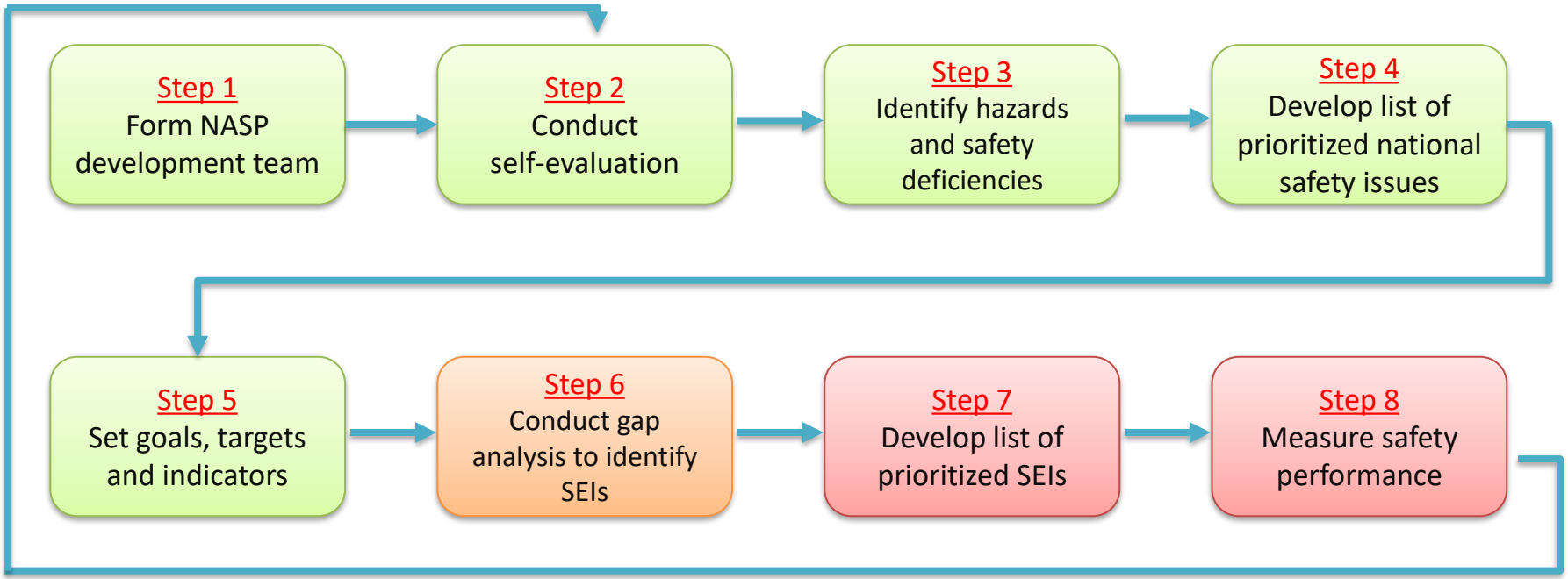
The first version of the NSP document presents a strategy for enhancing the safety of Iran's aviation industry over a three-year period (2024-2026).

The structure of this document includes:

- **The purpose of the NASP**
- **Iran’s strategic approach to managing aviation safety,**
- **The Iran operational safety risks identified for the 2024 to 2026**
- **Safety issues addressed in the NASP**
- **description of how the implementation of the safety enhancement initiatives (SEIs) listed**

NASP development process

The key contents of the MID-RASP were developed using a eight-step process recommended by the GASP to develop RASPs and NASPs, like the Plan-Do-Check-Act (PDCA) continuous improvement cycle, as follows:



Self Evaluation

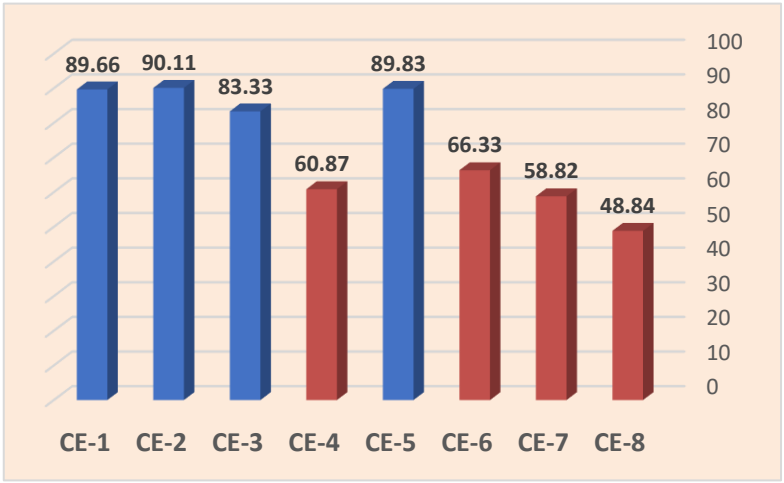
The process for developing the NASP begins with an evaluation of the current situation in the State to obtain an understanding of its operational context; this activity is referred to as a self - assessment.

- **Identifies hazards and safety deficiencies; these include:**
  - **Organizational challenges (Safety oversight-SSP-SMS)**
  - **Operational safety risks**
  - **Emerging risks**

Organizational Challenges

ICAO Audit Report 2022

Not Satisfactory PQs by Audit Area and Critical Element (CE)



	LEG	ORG	PEL	OPS	AIR	AIG	ANS	AGA
CE-1	1					1		1
CE-2			2	1	4	1	1	
CE-3		1	1	2	1	3	1	1
CE-4			4	3	2	2	6	1
CE-5				7	3	2		
CE-6			3	19	10		3	32
CE-7			4	11	3		16	8
CE-8			4	5	4	2	7	

EI:73.40%

ORG-Challenges

Challenges- Safety oversight

According to the ICAO audit report in 2022, the shortage of Critical Elements (CEs) and the Areas is as follows:

1. Critical Elements (CEs):

- **CE-4 (Qualified technical personnel)**
- **CE-6 (Licensing, certification, authorization and approval obligations)**
- **CE-7 (Surveillance obligations)**
- **CE-8 (Resolution of safety Issues)**

2. Areas:

- **OPS (Air Operation)**
- **AGA (Aerodromes and ground aids)**
- **ANS (Air navigation services)**
- **AIR (Airworthiness of aircraft)**

ORG-Challenges

Challenges- Safety oversight

3. Difficulty establishment an independent Accident and Incident Investigation Authority (AIIA).

4. Lack of qualified human resources (CE-4) to Implementation licensing, certification, authorization and approval processes, supporting accident and incident investigations, Implementation of surveillance programs(CE-7) and follow up CAP for the resolution of those safety issues (CE-6 to CE-8).

ORG-Challenges

Challenges- SSP & SMS

5. Lack of effective safety oversight, difficulties in implementing SSP.

6. The lack of development and implementation of safety management system regulations for some aviation service providers(Part 145 and Part 21).

7. The lack of implementation of safety data collection and processing systems (SDCPS) to capture, store, aggregate and enable the analysis of safety data and safety information to support their safety performance management activities.

ORG-Challenges

Challenges- SSP & SMS

8. ECCAIRS 2:

The European Co-ordination center for Accident and Incident Reporting Systems (ECCAIRS) is one of the essential tools for collecting safety data in Iran, which has been in use since 2006. During this period, software updates, offline forms, and extensions have been regularly updated through the respective website. However, for over two years now, there has been no access to update this system, leading to issues in data collection. This matter has been previously reported to the relevant authority(EASA) and regional offices, but no solution has been provided so far.

Islamic Republic of Iran
Civil Aviation Authority

Date: 28 June, 2023
Number: 2412021570

Mr. Mohamed Abubaker Farea
ICAO Middle East Office Regional Director
Email: icaomid@icao.int

Subject: ECCAIRS FOCAL POINTS

Dear Mr. Farea,

Hereby we would like to draw your attention that CAA.IRI has required aviation stakeholders to provide safety related reports through mandatory occurrence reporting system since 2006 according to ICAO SARPS.

There were opportunity to modify and update ECCAIRS software (software-extension-offline form) through http://eccairsportal.jrc.ec.europa.eu for many years; but upon ECCAIRS 2 establishment, we failed to have access to the Central Hub; therefore all related information and requirements were transferred to "e2.aviationreporting.eu" website, meanwhile we encountered with significant issues as there is not any possibility to update and promote related CAA.IRI ECCAIRS software system.

We would appreciate if you require related officials to provide us with "ECCAIRS 2 Central Hub" membership and the method to get advantages from latest updates related files and information.

For future coordination, contact details of CAA.IRI focal points are presented in following table:

Member	Alternate	Advisor
Mr. Mehdi Barattoo Director General Safety and Quality Assurance Department Fax: +9821 44659366 Tel: +9821 44659366 Mobile: +98 9123712371 E-mail: m-barattoo@caa.gov.ir safety@caa.gov.ir	Mr. Mahi Adinehvia Chief Expert of Safety and Quality Assurance And alternate NCMC Mob: +989125771909 Tel: +982144659366 Fax: +982166078700 Ext.450 Email: adineh@caa.gov.ir	Mr. Jaber Azhari Head of Data Analyzing Team Fax: +9821 44659366 Tel: +9821 44659366 Mobile: +98 9122246778 E-mail: j. azhari@caa.gov.ir safety@caa.gov.ir

ORG-Challenges

Operational Challenges

Operational Safety Risks

Globally and regionally, there are five high risk categories that have been identified as key safety priorities. Based on the number of accidents and the number of fatal accidents related to the mentioned risks that occurred in the Iran civil aviation industry from 2015 to 2022, these risks have been prioritized in the NASP.

Commercial air transport occurrences in IRAN				
Year	Fatal accidents	Non-fatal accidents	Accidents	Fatalities
2015-2022	1-> CFIT 1-> SEC & LOC-I	11	13	242

Occurrences involving commercial air transport aircraft registered in States other than IRAN		
Year	Fatal accidents	Non-fatal accidents
2015-2022		1

OPS- safety risks

Operational Safety Risks

In addition , there are two safety risks of relevance to the IRAN aviation industry . These safety risks were identified based on data and information from the IRAN Safety Data Collection, which include information from mandatory and voluntary reports, accident and investigation reports, IRAN's safety performances and trends, and industry engagements.

These risks are:

a. SECURITY related (SEC)

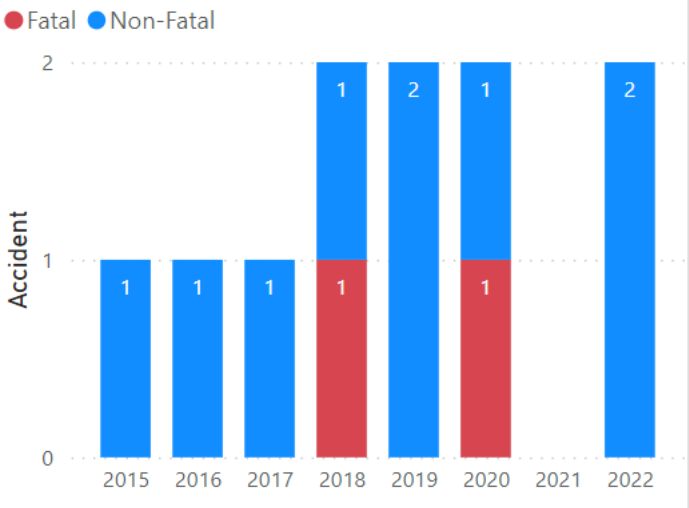
b. Fire-Inflight

Priority	Occurrence Category
1	Controlled flight into terrain (CFIT)
2	Loss of control in-flight (LOC-I)
3	SECURITY RELATED(SEC)
4	Mid-air collision (MAC)
5	Runway excursion (RE)
6	Runway incursion (RI)
7	Fire-Inflight

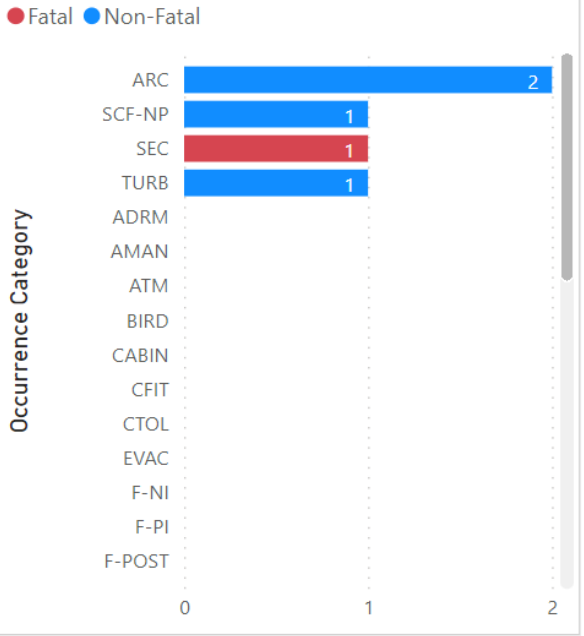
OPS- safety risks

Operational Safety Risks

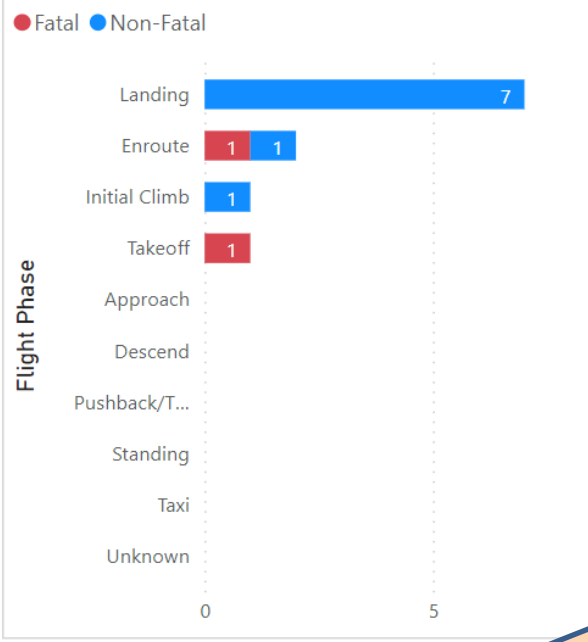
Accident by Year for Iran (Islamic Republic of)



Accidents by Occurrence Category



Accidents by Flight phase



OPS- safety risks

Operational Safety Risks

No.	Occurrence Category	Priority
1	Controlled flight into terrain (CFIT)	High
2	Loss of control in-flight (LOC-I)	High
3	SECURITY RELATED(SEC)	High
4	Mid-air collision (MAC)	High
5	Runway excursion (RE)	High
6	Runway incursion (RI)	High
7	Fire-Inflight	low

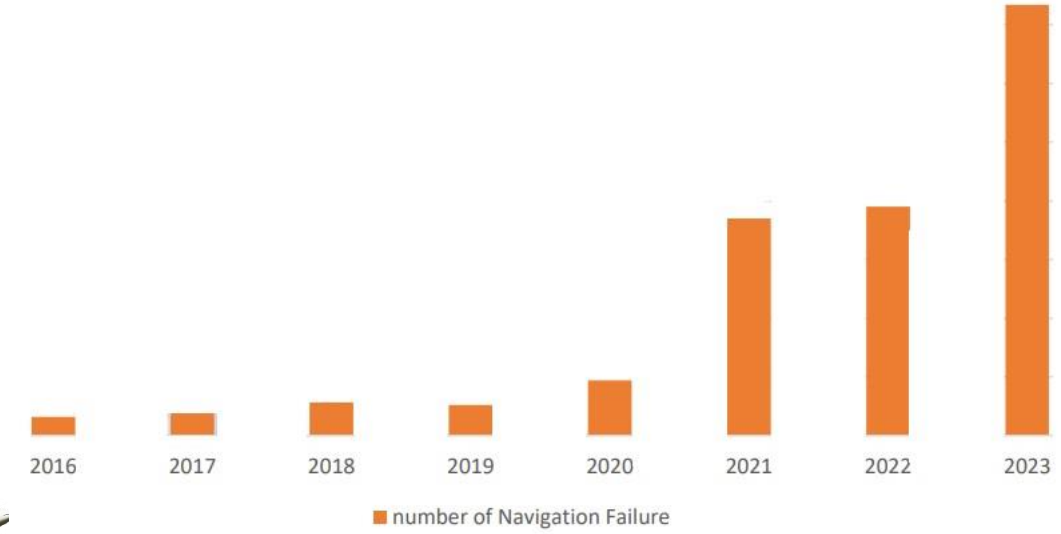
It is prioritized based on severity and probability

Emerging Risk

Emerging Risks

1. Navigation error / GPS Failure / False EGPWS / GNSS (NAV)

Based on the reports received through the ECCAIRS system, we had a lot of events.(2016-2023) related to navigation error.



Emerging risks

2. RPAS

- **Frequency Interference**: In cases where more than one drone operates in a single area, frequency interference may occur, leading to a reduction in the efficiency and safety of flights.
- **Congestion Issues**: In densely populated areas with heavy air traffic, the use of drones may encounter **issues related to airspace congestion**, **requiring precise flight management**.

It is worth mentioning that the Remotely Piloted Aircraft Systems (RPAS) operations are strictly limited to domestic operations and are not envisaged to conduct international operations.

Emerging risks

3. Laser Attack (Interferences)

Laser attacks on the cockpit are a serious issue and can cause significant disruption to the operational activities of aircraft.
These types of attacks can potentially harm the pilot's eyes, as well as lead to loss of focus and vision problems during flight .

We have received four reports(2022-2023) regarding laser attacks that have disrupted the operational activities in the cockpit.

Emerging risks

An overview of identified challenges

An Overview of Identified Challenges

Category Name	Relevant Challenges
ORG-Challenges	Difficulty Establishment an independent accident and incident investigation authority
	Lack of qualified human resources (CE-4) to Implementation licensing, certification, authorization and approval processes, supporting accident and incident investigations, Implementation of surveillance programs (CE-7) and follow up CAP for the resolution of those safety issues (CE-6 to CE-8).
	The European Co-ordination Center for Accident and Incident Reporting Systems (ECCAIRS 2).
	The lack of development and implementation SMS regulations for some aviation service providers (Part 145 and Part 21).
	The lack of effective implementation and execution of safety data collection and processing systems (SDCPS) to capture, store, aggregate and enable the analysis of safety data and safety information to support their safety performance management activities.

An Overview of Identified Challenges

Category Name	Relevant Challenges
OPS- safety risk	Controlled flight into terrain (CFIT)
	SECURITY related (SEC)
	Loss of control in-flight (LOC-I)
	Mid-air collision (MAC)
	Runway excursion (RE)
	Runway incursion (RI)
	Fire-Inflight
Emerging risks	Navigation error / GPS Failure / False EGPWS / GNSS (NAV)
	RPAS
	Leaser Attack

Goals , Targets , Indicators

Goal	Target		Indicators
Goal 1: Achieve a continuous reduction of operational safety risks	**1.1**	I.R. of Iran maintain a decreasing trend of the national accident rate.(Especially Events Related to High-Risk Categories)	Number of accidents Rate of accident per 10,000 departures. Number of fatal accidents Rate of fatal accident per 10,000 departures. Number of fatalities per passengers carried (fatality rate) Percentage of occurrences related to high risk categories (HRCs)
Goal 2: Strengthen safety oversight capabilities of I.R. of Iran	**2.1**	Improve its score for the effective implementation (EI) of the critical elements (CE4-CE6-CE7-CE8) of the State's safety oversight system (with focus on priority PQs) as follows: by 2025 – 85 per cent by 2030 – 95 per cent	• percentage of effective implementation(EI) of the critical elements • Percentage of fully implementation the priority PQs • Percentage of required corrective action plans (CAPs) submitted (OLF) • Percentage of completed CAPs per State (using OLF)

Goal	Target		Indicators
Goal 2: Strengthen safety oversight capabilities of I.R. of Iran	**2.2**	Encourage to increase the number of IOSA registered Iranian airlines and ISAGO registrations.	The number of Iranian airlines registered in IOSA and ISAGO registration.
	2.3	I.R. of Iran to reach a safety oversight index greater than 1 in all categories by 2025.	safety oversight index
Goal 3: Fully implement effective State safety program (SSP)	**3.1**	I.R. of Iran to implement the foundation of its SSP by the end of 2024.	Foundational SSP PQs self-assessment (%)
	3.2	Publication of the National Aviation Safety Plan(NASP) by the end of 2024.	Implementation of strategy items included in the NASP(DOC10131)
	3.3	Establish and implementation SMS regulations for aviation service providers Part 145 and Part 21 by the end of 2024.	Progress percentage of Regulation development and Implementation
	3.4	Updating Accident and Incident Reporting Systems (ECCAIRS).	Progress percentage of Updating Accident and Incident Reporting Systems (ECCAIRS).
	3.5	Establishing and implementation efficient safety data collection and processing systems(SDCPS).	Progress percentage of Establishing and implementation SDCPS

Goal	Target		Indicators
Goal 4: Increase collaboration at the regional level	**4.1**	I.R. of Iran to use a regional safety oversight mechanism, another State or other safety oversight organization to strengthen their safety oversight capabilities .	Implementation of safety monitoring mechanisms of other countries and international organizations as best practice.
	4.2	I.R. of Iran to contribute information on safety risks, including SSP Safety Performance Indicators (SPIs), to Middle East aviation safety group (MID- RASG) by 2025.	Regional engagement activities conducted by IRAN
	4.3	I.R. of Iran to actively lead RASGs' safety risk management activities with effective safety oversight capabilities and an effective SSP by 2025.	Regional engagement activities conducted by IRAN
	4.4	I.R. of Iran to encourage the increased participation in flight data sharing initiatives by air operators, with aircraft of mass 27,000kg above by 2025.	The number of air operators who shared their flight data.

Goal	Target		Indicators
Goal 5: Expand the use of industry programs	**5.1**	All service providers in I.R. of Iran to use globally harmonized SPIs as part of their safety management system (SMS) by 2025..	Number of service providers using globally harmonized metrics for their SPIs.
	5.2	Encourage to increase the number of service providers participating in the corresponding ICAO-recognized industry assessment programs by 2025.	Number of service providers participating in the corresponding ICAO-recognized industry assessment programmes
Goal 6: Ensure the appropriate infrastructure is available to support safe operations	**6.1**	I.R. of Iran to implement air navigation and airport core infrastructure by 2025.	Implementation status of ANS and Airport core infrastructure elements.
	6.2	I.R. of Iran to achieve at least 85% EI in AGA of USOAP CMA by 2025.	Iran's EI score in AGA
	6.3	I.R. of Iran to certify all aerodromes that are used for international operations by 2025.	Number/percentage of certified aerodrome that are used for international operations.

Challenges in NASP Development

Challenges in NASP Development

1. **Develop regulations for implementing a safety management system(SMS):**

Due to the absence of safety management system regulations in Part 145 and Part 21, all stakeholders have not implemented the safety management system.

Challenges in NASP Development

2. Data Collection and Analysis:

Currently, there is no integrated system for collecting and analyzing data in accordance with defined standards.

This has led to the loss of some information and a lack of proper data analysis. It is worth noting that the development of this system is in progress, and its full implementation will be time-consuming.

Challenges in NASP Development

3. Lack of qualified human resources:

A lack of qualified human resources has resulted in inadequate supervision and follow-up on the implementation of safety management system requirements across various sectors of the aviation industry (OPS, ADR, PEL, …).

Challenges in NASP Development

4.Lack of Training:

Due to insufficient training, some service providers lack a proper understanding of the components involved in implementing a safety management system.

Furthermore, some auditors and inspectors do not have a proper understanding of the concepts and maturity levels of the SSP.

Challenges in NASP Development

5. Lack of coordination and adequate collaboration:

The lack of proper cooperation and coordination with Stakeholders and internal offices has caused problems in collecting Safety data and information, and it has also made it difficult to access some safety data.

Thank You!

Qatar

Oct.2023