STATE PLAN FOR AVIATION SAFETY IN IRELAND 2020-2023

CONTENTS

EXECUTIVE SUMMARY

For several years Ireland has shown it's commitment to aviation safety management and to resourcing activities at national level to contribute to continuing improvements in aviation safety. Ireland also contributes to aviation safety management at EU and global level through active participation in EASA and ICAO forums in this regard.

This is the 11th edition of the State Plan for Aviation Safety (SPAS) in Ireland issued by the Irish Aviation Authority Safety Regulation Division (IAA) on behalf of the State. For the purposes of this Plan the use of abbreviation IAA is to address the roles and responsibilities of the IAA safety regulation division, and if required any references to the IAA Air Navigation Services Provider will be clearly identified in the text.

The purpose of the SPAS is to identify the actions taken at State level to address the main safety issues in civil aviation in Ireland. The IAA has implemented State level safety management processes, including risk management processes, the purpose of which is to identify key safety issues and to drive continuing improvements in aviation safety performance in Ireland.

Safety performance is subject to ongoing monitoring by the IAA at all levels using the safety performance indicators identified in this Plan. The Annual Safety Performance Review (ASPR) provides a summary of the top tier indicators across the different sectors of civil aviation in Ireland. Safety performance monitoring helps to assess if known safety issues are being addressed successfully and also helps to identify new hazards for risk assessment and potential action in future editions of the SPAS.

The SPAS is also an effective safety promotion document as it provides a reference for safety planning by organisations in the State to be considered by organisations as part of their own safety management system (SMS) development. Whereas various forums already exist for communication between IAA and regulated entities, the Plan includes actions to provide greater opportunity for collaboration and information sharing between the IAA as responsible party for implementing the State Safety Programme and SPAS, and organisations responsible for implementing SMS. This closer collaboration will provide opportunity for co-ordinated effort by the total aviation system to improve aviation safety.

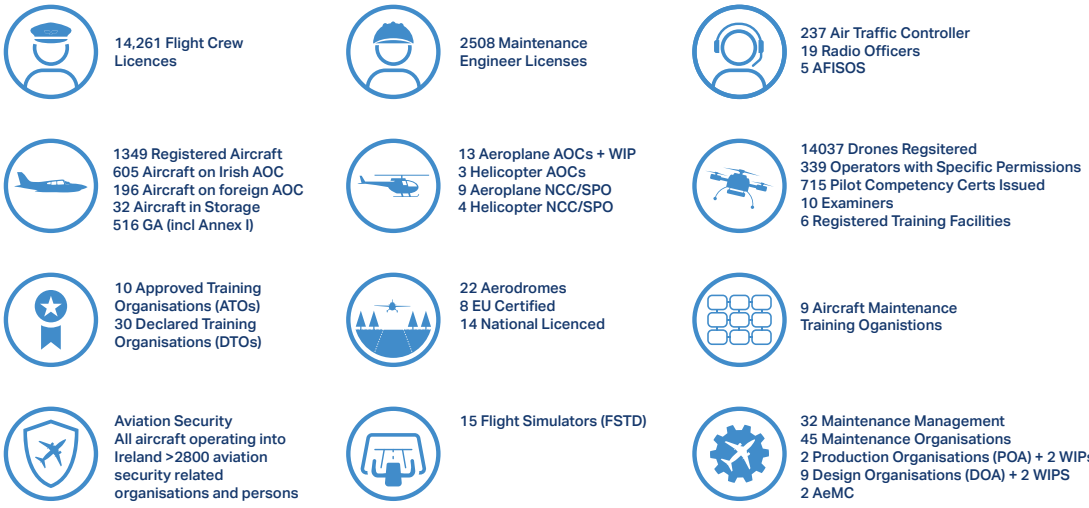
The actions contained in the plan cover a broad spectrum, including safety policy, targeted safety oversight, safety analysis, safety performance monitoring and safety promotion. The actions recommended for EU Member States contained in the European Plan for Aviation Safety are considered and included where appropriate.

At the time of writing, the impact of COVID-19 on the SPAS has not been fully assessed, however, as this Plan is fundamentally about the efficient use of resources at the State level, it can be expected that the SPAS will be affected, as the civil aviation system slowly recovers from the pandemic in the next two years. It is not anticipated at this time that the overall strategic direction of the SPAS will be unduly affected, however, some short-term effects at the detailed level (eg extended target dates) may occur.

INTRODUCTION

The State Plan for Aviation Safety (SPAS) in Ireland is built on a proactive approach to managing the safety of 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.

This Irish civil aviation system at end of 2019 is summarised in the following figure:



At the time of writing the European air traffic is projected to grow by approximately 2% per year over the next five years but this projection does not consider the impact of the COVID-19 pandemic on air traffic. The civil aviation system has proven itself resilient in the face of previous shocks to the system (eg impact of 9/11, volcanic ash etc) and so it is hoped that the system will quickly recover from the implications of COVID-19 pandemic as well. The IAA will continue to monitor developments in this area and plan accordingly (eg resources).

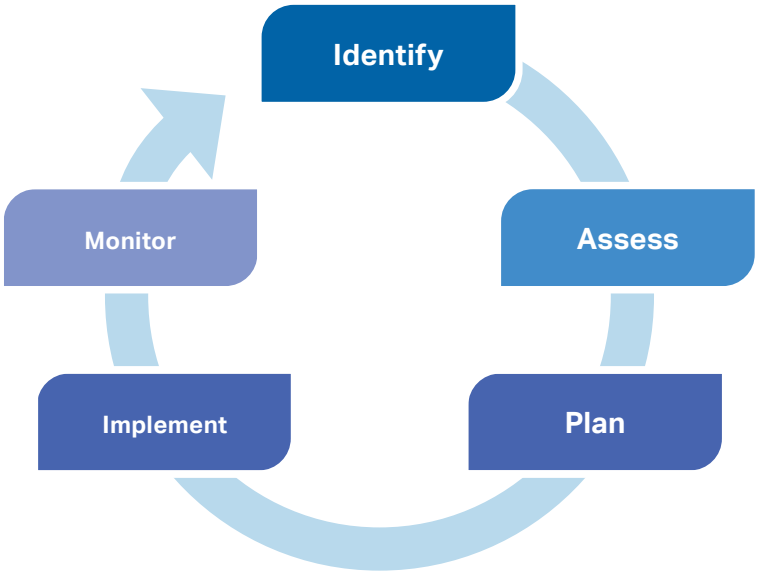
The IAA is responsible for the safety oversight the Irish civil aviation system which is does through:

- Establishing and implementing safety oversight policies and regulations, in conjunction with Department of Transport, Tourism and Sport, as necessary
- Providing the safety oversight resources required, commensurate with the size and scope of the civil aviation system

- Conducting audits, inspections and tests to ensure stakeholders meet the required standards on an ongoing basis, including standards for safety management systems
- Implementing safety management processes to identify the main risks to civil aviation and identifying mitigating actions at State level to address these risks
- Monitoring the performance of the civil aviation system
- Providing guidance to civil aviation stakeholders on the implementation of safety regulations and safety management
- Promoting safety awareness and the sharing and exchange of safety information with the aviation community to foster the maintenance and improvement of safety and to support the development of a positive safety culture

The **safety management** system implemented by the IAA safety regulation division includes risk management processes to;

- **Identify** hazards in civil aviation
- **Risk assess** the associated safety issues to prioritise actions
- **Plan** actions to address the main safety issues (eg the SPAS)
- **Implement** the planned actions
- **Monitor** the results



As part of safety management, the IAA uses safety information obtained from regulatory oversight activities, safety occurrence reporting and performance monitoring to identify hazards and associated safety issues across all sectors of the civil aviation system. Safety issues are risk assessed to develop sector-based safety priorities (eg fixed wing commercial, helicopter, aerodromes etc). The optimum risk treatment approach for the safety priorities are determined and associated mitigating actions are developed for inclusion in the Plan. Stakeholder consultation is provided through a range of activities including IAA website consultation, safety oversight (eg SMS oversight), safety review meetings, and safety workshops. The safety management pro-

cesses also help identify and mitigate actions to address emerging risks. The emerging risks addressed in this version of the Plan include COVID-19, integration of drones into the civil aviation system, oversight of new business models etc. The emerging risk of cybersecurity is not addressed as part of SPAS (ie security related), albeit the SPAS recognises that additional competencies may be required for aviation safety oversight inspectors in this area.

This Plan identifies the actions to be taken by the IAA safety regulator (ie State level), however, the Plan also identifies the roles that the IAA expects that other stakeholders will undertake, to address the safety issues identified. Safety management is implemented by the civil aviation stakeholders via organisational safety management systems. Whereas the IAA can assist safety management by sharing safety information, individual organisations must identify risks specific to their operations and implement risk mitigation strategies to reduce these risks. This Plan serves to set the civil aviation safety agenda for Ireland, and each regulated entity should consider the safety objectives identified in this Plan for applicability within their own safety management system(s).

Civil aviation is a global business and through the IAA safety management processes above, it is ensured that this Plan 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.

The IAA contributes to the global safety management processes primarily through it's active participation in the European Advisory Bodies and safety networks established by EASA, at various levels, including:

- Member States Advisory Body (MAB) – providing strategic direction to European safety management and European EPAS
- Technical Boards (TeB) – providing implementing guidance and feedback on actions across all aviation sectors. This includes the Safety Management TeB which provide a forum for mutual sharing of information between EU Member States on SPAS/EPAS development and implementation.
- Collaborative Analysis Groups (CAG) and Network of Analysts– helping to identify the main safety issues that need to be addressed via pan-EU or national actions. IAA provides statistical analysis support to these bodies.
- Safety Promotion Network – providing a forum for sharing of information on safety promotion activities to support new regulations (eg Drones) or specific safety issues (eg airspace infringement)

The benefit of IAA participation in these EU activities is two-fold.

- It provides valuable safety information based on safety issues identified in other EU Member States that may not yet have materialised in the Irish civil aviation system, for consideration as part of the IAA safety management processes.

– It provides an opportunity for the IAA to share information on risks identified in Ireland to benefit EU safety management processes and potentially lead to mitigating actions outside of IAA scope (eg amendments to EU regulations or guidance).

The latest edition of the ICAO Global Aviation Safety Plan 2020-2022 was published in 2019. It is also necessary to ensure that the IAA actions are consistent with the goals and safety enhancement initiatives (SEI's) included in the GASP and applicable to individual ICAO contracting States. The IAA contributes to the ICAO GASP development through participation in ICAO panels, ABIS States representation, ICAO High Level Safety Conference and EU Consultation and Safety Management International Collaboration Group.

The GASP 2020-2022 identifies six main goals:

– Goal 1 is to achieve a continuous reduction of operational safety risks.

– Goal 2 calls for all States to strengthen their safety oversight capabilities.

– Goal 3 is also aimed at individual States and calls for the implementation of effective SSPs.

– Goal 4 calls for States to increase collaboration at the regional level to enhance safety.

– Goal 5 aims to expand the use of industry programmes.

– Goal 6 focuses on the need to ensure the appropriate infrastructure is available to support safe operations.

The GASP includes State level organisational SEI's that address areas such as the States safety oversight system, safety management, human resources, collaboration between Stakeholders, as well as operational SEI's that address key operational risks. This Plan takes due consideration of the GASP goals and associated SEI's for States and where relevant cross reference to individual GASP SEI's are provided in the document.

In addition, the safety performance indicators and targets identified in Appendix II of this Plan have been updated to ensure consistency with the GASP. Although Ireland has been assessed by ICAO as having a very high level of implementation of ICAO Standards and Recommended Practices (ie 7th position in league table of world States), the GASP identifies a number of SEI's that need to be addressed in order to ensure that Ireland maintains and improves this position, as both the ICAO Annexes and the Irish safety oversight system continuously evolve.

The IAA also supports the actions of the ICAO Regional Aviation Safety Group for Europe (RASG-EUR) in developing the regional aviation safety plan (RASP) and monitoring the progress of individual States in meeting the associated safety objectives and targets.

The IAA participation in ICAO and EU safety groups also provide an opportunity to influence the safety management processes at a global level, thereby helping to improve safety standards across the world to the benefit of Irish passengers flying with foreign aircraft operators in foreign States.

This is the eleventh edition of the SPAS and like the last edition it contains two separate 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 four chapters to address State level safety management, systemic operational risk areas, and specific risks in Commercial Air Transport and General Aviation.

For convenience, the appendices provide summary lists of safety objectives, safety performance indicators and targets in the Plan, as well as identifying new actions in this version of the Plan and actions closed since the last version of the Plan was issued.

SECTION ONE

Safety Strategy

STRATEGIC DEVELOPMENT OF THE IRISH SPAS

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 and the IAA has regulatory responsibility to develop the State Safety Programme (SSP) and State Plan for Aviation Safety (SPAS) in accordance with Regulation (EU) 2018/1139 of the European Parliament and of the Council.

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, through the processes discussed in the introduction. Consultation with other State level stakeholders (i.e. institutions) is accomplished via the State Safety Program Steering Committee (ref State Safety Programme for details https://www.iaa.ie/safety/state-safety-programme).

Under Regulation (EU) 2018/1139, this Plan must include the relevant actions identified for EU Member States in the EPAS, as appropriate. This recently introduced obligation does not have a major impact on the development of the Plan, because the IAA participates in the development of the EPAS actions through the EASA Advisory Bodies Technical Boards, and has voluntarily included the EPAS recommendations for EU Member States in each edition of the Irish Plan for several years. A cross-reference between the actions in this Plan and EPAS actions for Member states is provided in Appendix V.

As discussed in the introduction, this Plan also takes due consideration of the goals and safety enhancement initiatives for States contained in the ICAO Global Aviation Safety Plan 2020-2022.

CHALLENGES AND STRATEGIC SAFETY OBJECTIVES

In light of the foregoing, the IAA has identified the following challenges for the next five years:

Maintaining a world class safety oversight system for Ireland's progressive civil aviation system

Maintaining adequate and competent resources and capability to deliver on the growing safety regulation, regulatory oversight and safety management agenda

Implementing state of the art data management, analytics and risk modelling, to facilitate enhanced safety management processes and data-based decision making in safety oversight

Planning for ongoing regulatory changes and implementing effective risk and performance-based oversight methods

Assessing evolving industry needs, new technologies and emerging risks and developing appropriate oversight requirements

Enhancing capability for safety promotion, to reach intended audience using modern content type and communications channels, including social media

Promoting positive safety culture and sharing and exchange of safety information

Influencing safety regulation development in Europe and worldwide (ICAO)

In order to meet these challenges, actions may be developed across all critical elements of the Irish safety oversight system, including:

- Structure and policy
- Regulatory Change Management
- Regulatory Oversight
- Human Resources
- Facilities and Equipment
- Safety Management
- Safety Promotion
- Performance monitoring
- Operational Risks.

Each of these critical elements is addressed in more detail in the following paragraphs, in which strategic safety objective are identified. A summary of the strategic Safety Objectives is provided in Appendix I of this Plan.

The strategic safety objectives derive from the IAA state level risk register and associated risk assessments that help identify current priorities. The risk register is subject to ongoing review to update the risk assessments following completion of mitigating actions (including relevant SPAS actions), and to address significant changes in the civil aviation system and emerging risks.

Structure and Policy

Strategic Safety Objective:

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

The IAA is currently undertaking the most significant structural change in several years through the aviation regulation reform project. The IAA has been engaged with the Department of Transport, Tourism and Sport (DTTaS) and the Commission for Aviation Regulation (CAR) on this project which will see the IAA Safety Regulator split from the IAA Air Navigation Services Provider and merge with CAR. In order to progress the project, DTTaS formed a number of sub-committees reporting to a 'High-Level Steering Group' chaired by the Director General of Civil Aviation. DTTaS also actioned a number of initiatives centred on project delivery, including:

- The draft Heads of Bill (Air Navigation and Transport Bill 2019) to give effect to the Government policy, which was approved by the Cabinet at its meeting on Tuesday 18th June 2019.
- The draft legislation then commenced the formal Oireachtas process to be developed as primary legislation with the first step; pre-legislative scrutiny by the Oireachtas Transport Committee, taking place on 10 July 2019.

An IAA Board sub-committee has also been established, with a subordinate cross-functional IAA Separation Working Group formed and tasked with documenting the scope, timelines, costs and risks associated with the proposed Separation. This Working Group comprised eight work-streams (IT, Finance, HR, Procurement, Legal, Property, Branding & Communications), and included a number of individual and cross-functional workshops to assess alternative separation models including "Full Separation" and 'Shared Services'.

In early December 2019, the Minister for Transport, Tourism and Sport issued a direction to the Chairperson of the IAA Board to the effect that as an interim measure to facilitate full formal separation at a later date, the IAA air navigation service function should be established as a subsidiary company of the IAA. Work is ongoing in respect of developing a subsidiary model in line with the Ministerial Direction.

One of the key goals of the ICAO GASP 2020-2022 is that States should strengthen their safety oversight capabilities. Although Ireland currently has a very high score for the effective implementation (EI) of the critical elements of the State's safety oversight system based on ICAO comprehensive audit, it is necessary that the safety oversight system is continuously monitored to ensure Ireland maintains in current strong global ranking, as the ICAO standards and the civil aviation system continuously evolve. ICAO has provided a number of self-assessment tools for States using on-line platforms and the IAA uses these tools to identify any actions required to enhance the safety oversight system to keep pace with change.

Strategic Safety Objective:

To continuously monitor and enhance the Irish safety oversight system to ensure it maintains its strong global ranking as the ICAO standards and civil aviation system continuously evolve.

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 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

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

The safety regulatory framework is constantly being updated to improve safety and efficiency in aviation and to support fair competition within EU. The IAA safety regulation division, and regulated entities in Ireland, must have change management processes to ensure continued compliance with the regulations. Whereas many of the regulatory changes are minor and focused on specific topics, some regulatory changes present significant implementation challenges, such as recent EU regulations on provision of ATM/ANS services and functions, changes in airworthiness regulations (eg Part CAMO, Part CAIO and Part ML) and forthcoming regulations on alcohol testing and cybersecurity.

In addition, the first set of EU implementing rules on the design and operation of drones were published in June 2019 and will become applicable in 2020. The regulations detail the rules for the placing of smaller drones on the European market and requirements for the operation of these drones which will apply in all EU States.

Regulatory Oversight

The IAA has implemented, and maintains, a comprehensive regulatory oversight programme to oversee the activities of organisations and persons involved in the Irish civil aviation system. This regulatory 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 to fulfil its obligations.

Strategic Safety Objective:

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

The performance of the IAA safety oversight programme is subject to ongoing oversight by ICAO and EASA. In addition the IAA is subject to oversight by the Department for Transport, Tourism and Sport (DTTAS) under so called "Section 32 examinations" see www.dttas.ie . All findings and recommendations issued in this regard are addressed as appropriate and some of the associated corrective actions are included in this 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. By applying risk-based oversight methods the IAA obtains the flexibility to focus its oversight activities towards areas of greatest safety concern. Risk-based oversight methods need to be supported to the greatest extent possible by data-based decision making and thus it relies on enhanced capability to collect and analyse safety information obtained from oversight activities, safety occurrence reporting, and performance monitoring across the civil aviation system. New risk-based oversight tools need to be developed to support organisational and sector-based risk profiling across all sectors. The outcome of the risk profiling allows the IAA to adjust the oversight audit plan both in terms of frequency and scope (focus) in order to target the areas of greater concern for each regulated entity.

The regulatory requirements for organisations to implement safety management systems have been well established for a number of years in some sectors (eg flight operations, aerodromes, air navigation service providers) and are only currently being introduced in other sectors (eg airworthiness). Experience has shown that it can take several years for organisations that have implemented SMS to reach a maturity level where their SMS processes could be deemed to be fully effective in allowing the organisation to understand and manage their own risks. In the case where a regulated organisation has been assessed as having a mature and effective SMS, the regulatory oversight process for that organisation would begin to transition from a compliance-based ethos to a performance-based ethos. In this environment, regulatory oversight

planning would be less influenced by the scope of the operating regulations applicable to that organisation but will be more focused on the oversight of the management system(s) of the organisation and the ability of the organisation to deliver continuously improving safety performance that meet its own safety objectives, as agreed by the regulator.

The current edition of the SPAS (ref Ch 1.6) includes actions to ensure the implementation of the risk based and performance-based oversight methodologies across the entire civil aviation system.

Human Resources

The IAA in common with all stakeholder in civil aviation must ensure continued availability of competent human resources in the face of strong demand for resources from external organisations both within and outside of civil aviation. The IAA ensures it offers competitive terms and conditions to retain staff and attract new staff as and when needed.

Strategic Safety Objective:

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

The IAA 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 1.8) identifies actions to address development of inspector competencies in human factors, risk and performance-based oversight and procurement of new skillsets in system development, data management, data analytics, risk modelling and safety promotion.

Facilities/Equipment

The staff in IAA 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).

Strategic Safety Objective:

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

The IAA Digitalisation project represents a large capital investment by the IAA to transform the current safety regulation service offering through maximising business activity within the digital environment. This is a two-year project that will see business processes, such as client management, applications processes (approvals, registration, certification, licensing etc.) and oversight processes migrate to online platforms across all domains over the next few years. It will also improve IAA Business Intelligence capability and create online portals to facilitate exchange of information between regulator and regulated entities (eg for operational performance and activity data and safety information sharing).

In addition, existing IT systems used by IAA are subject to ongoing update with a major change in the occurrence reporting system from ECCAIRS I to ECCAIRS II planned in the next two years.

Safety Management

The IAA continues to implement and evolve safety management processes to meet latest regulatory requirements. The IAA safety management processes include identification, modelling 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 improving safety. This version of the SPAS (ref Ch 1.3) has actions to implement the safety management methodologies across all aviation sectors.

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

One of the key supports for safety management for organisations and States is the timely reporting and analysis of safety occurrences. EU analysis of occurrence reporting rates of EU MS AOC holders shows that Irish commercial aeroplane operations have a strong reporting culture, however the rates in some sectors could be improved. This version of the SPAS focuses on improving occurrence reporting culture in poor performing sectors, including in general aviation.

The IAA is also very supportive of the EASA led initiatives for integrated safety risk management and is represented at Steering Board and Technical Board level on the EASA Data4Safety Project. This big-data project is now approaching the end of the proof of concept phase and has successfully demonstrated that it is capable of delivering valuable safety intelligence to members (regulators and regulated entities) based on analysis of multiple data sources (eg FDM, occurrence reports, weather, ATM etc).

The COVID-19 pandemic has a severe impact on aviation in terms of business continuity and safety of passengers and crews. A new chapter is added in this version of the Plan to address the implications and fall-out of this pandemic from safety management perspective.

Safety Promotion

Strategic Safety Objective:

To support Irish civil aviation through effective safety promotion.

The safety promotion function has gained increasing importance is recent years as a key regulatory tool. Safety promotion in the IAA involves the development and delivery of safety information, and/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. It also entails greater use of modern communications media (including social media), to provide greater outreach for safety information to individuals. The main online communications channels used by IAA for safety promotion currently are the IAA website www.iaa.ie and twitter @IAApress.

The content of safety promotion material may address regulatory changes and safety issues that emerge from safety management activities. Content development may include traditional classroom material, website articles, videos, infographics, infotoons etc depending on the target audience. In addition to providing ongoing safety information the IAA also runs specific safety promotion campaigns aimed at the wider public (eg drone safety awareness campaigns, unruly passengers).

This version of the SPAS (ref Ch 1.7) includes actions to enhance the safety promotion function in IAA.

Performance Monitoring

Strategic Safety Objective:

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

Performance monitoring is a key pillar of the safety management processes implemented by the IAA. The IAA monitors the performance of the civil aviation safety system across all sectors. 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.

Each individual chapter of Section 2 of this Plan identifies the safety issue involved and the safety objectives that the actions in the chapter are hoping to meet. These safety objectives are consistent with the strategic safety objectives highlighted in this section, however 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 Safety Performance Indicators 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). Appendix II provides a summary of all 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 ongoing 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 acceptable level of safety performance to meet ICAO Standards and related GASP safety enhancement initiatives.

Operational Risks

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

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 and this may be 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 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 including systemic risk areas and specific operational risks affecting commercial air transport and general aviation, details of which are provided in section 2. The operational risks and associated actions are also developed with due consideration of the GASP 2020-2022 Operational Safety Risk roadmap.

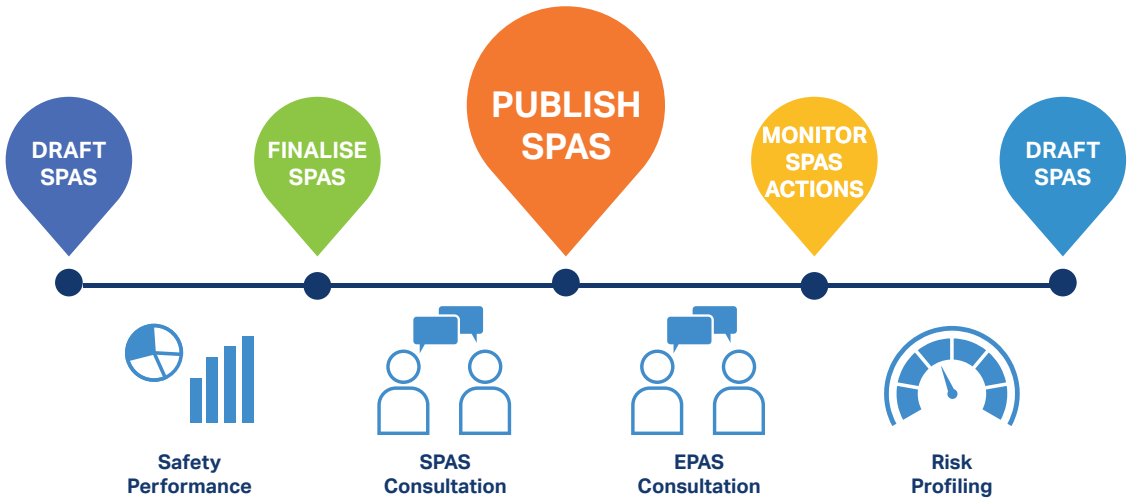
STRATEGIC ENABLERS

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 (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/competencies** – actions that relate to the provision of competent staff, including 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 (eg COVID-19).
- **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, through 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 Safety Plan is produced annually, and it addresses actions for the forthcoming 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, as well as the review and assessment of the implementation programmes for the actions in the Plan. After publication of the SPAS work begins in developing the next version of the Plan, including consultation with EASA on next version of EPAS, and review and update of risk registers, organisation and sector risk profiles. The safety management processes of risk profiling and performance monitoring are conducted on an ongoing basis throughout the year. They are depicted in the schematic as seasonal activities (Q1 and Q4) for convenience only to represent the timeframe when heightened activity is each area is conducted to support SPAS development.



Industry and general aviation contribution to the State Plan for Aviation Safety is compiled on an ongoing 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, cross-domain safety workshops and SMS oversight activities. 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.

SPAS STATISTICS

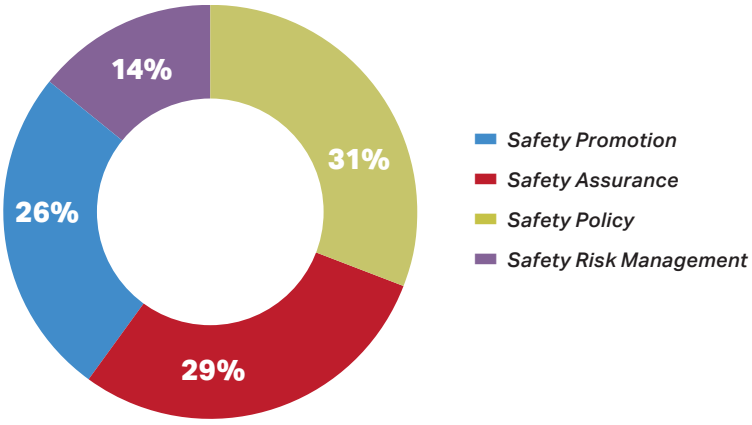
Since its inception in 2010, there have been a total of 56 risk topics addressed in the Plan with 235 associated actions to address the safety issues. Each annual addition of the Plan identifies new actions raised (Appendix III) and actions that were closed (Appendix IV) since last edition. The current edition of the Plan includes 84 actions, 59 of which have defined target dates and 25 of which are ongoing 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 for State level safety management including regulations and resources
- **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.

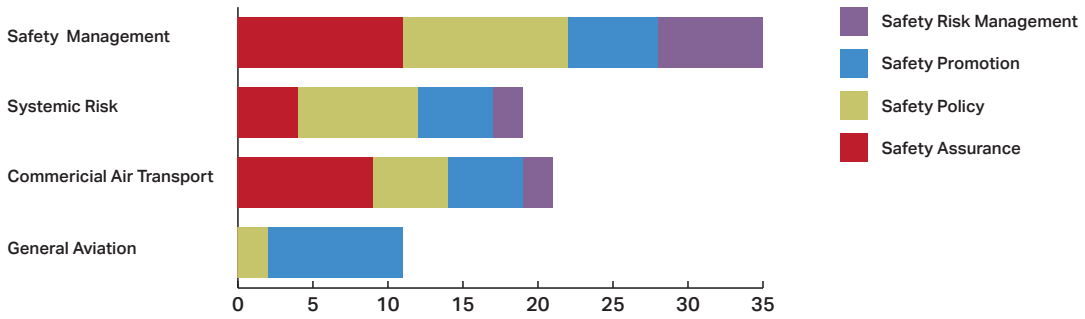
Figure 1 shows how the actions of the current version of the Plan break down between the different SSP Pillars.

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



The actions in the SPAS are broken into four chapters; safety management, systemic operational risks and specific operational risks in commercial air transport and general aviation. The breakdown of these actions by chapter and SSP Pillar is shown in Figure 2.

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



The highest proportion of actions are in the Safety Management chapter, which demonstrates the ongoing commitment by the IAA to implement the strategic enablers necessary to take full advantage of the improvements to safety management at State level as envisaged in Annex 19.

The actions to address the operational risks are primarily in the areas of safety assurance (eg focused oversight), safety policy (eg implementation of regulations, resources) and safety promotion (provision of safety information to industry). Safety promotion is one of the main tools used in the SPAS to address safety management in general aviation.

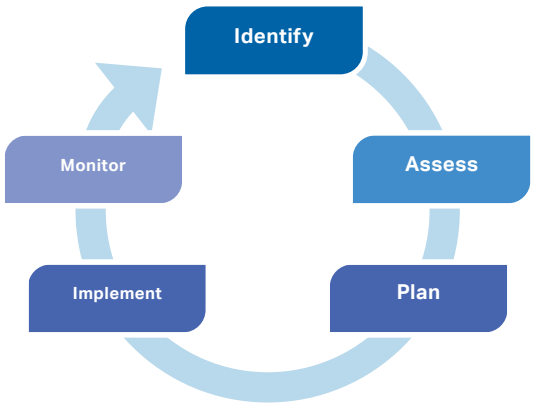
There were 23 new actions introduced in this version of the SPAS and 8 actions were closed. It is noted that since some of the tasks (eg focused oversight tasks) are completed as part of 2019-2020 oversight planning cycle they will not be completed for all affected organisations until end 2020.

At the time of writing the impact of COVID-19 on the SPAS actions cannot be fully assessed, however, some actions previously scheduled for completion in 2020 may be deferred until 2021. This is in recognition of the fact that priorities for both IAA and affected organisations are severely impacted by the COVID-19 pandemic during 2020.

SUMMARY OF THE DETAILED ACTIONS IN THE PLAN

Chapter 1, Safety Management actions address the State level actions to enhance the State Safety Programme (SSP) implemented in the State, including the update of the documented SSP processes, as published.

The actions address all pillars of the SSP including, the implementation of government policy to legally separate the IAA regulation and service provision functions. The chapter mainly focuses on actions to enhance the safety risk management processes implemented by the IAA. The actions include the implementation of state-of-the-art equipment and processes by the IAA to facilitate enhanced hazard identification and risk assessment and to implement risk-based safety oversight and safety performance monitoring.



The following figure gives a breakdown of the actions in this regard.

Identify Hazards	• SMS requirements in outstanding domains • Safety Culture and Occurrence Reporting • Enhanced Collaboration between SSP and SMS
Assess Risks	• Digitalisation Project (big data analysis) • Risk Assessments and Sector Risk Profiles • Enhanced Collaboration between SSP and SMS
Plan Safety Oversight	• Digitalisation Project (risk based oversight plans) • Oversight Planning using Organisation Risk Profiles • SPAS action planning
Conduct Safety Oversight	• Risk based oversight (compliance and effectiveness) • Competency of Personnel
Monitor Safety Performance	• Development of Safety Performance Indicators and Targets • Digitalisation Project (BI tools, dashboards/trends)

Chapters 2 through 4 of Section 2 address the operational risks including systemic risk areas, and specific risks in commercial air transport and general aviation. Many of the specific risks addressed are well known and common to aircraft operations globally, and, even if the probability of an accident or serious incident due to these specific risks is low in many cases, the consequences of the occurrence could be catastrophic (multiple fatalities). The actions in the plan take account of safety information available from ICAO (global), EASA (EU) as well as the experience of Irish operators.

The main operational risk areas addressed in this plan include

Systemic Risk Areas	• **Covid-19 pandemic** • **Brexit** • **Drones** • **Rotorcraft operations**	• **Aircraft Maintenance** • **Complex operational models** • **Parallel Runways**
Specific Risks	• **Loss of Control-Inflight** • **Controlled Flight into terrain** • **Mid-Air Collision** • **Runway Safety**	• **Ground Operations** • **Bird/Wildlife Strikes** • **Aircraft Environment**

The associated actions mainly address;

- safety policy driven tasks including; implementing procedural changes, encouraging and supporting infrastructural changes, and implementing SESAR Solutions that could help mitigate operational risks,
- safety analysis tasks; to learn more about specific operational risks,
- targeted oversight tasks; such as review of the level implementation by regulated entities of non-compliance related recommendations for improving aviation safety,
- safety promotion tasks; to provide guidance to regulated entities and aviation enthusiasts and to highlight specific areas of safety concern to targeted audiences, using modern social media platforms where relevant.

Section 2 provides a detailed account of the actions in the Plan.

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. This version of the SPAS is broken down into four chapters to address safety management, systemic risks and specific operational risks affecting commercial air transport and general aviation. Each Chapter is further subdivided into sub-chapters to address different areas of safety concern. Each chapter header includes an IAA Reference Number which identifies the domain that takes the lead role in addressing the safety issues (eg FOD.xxx – Flight Operations, ADR.yyy – aerodromes, M.zzz cross domain etc).

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 Ongoing). New actions are highlighted.
- Status – a high level summary of the status of the current actions in this area

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.

The "Systemic" chapter of last year's SPAS is split into two chapters (Chapter 1 and Chapter 2) in this version, which has resulted in some re-arrangement of sub-chapter numbers without affecting the associated content. This change is to highlight the difference between systemic tasks to address safety management and systemic tasks to address operational risks. New sub-chapters added this year include Chapter 1.8 "Competence of personnel", Chapter 2.1 "COVID-19 Pandemic", Chapter 2.5 "Aircraft Maintenance" and Chapter 3.8 "Aircraft Environment".

CHAPTER 1: SAFETY MANAGEMENT

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, as amended, 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. ICAO online self-assessment tools (ie USOAP OLF and iStars) - EI% Score, PQ tester results, safety oversight index, State safety briefing

STAKEHOLDERS/ROLES

Irish Aviation Authority – implementation of SSP and GASP safety enhancement initiatives for States

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

Industry – awareness, consultation and consideration of State safety objectives

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	Ongoing

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 2020
e)	The IAA will develop implementation guidance as necessary to support the goals of the GASP 2020-2022 in conjunction with partner States in ABIS and EU as appropriate.	Q4 2021
f)	The IAA will complete self -assessment of the Irish safety oversight system using ICAO online tools to ensure the system remains effective as the civil aviation system evolves.	Q4 2021

STATUS

ICAO GASP 2017-2019 targets have been met in Ireland and exceeded in many areas (eg USOAP Effective Implementation Score 95.06%) and the associated action c) is now closed.

The GASP 2020-2022 (latest edition) was published in 2019 and includes detailed organisational and operational safety enhancement initiatives (SEI's) for States and associated roadmap for their implementation. Due to the maturity of the State Safety Program in Ireland many of these ICAO GASP SEI's are already fully implemented, however, some SEI's provide further enhancement opportunities that the IAA will implement to ensure it's current safety oversight system remains effective as the civil aviation system continuously evolves. To this end action e) is updated and new action f) is added. Actions in other sections of this Plan are also added/updated in order to implement GASP SEI's and are annotated accordingly.

Work is ongoing in conjunction with EASA SM TeB to develop specific guidance to support the implementation of GASP and SSP (eg guidance for States on implementing 'acceptable level of safety performance').

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

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 will update this tool following publication of the updated SSP document.

The following chapters address systemic actions that the IAA is undertaking and many of these contribute to the enhancement of the State Safety Program, including safety management and risk management.

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 the next few years. This major organisational change impacts the State Safety Programme 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 (Regulator) 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 (Regulator) 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

Detailed work is ongoing to implement the government decision to separate the the safety regulation and air navigation services provision functions of the Irish Aviation Authority. Project governance includes a high level steering group chaired by the Director General of Civil Aviation and reporting sub-committees as well as IAA Separation Working Group comprising eight workstreams (IT, Finance, HR, Procurement, Legal, Property, Branding & Communications) and reporting to an IAA Board sub-committee.

Legislative actions by way of a Heads of Bill (Air Navigation and Transport Bill 2019) to give effect to the Government policy, was approved by the Cabinet in June 2019. Further amendments to primary legislation is in preparation by the Department of Transport, Tourism and Sport.

The IAA Separation Working Group has been working on documenting the scope, timelines, costs and risks associated with the project, and conducted a number of individual and cross-functional workshops to assess alternative separation models including "Full Separation" and 'Shared Services'. Following ministerial direction in December 2019, a subsidiary model is being developed as an interim measure pending enabling legislation to facilitate full separation.

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 to the fully separated organizations 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

EASA – Implementing rules for SMS in outstanding domains (eg airworthiness)

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	Ongoing
g)	The IAA will work with EASA for the development and implementation of SMS requirements in air-worthiness. ***EPAS Reference:*** RMT.0251	Q3 2021
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 and will provide feedback to EASA via the SM TeB. ***EPAS Reference:*** MST.026	Q4 2022

STATUS

Outstanding regulatory requirements for SMS in airworthiness domain are under EASA Rulemaking programme (RMT.0251 see EPAS 2020-2024 for details). COMMISSION IMPLEMENTING REGULATION (EU) 2019/1383 issued in 2019, and effective in Feb 2020 included provisions for safety management systems for continued airworthiness management organisations (CAMO's) for the first time. Implementing rules are planned for Q3 2021 for remaining airworthiness organ-isations (ie Part 145, Part 21).

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, including SMS training and guidance to assist Continued Airworthiness Management Organisations (CAMO's) and CAMO inspectors with the implementation of SMS in accordance with the new requirements in this domain.

The IAA is using the EASA MS Assessment tool to evaluate SMS implementation in the Air Operations and Aerodromes domains. The use of the EoSM tool required as part of EU perfor-mance scheme RP3 will continue to be used in the ANS domain and this tool will be tailored for use at relevant service providers that are outside of the performance scheme. The use of the MS Assessment tool for Training organisations and airworthiness is currently being planned. The

IAA will also provide feedback to EASA on the use of the SMS Assessment Tool at the SM TeB. Action h) is updated accordingly.

The actions in this chapter also address the GASP 2020-2022 SEI -13E & F for States; Issue SMS regulations for service providers and verify SMS implementation, and, identify and share safety management best practices.

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 SPIs/SPTs among States (both in EU and worldwide) would also help to harmonise safety data analysis and associated risk management strategies. ICAO has develop harmonised global SPI's to assist this process.

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/SPTs across different sectors.

STAKEHOLDERS/ROLES

Irish Aviation Authority – develop State level SPI/SPTs

Industry – develop SPI/SPTs, 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. ***EPAS Reference:*** SPT.060	Ongoing

b)	Develop process and outcome-based safety performance indicators and targets across all sectors of the Irish civil aviation system ***EPAS Reference:*** MST.001	Q4 2020
c)	The IAA will encourage organisations to develop their own Safety Performance Indicators (SPIs) with due regard to SPIs identified in Appendix II of this Plan, as appropriate to their own operations.	Q4 2022

STATUS

SPI/SPT development will be an ongoing task as long as aviation continues to change and evolve and the actions in this Plan will ensure compliance with ICAO SMM Edn 4 on SPI/SPT development.

Outcome oriented SPIs 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 is planned in other domains for outcome based SPTs. IAA actively participates and assists in statistical analysis tasks as part of EASA Network of Analysis work program to develop standardised SPI's at EU level.

As part of SMS oversight, the IAA may accept SPI/SPT's proposed by organisations as part of their own SMS, if the SPI/SPTs meet the safety objectives of the SMS. The organisations safety objectives should align with the State level safety objectives as outlined in this Plan, and as appropriate to that organisation.

Process oriented SPIs 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 – ref also Ch 1.1 action f).

Appendix II provides a summary of the SPIs currently available or being further developed by the IAA. Appendix II is also updated as appropriate to reflect the goals, targets and indicators proposed by ICAO in GASP 2020-2022. A new action c) is added to encourage organisations to consider the Irish and global harmonised SPIs in their SMS as appropriate to their operations.

The actions in this chapter also address the ICAO GASP 2020-2022 SEI-18A (States) — Develop safety performance indicators using the established safety risk management process

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 twitter. ***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 (ERCS)	Q4 2020

i)	The IAA will promote the benefits of the regulators EU ERCS and encourage it's use by regulated entities as appropriate to their needs.	Q2 2021
l)	Implement the new EASA ERCS in IAA occurrence reporting system platforms	Q4 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
n)	The IAA will implement and promote the 'just culture' body required by Regulation (EU) 376/2014, with working arrangements (governance structure, procedures, etc) that guarantee the required independence.	Q4 2020

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 and much work was accomplished during 2019 to assist organisations in transitioning their reporting systems to meet 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.

Statutory Instrument 195/2020 assigns the IAA as the authority to implement the 'just culture' body required by the Regulation (EU) 376/2014. The purpose of this body is to ensure confidence of employees in the occurrence reporting systems established at organisational and State level and thereby improve voluntary occurrence reporting and reporting on human factor related occurrences (new action n).

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 completed a similar survey for EU helicopter operators in 2019. These surveys provide statistical data to support the promotion of occurrence reporting – action k) was closed.

The occurrence reporting rates in general aviation (including Part-SPO/aerial works) remain frustratingly low. This is despite the changes that were implemented to online occurrence reporting systems following updated regulations (eg EU Reg 376/2014), legal assurance on 'just culture' and implementation of a number of changes based on lessons learned from GA safety culture surveys conducted in 2010 and 2015. The General Aviation Safety Council of Ireland (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 (eg Annex I aircraft) and has established it's own voluntary occurrence reporting system independent from IAA. The IAA will seek further opportunities to promote GA occurrence reporting by explaining the rules, just culture, confidentiality and use of data – ref existing action c) and new item n).

The EC regulation on the European Event Risk Classification Scheme for use by EU Member States was expected in 2019 but is now due to be published in 2020. 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 the end of 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 implement the new platform and engage with affected stakeholders over the next two years.

The actions in this chapter support GASP 2020-2022 SEI 20A (States) — Identify areas where collaboration/support is needed to ensure that stakeholders understand and implement safety culture concepts to fully embrace an open, just culture and non-punitive safety reporting.

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 domain based on assessment of organisation risk profile, organisation compliance profile and organisation performance profile.	Q2 2021
g)	The IAA will ensure adequate resources are available to support data-based decision making (including systems development, data management and risk modelling) and safety promotion.	Q4 2022
h)	The IAA will 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 amedium-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. Further improvements made in 2019 included the increased use of sector risk registers, risk assessments and risk profiling in more domains, and the procurement and use of bowtie methodology for risk modelling purposes.

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 chapter 1.7 Digitalisation Project and new chapter 1.8 Competency of personnel). Previous action f) in this chapter concerning training of staff was re-defined and re-located to chapter 1.8.

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 Digitalisation

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.

To implement functions in the IAA ebusiness and digitalisation 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 implemented on new digitalisation platform.

Availability of business intelligence and 'big data' management tools from the digitalisation project to support safety management and RBO/PBO in all sectors

STAKEHOLDERS/ROLES

Irish Aviation Authority – ebusiness and digitalisation project delivery, migration of all compliance oversight functions from 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 2020
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 digitalisation project.	Q4 2022
d)	The IAA will develop the processes and systems necessary to enhance the current safety analysis capabilities including the development of Big Data analytics	Q4 2021

STATUS

The IAA Digitalisation project was approved by the IAA Board, and procurement contracts have been finalised. This is a two-year project that will see business processes, such as client management, applications processes (approvals, registration, certification, licensing etc.) and oversight processes migrate to online platforms across all domains over the next few years.

Work is underway in defining detailed specification for project delivery over the next two years based on the project delivery schedule. Initial deliverables include new Drone User registration, aviation security oversight modules. The ATM/ANS oversight module is scheduled for delivery by end 2020. Current integrated audit management processes implemented on EMPIC will also migrate to the new digital platform.

The digitalisation project will also improve IAA Business Intelligence capability and create online portals to facilitate exchange of information between regulator and regulated entities (eg for operational performance and activity data and safety information sharing). Target dates were updated to reflect current digitalisation project plan.

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 in conjunction with the eBusiness and Digitalisation project.

1.8 - M015 Competency of Personnel

SAFETY ISSUE

The IAA must ensure it has sufficient and competent staff to fulfil its obligations under ICAO Annexes and EU and national regulations. In additions to maintaining competencies required by regulations, the current focus is on new competencies required for safety management processes including risk management, performance monitoring, risk and performance-based oversight and human factors. In addition, new competencies are required to address new oversight activities regarding specific or emerging risks eg drones, cybersecurity, human factors, alcohol testing etc.

SAFETY OBJECTIVE

To ensure that the IAA procures and maintains sufficient and competent staff to oversee the continuously evolving civil aviation system.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Resource capacity and training completion rates per IAA regulatory functional areas

STAKEHOLDERS/ROLES

EASA – Implementing rules to support competency requirements

Irish Aviation Authority – procurement and training of staff

Industry/persons – stakeholder awareness

	ACTIONS	TARGET DATE
a)	The IAA will ensure that it has sufficient qualified and trained inspectorate staff to properly discharge their safety oversight responsibilities in a risk-based and performance-based regulatory environment ***EPAS Reference:*** MST.032 a).	Q4 2022
b)	The IAA will ensure that relevant inspectorate staff in all domains are fully trained in oversight (compliance and effectiveness) of organisation management systems, particularly focused on oversight of safety culture, governance structures, interaction between risk management and performance monitoring, and the use of inspection findings and safety information such as accidents and incidents ***EPAS Reference:*** MST.032 c)	Q4 2021

c)	The IAA will ensure that relevant regulatory staff are trained in oversight of the effective management of human factors by regulated entities.	Q4 2021
d)	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	Q4 2020
e)	The IAA will provide feedback to EASA on how the Language Proficiency Requirements is implemented, to share best practices and identify areas for improvement and harmonisation ***EPAS Reference:*** MST.033.	Q4 2021
f)	The IAA will ensure it has sufficient competent staff to oversee flight time specification schemes, in particular those relating to effective fatigue risk management by operators and advise EASA. ***EPAS Reference:*** MST.034.	Q4 2020

STATUS

The IAA has detailed procedures for resource planning across all functional areas that require annual review. The procedures also ensure resource review following any significant changes to IAA organisation, regulations, regulated entities, facilities etc. The IAA separation project discussed in Chapter 1.2 above, includes a full safety regulation resource review including provision for services currently shared with the ANSP, such as corporate, HR, finance, ICT etc.

In order to meet the standards of Annex 19 safety management, and comply with the authority requirements for management systems required by EU regulations the IAA is also recruiting additional staff, as well as upskilling existing staff to provide the new competencies needed by the IAA for conducting oversight in a risk-based regulatory environment. This entails new competencies in the areas of data management and risk modelling and assessment as well as new competencies for oversight inspectors to oversee performance-based regulations.

The oversight of organisations management systems (including compliance and safety management systems) must ensure that organisations are fully in control of their own risks and consequently IAA SMS inspectors need additional competencies to ensure that organisations safety management systems are both compliant with the regulations and effective in improving safety.

There is a need for regulatory staff to have specific HF competencies to be able to perform their duties on overseeing how effectively human factors are managed within organisations, as it is a significant contributor in assuring a high level of safety.

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.

Specific actions are included in this chapter of the Plan to address Language Proficiency Training and oversight of flight time specification schemes in response to actions for member states included in the latest version of EPAS 2020-2024.

The actions in this chapter support the GASP 2020-2022 safety enhancement initiatives for States:

SEI-5 — Qualified technical personnel to support effective safety oversight

SEI-19 — Acquisition of resources to increase the proactive use of risk modelling capabilities

1.9 - 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. Closer collaboration between the safety management processes in the SSP and the safety management processes in organisations SMS will greatly enhance the ability to identify the key areas of safety concern.

SAFETY OBJECTIVES

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 a 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, as part of SMS oversight of approved and declared organisations. ***EPAS Reference:*** MST.028.	Ongoing

b)	The IAA will establish a national FDM forum with affected Irish aircraft operators to promote the benefits of FDM and promote good practices document produced by the European Authorities Co-ordination Group on Flight Data Monitoring (EAFDM). ***EPAS Reference:*** MST.003	Q4 2020
c)	The IAA, in conjunction with industry, will establish the methodology and processes to share safety information between SSP/SMS, over and above the current data provided under the mandatory and voluntary occurrence reporting schemes.	Q4 2021
d)	The IAA will work with organisations to ensure that Human Factors principles are fully integrated into Safety Management processes.	Ongoing

STATUS

In the recent years the actions in the Plan addressed the integration of human factors and the assessment of key risk into organisations safety management process. Both of these areas are now part of normal SMS oversight activities however they are retained in the Plan as ongoing tasks pending the assessment of the SMS audit findings in this area over the next oversight cycle.

The IAA intends to establish a national FDM forum for Irish aircraft operators during 2020. Additional IAA inspectors were trained in the area of FDM oversight during 2019 to further assist the process.

The risks identified in the safety management systems implemented by the organisations SMS should be fed back to the State to ensure that sector-based risks can be identified, and related State level safety objectives be developed and shared across the sector. Conversely, the organisations safety objectives should align, as appropriate, with the safety objectives identified at State level, in order to ensure that sector-based risks have been considered by each organisation operating within that sector. The IAA is developing processes to facilitate the sharing and discussion of this safety information both within and outside of the formal audit processes (eg safety occurrence review meetings, industry workshops, promotion of SPAS etc). The eBusiness and Digitalisation project (ref Chapter 1.7) will provide further opportunity for ongoing electronic sharing of safety information.

New Chapter 1.8 "Competence of personnel" has specific actions to enhance the competence of IAA inspectors to oversee the compliance and effectiveness of SMS.

The actions in this chapter support GASP 2020-2022 SEI's for States including;

20D - Collaborate with national and industry stakeholders…

21C - Encourage information-sharing with industry.

CHAPTER 2 – SYSTEMIC OPERATIONAL RISKS

2.1 - M.016 COVID-19 Pandemic

SAFETY ISSUE

The COVID-19 pandemic is a major global health crisis that has severe impact on all stakeholders of the Irish civil aviation system. Organisations are required to scale down operations to meet health authority instructions and an almost total cessation of air traffic. The IAA must provide regulatory support to industry in this time of crisis and ensure the dramatic changes required in response to the virus are implemented in accordance with robust change management and risk management processes.

SAFETY OBJECTIVE

To ensure that the changes required during operational wind-down, and return to normal operations procedures in consequence of COVID-19 pandemic are properly and safely managed.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Serious non-compliances, accidents, serious incidents and incidents attributable to COVID-19 change management

STAKEHOLDERS/ROLES

Government Departments – policy decisions in respect of COVID-19.

EASA – common approach to exemption criteria and guidance to support regulated entities during COVID-19 crisis

Irish Aviation Authority – assist industry with practical requirements (eg exemptions) and guidance, oversight of change management, including risk assessments

Industry – change management during operations wind-down, management of contingency procedures during the crisis and return to normal operations after the crisis is over.

ACTIONS		TARGET DATE
a)	The IAA will support Irish industry during the COVID-19 crisis to address regulatory issues (including exemptions, AltMoc where appropriate) required to scale down operations and the use of contingency measures.	Q4 2020
b)	The IAA will co-ordinate with EASA as necessary to ensure consistency in European approach in respect of contingency measures and safe return to normal operations	Q4 2020
c)	The IAA will ensure robust change management and risk management process are followed in respect of the dramatic changes required in response to COVID-19 including return to normal operations as COVID-19 restrictions are eased.	Q4 2020

STATUS

The IAA implemented crisis management procedures at an early stage in the spread of the virus. The IAA remains fully supportive of the national effort to contain and delay the spread of COVID-19 and implemented measures in response to Government and health authorities advice, including self-isolation of staff, closure of offices, remote working for staff where possible and social distancing.

The IAA safety regulation division has implemented ICT capabilities to support remote working for all managers and inspectors that supports continuity of regulatory service, even as government "stay at home" policies emerged. This means that safety oversight and safety management tasks continue, albeit with limited options to conduct some oversight tasks, such as inspections and site audits, that are deferred. The IAA has been able to maintain full engagement with industry to guide them on regulatory matters during the crisis and provide exemptions and approvals as necessary to support contingency measures necessary in the national interest.

The IAA also co-ordinates with EASA to ensure consistent European efforts to address the COVID-19 crisis. EASA Safety Directives (eg SD No: 2020-01, issued 13 March 2020 concerning disinfecting aircraft) are reviewed with affected operators and EASA guidance (eg transport of cargo on passenger aircraft) is used to support contingency measures implemented by operators. IAA Aeronautical Notice O.84 was also issued in this respect. The IAA also co-ordinates with the EC/EASA to address deferment of regulations and issuance of exemptions as necessary to support industry and to provide guidance for return to normal operations safely whilst protecting against the spread of the virus due to air transport. The IAA will ensure that the pan-EU operational recommendations on responding to the threat of COVID-19 (eg via EASA SIB's, guidance, notifications) are properly considered as appropriate by IAA regulator and affected organisations.

The IAA will continue to ensure that affected organisations change management processes and risk management processes are robust enough to manage the winding down of operations in response to the COVID-19 crisis, the management of contingency measures during the crisis and the safe return to normal operations in conjunction government policy.

2.2 - 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 ensure that the changes required during the transition to the post-Brexit environment, are properly managed to help minimise the risks to Irish industry

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 2020

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 on international agreements and Irish industry.

The IAA contingency planning ensured that there was no major disruption to Irish civil aviation throughout 2019 as the various stages and levels of uncertainty on deal or no-deal Brexit played out in Britain. The implications of Brexit continued to generate increased applications to the IAA in 2019, from UK based persons (aircrew and engineer licensing) and organisations (maintenance and air operations). The IAA will continue to support Irish industry on issues that arise as the discussions continue regarding the implications of Brexit, on all aspects of aviation, following the termination of the transition arrangements at the end of 2020.

2.3 - 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 by private or professional users 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

Department of Transport, Tourism and Sport - policy decisions in relation to designation of market surveillance authority, notifying authority and U-Space

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 EASA Drone Implementing Workshop and 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 (***EPAS Reference:*** SPT.091).	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
i)	The IAA will develop a safety promotion campaign to ensure Irish private and professional drone users are aware of new EU regulations and updated policies and guidance	Q4 2020

STATUS

The current focus of activity in this area is the implementation of new EU Regulations on Drones, namely Implementing Act Reg (EU) 2019/947 including requirements relating to operation and registration of drones and Delegated Act Reg (EU) 2019/945 including requirements related to CE marking, technical requirements and third country operations.

The IAA launched a cross domain drone rules implementation project team to address the multifaceted elements, including state policy, safety promotion, airspace, operations, airworthiness, equipment standards, licencing, training, security and oversight. The project Team will continue to function until the end of 2022 to meet the various calendar milestones included in the regulations. A full review of the impact of the regulations on existing policy and guidance for the open and specific categories of drone operations is currently underway and relevant policies and guidance are being updated. The project team also consults with external stakeholders (eg Department of Transport Tourism and Sport, Irish accreditation bodies, ANSP's, professional drone users etc) as necessary to implement the new regulations.

The current IAA Drone Equipment Register will migrate to a new Drone Operator register as required by the EU regulations which will be hosted on a new platform as part of the IAA digitalisation project (ref also Ch 1.7 above).

The IAA is also working on a detailed communications strategy to promote the new regulations and updated guidance to Irish public and professional drone users. The content will include website articles, videos, animations and infographics tailored to suit intended audience with a

specific drone safety promotion campaign to coincide with the applicability date of the regulation – new action i) above. The IAA dedicated website https://www.iaa.ie/general-aviation/drones is continuously being updated to provide the latest available guidance for those interested in operating drones as private or professional users.

The IAA continues to support the European initiatives in this area including the EASA UAS Implementation Workshop and Joint Authorities for Rulemaking of Unmanned Systems Group (JARUS) on the development of the regulations and related guidance (ie AMC/GM).

2.4 - 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 ongoing management of safety by organisations with complex business models, or novel work practices, could have a detrimental effect on safety.

SAFETY OBJECTIVE

To ensure appropriate oversight processes are in place to oversee complex organisations and new business or novel work practices.

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 novel work practices

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.032 b).	Ongoing
b)	The IAA will ensure it has a thorough understanding of operators' governance structure, in particular, extent of outsourcing, 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 2021
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 ongoing. The IAA co-ordinates with all affected NAA's during overseas audits and shares information as appropriate on an ongoing basis. Action a) is retained in the Plan as an ongoing task.

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 ongoing surveillance. Action c) is retained in the Plan as an ongoing task.

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 in conjunction with EASA. The IAA participated in EASA Working group on this topic and the issue was also reviewed at EASA Air Ops TeB. EASA guidance on effective oversight of group operations is due in 2020 to assist this task and action b) is extended accordingly.

The actions in this chapter support the GASP 2020-2022 SEI-11 (States) — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner.

2.5 - AWSD.007 Aircraft Maintenance

SAFETY ISSUE

The incorrect performance of aircraft maintenance or continuing airworthiness management could affect the airworthiness of an aircraft and lead to on-board technical problems that could impact safety of flight.

SAFETY OBJECTIVE

To continuously improve safety by assessing and mitigating the risks relating to aircraft maintenance and maintenance management involving Irish maintenance and maintenance management organisations.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to aircraft maintenance and maintenance management issues.

STAKEHOLDERS/ROLES

Irish Aviation Authority – analysis of aircraft maintenance and maintenance management occurrences rates and trends and identification of sector-based safety issues

Industry (Air Operators) – managing aircraft maintenance related safety risks and reporting pre-cursor events that could result in an aircraft maintenance or maintenance management related occurrence.

ACTIONS		TARGET DATE
a)	The IAA will develop the sector risk register and sector risk profile to address aircraft maintenance and aircraft maintenance management activities.	Q4 2020
b)	The IAA will focus on the risk of fraud in maintenance Part-147 examinations, including by adding specific items in audit checklists and collecting data on the actual cases of fraud. ***EPAS Reference:*** MST.035.	Q4 2021

STATUS

The lack of regulatory requirements for SMS in the Airworthiness domain (see also Ch 1.3 above) has meant that the safety management processes in this domain have not kept pace with developments in other domains, such as flight operations, aerodromes, air navigations services provision etc. This is not to say that airworthiness organisations do not manage safety very well, it just means that they don't have to comply with SMS requirements and therefore do not have standardised risk management processes.

SMS requirements have now been introduced into the regulatory framework for continued airworthiness management organisations (Part M) , and SMS requirements for maintenance organisations (Part 145) will be published in the next two years. Accordingly, the IAA has begun the work to develop the risk register and sector risk profile for Part M/145 activities to help develop State level mitigating actions and to assist organisations in developing their own SMS (new action a)).

New action b) derives from EPAS action to encourage EU Member States to focus on the risk of fraud in Part-147 maintenance training organisations. Although the IAA is currently unaware of any cases of fraud in Irish Part-147 organisations, the action is added to the Plan in order to gather more information from Irish Part-147 organisations through the conduct of regular training and examination audits.

2.6 - 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, (loss of control – inflight), 2.2 (terrain conflict) and 2.3 (mid-air collision) 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

Department of Transport, Tourism and Sport – policy in respect of oversight of civil helicopter operators in the conduct of State functions.

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 2021
c)	The IAA will develop rotorcraft specific safety promotion campaigns to address key risks in rotorcraft operations, including specific helicopter safety workshops if required ***EPAS Reference:*** MST.015.	Q4 2021

STATUS

The safety issues identified in this version of the Plan may be applicable to either or both offshore and onshore helicopter operations. Action Chapter 1.9 a) "The IAA will target the key risks identified in this Plan, as part of SMS oversight of approved and declared organisations. EPAS Reference MST.028", 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.

The IAA continues to engage with European initiatives to address rotorcraft safety and in particular the measures in the European Rotorcraft Safety roadmap that pertain to national authorities, such as continued aviation education and flight crew training. The IAA also participates in the EASA/NAAs Helicopter Offshore Coordination forum to address specific risks in this area. No new actions are currently proposed in this version of the Plan in this regard, pending consultation with industry via the newly formed Helicopter Operators Consultancy Group.

The roadmap also addresses safety promotion in the helicopter operations domain and the IAA is engaged with the EASA Safety Promotion Network – Rotorcraft to share information and implement specific EU wide safety promotion campaigns. Although helicopter safety promotion activities in Ireland are normally included with fixed wing equivalent activities (eg for AOC holders and general aviation (eg GASCI)), a new action c) is included in this chapter to ensure the specific risks for helicopter operations are addressed, including organisation of specific helicopter safety promotion activities (ie campaigns, helicopter safety workshops) if needed.

EPAS MST.031 requests that EASA Member States together with their ANSPs, 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.

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.

2.7 - ASD.003 Implementation of Parallel Runway Operations

SAFETY ISSUE

The growth of civil aviation has led to capacity issues for some aerodromes 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 in due to the introduction of parallel runway operations, integrated safety oversight of the change management projects affecting aerodromes, ANSP and flight operations.

Industry (ANSP, Aerodromes, 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 runway operations 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. The project construction (including new control tower and runway) is well underway and risk management processes have been found to be effective during the construction phase.

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

The construction programme is underway and risk mitigation measures (including site access, re-designation of existing runways, temporary closure of runways at critical stages) ensure no adverse safety effect on aerodrome operations. Ongoing analysis of occurrences has not revealed any safety concerns regarding aerodrome operations during the construction programme.

CHAPTER 3 – SPECIFIC OPERATIONAL RISKS - COMMERCIAL AIR TRANSPORT

3.1 - 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 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 Upset 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
i)	The IAA will provide guidance to industry on the implementation of proposed new EU regulation on fuel planning and fuel management	Q4 2020
j)	The IAA will work with EASA to develop guidance for operators on the mitigation of risks associated with icing in flight	Q4 2021

STATUS

Previous versions of this Plan have addressed mitigating actions in this area, such as competency requirements for IAA inspectors assessing evidence based and competency based (EBT/CBT) training programmes, and, updated policies, procedures and training for inspectors in respect of oversight of the integration of CRM into flight crew training and operations, including abnormal and emergency procedures and emphasising crew resilience, surprise and startle effect.

The European regulatory framework includes recurrent and conversion training provisions related to Upset Prevention and Recovery Training (UPRT) and regulations pertaining to loss of control during go-around and climb, and FSTD fidelity. 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.

Icing in flight if not properly managed can result in a loss of control accident or serious incident. EASA EPAS 2020-2024 identifies the need to raise awareness of this safety issue through provision of information on the situations where icing in-flight may occur and how flight crew can recognise some of the factors that might lead to accidents and measures that operators and flight crew can take to mitigate the risk of an accident occurring.

The IAA participates in the EASA Safety Promotion Network which is tasked with delivering safety promotion tasks (SPT) of the EPAS. The specific tasks that address the safety issues discussed above include

- SPT.012 Promotion of the new European provisions on pilot training (ie UPRT)
- SPT.102 Raise awareness of the risks posed by icing in-flight and potential mitigations

Fuel management includes pre-flight fuel planning, inflight fuel management and flight planning in respect of selection of aerodromes and alternates. New EU regulations to 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 has developed the relevant

internal policies and procedures during 2019 to facilitate the approval of "fuel schemes", and will provide support and 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.

The actions in this chapter support the GASP 2020-2022 Operational SEI Mitigate contributing factors to LOC-I accidents and incidents

3.2 - 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 2020

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. The IAA has developed the PBN transition plan as required under EU regulations and submitted to EU Network Manager and FAB partner. The IAA has been actively assisting and encouraging the delivery of the Irish PBN implementation plan, which remains on track to be completed by end of 2020.

EPAS MST.031 requests that EASA Member States together with their ANSPs, to 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. This issue is addressed in chapter 2.6 Rotorcraft operations above.

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.

The actions in this chapter support the GASP 2020-2022 Operational SEI Mitigate contributing factors to CFIT accidents and incidents

3.3 - 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. The European Action Plan for the Prevention of Airspace Infringement Risk Reduction (EAPAIRR) was issued to help mitigate this risk.

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
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 2021
i)	The IAA will review the actions taken by Irish air operators to address the recommendation of EASA SIB 2013-11R1 issued Jan 2020, in respect of AOM instructions following ACAS RA, as part of oversight activities.	Q4 2021

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. Ongoing monitoring is provided in the oversight programme.

A detailed analysis of ATM related occurrences was completed and key finding shared with industry stakeholders during cross domain workshop in 2018. Recommendations to address key findings were confirmed as fully implemented during 2019 and action g) was closed. The analysis also identified areas for further risk assessment, specifically related to protection of runway, that would include potential for accidents categorised as runway incursion or mid-air collision in close proximity to the runway (eg during the go-around). Refer to Chapter 3.4 for more details on this action.

EPAS MST.030 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 ANSP, in conjunction with COOPANS Alliance partners, works closely with the SESAR initiative and ensures state of the art technologies are implemented.

EASA SIB 2013-11 on ACAS II "Manoeuvres based on visual acquisition of traffic" was revised and re-issued in January 2020 to update the recommendations for operators in respect of AFM instructions this regard. The IAA will promptly ensure that Irish operators are aware of the recommendations of this SIB and will review the actions taken by operators as part of oversight activities – new action i).

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.

The actions in this chapter support the GASP 2020-2022 Operational SEI Mitigate contributing factors to MAC accidents and incidents

3.4 - M.007 Runway Incursions

SAFETY ISSUE

A runway incursion (RI) involves the incorrect presence of an aircraft, vehicle, person on the protected area of a surface designated for the aircraft landing and take-off. 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 certificated and nationally licensed 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 aerodromes.

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.011	Ongoing
c)	The IAA will review the level of implementation of recommendations for service providers contained in the EAPRRI Version 3, as part of the oversight cycle ***EPAS Reference:*** MST.014	Ongoing
e)	The IAA will work with ANSP's and aerodrome 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
f)	The IAA will assess the performance of organisational change management processes for procedural and/or infrastructural changes on the manoeuvring areas at Irish airports (EAPPRI V3).	Q4 2021
g)	The IAA will conduct risk modelling, risk assessment and safety analysis of loss of situational awareness and low visibility runway operations in the ATM/ANS domain	Q4 2021

STATUS

Much work has been accomplished in this area in the past 10 years including implementation of EAPPRI Version 2 recommendations at State and industry level. Runway Safety Teams are established at all certificated aerodromes. EAPPRI Version 3 was issued in 2018 and new recommendations for the regulator as well as for regulated entities were reviewed during 2019 – action d) was closed.

From the regulator's perspective there are some new recommendations on performance assessment of manoeuvring area change management processes (new action f)) and state level focus on RI by incorporating the risk into SPAS (ie this Plan), promotion of EAPPRI which have already been addressed and establishment of State level runway safety group. Whereas, the level of activity and rate of RI in Ireland does not support the establishment of standing State level RI safety group, action c) of chapter 2.7 establishes an IAA cross domain team to review runway/taxi way occurrences during the major project to implement parallel runways in Dublin airport.

The IAA performed an analysis of ATM related occurrences reported under mandatory reporting regulations as per action in previous versions of this Plan. Following review of this analysis an area for further investigation was identified relating to runway safety. The IAA will conduct detailed risk modelling, risk assessment and safety analysis of loss of situational awareness in the ATM/ANS domain and low visibility runway operations – new action g).

There are a number of additional or enhanced recommendations for organisations which aim to capitalise on the availability of SMS to assess the effectiveness of cross domain working arrangements and local runway safety teams as well as specific recommendations addressing control of aerodrome works, vehicle drivers, stop bars, NOTAMs etc. Ongoing action c) will ensure that the implementation of updated recommendations of EAPPRI will be reviewed during oversight activities.

EPAS MST.029 requests that EASA Member States, together with their ANSPs and aerodrome 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. Solutions implemented or being implemented include A-SMGCS and moving map related security alerting systems.

The IAA continues to work with AOC holders, ANSP's and aerodrome 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.

The actions in this chapter support the GASP 2020-2022 Operational SEI (States) Mitigate contributing factors to RI accidents and incidents.

3.5 - 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 certificated and licensed 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, Aerodromes) – 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 review the level of implementation of EAPPRE recommendations for service providers as part of oversight cycle. ***EPAS References:*** MST.007, SPT.075	Ongoing
k)	The IAA will promote the new ICAO format for runway surface condition reporting and provide guidance to industry during it's implementation	Q4 2021

STATUS

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

One of the main precursors to RE related accidents and serious incident is the braking action not matching expectations due to technical issues with the assessment and reporting of runway surface condition regarding friction testing. ICAO has developed the global runway condition assessment and reporting format proposed for implementation during 2020. The methodology includes a Runway Condition Assessment Matrix (RCAM) and a Runway Condition Report (RWC) and these inputs are then incorporated within a new NOTAM/SNOWTAM format. This new reporting format has cross domain applicability including aerodromes, flight operations and air traffic control and the IAA has established a project team consisting of appropriate inspectors from affected domains to promote the new requirements and provide guidance during the implementation – new action k).

The IAA continues to work with AOC holders, ANSPs and aerodrome 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.

The actions in this chapter support the GASP 2020-2022 Operational SEI (States) Mitigate contributing factors to RE accidents and incidents

3.6 - 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 and fatal accidents have occurred due to incorrect loading of cargo.

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, Aerodromes) – managing ground operations related safety risks and reporting ground operations related occurrences

	ACTIONS	TARGET DATE
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 support EASA in developing forthcoming EU regulations on ground handling, will implement requirements for authorities and support industry with the implementation of related organisational requirements (EU Implementing Rules and AMC pending)	Q4 2022

j)	The IAA will review actions taken by affected Irish regulated organisations to address the recommendations of EASA SIB 2019-02, in respect of threat of explosive door openings of parked aircraft by ground handling, RFFS staff, flight operational and maintenance staff.	Q4 2021

STATUS

New EU Basic Regulation 2018/1139 broadens the scope of the EU regulatory framework to include Ground Handling organisations. The IAA actively participated in European ground handling workshop (industry and regulators) in 2019 which reviewed issues such as management system, operational standards, ground support equipment, training, staff turnover and oversight as part of ground handling roadmap development to support rulemaking (Ref EASA rulemaking task RMT.0728) and safety promotion. The roadmap includes detailed actions under each of the main areas and the IAA continues to support EASA in this regard.

The IAA hosts an annual cross-domain safety workshop, 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 ground handlers. The IAA oversight activities continue to focus on subcontract control and safety promotion in ground handling organisation.

The recommendations arising from analysis of high-risk occurrences in the movement area (apron and taxiways) identified a number of focused oversight tasks in ground handling (eg loading, aircraft ground handling, ground service equipment, mass and balance checks) which were completed in 2019. Recommendations on occurrence reporting deficiencies were addressed with the transition to ECCAIRS portal. Further safety analysis is ongoing in respect of the introduction of parallel runways (ref Chapter 2.7). Action e) was closed.

EASA SIB 2019-02 on the risk of explosive door opening on parked aeroplanes that could impact anyone seeking to enter a parked aircraft including flight crews, ground handling staff, RFFS staff, maintenance staff and contain recommendations for associated organisations to address this risk. The IAA will ensure that affected Irish regulated entities are aware of the recommendations of this SIB and will review the actions taken as part of oversight activities – new action j).

The IAA continues to work with AOC holders, ANSPs and aerodrome 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.

3.7– ADR.002 Bird and Wildlife Strikes

SAFETY ISSUE

Bird and Wildlife strikes may cause significant damage to an aircraft structure or flight controls, and aircraft engines (especially jet-engines) are vulnerable to the loss of thrust which can follow the ingestion of birds into engine air intakes which may lead to an accident

SAFETY OBJECTIVE

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

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

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

STAKEHOLDERS/ROLES

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

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

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

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

STATUS

The National Bird Strike Hazard Committee chaired by the IAA has been reconstituted as the National Bird/Wildlife Hazard Committee in Ireland which reviews both birdstrike and wildlife strike analysis reports and assesses the effectiveness of mitigation measures in use in the State – action c) was closed. The IAA provides annual statistical analysis of Bird strikes and Wildlife strikes at certificated aerodromes and will continue to work with all stakeholders to ensure that the National Bird/Wildlife Hazard Committee enhances its capability in terms of analysis of data and identifying safety issues / best practices for wildlife strike hazard reduction – new action d).

EPAS 2020-2024 includes new rulemaking task (RMT.0726) addresses certification of rotorcraft to improve occupant safety in the event of a bird strike and new safety promotion task (SPT.093) addressing bird strike risk to rotorcraft. The IAA is an active participant in the EASA Safety Promotion Network helping to devise and promulgate EU safety promotion material to address EPAS SPT tasks.

3.8 – M.009 Aircraft Environment

SAFETY ISSUE

The aircraft environment must be protected to ensure the safe transport of passengers and crew. The aircraft environment can be affected by sudden aircraft de-pressurisation, poor cabin air quality or airborne viruses, which could cause severe discomfort or illness for those on-board, but the greatest risk is on-board fire, which if uncontrolled, could cause loss of control of the aircraft. Emerging hazards in this area is the carriage of lithium batteries on board the aircraft and unruly passenger behaviour.

SAFETY OBJECTIVE

To continuously improve safety by assessing and mitigating the risks relating to the aircraft environment involving Irish commercial aeroplane operators.

SAFETY PERFORMANCE INDICATORS (REF APPENDIX II FOR DETAILS)

Accident, Serious Incident and Incident rates and trends related to aircraft environmental issues involving Irish commercial aeroplane operators.

STAKEHOLDERS/ROLES

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

Industry (Air Operators) – managing aircraft environmental related safety risks and reporting pre-cursor events that could result in an aircraft environmental occurrence.

	ACTIONS	TARGET DATE
a)	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	Ongoing
b)	The IAA will work with industry stakeholders to address the risks caused by unruly passenger behaviour on board aircraft operated by Irish AOC holders.	Q4 2021

STATUS

The main focus of the actions in the current version of the Plan is on the risk of on-board fire. In-flight fire can ultimately lead to loss of control, either as a result of structural or control system failure, or as a result of crew incapacitation. Fire on the ground can take hold rapidly and lead to significant casualties, notwithstanding evacuation and emergency response. Smoke or fumes, whether they are associated with fire or not, can also lead to passenger and crew incapacitation.

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 operational risks associated with the carriage of lithium batteries by aircraft operators (eg in cargo). IAA flight operations oversight activities including Safety and Emergency Procedures Training and Flight Crew Training encompass oversight of this area and the associated action was closed.

The potential threat of fire due to lithium batteries is still a focus in the Plan. Further work is underway to promote the hazards associated with the carriage of Lithium Batteries primarily focused on the risk of fire due to inappropriate storage of lithium batteries in passenger checked-in baggage. This activity will continue for the foreseeable future and the action is changed to an ongoing task.

The safety of flights, passengers and crew can be affected by the unruly behaviour of a small minority of passengers. Unruly behaviour can include intoxication, aggressive or inappropriate behaviour, as well as failure to follow the instructions of flight crew, who are there to protect passenger safety. The Irish Aviation Authority (IAA) joined the global partnership spearheaded by the EASA #notonmyflight campaign to remind passengers of their responsibilities to fellow travelers and flight crew and to encourage passengers to be mindful of the negative impacts of unruly behaviour. In addition, the IAA led a safety initiative with Irish industry culminating in a joint declaration to tackle this problem, and continues to monitor the unruly behaviour occurrences on flights operated by Irish AOC Holders (new action b)).

The IAA continues to work with AOC holders to ensure they include aircraft environment risks (eg FIRE-NI) in their own SMS, and that they develop their own safety objectives, safety performance indicators and targets, with due consideration of this Plan.

CHAPTER 4 – SPECIFIC OPERATIONAL RISKS – GENERAL AVIATION

4.1 – 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. ***EPAS Reference:*** MST.025	Ongoing
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	Ongoing

c)	The IAA will work with GASCI to develop and promote Safety Information to the general aviation helicopter community in Ireland. ***EPAS Reference:*** MST.015	Ongoing
d)	The IAA will promote airworthiness safety information (eg aircraft equipment failure and maintenance) for dissemination to the general aviation community.	Ongoing

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 on facebook and twitter. 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 EASA General Aviation Roadmap (current version 2.0) contains a number of initiatives to assist the GA community. The IAA will also provide related guidance to GA community in implementing these initiatives.

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) and through GASCI safety evenings. IAA Safety Leaflet IGA3 was updated in 2017 to provide latest guidance on the maintenance of GA aircraft, engines and components with low utilisation.

The IAA provides safety promotion and guidance material for general aviation on https://www.iaa.ie/general-aviation and this site is subject to going review and update to ensure that this material is accessible in the best way possible to suit the various intended audiences in general aviation. The IAA twitter account @IAApress is also used to great effect to highlight safety promotion material for general aviation.

4.2 – 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

The actions in this chapter support the GASP 2020-2022 Operational SEI Mitigate contributing factors to MAC accidents and incidents

STATUS

The design of airspace is relatively non-complex in Ireland in comparison to many European States. The Irish airspace consists Class C and Class G airspace only, and Class C airspace is concentrated on a small number of airports (State and regional airports) leaving ample Class G airspace available for GA activity. Nevertheless, the subject of airspace infringement is frequently addressed during general aviation safety evenings and the related safety messages, such as pre-flight planning, environmental issues, navigation skills, maintaining situational awareness, use of technology, will be promoted on an ongoing 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.

4.3 – 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 ***EPAS Reference:*** MST.028	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 some enabling 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. The COVID-19 restrictions have had the effect of pro-longing the winter break in Ireland and so the safety messages related to return to flying need to be re-emphasised to coincide with the easing of these restrictions.

The IAA is working with the EASA Safety Promotion Network to help develop safety promotion content for GA, including weather awareness and basic instrument rating for GA pilots,

SAFETY PRESENTATIONS/LEAFLETS COMPLETED IN 2019 ADDRESSED

- maintaining situational awareness,
- the use of threat and error management to prevent loss of control accidents,
- mid-air collisions
- airspace infringements
- carburetor icing.

SAFETY PROMOTION TOPICS UNDER CONSIDERATION FOR 2020/2021 INCLUDE:

- Return to flying post COVID-19 restrictions
- Guidance on prevention and recovery from Stall/Spin.
- Risks associated with flying taildragger aircraft
- Promoting the use of lightweight ADS-B by GA
- Carbon monoxide risk in small aeroplanes and helicopters (EASA SIB 2020-01)

The actions in this chapter support the GASP 2020-2022 Operational Safety Risks Roadmap safety enhancement initiatives in respect of general aviation.

4.4 – FOD.022 Miscellaneous Risks in General Aviation

SAFETY ISSUE

This chapter deals with other risks outside of the key risk areas discussed in Chapter 4.3 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 2020
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/twitter channels.	Q4 2020

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, nonetheless 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.

New items under consideration for safety promotion this year include

- Use of restraint systems and pilot back protection during parachute operations (EASA SIB 2018-18R1)
- Sailplane Rigging (EASA SIB 2019-07)

SECTION THREE

Appendix I–VI

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 continuously monitor and enhance the Irish safety oversight system to ensure it maintains it's strong global ranking as the ICAO standards and civil aviation system continuously evolve.
- 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 digitalisation 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 being achieved
- 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 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 should 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).

The IAA (regulator) will monitor the safety performance indicators within the limits of the data collected from the occurrence reporting system and IAA management systems (eg EMPIC/ Sharepoint). External data provided by ICAO (online platforms) and EASA (eg continuous monitoring reports) is also used as appropriate. Regulated organisations are responsible for monitoring their own safety performance indicators using their own management systems. Organisations may find benefit in using operational data recording systems to help monitor some safety performance indicators.

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 ICAO PQ Self-Assessment completion ICAO Safety Oversight Index EPAS MST tasks completion ICAO USOAP EI Score ICAO USOAP CC/EFOD Completion	Maintain SSP Gap Analysis > 90% 100% PQ self-assessment completed by end 2021 Maintain ICAO SOI > 1 All EPAS MST tasks reviewed and actioned as relevant Maintain EI Score > 90% 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 Percentage of organisations assessed using EoSM or EASA MS Assessment Tool	Establish outstanding requirements in airworthiness by 2021 >90 % by end 2021
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 Percentage of organisations that have developed acceptable SPI/SPT's, in consideration of State SPI/SPT's	Maintain >90% >90% by end 2021

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	Full legal implementation of regulation by end 2020 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 Processes available to assess RBO/PBO methodologies Non-compliance results, number/level of findings per audit area and closure rate for findings	ORP's completed in >90% of regulated organisations in OPS, ADR, ANS by end 2020 and AWS by end 2022 Processes available by end 2021 Positive trends in non-conformance results on sector basis
To implement integrated audit management across all oversight sections in IAA and to implement functions in the IAA ebusiness and digitalisation project to support effective safety management and risk-based and performance-based oversight.	Audit management transfer rate to new digital platform	>90% audit management migrated to new digital platform by 2021 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.	Information sharing portal development rate on new digital platform	Availability of applications to facilitate sharing of safety information between IAA and regulated entities across all domains by end 2022
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. Collaboration with other States on oversight of complex organisations Guidance available for inspectorate staff on overseeing governance structures in complex organisations	Maintain ongoing oversight as part of SMS oversight Maintain State/State collaborative oversight processes Guidance available by end 2021

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 complaints from Irish industry and persons due lack of IAA support during Brexit transition.	No complaints received from Irish organisations and complaints from <5% of persons affected.
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. Positive trends in the number of incidents involving the sighting of drones in proximity to civil aviation aircraft and airports.
	Level of Implementation of new EU regulations on drones	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.
	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	No non-Compliance oversight findings on management of drone infringements in aerodromes
To ensure that the IAA procures and maintains sufficient and competent staff to oversee the continuously evolving civil aviation system.	Resource plans capacity usage (demand/availability) per section	Average capacity usage ratio below 100%

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; – Aircraft Handling events – Warning system activation – Aircraft upset events – Flight parameter exceedance events – Technical failures or incorrect maintenance 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 (Regulator):** No accidents or serious incident categorised as LOC-I Positive trends in LOC-I occurrences and precursor events on sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders by end 2021 **AOC Holders:** Inclusion of LOC-I risk in their own SMS. Development of own Safety Objectives, SPI's and SPT's with positive 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; – Warning system activation – 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	**IAA (Regulator):** No accidents or serious incident categorised as CFIT. Positive trends in CFIT occurrences and precursor events on sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders by end 2021 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 positive trends Use of FDM data to support monitoring and analysis of CFIT occurrences **ANSP's:** Approach with vertical guidance (APV) procedures available at all certificated aerodromes by end 2020.
	Low level IFR routes in controlled airspace to facilitate safe helicopter operations.	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 – Airborne conflict with Drones – ATM events leading to loss of separation (eg Deviation from ATC Clearances, Level Bust, Separation Minimum Infringement, Airspace Infringement) – Procedural errors leading to potential MAC – Equipment failures (eg navigation, protection) leading to potential MAC	**IAA SRD:** No accidents or serious incident categorised as MAC. Positive trends in MAC occurrences and precursor events on sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders and ANSP's by end 2021 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 positive 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 positive trends. Compliance with EU regulations for SPI in ATM. Use of radar data to support monitoring and analysis of MAC occurrences Full implementation of EU EAPAIRR recommendations
	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	Implementation of SESAR solutions (eg enhanced STCA and enhanced Safety nets), as feasible (Ref SESAR Solutions Catalogue)

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	**IAA (Regulator):** No accidents or serious incident categorised as RI. Positive trends in RI occurrences and precursor events on sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders, aerodrome operators and ANSP's by end 2021 Monitoring implementation of EAPPRI recommendations **AOC Holders, ANSP's, Aerodrome operators:** Inclusion of RI risk in their own SMS. Development of own Safety Objectives, SPI's and SPT's with positive trends Use of radar data to support monitoring and analysis of RI occurrences
	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.	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 Regulator:** No accidents or serious incident categorised as RE. Positive trends in RE occurrences and precursor events on sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders, and aerodrome operators by end 2021 Full implementation of EAPPRE recommendations **AOC Holders, ANSP's Aerodrome operators:** Inclusion of RE/ARC risk in their own SMS. Development of own Safety Objectives, SPI's and SPT's with positive 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: – Aircraft ground collision events – Aircraft ground damage events – 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 marshalling, 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 – 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 (Regulator):** No fatal accidents during ground operations Positive trends in ground operations related accidents, serious incidents and occurrences on sector basis. Acceptance of organisation Safety Objectives and associated SPI/SPT's for over 90% of AOC Holders, ANSP's and aerodrome operators by end 2021 Positive trends in non-compliance oversight findings in respect of ground operations, including contracted services. **AOC Holders, ANSP's Aerodrome operators:** Inclusion of ground operations related risks in their own SMS. Development of own Safety Objectives, SPI's and SPT's with positive trends Use of technology to prevent ground operations occurrences

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 Compliance oversight results targeting change management and risk management processes in affected operators, ANSPs and aerodromes.	**IAA (Regulator):** No adverse trends in accidents, serious incidents, occurrences and precursor events across affected domains, during implementation of parallel runway operations. No significant findings of non-compliance in change management and risk management procedures in affected stakeholders. **AOC Holders, ANSP, Aerodrome:** 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 No of occurrences reported by the general aviation community	4 general aviation safety evenings per year 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 Positive 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. Positive 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 f)	The IAA will complete self -assessment of the Irish safety oversight system using ICAO online tools to ensure the system remains effective as the civil aviation system evolves.	Q4 2021
1.4 c)	The IAA will encourage organisations to develop their own Safety Performance Indicators (SPIs) with due regard to SPIs identified in Appendix II of this Plan, as appropriate to their own operations	Q4 2022
1.5 n)	The IAA will implement and promote the 'just culture' body required by Regulation (EU) 376/2014, with working arrangements (governance structure, procedures, etc) that guarantee the required independence.	Q4 2020
1.8 a)	The IAA will ensure that it has sufficient qualified and trained inspectorate staff to properly discharge their safety oversight responsibilities in a risk-based and performance-based regulatory environment EPAS Reference MST.032 a).	Q4 2022
1.8 b)	The IAA will ensure that relevant inspectorate staff in all domains are fully trained in oversight (compliance and effectiveness) of organisation management systems, particularly focused on oversight of safety culture, governance structures, interaction between risk management and performance monitoring, and the use of inspection findings and safety information such as accidents and incidents EPAS reference MST.032 c)	Q4 2021
1.8 c)	The IAA will ensure that relevant regulatory staff are trained in oversight of the effective management of human factors by regulated entities.	Q4 2021
1.8 d)	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	Q4 2020
1.8 e)	The IAA will provide feedback to EASA on how the Language Proficiency Requirements is implemented, to share best practices and identify areas for improvement and harmonisation EPAS Reference MST.033.	Q4 2021
1.8 f)	The IAA will ensure it has sufficient competent staff to oversee flight time specification schemes, in particular those relating to effective fatigue risk management by operators and advise EASA.	Q4 2020
2.1 a)	The IAA will support Irish industry during the COVID-19 crisis to address regulatory issues (including exemptions, AltMoc) required to scale down operations and the use of contingency measures.	Q4 2020

2.1 b)	The IAA will co-ordinate with EASA as necessary to ensure consistency in European approach in respect of contingency measures and safe return to normal operations	Q4 2020
2.1 c)	The IAA will ensure robust change management and risk management process are followed in respect of the dramatic changes required in response to COVID-19 including return to normal operations as COVID-19 restrictions are eased.	Q4 2020
2.5 a)	The IAA will develop the risk register and sector risk profile to address aircraft maintenance and aircraft maintenance management activities.	Q4 2020
2.5 b)	The IAA will focus on the risk of fraud in maintenance Part-147 examinations	Q4 2021
2.6 c)	The IAA will develop rotorcraft specific safety promotion campaigns to address key risks in rotorcraft operations, including specific helicopter safety workshops if required.	Q4 2021
3.1 a)	The IAA will work with EASA to develop guidance for operators on the mitigation of risks associated with icing in flight	Q4 2021
3.3 i)	The IAA will review the actions taken by Irish air operators to address the recommendation of EASA SIB 2013-11R1 issued Jan 2020, in respect of AFM instructions following ACAS RA, as part of oversight activities.	Q4 2021
3.4 f)	The IAA will assess the performance of organisational change management processes for procedural and/or infrastructural changes on the manoeuvring areas at Irish airports (EAPPRI V3).	Q4 2021
3.4 g)	The IAA will conduct risk modelling, risk assessment and safety analysis of loss of situational awareness and low visibility runway operations in the ATM/ANS domain	Q4 2021
3.5 k)	The IAA will promote the new ICAO format for runway surface condition reporting and provide guidance to industry on it's implementation	Q4 2021
3.6 j)	The IAA will review actions taken by affected Irish regulated organisations to address the recommendations of EASA SIB 2019-02, in respect of threat of explosive door openings of parked aircraft by ground handling, RFFS staff, flight operational and maintenance staff.	Q4 2021
3.7 d)	IAA will continue to work with all stakeholders to ensure that the National Bird/Wildlife Hazard Committee enhances its capability in terms of analysis of data and identifying safety issues / best practices for wildlife strike hazard reduction.	Ongoing
3.8 b)	The IAA will work with industry stakeholders to address the risks caused by unruly passenger behaviour on board aircraft operated by Irish AOC holders.	Q4 2021

APPENDIX IV – Summary of SPAS Actions completed in 2019

Action
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 2017-2019 mid-term objectives. ***EPAS Reference:*** RMT.0251
The IAA will conduct occurrence reporting survey of EU Helicopter operators on behalf of EASA and provide analysis of the results
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 – see new action Ch 1.8 d)
The IAA will perform an analysis of ATM related occurrences reported to the IAA and develop an ATM safety risk profile to guide safety actions to address the key risks.
The IAA will review Version 3.0 of the EAPPRI and identify actions required to address the updated document
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
The IAA will work with airports to extend the scope of the current National Bird Hazard Committee to include wildlife threats around airports.
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.

APPENDIX V – Link to EPAS

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

Action	
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 1.9
MST.015 Helicopter safety events	Ch 2.6, 4.1
MST.019 Better understanding of operators' governance structure	Ch 2.4
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 4.1, 4.3
MST.026 SMS Assessment	Ch 1.3
MST.027 Develop just culture in GA	Ch 1.5
MST.028 Member States to establish and maintain a State Plan for Aviation Safety	This Document is the SPAS
MST.029 Implementation of SESAR runway safety solutions	Ch 3.4
MST.030 Implementation of SESAR solutions aiming to reduce the risk of mid-air collision en-route and TMA	Ch 3.3
MST.031 Implementation of SESAR solutions aiming to facilitate safe IFR operations (helicopters)	Ch 2.6
MST.032 Oversight capabilities focus areas	Ch 1.8, 2.4
MST.033 Feedback on implementation of language proficiency requirements	Ch 1.8
MST.034 Oversight focus on flight time specification schemes	Ch 1.8
MST.035 Oversight focus on fraud in Part-147	Ch 2.5

APPENDIX VI - 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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