ประกาศสำนักงานการบินพลเรือนแห่งประเทศไทย

เรื่อง แผนปฏิบัติการด้านความปลอดภัยในการบินพลเรือนแห่งชาติ

พ.ศ. ๒๕๖๔ - ๒๕๖๖

ตามที่มาตรา ๒๑/๑ แห่งพระราชบัญญัติการเดินอากาศ พ.ศ. ๒๔๙๗ แก้ไขเพิ่มเติม
โดยพระราชบัญญัติการเดินอากาศ (ฉบับที่ ๑๔) พ.ศ. ๒๕๖๒ กำหนดให้สำนักงานการบินพลเรือนแห่งประเทศไทย
จัดทำแผนนิรภัยในการบินพลเรือนแห่งชาติ เพื่อเป็นแนวทางในการบริหารจัดการความปลอดภัยการบิน
พลเรือนในระดับประเทศ โดยแผนดังกล่าวให้มีคณะกรรมการนิรภัยในการบินพลเรือนแห่งชาติซึ่ง
คณะกรรมการการบินพลเรือนแต่งตั้ง เพื่อขับเคลื่อนแผนนิรภัยในการบินพลเรือนแห่งชาติให้เป็นไปตาม
วัตถุประสงค์และเป้าหมาย อาศัยอำนาจตามมาตรา ๒๑/๒ (๒) (๓) และ (๔) ที่กำหนดว่าเพื่อประโยชน์ในการ
บริหารจัดการแผนนิรภัยในการบินพลเรือนแห่งชาติ ให้ผู้อำนวยการสำนักงานการบินพลเรือนแห่งประเทศไทย
มีหน้าที่และอำนาจจัดให้มีกลไก มาตรการเกี่ยวกับความปลอดภัยในการบินพลเรือน จัดให้มีกระบวนการ
เพื่อลำดับความสำคัญในการตรวจ ตรวจสอบ และสำรวจโดยพิจารณาจากข้อบกพร่องด้านความปลอดภัย
หรือการประเมินความเสี่ยง และส่งเสริมให้ผู้ที่เกี่ยวข้องตระหนักรู้และดำเนินการสื่อสารข้อมูลด้านความปลอดภัย
ในการบินพลเรือน เพื่อสนับสนุนองค์กรและพัฒนาวัฒนธรรมความปลอดภัยขององค์กรซึ่งจะเสริมสร้าง
ประสิทธิภาพและประสิทธิผลของแผนนิรภัยในการบินพลเรือนแห่งชาติ ดังนั้น ผู้อำนวยการสำนักงานการบิน
พลเรือนแห่งประเทศไทยจึงจัดทำแผนปฏิบัติการด้านความปลอดภัยในการบินพลเรือนแห่งชาติ (Thailand
Aviation Safety Action Plan: TASAP) ซึ่งได้รับความเห็นชอบจากคณะกรรมการนิรภัยในการบินพลเรือน
แห่งชาติในการประชุม ครั้งที่ ๑/๒๕๖๔ เมื่อวันที่ ๒๒ มิถุนายน ๒๕๖๔ เพื่อกำหนดกลไกและกระบวนการ
ในการดำเนินงานกิจกรรมด้านความปลอดภัยและการปรับปรุงด้านความปลอดภัยของผู้ที่เกี่ยวข้องเพื่อเป็น
กลไกและมาตรการในการขับเคลื่อนแผนนิรภัยในการบินพลเรือนแห่งชาติได้อย่างมีประสิทธิภาพ โดยออก
ประกาศเรื่องแผนปฏิบัติการด้านความปลอดภัยในการบินพลเรือนแห่งชาติไว้ ดังต่อไปนี้

ข้อ ๑ ประกาศนี้ เรียกว่า "ประกาศสำนักงานการบินพลเรือนแห่งประเทศไทย เรื่อง
แผนปฏิบัติการด้านความปลอดภัยในการบินพลเรือนแห่งชาติ พ.ศ. ๒๕๖๔ – ๒๕๖๖"

ข้อ ๒ ประกาศนี้ให้ใช้ตั้งแต่วันถัดจากวันประกาศเป็นต้นไป

ข้อ ๓ การดำเนินงานกิจกรรมด้านความปลอดภัยในการบินพลเรือนให้เป็นไปตามแผนปฏิบัติการ
ด้านความปลอดภัยในการบินพลเรือนแห่งชาติ พ.ศ. ๒๕๖๔ – ๒๕๖๖ แนบท้ายประกาศนี้

ประกาศ ณ วันที่ ๓๑ สิงหาคม พ.ศ. ๒๕๖๔

(นายสุทธิพงษ์ คงพูล)

ผู้อำนวยการสำนักงานการบินพลเรือนแห่งประเทศไทย

**Thailand Aviation
Safety Action Plan
2021 - 2023**

Contents

Foreword

Thailand is committed to the continuous improvement of aviation safety through a national aviation safety strategy that is set out in the Thailand Aviation Safety Action Plan (TASAP).

A safe aviation system protects people, and contributes to the economic development of Thailand and its industries. This can be achieved through the commitment and actions of all stakeholders including the Thai aviation industry.

Mr. Suttipong Kongpool
Director General of the Civil Aviation Authority of Thailand

The purpose of the TASAP is to highlight the actions required to reduce the risk of fatal accidents to an acceptable level and to achieve the ICAO Aspirational Safety Goal: Zero fatalities by 2030 and beyond. This is achieved through a defined Acceptable Level of Safety Performance and State Safety Objectives that have been agreed by the main stakeholders.

The TASAP promotes the effective implementation and continuous improvement of Thailand's State Safety Programme (SSP). This includes actions to implement an effective safety oversight system and a proactive approach to managing safety.

It also includes actions on addressing the high-risk category accidents to continuously reduce the risk of a fatal accident. The effectiveness of these actions will be monitored by State Safety Performance Indicators and State Safety Performance Targets.

Safety is a shared responsibility that cannot be achieved without the active contribution of the Thai aviation community. Many of the actions in the TASAP can only be achieved through a coordinated and collaborative approach, therefore, the actions in the TASAP apply to all of the stakeholders.

All stakeholders shall consider the TASAP as the national strategy for the continuous improvement of aviation safety in Thailand and contribute to the actions contained within.

I thank you all for your active contribution to make the Thai Civil Aviation System safer.

Purpose of the TASAP

In 2015 the Thai Government created the Civil Aviation Authority of Thailand (CAAT), with appropriate resources and powers paving the way for a full transformation of the Thai safety oversight system to better regulate and oversee aviation safety.

The International Civil Aviation Organization (ICAO) is leading a change of approach in the global civil aviation system from being reactive as a result of previous events and accidents to being proactive to prevent potential safety issues.

This change in approach requires civil aviation organisations to implement a Safety Management System (SMS) and States to implement a State Safety Programme (SSP) both oriented on enhanced safety risk management, and safety performance monitoring and management.

CAAT developed the Thai SSP document that sets out the roles and responsibilities and describes how operational safety risks and issues are identified and managed.

CAAT is responsible in collaboration with other stakeholders for developing the TASAP.

Further to the implementation of activities described in the Thai SSP, actions have been identified to manage and reduce the safety risks to the Thai aviation system.

This TASAP is the result of a collaborative work with Thai industry and complements the SSP with clear actions to improve aviation safety. It has been developed from the analysis of the available Safety data and information

Globally: ICAO Global Aviation Safety Plan (GASP)
Regionally: ICAO Regional Aviation Safety Plan for Asia Pacific region (AP-RASP)
Nationally: Analysis of safety events reported to the CAAT and feedback from surveillance and industry.

The TASAP is the means by which Thailand defines, and drives the implementation of safety actions and safety improvements generated by the SSP. The actions detailed in the TASAP will be monitored by the Aviation Safety Management Department (SMD) of CAAT who will regularly report on the progress. The stakeholders, as detailed in the SSP document include:

1. The Thai Government and its agencies, with CAAT playing the central role for the whole Civil Aviation Safety Management in Thailand
2. The Thai Aviation industry
3. Foreign operators

Globally

Regionally
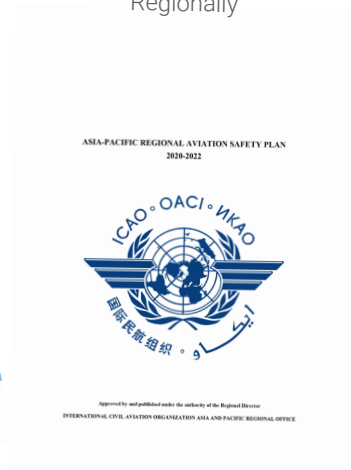
Nationally

Thai Aviation Industry

The scheme below describes the operational context in Thailand.
The information as of December 2020.

679 Aircraft

365 Commercial aircraft
305 Private aircraft
9 Aerial work aircraft

25 Air Operators

21 International
3 Domestic
1 Balloon Domestic

41 Airports / 6 Airport Operators

38 Public Airports / 4 Operators
11 International Airports
27 Domestic Airports
3 Private Airports / 2 Operators

7 Air Navigation Service Providers

2 Air Traffic Service Providers
2 Communication Navigation and Surveillance Service Providers
1 Aeronautical Meteorological Service Provider
1 Aeronautical Search and Rescue Service Provider
1 Aeronautical Information Service Provider

CAAT
The Civil Aviation Authority of Thailand

Designated Personnel

115 Designated Check Pilots
18 Senior Designated Check Pilots
26 Authorized Medical Examiner
21 Senior Authorized Medical Examiner

Licenses Holders

1,538 Private Pilot (PPL)
7,479 Commercial Pilot (CPL)
3,905 Air Transport Pilot (ATPL)
6,562 Maintenance Engineer (AMEL)
1,539 Air Traffic Controller (ATC)
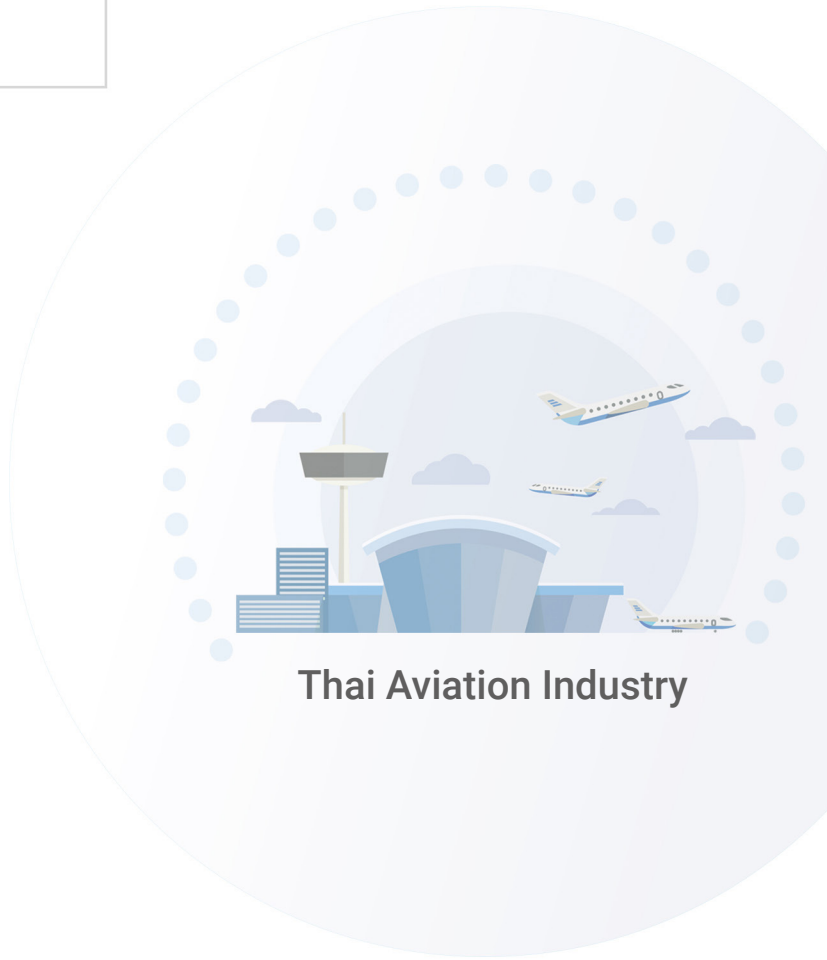
268 Maintenance Organisations

30 Domestic
238 Foreign

5 Aeromedical Centres

IR   CPL

16 Training Organisations

14 for Pilots
1 for Controller
1 for Maintenance engineer

Thai Aviation Industry

Development of the TASAP

A fundamental part of the State Safety Programme is for the State to define an Acceptable Level of Safety Performance (ALoSP). This is intended to enable the prioritisation of resources and actions. For Thailand the focus is on reducing the risk of an aviation accident and improving compliance with the international safety standards as defined by ICAO.

The ALoSP has been developed from an analysis of the Thai aviation system as well as considering regional and global aviation accident data. The ALoSP is the foundation of the TASAP and aims to ensure there is continuous improvement of aviation safety. The ALoSP defines how safe the Thai aviation system must be to remain acceptable to the Thai government, CAAT and the travelling public.

ALoSP indicators have been identified that will measure the achievement of ALoSP and allow the National Civil Aviation Safety Board (NCASB) to decide on actions to be taken should there be any shortfall.

To achieve the ALoSP, State safety objectives were defined with the Thai aviation industry in two different categories:

1. Generic organisational objectives (GEN)

GEN objectives focus on implementing and improving safety management at every level of the system including drive the work of the CAAT and other stakeholders to develop the necessary structural and organisational capabilities to improve aviation safety. Although CAAT plays the key role for most GEN objectives, Thai industry also plays a critical role in supporting the CAAT.

2. Specific operational objectives (OPR)

OPR objectives focus on safety outcomes to reduce numbers and severity of safety events. OPR objectives intend to address identified safety issues in Thailand. These need to deal with the High-Risk Category (HRC) occurrences defined in the GASP and AP-RASP and are, by nature, outcome oriented. The Thai industry plays a leading role in achieving these objectives with support from CAAT.

Accordingly, State Safety Performance Indicators (SPIs) were agreed to measure the achievement of each of the State safety objectives.

As agreed with the industry; to achieve State safety objectives the plan needs to include actions to be implemented and their progress need to be monitored.
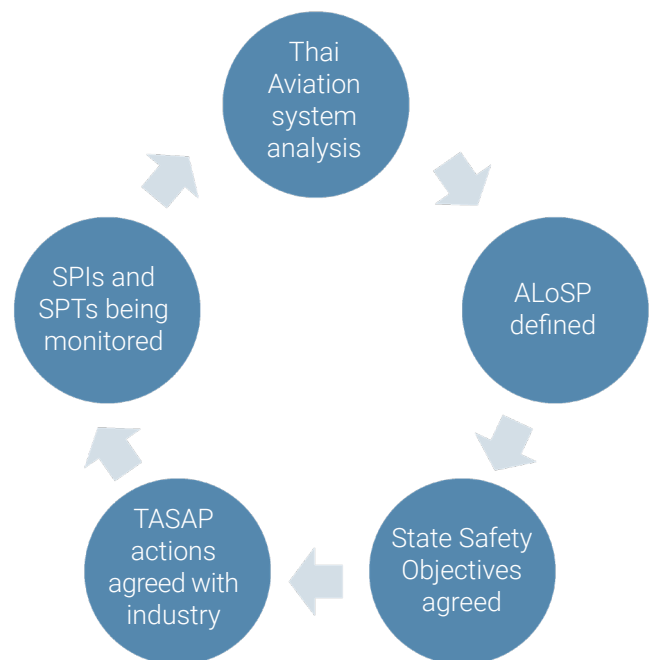
Figure 2: The Process to develop ALoSP, State Safety objectives, SPIs and SPTs

The TASAP progress is monitored at 3 levels:

- The progress of each action is monitored through a series of indicators.
- The level of achievement of a State safety objective is monitored through State SPIs with objectives considered as reached when State safety performance targets (SPTs) are reached.
- The level of achievement of the ALoSP is monitored through ALoSP indicators representing the overall level of safety performance of the system.

Thailand Acceptable Level of Safety Performance & Safety Objectives

For the initial ALoSP, the focus is on improving the overall safety performance of the Thai civil aviation system. The Thai ALoSP is made up of the following six key performance measures.

No	ALoSP	Indicators
1	A decreasing trend of fatal accidents during commercial operations by Thai AOC holders.	5-year rolling average number of Commercial Air Transport fatal accidents involving Thai AOC holder per 1 million departures
2	A decreasing trend of fatal accidents caused by the Thai aviation industry.	5-year rolling average number of fatal accidents involving foreign Commercial Air Transport operating in Thailand per million departures caused by the Thai aviation industry. 5-year rolling average number of non-fatal accidents and serious incidents involving foreign Commercial Air Transport operating in Thailand per million departures.
3	A decreasing trend of non-fatal accidents and serious incidents during commercial operations by Thai AOC holders.	5-year rolling average number of CAT non-fatal accidents and serious incidents involving Thai AOC holder per 1 million departures.
4	A level of compliance to international civil aviation safety standards (ICAO SARPs) above 75% in each ICAO domain and above 60% for standards related to Certification, Surveillance and Resolution of Safety issues.	Level of Effective implementation of international safety standards (according to ICAO Protocol questions by domain and critical element of a Safety Oversight system.)
5	SMS implemented and operating in all organisations required to have SMS by the end of 2022.	Percentage of organisations that have a SMS fully established and assessed as operating by the CAAT (using SMS Assessment tools).
6	Thai SSP is operating and effective by the end of 2023.	Rate of ICAO SSP foundation related SARPs Effective implementation according to ICAO Protocol questions.

Generic Organisational Safety Objectives (GEN)

For the GEN objectives, their level of achievement will be monitored using Safety Performance Indicators (SPIs) and will be considered as being achieved when Safety Performance Targets (SPTs) are reached.

Thailand has established the following as the GEN objectives:

GEN-1:	To have an effective safety oversight capability in Thailand
GEN-2:	To achieve a systematic and efficient implementation of the Thai SSP
GEN-3:	To have an effective safety reporting system and promote Just Culture within the aviation industry
GEN-4:	To actively cooperate at the regional level to enhance safety
GEN-5:	To ensure that aviation organisations implemented an operating SMS across all the aviation system

Specific Operational Safety Objectives (OPR)

For the OPR objectives, their level of achievement will be monitored using Safety Performance Indicators (SPIs) and will be considered as being achieved when Safety Performance Targets (SPTs) are reached.

Thailand has established the following as the OPR objectives:

OPR-1:	To reduce the rate of occurrences related to controlled flight into terrain (CFIT)
OPR-2:	To reduce the rate of occurrences related to loss of control in-flight (LOC-I)
OPR-3:	To reduce the rate of occurrences related to mid-air collision (MAC)
OPR-4:	To reduce the rate and severity of runway excursions (RE)
OPR-5:	To reduce the rate of runway incursions (RI)
OPR-6:	To reduce the rate of bird strikes with damage to aircraft parts

GEN-1

To have an effective oversight capability in Thailand

For the sake of safety, Thailand is committed to ensure compliance of its safety oversight system with the ICAO Standards and Recommended Practices (SARPs). Safety oversight aims at ensuring that civil aviation operations are safe.

This includes ensuring that regulatory requirements are met and that Safety Performance of the organisations are acceptable. The Safety Oversight System is part of the State Safety Program as detailed in the SSP document.

The table below details the SPIs and SPTs for GEN-1 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
Level of Effective Implementation (EI) of international civil aviation safety standards (ICAO)	75% overall Effective Implementation of international civil aviation safety standards (ICAO)	End of 2022
Level of Effective Implementation (EI) of international civil aviation safety standards (ICAO) for each domain	75% Effective Implementation of international civil aviation safety standards (ICAO) in each domain	End of 2022
Level of Effective Implementation (EI) of international civil aviation safety standards (ICAO) for licensing and certification (CE6), surveillance (CE7) and Resolution of safety issues (CE8)	At least 60% in licensing and certification (CE6), surveillance (CE7) and Resolution of safety issues (CE8)	End of 2022

Actions to achieve GEN-1 objective:

No.	Action	Target date	Indicators and Targets	Leaders*
Publish a fair and comprehensive set of specific operating regulations covering all technical aspects of operations in Thailand.				
GEN1.PEL01	Publish Flight Crew ATO Approval regulation	31/12/21	For each regulation, the percentage of advancement: • 50% first draft with Acceptable Means of Compliance (AMCs) and Guidance material (GMs) submitted to CAAT Legal department (LEG), • 75% final draft ready considering industry consultation and CAAT Legal department feedbacks, • 100% regulation published.	CAAT/PEL*
	Publish Flight Crew Licensing regulation	31/12/21		
	Publish Maintenance Engineers ATO Approval regulation	30/04/22		
	Publish Maintenance Engineers Licensing regulation	30/04/22		
	Publish Air Traffic Controller ATO Approval Regulation	30/09/22		
	Publish Air Traffic Controller Licensing Regulation	30/09/22		
GEN1.OPS01	Publish Operations regulations for Commercial Air Transport	31/12/21		CAAT/OPS*
	Publish Operations regulations for Non-Commercial Complex	31/12/21		
	Publish Operations regulations for Non-Commercial Others	31/12/21		
	Publish Special Operations regulation	31/12/21		
GEN1.AIR01	Publish airworthiness management regulation	31/12/21		CAAT/AIR*
	Publish production certificate regulation	31/12/22		
	Publish design organisation approval regulation	31/12/24		
GEN1.ANS01	Publish Regulations covering all ANS areas (As per Annex 2, 3, 4, 5, 10, 11, 12, and 15 to Chicago Convention)	30/06/22		CAAT/ANS*
GEN1.AGA01	Publish Aerodromes certification regulation.	30/06/22		CAAT/AGA*
Establish the procedures, tools and other means to allow licensing, certification, surveillance and resolution of safety issues activities.				
GEN1.PEL02	Establish the means for licensing, certification & surveillance of:		Percentage of progress considering: • 25% for Procedures and Tools drafting, • 50% for Procedures and Tools approval, • 75% for IT Tools set-up, • 100% for inspectors training to new procedures and tools.	CAAT/PEL*
	– ATOs for Flight crew	31/03/22		
	– Flight crews licensing	31/03/22		
	– ATOs for Maintenance Engineers	30/06/22		
	– Maintenance Engineers licensing	30/06/22		
	– ATOs for Air Traffic Controllers	31/05/23		
	– Air Traffic Controllers Licensing	31/05/23		
GEN1.OPS02	Establish the means for licensing, certification & surveillance of:			CAAT/OPS*
	– Commercial Air Transport operators	31/03/22		
	– Non-Commercial Air Transport using complex aircraft	31/03/22		
	– Non-Commercial Air Transport using other (non-complex) aircraft	30/06/22		
	– Special operations	30/06/22		

No.	Action	Target date	Indicators and Targets	Leaders*
GEN1.AIR02	Establish the means for licensing, certification & surveillance of:		Percentage of progress considering:	CAAT/AIR*
	– Airworthiness management functions	30/01/22	• 25% for Procedures and Tools drafting,	
	– Design organisations	30/06/24	• 50% for Procedures and Tools approval,	
	– Production organisations	30/06/22	• 75% for IT Tools set-up,	
GEN1.ANS02	Establish the necessary means for licensing, certification & surveillance of:	31/12/21	• 100% for inspectors training to new procedures and tools.	CAAT/ANS*
	– Air Navigation Services Providers			
	– Air Navigation Facility Establishment			
GEN1.AGA02	Establish the necessary means for certification and surveillance of Aerodromes and Aerodrome operators.	30/06/22		CAAT/AGA*

Implement the new regulations through authorisation, licensing, certification and surveillance.

No.	Action	Target date	Indicators and Targets	Leaders*
GEN1.PEL03	Certify all the ATO as independent organisations and according to new regulations.	31/12/23	– Percentage of existing ATOs certified according to new regulations. – Percentage of AOC performing Type rating training certified as ATO according to new regulations.	CAAT/PEL*
GEN1.OPS03	Certify all Thai Commercial Air Transport operators operating internationally according to new regulations.	31/12/23	– Percentage of International CAT operators certified according to new regulations.	CAAT/OPS*
	Certify all Thai Commercial Air Transport operators according to new regulations.	30/06/24	– Percentage of CAT operators certified according to new regulations.	
GEN1.OPS04	Certify all Thai Non-Commercial Air Transport operators operating internationally according to new regulations.	30/06/24	– Percentage of Non-commercial operators operating internationally authorised according to new regulations.	CAAT/OPS*
	Certify all Thai Non-Commercial Air Transport operators according to new regulations.	31/12/24	– Percentage of Non-commercial operators authorised according to new regulations.	
GEN1.AIR03	Certify all the Domestic AMOs according to new regulations.	30/05/22	– Percentage of Domestic AMOs certified according to new regulations.	CAAT/AIR*
	Certify all the Foreign AMOs according to new regulations.	30/05/23	– Percentage of Foreign AMOs certified according to new regulations.	
GEN1.ANS03	Certify ANSPs in ATS, CNS, MET, IFPD, AIS and SAR area.	31/12/26	Percentage of completed certified ANSPs.	CAAT/ANS*
GEN1.AGA03	Certify international public airport operators according to new regulations.	30/06/24	– Percentage of international public airports certified according to new regulations.	CAAT/AGA*
	Certify domestic public airport operators according to new regulations.	30/06/25	– Percentage of domestic public airports certified according to new regulations.	

No.	Action	Target date	Indicators and Targets	Leaders*
GEN1.PEL04	Perform surveillance of ATOs to ensure appropriate performance of systems certified according to new regulations.	31/12/24	Percentage of ATOs that passed the first surveillance cycle.	CAAT/PEL*
GEN1.OPS05	Perform surveillance of Commercial Air Transport operators to ensure appropriate performance of systems certified.	30/06/25	− Percentage of CAT operators that passed the first surveillance cycle one year after certification.	CAAT/OPS*
	Perform surveillance of Non-Commercial Air Transport operators to ensure appropriate performance of systems certified.	31/12/25	− 20% of Non-Commercial complex operators that passed the first surveillance cycle one year after certification.	
GEN1.AIR04	Perform surveillance of Domestic AMOs to ensure appropriate performance of systems certified.	30/05/23	− Percentage of Domestic AMOs that passed the first surveillance cycle one year after certification.	CAAT/AIR*
	Perform surveillance of Foreign AMOs to ensure appropriate performance of systems certified.	30/05/24	− Percentage of Foreign AMOs that passed the first surveillance cycle one year after certification.	
GEN1.ANS04	Perform surveillance of ANS certified organisations to ensure appropriate performance of systems certified.	31/12/27	Percentage of ANS certified organisations that passed the first surveillance cycle one year after certification.	CAAT/ANS*
GEN1.AGA04	Perform surveillance of international airports to ensure appropriate performance of systems certified.	30/06/25	− Percentage of international airports that passed the first surveillance cycle one year after certification.	CAAT/AGA*
	Perform surveillance of domestic airports to ensure appropriate performance of systems certified.	30/06/26	− Percentage of domestic airports that passed the first surveillance cycle one year after certification.	

GEN-2

To achieve a systematic and efficient implementation of the Thai SSP

The SSP document details the policies, processes and procedures for managing aviation safety at state level in order to comply with the ICAO SARPs and with the Thai state safety policy. The main objective of the SSP in Thailand is to continuously improve civil aviation safety in Thailand through proactive risk management and the promotion of a positive safety culture, including:

- The identification of safety issues through the systematic collection and analysis of safety data and safety information from occurrences reported by service providers (Mandatory and Voluntary occurrence reports), from surveillance activities, and other inputs from international stakeholders.

- The mitigation of safety issues, where necessary, will be achieved through;

1. Rulemaking activities: amendment of existing or implementation of new regulations;

2. Surveillance activities: the improvement of surveillance practices including implementation of a risk-based surveillance programme and appropriate enforcement actions following just culture principles, and;

3. Safety promotion activities: in particular safety training and publication of safety promotion material.

The ICAO GASP 2020-2022 calls for all States to implement the foundation of an SSP by 2022, and to have an effective SSP in place by 2025.

The table below details the SPIs and SPTs for GEN-2 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
Level of Effective Implementation of international civil aviation safety standards (ICAO) related to the foundation of the SSP	90% of Effective Implementation of international civil aviation safety standards (ICAO) related to the foundation of the SSP	End of 2022

Actions to achieve GEN-2 objective:

No.	Action	Target date	Indicators and Targets	Leaders*
Finalize the establishment of the Thai SSP.				
GEN2.SMN01	Publish an updated SSP document in line with the evolutions of Annex 19 and Thailand laws and regulations.	31/03/22	Percentage of advancement considering: • 40% first draft submitted to NCASB, • 70% final draft considering NCASB feedback, • 100% document approved by CAB and published.	CAAT/SMD*
GEN2.SMN02	Review and approve the MoU between CAAT, AAIC and SAR based on the new version of Annex 19.	31/12/21	Percentage of implementation considering: • 50% draft the new MoU by SMD, • 100% document signed by the parties.	CAAT/SMD* CAAT/LEG AAIC SAR
GEN2.ORG01	Establish procedures detailing how safety investigations are carried out within CAAT, in parallel and coordination with AAIC.	31/12/21	Percentage of advancement considering: • 40% first draft submitted, • 70% final draft considering feedback, • 100% document approved.	CAAT/SMD*
GEN2.SMN03	Publish the first CAAT Annual Safety Report.	30/09/21	Percentage of implementation considering: • 50% Report drafted • 100% Report approved and published	CAAT/SMD*
Implement Risk-based Surveillance (RBS) in every domain.				
GEN2.OPS01	Establish a risk-based surveillance methodology and implement for OPS domain.	31/12/21	Percentage of advancement considering: • 50% the methodology is developed, • 75% the RBS program is established, • 100% the inspectors are trained in the methodology.	CAAT/OPS*
GEN2.SMN04	Based on OPS department (GEN2.OPS01) process, establish a common methodology for programming the surveillance activities based on risks.	31/12/22	Percentage of advancement considering: • 50% the methodology is drafted, • 100% the methodology is endorsed by the departments.	CAAT/SMD*
GEN2.PEL01	Establish risk-based surveillance in each domain.	31/12/22	Percentage of advancement by domain considering: • 50% the RBS program is established, • 100% the inspectors received training in the methodology.	CAAT/PEL*
GEN2.AIR01		31/12/22		CAAT/AIR*
GEN2.ANS01		31/12/23		CAAT/ANS*
GEN2.AGA01		31/12/23		CAAT/AGA*

GEN-3

To have an effective safety reporting system and promote Just Culture within the aviation industry

Effective safety management relies on the provision to managers of appropriate safety information to allow the right safety decision-making.
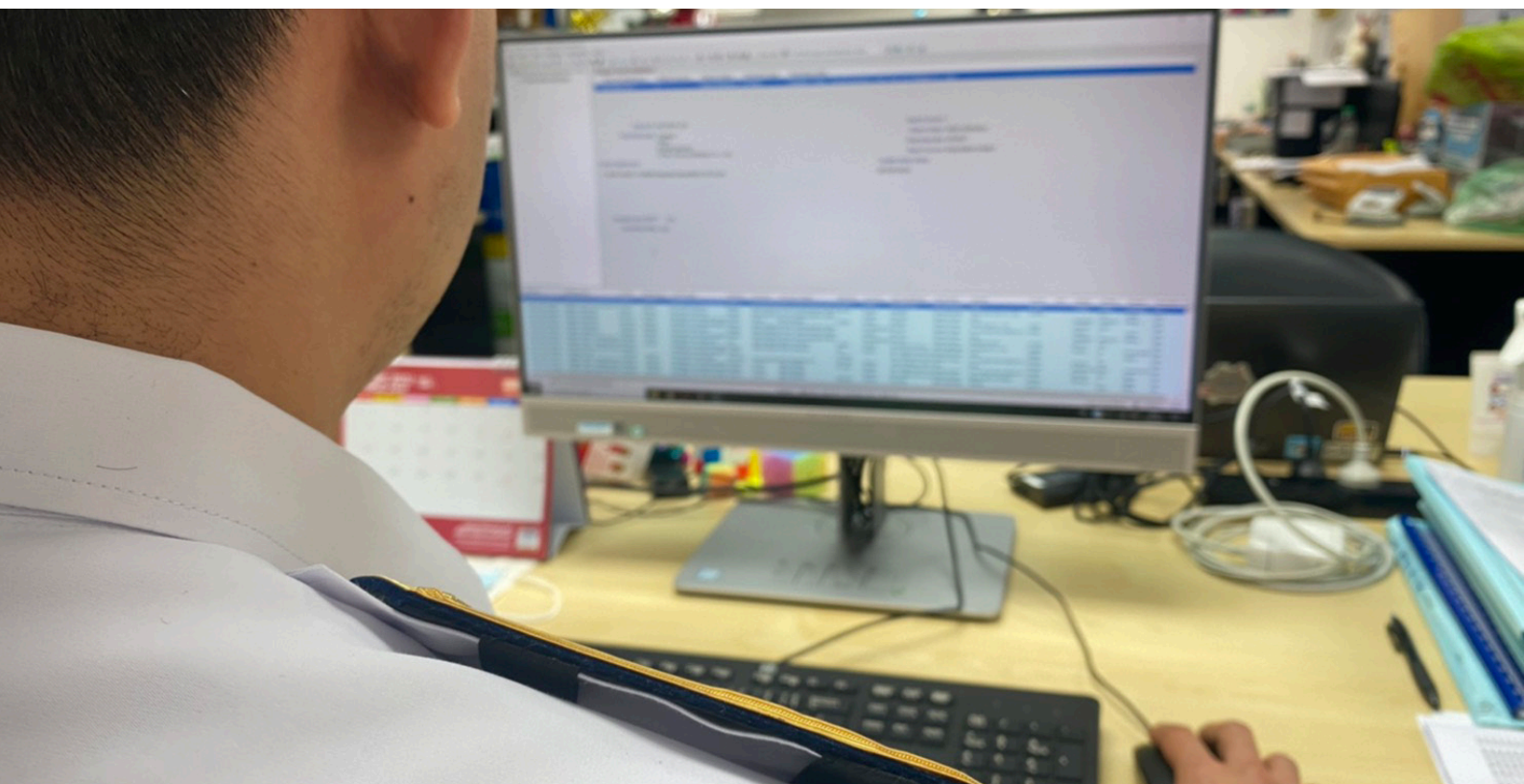
To have a clear understanding of the aviation safety risks in Thailand, the aviation community needs a reliable set of safety data and information to identify risks and priorities. This cannot be achieved without an increase of occurrences being reported.

This increase should not be limited to occurrences that are mandatory to report but needs to also include occurrences that are reported voluntarily (potential hazards, errors, near misses and emerging risks) to enable a better understanding of the system.

To make this increase possible, the implementation of a Just culture policy by CAAT and industry is critical. The more safety data available, the more effective the analysis will be leading to a better understanding of aviation system risks.

The table below details the SPIs and SPTs for GEN-3 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
Occurrence Reporting rate (Number of occurrence Reported per 1,000 flight departures per year)	Annual increase above 30%	End of 2021 End of 2022
Percentage of civil aviation organisations reporting occurrences	Annual increase above 10%	End of 2021 End of 2022

Actions to achieve GEN-3 objective:

No.	Action	Target date	Indicators and Targets	Leaders*
Ensure that occurrences are properly reported to CAAT.				
GEN3.SMN01	Establish a tool to assess the effectiveness of organisations safety reporting system.	31/12/22	Percentage of advancement considering: • 50% first draft issued, • 75% final draft after consultation process issued, • 100% final version approved.	CAAT/SMD*
GEN3.PEL01	Carry out surveillance on organisations to confirm they have implemented an operating aviation safety occurrence reporting system.	31/12/22	– Percentage of applicable organisations that have been assessed. – Percentage of organisations that have an operating safety occurrence reporting system.	CAAT/PEL*
GEN3.OPS01		31/12/22		CAAT/OPS*
GEN3.AIR01		31/12/22		CAAT/AIR*
GEN3.ANS01		31/12/22		CAAT/ANS*
GEN3.AGA01		31/12/25		CAAT/AGA*
Establish policies, procedures and tools to foster the increase of occurrences reported to CAAT.				
GEN3.SMN02	Establish and implement procedures, tools and training to meet new safety data and information protection regulation.	31/12/21	Percentage of advancement considering: • 50% Tools and procedures available, • 75% Tools and procedures approved, • 100% Staff trained.	CAAT/SMD*
GEN3.SMN03	Revise enforcement policy and procedures manual to align with new law and regulations and to include Just culture principles.	31/12/21	Percentage of implementation considering: • 50% new documents drafted, • 100% documents approved.	CAAT/QAD* CAAT/LEG CAAT/SMD
GEN3.SMN04	Provide training and safety promotion material to enhance the understanding of Just Culture and its impact on reporting and safety behaviours.	30/06/22	– Percentage of CAAT staff involved in oversight trained in Just Culture. – Percentage of Organisations that have a Just Culture policy and procedures in place.	CAAT/SMD*

GEN-4

To actively cooperate at the regional level to enhance safety

Aviation is international by nature. Improving aviation safety in the Region will improve aviation safety in Thailand and for Thai citizens. Sharing lessons learnt and working collaboratively with neighbouring countries is critical as these countries probably face similar safety challenges.

The table below details the SPIs and SPTs for GEN-4 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
Populate COSCAP and RSOO technical expert database	Database reviewed and updated annually	Continuous
CAAT attendance to COSCAP SEA and RASG meetings and conferences	Attendance at 100% of all activities	Continuous

Actions to achieve GEN-4 objective:

No.	Action	Target date	Indicators and Targets	Leaders*
Consider RASG-APAC SEI Tools when developing new regulations or processes or when amending existing ones.				
GEN4.SMN01	Review new ICAO Safety Enhancement Initiatives (SEI) and provide recommendations to CAAT departments for their implementation.	31/12/22	Percentage of new SEIs reviewed by SMD not later than 6 months after their publication.	CAAT/SMD*
Enhance communication with other states at Regional level and with International stakeholders.				
GEN4.ORG01	Establish a procedure to improve the communication with international bodies, especially with Bangkok ICAO Regional Office.	31/12/21	Percentage of implementation considering: • 50% new documents drafted, • 100% documents approved.	CAAT/QAD*
GEN4.AIR01	Establish and implement a strategy to facilitate recognition of foreign AMOs.	31/12/21	Percentage of implementation considering: • 30% strategy defined, • 60% procedures and tools approved, • 100% first organisations or products accepted.	CAAT/AIR*
GEN4.PEL01	Establish and implement a strategy to facilitate recognition of foreign ATOs.	30/06/22	Percentage of implementation considering: • 30% strategy defined, • 60% procedures and tools approved, • 100% first organisations or services accepted.	CAAT/PEL*

GEN-5

To ensure that aviation organisations have implemented an operating SMS across all the aviation system

Aviation organisations' SMS generate a significant input for the SSP safety data collection and processing system (SDCPS). The effectiveness of the SMS reflects their capability and capacity to manage their safety risks appropriately and to focus on areas of greatest safety concern.

There should be a harmonised approach to SMS oversight both for certification and for Safety performance monitoring across all CAAT departments.

An operating SMS, means that the system is producing the expected output.

The table below details the SPIs and SPTs for GEN-5 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
Establishment of SMS assessment tool	To have harmonised SMS assessment procedures and tools	End of 2022
Percentage of civil aviation organisations having an operating SMS implemented	100% of civil aviation organisations having an operating SMS	End of 2024

Actions to achieve GEN-5 objective:

No.	Action	Target date	Indicators and Targets	Leaders*
GEN5.SMN01	Harmonise SMS requirements across the different domains.	30/06/22	Percentage of advancement considering: • 50% Comparison analysis completed, • 75% Recommendations to oversight departments issued in case of differences, • 100% SMS requirements are harmonized.	CAAT/SMD* CAAT/Safety oversight departments
GEN5.SMN02	Develop a generic SMS guidance material that includes best practices to improve the implementation of an operating then effective SMS.	30/06/22	Percentage of advancement considering: • 30% first drafts issued, • 60% final draft approved, • 100% CAAT inspectors trained.	CAAT/SMD*
GEN5.SMN03	Establish harmonised procedures and tools for SMS certification and for SMS effectiveness assessment during surveillance.	31/12/22	Percentage of advancement considering: • 30% procedures and tools prepared, • 60% procedures and tools approved, • 100% CAAT inspectors trained.	CAAT/SMD* CAAT/Safety oversight departments
GEN5.PEL01 GEN5.OPS01 GEN5.AIR01 GEN5.ANS01 GEN5.AGA01	Assess the SMS effectiveness of all applicable organisations using the SMS assessment tool.	31/12/23 31/12/23 31/12/23 31/12/23 31/12/25	– Percentage of applicable organisations that have been assessed. – Percentage of applicable organisations that have an operating SMS.	CAAT/PEL* CAAT/OPS* CAAT/AIR* CAAT/ANS* CAAT/AGA*
GEN5.SMN04	Develop safety promotion material that includes lessons learnt and best practices to promote the importance of complying with procedures.	31/12/23	Percentage of advancement considering: • 30% promotion material prepared, • 60% promotion material approved, • 100 % CAAT inspectors briefed.	CAAT/OPS*
GEN5.SMN05	Establish a CRM Advisory committee to enable the sharing of lessons learnt and best practices.	31/12/23	Percentage of advancement considering: • 30% CRM Advisory committee established, • 60% first committee meetings held, • 100 % First Safety Promotional Material published.	CAAT/OPS*

OPR

Specific Operational Safety Objectives

To mitigate the risk of fatalities, Thailand needs to identify and address the operational risks specific to the Thai aviation system. The identification of risks is made through the analysis of safety events and of safety plans published by other states and International bodies. As the Safety Data Collection and Processing System (SDCPS) is not mature yet, the OPR objectives are derived from the ICAO High Risk Category occurrences contained in Global and Regional safety plans.

Thailand has established the following as the OPR objectives:

OPR-1:	To reduce the rate of occurrences related to controlled flight into terrain (CFIT)
OPR-2:	To reduce the rate of occurrences related to loss of control in-flight (LOC-I)
OPR-3:	To reduce the rate of occurrences related to mid-air collision (MAC)
OPR-4:	To reduce the rate and severity of runway excursions (RE)
OPR-5:	To reduce the rate of runway incursions (RI)

As a result of the safety occurrence analysis, an additional OPR objective was added due to the high frequency of such occurrences in Thailand:

OPR-6:	To reduce the rate of bird strikes with damage to aircraft parts

Organisations shall focus their attention on identifying precursor events and contributing factors, and on monitoring the rate of occurrences of these with the objective to reduce these rates of occurrence as well as the severity of their potential consequences.

As a new occurrence reporting regulation has been applicable since April 2020, an increase of the occurrences reported to CAAT is expected for 2021. The wider application of Just culture will also contribute to the increase of the occurrences reported to CAAT. This will improve the risk picture that CAAT will have so that it can improve the way it manages safety in the future.

While it is relevant, at global level, to follow the number of CFIT, LOC-I, MAC, RE or RI occurrences; it is not relevant at national level or at operator level.

At national or operator level, it is necessary:

• To monitor precursor events that could lead to an accident or serious incident. Precursor events are actions, omissions, events, conditions, or a combination thereof, that could lead to an accident. Precursor events should be considered as undesirable events in organisations' SMS.

• To monitor contributing factors of the occurrences. These factors are actions, omissions, events, conditions, or a combination thereof, which, if eliminated, avoided or absent, would have reduced the probability of the accident or incident occurring, or mitigated the severity of the consequences of the accident or incident.

OPR-1

To reduce the rate of occurrences related to controlled flight into terrain (CFIT)

Controlled flight Into Terrain (CFIT) is an in-flight collision with terrain, water or obstacle without indication of loss of control. CFIT events are included in the TASAP due to the high risk of fatality.

Examples of Contributing factors	Examples of Precursor events
• ATS procedure design and documentation	• Altitude below minimum safe altitude
• Pilot fatigue and disorientation	• Flight path below glideslope during ILS approach
• ILS malfunction or calibration	• Excessive rate of descent
• PAPI alignment with glideslope	• TAWS (EGPWS) warning
• Crew resource management	• Go-around at low altitude
• Adverse weather	• Inappropriate low altitude manoeuvring
• Obstacles not appropriately documented (charts) or marked (lighting)	• Low fuel
• Loss of situational awareness	• Low energy during approach
• Mountainous terrain	• ILS failures and malfunctions
• Aircraft not equipped with TAWS/EGPWS	
• Aircraft system malfunction (Navigation equipment and EGPWS)	

The table below details the SPIs and SPTs for OPR-1 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
2-year rolling average of rate of occurrences related to controlled flight into terrain (CFIT) per million flights per year	Decreasing 2-year rolling average of rate of occurrence related to controlled flight into terrain (CFIT) per million flights per year	Continuous

Actions to achieve OPR-1 objective:

No.	Action	Target date	Indicators and Targets	Leaders* & Stakeholders
OPR1.SMN01 OPR1.OPS01	Establish a task force with industry to identify actions to reduce the likelihood of CFIT events and to identify CFIT risk hotspots.	30/06/22	– Task Force team established and initial meeting held. – CFIT hotspots identified at all international airports and risk assessed for hotspots. – Number of appropriate actions identified.	CAAT/SMD* and OPS* CAAT/AGA and ANS Air operators Aerodrome operators ANSPs
OPR1.SMN02	Continue monitoring and analysing the number of occurrences that have the potential to result in a CFIT event.	31/12/21	– Number of occurrences that could have resulted in a CFIT event per million flights are collected and analysed. – Analysis of CFIT related occurrences completed and results published in the annual safety report.	CAAT/SMD* Air operators Aerodrome operators ANSPs
OPR1.OPS02	Identify hazards related to CFIT occurrences.	30/06/22	Number of hazards identified and risk assessed.	CAAT/OPS* CAAT/SMD, AGA and ANS Air operators Aerodrome operators ANSPs
OPR1.OPS03	Establish guidance for operators to ensure effectiveness of Ground Proximity Warning System (GPWS) (ICAO APRAST SEI Ref – CFIT1 (2)).	30/06/22	Percentage of advancement considering: • 50% first draft issued, • 75% final draft after consultation process issued, • 100% guidance is approved and published.	CAAT/OPS*
OPR1.OPS04	Establish guidance for operators on training programme on the use of GPWS (ICAO APRAST SEI Ref – CFIT1 (3)).	30/06/22	Percentage of advancement considering: • 50% first draft issued, • 75% final draft after consultation process issued, • 100% guidance is approved and published.	CAAT/OPS*
OPR1.OPS05	Establish guidance on Controlled Flight into Terrain (CFIT) and Approach and Landing Accident Reduction (ALAR) training programme (ICAO APRAST SEI Ref – CFIT6 (5)).	31/12/22	Percentage of advancement considering: • 50% first draft issued, • 75% final draft after consultation process issued, • 100% guidance is approved and published.	CAAT/OPS*
OPR1.OPS06	Establish instrument approach procedures using continuous descent final approach techniques (ICAO APRAST SEI Ref – CFIT3 (8)).	30/06/22	Percentage of advancement considering: • 50% first draft issued, • 75% final draft after consultation process issued, • 100% procedures are approved and published.	CAAT/OPS*

OPR-2

To reduce the rate of occurrences related to loss of control in-flight (LOC-I)

Loss of control in-flight is an extreme deviation from intended flight path. Occurrences categorised as LOC-I are events that lead or could lead to a non-recoverable loss of control. LOC-I accidents often have catastrophic results with very high risk of fatality; for this reason, it is included in this TASAP.

Examples of Contributing factors	Examples of Precursor events
• Pilot performance as a result of Human Factors	• System malfunction causing automation to disengage
• Inadequate flight crew training	• Aircraft not behaving as expected
• Operating procedure design	• Wind shear events
• ATS procedure design - SIDs & STARs	• Stall warning and stick shaker events
• Air traffic related such as wake turbulence	• Excessive Bank angle
• Malfunctioning and/or misunderstanding of automation	
• Aircraft system malfunction - Power plant, flight command	
• Environment, including adverse weather conditions	

The table below details the SPIs and SPTs for OPR-2 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
2-year rolling average of rate of occurrences related to Loss of Control In-flight events (LOC-I) per million flights per year.	Decreasing 2-year rolling average of rate of occurrence related to Loss of Control In-flight events (LOC-I) per million flights per year.	Continuous

Actions to achieve OPR-2 objective:

No.	Action	Target date	Indicators and Targets	Leaders* & Stakeholders
OPR2.SMN01	Establish a task force with industry to identify actions to reduce the likelihood of LOC-I events.	30/06/22	– Task Force team established and initial meeting held. – Top 5 contributing factors to LOC-I identified.	CAAT/SMD* Air operators
OPR2.SMN02	Continue monitoring and analysing the number of occurrences that have the potential to result in a LOC-I event.	31/12/21	– Number of occurrences that could have resulted in a LOC-I per million flights collected and analysed. – Analysis of LOC-I related occurrences completed and results published in the annual safety report.	CAAT/SMD* Air operators
OPR2.OPS01	Identify hazards related to LOC-I occurrences	30/06/22	Number of hazards identified and risk assessed.	CAAT/OPS* CAAT/SMD Air operators
OPR2.OPS02	Establish guidance on mode awareness and energy state management aspects of flight deck automation. (ICAO APRAST SEI Ref – LOC5 (6) CAAT/OPS)	31/12/22	Percentage of advancement considering: • 50% first draft issued, • 75% final draft after consultation process issued, • 100% advisory circular is approved and published.	CAAT/OPS*
OPR2.OPS03	Establish Guidance Material on Flight Crew Proficiency (ICAO APRAST SEI Ref – LOC 2, LOC 4 (17)) related to Loss of Control prevention and upset recovery.	31/12/23	Percentage of advancement considering: • 50% first draft issued, • 75% final draft after consultation process issued, • 100% guidance material is approved and published.	CAAT/OPS*
OPR2.SMN03 OPR2.OPS04	Establish an industry wide Ground Handling Task Force to reduce the risk of weight and balance and de-icing events that could lead to a LOC-I event.	30/09/22	– Ground Handling Task Force established, terms of reference agreed and first meeting held. – Number of appropriate mitigating actions proposed.	CAAT/SMD* and OPS* Air operators

OPR-3

To reduce the rate of occurrences related to mid-air collision (MAC)

Mid-air collision refers to a collision between aircraft while both are airborne. There is also a high fatality risk associated with these events. Most occurrences reported relate to loss of separation and Traffic Collision Avoidance System (TCAS) Resolution Advisory (RA) warnings.

Examples of Contributing factors
• Air traffic control errors
• Air traffic controller's workload and fatigue
• Communication errors between ATC and Pilot
• Released airborne objects such as sky lanterns, kites and drones
• Flight crew training
• Aircraft system malfunction (, Altimeters)
• Congested airspace

Examples of Precursor events
• Level busts
• TCAS RA
• Airspace infringements
• Loss of separation

The table below details the SPIs and SPTs for OPR-3 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
2-year rolling average of rate of occurrence related to mid-air collision (MAC) per million flights per year	Decreasing 2-year rolling average of rate of occurrence related to mid-air collision (MAC) per million flights per year	Continuous

Actions to achieve OPR-3 objective:

No.	Action	Target date	Indicators and Targets	Leaders* & Stakeholders
OPR3.SMN01	Establish a task force with industry to identify actions to reduce the likelihood and severity of MAC events and to identify MAC risk hotspots.	30/06/22	− Task Force team established and initial meeting held. − Top 5 contributing factors to MAC identified. − Hot spots identified.	CAAT/SMD* ANSPs Air operators
OPR3.ANS01	Identify Airspace hotspots in conjunction with industry.	31/12/22	Completed analysis of airspace hotspots.	CAAT/ANS* CAAT/SMD ANSPs Air operators
OPR3.OPS01 OPR3.ANS02	Identify hazards related to MAC occurrences.	31/12/22	Number of hazards identified and risk assessments carried out.	CAAT/OPS* and ANS* CAAT/SMD ANSPs
OPR3.SMN02	Continue monitoring and analysing the number of occurrences that have the potential to result in a MAC event.	31/12/21	− Number of TCAS RA's in Thailand controlled airspace per million flights collected and analysed. − Number of loss of separation occurrences per million flights collected and analysed. − Number of occurrences that could have resulted in a MAC event per million flight collected and analysed. − Analysis of MAC related occurrences completed and published in Annual Safety Report.	CAAT/SMD* ANSPs Air operators

OPR-4

To reduce the rate and severity of runway excursions (RE)

Runway excursion is a veer off or overrun off the runway surface during both take-off and landing. This is the most prevalent occurrence related to "runway safety". As opposed to previously described events, occurrences related to runway excursions have led, on average, to fewer fatalities. However, the reported occurrences relate to actual excursions rather than potential runway excursions so although the numbers are low the potential severity is high.

Examples of Contributing factors	Examples of Precursor events
• Heavy rain and/or strong winds	• Unstabilised approach that continues to land
• Pilot error and decision making	• Long landings
• Runway conditions	• Too high energy in final approach
• Unstabilised approach	• Aquaplaning events
• Aircraft system malfunction - Thrust reversers, speed-brakes and brakes	• Aircraft stopping device failures -Thrust reversers, speed-brakes & brakes
	• Rejected take-off
	• Abnormal runway contact

The table below details the SPIs and SPTs for OPR-4 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
2-year rolling average of rate of occurrence related to runway excursion (RE) per million flights per year.	Decreasing 2-year rolling average of rate of occurrence related to runway excursion (RE) per million flight per year.	Continuous

Actions to achieve OPR-4 objective:

No.	Action	Target date	Indicators and Targets	Leaders* & Stakeholders
OPR4.SMN01	Establish a task force with industry to identify actions to reduce the likelihood and severity of runway excursion events considering the ICAO Global Runway Safety Plan.	31/05/22	− Task Force team established and initial meeting held. − Review of Global Runway Safety Plan completed. − Top 5 contributing factors to runway excursion identified. − Number of appropriate actions identified.	CAAT/SMD* CAAT/AGA, OPS and ANS Aerodrome operators Air operators ANSPs ATOs Military
OPR4.AGA01	Ensure Airport operators of public-used aerodromes establish runway safety teams.	31/12/22	Percentage of public-used aerodromes with an operating runway safety team.	CAAT/AGA* Aerodrome operators Air operators ANSPs ATOs Military
OPR4.OPS01	Ensure all operators establish 'stabilised approach criteria' and provide SOPs with clear limits and actions to be taken following an approach deviation.	30/06/22	100% of operators have implemented stabilised approach criteria and SOPs with clear limits and actions to be taken following an approach deviation.	CAAT/OPS* Air operators
OPR4.SMN02	Continue monitoring and analysing the number of occurrences that have the potential to result in a runway excursion event.	31/12/21	− Number of RE events per million airport movements measured. − Number of unstabilised approaches reported that continue to land per million flights collected & analysed. − Number of occurrences that could have resulted in a runway excursion event per million flights collected & analysed. − Analysis of RE related occurrences completed & published in Annual Report.	CAAT/SMD* Aerodrome operators Air operators ANSPs
OPR4.AGA02	Establish Runway Safety Maturity checklist (ICAO APRAST SEI Ref - RS1(10))	31/12/22	Percentage of advancement considering: • 50% first draft issued, • 75% draft after consultation process issued, • 100% checklist is approved and published.	CAAT/AGA* CAAT/ANS and OPS
OPR4.AGA03	Establish guidance material and training program for runway pavement, maintenance and operations from aerodrome operator's perspective (ICAO APRAST SEI Ref – RE7 (11))	31/12/23	Percentage of advancement considering: • 50% first draft issued, • 75% draft after consultation process issued, • 100% guidance material is approved and published.	CAAT/AGA*

OPR-5

To reduce the rate of runway incursions (RI)

Runway incursion is any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and take-off of aircraft. Although statistically very few runway incursions result in collisions, there is a high fatality risk associated with these events.
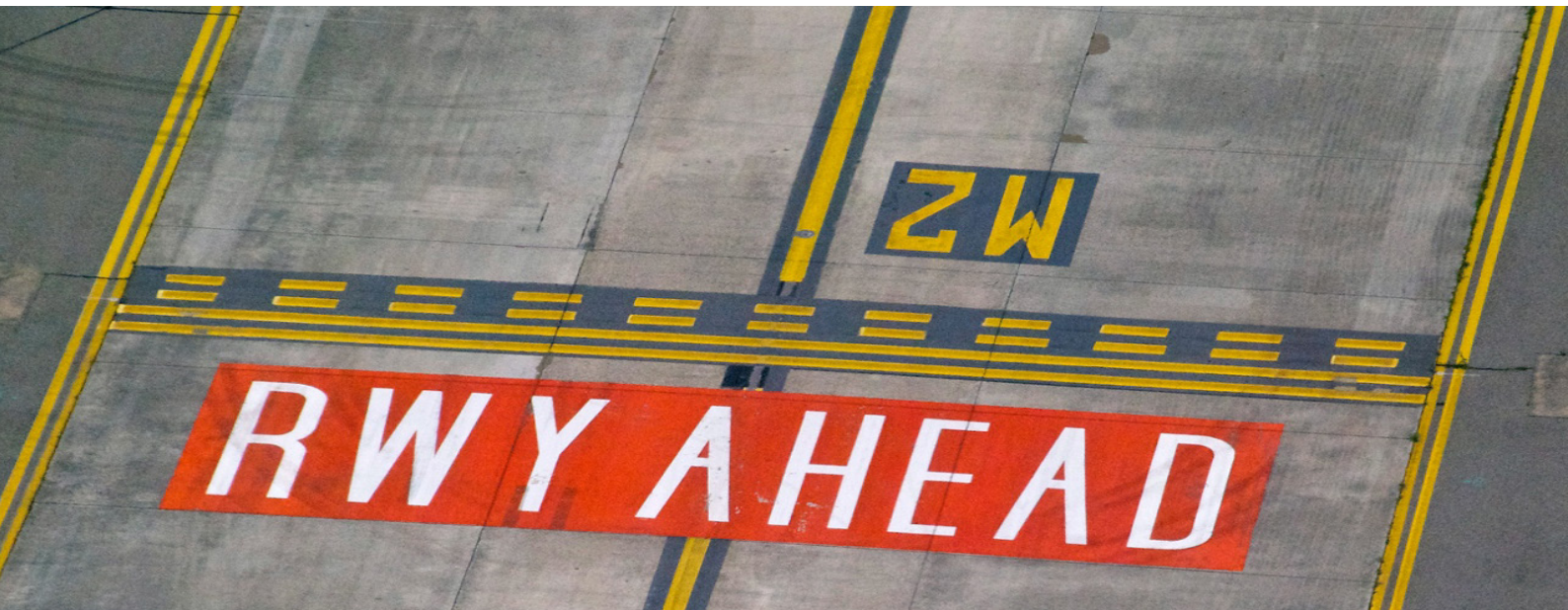
Examples of Contributing factors	Examples of Precursor events
• Airport signage, marking and lighting	• Aircraft partially passing stop bars
• Communication errors (Pilot / ATC)	• Runway/Taxiway confusion
• ATC error	
• Use of non-standard phraseology	
• Loss of situational awareness	
• Runway and taxiway layout	
• Poor visibility due to adverse weather conditions	
• High speed taxiing	

The table below details the SPIs and SPTs for OPR-5 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
2-year rolling average of rate of occurrences related to runway incursion (RI) per million aircraft movements per year	Decreasing 2-year rolling average of rate of occurrence related to runway incursion (RI) per million aircraft movements per year	Continuous

Actions to achieve OPR-5 objective:

No.	Action	Target date	Indicators and Targets	Leaders* & Stakeholders
OPR5.SMN01	Establish a task force with industry to identify hotspots and actions to reduce the likelihood and severity of runway incursion events considering the ICAO Global Runway Safety Plan.	31/05/22	− Task Force team established and initial meeting held. − Review of Global Runway Safety Plan completed. − Top 5 contributing factors to runway incursion identified. − Number of appropriate actions identified.	CAAT/SMD* CAAT/AGA, OPS and ANS Aerodrome operators Air operators ANSPs ATOs Military
OPR5.AGA01	Ensure Airport operators of public-used aerodromes establish runway safety teams.	31/12/22	Percentage of public-used aerodromes with an operating runway safety team.	CAAT/AGA* Aerodrome operators Air operators ANSPs ATOs Military
OPR5.SMN02	Continue monitoring and analysing the number of occurrences that have the potential to result in a runway incursion event	31/12/21	− Number of incursions by aircraft, vehicles, and people per million airport movements are collected and analysed. − Total number of occurrences that could have resulted in a runway incursion event per million airport movements are collected and analysed. − Analysis of runway incursion related occurrences completed and published in Annual Safety Report.	CAAT/SMD* Aerodrome operators Air operators ANSPs
OPR5.AGA02	Establish Runway Safety Maturity checklist (ICAO APRAST SEI Ref - RS1 (10))	31/12/22	Percentage of advancement, considering: • 50% first draft issued, • 75% final draft after consultation process issued, • 100% checklists are approved and published.	CAAT/AGA* CAAT/ANS and OPS
OPR5.AGA03 OPR5.OPS01	Establish guidance material on Runway Incursion prevention including pilot training aspects (ICAO APRAST SEI Ref − RE2 (15))	31/12/23	Percentage of advancement, considering: • 50% first draft issued, • 75% final draft after consultation process issued, • 100% guidance material is approved and published.	CAAT/AGA* and OPS*

OPR-6

To reduce the rate of bird strikes with damage to aircraft parts

Bird strike is a collision between a bird and an aircraft. The majority of bird collisions occur near or at airports during take-off, landing, and associated phases of flight. Although most bird strikes do not result in significant events, the potential for an aircraft to lose both engines as a result of hitting large flocking birds is real. The Thai ecosystem together with the number of bird strikes reported to CAAT demonstrate that bird strikes is a safety issue that needs to be addressed.

Examples of Contributing factors	Examples of Precursor events
• Birds inhabiting airport and surrounding areas	• Large flocking birds sighted in close proximity to an aircraft
• Inadequate bird scaring activities	

The table below details the SPIs and SPTs for OPR-6 objective:

Safety Performance Indicators (SPIs)	Safety Performance Targets (SPTs)	Target Date
Rate of occurrences related to bird strikes with damage to aircraft per million aircraft movements per year	Decreasing rate of occurrence related to bird strikes with damage to aircraft per million aircraft movement per year	Continuous

Actions to achieve OPR-6 objective:

No.	Action	Target date	Indicators and Targets	Leaders* & Stakeholders
OPR6.AGA01	Identify actions to reduce the likelihood and severity of wildlife event consequences	31/12/22	− Number of meetings held per year. − Number of appropriate actions identified.	CAAT/AGA* Wildlife subcommittee CAAT/SMD Aerodrome operators
OPR6.SMN01	Continue monitoring and analysing the number of occurrences that have the potential to result in a wildlife event	31/12/21	− Number of wildlife occurrences reported per million movements collected & analysed. − Analysis of bird strike occurrences completed & published in Annual Report.	CAAT/SMD* Aerodrome operators Air operators ANSPs

Appendix:
List of acronyms

A

AAIC	Aircraft Accident Investigation Committee
AIR	ICAO "Airworthiness" domain
	Also designate CAAT Airworthiness department
ALAR	Approach and Landing Accident Reduction
ALoSP	Acceptable Level of Safety Performance
AOC	Air Operator Certificate
AGA	ICAO "Aerodrome and Ground Aids" domain
	Also designate CAAT Aerodromes department
AIS	Aeronautical Information Service
AMO	Approved Maintenance Organisation
AMC	Acceptable Means of Compliance
ANS	Air Navigation Services
ANSP	Air Navigation Service Provider
AP or APAC	Asia Pacific region (ICAO)
APRAST	Asia Pacific Regional Safety Action Team
ATO	Approved Training Organisation
ATS	Air Traffic Services

C

CAB	Civil Aviation Board
CAT	Commercial Air Transport
CAAT	Civil Aviation Authority of Thailand
CE	Critical Element of a safety oversight system
CFIT	Controlled Flight into Terrain
CNS	Communication Navigation and Surveillance (Ground aids)
COSCAP	Cooperative development of Operational Safety and Continuing Airworthiness Program
CRM	Crew Resource Management

E

EGPWS	Enhanced Ground Proximity Warning System

G

GASP	ICAO Global Aviation Safety Plan
GEN	Generic organisational safety objective
GM	Guidance Material

I

ICAO	International Civil Aviation Organization
IFPD	Instrument Flight Procedure Design
ILS	Instrument Landing System

L

LEG	ICAO Legal domain
	Also designate CAAT Legal department
LOC-I	Loss of Control - Inflight

M

MAC	Mid Air Collision
MET	Meteorological Services
MOR	Mandatory Occurrence Report

N

NCASB	National Civil Aviation Safety Board

O

OPR	Specific Operational safety objective
OPS	ICAO Operations domain
	Also designate CAAT Operations department

P

PEL	ICAO Personnel Licensing domain
	Also designate CAAT Personnel licensing department
PQ	Protocol Question used by ICAO for USOAP

R

RBS	Risk Based Surveillance
RASP	Regional Aviation Safety Plan
RE	Runway Excursion
RI	Runway Incursion

S

SAR	Search and Rescue
SARPs	Standards and Recommended Practices
SDCPS	Safety Data Collection and Processing System
SEA	South East Asia
SEI	Safety Enhancement Initiatives
SMD	Safety Management Department of CAAT
SMS	Safety Management System
SSP	State Safety Program
SPI	Safety Performance Indicator
SPT	Safety Performance Target

T

TASAP	Thailand Aviation Safety Action Plan
TAWS	Terrain Avoidance Warning System
TCAS	Traffic Collision Avoidance System

U

USOAP	Universal Safety Oversight Audit Program

V

VOR	Voluntary Occurrence Report

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Thank you all for your active contribution
to make the Thai Civil Aviation System safer.

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