STATE PLAN FOR AVIATION SAFETY IN IRELAND

2019-2022

CONTENTS

EXECUTIVE SUMMARY

The State Safety Plan is rebranded as State Plan for Aviation Safety (SPAS), to ensure consistency with Regulation (EU) 2018/1139 of the European Parliament and of the Council (new Basic Regulation). The SPAS in Ireland is built up on a proactive approach to managing the safety of the Irish civil aviation. ICAO Annex 19 (Safety Management) requires States and organisations to implement a systemic approach to safety management. The systemic approach is implemented by States via the State Safety Program and State Plan for Aviation Safety, and by organisations through implementation of Safety Management Systems. The primary objective of safety management is to enable States and organisations to identify safety risks in a timely manner and to prioritise the actions required to mitigate these risks. As well as learning from past experiences, safety risk management includes processes to identify future risks posed by the increasing complexity and continued growth in civil aviation, with new business models and emerging technologies.

The Irish SPAS is consistent with the goals and objectives of the Global Aviation Safety Plan (GASP) and the European Plan for Aviation Safety (EPAS). The EPAS includes recommended actions for EU Member States and these recommendations are included in this Plan, as appropriate for Ireland.

This is the tenth edition of the SPAS produced by the Irish Aviation Authority. SPAS 2019-2022 edition differs slightly from previous versions in that it now has three distinct sections:

- **Section 1** – addresses the strategic element of the Plan including strategic priorities, strategic objectives, strategic enablers and performance monitoring. This section will provide an overview of the overall intent of the actions in the Plan.
- **Section 2** - provides the detailed actions of the Plan including the stakeholder roles and safety objectives. This section is divided into three sub-sections as per previous versions of the Plan; systemic, commercial air transport and general aviation.
- **Section 3** - provides four Appendices with summary lists of the strategic safety objectives, safety objectives of the SPAS along with related performance indicators and targets, and new and closed actions in this version of the Plan.

Safe aviation performance is delivered by the persons and organisations that conduct the aviation activities. The State enables aviation safety through development of aviation policy and regulations, and the provision of safety oversight and safety promotion. As part of safety risk management, the State can identify, and share, sector-based safety priorities from the oversight of multiple organisations operating within a common sector. Many of the actions in this Plan derive from sector-based risk profiles developed by the IAA, including stakeholder consultation through safety oversight visits, safety review meetings and safety workshops. This Plan identifies the actions to be taken at the State level (eg by the IAA safety regulator), however, this version of the Plan also identifies the roles that the IAA expects that other stakeholders will undertake, to address the specific safety issue under discussion.

SECTION ONE

Safety Strategy

GLOBAL CONTEXT FOR THE IRISH SPAS

As aviation is a global business that requires States to co-ordinate efforts to improve safety, the State Plan for Aviation Safety (SPAS) in Ireland is developed with due regard for international safety priorities. The figure above depicts how safety management is part of a global set of initiatives from ICAO to EU to Ireland, where individual States work together at EU and global levels to influence and implement best safety practices, as part of a top-down and bottom up approach.

The strategic hierarchy for safety management derives from the ICAO convention and is adopted at EU level and in Ireland. This hierarchy includes

– Aviation Strategy: Policies and objectives for safety (eg National Aviation Policy in Ireland)

– Aviation Safety Programme: Integrated set of regulations and activities aimed at improving safety (eg State Safety Program for Ireland)

– Aviation Safety Plan: High Level set of actions to address identified safety issues (eg State Plan for Aviation Safety in Ireland)

The National Aviation Policy for Ireland is published by the Department for Transport Tourism and Sport and outlines the strategy and policy for civil aviation in the State - see http://www.dttas.ie/aviation/english/national-aviation-policy-ireland.As an EU Member State, Ireland is also subject to the EU regulatory framework.

The New Basic Regulation (NBR), Regulation (EU) 2018/1139 of the European Parliament and of the Council, requires EASA to develop a European Aviation Safety Programme (EASP) and a European Plan for Aviation Safety (EPAS) and EU Member States to develop a State Safety

Programme (SSP) and State Plan for Aviation Safety (SPAS). The State Plan for Aviation Safety must include the risks and actions identified in the European Plan for Aviation Safety that are relevant for the Member State concerned.

The State Safety Programme for Ireland was developed in alignment with the European Aviation Safety Programme. This programme is currently being updated to reflect the latest developments in Europe and Ireland.

This document is the SPAS for Ireland and it is developed on behalf of the State by the Irish Aviation Authority, Safety Regulation Division, based on the safety priorities identified for the Irish civil aviation system. These safety priorities are developed as part of on-going risk management processes, including safety analysis and risk assessments, and in conjunction with the stakeholders through safety oversight, safety review meetings, and operational and safety workshops. Consultation with other State level stakeholders is accomplished via the State Safety Program Steering Committee (ref State Safety Programme for details).

Under the new EU Basic Regulation (EU) 2018/1139 (New BR), the Plan must now include the relevant actions identified for EU Member States in the EPAS. The new regulation will not cause a significant change to this edition of the Plan, because Ireland has on a voluntary basis included the EPAS recommendations for EU Member States in each edition of the Plan since the EPAS was first issued in 2011. The IAA also provides EASA with an annual update of progress in Ireland on EPAS recommendations.

Safety management is implemented by the civil aviation stakeholders via safety management systems. This is the final and most important link on the global aviation safety management chain. Whereas the State can enable safety management by sharing information based on aggregated risk assessments, individual organisations must, and are the only ones that can, identify risks specific to their operations and implement risk mitigation strategies to reduce these risks. This SPAS for Ireland identifies the safety priorities based on sector-based risk assessment and risk profiling, however, each organisation must assess it's own risk and act accordingly. The organisations must take due cognisance of the safety priorities identified in this Plan as part of it's own risk management processes.

STRATEGIC PRIORITIES AND STRATEGIC SAFETY OBJECTIVES

IAA SRD strategic priorities are developed in line with the IAA SRD values, vision and mission. The strategic priorities affecting safety management include the following:

To be acknowledged globally as a leading State in the effective implementation of risk-based safety management in regulation and oversight, to the appropriate ICAO and EU standards, including effective safety promotion.

To be efficient and innovative by continuously engaging with stakeholders and implementing lean processes, enabled by new digital technologies.

To develop and implement 'the state of the art' in risk management practices and make them available for the benefit of the global community.

To facilitate competitiveness, innovation and emerging technologies to the benefit of Irish and global aviation.

Building on these strategic priorities, and on the assessment of the risks that the IAA safety regulation function is exposed, the following key areas are addressed in the SPAS for action in the short to medium term.

Structure and Policy:

In accordance with European requirements, there is strong functional separation in place between the IAA's safety regulatory and service provision functions. Notwithstanding this, the Government has decided to legally separate the IAA's functions. This decision is outlined in the National Policy Statement on Airport Charging Regulation – September 2017, where it is proposed that the regulatory and safety functions of the IAA will be merged with the regulatory and consumer protection functions of the Civil Aviation Regulator (CAR) to form a new aviation regulatory authority and the air navigation services functions of the IAA will be retained as a regulated State-owned enterprise.

Work has already begun to give effect to this policy statement and to deliver full legal separation. A draft Heads of Bill has been approved by the three main stakeholders, the IAA, Department of Transport, Tourism and Sport (DTTAS) and CAR in January 2019 and is currently under consideration at Government level. The Department indicates that it plans for the necessary legislation to provide for full separation to be prepared by 1 January 2020.

The transformative project to transition the IAA to the new separate structures has already started and a Steering Committee chaired by the DTTAS and including members from DTTAS, CAR, IAA ANSP and IAA SRD has been established, along with associated project management, change management and risk management processes

Whereas the delivery of the transformation project itself is outside the scope of this document, the SPAS actions (ref Ch 1.2) focus on ensuring that there is no disruption to safety regulatory functions and air navigation services during the transition period and beyond.

Strategic Safety Objective:

To provide legal certainty on the independence of the IAA safety regulatory functions from the air navigation services provision.

Regulatory Change Management:

Although the competence for rulemaking in civil aviation is largely vested in EASA, the new EU regulatory framework includes requirements for both national competent authorities and regulated entities. Accordingly, the actions for the IAA SRD in respect of regulatory changes, as competent authority for Ireland, are two-fold:

1. To implement the requirements for competent authorities and advise affected industry stakeholders of the necessary changes to published procedures in this regard
2. To provide guidance to industry stakeholders on the implementation of requirements for regulated entities, including interpretation of requirements and means of compliance, and review/acceptance of alternative means of compliance

This edition of the SPAS includes actions that address some of the main regulatory changes, such as the impact of the new Basic Regulation, new EU regulations on Drones and oversight of ground handling services.

Strategic Safety Objectives:

To enable safe, secure and sustainable civil aviation system in Ireland through the provision of appropriate regulatory framework and operating rules and effective safety oversight.

To provide guidance to industry in implementing regulatory changes.

Safety Oversight

The IAA SRD has implemented, and maintains, a comprehensive safety oversight programme to oversee the activities of organisations and persons involved in the Irish civil aviation system. This safety oversight programme consists of a range of audits, inspections, tests and checks, using competent staff supported by regulations, policies, procedures, tools and training, to allow the IAA SRD to fulfil it's obligations. The new Basic Regulation also requires States to work together to ensure effective oversight of organisations performing aviation activities in different EU member States. The performance of the IAA SRD safety oversight programme is subject to oversight by ICAO, EASA and the Department for Transport, Tourism and Sport (DTTAS). The latest DTTAS Section 32 audit of the IAA is on-going at the time of writing, and the IAA will take appropriate and timely actions to address any recommendations arising from this audit. Any actions that emerge that affect the SPAS, will be included in the next version of the Plan.

The core element of safety oversight is ensuring that organisations and persons comply with the safety regulations, achieved through a comprehensive programme of compliance-based oversight. The IAA plans to supplement the compliance-based oversight model by implementing risk-based and performance-based oversight (RBO/PBO) as a key element of safety management in Ireland to target State resources in the more safety critical areas. The concept of risk-based oversight provides greater flexibility for the regulator to target areas of greater safety concern, however, it also relies on enhanced capability to collect and analyse safety information. The recently introduced EU regulation on safety occurrence reporting in civil aviation is a key enabler of RBO/PBO. Additional safety information from compliance oversight systems, and other sources, form the basis for risk and performance profiling that is at the heart of RBO/PBO.

The IAA uses organisational, and sector-based, risk and performance profiles to plan both the frequency and scope (focus) of safety oversight audits. In addition, the IAA oversight planning is informed by an assessment of the effectiveness of the regulated organisations safety management systems in managing their own risks.

The implementation of RBO/PBO, as well as the oversight of performance-based regulations requires additional resources and new competencies and processes for staff in IAA SRD. In addition, new processes will be required to measure the effectiveness of the RBO/PBO methodology in meeting the safety objectives (eg improvement in safety processes or safety outcomes).

Whereas mature elements of RBO/PBO are available in some aviation sectors, the current edition of the SPAS (ref Ch 1.6) includes actions to ensure the full implementation of the methodology across all remaining sectors.

Strategic Safety Objective:

To enhance safety oversight through implementing effective risk-based and performance-based safety oversight.

To collaborate with regulatory authorities of affected EU Member States on safety oversight of organisations performing aviation activities across different EU States.

Human Resources

The new requirements on safety management have an impact on the staffing levels at regulatory authorities, and the existing skill-sets and competencies needed to meet the new obligations.

The IAA SRD has undergone a full review of existing human resources in the context of the new obligations arising from the regulatory changes, the plans for separation of the regulatory and ANSP functions in the IAA, as well as the other strategic objectives discussed in this section. This version of the SPAS (ref Ch 1.6) identifies actions to address development of new inspector competencies in risk and performance-based oversight and procurement of new skillsets in system development, data management, data analytics and safety promotion.

Strategic Safety Objective:

To ensure the IAA regulator has sufficient and appropriately qualified and competent staff to provide effective safety oversight and safety management.

Facilities/Equipment

The staff in IAA SRD are provided with modern office accommodation and state of the art IT equipment with online access to accommodate remote working (eg by inspectors working in external locations).

The IAA SRD has launched a new eBusiness and Digitisation project to introduce eBusiness into all possible IAA SRD functions. Through innovation and active use of technology, the IAA SRD will be able to deliver dynamic, effective regulatory practices and maximise business activity within the digital environment.

Business processes such as the acceptance of applications for the approval, registration, certification or licensing of both individuals and organisations will be captured and tracked through digital means, with IAA inspectors and technical staff also equipped and trained to exercise oversight activity using digital platforms both at home and abroad.

Whilst the new business processes will greatly enhance the IAA SRD client relationships, the new eBusiness platform will also greatly enhance the access to, and availability of, safety information to support safety management and risk-based and performance-based oversight. It will include a state of the art business intelligence system, that will provide faster access to better quality data from the audit management process and greatly enhance the data collecting and data sharing mechanisms (eg for operational performance and activity data). The IAA is also exploring the possibility to use web-based solutions to facilitate the sharing of safety risk management information (eg hazards and safety issues).

In addition existing IT systems used by IAA SRD such as EMPIC and ECCAIRS are subject to on-going update with a major change from ECCAIRS I to ECCAIRS II planned in the next two years.

Strategic Safety Objective:

To provide enhanced ability to derive and share safety intelligence, through development of advanced digitisation processes, including business intelligence and big data capabilities.

Safety Management:

The IAA continues to implement and evolve safety management processes to meet latest regulatory requirements. The IAA safety management processes include identification and assessment of risk, risk profiling at State, Sector, and Organisation level, action planning to address highest safety concerns and performance monitoring to ensure actions are having the desired result in reducing risk. Stakeholder engagement in the process is achieved through oversight activities with individual organisations and domain or cross domain safety workshops involving the relevant stakeholders. This version of the SPAS (ref Ch 1.3) has actions to implement the safety management methodologies across all aviation sectors.

One of the key supports for safety management for organisations and States is the timely reporting and analysis of safety occurrences. Regulation (EU) 376/2014 aims to improve reporting culture by enshrining the necessary protection of reporter and confidentiality and use of occurrence data in European law. Pan-EU analysis of occurrence reporting rates of EU MS AOC holders shows that Irish commercial aeroplane operations have a strong reporting culture. This version of the SPAS focuses on improving occurrence reporting culture in other domains, including in general aviation.

The IAA is also very supportive of the EASA led initiatives for integrated safety risk management. To this end the IAA has been one of four EU States that are supporting the launch of the EASA Data4Safety Project. The aim of the project is to share safety data from multiple sources (including occurrence reports, aviation recording systems, environmental data, radar data, etc) to help to develop a proactive approach to safety for analysing trends and situations which can lead to a safety hazard. The Data4 Safety project is now at the Proof of Concept stage and the IAA are represented at Steering Board and Technical Board level.

Strategic Safety Objectives:

To enable safe, secure and sustainable civil aviation system in Ireland through effective safety management.

To encourage safety culture, safety reporting and management of safety through hazard identification and safety risk management.

Safety Promotion

Safety promotion in the IAA involves the development and delivery of safety information, or safety training, in an appropriate manner to suit the needs of all sectors of civil aviation in Ireland. This may include formal training programmes, safety briefing evenings, dedicated safety workshops, or using safety promotion channels enabled by modern social media. The content of safety promotion material may address regulatory changes and safety issues that emerge from safety management activities.

Safety promotion as a regulatory tool has assumed a greater role in the new performance based regulatory environment, where the compliance-based regulations are replaced by performance based regulatory objectives. Whereas, the majority of the tasks in the EASA EPAS address rule-making, in the latest version has over 20% of the actions are safety promotion.

This version of the SPAS (ref Ch 1.6) includes actions to enhance the safety promotion function in IAA SRD.

Strategic Safety Objective:

To support Irish civil aviation through effective safety promotion.

Performance Monitoring

Performance monitoring is a key pillar of the safety management processes implemented by the IAA. The IAA monitors the implementations of the SPAS itself and provides statistics relating to the actions in the Plan, later in this section.

This section of the document focuses on the strategic objectives of the SPAS. Section 2 drills down into the details of the Plan to address safety objectives of individual safety issues. These safety objectives are consistent with the strategic safety objectives, however in many cases they are set at a level that enables the development of safety performance indicators and targets so that the performance of the Plan can be monitored based on measurable outcomes.

The IAA monitors the safety performance indicators to assess if the actions in the plan are effective in meeting the safety objectives. The SPI's may be process based (eg compliance measures, resource related) or outcome based (eg number/rate of accidents, serious incidents, occurrences) and they are associated with targets (eg numerical targets, trends, completion dates).

The Annual Safety Performance Review (https://www.iaa.ie/safety) provides aggregated sector-based information on the main outcome-based safety performance indicators (eg accidents, serious incidents, occurrences), and more granular and detailed safety information derived from performance monitoring activities is reviewed directly with the regulated organisations as part of safety oversight activities.

Appendix 2 provides a summary of the Safety Objectives of this Plan along with the related Safety Performance Indicators and Safety Performance Targets.

The development of safety performance indicators and safety performance targets is an on-going process that needs to address updates and amendments to the safety objectives established in the SPAS on an annual basis. In addition, the IAA is working closely with EASA (eg via MAB/TeB's) to establish best practices in this area including how States should assess the level of safety performance (LoSP) to meet ICAO Standards.

Strategic Safety Objective:

To ensure the safety performance of the Irish civil aviation system is appropriately monitored to verify that safety objectives are met.

Operational Risks

Operational risks are the risks of negative safety outcomes arising from aviation operational activities across all sectors of the civil aviation system (eg flight operations, air navigation services, aerodrome operations, aircraft production and maintenance, training etc). The operational risks must be managed by the organisations involved as a part of approved SMS functions, where applicable. Relevant aspects of the intended operations, and changes affecting these operations, must be subjected to hazard identification and risk assessment by each organisation to identify and manage the operational risks.

Whereas, the IAA SRD cannot manage the risks on behalf of individual organisations, it can assist organisations in this regard by using the analysis of safety information obtained from multiple organisations within a sector, to identify and share sector-based risks. This sharing of safety information may be achieved by focused oversight or safety promotion activities.

This edition of the SPAS includes several actions in respect of operational risks in both commercial air transport and general aviation, details of which are provided in section 2. The main operational risks addressed for CAT and GA operations in this edition of the SPAS include:

- Mid-Air Collision
- Controlled Flight Into Terrain
- Runway Safety
- Ground Operations
- On-board fire
- Collision with obstacles
- Environmental

Strategic Safety Objective:

To ensure that the operational risks are fully assessed and mitigated by civil aviation stakeholders to reduce the risk of an accident or serious incident.

STRATEGIC ENABLERS

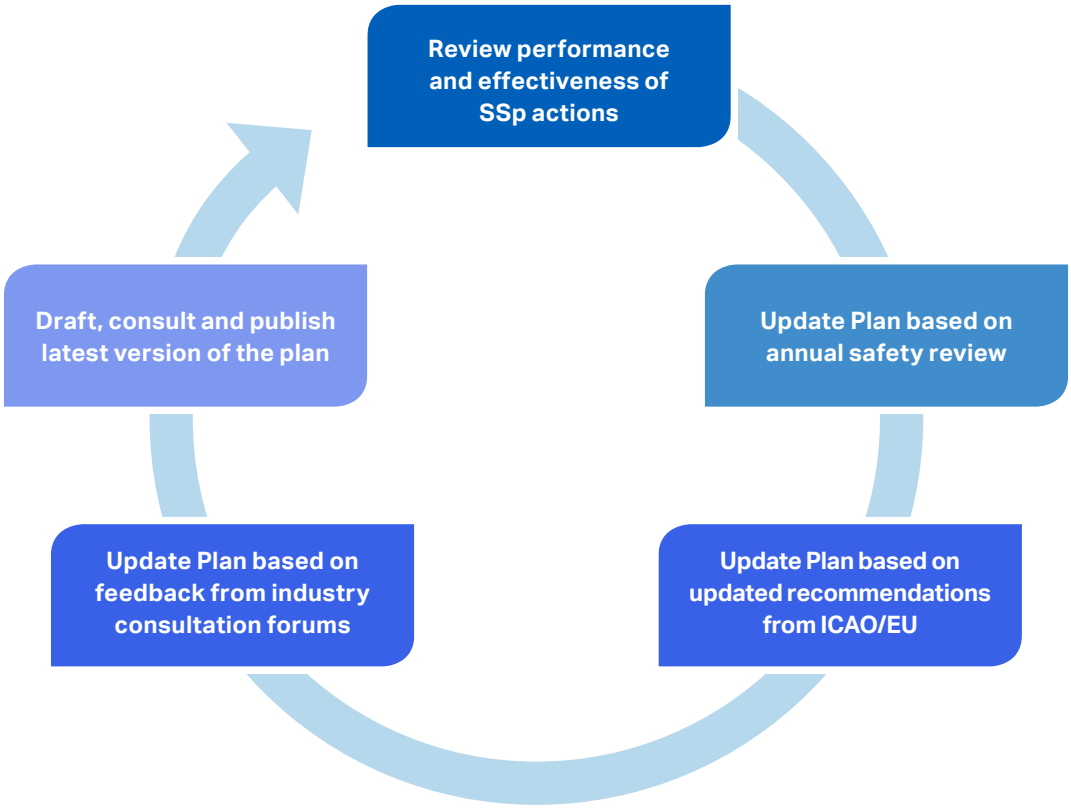
Many of the SPAS actions on behalf of the State are designed and implemented, using the tools available in the safety oversight system. This means that the actions in the Plan may include:

- **Safety Policy** – actions that target new or amended regulations or policy in the State. Much of the rulemaking competence in Europe is now transferred to EASA, so national rulemaking is limited to areas of the civil aviation system that are excluded from the EU regulatory framework (eg Basic Regulation). National policy for aviation safety remains within the competence of member States, as do State obligations in respect of ICAO. The IAA is responsible for implementing State policy in respect of the Aviation Safety Oversight System, including the State Safety Programme and State Plan for Aviation Safety.
- **Regulatory Oversight Functions** – actions that require the establishment of new regulatory functions, or amend existing functions (eg integration of drones into civil aviation system)
- **Regulatory resources** – actions that relate to the provision of technical training, tools and guidance to regulatory staff to enable them to perform safety oversight and safety management functions in an effective manner.
- **Targeted oversight** – actions that require specific areas of concern to be audited, and that are planned and performed as part of the scheduled oversight plan. These actions are normally completed for all affected organisations in a sector, within the current, or subsequent, audit cycle (eg 2 years).
- **Safety Analysis** – actions that require detailed analysis, risk assessment or research into areas of safety concern, possibly associated with new or emerging risks.
- **Safety Performance Monitoring** – actions that relate to monitoring the performance of regulated entities to ensure that safety objectives are being achieved.
- **Safety Promotion** – actions that target the delivery of latest guidance or training in respect of specific areas of concern. This material may be delivered during formal training programmes, safety evenings, dedicated workshops, or using safety promotion channels enabled by social media outlets. The effectiveness of safety promotion may also be assessed as part of performance monitoring.

SPAS DEVELOPMENT CYCLE

The State Plan for Aviation Safety is produced annually, and it addresses actions for the forth-coming period of four years. The annual development cycle is depicted in the following figure. The Plan is published in Q2 of each year following the review of the safety performance for the preceding years, including published Annual Safety Performance Review, as well as the review and assessment of the implementation programmes for the actions in the Plan.

Industry and general aviation contribution to the State Plan for Aviation Safety is compiled on an on-going basis through safety oversight and safety review meetings on an individual organisation and sector basis. This includes sector-based operational and safety forums and meetings and cross-domain safety workshops. In addition, one of the systemic actions in the Plan is to strengthen the link between the State Safety Programme and the Safety Management System implemented by industry, which will provide another avenue to improve the effectiveness of the Plan.



LINK TO EPAS

New Basic Regulation 1139/2018 requires EU Member States to identify in SPAS the main safety risks affecting their national civil aviation safety system, to set out the necessary actions to mitigate those risks, and to ensure that the SPAS is maintained and regularly reviewed. In doing so, Member States must consider the European Plan for Aviation Safety and include relevant actions within their own SPAS, as appropriate to the State.

The following table provides a cross reference between the EPAS actions for Member States and the relevant action in this Plan.

EPAS Reference	SPAS Chapter
MST.001 Member States to give priority to the work on SSPs	Ch 1.1
MST.002 Promotion of Safety Material	Ch 1.3, 3.1
MST.003 Member States should maintain a regular dialogue with their national aircraft operators on flight data monitoring (FDM) programmes	Ch 1.8
MST.015 Helicopter safety events	Ch 2.9, 3.1
MST.019 Better understanding of operators' governance structure	Ch 1.9
MST.020 Loss of Radar Detection (over-interrogation)	N/A – no evidence of over-interrogation problems in Irish airspace.
MST.024 Loss of separation between civil and military aircraft	Addressed and closed in previous version of SPAS
MST.025 Improve the dissemination of safety messages in GA	Ch 3.1
MST.026 SMS Assessment	Ch 1.3
MST.027 Develop just culture in GA	Ch 1.6

MST.028 Member States to establish and maintain a State Plan for Aviation Safety (incorporates MST.004, 005, 006, 007, 010, 016, 018 from previous EPAS versions) *This Document is the SPAS – legacy MST references (eg 007, 010 etc) are retained throughout this document where relevant*	Ch 1.1
MST.029 Implementation of SESAR runway safety solutions	Ch 2.4
MST.030 Implementation of SESAR solutions aiming to reduce the risk of mid-air collision en-route and TMA	Ch 2.3
MST.031 Implementation of SESAR solutions aiming to facilitate safe IFR operations (helicopters)	Ch 2.2

SPAS STATISTICS

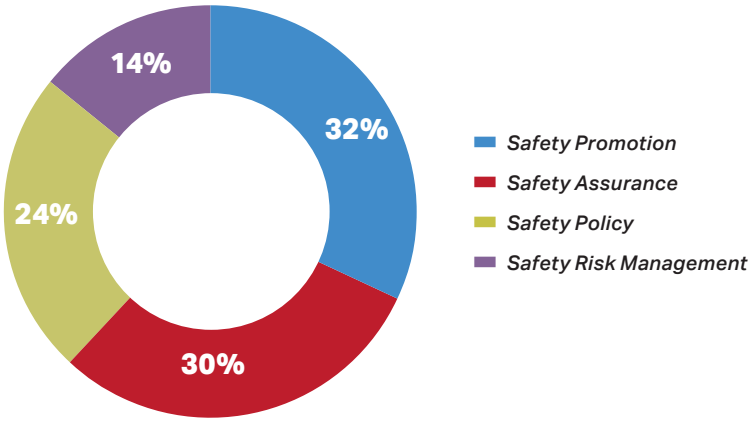
Since its inception in 2010 there have been a total of 54 risk topics addressed in the Plan with 214 associated actions to address the safety issues. 144 of the actions raised in the Plan have been closed over the recent years leaving a total of 70 actions that are currently being addressed in this version of the Plan. 48 of these actions have associated target dates within the remit of this Plan and 22 of the actions are on-going tasks, included in the SPAS as they specifically relate to safety management tasks.

The individual action items in the Plan are aligned with the four pillars of the State Safety Programme for Ireland as defined in Annex 19, as follows:

- **Safety Policy**, includes policy as promulgated through regulations or policy statements
- **Safety Risk Management**, includes tasks relating to hazard identification, risk assessment and risk mitigation
- **Safety Assurance**, includes tasks related to targeted safety oversight, safety performance monitoring and change management
- **Safety Promotion**, includes tasks related to provision of training and guidance to aviation professionals as well as safety awareness to the public.

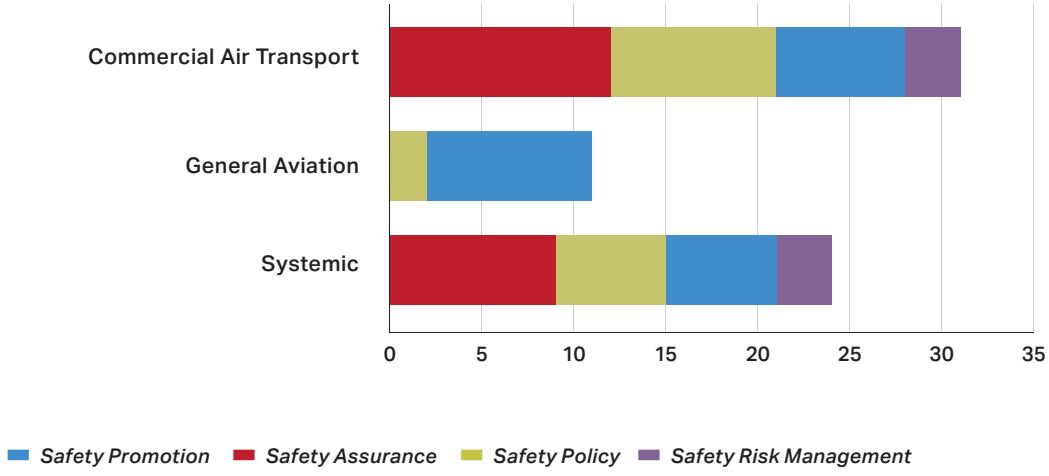
Figure 1 shows how the 70 actions of the current version of the Plan break down between the different SSP Pillars.

FIGURE 1 – BREAKDOWN OF CURRENT SPAS ACTIONS BY SSP FRAMEWORK PILLAR



The actions in the SPAS are broken into three sections, systemic, commercial air transport and general aviation. The breakdown of these actions by section and SSP Pillar is shown in Figure 2.

FIGURE 2 – BREAKDOWN OF SPAS ACTIONS BY SECTION AND SSP PILLAR



Most of the actions are in the Systemic Section, which reflects the considerable effort at the Irish State level to implement the strategic enablers necessary to take full advantage of the improvements to safety management envisaged in Annex 19. The main type of actions addressing commercial air transport are safety assurance (eg targeted oversight), closely followed by safety policy and safety promotion. The main actions in the general aviation section address safety promotion which is the best available tool for the State to help improve safety in this sector.

There were 20 new actions introduced in this version of the SPAS and 13 actions were closed. Based on a review of the last 10 iterations of the SPAS there are on average a little over 12 actions closed and 12 newly introduced actions in each version of the SPAS leaving the overall total of actions in the 4-year plan relatively stable at around 66 actions on average, including open and ongoing tasks.


DUBLIN

SECTION TWO

Detailed Actions in The Irish SPAS

INTRODUCTION

This section of the SPAS for Ireland provides the details of the safety actions that are currently in place to implement the strategic safety objectives discussed in section 1 above. The SPAS is broken down into three main chapters to address systemic issues, commercial air transport and general aviation. Each Chapter is further subdivided into sections to address different areas of safety concern.

As the SPAS addresses several different safety areas, a consistent subsection template is provided as follows:

- Header – Safety risk area headline, including an IAA assigned Reference Number
- Safety Issue – a brief statement about the safety issue
- Safety Objective – a statement of the objectives of the actions in this safety area
- Safety Performance Indicators – how safety improvements will be monitored
- Stakeholders – a brief outline of the Stakeholders involved and their roles
- Actions – action statement with target dates (including on-going). New actions are highlighted.
- Status – a high level summary of the status of the actions in this area

As discussed in Section 1, each safety issue identified in this Section has an associated safety objective and each safety objective has associated safety performance indicators and safety targets. Section 2 should be read in conjunction with Appendix II of this Plan which provides the detailed list of safety objectives, safety performance indicators and safety performance targets.

CHAPTER 1 – SYSTEMIC ISSUES

1.1 - M.002 Implementation of State Safety Programme (SSP)

SAFETY ISSUE

ICAO Standards and Recommended Practices (SARPs) Annex 19 requires the implementation of State Safety Programmes in Annex 19, effective since November 2013. An SSP is an integrated set of regulations and activities aimed at improving safety in the State. The incomplete or ineffective implementation of the SSP represents a risk to effective safety management in the State.

SAFETY OBJECTIVE

To be a leading State in the implementation of the State Safety Programme to meet Annex 19 SARPS, by exceeding international global targets established in the ICAO Global Aviation Safety Plan.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Gap analysis against SSP standards and EPAS recommendations for Member States.

USOAP CMA indicators - EI% Score, Compliance Checklist completion

STAKEHOLDERS/ROLES

Irish Aviation Authority – implementation of SSP

Department of Transport, Tourism and Sport – consultation on policy and strategy

Industry – awareness, consultation and consideration of safety priorities

ACTIONS		TARGET DATE
a)	The IAA will implement the elements of the EASA European Plan for Aviation Safety that apply to national authorities, as appropriate to Ireland. ***EPAS Reference:*** MST.028	Q4 2019
c)	The IAA will work, in conjunction with EASA as appropriate, to ensure that the implementation of the SSP for Ireland is accomplished in accordance with the ICAO GASP mid-term objectives. ***EPAS Reference:*** RMT.0251	Q4 2019
d)	The IAA will update the State Safety Programme document as necessary to align with Amendment 1 of Annex 19 and latest issue of European Aviation Safety Programme. ***EPAS Reference:*** MST.001	Q4 2019
e)	The IAA will review draft GASP 2020-2022 and work with partner States in ABIS and EU to influence the global safety priorities and develop implementation guidance to support the goals of the GASP.	Q4 2019

STATUS

ICAO GASP 2017-2019 targets have been met in Ireland met and exceeded in many areas (eg USOAP Effective Implementation Score 94.5%). Work is underway, in conjunction with EASA consultancy groups (eg MAB/TeB) on the draft ICAO GASP 2020-2020 in advance of the ICAO Assembly in September 2019. Some comments have already been provided on performance monitoring elements. Further planned work includes developing guidance material to support the implementation of GASP and SSP (eg guidance on implementing 'acceptable level of safety performance').

IAA implements the EPAS actions for Member States and provides progress updates to EASA as requested.

The State Safety Programme for Ireland was last published in 2015 and is currently being updated to align with ICAO Annex 19 Amendment 1 and ICAO SMM Edition 4. ICAO has provided an updated SSP Gap Analysis tool on iSTARS to reflect Amdt 1 to Annex 19 and the IAA has provided relevant updates to this new tool.

1.2 - M.014 Legal separation of IAA safety regulation and service provision functions

SAFETY ISSUE

In accordance with a decision by the Irish Government the safety regulation and air navigation services provision functions of the Irish Aviation Authority will be legally separated in 2020. This is a major organisational change and robust change management procedures must be applied to ensure there is no disruption to regulatory or air navigation services functions, during or after the change.

SAFETY OBJECTIVE

To ensure there is no disruption to regulatory functions and provision of air navigation services during the transformational project to separate the functions of safety regulation and air navigation service provision (ANSP) of the Irish Aviation Authority.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Regulatory compliance and safety management effectiveness indicators at IAA regulatory and organisational levels.

STAKEHOLDERS/ROLES

DTTAS – policy and decision making

Irish Aviation Authority – project implementation at regulatory and organisational level

Civil Aviation Regulator – project implementation at regulatory level

Industry – stakeholder involvement

ACTIONS		TARGET DATE
a)	The IAA SRD will apply change management and risk management processes to ensure that there is no loss or reduction of regulatory function during the transformation project to legally separate from the IAA ANSP and merge with CAR.	Q4 2021
b)	The IAA SRD will target ANSP change management and risk management processes as part of safety oversight planning, during the transformation project to legally separate the IAA ANSP from the regulator	Q4 2021

STATUS

The transformative project to transition to the new structure has already started and a Steering Committee chaired by the DTTAS and including members from DTTAS, CAR, IAA ANSP and IAA SRD has been established. The General Scheme of the Air Navigation and Transport Bill 2019 was approved by Government and published in June 2019. In addition, six working groups have been established to address organisation structure & governance, legislation, finance & funding, Human Resources & change management, corporate branding & communications and IT / Facilities / Infrastructure. A detailed project plan including timelines is currently in work. Whereas the delivery of the transformation project itself is outside the scope of this document, the SPAS actions focus on the availability and continuity of regulatory functions and air navigation services during the transition period and beyond.

1.3 - M.004 Implementation of SMS

SAFETY ISSUE

ICAO standards and EU Implementing rules require the implementation of Safety Management Systems (SMS) in aviation organisations. The lack of effective implementation of SMS could reduce the ability of organisations to improve safety performance.

SAFETY OBJECTIVE

To support Irish organisations in the implementation of safety management systems that are compliant with the regulations and effective in their performance.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Compliance, maturity and effectiveness indicators of organisations' safety management systems.

STAKEHOLDERS/ROLES

Irish Aviation Authority – guidance, oversight and assessment of SMS implementation

Industry – implementation of SMS requirements

ACTIONS		TARGET DATE
b)	The IAA will include SMS promotional material developed by ESSI Teams, EASA and SMICG in Annual SMS training delivered by the IAA. ***EPAS Reference:*** MST.002	On-going

g)	The IAA will work with EASA for the development and implementation of SMS requirements in airworthiness. ***EPAS Reference:*** RMT.0251	Q4 2020
h)	The IAA will transition to the use of EASA MS Assessment tool to measure the effectiveness of safety management by approved organisations in all domains. ***EPAS Reference:*** MST.026	Q4 2020

STATUS

Outstanding regulatory requirements for SMS in airworthiness domain are under EASA Rulemaking programme (RMT.0251 see EPAS 2019-2023 for details). Implementing rules are planned for Q3 2019 (CAMO) and Q3 2021 (Part 145, Part 21). The IAA is currently developing associated training programmes for IAA inspectors and guidance for industry. The IAA provides SMS training (week-long courses) for the benefit of both IAA staff and Irish industry, which uses the published guidance material (ie ICAO, SMICG, EASA) to promote SMS best practice.

The IAA is using the EASA MS Assessment tool to evaluate SMS implementation in Air Operations domain and is currently transitioning to it's use in other domains. The use of the EoSM tool required as part of EU performance scheme RPII will continue to be used in the ANS domain.

1.4 - M.003 Development of Safety Performance Indicators (SPIs) and Safety Performance Targets (SPT's)

SAFETY ISSUE

Safety performance indicators and targets are used by States and industry to monitor performance to establish if safety objectives are being met. According to ICAO SMM Edition 4, SPI's and SPT's should be developed to address safety objectives that may be process-oriented or outcome-oriented, to contribute to the overall measure of the level of safety performance. A standardised approach to development of SPI's/SPT's among States (both in EU and worldwide) would also help to harmonise safety data analysis and associated risk management strategies.

SAFETY OBJECTIVE

To develop process-oriented and outcome-oriented SPI's and SPT's to support the measurement of safety performance across all sectors of the Irish civil aviation system.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Availability (eg percentage) of SPI/SPT's across different sectors.

STAKEHOLDERS/ROLES

Irish Aviation Authority – develop State level SPI/SPT's

Industry – develop SPI/SPT's, acceptable to authority, as part of organisation SMS implementation

ACTIONS		TARGET DATE
a)	Participate in the development of standard safety performance indicators across Europe through participation in the EASA Network of Analysts working group. ***EASA Reference:*** SPT.060	Ongoing
b)	Develop process and outcome based safety performance indicators and targets across all sectors of the Irish civil aviation system	Q4 2020

STATUS

SPI/SPT development will be an ongoing task as long as aviation continues to change and evolve. The new action introduced in this edition of the SPAS to ensure compliance with ICAO SMM Edn 4 on SPI/SPT development.

Outcome oriented SPI's are available across all sectors in the State. SPT's are developed in the ATM domain as part of EU ATM Performance Scheme. Further work planned in other domains for outcome based SPT's. IAA continues to support EASA by performing statistical analysis of EU data to help identify EU wide SPI/SPT's in commercial air transport.

As part of SMS oversight, the IAA accepts SPI/SPT's proposed by organisations as part of their own SMS, if the SPI/SPT's meet the safety objectives of the SMS and the organisation has given due consideration to State level SPI/SPT's, as applicable to that sector.

Process oriented SPI's available in Ireland in some areas including, activity indicators, indicators to support ICAO CMA/EASA SIS, indicators of compliance oversight processes, indicators to support risk profiling etc. Further work is required at a detailed level to ensure all requirements are met.

1.5 - M.005 Safety Culture and Occurrence Reporting

SAFETY ISSUE

Effective safety management is contingent on the timely availability of safety data from organisations and persons involved in civil aviation, which in turn is heavily dependent on a positive safety culture. The lack of timely reporting or poor safety culture reduces the ability to analyse and mitigate safety risks and to share vital safety information.

SAFETY OBJECTIVES

- To implement Regulation (EU) 376/2014 and assist organisations and persons experiencing difficulties implementing the Regulation
- Promote voluntary occurrence reporting for those not subject to mandatory reporting requirements

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Occurrence reporting rates across different sectors.

STAKEHOLDERS/ROLES

Irish Aviation Authority – promote a positive safety culture and provide mechanisms for collecting occurrence reports from organisations and persons

Industry – promote a positive safety culture and provide mechanisms for collecting occurrence reports from staff

Persons – help make aviation safer by reporting safety occurrences or hazards to their organisations, clubs/associations or the IAA (as appropriate)

ACTIONS		TARGET DATE
c)	The IAA will work with GASCI to encourage the sharing of Safety information within the GA community, at GASCI safety evenings and Club Fly-in events and via GASCI website and facebook. ***EPAS Reference:*** MST.027	Ongoing
g)	The IAA will use the results of oversight of occurrence reporting as a performance indicator of the safety culture of an organisation. ***EPAS Reference:*** MST.023	Ongoing
h)	The IAA will provide relevant training to inspectorate staff on the use of the new EU Event Risk Classification Scheme	Q2 2020

i)	The IAA will promote the use of EU Event Risk Classification Scheme by regulated entities	Q2 2020
k)	The IAA will conduct occurrence reporting survey of EU Helicopter operators on behalf of EASA and provide analysis of the results	Q2 2019
l)	Implement the new EASA ERCS in IAA occurrence reporting system platforms	Q2 2020
m)	The IAA will implement the new ECCAIRS II platform to enhance the process for managing occurrence reports and transferring them to the European Central Repository	Q4 2021

STATUS

IAA occurrence reporting website available on https://www.iaa.ie/safety/safety-reporting provides details and guidance on how to report safety concerns to IAA. Those involved in aviation activities should use the system established to meet regulations for mandatory and voluntary occurrences. A simpler reporting system is provided for private citizens not involved in aviation (eg passengers/public) to advise IAA of aviation safety concerns.

Regulation (EU) 376/2014 places new responsibilities on organisations to provide ADREP/ECCAIRS compatible reports. The IAA recognises that the new responsibilities may require systems/procedure development and training and provides assistance to organisations and persons experiencing difficulties implementing the new requirements. The just culture principles of Regulation (EU) 376/2014 are also included in the State Safety Programme for Ireland. These principles apply to all reporters, whether the report is submitted under the regulation or independently.

The General Aviation Safety Council of Ireland (GASCI) seeks to identify flight safety risks and minimise them through education, training and shared experience amongst the Aviation Community. GASCI has provided guidance to the GA community on the new mandatory requirements in the regulation and encourages voluntary reporting by those not subject to the mandatory provisions.

The IAA uses the results of the oversight of occurrence reporting as a performance indicator of the safety culture of an organisation across different sectors. The IAA has conducted a survey of occurrence reporting rates on behalf EASA for EU AOC holders operating aeroplanes and is currently completing a similar survey for helicopters. These surveys provide statistical data to support the promotion of occurrence reporting.

The EC regulation on the European Event Risk Classification Scheme for use by EU Member States was expected in 2018 but is now due to be published in 2019. The implementation of this regulation will require systems development and training for IAA staff. The associated actions are consequently delayed and now expected to be completed by mid-2020.

To enhance the performance of the occurrence reporting management tasks, the IAA has supported the EASA led project for a major upgrade to the ECCAIRS platform from ECCAIRS I to ECCAIRS II. The IAA will implementation the new platform and engage with affected stakeholders over the next two years.

1.6 - M.010 Implementation of Risk-based and Performance-based (RBO/PBO) Oversight

SAFETY ISSUE

The IAA plans to implement risk-based and performance-based oversight as a key element of safety management in Ireland, to target resources in the more critical safety areas. The lack of, or ineffective implementation of, risk-based and performance-based oversight could result in the targeting of resources in the wrong areas.

SAFETY OBJECTIVE

To implement effective risk-based and performance-based oversight methodologies across relevant sectors of the Irish civil aviation system.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Availability and use of risk and performance profile assessment tools in different sectors

Use of EASA MS Assessment tool in different sectors

Availability of processes to measure effectiveness of the use of RBO/PBO methods

STAKEHOLDERS/ROLES

Irish Aviation Authority – plan safety oversight based on RBO/PBO methodologies and measure the effectiveness of these methodologies in improving safety processes or safety outcomes

Industry – address safety concerns arising from RBO/PBO methodologies

ACTIONS		TARGET DATE
d)	The IAA will develop the tools to support risk-based and performance-based oversight in airworthiness based on assessment of organisation risk profile, organisation compliance profile and organisation performance profile.	Q2 2021
f)	The IAA will ensure that inspectorate staff in the safety regulation department are fully trained to properly discharge their safety oversight responsibilities in a risk-based and performance-based regulatory environment.	Q4 2020
g)	The IAA will ensure adequate resources are available to support data-based decision making (including systems development, data management and data analytics) and safety promotion.	Q4 2022
h)	Develop processes to measure the effectiveness of risk-based and performance-based methodologies across relevant sectors of the civil aviation system	Q4 2022

STATUS

The full implementation of risk-based and performance-based oversight in the IAA is a medium-term project which requires the following across all relevant departments in IAA:

- Risk and performance measurement systems and structures
- Data collection and analysis systems
- Data quality verification processes
- Development of required skills
- Integrated oversight planning
- Change management

Many of the individual elements required are in place in some domains (eg data collection and analysis, risk and performance profiling, oversight planning) however more work is required to make the transformational changes (across people, process, systems, data and culture) to fully implement risk-based and performance-based oversight over the next few years. Oversight inspectors need new competencies for conducting oversight in an RBO/PBO environment and additional skillsets are required in the areas of system development, data management and data analytics to support data-based decision making (ref also to IAA Digitisation Project Ch 1.7 below).

The performance based regulatory environment envisages a greater role for safety promotion to support safety oversight functions in States. This function will also be enhanced in the IAA in the next few years.

Even as the transition to RBO/PBO environment is underway the Plan includes a new action to develop processes to measure the effectiveness of RBO/PBO when implemented, to ensure that the methodologies involved bring the expected benefits in improving safety processes and/or safety outcomes.

1.7 - M.006 eBusiness and Digitisation

SAFETY ISSUE

Failure to implement an integrated Information System to allow more effective and efficient management of compliance and safety related data could diminish the ability to perform effective safety management and risk-based and performance-based oversight (RBO/PBO).

SAFETY OBJECTIVE

To implement integrated audit management across all oversight sections in IAA SRD.

To implement functions in the IAA SRD ebusiness and digitisation project along with related business intelligence and 'big data' management tools to support effective safety management and risk-based and performance-based oversight.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

All compliance oversight functions available on EMPIC.

Availability of business intelligence and 'big data' management tools from the digitisation project to support safety management and RBO/PBO is all sections

STAKEHOLDERS/ROLES

Irish Aviation Authority – ebusiness and digitisation project delivery, migration of all compliance oversight functions to EMPIC

Industry – stakeholder engagement to support project design, implementation and use.

ACTIONS		TARGET DATE
b)	The IAA will implement an integrated audit management system in the Air Navigation Services domain	Q4 2019

c)	The IAA will work with stakeholders to develop applications to facilitate the sharing of data to support risk-based and performance-based oversight, and safety promotion, as part of the IAA digitisation project	Q4 2020

STATUS

Initial work to scope and cost eBusiness and digitisation project completed and the business case was approved by the IAA Board to allow IAA SRD proceed with project design and development. The process of engagement with project design teams has commenced and engagement with stakeholders will be facilitated in the process. Detailed project timelines are being developed but the overall target is to implement the project by end 2021.

The Aerodromes audit programme has been transferred to EMPIC, along with flight operations, airworthiness, personnel licensing, aeromedical, aircraft registration and others. Work is beginning to transition the ANS audit programme.

1.8 - M.011 Enhanced collaboration between SSP and SMS

SAFETY ISSUE

The State Safety Program is complimentary to the Safety Management Systems implemented by the civil aviation organisations and service providers (regulated entities). Closer collaboration between the safety management processes in the SSP and the safety management processes in the regulated entities SMS will greatly enhance the ability of the overall safety system to identify the key areas of safety concern.

SAFETY OBJECTIVE

To develop systems and processes for collaboration between SSP and SMS to ensure that safety intelligence is mutually shared between organisations and the State in more effective manner.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Collaborative systems and processes developed in all relevant sectors

STAKEHOLDERS/ROLES

Irish Aviation Authority – develop collaborative systems and processes as part of oversight activities, either within, or outside of, oversight audit activities.

Industry – engage with, and support, collaborative processes

ACTIONS		TARGET DATE
a)	The IAA will target the key risks identified in this Plan, including RI, RE, LOC-I, MAC, CFIT (as appropriate to the organisation), as part of SMS oversight of approved and declared organisations. ***EPAS Reference:*** MST.028.	Ongoing
b)	The IAA will establish regular dialogue with aircraft operators to promote the benefits of FDM and ensure that the standardised indicators (including RE, MAC, CFIT, LOC-I) and associated event triggers published by the European Authorities Co-ordination Group on Flight Data Monitoring (EAFDM) are implemented and monitored as part of the SMS. ***EPAS Reference:*** MST.003	Ongoing
c)	The IAA, in conjunction with industry, will establish the methodology, tools and processes to facilitate the collection of relevant safety data from the regulated entities SMS, over and above the current data provided under the mandatory and voluntary occurrence reporting schemes.	Q4 2020
d)	The IAA will work with organisations to ensure that Human Factors principles are fully integrated into Safety Management processes.	On-going
e)	The IAA will develop the processes and systems necessary to enhance the current safety analysis capabilities including the development of Big Data analytics	Q4 2020

STATUS

In the past two years the actions in the Plan addressed the integration of human factors and the use of FDM data (affected air operators only) into organisations safety management process. Both actions are now included in ongoing SMS oversight activities.

The risks identified in the safety management systems implemented by the organisations should be fed back to the State to ensure that sector-based risks can be identified and shared across the sector. Conversely the sector-based risks identified at State level and associated safety objectives (eg in this Plan Appendix II) should be re properly considered by the regulated entities as part of their safety management processes. The IAA is developing processes to facilitate the sharing and discussion of this safety information outside of the formal audit processes. The intent is to take advantage of existing interfaces, such as safety occurrence review meetings and/or MS effectiveness assessment to facilitate these discussions. The eBusiness and Digitisation project will provide opportunity for ongoing electronic sharing of safety information.

Collecting different types of safety information from multiple sources could present an ocean of noise unless carefully managed. The IAA is also keenly aware of the need to develop "big data" management capability as part of the eBusiness and Digitisation project.

1.9 - M.012 Complex or Novel Operational Models

SAFETY ISSUE

Due to the increased complexity of the aviation industry, the number of interfaces between organisations, their contracted services and regulators has increased, as has the geographic spread of the associated operational and management processes and the introduction of novel work practices. Failure to adequately address the safety risks arising from the introduction and on-going management of safety by organisations with complex business models, or novel work practices, could have a detrimental effect on safety.

SAFETY OBJECTIVES

To ensure appropriate oversight processes are in place to oversee complex organisations and new business or employment models.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Effective SMS processes confirmed for all complex organisations

State/State collaborative processes developed

Specific guidance for inspectorate on oversight of governance structure of complex organisations.

STAKEHOLDERS/ROLES

Irish Aviation Authority – confirm effective SMS processes, develop State/State collaborative oversight processes, develop guidance for oversight of governance structure of complex organisations.

Other States – develop State/State collaborative oversight processes for complex organisations

Industry – complex organisation ensure SMS addresses risks associates with complex business, operating and employment models

ACTIONS		TARGET DATE
a)	The IAA will implement cooperative oversight and disseminate best practices on how NAAs can better work together and participate in the oversight of organisations/persons certified by another Member State. ***EPAS Reference:*** MST.021.	Ongoing
b)	The IAA will ensure it has a thorough understanding of operators' governance structure, in particular, influence of financial stakeholders and of the controlling management personnel, where such personnel are located outside the scope of approval. The IAA will also assist in the development of, and implement, best EU practices in this regard. ***EPAS Reference:*** MST.019	Q4 2019
c)	Management systems of the operator should capture new hazards that are introduced by different employment models within an individual operator, increased mobility of pilots, safety-critical services provided by non-certified service providers and (long-term) leasing. The IAA will ensure this happens through SMS oversight activities and provide relevant updates to the Agency when requested. ***EPAS Reference:*** MST.022	Ongoing

STATUS

The IAA participated in EASA working group to develop European guidance and recommended practices on co-operative oversight of complex organisations. Implementation of recommended practices is on-going. The IAA co-ordinates with all affected NAA's during oversees audits and shares information as appropriate on an on-going basis.

The IAA participated in EASA WG addressing risks associated with complex business and employment models in 2017 to develop EASA 'Practical Guide - Management of hazards related to new business models of commercial air transport operations'. The recommendations have been incorporated into the IAA SMS oversight programme as applicable and will be subject to on-going surveillance.

Another challenge to be addressed is the complex organisational structures employed by many modern organisations, to ensure that the management personnel have the relevant control of the business and resources to enable them to meet their obligations. This issue is being addressed at a pan-EU level via EASA. The IAA participated in EASA Working group on this topic in 2017 and related issues concerning outsourcing and group operations, as well as interoperability issues, were further addressed at the EASA Air Ops TeB in late 2017 (also attended by IAA) and further workshops are envisaged. EPAS MST.019 tasks member states with developing guidance on how to oversee complex operations.

1.10 - M.013 Preparation for Brexit

SAFETY ISSUE

The decision of Ireland's nearest neighbour and biggest trading partner, the UK, to leave the EU will have huge ramifications for Ireland from a political, social and economic standpoint. This decision has led to a period of uncertainty for all aspects of life in Ireland, and the civil aviation system in Ireland will not be untouched by this period of uncertainty.

SAFETY OBJECTIVE

To support affected Irish regulated entities with their safety regulatory needs to ensure they can continue operations during and after the transition to the post-Brexit environment.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Effectively managed transition to post Brexit environment

STAKEHOLDERS/ROLES

Department of Transport, Tourism and Sport – policy decisions affecting post-Brexit (Hard/Soft) scenario.

EASA/UK – mutual acceptance of licences and certificates in post -Brexit (hard/soft) scenario

Irish Aviation Authority – assist industry with practical requirements (eg licence transfer) and guidance during the transition process

Industry – assess impact of Brexit (hard/soft) to their operations and develop appropriate contingency plans

ACTIONS		TARGET DATE
a)	The IAA will work with DTTAS and Irish industry to assess potential impact on Irish civil aviation system to ensure it is fully prepared to manage the changes required as a result of Brexit.	Q4 2019

STATUS

High level working group established involving IAA, DTTAS and Industry Stakeholders to monitor ongoing developments regarding hard or soft Brexit and the implications of either scenario to international agreements and Irish industry

The primary operational risks to the European aviation industry such as the access for UK airlines to the European market and acceptance of certified parts from UK Part 145 organisations, have been mitigated by EU regulation (see Regulation (EU) 2019/502 and Regulation (EU) 2019/494).

The IAA continues to facilitate the transfer of pilot and aircraft maintenance engineer's licences to ensure they continue to have an EASA qualifying licence required to work in the EU aviation environment i.e. with Irish airlines and maintenance organisations.

1.11 - FOD.009 Integration of civil drones into the civil aviation system

SAFETY ISSUE

The popularity and application of drones continues to grow and we are now moving towards the integration of professional drone operations into the civil aviation system. The need to integrate professional drone operations into the civil aviation system and the increasing use of drones by members of the public represents a growing risk to aviation safety.

SAFETY OBJECTIVE

To ensure that the operation of drones for commercial or leisure purposes is properly integrated into the civil aviation system so that it does not result in accidents or serious incidents due to conflict between a drone and an aircraft in Irish airspace

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Occurrence rates related to drone conflict with aircraft in commercial and general aviation

STAKEHOLDERS/ROLES

EASA – Implementing rules to support drone operations

Irish Aviation Authority – oversight and promotion of drone implementing rules

Industry – implementation of drone rules for organisations

Persons – awareness and safe operations of drones

ACTIONS		TARGET DATE
d)	The IAA will continue to participate in the development of appropriate guidance concerning the operation of drones through its collaboration in the Joint Authorities for Rulemaking of Unmanned Systems Group (JARUS).	Ongoing

f)	The IAA will provide relevant public guidance to raise awareness of the regulatory requirements and safety hazards associated with operating drones.	Ongoing
h)	The IAA will review the impact of the new EU regulatory framework (New BR and IR's) for Drones and update published policy and guidance accordingly.	Q4 2022

STATUS

EASA rulemaking task RMT.0230 addresses the introduction of a regulatory framework for the operation and registration of drones in Europe.

There are three categories of drone operations defined:

- Open category: low-risk operation not requiring authorisation or declaration before flight
- Specific operation category: medium-risk operation requiring authorisation or declaration before flight
- Certified category: high-risk operation requiring certification process

The EPAS 2019-2023 provides details of the roll-out of EU implementing rules over the next 5 years to address the approval of equipment and operations in the various categories. The IAA will engage with EASA rulemaking groups and the Joint Authorities for Rulemaking of Unmanned Systems Group (JARUS) on the development of the regulations and related guidance (ie AMC/GM).

The IAA will implement the requirements for authorities and provide guidance to affected industry on the implementation of requirements for operators. The IAA will also distribute relevant safety promotion material for the general public to highlight the dangers of drone operations.

A public drone symposium was held in May 2019 the purpose of which was to provide stakeholders with a forum to discuss the growing market opportunities for drone use, how the drone market will be regulated, and the challenges in ensuring safety, security, environment and privacy issues are effectively addressed.

Ireland has already issued national legislation concerning operating and registering drones (ref SI 563 of 2015) and has a dedicated website https://www.iaa.ie/general-aviation/drones that provides all the latest guidance for those interested in operating drones for either business (aerial works) or leisure purposes. The site includes relevant links and guidance for the on-line drone registration system.

CHAPTER 2 – COMMERCIAL AIR TRANSPORT

2.1 - FOD.001 Loss of Control in flight

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. Loss of control can arise following an aircraft upset events including equipment failures, environmental issues, human factors, on-board fire, aircraft fuel management.

SAFETY OBJECTIVE

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

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to LOC-I category occurrences involving Irish commercial aeroplane operators.

STAKEHOLDERS/ROLES

Irish Aviation Authority – 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.

	ACTIONS	TARGET DATE
d)	The IAA will promote the new EU regulations concerning Loss of Control Prevention and Recovery Training and will provide guidance to Irish organisations (AOC/ATO/FSTD) on the implementation of these requirements. ***EPAS Reference:*** SPT.012	Q4 2020

e)	The IAA will review and promulgate latest EASA publications (policies/SIB's) concerning LOC-I and monitor the implementation of recommendations applicable to the Irish civil aviation system.	Ongoing
h)	The IAA will review the Irish Air Operators flight crew procedures for flight deck smoke ventilation, flight deck checklists, donning of oxygen masks and training for fire fighting to ensure they reflect the latest RAeS guidance in this area.	Q4 2020
i)	The IAA will provide appropriate training and guidance to flight operations inspectors in the oversight of proposed new EASA regulations on fuel planning and fuel management	Q2 2019
j)	The IAA will provide guidance to industry on the implementation of proposed new EU regulation on fuel planning and fuel management	Q4 2019
k)	The IAA will review industry (ie air operators and airports) actions to promote the hazards associated with the carriage of Lithium batteries in passenger baggage, during oversight activities	Q4 2020

STATUS

Training for IAA inspectors on assessing evidence based and competency based (EBT/CBT) training programmes was completed in 2018.

The IAA has updated policies and procedures in respect of Crew Resource Management oversight and provided associated training to inspectors in conjunction with EASA guidance (AMC and safety promotion). This guidance promotes the development of CRM training for Air Operators having CRM training responsibilities, and Competent Authorities having oversight responsibilities and refers to the integration of CRM principles into flight crew training and operations including abnormal and emergency procedures and emphasises crew resilience, surprise and startle effect.

The European regulatory framework includes recurrent and conversion training provisions related to Upset Prevention and Recovery Training (UPRT) which were applicable since 2016. Further regulations pertaining to loss of control during go-around and climb, and FSTD fidelity, were published during 2018. The IAA has been pro-actively working with operators, training organisations and flight simulator operators to assist in the implementation of the UPRT regulations and UPRT training by affected organisations was found to be in compliance with EASA requirements during 2017-2018 audit cycle (subject to limitations within the Validated Training Envelope). Work is continuing to assist FSTD operators in implementing UPRT requirements on training devices.

Previous versions of this Plan addressed the safety issue of on-board fire on aircraft, including addressing updated guidance from the Royal Aeronautical Society (RAeS) on management of this risk in the airworthiness domain and risk controls of lithium batteries by aircraft operators. The updated RAeS guidance also addresses issues for flight crews, which are being reviewed as part of AOC oversight activities. More work is required to promote the dangers associated with the carriage of Lithium Batteries (eg in passenger baggage).

Fuel management includes pre-flight fuel planning, inflight fuel management and flight planning in respect of selection of aerodromes and alternates. New EU regulations introduce the concept of the "fuel scheme" which integrates the fuel planning policy, with the selection of aerodromes, and with the inflight fuel management policies. The IAA is currently training inspectorate staff to oversee the new regulations on fuel planning and management and will provide guidance to operators who wish to avail of the performance-based approach to fuel planning and management.

The IAA continues to work with AOC holders to ensure they include LOC-I risk in their own SMS, and that they develop their own safety objectives, safety performance indicators and targets, with due consideration of this Plan.

2.2 - FOD.003 Controlled Flight into Terrain

SAFETY ISSUE

Controlled Flight Into Terrain 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. Controlled Flight Into Terrain (CFIT) is identified as one of the main contributory causes to fatal and non-fatal accidents across all sectors of civil aviation.

SAFETY OBJECTIVE

To continuously improve safety by assessing and mitigating the risks of controlled flight into terrain involving Irish commercial aeroplane operators or operators flying in Irish controlled airspace.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

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

STAKEHOLDERS/ROLES

Irish Aviation Authority – 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

ACTIONS		TARGET DATE
c)	The IAA will work with service providers to ensure that Irish airports licensed for commercial air transport provide non-precision instrumented approaches that contain vertical guidance. ***EPAS Reference:*** MST.006	Q4 2019

STATUS

EASA Opinion 10/2016 on PBN includes the objective that PBN approach procedures with vertical guidance (APV) that conform to the requirements of the RNP approach specification (RNP APCH) be implemented at all instrument runway ends (IREs) which are not served by precision approach procedures before 30 January 2020. The IAA has been actively assisting and encouraging the delivery of the Irish PBN implementation plan, which is currently scheduled to be completed by end of 2019.

The IAA continues to work with AOC holders to ensure they include CFIT risk in their own SMS, and that they develop their own safety objectives, safety performance indicators and targets, with due consideration of this Plan.

2.3 - ASD.001 Mid-Air Collisions

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) which has led to the publication of the European Action Plan for the Prevention of Airspace Infringement Risk Reduction (EAPAIRR).

SAFETY OBJECTIVE

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

PERFORMANCE INDICATORS

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

STAKEHOLDERS/ROLES

Irish Aviation Authority – 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

	ACTIONS	TARGET DATE
b)	The IAA will review the level of implementation of recommendations for regulated organisations contained in the EAPAIRR as part of the oversight cycle. ***EPAS Reference:*** MST.010	Ongoing
g)	The IAA will perform an analysis of ATM related occurrences reported to the IAA and update the ATM safety risk profile to guide safety actions to address the key risks.	Q4 2019

h)	The IAA will review the need for, and feasibility of, implementing SESAR solutions (eg enhanced STCA/safety nets) aiming to reduce the risk of mid-air collision en-route and in TMA. ***EPAS Reference:*** MST.030	Q4 2020

STATUS

The IAA has reviewed the implementation of the EAPAIRR recommendations for regulated organisations in the State and found them to be substantially complete, where relevant. On-going monitoring is provided in the oversight programme.

The IAA has confirmed during SMS oversight, that relevant commercial operators include the risk of operation in uncontrolled airspace as part of their SMS.

A detailed analysis of ATM related occurrences is currently under way and due to complete in 2019.

A new action for this version of the SPAS is prompted by EPAS MST.030 that requests that EASA Member States, together with their ANSPs, should evaluate the needs for, and feasibility of, implementing SESAR solutions, such as those related to enhanced Short Term Conflict Alerts (STCA)/enhanced safety nets, with reference to SESAR Solutions Catalogue.

The IAA continues to work with AOC holders and ANSP's to ensure they include MAC risk in their own SMS, and that they develop their own safety objectives, safety performance indicators and targets, with due consideration of this Plan.

2.4 - M.007 Runway Incursions

SAFETY ISSUE

A runway incursion (RI) involves the incorrect presence of an aircraft, vehicle, person or wildlife on the protected area of a surface designated for the aircraft landing and take-off. Runway Incursions have been recognised for some time as a key risk in aviation safety and led to the publication of the European Action Plan for the Prevention of Runway Incursions which was updated to Edition 3 in 2018.

SAFETY OBJECTIVE

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

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to RI category occurrences involving Irish commercial air operators or at Irish airports.

STAKEHOLDERS/ROLES

Irish Aviation Authority – 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

ACTIONS		TARGET DATE
b)	The IAA will audit the effectiveness of the local runway safety teams (including effectiveness of SMS in reducing RI precursor events). ***EPAS Reference:*** MST.01	Ongoing
c)	The IAA will review the level of implementation of recommendations for service providers contained in the EAPRRI as part of the oversight cycle ***EPAS Reference:*** MST.014	Ongoing
d)	The IAA will review Version 3.0 of the EAPPRI and identify actions required to address the updated document	Q4 2019
e)	The IAA will work with ANSP's and airport operators to review the need for, and feasibility of, implementing the runway safety related SESAR solutions such as those related to ground situational awareness, airport safety net vehicles and enhanced airport safety nets ***EPAS Reference:*** MST.029	Q4 2021

STATUS

Much work has been accomplished in this area in the past 10 years including implementation of EAPPRI recommendations at State and industry level. Runway Safety Teams have been established at the main airports. EAPPRI Edition 3 was issued in 2018 and new recommendations are under review for action.

A new action for this version of the SPAS is prompted by EPAS MST.029 that requests that EASA Member States, together with their ANSPs and airport operators, should evaluate the needs for and feasibility of implementing SESAR solutions, such as those related to ground situational awareness, airport safety net vehicles and enhanced airport safety nets, with reference to SESAR Solutions Catalogue.

The IAA continues to work with AOC holders, ANSP's and airport operators to ensure they include RI risk in their own SMS, and that they develop their own safety objectives, safety performance indicators and targets, with due consideration of this Plan.

2.5 - FOD.002 Runway Excursions

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. Runway Excursions (RE) have been identified as one of the most common causes of accidents reported annually, and led to the publication of the European Action Plan for the Prevention of Runway Excursions (EAPPRE) in 2016.

SAFETY OBJECTIVE

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

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to RE and Abnormal Runway Contact (ARC) category occurrences, involving Irish commercial air operators or at Irish airports.

STAKEHOLDERS/ROLES

Irish Aviation Authority – analysis of RI/ARC occurrences rates and trends and identification of sector-based safety issues

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

ACTIONS		TARGET DATE
j)	The IAA will monitor the implementation of EAPPRE recommendations for service providers during oversight audits. ***EPAS References:*** MST.007, SPT.075	Ongoing

STATUS

EAPPRE detailed recommended actions and associated guidance material intended for implementation by the relevant stakeholder organisations (including regulators, aircraft and airport operators, ANSP's etc) are subject to ongoing review as part of safety oversight activities.

The actions taken by Irish AOC holders in respect of EASA SIBs 2014-02 (Operations in Crosswinds) and 2018-02 (Runway condition reporting) were verified during the 2017-2018 oversight cycle.

The IAA continues to work with AOC holders, ANSP's and airport operators to ensure they include RE and ARC risks in their own SMS, and that they develop their own safety objectives, safety performance indicators and targets, with due consideration of this Plan.

2.6 - FOD.004 Safety of Ground Operations

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. There have been cases of fatalities of persons on the ramp area due to collision with aircraft or ground vehicles. In addition improper ground handling activities (eg cargo loading, de-icing, refuelling) could result in aircraft controllability issues in flight.

SAFETY OBJECTIVE

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

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to Ground Operations (eg RAMP, GCOL) category occurrences, involving Irish commercial air operators or at Irish airports.

STAKEHOLDERS/ROLES

Irish Aviation Authority – analysis of Ground Operations related occurrences rates and trends and identification of sector-based safety issues

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

	ACTIONS	TARGET DATE
e)	The IAA will review ramp and taxiway events (collisions and near collisions) and will consult with industry to develop and promote mitigating measures, including structural, technological, operational and training. ***EPAS Reference:*** MST.018	Q4 2019
g)	The IAA will focus on performance of ground handling, including subcontractors, as part of compliance oversight activities.	Q4 2020

h)	The IAA will 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).	Q4 2020
i)	The IAA will implement forthcoming EU regulations for authorities on ground handling and support industry with the implementation of related organisational requirements (EU Implementing Rules and AMC pending)	Q4 2022

STATUS

New EU Basic Regulation 2018/1139 broadens the scope of the EU regulatory framework to include Ground Handling organisations. The associated Implementing rules for authorities and organisations are under development and the focus of the Plan for the next few years will be to guide the implementation of the new regulations. A European ground handling roadmap is being prepared and EASA is consulting with European stakeholders (including in Ireland) to define the scope, objectives and performance indicators of the road map and to prepare the way for ground-handling-related rulemaking (Ref EASA rulemaking task RMT.0728).

The IAA hosts an annual cross-domain safety workshop, currently involving IAA inspectorate staff and safety managers from air operators, ANSP's and airports. The 2018 workshop focused on a safety analysis of ground operations occurrences and the workshop identified actions to address the risks associated with the performance of as yet unregulated ground handlers. This activity is typically performed as a subcontract activity for Air Operators or Airport operators and the organisations involved intend to provide greater subcontract control of ground handling organisations.

In addition, work is in progress on safety promotion in ground handling, in order to raise the awareness of the personnel involved to the hazards associated with their activities. Relevant safety promotion material is already developed and freely available (eg SkyClips on Skybrary, and safety videos developed by DGAC France) and this material can be obtained via relevant links provided on the EASA SPN https://www.easa.europa.eu/easa-and-you/safety-management/safety-promotion.The IAA will also focus on this area during oversight activities.

Latest EASA SIB 2017-11 on de-icing was included in the Ground Operations Working Group meeting in October 2018.

Recommendations arising from analysis of ramp and taxiway events are due in 2019.

The IAA continues to work with AOC holders, ANSP's and airport operators to ensure they include ground operations in their own SMS, and that they develop their own safety objectives, safety performance indicators and targets, with due consideration of this Plan.

2.7 - AED.002 Wildlife Strike Hazard

SAFETY ISSUE

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

SAFETY OBJECTIVE

To continuously improve safety by assessing and mitigating the risks due to wildlife strikes at Irish certified airports.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to wildlife strikes. Note that this is monitored under the area of runway incursions.

STAKEHOLDERS/ROLES

Irish Aviation Authority – analysis of wildlife related occurrences rates and trends and identification of sector-based safety issues

Industry (Airports) – control of wildlife around airports to minimise the risk of wildlife strike on aircraft

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

ACTIONS		TARGET DATE
d)	The IAA will work with airports to extend the scope of the current National Bird Hazard Committee to include all wildlife threats around airports.	Q4 2020

STATUS

The IAA chairs the National Bird Hazard Committee in Ireland which reviews bird strike analysis reports and assesses the effectiveness of mitigation measures in use in the State. The specific hazard of land-based wildlife on the runway is also part of the runway incursion safety issue discussed in Ch 2.4 above.

Global actions to address the hazard of wildlife strikes included an ICAO Wildlife Strike Reduction Symposium in 2017 and the associated recommendations were reviewed. Whereas many of the ideas emerging from this symposium are already implemented in Ireland, the proposal to develop an Airport Wildlife Committee was highlighted and the IAA wishes to extend the scope of the National Bird Hazard Committee to include all wildlife threats around airports.

It is also noted that EASA intends new certification standards to provide better protection for aircraft from wildlife strikes (ref EPAS 2019-2023).

2.8 - ASD.003 Implementation of parallel runway operations

SAFETY ISSUE

The growth of civil aviation has led to capacity issues for some airports which may be alleviated by the introduction of parallel runway operations. Parallel runway operations introduce specific risks affecting aerodrome operations, flight operations, airspace planning and air traffic control.

SAFETY OBJECTIVE

To continuously improve safety by assessing and mitigating the risks emerging due to implementing parallel runway operations.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to parallel runway operations.

STAKEHOLDERS/ROLES

Irish Aviation Authority – analysis of occurrences and identification of cross domain hazards due to the introduction of parallel runways, co-ordination in safety oversight of the change management projects affecting aerodromes, ANSP and flight operations.

Industry (ANSP, Airport, AOC Holders) – change management and risk assessment for parallel runway operations, including management of the interfaces. Reporting safety occurrences arising during the implementation of parallel runway operations.

ACTIONS		TARGET DATE
a)	The IAA will develop the oversight planning process for introduction of parallel runways to take due account of the cross-domain implementation projects, their interconnections and dependencies.	Q4 2020
b)	The IAA will establish a dedicated cross domain team to provide detailed analysis of safety events that occur during the implementation of parallel runway operations.	Q4 2021

STATUS

The first implementation of parallel runway operations in Ireland is currently being planned for Dublin Airport. The implementation of a parallel runway operation involves a number of different inter-connecting projects to address;

- runway and taxiway design and development and associated aerodrome procedural changes
- air traffic services infrastructure design and development and associated procedural changes
- airspace changes including standard instrument arrival and departure development
- flight operations procedures development

The IAA safety oversight system will ensure that all changes are properly implemented in accordance with associated regulations, including ensuring that the risks at the interfaces of the different sectors are appropriately managed.

In addition, a dedicated cross domain team of inspectors and analysts has been established to provide on-going analysis of safety occurrences during the transition to parallel runway operations.

2.9 – FOD.028 - Rotorcraft Operations

SAFETY ISSUE

Rotorcraft operations includes the following types:

- Approved commercial CAT operations by holders of an EASA MS AOC (eg carriage of passengers or helicopter emergency medical services);
- Declared non-commercial operations involving complex helicopters (Part NCC)
- Declared specialised helicopter operations (Part SPO); and
- Non-commercial operations (Part NCO)
- In addition, one Commercial AOC Holder in Ireland carries out Search and Rescue operations on behalf of the State

This chapter deals with helicopter operations by approved organisations (AOC) and Part NCC/Part SPO operations by declared organisations. Part NCO and other general aviation rotorcraft operations (eg gyroplanes) are addressed in the general aviation section of this Plan.

The sector-based risk profile in this area includes the following key risk areas; loss of control-in-flight, terrain and obstacle conflict, and mid-air collision.

These safety risk areas have been discussed in Chapters 2.1, 2.2 (terrain conflict) and 2.3 above

in respect of commercial aeroplane operations, and this Chapter deals with the safety issues in these areas for helicopter AOC/NCC/SPO operations.

SAFETY OBJECTIVE

To continuously improve safety by assessing and mitigating the risks in helicopter operations in the State, involving Irish approved or declared helicopter operators.

PERFORMANCE INDICATORS

Accident, Serious Incident and Incident rates and trends related to helicopter operations involving Irish helicopter approved or declared organisations.

STAKEHOLDERS/ROLES

Irish Aviation Authority – analysis of sector occurrence rates and trends and identification of sector-based safety issues

Industry (approved and declared helicopter operators) – managing helicopter operational safety risks and reporting pre-cursor events that could result in helicopter occurrences.

Industry (ANSP's) – implement SESAR solutions aiming to facilitate low level Helicopter IFR route network in the TMA, if feasible.

	ACTIONS	TARGET DATE
a)	The IAA will review the need for, and feasibility of, implementing SESAR solutions aiming to facilitate low level Helicopter IFR route network within and outside of the TMA. ***EPAS Reference:*** MST.031	Q4 2021
b)	The IAA will work with industry to provide a helicopter flight operations consultation forum involving approved and declared helicopter operators, to focus on common operational and safety issues across this sector.	Q4 2020

STATUS

Previous versions of this Plan addressed the specific risk of offshore operations based on review and promulgation of EASA safety analysis in this regard. The safety issues identified in this version of the Plan may be applicable to either or both offshore and onshore helicopter operations. In addition, action Chapter 1.8 a) "The IAA will target the key risks identified in this Plan, including RI, RE, LOC-I, MAC, CFIT (as appropriate to the organisation), as part of SMS oversight of approved and declared organisations", applies equally to helicopter operators.

Although the helicopter industry is relatively small in Ireland (ie 3 AOC holders), the availability of declared Part NCC/Part SPO operations in the regulatory framework has seen a growth of activity

in this area and prompts the need for a dedicated helicopter flight operations consultation forum, involving IAA and AOC/NCC/SPO approved and declared organisations to address common operational and safety issues, including for example the EASA Rotorcraft Safety Roadmap. Currently, helicopter AOC holders are part of the Flight Operations Consultancy Group that includes both fixed and rotary wing operators.

A new action for this version of the SPAS is prompted by EPAS MST.031 that requests that EASA Member States together with their ANSPs, should evaluate the possibility to establish a network of low level IFR routes in their airspace to facilitate safe helicopter operations with reference to the SESAR Solutions Catalogue. The IAA is working with a HEMS helicopter operator to develop PinS (Point-in-Space) RNP approaches to most used landing sites, some of which are in controlled airspace.

In response to an AAIU Safety Recommendation following a fatal accident during SAR operations in 2017, the Minister for Transport, Tourism and Sport, initiated an independent review of SAR aviation operations in Ireland to make recommendations on improvements necessary to ensure appropriate processes, resources and personnel were in place to provide effective, continuous, comprehensive and independent oversight of all aspects of these operations. The independent report made 12 recommendations arising from which a New National Search and Rescue Plan for Ireland (2019) was developed. A new National SAR Committee has been created with renewed terms of reference which underpins its role in providing strategic coordination, guidance and leadership for Search and Rescue. This group will monitor the performance and adequacy of the SAR system and advise on any necessary improvements. It will have an independent chairman and it's members will include senior representatives from the Coast Guard (IRCG), Irish Aviation Authority (IAA) and An Garda Síochána (AGS), their parent Departments and other strategic partners in both the State (Departments of Defence, Health and Local Government) and the voluntary SAR sector (RNLI).

The IAA continues to work with AOC holders to ensure they include the main risks to helicopter operations in their own SMS, and that they develop their own safety objectives, safety performance indicators and targets, with due consideration of this Plan.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CHAPTER 3 – GENERAL AVIATION

3.1 - FOD.014 Safety Promotion for General Aviation

SAFETY ISSUE

Good safety management depends on the sharing of safety information with GA pilots and instructors, including lessons learned from accidents or incidents. Safety promotion enhances awareness of hazards and provide best practices for mitigating these hazards to help reduce accidents in the general aviation sector.

SAFETY OBJECTIVE

To share safety information within the general aviation community to help reduce the number of accidents and serious incidents involving general aviation operations in Ireland.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to general aviation.

STAKEHOLDERS/ROLES

Irish Aviation Authority – analysis of accidents, serious incidents and occurrences in general aviation and development of sector risk profile. Sharing safety information with general aviation operators.

Industry (General aviation clubs and associations) – analysis of risks within their own sector and sharing safety information with members

GA Pilots and engineers – reporting of safety occurrences to improve safety management.

ACTIONS		TARGET DATE
a)	The IAA will work with GASCI to develop and promote Safety Information to general aviation community in Ireland. ***EASA Reference:*** MST.002	On-going

b)	The IAA will work with GASCI to organise/facilitate regular general aviation safety events, during which safety information (including EASA SPN material) will be promoted. ***EPAS Reference:*** MST.025	On-going
c)	The IAA will work with GASCI to develop and promote Safety Information to the general aviation helicopter community in Ireland. ***EASA Reference:*** MST.002, MST.015	On-going
d)	The IAA will promote airworthiness safety information (eg aircraft equipment failure and maintenance) for dissemination to the general aviation community.	On-going

STATUS

Safety Promotion is assuming an ever-increasing importance as a safety management tool, particularly in the domain of general aviation. Whereas organisations can benefit from SMS implementation to learn from safety occurrences, general aviation practitioners must rely on learning from each other. The IAA can greatly assist in this area, however to do this, it is necessary that persons involved in general aviation feel confident to share information on safety occurrences with the IAA. Chapter 1.5 in this Plan addresses safety culture and safety reporting in the general aviation community.

The General Aviation Safety Council of Ireland (GASCI) seeks to identify flight safety risks and minimise them through education, training and shared experience amongst the general aviation community. GASCI has representatives from most sectors of general aviation in Ireland, and includes representatives from the IAA and AAIU. GASCI provides safety information on it's website www.GASCI.ie as well as on facebook. The IAA provides financial and logistical support to GASCI in organising regular safety evenings around the country for the benefit of the general aviation community.

The EASA Safety Promotion Network https://www.easa.europa.eu/easa-and-you/safety-management/safety-promotion provides a platform for sharing safety information developed by EASA, or EU member states, that concern general aviation. This material is also promoted by the IAA and GASCI.

The IAA airworthiness department reviews accident reports for issues affecting aircraft equipment or maintenance and promulgates relevant safety information via the IAA website https://www.iaa.ie/general-aviation/safety-information). IAA Safety Leaflet IGA3 was updated in 2017 to provide latest guidance on the maintenance of GA aircraft, engines and components with low utilisation.

3.2 - FOD.017 Airspace Infringement by GA aircraft

SAFETY ISSUE

An airspace infringement (AI) occurs when an aircraft enters controlled airspace without receiving the appropriate ATC clearance. The problem of airspace infringement is a serious risk to aviation safety and the risk is particularly serious when the infringing aircraft involved is a GA light aircraft that does not carry transponder equipment used to prevent mid-air conflict between aircraft.

SAFETY OBJECTIVE

To continuously improve safety by assessing and mitigating the risks due to airspace infringements involving general aviation operations in Ireland.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to airspace infringement.

STAKEHOLDERS/ROLES

Irish Aviation Authority – analysis of airspace infringement related accidents, serious incidents and occurrences. Sharing safety information with general aviation operators.

Industry (General aviation training organisations, clubs and associations) – assessment and management of the risk of airspace infringement within their own sector and sharing safety information with members

GA Pilots and engineers – reporting of airspace infringement safety occurrences.

ACTIONS		TARGET DATE
a)	The IAA will work with the General Aviation Safety Council of Ireland to review airspace design issues at airspace infringement hotspots with a view to implementing measures to reduce airspace infringements by GA aircraft. ***EPAS Reference:*** MST.016	Q4 2020
b)	The IAA will work with GASCI to highlight the risk of airspace infringement, and share best practices in its avoidance, during general aviation safety evenings	Ongoing

STATUS

The subject of airspace infringement is frequently addressed during general aviation safety evenings and the related safety messages, such as pre-flight planning, navigation, maintaining situational awareness, use of technology, will be promoted on an on-going basis.

The IAA is also exploring opportunities to address specific airspace design issues at the margins of Class C airspace subject to increased levels of GA traffic, to reduce the level of technical infringement by low flying GA aircraft with very little risk of conflict with other traffic. GASCI is supporting this work by identifying areas of high level of GA activity close to the boundary of Class C airspace, and looking for opportunities to reduce the volume of Class C designated airspace in these areas.

3.3 - FOD.020 Key Risks for General Aviation aircraft

SAFETY ISSUE

Analysis of accidents and serious incidents in Ireland, Europe and globally identifies some key risks for general aviation, including:

- **Loss of Control – Inflight (LOC-I);** possibly caused by inadequate aircraft handling, loss of situational awareness or management of aircraft upset (eg induced by weather, technical failure, fuel shortage) possibly associated with an element of surprise.
- **Controlled Flight into Terrain or Obstacles (CFIT);** possibly caused by inadequate flight planning or navigation, or failure to properly manage changing weather conditions.
- **Mid-Air Collisions in GA (MAC);** most likely in areas of intensive general aviation activity, however the emerging risk from Drone operations is also a risk for general aviation operations
- **Occurrences during take-off and landing;** heavy landings (ARC), runway excursions (RE) or collision with obstacles (CTOL) are often associated with technical failure, aircraft handling or weather events affecting take-off and landing performance in general aviation. The use of grass strips by general aviation brings specific risks

SAFETY OBJECTIVE

To continuously improve safety of general aviation by assessing and mitigating the key risks of loss of control inflight, controlled flight into terrain, mid-air collision, and occurrences during take-off and landing.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to LOC-I, CFIT, MAC, ARC, RE, and CTOL in general aviation.

STAKEHOLDERS/ROLES

Irish Aviation Authority – analysis of related accidents, serious incidents and occurrences. Sharing safety information with general aviation operators.

Industry (General aviation training organisations, clubs and associations) – assessment and management of the risks within their own sector and sharing safety information with members

GA Pilots and engineers – reporting of safety occurrences (eg near miss) for information sharing to the benefit of the general aviation community.

	ACTIONS	TARGET DATE
c)	The IAA will work with GASCI to highlight the key risks of loss of control inflight, controlled flight into terrain, mid-air collision, and occurrences during take-off and landings, and to share best practices in their avoidance by: – Developing and promulgating safety information to address the main causes of these occurrences – Organising safety evenings for general aviation to present safety information – Using website and social media platforms to target intended audience	Ongoing
d)	The IAA will work with GASCI to encourage stakeholders to include the general aviation "areas of operation" identified in the Aeronautical Charts, in the States AIP and electronic databases.	Q4 2020

STATUS

The Plan has previously addressed actions that can help to reduce the risks in these areas, such as:

- Improvement to Aeronautical Charts to include new symbology to identify "Area of Operations" for elevated general aviation activities (eg training fields).
- Introduction of listening squawk function in Ireland
- Registration and licensing for powered paragliders

It is also planned to include new general aviation "areas of operations" in the States AIP and electronic databases so that they can be retrieved by navigation equipment manufacturers for inclusion in navigation databases.

The focus in this area is in safety promotion to address the different precursor events that may be associated with the main categories of GA accidents and serious incidents, as shown in the following table:

Occurrence	Precursor Events
Loss of Control -Inflight	– Recognition and recovery from aircraft upset – Awareness of flight attitude – Control of aircraft, following engine failure – Recognition of, and response to carburetor icing – Operations of light aircraft within recommended mass and balance limits – Execution of forced landings – Awareness of performance differences between different GA aircraft types – Runway excursion or heavy landing following aircraft handling or environmental issues – Take-off and landing from hard/soft airstrips
Collision with terrain or obstacle	– Inadvertent flight into degraded visual environments – Flight below minimum safe altitude (eg for weather avoidance) – Pre-flight planning – Situational awareness during flight – Use of advanced technologies – Use of aeronautical charts and terrain and obstacle databases

Mid-Air Collision	– Use of see and avoid – Safety Management at Club Fly-ins and airshows – Conflict with Drones – Use of advanced technologies
Occurrence during take-off or landing	– Runway excursion or heavy landing following aircraft handling or environmental issues – Collision with obstacles (eg trees, buildings, electrical wires) during take-off and landing – Take-off and landing from hard/soft airstrips
Human Factors	– Threat and error management – Decision making

The topics identified in this table have been the subject of safety evening presentations and safety leaflets produced by GASCI, IAA, EASA and others, however the key safety messages need to be continuously reinforced using multiple communication means, including social media. Recent safety presentations addressed the use of angle of attack to prevent loss of control, landing during crosswind, responding to engine failure, use of technology for navigation and weather avoidance, carburettor icing.

Safety presentations/leaflets planned for 2019 currently include

– maintaining situational awareness,

– the use of threat and error management to prevent loss of control accidents,

– mid-air collisions

– airspace infringements

– carburetor icing.

3.4 - FOD.022 Miscellaneous Risks in General Aviation

SAFETY ISSUE

This chapter deals with other risks outside of the key risk areas discussed in Chapter 3.4 above, that may emerge for general aviation activities as the Plan evolves. The Plan is currently addressing two such risks:

Safety at airshows and club fly-ins; addressing safety of participants and attendees at these events.

Hand-propping engines; providing updated guidance in this procedure which is rarely needed in modern general aviation except with older aircraft types or cases where hand-propping aircraft is possible if aircraft battery is discharged

SAFETY OBJECTIVE

To reduce the risk of fatal accidents, accidents and serious incidents in Ireland at general aviation airshows or club fly-ins, or as a result of hand-propping engines.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends during airshow/fly-ins or hand-propping engines.

STAKEHOLDERS/ROLES

Irish Aviation Authority – analysis of related accidents, serious incidents and occurrences. Sharing safety information with general aviation operators.

Industry (General aviation training organisations, clubs and associations) – assessment and management of the risks within their own sector and sharing safety information with members

GA Pilots and engineers – reporting of safety occurrences (eg near miss) for information sharing to the benefit of the general aviation community.

ACTIONS		TARGET DATE
d)	The IAA will work with GASCI to produce general safety guidance for the conduct of club fly-ins and promote this guidance during GASCI safety evenings.	Q4 2019
e)	The IAA will work with GASCI to develop safety promotion material concerning hand-propping operations for presentation at GASCI safety evenings and promulgation via website and facebook channels.	Q4 2019

STATUS

In 2017, the IAA published updated policies and procedures relating to the acceptance procedures for public airshows, in line with latest safety recommendations arising from foreign accident reports, and provided associated training to inspectorate staff. In addition, European safety leaflet GA11 "Safety at Flying Displays and events: A guide for pilots" was promoted.

Further safety guidance is planned for conducting less formal club fly-ins, which although not fee-paying public events, are often attended by families and friends of the participants.

Hand-propping aircraft is a specialist skill that needs both proper training and good technique. It presents a hazard to both the person performing the technique and to the aircraft (ref AAIU Report 2017-011) if not properly performed. It's use today is limited to aircraft without electrical starting systems (eg older vintage aircraft) or it may be possible to use hand-propping in some aircraft when the aircraft battery has discharged and a replacement is not available. New guidance on this subject is planned based on latest best practices material available.

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Appendix I–V

Appendix I – Strategic Safety Objectives

- To enable safe, secure and sustainable civil aviation system in Ireland through the provision of appropriate regulatory framework and operating rules and effective safety oversight.
- To enable safe, secure and sustainable civil aviation system in Ireland through effective safety management
- To provide legal certainty on the independence of the IAA safety regulatory functions from the air navigation services provision.
- To ensure that the operational risks are fully assessed and mitigated to reduce the risk of an accident or serious incident
- To enhance safety oversight through implementing risk-based and performance-based safety oversight
- To collaborate with regulatory authorities of affected EU Member States on safety oversight of organisations performing aviation activities across different EU States
- To support Irish civil aviation through effective safety promotion
- To ensure the IAA regulator has sufficient and appropriately qualified and competent staff to provide effective safety oversight and safety management
- To provide enhanced ability to derive and share safety intelligence, through development of advanced digitisation processes, including business intelligence and big data capabilities.
- To ensure the safety performance of the Irish civil aviation system is appropriately monitored to verify that safety objectives are met
- To encourage safety culture, safety reporting and management of safety through hazard identification and safety risk management

APPENDIX II – Safety Objectives, SPI's and SPT's

This table summarises the Safety Objectives (SO) for the State as outlined in the State Plan for Aviation Safety. The table also outlines the Safety Performance Indicators (SPI) and Targets (SPT) established by the IAA SRD on behalf of the State. Individual organisations (regulated entities) are responsible for developing their own SO/SPI/SPT's as part of their Safety Management Systems, however the information in this table must be considered by each individual organisation, as appropriate to it's own activities. The table includes further guidance on IAA expectations in this regard for different sectors (eg AOC Holders, ANSP's, Airports).

Safety Objective	Safety Performance Indicators	Safety Performance Targets
Systemic		
To be a leading State in the implementation of the State Safety Programme to meet Annex 19 SARPS, by exceeding international global targets established in the ICAO Global Aviation Safety Plan.	ICAO SSP GAP Analysis	Maintain SSP Gap Analysis > 90%
	EPAS MST tasks completion	All EPAS MST tasks reviewed and actioned as relevant
	ICAO USOAP EI Score	Maintain EI Score > 90%
	ICAO USOAP CC/EFOD Completion	Maintain Average CC/EFOD completion score > 90%
To support Irish organisations in the implementation of safety management systems that are compliant with the regulations and effective in their performance.	SMS requirements established in all domains	Establish outstanding requirements in airworthiness by 2021
	Percentage of organisations assessed using EoSM or EASA MS Assessment Tool	>90 % by end 2020
To develop process-oriented and outcome-oriented SPI's and SPT's to support the measurement of safety performance across all sectors of the Irish civil aviation system.	SPI/SPT's developed in each domain	Maintain >90%
	Percentage of organisations that have developed acceptable SPI/SPT's, in consideration of State SPI/SPT's	>90% by end 2020
To implement Regulation (EU) 376/2014 on occurrence reporting and promote voluntary occurrence reporting for those not subject to mandatory reporting requirements	Implementation of Regulation (EU) 376/2014 Occurrence reporting rates in each sector	No significant findings during EASA SYS audit 2019 Increased trends in annual occurrence reporting rates in each sector

To implement effective risk-based and performance-based oversight methodologies across relevant sectors of the Irish civil aviation system.	Organisation risk profile completion rate	ORP's completed in >90% of regulated organisations in OPS, AED, ANS by end 2020 and AWS by end 2022
	Processes available to assess RBO/PBO methodologies	Processes available by end 2021
	Non-compliance results, number/level of findings per audit area and closure rate for findings	Reducing trends in non-conformance results
To implement integrated audit management across all oversight sections in IAA SRD and to implement functions in the IAA SRD ebusiness and digitisation project to support effective safety management and risk-based and performance-based oversight.	Migration of compliance oversight functions to EMPIC	>90% by end 2020
	Implementation of IAA Digitisation Project	Availability of BI and Big Data capability to support safety management and RBO/PBO by end 2021
To develop systems and processes for collaboration between SSP and SMS to ensure that safety intelligence is mutually shared between organisations and the State in more effective manner.	Implementation of IAA Digitisation Project	Availability of applications to facilitate sharing of safety information between IAA and regulated entities by end 2021
To ensure appropriate oversight processes are in place to oversee complex organisations and new business models.	Effective SMS processes in complex organisations to address risks associated with novel business or employment models.	Maintain ongoing oversight as part of SMS oversight
	Collaboration with other States on oversight of complex organisations	Maintain State/State collaborative oversight processes
	Guidance available for inspectorate staff on overseeing governance structures in complex organisations	Guidance available by end 2019
To ensure that the changes required during the transition to the post-Brexit environment, are properly managed to help minimise the risk to Irish Industry.	Level of satisfaction of Irish Industry and persons with IAA support	Satisfaction levels greater than 95%

To ensure that the operation of drones for commercial or leisure purposes is properly integrated into the civil aviation system so that it does not result in accidents or serious incidents due to conflict between a drone and an aircraft in Irish airspace	Accident, serious incident and incidence drone related occurrences	No accidents or serious incidents involving civil aviation aircraft engaged in commercial or private operations due to conflict with Drones.
	Level of Implementation of new EU regulations on drones	Reducing trends in the number of incidents involving the sighting of drones in proximity to civil aviation aircraft show reducing trends.
	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	All new drone related Authority Requirements implemented on time. No delays to Irish drone industry due to lack of guidance on implementation of Organisation Requirements for drone operations. No non-compliance oversight findings on management of drone infringements in aerodromes

Commercial Air Transport		
To continuously improve safety by assessing and mitigating the risks relating to loss of control inflight involving Irish commercial operators.	Loss of Control – Inflight Occurrences and precursor events including; – Loss of situational awareness events – Warning system activation – Unstable approach – Technical failures leading to aircraft upset – Weather or icing conditions leading to aircraft upset – Birdstrike or laser attack leading to aircraft upset – Smoke or Fire events (including lithium battery related events) that could lead to aircraft upset – Recognition and recovery from aircraft upset – Inflight fuel management issues leading to aircraft upset – Level of crew training on UPRT and CRM	**IAA SRD:** No accidents or serious incident categorised as LOC-I. Reducing trends in LOC-I occurrences and precursor events on organisation and sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders by end 2020 **AOC Holders:** Inclusion of LOC-I risk in their own SMS. Development of own Safety Objectives, SPI's and SPT's with reducing trends Use of FDM data to support monitoring and analysis of LOC-I occurrences. Ensuring all flight crews are trained in upset recognition and recovery (UPRT) procedures and CRM (as applicable) **FSTD organisations:** Update FSTD capability to support UPRT

To continuously improve safety by assessing and mitigating the risks of controlled flight into terrain involving Irish commercial operators or operators flying in Irish controlled airspace.	Controlled Flight into Terrain occurrences and precursor events including; – Intentional low-level operations leading to CFIT occurrence – Operations in degraded visual environments leading to CFIT occurrences – Loss of situational awareness by crews leading to CFIT occurrence – CFIT occurrences during take-off and landing sites outside of airports/heliports – Accuracy and use of aeronautical charts and terrain and obstacle databases Low level IFR routes in controlled airspace to facilitate safe helicopter operations.	**IAA SRD:** No accidents or serious incident categorised as CFIT. Reducing trends in CFIT occurrences and precursor events on organisation and sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders by end 2020 Reduced level of reported anomalies in Aeronautical Charts and AIP data that supports terrain databases **AOC Holders:** Inclusion of CFIT risk in their own SMS. Development of own Safety Objectives, SPI's and SPT's with reducing trends Use of FDM data to support monitoring and analysis of CFIT occurrences **ANSP's**: Replace non-precision approach (NPA) procedures with approach with vertical guidance (APV) procedures Implementation of low level IFR helicopter routes in controlled airspace, as feasible (Ref SESAR Solutions Catalogue)

To continuously improve safety by assessing and mitigating the risks of mid-air collision involving Irish commercial operators or operators flying in Irish controlled airspace.	MAC occurrences, and precursor events including; – ACAS RA events – Airborne conflict with non-transponder equipped aircraft in controlled airspace – Airborne conflict with non-transponder equipped aircraft non-controlled airspace – Airborne conflict with Drones – ATM events leading to loss of separation (eg Deviation from ATC Clearances, Level Bust, Separation Minimum Infringement, airspace infringement) Level of Implementation of SESAR solutions (eg enhanced STCA and enhanced Safety nets) aiming to reduce the risk of mid-air collision en-route and TMA	**IAA SRD:** No accidents or serious incident categorised as MAC. Reducing trends in MAC occurrences and precursor events on organisation and sector basis. Acceptance of organisation Safety Objectives and associated SPI/ SPT's for over 90% of AOC Holders and ANSP's by end 2020 Monitoring implementation of EU EAPAIRR addressing Airspace infringement **AOC Holders:** Inclusion of MAC risk in their own SMS. Development of own Safety Objectives, SPI's and SPT's with reducing trends Use of FDM data to support monitoring and analysis of MAC occurrences Full implementation of EU EAPAIRR recommendations **ANSP's:** Inclusion of MAC risk in their own SMS. Development of own Safety Objectives, SPI's and SPT's with reducing trends Use of radar data to support monitoring and analysis of MAC occurrences Full implementation of EU EAPAIRR recommendations Implementation of SESAR solutions (eg enhanced STCA and enhanced Safety nets), as feasible (Ref SESAR Solutions Catalogue) Level of Implementation of SESAR solutions (eg enhanced STCA and enhanced Safety nets) aiming to reduce the risk of mid-air collision en-route and TMA

To continuously improve safety by assessing and mitigating the risks of runway incursion involving Irish commercial operators or at Irish certified aerodromes.	RI occurrences, and precursor events including; – Deviation from ATC clearances by Flight Crew or Ground Crew – Aircraft and vehicle ground movement errors in low visibility operations – Non-Adherence to standard phraseology in ATC communications – Non-Adherence to ATC communication procedures (eg readback/hearback) – Presence of wildlife on or near the runway Level of Implementation of SESAR solutions (eg ground situational awareness, airport safety net vehicles and enhanced airport safety nets) aiming to reduce the risk of a runway incursion.	**IAA SRD:** No accidents or serious incident categorised as RI. Reducing trends in RI occurrences and precursor events on organisation and sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders, airport operators and ANSP's by end 2021 Monitoring implementation of EAPPRI recommendations **AOC Holders, ANSP's, Airport Operators (as applicable):** Inclusion of RI risk in their own SMS. Development of own Safety Objectives, SPI's and SPT's with reducing trends Use of radar data to support monitoring and analysis of RI occurrences Full implementation of EU EAPPRI recommendations as appropriate Implementation of SESAR solutions (eg ground situational awareness, airport safety net vehicles and enhanced airport safety nets), as feasible

To continuously improve safety by assessing and mitigating the risks of runway excursion involving Irish commercial operators or at Irish certified aerodromes.	RE and ARC occurrences, and precursor events including; – Execution of unstable approach leading to potential RE – Poor decision making during adverse environmental conditions (winds/visibility) – Inadequate clearing of contaminated runways – Inaccurate reporting of runway surface condition – Reliability of critical equipment (eg landing gear, wheels and brakes) Level of Implementation of EAPPRE recommendations aiming to reduce the risk of a runway excursion.	**IAA SRD:** No accidents or serious incident categorised as RE. Reducing trends in RE occurrences and precursor events on organisation and sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders, and airport operators by end 2021 Full implementation of EAPPRE recommendations **AOC Holders, ANSP's, Airport Operators (as applicable):** Inclusion of RE/ARC risk in their own SMS. Development of own Safety Objectives, SPI's and SPT's with reducing trends Use of FDM/radar data to support monitoring and analysis of RE occurrences Full implementation of EU EAPPRE recommendations as appropriate

To continuously improve safety by assessing and mitigating the risks due to ground operations by Irish commercial operators or at Irish certified aerodromes.	Ground Operations related occurrences, including the following: – Non-Adherence to aircraft loading procedures (eg passengers, baggage and cargo, fuel) – Inaccurate calculation or reporting of mass and balance – Deviations from ATC clearances – Non-Adherence to aircraft ground handling procedures (incl marshaling, towing, de-icing, refuelling etc) – Failure to report damage to aircraft during ground operations – Inadequate protection of passengers and ground staff on aircraft ramp – Poor condition of aircraft steps – Inadequate control of ground movements in low visibility conditions – Non-Adherence to positioning, securing and decongestion procedures for ground service equipment on the ramp Non-compliance findings in the area of ground operations, including related sub-contracted services.	**IAA SRD:** No fatal accidents during ground operations Reducing trends in ground operations related accidents, serious incidents and occurrences on organisation and sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders, ANSP's and airport operators by end 2021 Reducing trends in non-compliance oversight findings in respect of ground operations, including contracted services. **AOC Holders, ANSP's, Airport Operators:** Inclusion of ground operations related risks in their own SMS. Development of own Safety Objectives, SPI's and SPT's with reducing trends Use of technology to prevent ground operations related occurrences Increased level of safety promotion targeting ground handlers

To continuously improve safety by assessing and mitigating the risks emerging due to implementing parallel runway operations.	Accidents, serious incidents and incidents related to mid-air collision, runway incursions, ground collisions, ground operations and related precursors as outlined above	**IAA SRD:** No adverse trends in accidents, serious incidents, occurrences and precursor events across affected domains, during implementation of parallel runway operations.
	Compliance oversight results targeting change management and risk management processes in affected operators, ANSP and airport.	No significant findings of non-compliance in change management and risk management procedures in affected stakeholders.
		AOC Holders, ANSP's, Airport Operators: Change management and risk management in accordance with SMS procedures Monitoring of occurrences and precursor events for adverse trends during implementation of parallel runway operations
General Aviation		
To share safety information within the general aviation community to help reduce the number of accidents and serious incidents involving general aviation operations in Ireland.	Number of safety evenings organised	4 general aviation safety evenings per year
	No of occurrences reported by the general aviation community	Increasing trend in level of occurrence reporting by GA community
To continuously improve safety by assessing and mitigating the risks due to airspace infringements involving general aviation operations in Ireland.	Number of accidents and serious incidents. Rate of airspace infringements by general aviation per 100,000 flight hours	No accidents or serious incidents due to Airspace Infringement (AI) by GA traffic Reducing trends in AI occurrence rate by GA traffic
To continuously improve safety of general aviation by assessing and mitigating the key risks of loss of control inflight, controlled flight into terrain, mid-air collision and occurrences during take-off and landing.	Number of fatalities, accidents, serious incidents and incidents involving general aviation, categorised as LOC-I, CFIT, MAC, RE, ARC, or CTOL	No fatalities in general aviation. Reducing trends in accidents, serious incidents and incidents

APPENDIX III - Summary of New Actions in this version of SPAS

Chapter Ref	Action	Target Date
1.1 e)	The IAA will review draft GASP 2020-2022 and work with partner States in ABIS and EU to influence the global safety priorities and develop implementation guidance to support the goals of the GASP.	Q4 2019
1.2 a)	The IAA SRD will apply change management and risk management processes to ensure that there is no loss or reduction of regulatory function during the transformation project to legally separate from the IAA ANSP and merge with CAR.	Q4 2021
1.2 b)	The IAA SRD will target ANSP change management and risk management processes as part of safety oversight planning, during the transformation project to legally separate the IAA ANSP from the regulator	Q4 2021
1.3 b)	Develop process and outcome based safety performance indicators and targets across all sectors of the Irish civil aviation system	Q4 2020
1.4 m)	The IAA will implement the new ECCAIRS II platform to enhance the process for managing occurrence reports and transferring them to the European Central Repository	Q4 2021
1.6 g)	The IAA will ensure adequate resources are available to support data-based decision making (including systems development, data management and data analytics) and safety promotion.	Q4 2022
1.6 h)	Develop processes to measure the effectiveness of risk-based and performance-based methodologies across relevant sectors of the civil aviation system	Q4 2022
2.1 k)	The IAA will review industry (ie air operators and airports) actions to promote the hazards associated with the carriage of Lithium batteries in passenger baggage, during oversight activities	Q4 2020
2.3 h)	The IAA will review the need for, and feasibility of, implementing SESAR solutions (eg enhanced STCA/safety nets) aiming to reduce the risk of mid-air collision en-route and in TMA. ***EPAS Reference:*** MST.030	Q4 2020
2.4 e)	The IAA will work with ANSP's and airport operators to review the need for, and feasibility of, implementing the runway safety related SESAR solutions such as those related to ground situational awareness, airport safety net vehicles and enhanced airport safety nets. ***EPAS Reference:*** MST.029	Q4 2021
2.6 g)	The IAA will focus on performance of ground handling, including subcontractors, as part of compliance oversight activities.	Q4 2020

2.6 h)	The IAA will 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).	Q4 2020
2.6 i)	The IAA will implement forthcoming EU regulations for authorities on ground handling and support industry with the implementation of related organisational requirements (EU Implementing Rules and AMC pending)	Q4 2022
2.7 d)	The IAA will work with airports to extend the scope of the current National Bird Hazard Committee to include all wildlife threats around airports	Q4 2020
2.8 b)	The IAA will establish a dedicated cross domain team to provide detailed analysis of safety events that occur during the implementation of parallel runway operations.	Q4 2021
2.9 a)	The IAA will review the need for, and feasibility of, implementing SESAR solutions aiming to facilitate low level Helicopter IFR route network in the TMA. ***EPAS Reference:*** MST.031	Q4 2022
2.9 b)	The IAA will work with industry to provide a helicopter flight operations consultation forum involving approved and declared helicopter operators, to focus on common operational and safety issues across this sector.	Q4 2020
3.2 b)	The IAA will work with GASCI to highlight the risk of airspace infringement, and share best practices in its avoidance, during general aviation safety evenings	Ongoing
3.3 c)	The IAA will work with GASCI to highlight the key risks of loss of control inflight, controlled flight into terrain, mid-air collision, and occurrences during take-off and landings, and to share best practices in their avoidance by: – Developing and promulgating safety information to address the main causes of these occurrences – Organising safety evenings for general aviation to present safety information – Using website and social media platforms to target intended audience	Ongoing
3.3 d)	The IAA will work with GASCI to encourage stakeholders to include the general aviation "areas of operation" identified in the Aeronautical Charts, in the States AIP and electronic databases.	Q4 2020

APPENDIX IV- Summary of SPAS Actions completed in 2018

Chapter Ref	Action
1.4 j)	Update the IAA occurrence reporting website to provide easy to use instructions for reporters to guide them through the reporting process
1.5 c)	The IAA will develop the tools to support risk-based and performance-based oversight in air navigation services and aerodromes domains based on assessment of organisation risk profile, organisation compliance profile and organisation performance profile.
1.5 e)	The IAA will develop sector level risk profiles, which will be used to inform the IAA oversight planning at the strategic level.
2.1 f)	The IAA will ensure that IAA regulatory inspectors are trained in accordance with the relevant competency framework prior to assessing applications from training organisations implementing evidence/competency based training programmes.
2.1 g)	The IAA will review latest EASA recommendations on Crew Resource Management oversight and training and update related policies and procedures accordingly
2.3 f)	The IAA will ensure that Irish operators fully address the risks associated with operations into uncontrolled airspace in their safety management system
2.5 k)	Review the implementation of recommendations in EASA SIB 2014-20 "Aeroplane Operations in Crosswind Conditions" and new SIB 2018-02 "Runway Surface Condition Reporting" with Irish AOC holders during the current oversight cycle.
2.6 f)	The IAA will promote the EASA recommendations on aircraft de-icing as promulgated in EASA SIB 2017-11, during pre-winter ground operations consultation workshops.
2.7 c)	The IAA will review recommendations arising from the ICAO Wildlife Strike Reduction Symposium for application in Ireland.
3.3 a)	The IAA will work with the General Aviation Safety Council of Ireland to assist in the development of improved AIP guidance for VFR traffic at unattended airfields.
3.3 b)	The IAA will work with the General Aviation Safety Council of Ireland (GASCI) to introduce improved symbology in Aeronautical Charts (eg ATZ) for GA airfields and high density GA activity areas. EPAS Reference SPT.044
Merged Actions	
3.3 c)	The IAA will work with GASCI to develop safety promotion material concerning the risk of controlled flight into terrain in general aviation for presentation at GASCI safety evenings and promulgation on website and facebook channels.
3.3 c)	The IAA will work with GASCI to develop safety promotion material concerning the recognition and response to carburettor icing to reduce the risk of engine stoppage during flight. This material to be presented at GASCI safety evenings and promulgated via website and facebook channels.

APPENDIX V - GLOSSARY OF TERMS

A

AAIU	Air Accident Investigation Unit
ANSD	Air Navigation Services Department
AOC	Air Operators Certificate
ARMS	Aviation Risk Management Solutions
ATC	Air Traffic Control
ATS	Air Traffic Service

C

CAST	Commercial Aviation Safety Team
CFIT	Controlled Flight Into Terrain

E

EASA	European Aviation Safety Agency
EASA	MS EASA Member States (28 EU Member States plus Iceland, Liechtenstein, Norway and Switzerland)
EPAS	European Plan for Aviation Safety
EC	European Commission
ECR	European Central Repository
EGAST	European General Aviation Safety Team
EHEST	European Helicopter Safety Team
ERC	Event Risk Classification
EU	European Union

F

FAB	Functional Airspace Block
FDM	Flight Data Monitoring

G

GA	General Aviation
GASCI	General Aviation Safety Council of Ireland

I

IAA	Irish Aviation Authority
ICAO	International Civil Aviation Organisation

K

KSI	Key Safety Indicators

L

LOC-I	Loss of control in flight

M

MAC	Mid air collision
MOR	Mandatory Occurrence Report
MTOM	Maximum Take-Off Mass

N

NoA	Network of Analysts

P

PBN	Performance Based Navigation

R

RI	Runway Incursion
RE	Runway Excursion
RIAG	Runway Incursion Action Group
RST	Runway Safety Team
RPAS	Remotely Piloted Aircraft System

S

SAR	Search and rescue
SMS	Safety Management system
SOTS	Safety Occurrence Tracking System
SUA	Small Unmanned Aircraft

U

UAS	Unmanned Aerial Systems
UN	United Nations

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