

National Aviation Safety Plan 2021-2023 Bangladesh



Civil Aviation Authority of Bangladesh

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FOREWORD BY CHIEF EXECUTIVE

Welcome to the first edition of the Bangladesh National Aviation Safety Plan (NASP) issued by the Civil Aviation Authority of Bangladesh (CAAB) on behalf of the State. This NASP is being issued at a time when the State is overcoming the devastating effects of the COVID-19 pandemic. Pursuant to its commitment, CAAB is continuously moving ahead in the face of new challenges and has always put the safety and security in aviation's top priority.

The NASP is a master planning document containing the strategic direction of a State for the management of aviation safety for a set time period. Bangladesh is committed to enhancing aviation safety and to the resourcing of supporting activities. The NASP reaffirms Bangladesh's commitment to the ICAO Assembly Resolution A40-1, consistent with vision, goals and targets of the Global Aviation Safety Plan (GASP). In a bid to harmonize the NASP of the individual States, ICAO has suggested that the States draw their NASPs in line with the Regional and Global Aviation Safety Standards.

The purpose of the NASP is to identify the actions taken at State level to address the main safety issues in civil aviation in Bangladesh and to drive continuing improvements in aviation safety performance in Bangladesh, through the development and implementation of a national aviation safety strategy align with the Standards of ICAO Annex 19, ICAO Global Aviation Safety Plan 2020–2022 (GASP, Doc 10004) and the Asia Pacific Regional Aviation Safety Plan 2020–2022 (AP-RASP).

The NASP has been developed based on the operating environment and risks in the context of Bangladesh. The NASP presents the national strategic direction for the management of aviation safety for the period 2021 to 2023. The safety enhancement initiatives by Bangladesh not only support the improvement of safety domestically, but within the Asia-Pacific region and globally.

In developing the NASP due cognizance has been taken on the following factors:

- Risk assessment and mitigation of new safety risks introduced by COVID-19 on both the regulator and regulated entities, and on-going re-assessment of the risks as the pandemic persists longer than initially anticipated into 2021.
- The provision of regulatory support to the aviation industry as necessary to ensure continued operations for essential reasons based on acceptable safety cases (eg exemptions, extensions and alternative means of compliance).

The COVID-19 pandemic provided one of the greatest challenges at Global and National levels, thus requiring the States and the Industry to resort to mechanisms which are in harmonization within the Region and Globally. Returning to normal operations in a post COVID-19 situation is the biggest endeavor for civil aviation and keeping this in mind this version of the NASP has been drawn to identify and provide remedies to address the main safety issues, including management systems and risk assessments.

The NASP is a living document and will continue to evolve in a proactive manner to address the known operational risks and the risks emerging from new technologies and operating concepts. The CAAB will continue to work with stakeholders in the civil aviation system to help identify and mitigate the risks and to strive for continuous improvement in aviation safety.

The NASP is subject to ongoing maintenance aligned to the review, development and publication of the GASP, the AP-RASP and the SSP.

Air Vice Marshal Md Mafidur Rahman
Chairman
Civil Aviation Authority of Bangladesh
(Bangladesh SSP-Accountable Executive)

EXECUTIVE SUMMARY

The National Aviation Safety Plan (NASP) is the master planning document containing the strategic direction of a State for the management of aviation safety for a set time period. This plan lists national safety issues, sets national aviation safety goals and targets, and presents a series of safety enhancement initiatives (SEIs) to address identified safety deficiencies and achieve the national safety goals and targets.

Pursuant to the ICAO Assembly Resolution A40-1, each State should develop a National Aviation Safety Plan in line with the 2020-2022 edition of the GASP goals, targets and high-risk categories (HRCs) of occurrences. The NASP is the means to demonstrate commitment by the State for the implementation of activities leading to improvement of safety in the State.

Bangladesh has not yet implemented a State Safety Programme (SSP). However, a draft SSP has been developed and is awaiting approval. Keeping this in view the NASP is guided primarily by the GASP and the Asia/Pacific regional aviation safety plan (AP-RASP) so that Bangladesh can use the GASP and AP-RASP to identify and manage operational safety risks. The NASP includes action plans to address organizational challenges and enhance organizational capabilities.

The NASP is being developed at a time when Bangladesh is slowly returning to normal Air Transport operation after successfully handling the devastating effects of the COVID-19 Pandemic. Maintaining high standards in safety will be of paramount interest in restoring passenger confidence. At the same time Bangladesh should also allow the projected growth in aviation to be utilized in a safe and sustainable way, and that we strengthen our safety oversight capabilities.

For several years Bangladesh has shown its strong commitment to continuously improve its capabilities in the management of aviation safety and proper resource management at the national level and as well as in international levels through active participation in ICAO, FAA and EASA forums. The National Aviation Safety Plan which details the national strategic direction for the management of aviation safety for the period 2021 to 2023 has been developed keeping in view the State obligations under ICAO Assembly Resolution A 40-1.

The NASP document is also an effective means of safety promotion as it provides a reference for safety planning by service providers in the State. The Plan includes actions to provide greater opportunity for collaboration and information sharing between the CAAB (as responsible party for implementing the SSP and NASP), and service providers responsible for implementing their SMS. This closer collaboration will provide opportunity for co-ordinated effort by the total aviation system to improve aviation safety.

The NASP establishes Bangladesh's safety goals, targets and initiatives consistent with the International Civil Aviation Organization's Global Aviation Safety Plan (GASP, Doc 10004) and the Asia Pacific Regional Aviation Safety Plan (AP-RASP). The NASP is subject to a triennial review cycle.

The six aviation safety goals of Bangladesh for 2021–2023 are to:

1. achieve a continuous reduction of operational safety risks;
2. strengthen the Bangladesh's safety oversight capabilities;
3. implement an effective State Safety Programme (SSP);
4. increase collaboration at regional level;
5. expand the use of industry safety programmes by service providers; and
6. ensure Bangladesh has the appropriate aviation infrastructure to support safe operations.

To achieve these goals, Bangladesh has developed operational and organisational roadmaps' (action plans) comprising a range of defined safety enhancement initiatives and actions. Success will be measured against accompanying safety performance indicators and targets.

THE BANGLADESH NATIONAL AVIATION SAFETY PLAN

SECTION 1. INTRODUCTION

1.1 Overview of the NASP

Safety is always the primary consideration of Bangladesh Government aviation agencies to ensure continued confidence in our aviation industry. This first edition of the National Aviation Safety Plan (NASP) demonstrates Bangladesh's commitment to the implementation of activities for the improvement of safety and presents the national strategy and roadmap of actions for enhancing aviation safety for the period 2021 to 2023. It identifies initiatives that are being undertaken to reduce the risks associated with aviation operations in Bangladesh, and details the strategic direction for the management of aviation safety in the short, medium and long term.

While the NASP is based on Bangladesh's operating environment and risks, it is strategically aligned with the International Civil Aviation Organization's (ICAO) Global Aviation Safety Plan 2020–2022 (GASP) and the Asia Pacific Regional Aviation Safety Plan 2020–2022 (AP-RASP), in recognition that aviation activities are global in nature.

The NASP is subject to ongoing maintenance aligned to the review, development and publication of the GASP, the AP-RASP and the Bangladesh SSP.

1.2 Purpose of the NASP

The NASP is the master planning document containing the strategic direction of Bangladesh for the management of aviation safety for a period of 3 years (2021 to 2023). This plan lists national safety issues, sets national aviation safety goals and targets, and presents a series of safety enhancement initiatives (SEIs) to address identified safety deficiencies and achieve the national safety goals and targets.

The purpose of the NASP is to identify the actions taken at State level to address the main safety issues in civil aviation and to drive continuing improvements in aviation safety performance in Bangladesh.

The NASP has been developed using international safety goals and targets and HRCs from both the GASP (www.icao.int/gasp) and the Asia/Pacific Regional Aviation Safety Plan (AP-RASP). The SEIs listed in the NASP support the improvement of safety at the wider regional and international levels and include several actions to address specific operational safety risks and recommended SEIs for Bangladesh's set out in the AP-RASP (<https://www.icao.int/APAC/RASG/Pages/default.aspx>). Bangladesh has adopted these SEIs and has included them in this plan. Cross-references are provided to the AP-RASP for individual SEIs where relevant.

Implementing this NASP satisfies Bangladesh obligations under ICAO Assembly Resolution A40-1, which recognises the importance of effective national aviation safety planning consistent with the vision and goals of the GASP.

1.3 Structure of the NASP

This NASP outlines the national strategy for enhancing aviation safety for a period of 3 years. It comprises six sections. In addition to the introduction, sections include: Challenges and priorities in safety planning, Bangladesh's strategic approach to managing aviation safety, the national operational safety risks identified for the period 2021 to 2023 of the NASP, other safety issues addressed in the NASP, and a description of how the implementation of the safety enhancement initiatives (SEIs) listed in the NASP is going to be monitored.

1.4 Relationship between the NASP and the Bangladesh State Safety Programme (SSP)

This NASP addresses operational safety risks identified in the ICAO GASP and the AP-RASP in the absence of Bangladesh State Safety Programme (SSP). Bangladesh is committed to fully implement an SSP by 2025. The SSP comprises processes and activities that, drawn together, provide for proper oversight and management of aviation safety at the State level. Initiatives listed in this NASP address organizational challenges and aim to enhance organizational capabilities related to effective safety oversight.

A State Safety Programme (SSP) is defined by ICAO as an integrated set of regulations and activities aimed at improving safety. The SSP sets out how Bangladesh identifies, monitors and maintains the effectiveness of its aviation safety performance, and sets key safety principles that underpin the system. This NASP complements the SSP. The NASP is the continuous improvement element of the Bangladesh SSP. It prioritises initiatives that aim to enhance aviation safety by identifying strategies and actions to reduce specific risks.

The NASP reaffirms Bangladesh commitment to aviation safety, and seeks to ensure initiatives are appropriately managed and resourced. For each safety initiative, the NASP clearly defines responsibilities, accountabilities, timelines and deliverables, whilst ensuring alignment to GASP and AP-RASP requirements.

1.5 Responsibility for the NASP development, implementation and monitoring

The Civil Aviation Authority of Bangladesh (CAAB) is responsible for the development, implementation and monitoring of the NASP to support the SSP, in collaboration with the following Stakeholders, including CAAB’s own service providers, AAIC-BD under the Ministry of Civil Aviation and Tourism, Bangladesh Air Force (BAF), Bangladesh Meteorological Department (BMD), Approved Training Organizations (e.g. ATOs, Bangladesh Flying Schools), Approved Maintenance Organizations (AMOs) and with the national aviation industry. The NASP was developed in consultation with national operators and other stakeholders, and in alignment with the 2020-2022 edition of the GASP and the AP-RASP.

Bangladesh SSP provides for working groups that are responsible for the development, implementation and function of the SSP, including monitoring progress against national SEIs. The SSP-Coordination Group (SSP-CG) in coordination with other SSP-WG, which are responsible for the practical development and implementation of the SSP and NASP. The overall function and responsibility of each SSP working group is defined in Section 1.4.4 and Appendix 1 of the SSP.

1.6 Bangladesh National safety issues, goals and targets

The aviation system in Bangladesh is rapidly changing in light of economic, social and technological developments. Bangladesh adopts a proactive approach to identify emerging aviation trends and associated hazards where possible, and assess risks and implement effective mitigation strategies. High Risk Categories (HRCs) – Operational Safety Risks are identified by ICAO:

Global HRCs (GASP)	Regional HRCs (AP-RASP)
1. Controlled flight into terrain (CFIT)	1. Runway safety – Runway incursion (RI)/Runway excursion (RE) – Hard landings, Tail strikes on landing.
2. Loss of control in-flight (LOC-I)	2. Loss of control in-flight (LOC-I)
3. Mid-air collision (MAC)	3. Ground collision (GCOL)
4. Runway excursion (RE)	
5. Runway incursion (RI)	

Although Bangladesh has experienced a very low rate of GASP HRC occurrences over the past decade, has an excellent air safety record and an effective regulatory system, all GASP HRCs remain relevant to Bangladesh aviation. In this context, Bangladesh will actively manage these HRCs, by implementing strategies to seek to further reduce the rate of incidents and accidents.

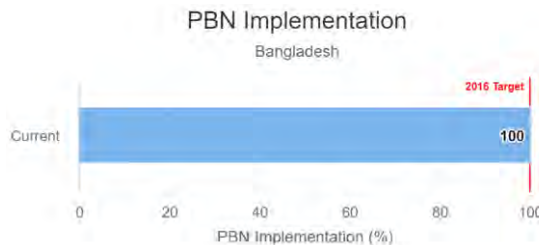
The NASP addresses the following national safety issues:

- 1) Loss of control in-flight (LOC-I);
- 2) Runway safety¹ – Runway incursion (RI)/Runway excursion (RE);
- 3) Controlled flight into terrain (CFIT);
- 4) Mid-air collision (MAC);
- 5) Safety of Ground Operations (GCOL/RAMP);
- 6) Bird and Wildlife strikes.

To address the issues listed above and enhance aviation safety at the national level, the 2021-2023 NASP contains Bangladesh safety goals and targets (e.g. SPIs and SPTs) is at Table 1 in Section 3.

1.7 Operational Context

Certification of international aerodromes has been raised to a global, regional and national priority. There are 3 certified aerodromes in Bangladesh, including 3 international aerodromes.



The implementation of Performance-based Navigation (PBN) is presently the global aviation community's highest air navigation priority. Bangladesh's international airports have 4 instrument runways which have 4 PBN approaches. This establishes the PBN implementation at 100% for Bangladesh.

There are currently around 20 air operator certificates (AOCs) issued by Bangladesh, and of those there are 6 issued to operators conducting international commercial air transport operations. Bangladesh also has 6 operators, which operate domestic air taxi services, primarily on turboprop aircraft, as well as 10 helicopter operators. There are no heliports in Bangladesh at this moment. However, there are around 300 helipads in Bangladesh.

The airspace of Bangladesh is classified as Class B, C, D, E, F and G.

The Air Transport Statistics of Bangladesh over the period of 2013 to 2018 is shown below based on iSTAR data.



In 2018, Bangladesh had approximately 60140 scheduled commercial departures. This is an increase of 9.5 % from 2017. During the last 5 years, departures have increased on average by 15.6 % annually.

46% of departures are international and 24.2% are regional within RASG-APAC. 34.9% of international departures were performed by operators from Bangladesh. The majority were conducted by Biman Bangladesh Airlines.

1. Runway safety is considered runway incursions and runway excursions.



Bangladesh has 3 international airports. Of these, the highest number of scheduled departures in 2018 was Hazrat Shahjalal Intl, Dhaka with approximately 39347 departures. This airport handled 65.4% of all scheduled commercial departures in 2018.

In the context of SSP implementation, Bangladesh has an overall SSP foundation of only 63.6% Bangladesh is at level 1, meaning that SSP Gap Analysis is in progress. Bangladesh is familiar with using the SSP Gap Analysis tool on iSTARS to perform SSP GAP analysis, define action plans and benchmark their progress.

In the context of Safety Partner Programmes, Bangladesh has no operational restrictions with regard to European airspace. Bangladesh has one airline (Bangladesh Biman) certified through the IATA Operational Safety Audit (IOSA) programme. However, Bangladesh is rated as Category² by the Federal Aviation Administration (FAA) through their International Aviation Safety Audit (IASA) programme.

SECTION 2. CHALLENGES AND PRIORITIES IN SAFETY PLANNING

2.1 Global challenges and priorities

The GASP outlines the safety challenges and priorities that ICAO considers to be of concern to the international aviation community, identified on the basis of safety data collected from proactive and reactive activities.

In response to these challenges, ICAO develops and prioritises global SEIs to reduce the risk associated with aviation activities. The GASP identifies two broad categories of challenges and associated initiatives that States are required to address through a NASP and SSP.

2.2 Global organisational challenges

Organisational challenges are systemic issues concerning organisational culture, policies and procedures on the effectiveness of safety risk controls. Organisations can include State aviation agencies and service providers (including ATM services providers, aerodrome operators and aircraft operators). ICAO has identified effective safety oversight and effective safety management as requirements to addressing organisational challenges.

2.3 Global operational safety risks

Operational safety risks arise during the delivery of a service or the conduct of an aviation activity. The GASP has identified five High Risk Categories (HRCs) of occurrences based on global fatalities, fatality rates and the number of accidents and incidents.

1. Controlled flight into terrain (CFIT);
2. Loss of control in-flight (LOC-I);
3. Mid-air collision (MAC);
4. Runway excursion (RE); and
5. Runway incursion (RI).

The GASP has detailed specific ‘roadmaps’ (action plans) on organisational challenges and operational safety risks to support States in achieving the GASP goals.

Given global health crisis events in 2020, ICAO have recognised and responded to the many challenges that the global aviation community has to face in relation to the COVID-19 crisis. ICAO established the Council Aviation Recovery Task Force (CART) in response to COVID-19 to partner with Member States, international and regional organizations, and industry to address the challenges presented by COVID-19. CART has provided initial global guidance for a safe, secure and sustainable restart and recovery of the aviation sector, through the CART Report recommendations and Take-off guidance material.

In 2021 CART produced its Phase 3 report with a specific recommendation that States should put in place the necessary measures to mitigate risks associated with prolonged alleviations and should not extend alleviations (both core and extended COVID-19 Contingency Related Differences) beyond 31 March 2021.

2.4 Regional challenges and priorities

The diversity of the APAC region, coupled with the severe operational and financial impacts on the aviation industry as a result of the COVID-19 pandemic, and the expected gradual recovery in aviation activity in the region, poses significant challenges for regional aviation safety. A full analysis of safety trends impacting the APAC region is detailed in the Asia Pacific Annual Safety Report published annually by the RASG-APAC. The RASG-APAC, through the 2020–2022 AP- RASP has established the following regional goals:

1. Reduce operational risks;
2. Improve States’ safety oversight and compliance;
3. Implement effective SMS and SSP;

4. Move towards data-driven regulatory oversight; and
5. Enhance aviation infrastructure.

In addition, the RASP Organisational Roadmap also includes the challenges of an increasingly complex aviation system, an increased need for capability and capacity building, and the limited collection of and use of safety data for decision-making. Challenges concerning the fast growth in air traffic volumes in the region up until March 2020 are now irrelevant as States in the region focus on responding to and planning for the eventual restart and recovery of aviation from COVID-19 pandemic impacts.

Bangladesh actively engages in the development of regional aviation safety priorities and policies through forums such as the RASG-APAC, APRAST and Directors General of Civil Aviation Asia and Pacific Region (DGCA) conferences.

2.5 Bangladesh risks and challenges

The Bangladesh aviation system is rapidly changing in light of economic, social and technological developments. Bangladesh adopts a forward-looking approach to identify emerging aviation trends and associated hazards where possible, and assess risks and implement effective mitigation strategies.

Although Bangladesh has experienced a very low rate of GASP HRC occurrences over the past decade, has an excellent high-capacity regular public transport safety record and an advanced regulatory system, all GASP HRCs remain relevant to Bangladesh aviation. In this context, Bangladesh will actively manage these HRCs, by implementing strategies to seek to further reduce the rate of incidents and accidents.

The main operational risk areas addressed in this plan include:

Systemic Risk Areas	Specific Operational Risk Areas
<ul style="list-style-type: none"> • Covid-19 pandemic • Regulatory Changes • Drone • Laser Attacks • Cyber Security 	<ul style="list-style-type: none"> • Runway Safety (RI/RE) • Loss of Control-Inflight (LOC-I) • Controlled Flight into terrain (CFIT) • Mid-Air Collision (MAC) • Ground Operations (GCOL/RAMP) • Bird/Wildlife Strikes

2.5.1 Global COVID-19 pandemic

The Global COVID-19 pandemic is a major global health crisis that has had a severe impact on all stakeholders of the Bangladesh civil aviation system. The pandemic has resulted in an unprecedented period of acute disruption to international and domestic air travel to which the Bangladesh aviation industry has not been immune. The Bangladesh Government has implemented a series of short- and long-term economic strategies and initiatives in response to COVID-19 to support Bangladesh airline industry through the sustained impact of the pandemic.

The CAAB will ensure the ongoing safety of Bangladesh aviation industry is not adversely affected by the economic crisis, particularly as aviation gradually recovers over several years. Alongside the need to ensure safety outcomes, Bangladesh is cognizant of the need to ensure that protection of passenger's health and those working in the industry is also fundamental to recovery of the aviation industry.

Bangladesh will continue to engage with ICAO and other international organisations in the development of suitable regulatory and safety strategies that support the return of international and domestic aviation activity. The CAAB will continue to support industry by promoting latest COVID-19 related guidance material as applicable to individual domains (including general aviation).

Bangladesh regulatory alleviation measures, put in place as part of ICAO's global coordinated response in the first half of 2020, are not planned to continue beyond the period required to support recovery of the industry and will need to be supported by thorough assessment of risks to ensure the safety of Bangladesh aviation operating environment is not compromised. The CAAB will ensure the robust risk management processes support the anticipated ramping up of operations during the latter half of 2021.

2.5.2 Emerging Issues

The NASP also addresses emerging issues. Emerging issues include concepts of operations, technologies, public policies, business models or ideas that might impact safety in the future, for which insufficient data exists to complete typical data-driven analysis. It is important that Bangladesh remain vigilant on emerging issues to identify potential operational safety risks, collect relevant data and proactively develop mitigations to address them. The NASP addresses the following emerging issues, which were identified by based on analyses from mandatory and voluntary reporting systems, Air Safety Reports (ASRs) and safety oversight activities or Safety Risk Assessment/Aeronautical Study conducted by service providers/operators for further analysis:

- 1) Small drones operating in the vicinity of aerodromes
- 2) Laser attacks
- 3) Exposure to Cyber-Security events

Advances in aircraft technology have contributed to making commercial aviation the safest mode of transport. Emerging technology and the integration of existing technologies into aircraft will play a vital role in meeting Bangladesh's future aviation safety, efficiency and long-term capacity requirements.

Increased uptake of new aircraft, RPAS, satellite-based navigation systems and other new technology requires properly skilled, qualified and experienced personnel to safely and effectively operate these systems and equipment.

2.5.3 Common Challenges

The common challenges in Bangladesh include:

1. Full implementation SSP and Service providers' SMS;
2. Safety Partner Programme: Challenges concerning the achievement of the FAA IASA Category 1
3. Challenges concerning Pilot Proficiency Check at foreign Simulator training facilities due to travel restrictions during COVID-19 pandemic,
4. Lack of CAA Regulatory Independence/distinct separation between regulatory oversight office and Service Providers, where these exist within the same Authority;
5. Infrastructure: Challenges concerning the fast growth in air traffic volumes until March 2020, several ongoing projects on airport development and expansion and CNS/ATM system upgradation and so on;
6. Political Issues: SAR agreements with neighbouring States;
7. Limited collection of and use of safety data for decision-making;
8. An increased need for capability and capacity building, such as operation of aircraft, airports, ATC;
9. Managing and retaining SME/talent in the aviation industry;
10. Emerging Issues": UAS operations, Laser Attacks and Exposure to cybersecurity events.

SECTION 3. BANGLADESH STRATEGIC APPROACH TO MANAGING AVIATION SAFETY

3.1 Bangladesh Safety Management Approach

The NASP presents the SEIs that were developed based on the organizational challenges (ORG) and operational safety risks (OPS), as presented in the ICAO global aviation safety roadmap (action plans), as well as State-specific issues identified by safety reporting systems and the analysis of safety data collected from proactive and reactive activities.

This plan is developed and maintained by the Civil Aviation Authority of Bangladesh (CAAB), in coordination with all stakeholders and is updated at least every 3 years.

3.2 Bangladesh National Safety Goals

Bangladesh safety goals represent our desired outcomes and objectives, and stem from the aviation challenges and priorities outlined in Section 3. Bangladesh safety goals, which align with the GASP global safety goals and AP-RASP regional priorities, are outlined in Figure 1.

Goal 1 — Achieve a continuous reduction of operational safety risks

Goal 1 seeks to achieve continuous reduction of operational safety risks faced by Bangladesh SSP stakeholders (including industry) and reflects the ICAO HRCs.

Goal 2 — Strengthen Bangladesh safety oversight capabilities

Goal 2 seeks to improve Bangladesh organisational ability and oversight capabilities. Bangladesh will continue to effectively implement the eight ICAO CEs and ensure the State oversight and governance structure is appropriate to meet State organisational challenges.

Goal 3 — Implement an effective SSP that delivers an acceptable level of safety performance

Goal 3 seeks to implement an effective SSP, including in achieving aviation safety goals and Bangladesh service providers' level of SMS implementation.

4.1.4 Goal 4 — Increase collaboration at the regional level

Goal 4 seeks to share SSP SPIs with regional RASG-APAC, submit a draft NASP to an ICAO Regional Office and register in the NASP Online Community, report in the Secure Portal on Emerging Issues and Additional Categories of Operational Safety Risks and if required support APAC States improve their safety performance through enhanced collaboration.

Goal 5 — Expand the use of industry safety programmes by industry

Goal 5 seeks to increase industry participation with ICAO-recognized industry assessment programmes, as well as harmonise service providers' safety performance indicators (SPIs). This would facilitate improvements in safety risk management at the national, regional and global level, and foster better engagement. Industry programmes often encourage service providers to strive for higher levels of safety than otherwise required by States, though do not replace State safety oversight. This would also enable Bangladesh to establish a safety data collection and processing system (SDCPS) to facilitate participation by industry service providers in a safety information.

Goal 6 — Ensure Bangladesh has the appropriate aviation infrastructure to support safe operations

Goal 6 seeks to ensure that Bangladesh has the appropriate infrastructure to support safe operations. It is linked to Bangladesh obligations under the ICAO Global Air Navigation Plan (GANP) and seeks ongoing investment in National air navigation and airport core infrastructure to maintain compliance with safety standards.

3.3 Global, Regional and Bangladesh National Safety Goals

The NASP includes the following national safety goals and targets, for the management of aviation safety, as well as a series of indicators to monitor the progress made towards their achievement. They are tied to the goals, targets and indicators listed in the GASP and the AP-RASP.

Figure 1. Bangladesh safety goals and their alignment with global and regional priorities

	1.	2.	3.	4.	5.	6.
GASP Goals	Achieve a decreasing trend of global accident rate	Strengthen States safety oversight capabilities	Implement effective State safety programmes (SSPs)	Increase Collaboration at the regional level	Expand the use of Industry Programmes	Ensure the appropriate infrastructure is available to support safe operations
AP-RASP Goals	1. Reduce operational risks	2. Improve States' safety oversight and compliance	3. Implement effective SMS and SSP	4. Move towards data-driven regulatory oversight		5. Enhance aviation infrastructure
State Safety Goals	1. Achieve a decreasing trend of global accident rate	2. Strengthen Bangladesh's safety oversight capabilities	3. Implement effective State safety programme (SSP), that delivers an acceptable level of safety performance	4. Increase Collaboration at the regional level	5. Expand the use of Industry safety Programmes by service providers	6. Ensure Bangladesh has the appropriate aviation infrastructure to support safe operations

3.4 Acceptable level of safety performance

Each safety goal contributes to an overall acceptable level of safety performance for Bangladesh. Bangladesh acceptable level of safety performance, or the sum output of Bangladesh safety goals, is:

No accidents involving commercial air transport that result in serious injuries or fatalities, no serious injuries or fatalities to third parties as a result of aviation activities and improving safety performance across all sectors.

3.5 Bangladesh NASP Goals, Targets and Indicators

Each safety goal is accompanied by safety performance indicators (SPI) to measure Bangladesh performance and provide evidence on whether desired outcomes are being achieved.

To define a benchmark for each SPI, Bangladesh has set safety performance targets (SPT) which represent the level of performance considered to be acceptable.

A summary of Bangladesh safety goals, SPIs and SPTs is at Table 1.

The table 1 summarises the Safety Performance Indicators (SPI) and Targets (SPT) established by the CAAB on behalf of the State. Individual service providers are responsible for developing their own SPI/SPT's as part of their Safety Management Systems (SMS), however the information in this table should be considered by each individual industry/service provider, as appropriate to its own activities. The industry and service providers are encouraged to use the globally harmonized SPIs as introduced by ICAO in the GASP.

Table 1 Bangladesh safety goals, indicators and targets

Bangladesh Aspirational Safety Goal “Zero fatalities by 2030 and beyond” Acceptable Level of Safety Performance				
Bangladesh Safety Goal	Safety Performance Indicators	Safety Performance Targets	Link to GASP Target	
Goal 1: Achieve a continuous reduction of operational safety risks	<ul style="list-style-type: none"> • Number of accidents • Number of accidents per million departures (accident rate) • Number of fatal accidents • Number of fatal accidents per million departures (fatal accident rate) • Number of fatalities • Number of fatalities per passengers carried (fatality rate) • % of occurrences related to high risk categories (HRCs) 	1.1 ²	Maintain a decreasing trend of national accident rate	
	<ul style="list-style-type: none"> • Fatal accident rate (per 10,000 flying hours) 	1A	No fatal accidents	G 1.1
	<ul style="list-style-type: none"> • Number of fatal accidents 	1B	10% reduction in fatal accidents	
	<ul style="list-style-type: none"> • Number of ground fatalities 	1C	No ground fatalities as a result of an aviation accident	
	<ul style="list-style-type: none"> • Accident rate (per 10,000 flying hours) 	1D	10% reduction in accident rate	
	<ul style="list-style-type: none"> • Number of accidents 	1E	10% reduction in accidents	
	<ul style="list-style-type: none"> • Serious incident rate (per 10,000 flying hours) 	1F	10% reduction in Serious incident rate	
	<ul style="list-style-type: none"> • Number of Serious incidents 	1G	10% reduction in Serious incidents	
	<ul style="list-style-type: none"> • Number of runway safety events 	1H	10% reduction in runway safety events	
	<ul style="list-style-type: none"> • Number of Bird Strikes per 10,000 departures and arrivals 	1I	10% reduction in Bird Strike Rates (annually)	
	<ul style="list-style-type: none"> • 10% reduction in ground operations safety events 	1J	Number of ground operations safety events	
Goal 2: Strengthen Bangladesh's safety oversight capabilities.	<ul style="list-style-type: none"> • Overall EI score by Bangladesh • Bangladesh to met the EI score as per the timelines • Bangladesh to fully implement the priority PQs related to a safety oversight system • % of priority PQs implemented by a Bangladesh • Bangladesh to timely update the filing of differences • % of required CAPs submitted by 	2.1	Bangladesh to improve their score for the effective implementation (EI) of the critical elements (CEs) of the State's safety oversight system (with focus on priority PQs) as follows: By 2022 – 75% By 2026 – 85% By 2030 – 95%	

² Legend: ORG related targets – Yellow / OPS related targets – Green

	<ul style="list-style-type: none"> Bangladesh (using OLF) % of completed CAP per State (using OLF) 		Special focus on lower EI scores in AIG, ANS, AGA) and CE8, CE7, CE-1.	
	<ul style="list-style-type: none"> Bangladesh to maintain a safety oversight index greater than 1 in all categories Percentage of each category with a safety oversight index greater than 1 Safety oversight index per State, per category 	2.2	By 2022, Bangladesh to reach a safety oversight index greater than 1, in all categories	
	<ul style="list-style-type: none"> ICAO USOAP EI Score 	2A	Maintain EI Score > 75%	G 2.1
	<ul style="list-style-type: none"> ICAO USOAP CC/EFOD Completion 	2B	Maintain Average CC/EFOD completion score > 80%	
	<ul style="list-style-type: none"> Safety regulatory implementation 	2C	90% of regulatory development delivered against plan	
	<ul style="list-style-type: none"> Priority PQs self-assessment (%) 	2D	≥2017 score	
	<ul style="list-style-type: none"> PQs (all) self-assessment (%) 	2E	100% completion of all Priority PQs self-assessment	
	<ul style="list-style-type: none"> ICAO Safety Oversight Index (SOI) 	2F	In all categories, Maintain ICAO SOI > 1	G 2.2
	<ul style="list-style-type: none"> ICAO Safety Oversight Index (%) 	2G	100% compliance score	
	<ul style="list-style-type: none"> Number of ICAO significant safety concerns findings 	2H	Positive score	G 2.1
	<ul style="list-style-type: none"> ICAO Significant Safety Concerns (SSC) findings (action) 	2I	Nil ICAO SSC Findings and	
	<ul style="list-style-type: none"> ICAO audit findings (action) 	2J	80% of finding fully addressed.	
	<ul style="list-style-type: none"> Corrective action plans, CAPs (%). 	2K	100% completion CAPs	
	<ul style="list-style-type: none"> Domestic safety surveillance events 	2L	80% of surveillance achieved against schedule	
Goal 3: Implement effective State safety programme (SSP), that delivers an acceptable level of safety performance	<ul style="list-style-type: none"> Bangladesh to implement the foundation of an SSP % of each subject area implemented globally % of satisfactory SSP foundational PQs % of required CAPs related to the SSP foundational PQs submitted by States (using OLF) % of required CAPs related to the SSP foundational PQs completed per State (using OLF) 	3.1	By 2022, Bangladesh to implement the foundation of an SSP	
	<ul style="list-style-type: none"> ICAO SSP GAP Analysis (%) 	3A	Maintain SSP Gap Analysis > 80%	G 3.1
	<ul style="list-style-type: none"> SSP Foundational PQs Self-Assessment completion (%) 	3B	80% completion of all SSP foundational PQs (self-assessment)	
	<ul style="list-style-type: none"> Percentage of required CAPs related to the SSP foundational PQs completed per State (using OLF) 	3C	90% completion of required SSP foundational PQs (CAPs)	

	<ul style="list-style-type: none"> Percentage of required CAPs related to the SSP foundational PQs submitted to ICAO (using OLF) 	3D	90% submission of required SSP foundational PQs (CAPs)	
	<ul style="list-style-type: none"> Number of appropriate SSP governance/working group meetings. 	3E	90% of defined SSP working group meetings conducted including SSP-CG meeting (based on annual schedule)	
	<ul style="list-style-type: none"> Number of aviation safety education seminars to industry 	3F	90% of seminars delivered against annual plan as a part of its safety promotion	
	<ul style="list-style-type: none"> Bangladesh to implement an effective SSP Level of maturity achieved in Annex 19 PQs Bangladesh requires applicable service providers under their authority to implement an SMS Bangladesh to implement a national aviation safety plan 	3.2	By 2025, Bangladesh to implement an effective SSP, as appropriate to our aviation system complexity	
	<ul style="list-style-type: none"> SMS requirements established in all domains 	3G	Establish any outstanding SMS requirements by 2021	
	<ul style="list-style-type: none"> Percentage of Industry's SMS assessed using Standard SMS Assessment Tool 	3H	>80 % by end 2021	
	<ul style="list-style-type: none"> Effective SMS processes in Industry to address risks associated with new business models. 	3I	Maintain ongoing oversight as part of SMS oversight	
	<ul style="list-style-type: none"> Guidance available for inspectorate staff on overseeing such SMS organizations 	3J	Guidance available by end 2021	G 3.2
	<ul style="list-style-type: none"> Implementation of strategy items included in the NASP 	3K	80% of NASP safety enhancement initiative actions completed in accordance with defined timeline	
	<ul style="list-style-type: none"> Publish a national aviation safety plan (NASP) 	3L	Publish the NASP by 2022	
Goal 4: Increase collaboration at the regional level	<ul style="list-style-type: none"> Number of States requiring assistance/support Number of States actively seeking assistance Bangladesh received assistance as a means of two CAT missions. Number of States offering assistance 	4.1	By 2020, States that do not expect to meet GASP Goals 2 and 3, to use a regional safety oversight mechanism, another State or other safety oversight organization's ICAO-recognized functions in seeking assistance to strengthen their safety oversight capabilities	
	<ul style="list-style-type: none"> Bangladesh to contribute information on safety risks to RASG-APAC Bangladesh to share its SSP SPIs with RASG-APAC Bangladesh to forward information on safety matters to States, RASGs or other stakeholders 	4.2	By 2022, Bangladesh to contribute information on safety risks, including SSP safety performance indicators (SPIs), to the regional aviation safety group (RASG-APAC)	
	<ul style="list-style-type: none"> Bangladesh with effective safety oversight capabilities and an effective SSP, leading RASGs' safety risk management activities 	4.3	By 2022, Bangladesh with effective safety oversight capabilities and an effective SSP, to actively lead RASGs' safety risk management activities	

	<ul style="list-style-type: none"> Bangladesh representation at ICAO meetings (e.g. RASG, APANPIRG, APRAST), panels and working groups 	4A	≥90% of meetings attended (defined by annual Strategic Review)	G 4.1, 4.2, 4.3
	<ul style="list-style-type: none"> Regional (APAC) engagement activities conducted by Bangladesh 	4B	90% of planned activities conducted (CAPSCA, DGCA etc)	
	<ul style="list-style-type: none"> Share information on Bangladesh SSP safety performance indicators (SPIs) with RASG-APAC. 	4C	90% of information provided against annual plan	
	<ul style="list-style-type: none"> Share information on Bangladesh NASP with ICAO and RASG-APAC 	4D	Register in the NASP Online Community and submit draft NASP to ICAO and RASG-APAC.	
	<ul style="list-style-type: none"> International aviation safety engagement (ICAO missions) and contribute expertise to the global civil aviation system. 	4E	80% of activities conducted (USOAP CMA)	
<p>Goal 5:</p> <p>Expand the use of Industry Safety Programmes by industry</p>	<ul style="list-style-type: none"> Number of service providers using globally harmonized metrics for their SPIs 	5.1	By 2020, all service providers to use globally harmonized SPIs as part of their safety management system (SMS)	G 5.1
	<ul style="list-style-type: none"> Encourage Service providers to use globally harmonized SPIs as part of their SMS. 	5A	90% of service providers to use harmonized SPIs as part of their safety management system (SMS)	G 5.1
	<ul style="list-style-type: none"> SPIs developed in each domain using globally harmonized SPIs as part of their SMS. 	5B	Maintain >90%	
	<ul style="list-style-type: none"> Percentage of service providers that have developed acceptable SPI/SPT's, in consideration of State SPI/SPT's 	5C	>90% by end 2021	
	<ul style="list-style-type: none"> Percentage of service providers* using globally harmonized metrics for their SPIs 	5D	100% of service providers	
	<ul style="list-style-type: none"> Number of service providers participating in the corresponding ICAO-recognized industry assessment programmes 	5.2	By 2022, increase the number of service providers participating in the corresponding ICAO-recognized industry assessment programmes	
	<ul style="list-style-type: none"> Percentage of airlines participation in IATA Operational Safety Audit (IOSA) 	5E	80% airlines audited by 2023.	G 5.2
	<ul style="list-style-type: none"> Percentage of International Airports participating in ACI APEX programme <p><i>*Airports Council International (ACI)</i> <i>*Airport Excellence in Safety programme (APEX)</i></p>	5F	Establish a baseline/level by 2023.	
	<ul style="list-style-type: none"> Air Traffic Service providers CANSO* maturity assessment score <p><i>*Civil Air Navigation Services Organisations</i></p>	5G	Positive score by 2022.	
	<ul style="list-style-type: none"> Percentage of Industry participating in participating in information sharing networks (including SDCPS) 	5H	By 2022, increase the number of service providers participating in information sharing networks (including SDCPS).	
<p>Goal 6:</p> <p>Ensure Bangladesh</p>	<ul style="list-style-type: none"> Bangladesh having implemented the air navigation and airport core 	6.1	By 2022, Bangladesh to implement the air navigation and airport core	

has the appropriate aviation infrastructure to support safe operations	infrastructure elements		infrastructure	
	<ul style="list-style-type: none"> Percentage of AN infrastructure elements (ATS and airspace including ADS-B) implemented 	6A	90% implementation of AN infrastructure elements	G 6.1
	<ul style="list-style-type: none"> Percentage of aerodrome (including runway) infrastructure elements implemented 	6B	90% implementation of aerodrome infrastructure elements	
	<ul style="list-style-type: none"> Percentage of other national infrastructure / Capabilities implemented 	6C	80% implementation of other national infrastructure / Capabilities	
	<ul style="list-style-type: none"> Number of air navigation deficiencies against the regional air navigation plans. 	6D	By 2023, maintain an increasing trend of Bangladesh with air navigation and aerodrome infrastructure that meets relevant ICAO Standards	

The SEIs in this plan are implemented through the existing safety oversight capabilities of Bangladesh and the service providers' SMS. SEIs derived from the ICAO global aviation safety roadmap were identified to achieve the national safety goals and targets presented in the NASP. Some of the national SEIs are linked to overarching SEIs at the regional and international levels and help to enhance aviation safety globally. The full list of the SEIs is presented in the appendix to the NASP.

SECTION 4. NATIONAL OPERATIONAL SAFETY RISKS

4.1 Introduction to Bangladesh Operational Risks

The NASP includes SEIs that address national operational safety risks, derived from lessons learned from operational occurrences and from a data-driven approach. These SEI may include actions such as: rule-making; policy development; targeted safety oversight activities; safety data analysis; and safety promotion. Separate sections are provided to address commercial air transport and general aviation to make the information more accessible to stakeholders.

4.2 Summary of accidents and serious incidents

The summary of accidents and serious incidents that occurred in Bangladesh, and those for aircraft³ registered in Bangladesh involved in commercial air transport and aircraft involved in general aviation, is shown in the tables below.

Year	Fatal accidents	Non-fatal accidents	Serious incidents
Commercial air transport occurrences in Bangladesh (for aircraft of a maximum mass of over 5 700 kg)			
2015 to 2020, average	1	2	6
2021(current year)	0	0	0
General aviation aircraft occurrences in Bangladesh			
2015 to 2020, average	2	6	1
2021(current year)	0	2	1

Year	Fatal accidents	Non-fatal accidents	Serious incidents
Occurrences involving commercial air transport aircraft registered in Bangladesh			
2015 to 2020, average	1	4	5
2021(current year)	0	0	0
Occurrences involving general aviation aircraft registered in Bangladesh			
2015 to 2020, average	2	6	1
2021(current year)	0	2	1

4.3 Bangladesh National HRCs⁴ of Occurrences

4.3.1 Although Bangladesh has experienced a very low rate of GASP HRC occurrences over the past 6 years, all GASP HRCs remain relevant to Bangladesh aviation. In this context, Bangladesh will actively manage

3. Particularly for aircraft of a maximum mass of over 5 700 kg during scheduled commercial operations (statistics and data on accidents and serious incidents may be gathered from the State’s accident and incident database or can be found using the ICAO ADREP system application available via iSTARS at www.icao.int/safety/iStars).

4. The NASP includes all HRCs in the GASP and AP-RASP; and include additional national operational safety risks.

these HRCs, by implementing strategies to seek to further reduce the rate of incidents and accidents.

4.3.2 The following 3 national high-risk categories of occurrences (HRCs) in the Bangladesh context were considered of the utmost priority because of the number of fatalities and risk of fatalities associated with such events. They were identified based on analyses from mandatory and voluntary reporting systems, accident and incident investigation reports, safety oversight activities over the past 5 years, as well as on the basis of regional analysis conducted by RASG and APANPIRG on the basis of safety data collected from proactive and reactive activities and on the operational safety risks described in the GASP. These HRCs are in line with those listed in the current 2020-2022 edition of the GASP, as well as the AP- RASP:

- 1) Loss of control in-flight (LOC-I)
- 2) Runway Safety⁵ – Runway incursion (RI)/Runway excursion (RE)
- 3) Controlled Flight into terrain (CFIT)

4.3.3 In addition to the national operational safety risks listed above, the following additional categories of operational safety risks have been identified per million movements:

- 4) Mid Air Collision (MAC)
- 5) Ground Operations (GCOL/RAMP/FOD)
- 6) Bird and Wildlife strikes

4.3.4 The aviation occurrence categories from the CAST/ICAO Common Taxonomy Team (CICTT) were used to assess risk categories in the process of determining national operational safety risks. The CICTT Taxonomy is found on the ICAO website at <https://www.icao.int/safety/airnavigation/AIG/Pages/Taxonomy.aspx>.

4.3.5 To address the national operational safety risks listed above, Bangladesh identified/ focused the following precursors or contributing factors leading to HRCs and to act upon such incidents Bangladesh will implement a series of SEIs, some of which are derived from the ICAO OPS roadmap, contained in the AP-RASP and GASP:

National HRC 1: Loss of Control in flight (LOC-I)

Safety Issue

Although the loss of control of an aircraft in flight (LOC-I) is a relatively rare event, the highest proportion of fatal accidents globally were attributed to LOC-I events across many different sectors in aviation. LOC-I may arise from different precursor events that result in an aircraft upset, including weather events, technical (equipment) failures, inflight fire, fuel events, human performance. LOC-I accidents may also arise from inadequate operations at airports, such as aircraft loading, ground handling or wildlife hazard management. Aircraft are fitted with warning systems to alert crews of potential LOC-I events.

Safety Objective

To continuously improve safety by assessing and mitigating the risks relating to loss of control inflight involving commercial aeroplane operators of Bangladesh.

Safety Performance Indicators

Accident, Serious Incident and Incident rates and trends related to LOC-I category occurrences involving commercial aeroplane operators of Bangladesh. Following are precursors/contributing factors:

- 1) Aircraft Handling events
- 2) Warning system activation: Stall warning/stick shaker
- 3) Flight parameter exceedance events
- 4) Excessive speed/vertical speed/accelerations (vertical or configuration)

⁵ Runway safety is considered runway incursions and runway excursions.

- 5) Excessive roll attitude or roll rate (Increased roll attitude or rate)
- 6) High pitch angle
- 7) Technical failures or incorrect maintenance leading to aircraft upset
- 8) Failure of primary flight instruments (eg. Engine failure)
- 9) Aircraft upset events
- 10) Weather or icing conditions leading to aircraft upset
- 11) Bird strike or laser attack leading to aircraft upset
- 12) Smoke or Fire events (including lithium battery related events) that could lead to aircraft upset
- 13) Recognition and recovery from aircraft upset
- 14) Inflight fuel management issues leading to aircraft upset
- 15) Level of crew training on UPRT and CRM
- 16) Low go-around or rejected landing (go-around)
- 17) Inadequate SOPs for effective flight management

Stakeholders/Roles

Civil Aviation Authority of Bangladesh (CAAB) – analysis of LOC-I occurrences, rates and trends and identification of sector-based safety issues

Industry (Air Operators) – managing LOC-I related safety risks and reporting pre-cursor events that could result in a LOC-I occurrence.

National HRC 2 (a): Runway Incursion (RI)

Safety Issue

A runway incursion (RI) involves the incorrect presence of an aircraft, vehicle, person on the protected area of a surface designated for the aircraft landing and take-off. RI occurrences may arise from different precursor events such as failure to adhere to ATC clearances by Flight Crew or Ground Crew, Aircraft and vehicle ground movement errors in low visibility operations, non-adherence to standards in ATC communications. Runway Incursions have been recognised for some time as a key risk in aviation safety.

Safety Objective

To continuously improve safety by assessing and mitigating the risks of runway incursion involving commercial operators of Bangladesh or at certificated aerodromes in Bangladesh.

Safety Performance Indicators

Accident, Serious Incident and Incident rates and trends related to RI category occurrences involving commercial air operators of Bangladesh or at aerodromes in Bangladesh. Following are precursors/contributing factors:

- 1) Deviation from ATC clearances by Flight Crew or Ground Crew
- 2) Operations in low visibility conditions
- 3) Aircraft and vehicle ground movement errors in low visibility operations
- 4) Non-Adherence to standard phraseology in ATC communications
- 5) Non-Adherence to ATC communication procedures (eg readback/hearback)
- 6) Presence of wildlife on or near the runway
- 7) Complexity of traffic (multiple simultaneous line-ups)
- 8) Complex or inadequate aerodrome design
- 9) Conditional clearances
- 10) Lack of Driver Training and Apron Safety
- 11) Loss of situational awareness of stop bars
- 12) Poor taxiway Lighting, markings, signage
- 13) Inactivity of Local Runway Safety Team for each aerodrome

Stakeholders/Roles

Civil Aviation Authority of Bangladesh (CAAB) – analysis of RI occurrences rates and trends and identification of sector-based safety issues

Industry (Air Operators, ANSP's, Airports) – managing RI related safety risks and reporting pre-cursor events that

could result in an RI occurrence

National HRC 2 (b): Runway Excursion (RE)

Safety Issue

A runway excursion (RE) is an event in which an aircraft veers off or overruns the runway surface during either take-off or landing. RE has been identified as one of the most common causes of accidents. RE occurrences may occur as a result of unstable approach, inadequate braking performance on runways, technical failures, weather impact, poor decision making/execution of the landing phase. These events may also lead to an Abnormal Runway Contact (ARC) event (eg. heavy landing, long landing, tail strike etc)

Safety Objective

To continuously improve safety by assessing and mitigating the risks of runway excursion involving commercial operators of Bangladesh, or, at certificated aerodromes in Bangladesh.

Safety Performance Indicators

Accident, Serious Incident and Incident rates and trends related to RE occurrences, involving commercial air operators of Bangladesh or at airports of Bangladesh. Following are precursors/contributing factors:

- 1) Execution of unstable approach leading to potential RE
- 2) Poor decision making during adverse environmental conditions (winds/visibility)
- 3) Inadequate clearing of contaminated runways
- 4) Inaccurate reporting of runway surface condition
- 5) Reliability of critical equipment (eg landing gear, wheels and brakes)
- 6) Unstable shortly before landing
- 7) High speed rejected take-off
- 8) Take-off with abnormal configuration
- 9) Abnormal runway contact/Hard landing
- 10) Tail strikes on landing
- 11) Long or fast/floated/bounced/firm/off-centre/crabbed landings.
- 12) Loss of control on ground
- 13) Failure to adhere to the appropriate SOPs

Stakeholders/Roles

Civil Aviation Authority of Bangladesh (CAAB) – analysis of RE occurrences rates and trends and identification of sector-based safety issues

Industry (Air Operators, ANSP's, Aerodromes) – managing RE related safety risks and reporting pre-cursor events that could result in an RE occurrence

National HRC 3: Controlled Flight into Terrain (CFIT)

Safety Issue

Controlled Flight Into Terrain (CFIT) describes an event where the aircraft is flown into terrain whilst under control of the flight crew, and is usually associated with loss of situational awareness in poor visibility conditions, or navigation errors. CFIT may arise from different precursor events, including loss of situational awareness by crews, unanticipated weather encounters, inadequate approach procedures. It is a particular risk for intentional low-level operations (eg inspections, surveys, sight-seeing etc.). Large commercial aircraft are equipped with warning systems to alert crews of potential CFIT events.

Safety Objective

To continuously improve safety by assessing and mitigating the risks of controlled flight into terrain involving

commercial aeroplane operators of Bangladesh or operators flying in controlled airspace in Bangladesh.

Safety Performance Indicators

Accident, Serious Incident and Incident rates and trends related to CFIT category occurrences involving Bangladeshi commercial aeroplane operators.

Following are precursors/contributing factors:

- 1) Warning system activation: EGPWS/ TAWS hard warnings
- 2) Intentional low-level operations leading to CFIT occurrence
- 3) Operations in degraded visual environments leading to CFIT occurrences
- 4) Loss of situational awareness by crews leading to CFIT occurrence
- 5) CFIT occurrences during take-off and landing sites outside of airports/heliports
- 6) Navigation errors: Accuracy and use of aeronautical charts and terrain and obstacle databases
- 7) Descent below MSA

Stakeholders/Roles

Civil Aviation Authority of Bangladesh (CAAB) – analysis of CFIT occurrences rates and trends and identification of sector-based safety issues

Industry (Air Operators) – managing CFIT related safety risks and reporting pre-cursor events that could result in a CFIT occurrence

Industry (ANSP's) – developing approach procedures to minimise the risk of CFIT

National HRC 4: Mid-Air Collisions (MAC)

Safety Issue

Mid-Air Collisions (MAC) are accidents where two or more aircraft impact each other in the air. While the likelihood of an event is low the consequences of any event are extremely high (major loss of life). Of particular concern is the risk of airspace infringement in controlled airspace by non-commercial light aircraft and drones. MAC occurrences may arise from different precursor events such as loss of separation with other large aircraft, light aircraft or drones, loss of situational awareness by crews, inadequate or ineffective air traffic control, equipment failures. Aircraft equipped with ACAS systems and/ or transponders provide enhanced alerting (eg ACAS RA alert) for crews of potential MAC events.

Safety Objective

To continuously improve safety by assessing and mitigating the risks of mid-air collision involving commercial aeroplane operators or operators flying in controlled airspace of Bangladesh.

Performance Indicators

Accident, Serious Incident and Incident rates and trends related to MAC category occurrences involving commercial aeroplane operators or ANSP's of Bangladesh.

Following are precursors/contributing factors:

- 1) TCAS/ACA alert: TCAS/ACAS Resolution Advisory (RA) events
- 2) Airborne conflict with non-transponder equipped aircraft
- 3) Airborne conflict with Drones
- 4) Loss of Separation: ATM events leading to loss of separation (eg Deviation from ATC Clearances, Level Bust, Separation Minimum Infringement, Airspace Infringement)
- 5) Procedural errors leading to potential MAC

- 6) Equipment failures (eg navigation, protection) leading to potential MAC

Stakeholders/Roles

Civil Aviation Authority of Bangladesh (CAAB)– analysis of MAC occurrences rates and trends and identification of sector-based safety issues

Industry (Air Operators, ANSPs) – managing MAC related safety risks and reporting pre-cursor events that could result in a MAC occurrence

Industry (ANSP's) – developing enhanced safety nets to minimise the risk of MAC

National HRC 5: Safety of Ground Operations (GCOL/RAMP)

Safety Issue

Ground operations involve all aspects of aircraft handling at the airport as well as aircraft movement around the aerodrome, except when on active runways. During this phase of flight, aircraft are normally travelling at low speed so accidents that occur are rarely fatal but they can result in costly repairs for airlines and lengthy delays for passengers. Ground Operations related occurrences include aircraft collision/damage, ground handling activities (aircraft ground movements, loading passengers/cargo, servicing, fuelling, de-icing), ground equipment use, failure and stowing.

Safety Objective

To continuously improve safety by assessing and mitigating the risks due to ground operations by commercial operators or at certified aerodromes in Bangladesh.

Safety Performance Indicators

Accident, Serious Incident and Incident rates and trends related to Ground Operations (eg RAMP, GCOL) category occurrences, involving commercial air operators or at airports of Bangladesh. Following are precursors/contributing factors:

- 1) Aircraft ground collision events (GCOL)
- 2) Ground Handling events (RAMP)
- 3) Aircraft ground damage events (due to FOD)
- 4) Loading errors: non-Adherence to aircraft loading procedures (eg. passengers, baggage and cargo, fuel)
- 5) Inaccurate calculation or reporting of mass and balance
- 6) Deviations from ATC clearances
- 7) Non-Adherence to aircraft ground handling procedures (incl. marshalling, towing, de-icing, refuelling etc)
- 8) Failure to report damage to aircraft during ground operations
- 9) Inadequate protection of passengers and ground staff on aircraft ramp
- 10) Poor condition of aircraft steps
- 11) Non-Adherence to positioning, securing and decongestion procedures for ground service equipment on the ramp
- 12) Inadequate/no FOD detection systems at airports

Stakeholders/Roles

Civil Aviation Authority of Bangladesh (CAAB) – analysis of Ground Operations related occurrences rates and trends and identification of sector-based safety issues

Industry (Air Operators, ANSP's, (Aerodromes) – managing ground operations related safety risks and reporting ground operations related occurrences.

National HRC 6: Bird and Wildlife Strikes

Safety Issue

Bird and Wildlife strikes may cause significant damage to an aircraft structure or flight controls, and aircraft engines (especially jet-engines) are vulnerable to the loss of thrust which can follow the ingestion of birds into engine air intakes which may lead to an accident. Bird and Wildlife Strikes may arise from different precursor events, including presence of wildlife on or near the airport, source of foods in the vicinity of the airport, inadequate technologies at airports to prevent Bird and Wildlife Strikes occurrences. It is a potential risk for international and local commercial flight operations.

Safety Objective

To continuously improve safety by assessing and mitigating the risks due to bird and wildlife strikes at certificated airports in Bangladesh.

Safety Performance Indicators

Accident, Serious Incident and Incident rates and trends related to bird and wildlife strikes.

Following are precursors/contributing factors:

- 1) Bird/wildlife in the vicinity of the airport
- 2) Presence of wildlife on or near the airport
- 3) Source of foods in the vicinity of the airport
- 4) Inadequate/no technology for Bird/wildlife hazard control at airports

Stakeholders/Roles

Civil Aviation Authority of Bangladesh (CAAB) – analysis of bird and wildlife related occurrences rates and trends and identification of airport-based safety issues.

CAAB will continue to work with all stakeholders to ensure that the National Bird/Wildlife Hazard Committee enhances its capability in terms of analysis of data and identifying safety issues / best practices for wildlife strike hazard reduction.

Industry (Aerodromes) – control of birds and wildlife around aerodromes to minimise the risk of strike on aircraft

Industry (ANSP's, Aerodromes) – managing bird and wildlife related safety risks and reporting bird and wildlife related occurrences

4.3.5 The GASP has detailed specific 'roadmaps' (action plans) on organisational challenges and operational safety risks to support Bangladesh in achieving the GASP goals. The full list of the SEIs is presented in the Appendix to the NASP.

4.4 Aviation safety roadmap

The aviation safety roadmap comprises an action plan of 22 SEIs designed to help Bangladesh achieve its NASP safety goals and an acceptable level of safety performance. It is divided into Operational (OPS) and Organisational (ORG) components in line with the GASP and AP-RASP. A summary of Bangladesh's aviation safety roadmap is included at Table 2.

Each SEI comprises specific actions that Bangladesh intends to undertake to improve State safety performance.

The OPS roadmap (Appendix I) details Bangladesh's SEIs to meet global, regional and national goals related to the continuous reduction of operational safety risks, including risk management activities associated with ICAOs HRC items.

The ORG roadmap (Appendix II) details Bangladesh’s SEIs associated with Bangladesh safety oversight capabilities and the implementation (and ongoing improvement) of Bangladesh SSP, including industry’s SMS implementation.

Figure 2 Demonstrates the relationship between safety goals, SPIs, SPTs SEIs and actions by Bangladesh



Table 2 Bangladesh Aviation Safety Roadmap (action plan) Summary

Goal	ID	Safety Enhancement Initiative (SEI)	Critical Element
Operational Roadmap			
1. Achieve a continuous reduction of operational safety risks	1.1	Mitigate contributing factors to LOC-I accidents and incidents.	CE-2, CE-5
	1.2	Mitigate contributing factors to Runway Safety (Excursions and Incursions) accidents and incidents.	CE-2, CE-5
	1.3	Mitigate contributing factors to CFIT accidents and incidents.	CE-2, CE-5
	1.4	Mitigate contributing factors to Mid-Air Collisions accidents and incidents.	CE-2, CE-5
	1.5	Mitigate contributing factors to Ground Operations accidents and incidents.	CE-2, CE-5
	1.6	Mitigate contributing factors to Bird and Wildlife Strikes accidents and incidents.	CE-2, CE-5
Organisational Roadmap			
2. Strengthen Bangladesh's safety oversight capabilities	2.1	Ensure the Bangladesh civil aviation safety regulatory regime is optimized for aviation safety performance, and where practical for the Bangladesh aviation environment, aligned to the standards and practices of ICAO and leading aviation countries.	CE-1, CE-2
	2.2	Enhance Bangladesh regulatory services and compliance monitoring of the aviation industry to assure aviation safety performance to regulatory requirements.	CE-6, CE-7
	2.3	Ensure Bangladesh aviation safety system and safety oversight capability are responsive to new crisis or	CE-2, CE-4, CE-5

		emerging issues (threats or trends).	
	2.4	Strengthen Bangladesh SSP Workforce Capabilities.	CE-4
3. Implement effective State safety programme (SSP) that delivers an acceptable level of safety performance	3.1	Ensure the implementation of an effective SSP for Bangladesh and maintain the continuous improvement of the SSP and the associated governance.	CE-3
	3.2	Enhance strategic collaboration amongst Bangladesh key aviation stakeholders to support SSP implementation.	CE-3, CE-5
	3.3	Improved safety risk management at a national level.	CE-3
	3.4	Standardize and streamline Bangladesh applicable service providers/industry's SMS obligation to ensure effective implementation and ongoing improvement.	CE-2, CE-5
	3.5	Develop a central data driven proactive risk management modelling capability.	CE-8
4. Increase collaboration at the regional level	4.1	Strengthen Bangladesh Regional (APAC) Engagement.	N/A
	4.2	Strengthen International aviation safety engagement and contribute expertise to the global civil aviation system.	N/A
	4.3	Deliver Bangladesh reporting and oversight obligations under the GASP 2020–2022 and RASP 2020–2022.	N/A
5. Expand the use of Industry safety Programmes by industry	5.1	Encourage industry participation in ICAO-recognized industry assessment programmes.	CE-7
6. Ensure Bangladesh has the appropriate aviation infrastructure to support safe operations	6.1	Ensure Bangladesh has the appropriate Air Traffic Services and airspace infrastructure to support safe operations.	N/A
	6.2	Ensure Bangladesh has the appropriate aerodrome infrastructure to support safe operations.	N/A
	6.3	Ensure Bangladesh has the appropriate other national infrastructure / Capabilities (for example meteorological infrastructure) to support safe operations.	N/A

* Runway safety is considered runway incursions and runway excursions.

4.5 Roadmap Structure

Each SEI is presented in a standardised format using the template at Figure 3, and aligns with GASP and AP-RASP requirements as shown at Figure 3.

Figure 3 Bangladesh aviation safety roadmap SEI template

Safety Enhancement Initiative	<i>Title of SEI</i>		
ID	<i>Unique identifier for SEI.</i>		
SSP Oversight	<i>SSP-CG with principal responsibility for SEI oversight.</i>		
Stakeholders	<i>Details each stakeholder related to the SEI.</i>		
Actions	<i>Action to be undertaken in support of the SEI.</i>	Responsible Entity	Completion Target Date
	<i>Each action is assigned a unique identifier based on the SEI ID.</i>	<i>Primary agency responsible for each action.</i>	<i>Proposed completion date (period) for each action.</i>
Related NASP target(s)	<i>NASP targets that relate to defined SEI. For further details on the NASP targets refer to Table 1.</i>		
GASP Reference	<i>Details any related GASP Goals / Targets / SEIs. Demonstrates NASP alignment to GASP.</i>		
AP-RASP Reference	<i>Details any related GASP priority areas / Targets / actions. Demonstrates NASP alignment to AP-RASP.</i>		
Other Reference	<i>Details any other pertinent reference to the SEI or associated actions. This can include reference to SSP document, NANP, ATMP etc. where the SEI and/or action is included.</i>		

SECTION 5. OTHER SAFETY ISSUES

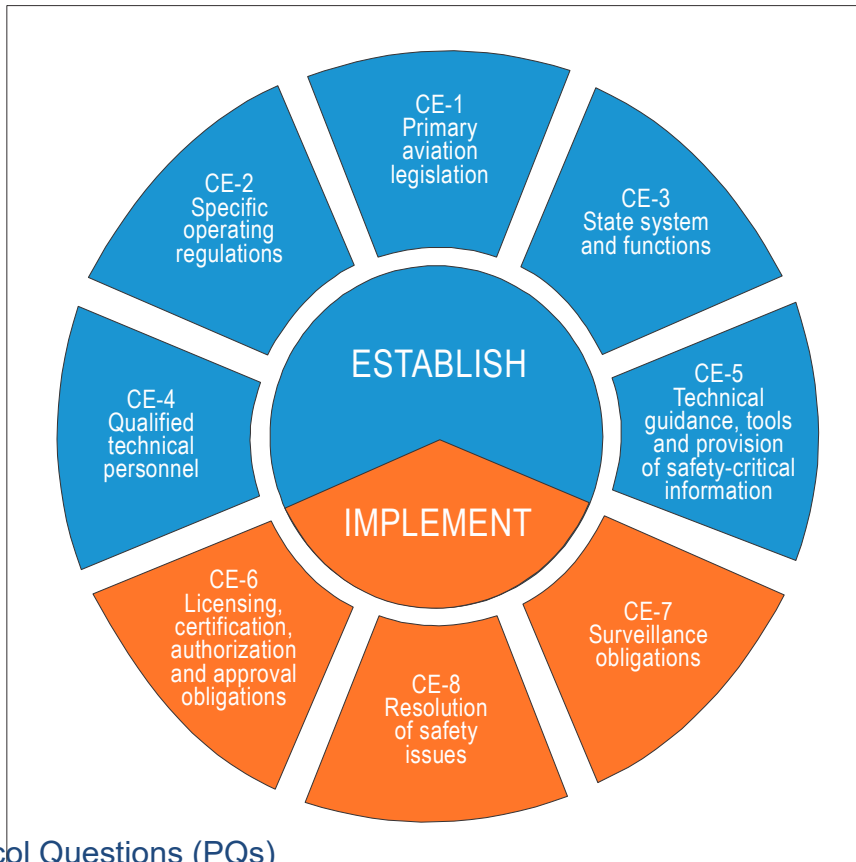
In addition to the national operational safety risks listed in the NASP, Bangladesh has identified other safety issues and initiatives selected for the NASP. These are given priority in the NASP since they are aimed at enhancing and strengthening safety oversight capabilities of Bangladesh and the management of aviation safety at the national level.

5.1 Critical Elements (CEs) of a safety oversight system

USOAP CMA audits involve on-site activities during which ICAO determines a State's capability for safety oversight by assessing the its effective implementation (EI) of the critical elements (CEs) of a safety oversight system.

The eight critical elements⁶ (CEs) of a safety oversight system are defined by ICAO. Bangladesh is committed to the effective implementation of these eight CEs, as part of its overall safety oversight responsibilities. The eight CEs are presented in Figure 4 below.

Figure 4. Critical elements of Bangladesh safety oversight system



5.2 Protocol Questions (PQs)







PQs are the primary tool used by ICAO in its USOAP CMA to assess the effective implementation of the eight CEs of a State safety oversight system. The USOAP CMA Working Group is responsible for coordinating Bangladesh response to all PQs by SSP agencies and for tracking overall compliance.

There are currently around 1,000 PQs, of which ICAO has identified a subset of Priority PQs that have a higher correlation to operational safety risks and should be used to prioritise State resources. SSP Foundational PQs are another subset considered by ICAO as prerequisites for the sustainable implementation of a full SSP. SSP foundational PQs are grouped in nineteen (19) subject areas derived from Annex 19 and the SMM. States can

6. Eight critical elements pertaining to USOAP, • CE 1: Primary aviation legislation • CE 2: Specific operating regulations; • CE 3: State system and functions; • CE 4: Qualified technical personnel; • CE 5: Technical guidance, tools and provision of safety-critical information; • CE 6: Licensing, certification, authorization and/or approval obligations; • CE 7: Surveillance obligations; and • CE 8: Resolution of safety issues.

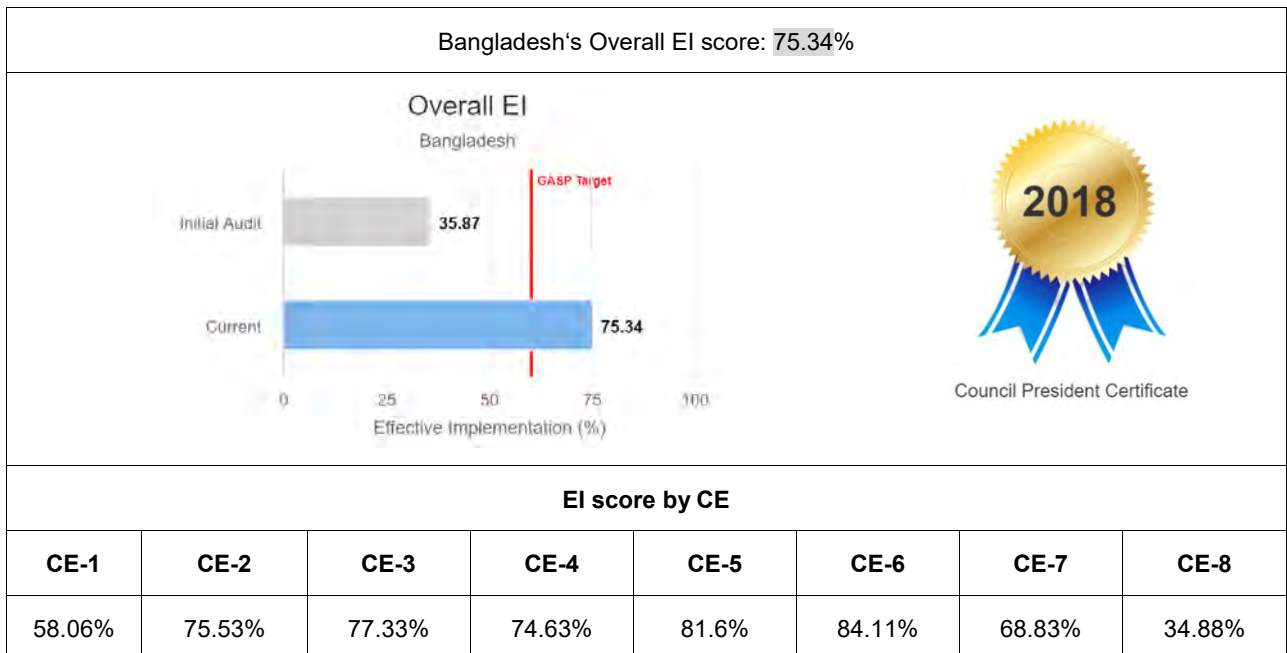
prioritize and address these PQs when conducting the SSP gap analysis or while defining the SSP implementation/action plan. The full list of SSP foundational PQs can be found via **iSTARS** at www.icao.int/safety/iStars.

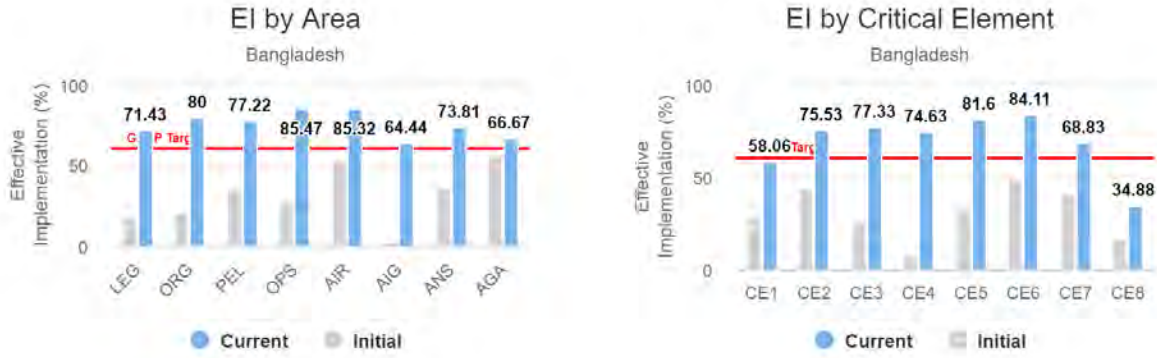
Table 3. iSTARS tools to identify specific deficiencies related to Safety oversight and SSP implementation

iSTARS SAFETY TOOLS			
Tools to determine the EI score, identify existing safety deficiencies related to safety oversight, as well as determine the safety oversight index for the three functional categories (refer to GASP Part I, 4.2.5.3)	USOAP Protocol Questions	PQ Tester	
	Level of Implementation and SSCs	Safety Audit Information	
	Summary of State Safety Indicators	State Safety Briefings	
	USOAP CMA OLF tools		
	Risk-based prioritization for operations, air navigation and support functions	Safety Oversight Margin	
Tools for SSP implementation	State safety programmes	SSP Gap Analysis	
	Status of SSP prerequisite protocol questions	SSP Foundation Tool	

5.3 USOAP Results by Area and Critical Element

Bangladesh was first audited in 2009. 2 other missions were conducted since then, the latest being in 2017. The latest ICAO activities, which aim to measure the effective implementation (EI) of the eight Critical Elements (CEs) of Bangladesh safety oversight system, as part of the ICAO Universal Safety Oversight Audit Programme (USOAP), have resulted in the following scores:





El score by audit area⁷

LEG	ORG	PEL	OPS	AIR	AIG	ANS	AGA
71.34%	80%	77.22%	85.47%	85.32%	64.44%	73.81%	66.67%

In 2017, ICAO measured the EI of the eight CEs by Bangladesh as part of its USOAP CMA. Since the initial audit, Bangladesh has improved its effective implementation (EI). The current overall result for Bangladesh is 75.34 % EI which is above the world average of 69.25%. Bangladesh has no Significant Safety Concerns (SSCs).

5.4 Safety Oversight Indexes (SOI)

A State’s Safety Oversight Index is defined by ICAO as the difference between the State’s EI score and the minimum EI score the State should have based on its traffic volume. A Safety Oversight Index can be positive or negative.⁸

The safety oversight index (SOI) of a Bangladesh is an ICAO indicator of its safety oversight capabilities. Every Bangladesh audited by ICAO has an SOI. It is a number greater than zero, where “1” represents a level at which the safety oversight capabilities of a Bangladesh would indicate the minimum expected capabilities considering the number of departures as an indication of the size of that Bangladesh’s aviation system. The calculations conducted by ICAO of Bangladesh SOI have resulted in the following scores:

Overall SOI score	Score in the area of Operations (PEL, OPS and AIR)	Score in the area of Air Navigation (AGA and ANS)	Score in the area of Support Functions (LEG, ORG and AIG)
1.20	1.18	1.22	1.22
Bangladesh has a high Safety Index over 1 in all 3 areas.			

7. Eight audit areas pertaining to USOAP, i.e. primary aviation legislation and civil aviation regulations (LEG), civil aviation organization (ORG); personnel licensing and training (PEL); aircraft operations (OPS); airworthiness of aircraft (AIR); aircraft accident and incident investigation (AIG); air navigation services (ANS); and aerodromes and ground aids (AGA).

8. For further information on the Safety Oversight Index, including how the index is determined and the functional breakdown, refer to Part I, Chapter 4.2.5 of the GASP.

5.5 Systemic Issues

The following 3 other safety issues in the Bangladesh context were considered of the utmost priority because they are systemic issues, which impact the effectiveness of safety risk controls. They were identified based on analysis from USOAP data, accident and incident investigation reports, safety oversight activities over the past 6 years, as well as on the basis of regional analysis conducted by APAC-RASG and APANPIRG on the basis of safety data collected from proactive and reactive activities.

These issues are typically organizational in nature and relate to challenges associated with the conduct of States' safety oversight functions, implementation of SSP at the national level and the level of SMS implementation by national service providers. They take into consideration organizational culture, policies and procedures within the aviation Stakeholders and those of service providers. These safety issues are in line with those listed in the 2020-2022 edition of the GASP, as well as the AP-RASP:

Safety Issue 1: Audit Areas with Lower EI Scores (AIG, AGA and ANS)

These are the areas where the Bangladesh scored the lower EI during the most recent ICAO USOAP audit and were therefore placed as high priority issues to resolve.

Safety Issue 2: Critical Elements with Lower EI Scores (CE8, CE4 and CE1)

These are the CEs where the Bangladesh scored the lower EI during the most recent ICAO USOAP audit and were therefore placed as high priority issues to resolve.

Safety Issue 3: Separation of regulation and service provision functions of CAAB

In accordance with a ministerial direction (2017), the safety regulation and air navigation services provision functions of the Civil Aviation Authority of Bangladesh will be separated in the next few years. This major organisational change will impact the State Safety Programme and hence robust change management procedures must be applied to ensure there is no disruption to regulatory or air navigation services functions, during or after the separation. In this regard, CAAB has taken a project to implement **Separation of regulatory and service provision functions of CAAB** in line with the SEI-1C and SEI-2A of the GASP with a view to **Establish and maintain an independent regulatory oversight authority**.

To address the issues listed above, Bangladesh will implement a series of SEIs. The full list of the SEIs/ aviation safety Roadmap is presented in the Appendix to the NASP.

SECTION 6. MONITORING IMPLEMENTATION

6.1 Monitoring Strategy

Bangladesh will continuously monitor the implementation of the SEIs listed in the NASP and measure safety performance of the national civil aviation system, to ensure the intended results are achieved, using the mechanisms presented in the appendix to this plan.

The CAAB (regulator) will also monitor the safety performance indicators (SPIs) within the limits of the data collected from the occurrence reporting system and CAAB safety management systems (eg ASRTM/ EMPIC/New Solution). External data provided by ICAO (online platforms) is also used as appropriate. Industry/service providers are responsible for monitoring their own safety performance indicators (SPIs) using their own management systems. Organisations may find benefit in using operational data recording systems to help monitor some safety performance indicators.

In addition to the above, Bangladesh will review the NASP every 3 years or earlier, if required, to keep the identified operational safety risks, safety issues and selected SEIs updated and relevant. The Civil aviation authority of Bangladesh (CAAB) will periodically review the safety performance of the initiatives listed in the NASP to ensure the achievement of national safety goals and targets. If required, Bangladesh will seek the support of RASG-APAC, industry and service providers to ensure the timely implementation of SEIs to address safety deficiencies and mitigate risks. Through close monitoring of the SEIs, Bangladesh will make adjustments to the NASP and its initiatives, if needed, and update the NASP accordingly.

6.2 Safety Performance Measurement

The ability to measure and report on Bangladesh safety performance is vital to determine the success of NASP strategies. Performance of each NASP safety goal is measured against SPIs that are aligned to, but expanded upon, those identified in the GASP. Each SPI has a defined benchmark or target (SPT). Details on the SPIs and SPTs are identified in Table 1 of Section 3.

Bangladesh will use the indicators listed in Section 3 of this plan to measure safety performance of the civil aviation system and monitor each national safety target. A periodic annual safety report will be published to provide stakeholders with relevant up-to-date information on the progress made in achieving the national safety goals and targets, as well as the implementation status of the SEIs.

In the event that the national safety goals and targets are not met, the root causes will be presented. If Bangladesh identifies critical operational safety risks, reasonable measures will be taken to mitigate them as soon as practicable, possibly leading to an unscheduled revision of the NASP.

6.3 Sharing safety data

SSP stakeholders collect information that can contribute to understanding safety performance and identify safety-related trends. Sharing safety information among SSP stakeholders helps support risk management at a national level and ensure the safety performance of Bangladesh can be readily measured.

Government agencies can often access information based on legislated (mandatory) or voluntary reporting from industry. SSP stakeholders should make every effort to share safety information in a timely manner, working within the extant limits required by legislative and privacy considerations.

6.4 Monitoring and oversight

SSP governance meetings and working groups play a key role in monitoring and delivering NASP SEIs, safety goals, SPIs and SPTs.

Each SEI action and SPT is tracked via an appropriate SSP governance forum, to monitor the achievement of defined State safety goals and status of planned initiatives. Agencies or SSP governance forums may be assigned responsibility to provide supporting safety information or conduct certain analysis. Performance will be escalated by the responsible SSP governance forum in accordance with the governance structure and escalation process detailed in the SSP. Relevant responsibilities are defined in Table 1, and throughout Appendix.

The State Safety Programme Coordination Group (SSP-CG) is responsible for overseeing the National Aviation Safety Plan. The SSP-CG is directly supported in this role by the NASP Implementation Group of senior aviation officials, and the SSP Implementation Project Team (SSP-IPT).

SSP-IPT will periodically report to the SSP-CG on the development and implementation of the SSP and the NASP. The SSP-CG is responsible for Bangladesh safety oversight including SSP working groups.

6.5 Actions on not meeting Bangladesh acceptable level of safety performance, safety goals and/or targets

The relevant SSP working group (as defined in Table 1) is responsible for monitoring the implementation of specific NASP strategy items and for continuous improvement of the NASP. Should Bangladesh not meet, or is not expected to meet, its acceptable level of safety performance, goals or targets, the relevant SSP working group will seek to identify root causes and take reasonable measures to mitigate any critical safety risks as soon as reasonably practicable.

6.6 Safety Information Sharing with RASG

The aviation system is rapidly changing in light of economic, social and technological developments. Bangladesh adopted a standardized approach to provide information at the regional level, for reporting to the RASG-APAC. This allows the region to receive information and assess operational safety risks using common methodologies. Bangladesh adopts a proactive approach to identify emerging aviation trends and associated hazards where possible, and assess risks and implement effective mitigation strategies.

Bangladesh actively engages in the development of regional aviation safety priorities and policies through forums such as the RASG-APAC, APRAST and Directors General of Civil Aviation Asia and Pacific Region (DGCA) conferences.

6.7 Feedback/Query on NASP

Any questions, comments regarding the NASP and its initiatives, and further requests for information, may be addressed to the following:

Civil Aviation Authority of Bangladesh (CAAB)
Headquarters, Flight Standard & Regulations Division
+880 (2) 8901162
+880 (2) 890 1418
mfsr@caab.gov.bd
www.caab.gov.bd

Appendices

APPENDIX 1—OPS ROADMAP

DETAILED SEIs: NATIONAL OPERATIONAL SAFETY RISKS

Goal 1. Achieve a continuous reduction of operational safety risks

National SEI 1.1	Bangladesh Action Plan (OPS Roadmap)			
Safety Enhancement Initiative (SEI)	Mitigate contributing factors to Loss of Control In-Flight (LOC-I) accidents and incidents.			
ID	1.1			
SSP Governance	SSP-CG			
Stakeholders	<ul style="list-style-type: none"> CAAB-Regulator AAIC-BD 	<ul style="list-style-type: none"> CAAB Service Providers Industry 	<ul style="list-style-type: none"> BAF BMD 	
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date	
	1.1.1 Focus on the management of the risk of LOC-I occurrences with industry, as appropriate to their operations, as part of safety oversight activities	CAAB-Regulator	Ongoing	
	1.1.2 Develop/review/promote the regulations for upset prevention and recovery training (URPT) and CRM (as applicable).	CAAB-Regulator	Q4 2022	
	1.1.3 Develop/provide guidance to operators (AOC/ATO) on the implementation of LOC-I requirements, including guidance for operators Upset Prevention and Recovery Training.	CAAB-Regulator	Q4 2022	
	1.1.4 Conduct an education campaign to ensure that pilot training program extensively incorporate human factors such as distraction, situational awareness etc.	CAAB-Regulator	Q4 2021	
	1.1.5 Conduct a campaign surveillance and education campaign on aircraft engine reliability, maintenance and overhaul.	CAAB-Regulator	Q2 2022	
	1.1.6 Work with industry stakeholders to address the risks caused by unruly passenger behavior on board aircraft.	CAAB-Regulator	Q4 2021	
	1.1.7 Flight Data Analysis Program (FDAP) guidance to encourage operators to consider LOC-I precursors as part of FDAP.	CAAB-Regulator	Q4 2022	
	1.1.8 Maintain a regular dialogue with operators and encourage them to use the FDM data to support monitoring and analysis of LOC-I occurrences.	CAAB-Regulator	Q4 2023 and ongoing	
	1.1.9 Continue to work with AOC holders, ANSP's and aerodrome operators to ensure they include LOC-I risk in their own SMS.	Industry	Q4 2021 and ongoing	
	1.1.10 Evaluate the SOPs to ensure the effective flight management during adverse weather and recovery of unusual aircraft altitudes.	CAAB-Regulator	Q4 2021	
Related NASP target(s)	1A, 1B, 1C, 1D, 1E, 1F, 1G			
GASP Reference	<ul style="list-style-type: none"> SEI-LOC-I (States) — <i>Mitigate contributing factors to Loss of Control In-Flight accidents and incidents.</i> SEI-17/18 (States) — <i>Establishment of safety risk management at the national level</i> 			
AP-RASP Reference	<ul style="list-style-type: none"> Goal 1. <i>Reduction in Operational Risks</i> A.I.1, A.I.2, A.I.3, A.I.4 			
Other Reference	<ul style="list-style-type: none"> Advisory Circular (AC 009) for Air Operators on Establishment of Flight Data Analysis (FDA) Programme— 2005. Advisory Circular (AC 003A) for Air Operators on Crew Resource Management (CRM) Training— 			

DETAILED ACTIONS IN THE NASP

2005.

• Advisory Circular (AC 002A) for Air Operators on Standard Operating Procedures (SOP)

DETAILED ACTIONS IN THE NASP

National SEI 1.2

Bangladesh Action Plan (OPS Roadmap)

Safety Enhancement Initiative (SEI)	Mitigate contributing factors to Runway Safety* accidents and incidents.		
ID	1.2		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB • AAIC-BD 	<ul style="list-style-type: none"> • BMD • Industry 	•
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	1.2.1 Focus on the management of the risk of RI/RE occurrences with industry, as appropriate to their operations, as part of safety oversight activities	CAAB Regulator	Ongoing
	1.2.2 Establish and implement National Runway Safety Programme.	CAAB-Regulator	Q1 2022
	1.2.3 Promote the establishment of local runway safety teams.	CAAB-Regulator	ongoing
	1.2.4 Audit the effectiveness of the local runway safety teams (including effectiveness of SMS in reducing Runway Safety precursor events)	CAAB-Regulator	ongoing
	1.2.5 Assess the performance of organizational change management processes for procedural and/or infrastructural changes on the manoeuvring areas at airports of Bangladesh.	CAAB-Regulator	Q2 2022
	1.2.6 Flight Data Analysis Program (FDAP) guidance to encourage operators to consider Runway Safety precursors as part of their FDAP.	CAAB-Regulator	Q4 2021
	1.2.7 Maintain a regular dialogue with operators and encourage them to use the FDM data to support monitoring and analysis of RI/RE occurrences.	CAAB-Regulator	Q4 2022 and ongoing
	1.2.8 Continue to work with AOC holders, ANSP's and aerodrome operators to ensure they include RE/RI risk in their own SMS.	CAAB-Regulator	Q4 2022 and ongoing
	1.2.9 Conduct risk modelling, risk assessment and safety analysis of runway safety based on occurrences reports in the ATM/ANS domain, including low visibility runway operations.	CAAB-Regulator	Q2 2022
	1.2.10 Establish requirements for the new ICAO reporting format for assessing and reporting runway surface conditions in accordance with the ICAO Global Reporting Format in Annex 14 Vol I.	CAAB-Regulator	Q4 2021
	1.2.11 Promote the new ICAO format for runway surface condition reporting and provide guidance to industry during its implementation.	CAAB-Regulator	Q4 2021
	1.2.12 Review the need for, and feasibility, of implementing suitable technologies, such as advanced surface movement guidance and control system (A-SMGCS), SMR, MLAT, or runway incursion warning systems (ARIWS) aiming to improve ground situational awareness.	CAAB ANSP and aerodrome operator	Q4 2022
	1.2.13 Agree on a common definition for runway safety events and promote training on RE/RI.	CAAB-Regulator	Q4 2021

	1.2.14 Increase Bangladesh compliance with Annex 14 through the review of the level of implementation of the CAR'84 and ANO-14 related to Aerodromes.	CAAB-Regulator	Q4 2022
Related NASP target(s)	1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I		
GASP Reference	<ul style="list-style-type: none"> • SEI-RE (States) — <i>Mitigate contributing factors Runway Excursion accidents and incidents.</i> • SEI-RI (States) — <i>Mitigate contributing factors Runway Incursion accidents and incidents.</i> • SEI-17/18 (States) — <i>Establishment of safety risk management at the national level</i> 		
AP-RASP Reference	<ul style="list-style-type: none"> • Goal I. <i>Reduction in Operational Risks</i> A.I.1, A.I.5, A.I.6, A.I.7, A.I.8, A.I.9, A.I.10, A.I.11, A.I.12, A.I.13, A.I.14, A.I.15, A.I.16, A.I.17 		
Other Reference	<ul style="list-style-type: none"> • (ICAO) Runway Safety Programme — Global Runway Safety Action Plan, First Edition, November 2017 • Advisory Circular (AC 009) for Air Operators on Establishment of Flight Data Analysis (FDA) Programme— 2005. 		

National SEI 1.3	Bangladesh Action Plan (OPS Roadmap)		
Safety Enhancement Initiative (SEI)	Mitigate contributing factors to Controlled Flight into Terrain (CFIT) accidents and incidents.		
ID	1.3		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB • AAIC-BD • BMD • Industry 		
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	1.3.1 Focus on the management of the risk of CFIT occurrences with industry, as appropriate to their operations, as part of safety oversight activities	CAAB Regulator	Ongoing
	1.3.2 Enhance cooperation of the airport operators with the SSP coordination and working groups.	CAAB Regulator Airport Operators	2021
	1.3.3 Flight Data Analysis Program (FDAP) guidance to encourage operators to consider CFIT precursors as part of FDAP.	CAAB Regulator	Q4 2022
	1.3.4 Maintain a regular dialogue with operators and encourage them to use the FDM data to support monitoring and analysis of CFIT occurrences.	CAAB Regulator	Q4 2023 and ongoing
	1.3.5 Continue to work with AOC holders, ANSP's and aerodrome operators to ensure they include CFIT risk in their own SMS.	All	Q4 2021 and ongoing
	1.3.6 Issue safety Advisory Circular to increase adherence the procedures of Terrain Awareness and Warning System (TAWS)	CAAB Regulator	Q4 2021
	1.3.7 Promote the use of GPS-driven position data to feed TAWS.	CAAB-ANSP	Q4 2021
	1.3.8 Ensure that ATC Surveillance system is improved for the provision of Minimum Safety Altitude Warning (MSAW) System	CAAB Regulator	Q4 2022
	1.3.9 Implementation of Satellite-based Augmentation System to enable vertically guided and continuous descent approaches.	CAAB-ANSP	Q4 2022

Related NASP target(s)	1A, 1B, 1C, 1D, 1E, 1F, 1G,1H, 1I
GASP Reference	<ul style="list-style-type: none"> • SEI-CFIT (States) — <i>Mitigate contributing factors to the risk of CFIT.</i> • SEI-17/18 (States) — <i>Establishment of safety risk management at the national level.</i>
AP-RASP Reference	<ul style="list-style-type: none"> • Goal I. <i>Reduction in Operational Risks</i> A.I.1, A.I.9, A.I.10, A.I.11, A.I.12, A.I.13, A.I.14, A.I.15, A.I.16, A.I.17
Other Reference	<ul style="list-style-type: none"> • Advisory Circular (AC 009) for Air Operators on Establishment of Flight Data Analysis (FDA) Programme— 2005. • Advisory Circular (AC 001) for Air Operators on Training Programmers for Terrain Awareness and Warning System (TAWS) — 2005. • Advisory Circular (CAAB AC019) for Air Operators on Reduced Effectiveness Of TAWS/EGPWS Equipment — 2009.

National SEI 1.4 Bangladesh Action Plan (OPS Roadmap)

DETAILED ACTIONS IN THE NASP

Safety Enhancement Initiative (SEI)	Mitigate contributing factors to Mid-Air Collision (MAC) accidents and incidents.		
ID	1.4		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB • AAIC-BD (AIG) 	<ul style="list-style-type: none"> • CAAB-ANSP • BAF 	<ul style="list-style-type: none"> • Industry
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	1.4.1 Focus on the management of the risk of MAC occurrences with industry, as appropriate to their operations, as part of safety oversight activities	CAAB Regulator	Ongoing
	1.4.2 Establish guidance and regulations to ensure aircrafts are equipped with Airborne Collision Avoidance System (ACAS) and promote adherence to ACAS warning procedures.	CAAB Regulator	Q4 2022
	1.4.3 Continue to implement programs that raise awareness of drone safety rules in the community.	CAAB Regulator	ongoing
	1.4.4 Implement RPAS passive detection at selected Bangladesh aerodromes.	CAAB Regulator	Q4 2022
	1.4.5 Flight Data Analysis Program (FDAP) guidance to encourage operators to consider MAC precursors as part of FDAP.	CAAB Regulator	Q4 2022
	1.4.6 Maintain a regular dialogue with operators and encourage them to use the FDM data to support monitoring and analysis of MAC occurrences (eg. ACAS RA alerts).	CAAB Regulator	Q4 2023 and ongoing
	1.4.7 Continue to work with AOC holders, ANSP's and aerodrome operators to ensure they include MAC risk in their own SMS.	CAAB Regulator	Q4 2021 and ongoing
	1.4.8 Perform an analysis of ATM related occurrences (eg. ACAS RA) reported to the CAAB and develop an ATM safety risk profile to guide safety actions to address the key risks.	CAAB-Regulator	Q4 2022 and ongoing
	1.4.9 Review the need for, and feasibility of, implementing suitable technologies (eg enhanced STCA/safety nets) aiming to reduce the risk of MAC en-route and in TMA. Note: STCA means Short Term Conflict Alerts.	CAAB-ANSP	Q4 2022
	1.4.10 Establish provisions for the installation and use of ADS-B for Visual Flight Rules (VFR) aircraft operations.	CAAB-ANSP	Q4 2023

Related NASP target(s)	1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I
GASP Reference	<ul style="list-style-type: none"> • SEI-MAC (States) — <i>Mitigate contributing factors to Mid-Air Collision accidents and incidents.</i> • SEI-17/18 (States) — <i>Establishment of safety risk management at the national level.</i>
AP-RASP Reference	
Other Reference	• Advisory Circular (AC09) for Air Operators on Establishment of Flight Data Analysis (FDA) Programme— 2005.

National SEI 1.5

Bangladesh Action Plan (OPS Roadmap)

Safety Enhancement Initiative (SEI)	Mitigate contributing factors to Safety of Ground Operations accidents and incidents.		
ID	1.5		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB • AAIC-BD (AIG) 	<ul style="list-style-type: none"> • CAAB-ANSP • BAF 	<ul style="list-style-type: none"> • Industry
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	1.5.1 Focus on the management of the risks during ground operations with regulated organizations of Bangladesh, as appropriate to their operations, as part of safety oversight activities.	CAAB-Regulator	ongoing
	1.5.2 Focus on the specific risks for ground operations during ramping up of operations post COVID-19	CAAB-Regulator	Q2 2022
	1.5.3 Focus on performance of ground handling, including Subcontractors (if any), as part of compliance oversight activities.	CAAB-Regulator	Q4 2022
	1.5.4 Establish regulations and guidance to ensure Safety Ground Operations in Bangladesh.	CAAB-Regulator	Q4 2021
	1.5.5 Continues to work with AOC holders, ANSPs and aerodrome operators to ensure they include ground operations related risks in their own SMS.	CAAB-Regulator	Q4 2022 and ongoing
	1.5.6 Use of technology (eg. A-SMGCS, SMR, MLAT or better technology for early detection of ground hazards) to prevent ground operations occurrences.	CAAB-Airport Operators	Q4 2022 and ongoing
	1.5.7 Ensure adequate safety promotion in ground operations to highlight the main risks to aircraft operations (eg. due to aircraft mass and balance reporting errors, failure to properly adhere to dangerous goods procedures and failure to report damage to aircraft during ground operations).	CAAB-Regulator	Q4 2022
Related NASP target(s)	1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I		
GASP Reference	• SEI-17/18 (States) — <i>Establishment of safety risk management at the national level.</i>		
AP-RASP Reference	• SEI-GCOL (States) — <i>Mitigate contributing factors to Ground Collisions accidents and incidents.</i>		
Other Reference			

National SEI 1.6

Bangladesh Action Plan (OPS Roadmap)

DETAILED ACTIONS IN THE NASP

Safety Enhancement Initiative (SEI)	Mitigate contributing factors to Bird and Wildlife Strike accidents and incidents.		
ID	1.6		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> CAAB AAIC-BD (AIG) 	<ul style="list-style-type: none"> CAAB-MOPS BAF 	<ul style="list-style-type: none"> Industry
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	1.6.1 Focus on the management of the risk of Bird/Wildlife strikes occurrences with industry, as appropriate to their operations, as part of safety oversight activities.	CAAB-Regulator	ongoing
	1.6.2 Continue to implement programs that raise awareness of Wildlife/ Bird Strikes regulations in the community.	CAAB-Regulator	ongoing
	1.6.3 Continues to work with AOC holders, ANSPs and aerodrome operators to ensure they include Bird and Wildlife Strikes related risks in their own SMS.	CAAB-Regulator	Q4 2022 and ongoing
	1.6.4 Promote collecting, reporting, recording and analysis of safety data on Wildlife/ Bird Strikes Engagement Forums to simplify Wildlife Management processes.	CAAB-Airport Operators	Q4 2021
	1.6.5 Work with airports to extend the scope of the current National Civil Aviation Wildlife Hazard/ Bird Control Committee to include wildlife threats around airports and to enhance collaboration with local communities and other government agencies.	CAAB-Regulator	Q4 2022 and ongoing
	1.6.6 Work with all stakeholders to ensure that the National Civil Aviation Wildlife Hazard/ Bird Control Committee enhances its capability in terms of analysis of data and identifying safety issues / best practices for Bird Strikes/Wildlife hazard reduction.	CAAB-Regulator	ongoing
	1.6.7 Ensure better management of plants and land use at airports.	CAAB-Airport Operator	Q4 2022
	1.6.8 Continue to use the Runway Sweep-in Vehicles to control the activities.	CAAB-Airport Operator	ongoing
	1.6.9 Use of technology to prevent Bird and Wildlife Strikes occurrences.	CAAB-Airport Operator	Q4 2022
Related NASP target(s)	1A, 1B, 1C, 1D, 1E, 1F, 1G, 1H, 1I		
GASP Reference	• SEI-17/18 (States) — <i>Establishment of safety risk management at the national level.</i>		
AP-RASP Reference			
Other Reference			

APPENDIX II—ORG ROADMAP

DETAILED SEIs: OTHER SAFETY ISSUES

Goal 2. Strengthen Bangladesh’s safety oversight capabilities

National SEI 2.1	Bangladesh Action Plan (ORG Roadmap)		
Safety Enhancement Initiative (SEI)	Ensure the Bangladesh civil aviation safety regulatory regime is optimized for aviation safety performance, and where practical for the Bangladesh aviation environment, aligned to the standards and the best practices of ICAO and leading aviation countries.		
ID	2.1		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB-Airport Operator • CAAB-ANSP • Industry • CAAB-Regulator • AAIC-BD • BMD 		
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	2.1.1 Promote and enhance the application of CAAB regulatory philosophy.	CAAB-Regulator	Q4 2021
	2.1.2 Finalize and implement the latest the regulatory program including any amendments.	CAAB-Regulator	Q4 2023 (and ongoing)
	2.1.3 Continue to modernize and refine Bangladesh approach to personnel licensing including medical certification.	CAAB-Regulator	Q4 2023
	2.1.4 Continue to refine Bangladesh approach to the carriage of Dangerous Goods by Air.	CAAB-Regulator	Q4 2021
	Separation of CAAB safety regulation and service provision		CAAB-Regulator
	2.1.5 Revise Bangladesh Enforcement Policy.	CAAB-Regulator	Q4 2021
	2.1.6 Implement the self-administration funding model.	CAAB-Regulator	Q4 2022
	2.1.7 Embed the regulatory project management approach and integrate change management.	CAAB-Regulator	Q4 2022
	2.1.8 Apply change management and risk management processes to ensure that there is no loss or reduction of regulatory function during the transformation project to separate the CAAB service providers from the regulator.	CAAB-Regulator	Q4 2022
	2.1.9 Target ANSP change management and risk management processes as part of safety oversight planning, during the transformation project to separate the CAAB service providers from the regulator.	CAAB-Regulator	Q4 2022
	2.1.10 Update the SSP document as necessary to reflect the organizational changes to the regulatory functions following separation.	CAAB-Regulator	Q4 2022
Related NASP target(s)	2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 2I, 2J, 2K, 2L		
GASP Reference	<ul style="list-style-type: none"> • SEI-1/8 (State) — <i>Consistent implementation of ICAO SARPs at the national level.</i> • SEI-2 (State) — <i>Development of a comprehensive regulatory oversight framework.</i> • SEI-9 (State) — <i>Continued implementation of and compliance with ICAO SARPs at the national level.</i> 		
AP-RASP Reference			
Other Reference	<ul style="list-style-type: none"> • CAAB Works Plan 2021-22 • Ministerial Direction to CAAB — 2017 		

DETAILED ACTIONS IN THE NASP

National SEI
2.2

Bangladesh Action Plan (ORG Roadmap)

Safety Enhancement Initiative (SEI) Enhance Bangladesh regulatory services capabilities and compliance monitoring of the aviation industry to assure aviation safety performance to regulatory requirements.

ID 2.2

SSP Governance SSP-CG

Stakeholders

- CAAB-Regulator
- CAAB-Airport Operators
- CAAB-ANSP
- BMD
- Industry
- BAF

Actions Action to be undertaken in support of the SEI **Responsible Entity** **Completion Target Date**

Continuously improve safety management at State Level

2.2.1 Continuously improve safety management at State level by

- Implementing and improving the safety management processes required in the SSP and ensuring ongoing updates of ICAO USOAP CMA online platforms.
- Actively participating ICAO forums to ensure NASP aligns with GASP and AP-RASP.
- Targeting key risks as part of safety management and safety oversight activities.
- Ensuring Human Factors principles are fully integrated into Safety Management processes
- Improving safety culture through improved safety promotion and monitoring of occurrence reporting rates.
- Ongoing development of safety performance indicators and targets that provide assurance that safety objectives of the NASP are being met.
- Include SMS promotional material developed by ICAO and SMICG* in SMS training delivered by the CAAB for regulator and industry.

CAAB-Regulator Ongoing

* SMICG means Safety Management International Collaboration Group.

Implementation of Risk-based and Performance-based (RBO/PBO) Oversight

2.2.2 Develop, implement and refine a risk-based oversight (RBO) methodology across the regulated industry sectors. CAAB-Regulator Q4 2021

2.2.3 Implement an enhanced regulatory oversight operating model to ensure the effective allocation of resources to enable optimal safety oversight. CAAB-Regulator Q4 2021

2.2.4 Ensure that CAAB has sufficient competent (qualified and trained) inspectorate staff to properly discharge their safety oversight* responsibilities in a risk-based and performance-based regulatory environment. CAAB-Regulator Q4 2022 Ongoing

* The RBO/PBO oversights mainly focus on: Positive safety culture, governance structures, human factors, fatigue and risk management, performance monitoring, fuel management and the use of inspection findings and safety information such as accidents and incidents.

2.2.5 Develop processes to measure the effectiveness of CAAB- Q4 2021

DETAILED ACTIONS IN THE NASP

	risk-based and performance-based methodologies across relevant sectors of the civil aviation system.	Regulator	
2.2.6	Develop the tools to support organization risk profiling in all domains.	CAAB-Regulator	Q4 2021
	Information Sharing		
2.2.7	Improve safety management by implementing best practices in the sharing of safety information, between: <ul style="list-style-type: none"> • CAAB and ICAO/other States aviation authorities • CAAB and Bangladesh military authorities • CAAB and Industry/regulated entities 	CAAB-Regulator	Q2 2023 and Ongoing
2.2.12	Introduce and use new occurrence reporting system for CAAB and encourage its use by industry.	CAAB-Regulator	Q4 2022 and Ongoing
Related NASP target(s)	2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 2I, 2J, 2K, 2L		
GASP Reference	<ul style="list-style-type: none"> • SEI-2 (State) — <i>Development of a comprehensive regulatory oversight framework.</i> • SEI-4 (State) — <i>Strategic allocation of resources to enable effective safety oversight.</i> • SEI-10 (State) — <i>Strategic allocation of resources to enable effective safety oversight.</i> • SEI-11 (State) — <i>Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner.</i> • SEI-17/18 (State) — <i>Establishment of safety risk management at the national level</i> 		
AP-RASP Reference			
Other Reference	<ul style="list-style-type: none"> • CAAB Works Plan 2021-22 • Ministerial Declaration —Beijing Declaration 		

National SEI
2.3

Bangladesh Action Plan (ORG Roadmap)

Safety Enhancement Initiative (SEI) Ensure Bangladesh aviation safety system and safety oversight capability are responsive to new crisis or emerging issues (threats or trends).

ID 2.3

SSP Governance SSP-CG

- Stakeholders**
- CAAB-Airport Operators
 - CAAB (Regulator)
 - CAAB-ANSP
 - CAAB-AVSEC
 - AAIC-BD
 - Industry
 - BMD
 - BAF

Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
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COVID-19 Pandemic

- | | | | |
|--------------|--|----------------|---------------------|
| 2.3.1 | Continue to support industry by promoting latest COVID-19 related guidance material as applicable to individual domains (including general aviation). | CAAB-Regulator | Ongoing |
| 2.3.2 | Continue to support industry and to proactively identify and mitigate COVID-19 safety risks as the pandemic continues. | CAAB-Regulator | Ongoing |
| 2.3.3 | Continue to participate ICAO COVID-19 related forums and where possible work closely with ICAO to develop ICAO standardized guidance in this area. | CAAB-Regulator | Q2 2022 and ongoing |
| 2.3.4 | Revise regulatory oversight programme to include remote surveillance where appropriate to overcome COVID-19 public health measures preventing on-site audits and inspections. | CAAB-Regulator | Q2 2022 |
| 2.3.5 | Develop CAAB safety oversight plans to Target post-COVID-19 ramping up of operations in each domain, focusing on management systems, human performance, human factors and return to service of stored equipment. | CAAB-Regulator | Q2 2022 |
| 2.3.6 | Support the industry during the COVID-19 crisis to address regulatory issues (including exemptions) required to scale down operations and the use of contingency measures. | CAAB-Regulator | Q4 2022 and ongoing |
| 2.3.7 | Co-ordinate with ICAO APAC RO as necessary to ensure consistency in regional approach in respect of contingency measures and safe return to normal operations. | CAAB-Regulator | Q4 2022 and ongoing |
| 2.3.8 | Ensure robust change management and risk management processes are followed in respect of the dramatic changes required in response to COVID-19 including return to normal operations as COVID-19 restrictions are eased. | CAAB-Regulator | Q4 2022 and ongoing |

Regulatory Changes

- | | | | |
|--------------|--|----------------|---------|
| 2.3.9 | Ensure that the regulatory framework for civil aviation in Bangladesh is current and commensurate with the size and scope of aviation activities in Bangladesh, by: <ul style="list-style-type: none"> • Working with SMEs on the development of CAAB regulations and implementing rules and associated guidance material. • Working with MOCAT, as required, on State level policy decisions affecting the regulatory framework. • Working with all relevant stakeholders to develop national regulations. | CAAB-Regulator | Ongoing |
|--------------|--|----------------|---------|

DETAILED ACTIONS IN THE NASP

	2.3.10	Implement National regulations and assist affected organizations and persons with implementing the associated requirements for them.	CAAB-Regulator	Ongoing
	RPAS/Drone			
	2.3.11	Develop a national Drone Policy to manage the safe integration of RPAS into Bangladesh airspace.	CAAB-Regulator	2021
	2.3.12	Develop Drone Regulations to manage the safe integration of RPAS into Bangladesh airspace.	CAAB-Regulator	2021
		Note: Since the majority of drone operators in Bangladesh, in either private or professional capacity, are members of the public, the communications strategy around Drone regulations have been a key focus during 2021.		
	2.3.13	Develop an industry guidance on Management of aerodromes operations in the event of drone infringement, including suspension and re-activation of flight operations as required and prohibition of drone flying in proximity to an aerodrome.	CAAB-Regulator	2021
	2.3.14	Establish a RPAS registration and operator accreditation system.	CAAB-Regulator	2021
	2.3.15	Review and update CAAB drone specific webpage https://www.caab.gov.bd/general-aviation/drones with all the latest information on the rules, procedures, safety guidance etc.	CAAB-Regulator	Ongoing
	Cyber Security			
	2.3.16	Increase CNS/Air Traffic Management System Cyber Resilience.	CAAB-Regulator CAAB-AVSEC, CAAB-ANSP	Ongoing
	2.3.17	Establish a cross-domain regulatory working group on cybersecurity to prepare for implementation of the new aviation safety regulations and providing associated guidance for industry.	CAAB-AVSEC, CAAB-ANSP	Q4 2023
	2.3.18	Review synergies between cybersecurity requirements in the security domain and those proposed requirements in the safety domain to ensure efficient implementation by the cybersecurity working group.	CAAB-Regulator CAAB-AVSEC, CAAB-ANSP	Q4 2021
	Laser Attacks			
	2.3.19	Campaign against laser attacks to educate public about its bad impact on flight during approach and landing.	CAAB-Regulator	Q4 2021
	2.3.20	Establish a working group on laser attacks to prepare for implementation of the new aviation safety regulations on prohibition of laser attacks in proximity to an aerodrome.	CAAB-Regulator	Q4 2021
	2.3.21	Review and update the Advisory Circular AC (AD-10) on Hazardous Non-aeronautical Ground Lights / LASER Emitter Near the Aerodromes	CAAB-Regulator	Q2 2022
Related NASP target(s)	2A, 2B, 2C, 2D, 2E, 2F, 2G, 2H, 2I, 2J, 2K, 2L			
GASP Reference	<ul style="list-style-type: none"> SEI-10 (State) — <i>Strategic allocation of resources to enable effective safety oversight.</i> SEI-11 (State) — <i>Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner.</i> 			
AP-RASP Reference				
Other Reference	<ul style="list-style-type: none"> CAAB Works Plan 2021-22 ICAO CART Recommendations and Quick Reference Guidance AC(AD-10) —Hazardous Non-aeronautical Ground Lights / LASER Emitter Near the Aerodromes 			

National SEI 2.4

Bangladesh Action Plan (ORG Roadmap)

DETAILED ACTIONS IN THE NASP

Safety Enhancement Initiative (SEI)	Strengthen Bangladesh SSP Workforce Capabilities.		
ID	2.4		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> CAAB-Regulator CAAB-Airport Operators 	<ul style="list-style-type: none"> AAIC-BD CAAB-ANSP 	<ul style="list-style-type: none"> BMD BAF
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	2.4.1 Develop, implement and enhance SSP Workforce Strategies.	CAAB and AAIC-BD	Q4 2021
	2.4.2 Develop, implement and enhance SSP Capacity Building Programme in line with Manpower Resource Plans (demand/availability) per section.	CAAB-Regulator	ongoing
	2.4.3 Conduct a review of CAAB's inspectorate personnel technical capability against required competencies and accordingly develop individual training plan with priority.	CAAB-Regulator	Q4 2021
	2.4.4 Implement SSP Capacity Building Plan through SSP Education (training, seminar and workshop)	CAAB-Regulator	ongoing
	2.4.5 Develop and deliver SSP education for SSP governance and working group participants.	CAAB-Regulator	ongoing
Related NASP target(s)	2C, 2D, 2E, 2F, 2G		
GASP Reference	• SEI-5 (State) — <i>Qualified technical personnel to support effective safety oversight.</i>		
AP-RASP Reference	• A.II.4 — <i>Standardized Capacity Building Programme</i>		
Other Reference	<ul style="list-style-type: none"> CAAB ORG Plan 2020-21: <i>Workforce Capability Strategy</i> Ministerial Declaration — Beijing Declaration 		

Goal 3. Implement effective State safety programme (SSP) that delivers an acceptable level of safety performance

National SEI 3.1	Bangladesh Action Plan (ORG Roadmap)		
Safety Enhancement Initiative (SEI)	Ensure the implementation of an effective SSP for Bangladesh and maintain the continuous improvement of the SSP and the associated governance.		
ID	3.1		
SSP Governance	SSP-IPT/CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB (Regulator) • CAAB (ANSP) • CAAB (Airport Operators) • AAIC-BD • Industry • BAF • BMD 		
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	3.1.1 Develop and deliver SSP education for SSP coordination and working group participants.	CAAB (Regulator)	Q4 2021
	3.1.2 Enhance communication between all SSP coordination and working group meetings.	CAAB (Regulator)	Q4 2021
	3.1.3 Define SSP governance interaction and communication requirements for all SSP working groups (develop/update Terms of Reference).	CAAB (Regulator)	Q4 2021
	3.1.4 Conduct industry SSP Awareness Campaign.	CAAB (Regulator)	Q4 2021
	3.1.5 Continue to refine CAAB's regulatory policies and practices with a view to the promotion of an open and effective safety reporting culture i.e. –Just Culture”.	CAAB (Regulator)	Q4 2021
	3.1.6 Implement and promote the ‘Just Culture’ among SMS organizations for all domains.	CAAB/Industry	Q4 2021
	3.1.7 Review attendance for all SSP coordination and working group meetings.	All	Q4 2021
	3.1.8 Update the SSP document as necessary to align with latest Amendments of Annex 19.	CAAB (Regulator)	Q4 2021
	3.1.9 Develop SSP implementation guidance as necessary to support the goals of the GASP 2020-2022.	CAAB (Regulator)	Q4 2021
	3.1.10 Develop and implement guidance for inspectors on overseeing SMS organizations	CAAB	Q4 2021
	3.1.11 Complete and maintain currency of ICAO PQ self-assessment.	CAAB (Regulator)	Q4 2021
	3.1.12 Develop and complete CAP for non-satisfactory PQs and Submit the CAPs to ICAO (using OLF)	CAAB (Regulator)	Q4 2021
	3.1.13 Maintain average CC/EFOD completion score > 90%	CAAB (Regulator)	Q4 2021
	3.1.14 Complete and maintain ICAO SSP GAP Analysis using iSTAR	CAAB (Regulator)	Q4 2021
	3.1.15 Conduct SSP foundational PQs Self-Assessment	CAAB (Regulator)	Q4 2021

DETAILED ACTIONS IN THE NASP

3.1.16	Develop and complete CAP related to SSP foundational PQs and Submit the CAPs to ICAO (using OLF)	CAAB (Regulator)	Q4 2021
3.1.17	Conduct SSP PQ Self-Assessment (Safety Management International Collaboration Group Tool).	CAAB (Regulator)	Q4 2021
3.1.18	Complete acceptance of Industry's SPI/SPT's for over 80% of AOC Holders, aerodrome operators and ANSP's.	CAAB (Regulator)	Q4 2022
3.1.19	Develop / align agency level planning to NASP safety enhancement initiatives and actions.	All	ongoing
3.1.20	Publish a national aviation safety plan (NASP)	CAAB (Regulator)	Q4 2021
Related NASP target(s)	3A, 3B, 3C, 3D, 3E, 3F, 3G, 3H, 3I, 3J, 3 K, 3L		
GASP Reference	<ul style="list-style-type: none"> • SEI-13 (State) — <i>Start of SSP implementation at the national level.</i> • SEI-14 (State) — <i>Strategic allocation of resources to start SSP implementation.</i> • SEI-11 (State) — <i>Support the development of NASPs</i> 		
AP-RASP Reference	<ul style="list-style-type: none"> • A.III.1 — <i>Support robust implementation and continuous improvement of SMS and SSP.</i> • A.III.2 — <i>Improve the sharing of best practices in safety management, safety data and analyses among regional platforms including APANPIRG Sub-groups via RASG-APAC.</i> • A.III.3 — <i>Support the development of NASPs</i> 		
Other Reference	<ul style="list-style-type: none"> • CAAB Works Plan 2021-22 • Ministerial Declaration —Beijing Declaration 		

National SEI 3.2

Bangladesh Action Plan (ORG Roadmap)

Safety Enhancement Initiative (SEI)	Enhance strategic collaboration amongst Bangladesh key aviation stakeholders to support SSP implementation.		
ID	3.2		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> CAAB (Regulator) CAAB (ANSP) 	<ul style="list-style-type: none"> AAIC-BD Industry 	<ul style="list-style-type: none"> CAAB (Airport Operators) BAF BMD
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	Improve Coordination with SSP Agencies		
	3.2.1 Present reports on safety trends to the Chairman CAAB and safety entities twice a year.	AAIC-BD	ongoing
	3.2.2 Develop and implement an SSP portal to support sharing of essential SSP information.	CAAB-Regulator	2021
	3.2.3 Clarify regulatory oversight arrangements for BMD.	CAAB Regulator	2021
	3.2.4 Establish subsidiary agreements under the CAAB-BAF memorandum of understanding (MoU) to facilitate safety information sharing.	CAAB-Regulator	ongoing
	Improve effective Communication with Industry		
	3.2.5 Establish methodology and processes to share safety information between SSP/ SMS, over and above the current data provided under the mandatory and voluntary occurrence reporting schemes.	CAAB-Regulator Industry	Q4 2023 ongoing
	3.2.6 Further develop the SSP-Coordination Group and associated technical working groups.	CAAB-Regulator	ongoing
	3.2.7 Develop educational campaign and associated SSP/NASP communications plan to industry.	CAAB-Regulator	Q4 2021
	3.2.8 Continue to implement a Stakeholder Engagement Strategy in order to improve trust, user experience and seek safety behavioral change.	CAAB-Regulator	ongoing
	Promote FDM operator's forum		
	3.2.9 Establish a national FDM forum for affected aircraft operators to promote the benefits of FDM for safety management and promote best practices in this regard.	CAAB-Regulator	Q4 2021
	3.2.10 Maintain a regular dialogue with operators and encourage them to use the FDM data for safety risk management purposes to support monitoring and analysis of occurrences/ safety events.	CAAB-Regulator	Q4 2023 and Ongoing
Related NASP target(s)	3E, 3F, 3G, 3H, 3I, 3K, 3L		
GASP Reference	<ul style="list-style-type: none"> SEI-15/16 (State) — <i>Strategic Collaboration with key aviation stakeholders to start /complete SSP implementation.</i> SEI -13E & F (States) — <i>Issue SMS regulations for service providers and verify SMS implementation, and, identify and share safety management best practices.</i> 		

	<ul style="list-style-type: none"> SEI-20/21 (States) — <i>Advance safety risk management at national level through collaboration, support and information sharing with industry stakeholders</i>
AP-RASP Reference	<ul style="list-style-type: none"> A.III.1 — <i>Support robust implementation and continuous improvement of SMS and SSP.</i>
Other Reference	<ul style="list-style-type: none"> Bangladesh SSP-CG Terms of Reference Ministerial Declaration — Beijing Declaration

DETAILED ACTIONS IN THE NASP

National SEI 3.3	Bangladesh Action Plan (ORG Roadmap)		
Safety Enhancement Initiative (SEI)	Improve safety risk management at a national level.		
ID	3.3		
SSP Governance	SSP-IPT		
Stakeholders	<ul style="list-style-type: none"> CAAB AAIC-BD 	<ul style="list-style-type: none"> Industry BAF 	<ul style="list-style-type: none"> BMD
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	3.3.1 Continue to improve and implement of a regulatory management system.	CAAB(Regulator)	ongoing
	3.3.2 Establish State level risk register.	CAAB(Regulator)	Q4 2022
	3.3.3 Engage industry in the development and refinement of sector/ organization safety risk profiles.	CAAB-Regulator	Ongoing Q2 2022
	3.3.4 Establish comprehensive risk analysis on significant risks by sector.	CAAB-Regulator	Q4 2021
	3.3.5 Ensure adequate resources are available to support risk-based oversight and the inspectorate staff are fully trained to perform oversight activities.	CAAB-Regulator	Q4 2022
	3.3.6 Target the key risks identified in this NASP, as part of SMS oversight of service providers.	CAAB-Regulator	Q4 2021
	3.3.7 Implement the digital audit management systems of each domain to improve safety risk management and safety promotion.	CAAB-Regulator	Q4 2022
	3.3.8 Develop and embed Safety Watch priorities.	AAIC-BD	Q4 2022
Related NASP target(s)	3A, 3B, 3C, 3E, 3F, 3G, 3H, 4C, 4D		
GASP Reference	<ul style="list-style-type: none"> SEI-17/18 (State) — <i>Establishment of safety risk management at the national level.</i> SEI-20/21 (State) — <i>Advancement of safety risk management at the national level through collaboration, support and information sharing with industry stakeholders.</i> 		
AP-RASP Reference	<ul style="list-style-type: none"> A.IV.2 — <i>Establish and populate a Regional Risk Register</i> A.IV.5 — <i>Develop a more data-driven, precision-/ targeted approach of identifying risks.</i> 		
Other Reference	<ul style="list-style-type: none"> CAAB Works Plan 2021-22 		

National SEI 3.4

Bangladesh Action Plan (ORG Roadmap)

Safety Enhancement Initiative (SEI)	Standardize and streamline Bangladesh industry’s SMS obligation to ensure effective implementation and ongoing improvement.		
ID	3.4		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> CAAB Industry 	AAIC-BD	
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	3.4.1 Develop and implement a common SMS regulation for all domains.	CAAB-Regulator	Q4 2021
	3.4.2 Create and deliver an SMS education package to industry to support new SMS regulations.	CAAB-Regulator	Q4 2021
	3.4.3 Develop and embed the use of the CAAB SMS Evaluation/ Assessment Tool to support risk- and performance-based oversight.	CAAB-Regulator	Q4 2021
	3.4.4 Develop and implement a SMS refresher course for all inspectors to capture updates to processes and lessons learnt.	CAAB-Regulator	Q4 2021
	3.4.5 Develop and embed the use of the CAAB Human Factors Assessment Tool.	CAAB-Regulator	Q2 2022
	3.4.6 Develop and implement a Human Factors refresher course for all inspectors to capture updates to processes and lessons learnt.	CAAB-Regulator	Q4 2021
	3.4.7 Develop and implement standardized SMS education for senior CAAB management.	CAAB-Regulator	Q4 2021
	3.4.8 Encourage adoption of globally harmonized SPIs by all service providers of Bangladesh, as a part of SMS oversight.	CAAB-Regulator	Q4 2021
	3.4.9 Develop and implement guidance for inspectorate staff on overseeing SMS organizations	CAAB-Regulator	Q4 2021
	3.4.10 Establish, implement and promote the occurrence reporting system in digital platforms (eg. SDCPS, ERCS or ECCAIRS II) for State and encourage its use by industry.	CAAB-Regulator	Q4 2022 And ongoing
	3.4.11 Monitor occurrence reporting rates as a key performance indicator of the safety culture of an SMS organization across different sectors, as a part of SMS oversight.	CAAB-Regulator	Q4 2022
	3.4.12 Promote the ‘Just Culture’ among SMS organizations for all domains provide greater confidence to travelling publics, pilots and key aviation personnel in the occurrence reporting system.	CAAB-Regulator	Q4 2022
Related NASP target(s)	3E, 3F, 3G, 3H, 3I, 3J, 3K, 5A		
GASP Reference	<ul style="list-style-type: none"> SEI-13 (State) — <i>Start of SSP implementation at the national level.</i> SEI-17/18 (State) — <i>Establishment of safety risk management at the national level.</i> SEI-20/21 (State) — <i>Advancement of safety risk management at the national level.</i> 		
AP-RASP Reference	<ul style="list-style-type: none"> A.III.1 — <i>Support robust implementation and continuous improvement of SMS and SSP.</i> 		
Other Reference	CAAB SMS Regulations — <ul style="list-style-type: none"> CAR 84 Rule 123(3)(4), Rule 123(24)(I), ANO(AT) A-2 (Air Operators SMS) CAR 84 Rule 260A (4) (C), ANO (AD) A-5 (Aerodrome SMS) CAR 84 Rule 226(4), ANO (ATS SMS) A-1, CAR 84 Rule 123(4) CAR 84 Rule 123(37), ANO (AW) Part-145, 145.A.65 (D), Appendix V (SMS) 		

DETAILED ACTIONS IN THE NASP

DETAILED ACTIONS IN THE NASP

National SEI 3.5	Bangladesh Action Plan (ORG Roadmap)
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Safety Enhancement Initiative (SEI)	Develop a data driven proactive risk management modelling capability.		
ID	3.5		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB (regulator) • AAIC-BD 	<ul style="list-style-type: none"> • CAAB-Service providers • Industry 	<ul style="list-style-type: none"> • BMD • BAF
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	3.5.1 Study the implementation of a Safety Data warehouse for Bangladesh to enhance available data to SSP agencies.	CAAB-Regulator	Q4 2021
	3.5.2 Bangladesh to study joining regional AP SHARE* programme.	CAAB Regulator	Q4 2021
	*AP-SHARE Asia-Pacific Regional Data Collection, Analysis and Information Sharing APV Approaches with Vertical Guidance		

Goal 4.
Increase collaboration at the regional level

National SEI 4.1	Bangladesh Action Plan (ORG Roadmap)
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Development of a mechanism to analyse safety risks and non-safety data in order to proactively determine what occurrences to investigate and what safety studies to commence.			
3.5.5	Ensure adequate resources are available to support data-based decision making (including systems development, data management and risk modelling) and safety promotion.	CAAB-Regulator	Q4 2022
3.5.6	Conduct risk modelling, risk assessment and safety analysis of safety events in all domain, including low visibility operations.	CAAB-Regulator	Q4 2022
3.5.7	Research and develop proposal for a State/industry collaborative safety data sharing and analysis programme ('predictive' risk management).	CAAB-Regulator	Q2 2022
Related NASP target(s)	3A, 3B, 3C, 3E, 3F, 3H, 3I, 3K, 5A, 5B		
GASP Reference	<ul style="list-style-type: none"> • SEI-19 (State) — <i>Acquisition of resources to increase the proactive use of risk modelling capabilities.</i> • SEI-20 (State) — <i>Strategic collaboration with key aviation stakeholders to support the proactive use of risk modelling capabilities.</i> • SEI-21 (State) — <i>Advancement of safety risk management at the national level.</i> 		
AP-RASP Reference	<ul style="list-style-type: none"> • A.IV.1 — <i>Establish a mechanism to collect and analyse SSP SPI data from APAC States and common industry indicators.</i> • A.IV.4 — <i>Establish a mechanism for regional aviation safety data collection and sharing and support States'/ Administrations' participation in regional aviation safety data-sharing projects.</i> • A.IV.5 — <i>Develop a more data-driven, precision-/ targeted approach of identifying risks.</i> 		
Other Reference	<ul style="list-style-type: none"> • CAAB Works Plan 2021-22. 		

Safety Enhancement Initiative (SEI)	Strengthen Bangladesh Regional (Asia Pacific) Engagement.		
ID	4.1		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB-Regulator • CAAB-Service Provider 	<ul style="list-style-type: none"> • AAIC-BD • BMD 	<ul style="list-style-type: none"> • MOFA • MOCAT
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	4.1.1 Provide capacity building assistance (including the Regional Technical Assistance Mission of ICAO Combined Action Team) to Bhutan, Cambodia, DR of Korea, Fiji, Malaysia, Myanmar, Nepal, Thailand and so on to improve aviation safety and security outcomes.	CAAB-Regulator	ongoing
	4.1.2 Define requirements and ensure participation in regional forums to share and enhance regional safety knowledge.	CAAB-Regulator	annually
	4.1.3 Develop and implement a strategy in consideration of Bangladesh future engagement with the ICAO Asia/Pacific Regional Office.	CAAB-Regulator	Q4 2021
	4.1.4 Continue to engage bilaterally and multilaterally with regional partners to improve efficiency, safety and harmonize services.	All	ongoing
	4.1.5 Improve aviation safety through Capacity Building Plan.	CAAB-Regulator	ongoing
	4.1.6 Support regional States to meet AP-RASP requirements and regional objectives.	CAAB-Regulator	Q4 2022
	4.1.7 Continue to host regional forums to share and enhance regional safety knowledge.	CAAB-Regulator	Q4 2021 ongoing
Related NASP target(s)	4A, 4B, 4C, 4D		
GASP Reference	<ul style="list-style-type: none"> • Regional SEI-1 — SEI-16 		
AP-RASP Reference	<ul style="list-style-type: none"> • A.I.18 — <i>Review, implement (and update the status of) priority RASG-APAC/ APRAST SEIs.</i> • A.II.2 — <i>Establish, enhance and populate a COSCAP technical experts' database.</i> • A.II.4 — <i>Standardized Capacity Building Programme.</i> • A.III.3 — <i>Support the development of NASPs.</i> • A.V.4 — <i>Establish a means for States/ Administrations to informally share information and coordinate on operational issues in the USOAP Audit Areas of OPS, ANS and AGA.</i> • A.III.2 — <i>Improve the sharing of best practices in safety management, safety data and analyses among regional platforms including APANPIRG Sub-groups via RASG-APAC.</i> 		
Other Reference	<ul style="list-style-type: none"> • CAAB — <i>Training Policy</i> • CAAB — <i>Training Programme</i> 		

National SEI 4.2		Bangladesh Action Plan (ORG Roadmap)	
Safety Enhancement Initiative (SEI)	Strengthen international aviation safety engagement and contribute expertise to the global civil aviation system.		
ID	4.2		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB-Regulator • CAAB-Service Provider 	<ul style="list-style-type: none"> • AAIC-BD • BMD 	<ul style="list-style-type: none"> • MOFA • MOCAT
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	4.2.1 Define requirements, ensure participation and provide expertise in international forums (including ICAO).	CAAB-Regulator	Q4 2021
	4.2.2 Participation in Safety Management International Collaboration Group (SMICG).	CAAB/AAIC-BD	ongoing
	4.2.3 Establish mutual recognition aviation safety agreements (eg. MoU) with other State aviation safety regulators.	CAAB-Regulator	Q4 2021
	4.2.4 Participation in European Union (Safety Assessment of Foreign Aircraft (SAFA)) Ramp Inspection Programme in accordance with CAAB-European Aviation Safety Agency (EASA) Working Arrangement.	CAAB-Regulator	ongoing
	4.2.5 International aviation safety engagement (ICAO missions) and contribute expertise to the global civil aviation system.	CAAB-Regulator	ongoing
Related NASP target(s)	4A, 4B, 4C, 4D, 4E		
GASP Reference	• Regional SEI-1 — SEI-16		
AP-RASP Reference			
Other Reference			

DETAILED ACTION IN THE NASP

National SEI 4.3		Bangladesh Action Plan (ORG Roadmap)			
Safety Enhancement Initiative (SEI)	Deliver Bangladesh reporting and oversight obligations under the Regional Aviation Safety Plan (RASP) and Global Aviation Safety Plan (GASP).				
ID	4.3				
SSP Governance	SSP-CG				
Stakeholders	<ul style="list-style-type: none"> • CAAB-Regulator • CAAB-Service Providers • BAF • BMD • MOCAT • AAIC-BD 				
Actions	Action to be undertaken in support of the SEI			Responsible Entity	Completion Target Date
	4.3.1 Provide input and support for all necessary reporting obligations under the RASP/GASP.			All	ongoing
	4.3.2 Contribute to regional and global mechanism to collect and analyze SSP SPI data from APAC States and common industry indicators.			CAAB-Regulator	Q4 2021
	4.3.3 Review, implement and update the status of priority RASG-APAC/ APRAST SEIs.			CAAB-Regulator	ongoing
	4.3.4 Contribute to a regional ICAO portal (APAC SEI dashboard) to enhance coordination of activities and share and monitor RASG-APAC/ APRAST SEIs and regionally harmonized SSP SPI.			All	ongoing
	4.3.5 Share information on Bangladesh SSP SPI data with RASG-APAC.			CAAB-Regulator	Q4 2021
	4.3.5 Review, implement and update the status of priority RASG-APAC/ APRAST SEIs.			CAAB-Regulator	ongoing
	4.3.6 Review, implement and update the status of priority AP-RASP SEIs.			CAAB-Regulator	Q4 2021
	4.3.7 Submit a draft NASP to ICAO under the obligation of the 2020–2022 edition of GASP and AP-RASP.			CAAB-Regulator	Q4 2021
	4.3.8 Register in the NASP Online Community under ICAO secured portal.			CAAB-Regulator	Q4 2021
	4.3.9 Register and report to the Secure Portal on Emerging Issues and Additional Categories of Operational Safety Risks			CAAB-Regulator	Q4 2021
Related NASP target(s)	4A, 4B, 4C, 4D				
GASP Reference	<ul style="list-style-type: none"> • SEI-7 (State) — <i>Provision of the primary source of safety information to ICAO by updating all relevant documents and records.</i> • SE1-12 (State) — <i>Continued provision of the primary source of safety information to ICAO by updating all relevant documents and records as progress is made.</i> 				
AP-RASP Reference	<ul style="list-style-type: none"> • A.I.18 — <i>Review, implement (and update the status of) priority RASG-APAC/ APRAST SEIs.</i> • A.IV.1 — <i>Establish a mechanism to collect and analyse SSP SPI data from APAC States and common industry indicators.</i> • A.V.4 — <i>Establish a means for States to informally share information and coordinate on operational issues in the USOAP Audit Areas of OPS, ANS and AGA.</i> 				
Other Reference	<ul style="list-style-type: none"> • CAAB Works Plan 2021–22. 				

DETAILED ACTIONS IN THE NASP

Goal 5. Expand the use of industry safety programmes by industry and safety information sharing networks by service providers

National SEI 5.1	Bangladesh Action Plan (ORG Roadmap)		
Safety Enhancement Initiative (SEI)	Encourage industry participation in defined* industry programmes.		
ID	5.1		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB-Regulator • CAAB-ANSP • CAAB-Airport Operations • Industry 		
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	5.1.1 Baseline current Bangladesh industry programme participation.	CAAB-Regulator	Q4 2021
	5.1.2 Define how participation in defined industry programmes can be used to inform State oversight.	CAAB-Regulator	Q4 2021
	5.1.3 Promote participation in industry programmes.	CAAB-Regulator	Q4 2022
	5.1.4 Promote information sharing networks (including SDCPS) to increase industry participating.	CAAB-Regulator	Q4 2022
	5.1.5 Encourage Service providers to use globally harmonized SPIs as part of their SMS.	CAAB-Regulator	Q4 2022
Related NASP target(s)	5A, 5B, 5C, 5D, 5E, 5F, 5G, 5H		
GASP Reference	• Goal 5: <i>Expand the use of industry programmes.</i>		
AP-RASP Reference	• A.II.3 — <i>Encourage IATA IOSA and ISAGO registrations</i>		
Other Reference			

DETAILED ACTIONS IN THE NASP

*Defined industry programmes are those defined in the 2020–2022 GASP, for Bangladesh these are:

- *Airports Council International (ACI)— Airport Excellence in Safety programme (for airports);*
- *Civil Air Navigation Services Organisations (CASNO) – maturity assessment (Air Traffic Service providers);*
- *International Air Transport Association (IATA) Operational Safety Audit (Airlines);*
- *International Business Aviation Council (IBAC) International Standard for Business Aircraft Operators (business aviation).*

Goal 6. Ensure Bangladesh has the appropriate aviation infrastructure to support safety operations

National SEI 6.1		Bangladesh Action Plan (ORG Roadmap)		
Safety Enhancement Initiative (SEI)	Ensure Bangladesh has the appropriate Air Traffic Services and airspace infrastructure to support safety operations.			
ID	6.1			
SSP Governance	SSP-CG			
Stakeholders	<ul style="list-style-type: none"> • CAAB • AAIC-BD • BMD • BAF 			
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date	
	6.1.1 Develop and implement a National Air Navigation Plan to supplement the NASP and meet the requirements of the GANP.	CAAB-ANSP	Q4 2022	
	6.1.2 Progress implementation of a new national air traffic system under the CNS/ATM modernization project.	CAAB-ANSP/ CAAB-Regulator	Q4 2024	
	6.1.3 Implement Air Navigation Services Readiness Program.	CAAB-ANSP	Q4 2022	
	6.1.4 Deliver an Airspace Modernization Program to deliver a series of enhancements to improve safe and efficient service outcomes and increase airspace access for the aviation industry.	CAAB-ANSP	Q4 2023	
	6.1.5 Design and implement new airspace associated with new runways at Cox's Bazar, Chittagong and Sylhet, Saidpur, Barisal and Rajshahi airport.	CAAB-ANSP	Q4 2024 and ongoing	
	6.1.6 Provide regulatory services to support major developments such as new runways and other major air navigation initiatives.	CAAB-ANSP	ongoing	
	6.1.7 Develop and implement the National Air Navigation Air Navigation Plan (NANP).	CAAB-ANSP	Q4 2022	
	6.1.8 The development of a National Strategic Airspace Plan.	CAAB-ANSP	Q4 2022	
Related NASP target(s)				
GASP Reference	• Goal 6: <i>Ensure the Appropriate Infrastructure is available to support safe operations.</i>			
AP-RASP Reference	<ul style="list-style-type: none"> • Priority Area V. <i>Enhanced aviation infrastructure.</i> • A.V.6 — <i>Implement safety-related initiatives from the APAC Seamless ANS Plan in a timely manner, as applicable.</i> 			
Other Reference	<ul style="list-style-type: none"> • CAAB Annual Works Plan 2021-22 • CAAB — <i>CNS/ATM Modernization Project.</i> 			

DETAILED ACTIONS IN THE NASP

National SEI 6.2

Bangladesh Action Plan (ORG Roadmap)

Safety Enhancement Initiative (SEI)	Ensure Bangladesh has the appropriate aerodrome (including runway) infrastructure to support safety operations.		
ID	6.2		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • CAAB-Infrastructure (CE) • CAAB-Regulator 	<ul style="list-style-type: none"> • CAAB-ANSP • BAF 	<ul style="list-style-type: none"> • Industry
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	6.2.1 Airport Development Support Program - Deliver essential communications, navigation and surveillance facilities for new 3 rd Terminal Dhaka, Barisal, Cox's Bazar, Jessore, Rajshahi and Saidpur airports.	CAAB-ANSP	ongoing
	6.2.3 Introduce Digital Aerodrome Services.	CAAB-ANSP	2022
	6.2.4 Implement ARFFS Modernization Program.	CAAB-ANSP	2021
	6.2.5 Provide regulatory services to support major developments such as the new 3 rd Terminal HSIA Dhaka, Cox's Bazar, Sylhet, Jessore, Saidpur airports, new runways and other major air navigation initiatives.	CAAB-Regulator	ongoing
Related NASP target(s)			
GASP Reference	• Goal 6: <i>Ensure the Appropriate Infrastructure is available to support safe operations.</i>		
AP-RASP Reference	<ul style="list-style-type: none"> • Priority Area V. <i>Enhanced aviation infrastructure.</i> • A.V.6 — <i>Implement safety-related initiatives from the APAC Seamless ANS Plan in a timely manner, as applicable.</i> 		
Other Reference	• CAAB Works Plan 2021–22.		

DETAILED ACTIONS IN THE NASP

National SEI 6.3

Bangladesh Action Plan (ORG Roadmap)

Safety Enhancement Initiative (SEI)	Ensure Bangladesh has the appropriate other national infrastructure /Capabilities to support safety operations		
ID	6.3		
SSP Governance	SSP-CG		
Stakeholders	<ul style="list-style-type: none"> • Infrastructure • CAAB • CAAB-ANSP 	<ul style="list-style-type: none"> • Industry • BAF • BMD 	<ul style="list-style-type: none"> • Home Affairs
Actions	Action to be undertaken in support of the SEI	Responsible Entity	Completion Target Date
	6.3.1 Implement Airport Collaborative Decision Making across major national airports.	CAAB-ANSP	Q4 2023
	6.3.2 Implement Air Traffic Flow Management.	CAAB-ANSP	Q4 2023
Related NASP target(s)			
GASP Reference	• Goal 6: <i>Ensure the Appropriate Infrastructure is available to support safe operations.</i>		
AP-RASP Reference	<ul style="list-style-type: none"> • Priority Area V. <i>Enhanced aviation infrastructure.</i> • A.V.6 — <i>Implement safety-related initiatives from the APAC Seamless ANS Plan in a timely manner, as applicable.</i> 		
Other Reference	<ul style="list-style-type: none"> • CAAB Works Plan 2021-22 		

DETAILED ACTIONS IN THE NASP

APPENDIX III — GLOSSARY OF TERMS

ABBREVIATIONS AND ACRONYMS

A

ACI APEX	Airport Council International Airport Excellence Programme
ADS-B	Automatic Dependent Surveillance Broadcast
APAC	Asia Pacific
APG	Aviation Policy Group
AP-RASP	Asia Pacific Regional Aviation Safety Plan
APRAST	Asia Pacific Regional Aviation Safety Team
ARFFS	Aviation Rescue and Fire Fighting Service
ATM	Air Traffic Management
ATMP	Air Traffic Management Plan
AAIC-BD	Aircraft Accident Investigation Committee of Bangladesh
AOC	Air Operators Certificate

B

BAF	Bangladesh Air Force
BITRE	Bureau of Infrastructure, Transport and Regional Economics
BMD	Bangladesh Meteorological Department

C

CANSO	Civil Air Navigation Services Organization
CAAB	Civil Aviation Authority of Bangladesh
CAT	Commercial Air Transport
CE	Critical Element
CFIT	Controlled Flight into Terrain
CMA	Continuous Monitoring Approach

D

DGCA	Director General Civil Aviation
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E

EI	Effective Implementation
EVTOL	Electric take-off and landing

F

FDAP	Flight Data Analysis Program
FDM	Flight Data Monitoring
FIR	Flight Information Region

G

GA	General Aviation
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GANP	Global Air Navigation Plan
GASP	Global Aviation Safety Plan
GNSS	Global Navigation Satellite System
H	
HRC	High Risk Categories
I	
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IOSA	IATA Operational Safety Audit
IS-BAO	International Standard for Business Aircraft Operations
L	
LOC-I	Loss of Control In-flight
LR-ATFM	Long Range Air Traffic Flow Management
M	
MAC	Mid-Air Collision
MOCAT	Ministry of Civil Aviation and Tourism
MOFA	Ministry of Foreign Affairs
MOR	Mandatory Occurrence Report
N	
NASP	National Aviation Safety Plan
P	
PASO	Pacific Aviation Safety Office
PBN	Performance Based Navigation
PQ	Protocol Question
R	
RASG	Regional Aviation Safety Group
RASG-APAC	Regional Aviation Safety Group Asia Pacific
RASP	Regional Aviation Safety Plan
RAST	Regional Aviation Safety Team
RE	Runway Excursion
RI	Runway Incursion
RPAS	Remotely Piloted Aircraft System
S	
SAR	Search and Rescue
SARP	Standards and Recommended Practices
SEI	Safety Enhancement Initiative
SMICG	Safety Management International Collaboration Group
SMS	Safety Management System
SPI	Safety Performance Indicator
SPT	Safety Performance Target
SSP	State Safety Programme
SSP-CG	State Safety Programme Coordination Group

SSP-IPT	State Safety Programme Implementation Team
T	
TAWS	Terrain Avoidance Warning System
U	
UAS	Unmanned Aerial Systems
UAM	Urban Air Mobility
UFR	Upper Flight Region
UPRT	Upset Prevention and Recovery Training
USOAP CMA	Universal Safety Oversight Audit Programme Continuous Monitoring Approach



Civil Aviation Authority of Bangladesh

