IRISH AVIATION AUTHORITY

IRISH STATE PLAN FOR AVIATION SAFETY Volume II

2024 Update

VOLUME II

SPAS Actions

0. Introduction

0.1 SPAS Vol II – 2024 Update

SPAS 2023-2025 Volume I outlines the strategic priorities identified for the reference period 2023 – 2025. This SPAS Volume II provides the actions at the regulatory level that are planned for the reference period to address the strategic priorities and associated key risk areas, across all domains of the civil aviation system in Ireland.

This is the 2024 update to SPAS Volume II that includes new actions identified during the last year and provides a status update on the existing actions. This update also maintains alignment with the European Plan for Aviation Safety 2024 Edition.

This update includes the following:

- 2 new actions added, one to address occurrence reporting data quality issues (ref EPAS action MST.0043) and a second to incorporate the first edition of the Global Action Plan For The Prevention Of Runway Incursions (GAPPRI)
- 19 closed actions in accordance with related timelines
- 6 deferred actions which were not completed in accordance with intended timelines, either due to extended scope of the action or due to re-prioritising of tasks.

Details of these changes are provided in the relevant chapters to follow and Appendix II “SPAS statistics” has been amended accordingly.

0.2 Structure of SPAS Volume II

This volume of the SPAS for Ireland provides the details of the safety actions that are currently in place to implement the strategic priorities discussed in SPAS Volume I. This version of the SPAS is broken down into seven chapters, chapter 1 addresses actions to improve safety management at State level and chapters 2 through 8 address the operational risks across different aviation domains.

- Chapter 1 Safety Management
- Chapter 2 Flight Operations – Fixed wing
- Chapter 3 Rotorcraft Operations

- Chapter 4 Air Navigation Services
- Chapter 5 Aerodrome Operations
- Chapter 6 Continued Airworthiness
- Chapter 7 General Aviation
- Chapter 8 UAS/IAM Operations

Chapter 2 through 8 represent a change in structure to previous editions of the SPAS where Commercial Air Transport is now divided into domain specific chapters (ie Flight Operations, Air Navigation Services and Aerodromes). This has the effect of repeating some of the key risk areas across different chapters (e.g. Runway Incursion is addressed in Chapters 2, 4, and 5), however this repetition allows the associated risk mitigation actions to be more specifically described to address the different contributions made in the different domains to the same key risk area.

As the SPAS addresses several different risk areas, a consistent template is provided in each sub-chapter as follows:

- Header – Safety risk area headline
- 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 – what we monitor to establish progress toward achieving safety objectives
- Stakeholders – a brief outline of the Stakeholders involved and their roles
- Actions – action statement with target dates (including on-going).
- Status Highlights – a high level summary of the status of the current actions in this area
- New Actions – background on any new actions included in this version of the SPAS

Each safety issue identified in this volume has an associated safety objective and each safety objective has associated safety performance indicators and safety targets. SPAS Volume I Chapter 5 provides the detailed list of safety objectives, safety performance indicators and safety performance targets in use in IAA and our expectations in this regard for regulated entities.

0.3 Overview of SPAS Volume II

0.3.1 Chapter 1 Safety Management

Chapter 1 includes the actions to address risk management and regulatory oversight at the State level which falls largely under the responsibility of the IAA. The actions address all pillars of the State Safety Program including, policy implementation, organisation (structure/resources), risk management, safety assurance (oversight and performance monitoring) and safety promotion.

This chapter is built around the overall objective of the IAA to transition from a compliance-based oversight (CBO) environment to a more effective oversight environment that target areas of greatest safety concern through risk-based oversight planning and performance-based over- sight methods (RBO/PBO). The IAA underwent a fundamental structural change to separate service provision from safety regulation and merge with the economic regulator in the State, a process which was completed in 2023. The new IAA provides the structure, organisation, resources and competent staff needed to enable the RBO/PBO oversight environment.

The transition from CBO to RBO/PBO environment requires continuous improvement in the improvement in safety management processes developed by the IAA to ensure that key decision-making in RBO/PBO is supported to the greatest extent possible by data-based safety intelligence. IAA system development projects (ECCAIRS 2, digitalisation) will have a key supporting role to play in this regard. The Chapter also focuses on improving the ability to share safety information at all levels in the civil aviation system to support risk management and safety promotion.

Chapter 1 also addresses the need for an integrated approach to manage risks that are not entirely contained within the aviation domain. Examples include cybersecurity, war in Ukraine and the Middle East.

0.3.2 Chapters 2 to 8 Operational Risks

Operational risks are the risks of negative safety outcomes arising from aviation operational activities across all sectors of the civil aviation system including flight operations, air navigation services, aerodrome operations, aircraft production and maintenance, training etc. These risks are identified in IAA sector risk registers and actions are prioritised based on risk assessments. The IAA risk registers also take due cognisance of the risks identified through the EU risk management processes and identified in Volume 3 of the EASA EPAS available at European Plan for Aviation Safety (EPAS) 2024 - 13th edition | EASA (europa.eu)

Risk Registers have been developed on an aviation sector basis as follows:

- Flight Operations Fixed Wing (Part OPS/Part NCC)
- Rotorcraft operations
- Air Traffic Management / Air Navigation Services
- Aerodrome Operations
- Continued Airworthiness
- General Aviation
- Unmanned Aircraft System (UAS) operations and Innovative Air Mobility

The management of operational safety risks is the responsibility of the regulated organisations (e.g. via SMS) and persons, however, the SPAS identifies the actions taken at State level to support civil aviation in addressing these operational risks. In particular, the State competent authority conducts oversight on the effective performance of organisations' safety manage- ment systems, and it can facilitate the sharing of information on risk between organisations and persons operating within a sector, as well as addressing cross domain risks at the interfaces between sectors. The IAA shares safety information with organisations and persons during regulatory oversight and safety promotion activities.

0.3.3 Appendices to Volume II

Appendices are included to address:

- Link between EPAS and SPAS
- SPAS statistics
- Glossary of terms used

0.3.4 Actions in the SPAS

The actions in the SPAS are addressed to relevant State authorities and as such they are designed and implemented using the tools available in the States safety oversight system. This means that the actions in the Plan may include:

Safety Policy	• Actions to implement new or amended policy and regulations in the State
Human Resources	• Actions that relate to the provision and maintenance of sufficient and competent regulatory staff
Safety Oversight	• Actions that require specific areas of concern to be audited/inspected, and that are planned and performed as part of the scheduled oversight plan or special activities
Safety Analysis	• Actions that require detailed analysis, risk assessment or research into areas of safety concern
Performance Monitoring	• Actions that relate to monitoring of safety performance to ensure that safety objectives are being achieved
Safety Promotion	• Actions that target the delivery of latest safety information using specific content and delivery methods to suit the target audience.

1. Safety Management

1.1 COVID-19 Pandemic

1.1.1 Safety Issue

The COVID-19 pandemic has been a major global health crisis that had a severe impact on all stakeholders of the Irish civil aviation system. The enduring nature of the pandemic meant that the consequent scaling down (or cessation) of aircraft operations lasted longer than originally anticipated. The IAA has continued to provide regulatory support to industry, ensuring the robust risk management processes during the ramping back up of operations.

1.1.2 Safety Objective

To ensure that appropriate safety risk management processes are applied in civil aviation as operations ramp back up post-COVID-19 pandemic.

1.1.3 Safety Performance Indicators (Ref SPAS Volume 1 Chapter 5 for details)

Serious non-compliances, accidents, serious incidents and incidents attributable to inadequate management of COVID-19 pandemic.

1.1.4 Stakeholders and Roles

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

EASA – common EU approach to regulatory activities during COVID-19 pandemic

Irish Aviation Authority – support industry with practical requirements (e.g. exemptions) and guidance; oversight of safety management systems

Industry –management of contingency procedures during the crisis and risk assessment of ramping up of operations.

1.1.5 Actions

	ACTIONS	TARGET DATE
a)	The IAA will support industry by promoting the latest COVID-19 related guidance material as applicable to individual domains (including general aviation) and will continue to work closely with EASA to develop EU standardised guidance in this area **EPAS Reference MST.0039**	Closed
b)	The IAA's risk-based safety oversight plans will target post-COVID-19 ramping up of operations in each domain, focusing on management systems, human performance, human factors and return to service of stored equipment.	Closed

1.1.6 Status Highlights

- Provided regulatory support to organisations and persons for essential purposes during the critical phases of the pandemic
- Supported hazard identification and risk assessment at national and EU level and ongoing updates to COVID related risk registers as the pandemic evolved
- Ongoing monitoring of key operational risks emerging during the pandemic
- Promoted COVID related safety workshops and ensured the timely promulgation of key COVID related safety messages developed at national and EU level to industry stakeholders as appropriate to their operations
- Focus on aviation personnel wellness through a national safety event
- Implemented risk-based oversight planning using COVID risk assessments, and executed oversight via remote auditing in times of health-related travel restrictions
- Contribution to, and promotion of, EASA COVID-19 resources EASA COVID-19 Resources | EASA (europa.eu)
- Actions remained open until end 2023 having particularly focused on the recovery from COVID-19 and associated emerging risks, such as those addressed in EASA SIB 2022-06.

All actions in Chapter 1.1 are now closed and the details are retained in Volume II during this reference period for record keeping purposes.

1.2 Continuously improve safety management at State level

1.2.1 Safety Issue

ICAO Standards and Recommended Practices (SARPs) in Annex 19 require the implementation of State Safety Programmes (SSP) and the IAA has been assigned responsibility for this Annex under primary Irish legislation. The SSP and associated State Plan for Aviation Safety (SPAS) are subject to continuous improvement and evolution to address emerging risks.

1.2.2 Safety Objective

To continuously improve the implementation of aviation safety management at State level in Ireland.

1.2.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

ICAO/EASA/National State level performance dashboards

1.2.4 Stakeholders and Roles

Department of Transport – aviation policy

Irish Aviation Authority – implementation of SSP/SPAS and identification of State safety objectives

Industry - awareness, consultation and consideration of State safety objectives and associated actions

1.2.5 Actions

ACTIONS	TARGET DATE
a) The IAA will continuously improve safety management at State level by: • Implementing and improving the safety management processes required in the State Safety Programme and ensuring ongoing updates of ICAO USOAP CMA online platforms **EPAS Reference MST.0001** • Working with other States (e.g. EU, ICAO, ABIS) to help develop rules and implementing guidance for safety management • Actively supporting ICAO/EASA panels and advisory bodies to ensure SPAS aligns with GASP and EPAS. **EPAS Reference MST.0028** • Targeting key risks as part of safety management and safety oversight activities **EPAS Reference MST.0028** • Ensuring Human Factors principles are fully integrated into Safety Management processes • Improving safety culture through improved safety promotion and monitoring of occurrence reporting rates **EPAS Reference MST.0023 and MST.0027** • Ongoing development of safety performance indicators and targets that provide assurance that safety objectives of the SPAS are being met. • Include SMS promotional material developed by ICAO, EASA, and SMICG in SMS training delivered by the IAA for regulators and industry. **EPAS Reference: MST.0002**	Ongoing
b) The IAA will implement EU mechanisms for improving occurrence reporting systems, including: • The new EU Event Risk Classification System European Risk Classification Scheme (ERCS) for Authorities and encourage it's use by industry • The new European ECCAIRS II occurrence reporting platform and provide associated guidance to reporting entities	Closed

c)	The IAA will improve safety management by implementing best practices in the sharing of safety information, between: • IAA and EASA/other States aviation authorities • IAA and Irish military authorities • IAA and Irish regulated entities	Q2 2024
d)	The IAA will assess the safety culture in Irish Air Operators and support EASA in developing standardised guidance and practical tools necessary to support this assessment. **EPAS Reference MST.0042**	Q4 2025
e)	The IAA will implement an aviation stakeholder forum, including licence holders, to enhance the safety management processes in the State	Closed
f)	The IAA will conduct a review of the effectiveness of regulatory provisions concerning crew peer support programmes.	Q2 2024
g) New Action	i) IAA shall encourage the generation of high-quality occurrence reporting data by reporting entities, through its safety promotion process ii) IAA shall organise training or workshops with organisations regarding data quality in occurrence reports iii) IAA shall deliver training to its own personnel on occurrence reporting system with focus on data quality and risk classification, ensuring continued competencies **EPAS Reference MST.0043**	Q4 2025
h) New Action	The IAA will review GAPPRI Vol 1 Recommendations (Edition Dec. 2023) to identify new workflows from regulator recommendations. This review will include a gap analysis from EAPPRI v3 recommendations	Q4 2024

1.2.6 Status Highlights:

- SPAS safety priorities aligned with latest update to ICAO GASP 2023-2025 and EPAS 2023-2025
- Continued support to ICAO SMP, SMICG and EASA Advisory Bodies, Collaborative Analysis Groups, Network of Analysts, Safety Promotion Network and Data4Safety

- Ongoing improvements to State level risk management and performance monitoring processes, including enhanced safety review process
- Encouragement of industry led safety culture improvement mechanisms in airports such as the Eurocontrol Safety Culture Stack, as an indicator of SMS maturity
- Additional resources provided to enhance safety promotion processes. Information sharing processes are being updated to further enhance stakeholder engagement and the target date for associated action c) above was extended by six months.
- System development projects to support deployment of ECCAIRS 2 and ERCS on the IAA occurrence reporting platform were completed and related training and instructional videos on the use of ECCAIRS 2 platform were conducted with staff and industry. The related SPAS action b) above was closed.
- Supporting development of SMICG Guidance for Implementing or Improving Voluntary Safety Reporting at State Level
- A National FDM Forum has been established and a related SPAS action was closed during 2022.
- The IAA will assess the safety culture in Irish Air Operators using an EU standardised assessment tool that was due to be finalised in Q1 2024.
- In Jan 2024, the IAA launched a survey on the effectiveness of crew support programmes for organisations and flight crews. The survey leverages on a similar EU survey conducted by EASA in early 2023 which will provide the opportunity for IAA to use the EU wide data as a benchmark to assess the Irish results. The data collection phase is completed and analysis of the results is planned for completion by end Q2 2024.
- IAA established the Aviation Stakeholders Forum (ASF) in September 2023 to foster the maintenance and improvement of aviation safety in Ireland and to support the development of a positive aviation safety culture within the Irish aviation community. The Forum includes representatives from regulated entities, state bodies, staff representative bodies and military. Two ASF meetings have been held to date and reports on these meetings are published on the IAA website at https://www.iaa.ie/about-us/aviation-stakeholder-forum. ASF meetings will continue to be held twice a year. The related SPAS action e) above was closed.

New Action 1.2.5(g)

The safety management processes in place in EU and Ireland depend to a large extent on the availability of good quality data, and in particular, the data derived from aviation occurrence reporting systems, to help identify and address aviation safety hazards. The IAA recognises the need to promote the benefits of good data quality in occurrence reports for the benefit of organisation's SMS activities, as well as Irish and EU state level safety management activities. The IAA provides training/workshops for IAA staff and industry, incorporating the ECCAIRS Coding guidance developed by the European Network of Analysts and published on the EASA website.

New Action 1.2.5(h)

The new GAPPRI Vol 1 includes 16 recommendations for States / Regulators. As part of its safety management activities, the IAA will implement recommendations as appropriate. A gap analysis of GAPPRI against EAPPRI v3 will be done to ensure continuity and alignment with recommendations already implemented. The IAA will utilise the National Runway Safety Forum (NRSF) to promote GAPPRI recommendations. Actions in SPAS Chapters 2, 4 and 5 have been updated to address the IAA monitoring of the level of implementation of GAPPRI recommendations for service providers during oversight activities.

1.2.7 The actions in this chapter also address GASP 2023-2025 Goal 3 'Implement effective State Safety Programmes' and GASR 2023-2025 Safety Enhancement Initiatives[1] including:

- GASR SEI -13E & F (States) - Issue SMS regulations for service pro*viders and verify SMS implementation, and identify and share safety management best practices.*
- *GASR SEI-16C (States) - Establish a system for continuous improvement of the SSP, in collaboration with all key aviation stakeholders.*
- *GASR SEI-17/18 (States) — Improving safety management processes*
- *GASR SEI-20/21 (States) –Strategic collaboration with key aviation stakeholders to advance safety risk management at national level*

The safety enhancement initiatives quoted are published in the ICAO Doc:10161 Global Aviation Safety Roadmap (GASR) 2023-2025.

1.3 Separation of IAA safety regulation and service provision functions

1.3.1 Safety Issue

In accordance with Irish Government policy, the safety regulation and air navigation services provision functions of the Irish Aviation Authority were separated in 2023 and the IAA safety regulatory function merged with the economic Civil Aviation Regulator (CAR). This major organisational change impacts the State Safety Programme and robust change management procedures have been applied to ensure no disruption to regulatory or air navigation services functions, during or after the change.

1.3.2 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.

1.3.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Regulatory compliance and safety performance indicators at IAA regulatory and organisational levels.

1.3.4 Stakeholders/Roles

Department of Transport – aviation policy

Irish Aviation Authority – project implementation at regulatory and organisational level
Civil Aviation Regulator – project implementation at regulatory level

Irish Air Navigation Services Provider – establishment of new organisation Industry – stakeholder involvement

1.3.5 Actions

ACTIONS		TARGET DATE
a)	The IAA 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 separate from the IAA ANSP and merge with CAR.	Closed
b)	The IAA will focus on the ANSP change management and risk management processes related to the transformation project to separate the IAA ANSP from the regulator as part of safety over- sight planning.	Closed
c)	The IAA will update the State Safety Programme document as necessary to reflect the organisational changes to the regulatory functions following separation.	Closed

1.3.6 Status highlights

- Amendments to primary legislation to enable legal separation came into force in 2023
- Institutional reform project in place to prepare for and implement the separated organisations once the primary legislation is enacted.
- On-going compliance monitoring of key functions at regulator and service provider level to ensure front line services and management systems were not affected and continued compliance with regulatory requirements during the transition.
- Regulator Risk Register addressing the impact of separation subject to assessment and update.
- New SSP document issued in 2023 to reflect new regulatory organisation.

All actions in Chapter 1.4 are now closed and the details are retained in Volume II during this reference period for record keeping purposes.

1.4 Integrated Risk Management (Safety and Security)

1.4.1 Safety Issue

Aviation risks to safety of flight due to acts of unlawful interference need to be considered at international, regional, national and operator level. The analysis of risk is performed independently in the technical domains of safety and security; however, an integrated view of cross-domain risks should also be considered. By having an integrated approach, it is possible to ensure that mitigation measures can be evaluated on the basis that they serve both safety and security objectives, thereby maximising the benefit of that mitigation to the organisation or State.

1.4.2 Safety Objectives

To continuously improve aviation safety through an integrated approach to risk management in the domains of safety and security.

1.4.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Safety and security performance indicators at IAA regulatory and organisational levels.

1.4.4 Stakeholders/Roles

Department of Transport – policy in respect of aviation safety and security.

Irish Aviation Authority — implementation of State policy and EU regulations in respect of aviation safety and security.

Aviation Industry — responsible for establishing and maintaining safety and security management systems including reporting of safety and security related occurrences to the Irish Aviation Authority.

Other State Agencies:

- An Garda Síochána - has overall responsibility for security threat assessment, including the threat assessment relating to civil aviation
- The National Civil Aviation Security Committee Threat and Risks Working Group - is responsible for identifying threats, risks and vulnerabilities in the Irish civil aviation regime.

1.4.5 Actions

ACTIONS		TARGET DATE
a)	The IAA will engage with the Department for Transport to establish the protocols and policies needed to facilitate an integrated risk management approach between aviation safety and security. **EPAS Reference MST.0040**	Closed
b)	The IAA will develop integrated risk management approach in safety and security including associated policies and procedures.	Q4 2024
c)	The IAA will implement Authority Requirements in forthcoming EU aviation regulations on cybersecurity (Part-IS) and assist affected organisations with implementing the associated Organisation Requirements.	Q4 2025
d)	The IAA will review synergies between national cybersecurity requirements (e.g. NIS 2 Directive) and those proposed requirements in the safety domain (Part-IS) to ensure efficient implementation.	Closed
e)	The IAA will share information on the safety issues arising from the war on Ukraine and the Middle East with affected Irish organisations and ensure the associated risks have been considered in the organisations' risk management processes, as appropriate to their operations.	Ongoing

1.4.6 Status highlights

- Protocol arrangements between competent authorities for safety and security were agreed during 2023. The related SPAS action a) above is closed. Mechanism for sharing information on safety and security developed. Action b) updated and extended to address ongoing developments in the occurrence reporting system in the aviation security domain, along with associated policies and procedures to facilitate the integrated approach.
- IAA cross domain project group established to develop efficient working methods to support new EU cybersecurity regulations addressing information systems. The IAA is now positioned to be a one-stop regulator for all aviation cybersecurity requirements (PART IS, NIS II, CER) pending development of State policy in this regard. The related SPAS action d) above is now closed.

- Part-IS and associated AMC/GM have now been published. IAA policies and procedures have been developed to meet Authority Requirements and the IAA has engaged with Industry through workshops and presentations to help address the organisational requirements. Competency/skills requirements for cybersecurity ISMS staff and oversight inspectors developed.
- IAA nominee provided for EASA Network of Security Analysts
- The hostilities in Ukraine and the Middle East has resulted in specific hazards for European civil aviation. The IAA has worked with EASA as part of a collaborative approach to addressing this safety concern to proactively identify new and emerging risks. EASA 2022 document "Review of Aviation Safety Issues Arising from the war in Ukraine", remains relevant. The IAA has highlighted to affected Irish organisations that a significant increase in reports of GPS jamming and spoofing was noted during Q1 2024 that may impact aircraft systems including navigation and warning systems (eg EGPWS and TCAS). Some of these events that occur over conflict zones may be latched by aircraft systems and therefore cause degraded performance until after the aircraft lands. EASA SIB 2022-02 that was updated to Revision 2 in Nov 2023 also refers. This action is changed to an ongoing task due to the prolonged hostilities in these regions and the need for ongoing assessment of the associated risks.

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

1.5.1 Safety Issue

The IAA is implementing risk-based and performance-based oversight as a key element of the State Safety Programme in Ireland, to target regulatory resources in the more critical safety areas. The lack of, or ineffective implementation of, risk-based and performance-based over- sight could result in the targeting of regulatory resources in the wrong areas.

1.5.2 Safety Objective

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

1.5.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Availability and use of risk and performance assessment tools in all aviation domains. Use of EASA MS Assessment tool in relevant aviation domains.

1.5.4 Stakeholders/Roles

Irish Aviation Authority — use of RBO/PBO methodologies in all critical elements of safety oversight.

Industry — awareness of key safety issues targeted by regulatory oversight for inclusion in their own SMS.

1.5.5 Actions

ACTIONS	TARGET DATE
a) The IAA will ensure adequate human resources are available to support data-based decision making and safety promotion.	Ongoing
b) 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 on the use of the tool to EASA via the SM TeB. **EPAS Reference MST.0026**	Ongoing

c) 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 2024
d) The IAA will develop a safety performance framework that will build on new BIS functionality to provide relevant and timely safety intelligence to support safety review and safety oversight processes at State, sector and organisational level	Q4 2025
e) The IAA will support an integrated SMS approach by organisations holding multiple certificates and facilitate cross domain oversight of SMS where feasible on a case-by-case basis.	Q4 2024
f) The IAA will support smaller organisations in implementing SMS proportionate to their size and complexity of operations **EPAS Reference MST.0002 (updated).**	Q4 2024
g) The IAA will harmonise and to the greatest possible extent simplify the procedures and documents applicable to AOC approval and oversight processes relating to small rotorcraft operations **EPAS Reference MST.0041**	Q4 2024

1.5.6 Status Highlights

- Additional human resources were added to the IAA safety analysis and performance and corporate communications division
- Increased safety promotion activities to address aviation safety including impact of the war in Ukraine/Middle East, unruly passengers, drone operations
- EASA MSAT used in flight operations, aerodromes and airworthiness domains. ATM/ANS domain continue to use EoSM developed in conjunction with the Single European Sky performance scheme. The task is now changed to ongoing to reflect the need to continue to provide feedback to EASA on the use of the tool.
- A detailed assessment of the Irish SSP was conducted using the ICAO SSPIA and associated guidance. Corrective actions were taken to address deficiencies noted. An EASA SYS II standardisation inspection of Ireland is planned for Nov 2024.

- Work commenced in developing an enhanced safety performance monitoring framework to support safety oversight and safety risk management processes. that will provide relevant information (including safety dashboards) to better support the safety review and safety oversight processes at State, sector and organisation levels.
- SMS oversight activities were mainly focused on recently introduced SMS requirements in airworthiness (Part CAMO. Part 145 and Part 21 POA). This included providing support to organisations (especially smaller organisations) in meeting the requirements. The IAA is supportive of the principle that an integrated SMS for multiple certificate holders should be subject to an integrated oversight approach, albeit this may be difficult to organise in practice, whilst addressing differences domain specific regulations. The principle was successfully applied in recent cases in airworthiness domain where an integrated oversight was conducted in organisations that developed an integrated SMS to support a single organisation with two certificates in Part CAMO and Part 145.
- The IAA is working with other EU Member States via the EASA Rotorcraft Expert Group to harmonise and simplify processes and tools in oversight of small helicopter operators.

Actions in this chapter support ICAO GASR 2023-2025 SEI-19 (States) - Acquisition of resources to increase proactive use of risk modelling capabilities

1.6 Competency of regulatory personnel

1.6.1 Safety Issue

The IAA must ensure it has sufficient and competent staff to fulfil its obligations under ICAO Annexes and EU and national regulations and must continuously update the competency requirements to address the evolving civil aviation system, new regulatory functions and emerging risks.

1.6.2 Safety Objective

To ensure that the IAA recruits and retains sufficient and competent staff to oversee the continuously evolving civil aviation system

1.6.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Human resource capacity and training completion rates per IAA regulatory functional areas

1.6.4 Stakeholders/Roles

EASA – Implementing rules to support competency requirements

Irish Aviation Authority – procurement and training of staff

Industry/persons – stakeholder awareness

1.6.5 Actions

ACTIONS		TARGET DATE
a)	The IAA will ensure that it has sufficient competent inspectorate staff to properly discharge its safety oversight responsibilities **EPAS Reference MST.0032 a).**	Ongoing
b)	The IAA will ensure that inspectorate staff are fully trained to perform oversight activities in a risk based and performance-based environment in all domains **EPAS Ref MST.0001.**	Ongoing
c)	The IAA will ensure that relevant inspectorate staff in all domains are fully trained in oversight of organisation management systems, including oversight of safety culture, governance structures, inter- action between risk management and performance monitoring, and the use of inspection findings and safety information such as accidents and incidents **EPAS reference MST.0032 c)**	Ongoing
d)	The IAA will ensure that relevant regulatory staff meet the new EU competency requirements on Human Factors, including HF trainers **EPAS Reference MST.0037.**	Q4 2024
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.0033.**	Ongoing

1.6.6 Status Highlights

- Annual assessment of human resource plans supported by specific human resource assessments to address regulatory changes
- Updated policy and procedures to address risk-based oversight planning and oversight of an SMS
- Introduction to SMS and advance SMS training courses delivered to IAA inspectors and to industry to address fundamentals of SMS. Advanced SMS training course incorporates MSAT assessment of SMS effectiveness.
- Occurrence Reporting System training course delivered to IAA inspectors, primarily to address coding and the risk classification of occurrences. These new training courses address the intent of the actions 1.5.5 b) and c) however these actions are retained in the plan as ongoing tasks, as ongoing tasks, to reflect the need for continued initial and recurrent training in this area.
- Updated guidance and training for relevant inspectors on the oversight of flight time specification schemes and feedback to EASA via Air Ops standardisation activities
- Feedback to EASA on experience with English Language Proficiency requirements as part of ATO Standardisation
- CRM training (including HF elements) provided to flight operations inspectors. Updated HF training for inspectors, to include other domains, is being planned and will take account of the new EU competency requirements in this regard.

Actions in this chapter support the GASR 2023-2025 safety enhancement initiatives for States: SEI-5 — Qualified technical personnel to support effective safety oversight

SEI-19C - Ensure that the Civil Aviation Safety Inspector workforce is trained to perform safety oversight of service providers that have implemented SMS

1.7 Digitalisation

1.7.1 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).

1.7.2 Safety Objective

To implement digital processes to support oversight management and safety management across all oversight sections in IAA.

1.7.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

All regulatory oversight processes migrated to new digitalisation platform.

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

1.7.4 Stakeholders/Roles

Irish Aviation Authority – digitalisation project delivery

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

1.7.5 Actions

ACTIONS	TARGET DATE
a) The IAA will implement the audit management systems of each domain in the new IAA digital platform MySRS.	Q4 2024
b) See 1.5.5 d)	
c) The IAA will implement EU Qualified Electronic Signatures to support certification and licencing tasks in all domains	Q4 2025

1.7.6 Status Highlights

- Previous action 1.7.5 b) relating to BIS development is now included under the scope of action 1.5.5 d) above and was therefore removed from this Chapter.
- Audit management processes migrated to new digitalisation platform MySRS in drones, personnel licensing and economic regulation. Further work planned in 2024 to migrate audit management processes in other domains.
- The IAA has implemented functions in its digitalisation platform (MySRS) to support Qualified Electronic Signatures as provided for in European Regulation (EU) No 910/2014. The IAA is working with individual organisations across different domains to implement QES.

1.8 Oversight of complex operational models and novel work practices

1.8.1 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 growth of organisations with complex business models, and/or novel work practices, could have a detrimental effect on safety.

1.8.2 Safety Objectives

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

1.8.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Effective SMS processes confirmed for all complex organisations State/State cooperative oversight processes developed Specific guidance for inspectorate on oversight of governance structure of complex organisations.

1.8.4 Stakeholders/Roles

Irish Aviation Authority – implementation of effective processes to oversee the SMS of complex organisations

Industry – complex organisation ensure SMS addresses risks associated with complex business and operating models and novel work practices

1.8.5 Actions

ACTIONS	TARGET DATE
a) 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.0019, MST.0032(b)**	Ongoing
b) The IAA will ensure that management systems of the operator captures 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 as part of SMS oversight. **EPAS Reference MST.0022**	Ongoing
c) The IAA will support implementation of EU regulations that allow air carriers that are part of a single air carrier business group to contract a single CAMO	Closed

1.8.6 Status Highlights

- The IAA contributed to the development of EASA "Guidance for the oversight of group- operations" published in June 2022 following lengthy delays due COVID-19.
- Associated recommendations have already been implemented in IAA procedures and in addition the IAA has already implemented co-operative oversight of group operations with specific States, where Irish AOC Holders are part of a multinational Group Operation
- The IAA has verified the implementation EASA 'Practical Guide - Management of hazards related to new business models of commercial air transport operations' by affected operators during the 2021-2022 oversight cycle.
- The IAA contributed to EC/EASA work in development of EU regulations (ie Regulation (EU) 1321/2014 amended by Regulation (EU) 2022/410) to allow air carriers that are part of a single air carrier business group to contract a single CAMO, and associated IAA procedures have been approved. The related SPAS action c) above is closed

- Actions a) and b) above are now substantially completed, however they are retained in the Plan as an ongoing activity to ensure continued focus in this regard during oversight activities.

Actions in this chapter support the GASR 2023-2025 SEI-11 (States) — Strategic collaboration with key aviation stakeholders to enhance safety in a coordinated manner.

1.9 Cross Domain – Significant Regulatory Changes

1.9.1 Safety Issue

Updates to ICAO standards and EU/National Regulations require robust change management processes to ensure that the impact of the changes to both the regulatory and organisational functions are fully assessed. Failure to properly assess the impact of regulatory changes could lead to gaps in regulatory oversight. This chapter of the plan addresses current significant regulatory changes with cross domain impact affecting the Irish civil aviation system. Significant regulatory changes that are primarily contained within one aviation sector are addressed in the domain specific chapters that follow.

1.9.2 Safety Objective

To implement robust regulatory change management processes to ensure that the authority requirements are fully implemented, and related guidance provided to industry stakeholders.

1.9.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Rate of findings of non-compliance following implementation of significant regulatory changes

1.9.4 Stakeholders/Roles

EASA – Implementing rules for areas under the Basic Regulation

Department of Transport – development of national policy and assignment of regulatory functions

Irish Aviation Authority — Participating in EU regulation development programme; developing national regulation for areas outside EU competence; implementation of EU requirements for competent authorities, and providing related guidance to industry stakeholders

Industry – implementation of regulatory requirements for organisations

1.9.5 Actions

ACTIONS	TARGET DATE
a) The IAA will ensure that the regulatory framework for civil aviation in Ireland is current and commensurate with the size and scope of aviation activities in Ireland, by: • Working with EASA on the development of EU regulations and implementing rules and associated guidance material • Working with Department of Transport, as required, on State level policy decisions affecting the EU and national regulatory framework.	Ongoing
b) The IAA will work with EASA and other States on the development of the regulatory framework to address higher airspace operations and future Space Transportation.	Q4 2024
c) The IAA will work with EASA and other States on the development of the regulatory framework to support the sustainable aviation, as well as the implementation of risk management actions to address the risks to aviation caused by climate change.	Q4 2025

1.9.6 Status highlights

1.9.6.1 Higher Airspace Operations/Space Transportation

- The IAA has established a cross functional Space Transportation Project Team tasked with reviewing the current legal framework and the technical and environmental requirements, responsibilities, funding etc necessary for the oversight of space transportation in respect of overflights in Irish airspace.
- National legislation SI 25/2023 "Upper Airspace and Rockets Order" issued in advance of EU regulations in this area.
- IAA engagement with EU Concept of Higher Operations project (ECHO II) to help develop the roadmap to support EU regulatory planning in this regard

1.9.6.2 Sustainable Aviation

- Much of the current regulatory focus in this regard is on development and certification of new "green" technologies and fuels to meet EU climate change commitments. These technical elements are addressed in the EPAS.

- The main focus for IAA in the reference period for this Plan will be on supporting Irish Department of Transport Sustainable Aviation Fuel Task Force in Ireland to develop the National Sustainable Aviation Fuel Policy Roadmap
- Developing inspector competencies to support oversight of new "green" technical solutions
- Sharing information on the effects of climate change on aircraft operations (e.g. severe weather events)
- Supporting the implementation of navigation procedures relating to sustainable aviation (e.g. PBN implementation, implementation of "green" trajectories).

2. Flight Operations (CAT/NCC) – Fixed Wing

Commercial fixed wing operations in Ireland are performed by organisations granted an Air Operations Certificate in accordance with EU Regulations. These organisations are passenger or cargo operators, and they perform the majority of commercial aircraft activity in Ireland.

The EU regulatory framework (Part NCC) also includes provisions for private operators to use complex aircraft (e.g. jet aircraft) for business purposes (traditional private business jet operations). Although these are not commercial operations, the complexity of the aircraft involved, and the associated operations are such that they are exposed to very similar risks as AOC operations and as such are included in this sector.

The following chapters address the key risk areas identified for this aviation sector.

2.1 Loss of Control in flight

2.1.1 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, weather events, human factors, on-board fire, aircraft fuel management and other events.

2.1.2 Safety Objective

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

2.1.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

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

2.1.4 Stakeholders/Roles

Irish Aviation Authority – analysis of LOC-I occurrence 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.

2.1.5 Actions

ACTIONS	TARGET DATE
a) The IAA will focus on the management of the risk of LOC-I occurrences with Irish regulated organisations, as appropriate to their operations, as part of safety oversight and performance monitoring activities **EPAS References MST.0028.**	Ongoing

2.1.6 Status Highlights

- Focus on management of risks associated with LOC-I during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of LOC-I related events and precursors.
- Updating sector risk register to include new risks in this area.
- Safety promotion of key risks in this area, such as entry of incorrect performance data
- Highlighting Increasing level of GPS jamming and spoofing affecting navigation and EGPWS systems to Irish AOC holders - EASA SIB 2022-02R2, issued Nov 2023 refers.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to LOC-I accidents and incidents

2.2 Controlled Flight into Terrain

2.2.1 Safety Issue

Controlled Flight into Terrain (CFIT) describes an event where the aircraft is flown into terrain whilst under control of the flight crew, and is usually associated with loss of situational awareness in poor visibility conditions, or navigation errors. 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.

2.2.2 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.

2.2.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

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

2.2.4 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, airports) — developing approach procedures to minimise the risk of CFIT

2.2.5 Actions

ACTIONS		TARGET DATE
a)	The IAA will focus on the management of the risk of CFIT occurrences with Irish regulated organisations, as appropriate to their operations, as part of safety oversight and performance monitoring activities **EPAS References MST.0028.**	Ongoing

2.2.6 Status Highlights

- Focus on management of risks associated with CFIT during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of CFIT related events and precursors
- Updating sector risk register to include new risks in this area
- Safety promotion on new regulations affecting this risk area, such as new EASA AWO regulations

- Highlighted EASA SIB on Incorrect Barometric Altitude Setting (EASA SIB 2023-03, issued Mar 2023) to aircraft operators and ANSP during annual safety review meetings

PBN transition plan developed and the latest version is found at pbn-transition-plan-for-ireland-v11-0.pdf (iaa.ie)

Ongoing co-ordination with main air navigation services provider to update airspace design to facilitate sustainable Instrument Flight Procedures (eg continuous descent approach) in consultation with airspace users.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to CFIT accidents and incidents

2.3 Mid-Air Collisions

2.3.1 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). For some time MAC has been recognised as a key risk in aviation safety and led to the publication of the European Action Plan for the Airspace Infringement Risk Reduction (EAPAIRR) in 2010 that was updated to Version 2 in 2022.

2.3.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks of mid-air collision involving Irish CAT/NCC aeroplane operators.

2.3.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to MAC category occurrences involving Irish CAT/NCC aeroplane operators.

2.3.4 Stakeholders/Roles

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

Industry (CAT/NCC aeroplane) – managing MAC related safety risks and reporting pre-cursor events that could result in a MAC occurrence

2.3.5 Actions

ACTIONS	TARGET DATE
a) The IAA will focus on the management of the risk of MAC occurrences with Irish regulated organisations, as appropriate to their operations, as part of safety oversight and performance monitoring activities **EPAS References MST.0028.**	Ongoing
b) Review implementation of updated recommendations for airspace users arising from EAPAIRR Version 2 issued in March 2022 during next AOC oversight cycle.	Q4 2024

2.3.6 Status Highlights

- Focus on management of risks associated with MAC during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of MAC related events and precursors
- Updating sector risk register to include new risks in this area
- Updated recommendations of the EAPAIRR Version 2, reviewed as applicable to regulators. Updated recommendations of the EAPAIRR Version 2, for airspace users under review during oversight cycle
- Highlighted EASA SIB on Incorrect Barometric Altitude Setting (EASA SIB 2023-03, issued Mar 2023) to aircraft operators and ANSP during annual safety review meetings
- Highlighting Increasing level of GPS jamming and spoofing affecting navigation and EGPWS systems to Irish AOC holders - EASA SIB 2022-02R2, issued Nov 2023 refers.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to MAC accidents and incidents

2.4 Runway Incursions

2.4.1 Safety Issue

A runway incursion (RI) involves the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of an aircraft. 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, and most recently the Global Action Plan for the Prevention of Runway Incursions GAPPRI (Edition Dec. 2023).

2.4.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks of runway incursion involving Irish CAT/NCC aeroplane operators.

2.4.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to RI category occurrences involving Irish CAT/NCC aeroplane operators.

2.4.4 Stakeholders/Roles

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

Industry (CAT/NCC aeroplane operators) – managing RI related safety risks and reporting pre-cursor events that could result in an RI occurrence

2.4.5 Actions

	ACTIONS	TARGET DATE
a)	The IAA will focus on the management of the risk of RI occurrences with Irish CAT/NCC aeroplane organisations, as appropriate to their operations, as part of safety oversight and performance monitoring activities **EPAS References MST.0028.**	Ongoing
b)	The IAA will review the level of implementation of recommendations for CAT/NCC aeroplane operators contained in the EAPRRI Version 3, and GAPPRI vol 1 (Edition Dec. 2023), as part of the oversight cycle	Q4 2024

2.4.6 Status Highlights

- Focus on management of risks associated with RI during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of RI related events and precursors
- Updating sector risk register to include new risks in this area
- Ongoing safety promotion on the risks in this area.
- Reviewed the implementation of the recommendations of the European Action Plan for the Prevention of Runway Incursions (EAPPRI), version 3, as applicable to aircraft operators. In 2024, this action has been updated to include the review of GAPPRI recommendations applicable to aircraft operators.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to RI accidents and incidents

2.5 Runway Excursions

2.5.1 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 2013 and the recently published Global Action Plan for the Prevention of Runway Excursions (GAPPRE) in 2021, coordinated by EUROCONTROL and the Flight Safety Foundation.

2.5.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks of runway excursion involving Irish CAT/NCC aeroplane operators.

2.5.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to RE and Abnormal Runway Contact (ARC) category occurrences, involving Irish CAT/NCC aeroplane operators.

2.5.4 Stakeholders/Roles

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

Industry (CAT/NCC aeroplane operators) – managing RE/ARC related safety risks and reporting pre-cursor events that could result in an RE occurrence.

2.5.5 Actions

	ACTIONS	TARGET DATE
a)	The IAA will focus on the management of the risk of RE occurrences with Irish CAT/NCC aeroplane operators, as appropriate to their operations, as part of safety oversight and performance monitoring activities **EPAS References MST.0028.**	Ongoing
b)	The IAA will review the level of implementation of GAPPRE/ EAPPRE recommendations for CAT/NCC aeroplane operators as part of safety oversight activities. **EPAS References MST.0007**	Ongoing
c)	The IAA will ensure a continued focus on training for pilots, which includes runway excursion prevention and ensures the continuous improvement in training programmes, taking into consideration the monitoring of performance indicators. **GAPPRE Recommendation #REG6**	Q4 2024

2.5.6 Status highlights

- Focus on management of risks associated with RE/ARC during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of RE/ARC related events and precursors
- Updating sector risk register to include new risks in this area
- Ongoing safety promotion on the risks in this area, including encouraging implementation of technical solutions (e.g. D-ATIS and ROAAS) where feasible.

- Implementation of the recommendations of the GAPPRE 2021 as applicable to aircraft operators is being monitored during oversight activities. This includes the monitoring of precursor events to RE and verifying that lessons learned are being effectively incorporated into training programmes

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to RE accidents and incidents

2.6 Safety of Ground Operations

2.6.1 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 ground collision accidents that occur are rarely fatal, but they can result in costly repairs for airlines and lengthy delays for passengers.

Ground operations includes a number of different activities that fall under the remit of the Flight Operations section of SPAS, including ground handling of aircraft, aircraft loading, aircraft de-icing, aircraft fueling and handling of dangerous goods.

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.

2.6.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks due to ground operations by Irish CAT/NCC aeroplane operators.

2.6.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to Ground Operations (e.g. RAMP, GCOL) category occurrences, involving Irish CAT/NCC aeroplane operators.

2.6.4 Stakeholders/Roles

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

Industry (CAT/NCC aeroplane operators) – managing ground operations related safety risks and reporting ground operations related occurrences.

2.6.5 Actions

ACTIONS		TARGET DATE
a)	The IAA will focus on the management of the risks during ground operations with Irish CAT/NCC aeroplane operators, as appropriate to their operations, as part of safety oversight and performance monitoring activities.	Ongoing
b)	The IAA will focus on the specific risks for ground operations during return to normal operations post COVID-19	Closed

2.6.6 Status Highlights

- Focus on management of risks associated with ground operations during ramp inspections and oversight of SMS
- Highlighted EASA SIB 2023-05 *'Emerging Risks for Summer 2023 Operations'* to Irish Air Operators for application of last year's lessons learned for 2024 Summer operations. The related post covid RNO SPAS action b) above is now closed
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of ground operations related events and precursors
- Updating sector risk register to include new risks in this area
- Safety promotion on the risks in this area, including dedicated Ground Operations Working Group
- Providing a leading role in EASA RMT task development of new EU regulations in ground handling

2.7 Aircraft Environment

2.7.1 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 depressurisation, adverse air quality (e.g. fumes/smoke) 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 are the carriage of lithium batteries on board the aircraft and unruly passenger behaviour.

2.7.2 Safety Objective

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

2.7.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

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

2.7.4 Stakeholders/Roles

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

Industry (CAT/NCC aeroplane operators) – managing aircraft environmental related safety risks and reporting pre-cursor events that could result in an aircraft environmental occurrence.

2.7.5 Actions

	ACTIONS	TARGET DATE
a)	The IAA will review actions by CAT/NCC aeroplane operators 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 CAT/NCC aeroplane operators.	Ongoing

2.7.6 Status Highlights

- Focus on management of risks to aircraft environment during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring reports of occurrences related to Fire/Smoke/Fumes, Cabin Safety, and unruly passenger events
- Detailed analysis conducted on unruly passenger behaviour
- Updating sector risk register to include new risks in this area
- During 2023, the IAA worked with An Garda Síochána, Irish airlines, the major Irish airports, ground handlers and international aviation organisations to re-launch the national Unruly Passenger Declaration first launched in 2019 pre-COVID. The declaration sets out how the Irish aviation industry will work together to address the issue of unruly behaviour on flights. This work will continue during the forthcoming years and accordingly action b) is changed to and ongoing task.
- Safety promotion on the risks in this area, including:
  - promote the hazards associated with the carriage of Lithium Batteries in cargo or checked in baggage, due to inappropriate storage of lithium batteries
  - safety promotion campaigns to address unruly passenger behaviour

3. Rotorcraft Operations

Rotorcraft operators in Ireland perform a wide range of highly specialised operations to meet different demands within the State, including passenger transport, medical emergencies, off- shore operations, search and rescue, survey work and others. This area includes four types of operations:

- Commercial operations conducted by AOC holders
- SPO (aerial work), such as survey, advertisement, photography
- National SAR operations involving onshore and offshore operations
- Non-commercial operations

Although each rotorcraft operational type has its own specific risks, they all share many risks in common, including intentional low flying operations, rotorcraft upset, response to technical defects, collision with obstacles and/or terrain, airborne collision with other aircraft or drones, and are thus addressed in a common rotorcraft risk register.

3.1 Rotorcraft safety

3.1.1 Safety Issue

Rotorcraft operators perform a wide range of highly specialised operations to meet different demands within the State, including passenger transport, medical emergencies, offshore operations, search and rescue, survey work and others. Although rotorcraft operators are exposed to similar risks as large commercial transport operators, the nature of rotorcraft operations brings specific risks to this sector.

3.1.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks in rotorcraft operations in the State.

3.1.3 Safety Performance Indicators (Ref also SPAS Volume I, Chapter 5)

Accident, Serious Incident and Incident rates and trends related to rotorcraft operations.

3.1.4 Stakeholders/Roles

Department of Transport – policy in respect civil rotorcraft operations in the State

Irish Aviation Authority – analysis of sector occurrence rates and trends and identification of sector-based safety issues; aviation safety oversight of civil rotorcraft operations

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

3.1.5 Actions

	ACTIONS	TARGET DATE
a)	The IAA will work with industry to provide a rotorcraft flight operations consultation forum involving approved and declared rotorcraft operators, to focus on common operational and safety issues across this sector	Closed
b)	The IAA will promote safety messages addressing the key risks in rotorcraft operations, including rotorcraft safety workshops where relevant **EPAS Reference MST.0015**	Ongoing

3.1.6 Status Highlights

- Focus on management of key risks during rotorcraft operations during oversight of SMS, including intentional low flying operations, rotorcraft upset, response to technical defects, collision with obstacles and/or terrain, airborne collision with other aircraft, including drones
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of rotorcraft safety related events and precursors
- Updating rotorcraft sector risk register to include new risks in this area
- At the Flight Operations Consultation Group meeting in early 2022 it was proposed to establish a separate Rotorcraft Operators Consultation Group (ROCG) to include both approved and declared rotorcraft operators. Rotorcraft operators subsequently expressed the wish to continue to attend the FOCG

along with the fixed wing community, and therefore a pragmatic solution was reached to incorporate the ROCG into the FOCG where the rotorcraft specific issues can be addressed. The related SPAS action a) is now closed

- IAA is represented on EASA Rotorcraft Collaborative Analysis Group and Helicopter Offshore Coordination forum
- Safety promotion on the key risks to rotorcraft operations, including:
  - Promotion of the European Rotorcraft Safety Roadmap
  - Promotion of EASA organised rotorcraft safety seminars and safety portion material – ref also EASA Rotorcraft Community Network https://www.easa.europa.eu/community/ rotorcraft
  - Participation of Irish rotorcraft community in the General Aviation Safety Council of Ireland

3.2 Use of civil certified rotorcraft for Search and Rescue operations

3.2.1 Safety Issue

In common with many other EU Member States, certified rotorcraft may be used in Ireland to perform search and rescue operations on behalf of the State. Since State functions (such as SAR) are currently excluded from EASA Basic Regulation each State must provide national regulations pertaining to the conduct and oversight of SAR. This leads to a complex regulatory framework with key activities such as fight operations, training, maintenance and design subject to EASA and/or national regulations depending on the specific use of the rotorcraft on an individual flight, and in which State such activities are conducted.

3.2.2 Safety Objective

To standardise the regulatory framework for the conduct and oversight of State Search and Rescue operations by civil certified rotorcraft.

3.2.3 Performance Indicators

Delivery of a common set of EU Standards for SAR conducted by civil certified rotorcraft.

3.2.4 Stakeholders/Roles

Department of Transport – policy in respect of oversight of civil rotorcraft operators in the conduct of State functions.

Irish Aviation Authority – analysis of sector occurrence rates and trends and identification of sector-based safety issues; aviation safety oversight of civil rotorcraft operators in the conduct of State functions (e.g. search and rescue, aerial firefighting).

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

3.2.5 Actions

ACTIONS	TARGET DATE
a) The IAA will work with the EC, EASA and other EU Member States to consider the development of EU standardised regulations pertaining to the use of civil certified aircraft for State functions (e.g. Search and Rescue)	Q4 2024

3.2.6 Status Highlights

- Safety Issue review meetings held with selected States to develop cross State consensus on the needs in this area
- Opt-in provisions available under EU Regulation (EU) 2018/1139 can be applied to SAR operations, however these opt-in provisions have limited use in some domains (e.g. Air Operations domain) due to the amount of exemptions from civil requirements required in order to perform some SAR missions.
- The IAA provided a presentation of the safety issue to EASA Management Advisory Board in October 2022 in order to gain support at EU level for the development of pan-EU standards for civil operators performing SAR functions. An EASA working group was proposed and the IAA developed the related ToRs for review.
- The IAA also participates in the ICAO EUR/NAT SAR Task Force which has identified a workstream to develop **SAR Ops Guidance Material for Civil Aviation Authorities.**
- The IAA has implemented AAIU (SIA) Annex 13 safety recommendations addressed to IAA pertaining to oversight of rotorcraft SAR operations, and monitors implementation of safety recommendations to other stakeholders.

4. Air Traffic Management / Air Navigation Services (ATM/ANS)

ATM/ANS services provided in Ireland, are:

- Air Traffic Services, including Air Traffic Control, Flight Information, Alerting
- Communication, Navigation and Surveillance Services
- Aeronautical Information
- Airspace Management
- Air Traffic Flow Management
- Meteorological Services

The key risk areas identified for this domain are mid-air collision, runway incursion and runway excursion.

The IAA has developed the following Key Safety Performance Indicators in the ATM/ANS domain, that address the key risk areas through associated ATM/ANS related precursor events:

- Separation Minimum Infringements
- Runway Incursion
- Aircraft Deviation from Clearance, Procedures or Regulation (airborne and ground-based)
- Level Bust
- Airspace Infringement

4.1 Mid-Air Collisions

4.1.1 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). MAC has been recognised for some time as a key risk in aviation safety and led to the publication of the European Action Plan for the Airspace Infringement Risk Reduction (EAPAIRR) in 2010 that was updated to version 2 in 2022.

4.1.2 Safety Objective

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

4.1.3 Safety Performance Indicators

Accident, Serious Incident and Incident rates and trends related to MAC category occurrences in Irish controlled airspace.

4.1.4 Stakeholders/Roles

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

Industry (ANSPs) – managing MAC related safety risks and reporting pre-cursor events that could result in a MAC occurrence, developing enhanced safety nets to minimise the risk of MAC

4.1.5 Actions

ACTIONS		TARGET DATE
a)	The IAA will focus on the management of the risk of MAC occurrences with Irish ANSPs, as appropriate to their operations, as part of safety oversight and performance monitoring activities **EPAS References MST.0028.**	Ongoing
b)	The IAA will evaluate the need for, and feasibility of, implementing SESAR solutions (ie enhanced STCA/safety nets #60, #69) with the Irish ANSP, aiming to reduce the risk of mid-air collision en-route and in TMA.EPAS Reference MST.0030	Closed
c)	The IAA will review implementation of updated recommendations for ATM/ANS regulators and services providers, including ANSP's, AIM/MET and Airspace Design, arising from EAPAIRR version 2 issued in March 2022 during next oversight cycle.	Q4 2024

4.1.6 Status Highlights

- Focus on management of risks associated with MAC during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of MAC related events and precursors
- Updating sector risk register to include new risks in this area
- Updated recommendations of the EAPAIRR Version 2, reviewed as applicable to ATM/ANS regulators, and new recommendation for establishment of airspace infringement strategic working group and to promote the establishment of Local Airspace Infringement Teams is under consideration, in the context of a relatively non-complex airspace structure in the State.
- Ongoing co-ordination with military authorities on safety occurrences via StaCMAN committee.
- Updated recommendations of the EAPAIRR version 2 for ANSP's, AIM/MET and Airspace Design under review during oversight cycle
- Highlighted EASA SIB on Incorrect Barometric Altitude Setting (EASA SIB 2023-03, issued Mar 2023) to aircraft operators and ANSP during annual safety review meetings
- Highlighting Increasing level of GPS jamming and spoofing affecting aircraft navigation and EGPWS systems to Irish ANSP - EASA SIB 2022-02R2, issued Nov 2023 refers

Action 4.1.5 (b) has been closed and is no longer tracked in the Irish SPAS in consequence of the removal of related MST.0030 from EPAS 2024 update.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to MAC accidents and incidents

4.2 Runway Incursions

4.2.1 Safety Issue

A runway incursion (RI) involves the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of an aircraft. 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 (EAPPRI), which was updated to Edition 3 in 2018, and most recently the Global Action Plan for the Prevention of Runway Incursions GAPPRI Volume 1 (Edition Dec. 2023). GAPPRI Volume 2 is due to be published later in 2024.

4.2.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks of runway incursion at Irish certificated and nationally licensed aerodromes.

4.2.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to RI category occurrences at Irish aerodromes.

4.2.4 Stakeholders/Roles

Irish Aviation Authority — analysis of RI occurrences rates and trends and identification of sector-based safety issues.

Industry (ANSP's) — managing RI related safety risks and reporting pre-cursor events that could result in an RI occurrence

4.2.5 Actions

	ACTIONS	TARGET DATE
a)	The IAA will focus on the management of the risk of RI occurrences with Irish regulated organisations, as appropriate to their operations, as part of safety oversight and performance monitoring activities **EPAS References MST.0028.**	Ongoing
b)	The IAA will monitor the effectiveness of the local runway safety teams, including ANSP participation and SMS effectiveness in reducing RI precursor events **EPAS Reference: MST.0011**	Ongoing
c)	The IAA will review the level of implementation of recommendations for ANSP's contained in EAPRRI version 3, and GAPPRI, Ed. Dec 2023, as part of the oversight cycle	Ongoing

d)	The IAA will evaluate in conjunction with ANSP's 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 (e.g. SESAR Solutions #02, #48, #70) **EPAS Reference MST.0029**	Closed
e)	The IAA will conduct risk modelling, risk assessment and safety analysis of runway safety in the ATM/ANS domain, including low visibility operations.	Q4 2024

4.2.6 Status Highlights

- Focus on management of risks associated with RI during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of RI related events and precursors
- Updating sector risk register to include new risks in this area
- Ongoing safety promotion on the risks in this area
- IAA participation in Local Runway Safety Teams and monitoring of ANSPs participation
- Establishment of, and participation in, the National Runway Safety Forum (NRSF)
- Reviewed the implementation of the recommendations of the European Action Plan for the Prevention of Runway Incursions (EAPPRI), version 3, as applicable to ANSPs. In 2024, this action has been updated to include the review of GAPPRI recommendations applicable to ANSPs and LRSTs.
- Bowtie barrier model development work to address runway protection from ATM/ANS perspective was completed. Analysis of the strength of the identified barriers and update the model utilising the occurrence reporting system identified data quality issues. Consequentially, some re-coding is needed prior to finalising analysis. Final analysis to be promoted through the NRSF.
- Action 4.1.5 (b) has been closed and no longer tracked in the Irish SPAS in consequence of the removal of related MST.0029 from EPAS in the 2024 update.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to RI accidents and incidents

4.3 Runway Excursions

4.3.1 Safety Issue

A runway excursion (RE) is an event in which an aircraft veers off or overruns the runway sur- face 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 2013 and the recently published Global Action Plan for the Prevention of Runway Excursions (GAPPRE) in 2021, co-ordinated by EUROCONTROL and the Flight Safety Foundation.

4.3.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks of runway excursion at Irish certificated and licenced aerodromes with ATS services.

4.3.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

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

4.3.4 Stakeholders/Roles

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

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

4.3.5 Actions

ACTIONS		TARGET DATE
a)	The IAA will focus on the management of the risk of RE occurrences with Irish regulated organisations, as appropriate to their operations, as part of safety oversight and performance monitoring activities **EPAS References MST.0028.**	Ongoing
b)	The IAA will review the level of implementation of GAPPRE/ EAPPRE recommendations for ANSP's as part of safety oversight activities. **EPAS References MST.0007**	Ongoing
c)	The IAA will ensure a continued focus on training for air traffic controllers and AFISOs, which includes runway excursion prevention and ensures the continuous improvement in training programmes, taking into consideration the monitoring of performance indicators **GAPPRE Recommendation #REG6**	Q4 2024
d)	IAA will establish a national runway safety forum which includes representatives from aircraft operators, ANSPs, aerodromes, and where best practices and learning can be shared. **GAPPRE Recommendation #REG10**	Closed

4.3.6 Status Highlights

- Focus on management of risks associated with RE/ARC during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of RE/ARC related events and precursors
- Updating sector risk register to include new risks in this area
- Ongoing safety promotion on the risks in this area.
- Implemented the National Runway Safety Forum, involving airports, ANSP's and aircraft operators and related action d) above was closed.

- Implementation of the recommendations of the GAPPRE 2021 as applicable to ANSPs is being monitored during oversight activities. This includes the monitoring of precursor events to RE and verifying that lessons learned are being incorporated into training programmes

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to RE accidents and incidents

4.4 Controlled Flight into Terrain - Rotorcraft

4.4.1 Safety Issue

Rotorcraft operators may encounter significant weather and terrain related challenges when performing a wide range of highly specialised operations to meet different demands within the State, including medical emergencies, search and rescue, survey work and others. Much of this activity requires low level flying and take-off and landing sites (e.g. hospitals, re-fuelling) that do not offer the same protections as airports. The IAA is working with ANSPs, air operators and procedures designers and other Stakeholders, to develop low level IFR routes in Irish airspace to facilitate safe rotorcraft operations.

4.4.2 Safety Objective

To improve rotorcraft safety by implementing low level IFR routes in Irish airspace.

4.4.3 Safety Performance Indicators

Accident, Serious Incident and Incident rates and trends related to low-level rotorcraft operations involving Irish rotorcraft approved or declared organisations.

4.4.4 Stakeholders/Roles

Irish Aviation Authority — analysis of rotorcraft low level occurrence rates and trends and identification of sector-based safety issues.

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

Industry (ANSP's) – to support the implementation of low-level Rotorcraft IFR operations.

4.4.5 Actions

ACTIONS		TARGET DATE
a)	The IAA, in conjunction with the ATM/ANS providers and other stakeholders will evaluate the possibility of implementing instrument procedures to facilitate low level Rotorcraft IFR routes in Irish airspace **EPAS Reference MST.0031**	Closed

4.4.6 Status Highlights

- Stakeholder workshops held involving Irish rotorcraft operators to identify priorities (e.g. most commonly used sites for take-off and landings).
- IAA policies and procedures established for development of Point-in-Space (PinS) approaches.
- Implementation of the first PinS Approach for Rotorcraft in 2021.
- Working with Stakeholders to identify other sites suitable for PinS approaches either within or outside of controlled airspace.
- Responsibilities for the maintenance and safeguarding of the PinS IFP remain difficult issues to be resolved on a case-by-case basis.

This action was initiated in the European Plan for Aviation Safety (EPAS) to serve the alignment with the ATM Master Plan (MP). To avoid overlap with the activities under the European ATM Masterplan and related reporting obligations, the action was deleted from EPAS in 2024, and consequently will no longer be tracked as part of the Irish SPAS. The IAA will continue to report activities in this regard via the ATM MP LSSIP activities.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to CFIT accidents and incidents

4.5 Significant ATM/ANS Regulatory Changes

4.5.1 Safety Issue

EASA EPAS Rulemaking Task RMT.0161 concerns the development of a harmonised and mutually recognised mechanism to attest compliance of ground equipment, including ATM systems and constituents. This rulemaking project involves the development of new Implementing Rules and Delegated acts that will represent a significant change to the current processes for certification/declaration of ground equipment, to include

for the first time the approval of organisations for design and production. The new regulations will also introduce a simpler interoperability scheme, that will replace current SES IOP rules in Q3 of 2023. The IAA is actively engaged in the EU rulemaking project to support the development of the new regulatory framework and prepare for its implementation.

4.5.2 Safety Objective

To implement the new EU regulatory framework concerning the compliance of ATM ground equipment, including systems and constituents, and provide associated guidance to affected service providers.

4.5.3 Performance Indicators

Rate of findings of non-compliance following implementation of significant regulatory changes.

4.5.4 Stakeholders/Roles

EASA – Management of EPAS RMT.0161

Department of Transport — development of national policy and assignment of regulatory functions.

Irish Aviation Authority — Participating in EU regulation development programme; implementation of EU requirements for competent authorities, and providing related guidance to industry stakeholders.

Industry – implementation of regulatory requirements for organisations

4.5.5 Actions

ACTIONS	TARGET DATE
NEW ACTIONS a) The IAA will work with EASA and other States on the development of the regulatory framework to address compliance of ATM/ANS systems and constituents and will support a smooth transition to the new regulatory framework in Ireland **EPAS Reference RMT.0161**	Q4 2025

4.5.6 Status Highlights

- Supporting the work of EASA sub-task teams (4 of) in developing content for NPAs and EASA opinion.
- The IAA hosted a workshop for NSA's and an NCP Transversal WG meeting in 2023

5. Aerodromes

Aerodromes within Ireland consist of four main types:

- Certificated Aerodromes per EU Regulation No. 139 of 2014, which are open to public use and primarily serve commercial air transport. There are currently 7 aerodromes certified to EU regulation in Ireland.
- Nationally Licensed public aerodromes, which are open to public use and serve commercial operations in cases that are not currently within the scope of EU regulations. There are currently 6 nationally licensed public aerodromes in Ireland.
- Nationally licensed private aerodromes, which are not open to public use but require to be licensed (e.g. to facilitate flight training). There are currently 9 nationally licensed private aerodromes in Ireland.
- Declared use of an unlicensed aerodrome by aircraft engaged in instruction in flying. There are currently 5 airfields where such a declaration is in place.

Details of the current certificated and licensed aerodromes are published in AIP Ireland, AD Section 1.5 — Status of Certification of Aerodromes.

The key operations risk areas identified in the Aerodromes domain are runway incursions, runway excursions, ground operations, bird/wildlife management and drone infringements.

Ground operations includes a number of different activities that fall under the remit of the Aerodrome section of SPAS, including ground vehicle operations and runway condition monitoring. In some cases (e.g. smaller airports) the aerodrome operator also performs ground operations involving aircraft, such as ground handling, aircraft loading and handling of dangerous goods.

The IAA is also supportive of industry led safety initiatives at airports, such as the Eurocontrol Safety Culture Stack, as an indicator of SMS maturity.

Refer also to Chapter 8 action 8.1.5(b) concerning guidance for aerodrome operators on UAS incident management at aerodromes.

5.1 Runway Incursions

5.1.1 Safety Issue

A runway incursion (RI) involves the incorrect presence of an aircraft, vehicle or person on the protected area of a surface designated for the landing and take-off of an aircraft. 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, and most recently the Global Action Plan for the Prevention of Runway Incursions GAPPRI (Edition Dec. 2023).

5.1.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks of runway incursion at Irish certificated and nationally licensed aerodromes.

5.1.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to RI category occurrences at Irish aerodromes.

5.1.4 Stakeholders/Roles

Irish Aviation Authority — analysis of RI occurrences rates and trends and identification of sector-based safety issues.

Industry (Airports) — managing RI related safety risks and reporting pre-cursor events that could result in an RI occurrence

5.1.5 Actions

	ACTIONS	TARGET DATE
a)	The IAA will focus on the management of the risk of RI occurrences with Irish aerodrome operators, as appropriate to their operations, as part of safety oversight and performance monitoring activities **EPAS References MST.0028**	Ongoing
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.0011**	Ongoing

c)	The IAA will review the level of implementation of recommendations for service providers contained in EAPRRI Version 3 and GAPPRI, Ed. Dec 2023 as part of the oversight cycle **EPAS Reference MST.0014**	Ongoing
d)	The IAA will evaluate in conjunction aerodrome operators 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 (e.g. SESAR Solutions #01, #04, #47) **EPAS Reference MST.0029**	Closed

5.1.6 Status Highlights

- Focus on management of risks associated with RI during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of RI related events and precursors
- Updating sector risk register to include new risks in this area
- Ongoing safety promotion on the risks in this area
- Local Runway Safety Teams in place and operational. IAA actively participates.
- Participation in the National Runway Safety Forum
- Reviewed the implementation of the recommendations of the European Action Plan for the Prevention of Runway Incursions (EAPPRI), version 3, as applicable to airports. EAPPRI recommendations also considered by LRST's. In 2024, this action has been updated to include the review of GAPPRI recommendations applicable to airports and LRSTs.

EAPPRI recommendation for regulators on performance assessment of manoeuvring area change management processes, including cross-domain risk assessment, has been implemented via Service Level Agreements between the aerodrome and the ANSP, as required for specific airports, and are subject to ongoing oversight. A related SPAS action in this regard was closed in 2022.

Action 4.1.5 (b) has been closed and is no longer tracked in the Irish SPAS as a consequence of the removal of related MST.0029 from EPAS in the 2024 update.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to RI accidents and incidents

5.2 Runway Excursions

5.2.1 Safety Issue

A runway excursion (RE) is an event in which an aircraft veers off or overruns the runway sur- face 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 2013 and the recently published Global Action Plan for the Prevention of Runway Excursions (GAPPRE) in 2021, co-ordinated by EUROCONTROL and the Flight Safety Foundation.

5.2.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks of runway excursion at Irish certificated and licensed aerodromes.

5.2.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

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

5.2.4 Stakeholders/Roles

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

Industry (Aerodromes) – managing RE/ARC related safety risks and reporting pre-cursor events that could result in an RE occurrence

5.2.5 Actions

ACTIONS		TARGET DATE
a)	The IAA will focus on the management of the risk of RE occurrences with Irish aerodrome operators, as appropriate to their operations, as part of safety oversight and performance monitoring activities **EPAS References MST.0028**	Ongoing

b)	The IAA will review the level of implementation of GAPPRE/ EAPPRE recommendations for aerodrome operators as part of safety oversight activities. **EPAS References MST.0007**	Ongoing
c)	The IAA will ensure a continued focus on training for aerodrome personnel, which includes runway excursion prevention and ensures the continuous improvement in training programmes, taking into consideration the monitoring of performance indicators. **GAPPRE Recommendation #REG6**	Q4 2024

5.2.6 Status Highlights

- Focus on management of risks associated with RE/ARC during oversight of SMS
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of RE/ARC related events and precursors
- Updating sector risk register to include new risks in this area
- Ongoing safety promotion on the risks in this area.
- Implementation of the recommendations of the GAPPRE 2021 as applicable to aerodrome operators is being monitored during oversight activities. GAPPRE recommendations are also considered by LRST's.
- GAPPRE Recommendation #REG6 is addressed in the Aerodrome Domain via existing training requirements concerning runway maintenance and runway condition reporting and verifying that lessons learned are being incorporated into training programmes.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to RE accidents and incidents

5.3 Safety of Ground Operations

5.3.1 Safety Issue

Ground operations involve all aspects of ground vehicle and aircraft handling at the airport as well as movements 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.

5.3.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks due to ground operations at Irish certified/Licensed aerodromes.

5.3.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to Ground Operations (e.g. RAMP, GCOL) category occurrences at Irish airports.

5.3.4 Stakeholders/Roles

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

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

5.3.5 Actions

	ACTIONS	TARGET DATE
a)	The IAA will focus on the management of the risks during ground operations with Irish aerodrome operators, as appropriate to their operations, as part of safety oversight and performance monitoring activities.	Ongoing
b)	The IAA will focus on the specific risks for ground operations during return to normal operations post COVID-19	Closed

5.3.6 Status Highlights

- Focus on management of risks associated with ground operations during ramp inspections and oversight of SMS
- Highlighted EASA SIB 2023-05 *'Emerging Risks for Summer 2023 Operations'* to Irish Aerodrome Operators for application of 2023 lessons learned for 2024 summer operations. The related post covid return to normal operations action b) above is now closed.
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Monitoring of ground operations related events and precursors
- Updating sector risk register to include new risks in this area
- Safety promotion on the risks in this area
- Monitoring the implementation of recommendations of EASA SIB 2019-02 which addresses the risk of explosive door opening on parked aeroplanes
- Action regarding 'post covid return to normal operations' is completed and closed in 2023.

5.4 Bird and Wildlife Strikes

5.4.1 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

5.4.2 Safety Objective

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

5.4.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

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

5.4.4 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 (Air Operators, Aerodromes) – managing bird and wildlife related safety risks and reporting bird and wildlife related occurrences

5.4.5 Actions

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

5.4.6 Status Highlights

- Focus on management of risks associated with bird/wildlife during oversight of aerodrome operators
- Continued increased rate of reporting of bird/wildlife strikes during 2023, post covid
- Review of organisational safety objectives and SPIs to ensure they are appropriate and that they consider State level safety objectives (ref SPAS Volume I, Chapter 5)
- Supporting the National Bird/Wildlife Hazard Committee
- Statistical analysis of confirmed bird/wildlife strikes on aircraft
- Annual notification to ICAO IBIS system on confirmed Bird/Wildlife strikes
- Updating sector risk register to include new risks in this area

In 2021 detailed guidance was published "Bird & Wildlife Strike Management at Aerodromes" which is available at BIRD AND WILDLIFE STRIKE MANAGEMENT AT AERODROMES (iaa.ie)

6. Airworthiness

Airworthiness activities in Ireland include production activities (aircraft parts), the management of continued airworthiness and the execution of maintenance. The airworthiness domain has been historically subject to Quality Management Systems, however the introduction of requirements for Safety Management Systems (SMS) in airworthiness domain began with the establishment of requirements for SMS for Continued Airworthiness Management Organisations (CAMO) in Commission Implementing Regulation (EU) 2019/1383. The implementing regulations to require SMS for Part 145 organisations and Part 21 Production Organisations is planned for 2023.

6.1 SMS in CAMO, Part 145 and Part 21 Production

6.1.1 Safety Issue

The EU regulatory framework introduced the requirements for SMS for CAMO's in 2019 and the requirements for SMS in Part 145 and Part 21 is planned for 2023. The IAA is developing necessary procedures and competencies (see Chapter 1.6 of this Plan) to oversee the compliance and effectiveness of an SMS and is also supporting airworthiness organisations with the implementation of SMS organisational requirements. Implementation of SMS also supports the transition to risk-based and performance-based oversight in airworthiness domain (ref Ch 1.5 of this Plan for further details).

6.1.2 Safety Objective

To oversee and support the implementation of compliant and effective SMS in Irish approved CAMO's, Part 145 and Part 21 Production organisations.

6.1.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Maturity indicators based on EASA Management System Assessment Tool.

6.1.4 Stakeholders/Roles

Irish Aviation Authority – initial acceptance and continued regulatory oversight of SMS

Industry (CAMO. Part 145 and Part 21 Production) – implementation of compliant and effective SMS with continuous improvement in safety performance.

6.1.5 Actions

ACTIONS	TARGET DATE
a) The IAA will develop the tools to support organisation risk profiles for CAMO, Part 145 and Part 21 Production organisations.	Q4 2024
b) The IAA will support organisations with the implementation of SMS organisational requirements.	Q4 2024
c) The IAA will develop safety performance indicators necessary to support the oversight of an SMS in CAMO, Part 145 and Part 21 Production	Q4 2024

6.1.6 Status Highlights

- The IAA developed the necessary procedures to implement the authority requirements pertaining to oversight of the compliance and effectiveness of an SMS in Part 145 and Part 21 Production
- EASA Management System Assessment Tool has been updated to support its use for CAMO, Part 145 and Part 21 organisations.
- EASA Part 145 transition guide reviewed and associated guidance being adopted
- Safety review teams developed in CAMO, Part 145 and Part 21 Production domains
- Sector risk registers developed for CAMO and Part 145
- Organisation risk profiles under development in CAMO, Part 145 and Part 21 Production domains. Mature model developed for CAMO, to be rolled out to other domains during 2024. Target date extended accordingly.
- IAA annual safety performance review 2023 included details on airworthiness events reported through the occurrence reporting system. This data can be used by IAA and organisations to help develop SPIs in the airworthiness domain. Target date extended accordingly
- Training provided for inspectors (see Ch 1.6 for details)

6.2 Risk Management in airworthiness

6.2.1 Safety Issue

The incorrect performance of airworthiness activities such as aircraft production, 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.

6.2.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks relating to performance of aircraft airworthiness activities involving Irish organisations.

6.2.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to performance of aircraft airworthiness activities.

6.2.4 Stakeholders/Roles

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

Industry – managing aircraft production and maintenance related safety risks and reporting pre-cursor events that could result in an aircraft airworthiness related occurrence.

6.2.5 Actions

ACTIONS		TARGET DATE
a)	The IAA will work with airworthiness industry stakeholders to enhance the assessment of risk and associated risk mitigation actions	Q4 2024
b)	The IAA will focus on the risk of fraud in maintenance Part-147 examinations, by adding specific items in audit checklists and collecting data on the actual cases of fraud. **EPAS Reference MST.0035**	Ongoing
c)	The IAA will support organisations involved in Dangerous Goods training during the transition from a category-based approach to a competency-based training and assessment approach (CBTA).	Closed

6.2.6 Status

- Safety review teams developed in CAMO, Part 145 and Part 21 production domains
- Sector risk registers developed and maintained for CAMO and Part 145, including COVID-19 specific risks
- Focus on management of airworthiness risks with CAMOs during oversight of SMS and with Part 145 organisations during initial acceptance of SMS
- Monitoring of occurrences with event types related to aircraft production, maintenance or maintenance management
- SMS training provided to Part 21 Production, CAMO and Part 145 organisations
- Specific focus on risk of fraud in Part 147 examinations introduced into audit checklists (action 2.4.5(b) now an ongoing task). No cases yet reported. IAA also report to EASA on cases of fraud during Part 66 licence applications, where the fraud is suspected to have occurred in other jurisdictions.
- The IAA implemented relevant policies and procedures and supported Dangerous Goods training organisations that expressed interest in, or who applied to, transition to the new CBTA framework, including airlines, airports and independent DG organisations. The related SPAS action is now closed.

7. General Aviation

General Aviation (GA) in Ireland includes aviation activities not categorised as Commercial Air Transport (CAT) or addressed under Part NCC declaration. It includes aviation activities regulated under European and National legislation such as.

- specialised operations (Part SPO/Aerial Works) including aerial photography, surveys and parachute support operations;
- non-commercial operations using certified non-complex aircraft (Part NCO) such as private flying, pilot training, introductory flights, and cost-sharing flights
- leisure flying involving non-certified aircraft (ie the so called Annex 1 aircraft) There are over 550 registered GA aircraft in Ireland.

7.1 Safety Promotion for General Aviation

7.1.1 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.

7.1.2 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.

7.1.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

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

7.1.4 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 awareness.

7.1.5 Actions

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.0015, MST.0025, MST.0027**	Ongoing

7.1.6 Status Highlights

- General Aviation Safety Council of Ireland established with representatives from most sectors of general aviation in Ireland, IAA and AAIU. GA public safety evenings held in Q2 and Q4 each year.
- Ongoing promotion of safety resources for GA
  - www.GASCI.ie
  - https://www.iaa.ie/general-aviation
  - https://www.easa.europa.eu/community/ga
- Focus on improving safety reporting culture in general aviation to share safety information amongst the community (see also https://flyinginireland.com/2022/10/do-you-report/)

7.2 Airspace Infringement by GA aircraft

7.2.1 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 by air traffic controllers to help prevent mid-air conflict between aircraft.

7.2.2 Safety Objective

To continuously improve safety by assessing and mitigating the risks due to airspace infringe- ments involving general aviation in Ireland.

7.2.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

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

7.2.4 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

7.2.5 Actions

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.0038**	Q4 2024
b)	The IAA will work with GASCI to highlight the risk of airspace infringement by general aviation aircraft, and share best practices in its avoidance, during general aviation safety evenings	Ongoing

7.2.6 Status Highlights

- Airspace design is relatively non-complex in Ireland with Class C airspace concentrated around the main airports and Class G airspace otherwise. Most airspace infringements occur around the interfaces of Class C/G, possibly due to loss of situational awareness or navigation error, rather than intent.
- Ongoing co-ordination with main air navigation services provider to update airspace design to facilitate sustainable Instrument Flight Procedures (eg continuous descent approach) in consultation with airspace users including GA community.
- Airspace Infringement is regularly addressed in GASCI safety evenings, including AI hotspots.

The actions in this chapter support the GASR 2023-2025 Operational SEI Mitigate contributing factors to MAC accidents and incidents

7.3 Key Risks for General Aviation aircraft

7.3.1 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 (e.g. 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 meteorological 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

7.3.2 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.

7.3.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

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

7.3.4 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 (e.g. near miss) for information sharing to the benefit of the general aviation community.

7.3.5 Actions

ACTIONS		TARGET DATE
a)	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.0028**	Ongoing
b)	The IAA will ensure that learning objectives in the 'Meteorological Information' part of the PPL/LAPL syllabus used by Irish general aviation training organisations address: • practical interpretation of ground-based weather radar, strengths and weaknesses. • practical interpretation of meteorological satellite imagery, strengths and weaknesses. • forecasts from numerical weather prediction models, strengths and weaknesses. **EPAS Reference MST.0036**	Closed

7.3.6 Status Highlights

- During the reference period for this version of SPAS the following topics were addressed as part of general aviation safety promotion:
  - Lessons learned from recent Annex 13 accident reports
  - Prevention of loss of control in flight (fixed and rotary wing)
  - Mid-air collision/Airspace infringements/Drones
  - Crosswind Landings
  - Human factors (decision making, startle effect)
  - Single pilot CRM/TEM
  - Recency and skills fade
  - Use of technology/iconspicuity devices
  - Winter operations
  - Carburetor Icing
  - Airspace changes - New Parallel Runway in Dublin Airport
  - Reducing Risks in Navigation
  - Activities in Restricted and Military operating areas
  - Strip Flying
  - Sea Survival
  - Winter Operations
- General aviation “areas of operation” symbology included in Aeronautical Charts and AIP, addressing areas of intensive ga activity (e.g. GA training fields).
- Consulted with Irish approved and declared training organisations on the learning objectives on the “Meteorological Information” part of the PPL/LAPL training syllabus and confirmed that relevant questions were included in the PPL(G) question bank. Action 7.3.5 b) is closed.
- Review EAPAIRR Version 2 recommendations relating to GPS use in General Aviation eg promoting benefits and hazards of GPS, importance of updating fitted systems etc.

The following table identifies the key risks in general aviation as published in the IAA Annual Safety Performance Review. It is repeated here for convenience.

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 carburettor icing** • **Operations of light aircraft within recommended mass and balance limits** • **Execution of forced landings** • **Awareness of performance differences between different GA aircraft types**
Collision with terrain or obstacle	• **Inadvertent flight into degraded visual environments** • **Flight below minimum safe altitude (e.g. 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 (e.g. 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** • **Wellness**
Miscellaneous Risks	• **Public safety at club fly-ins** • **Hand-propping engines** • **Taildragger aircraft** • **Carbon monoxide risk in small aeroplanes and helicopters (EASA SIB 2020-01)**

The actions in this chapter support the GASR 2023-2025 Operational Safety Risks Roadmap safety enhancement initiatives in respect of general aviation.

8. Unmanned Aircraft System (UAS) Operations and Innovative Air Mobility (IAM)

Innovative Air Mobility includes manned and unmanned aircraft with vertical take-off and landing capabilities either in urban or non-urban environments. At this time there are no specific actions planned to address Innovative Air Mobility in the SPAS, however it is included in this Chapter as a placeholder for future actions.

UAS operations commonly referred to as UAS operations, cover a wide range of use cases and scale of operations, often in non-traditional aviation sectors. Examples of activities that UAS operations can support include aerial photography and videography, farming and agriculture, construction, package deliveries, sensory analysis and inspection, geographic mapping, medical emergency support, law enforcement, passenger transport, recreational, sport and entertainment, monitoring and surveillance, search and rescue, airborne wind energy generation, and recreational, sport and entertainment.

The top risks areas for UAS operations identified in Ireland and in wider EU / Global assessments include airborne collision between a UAS and a manned aircraft, serious or fatal injury to persons on the ground, airspace infringement by UAS leading to disruption to air transport operations, malicious use of UAS.

The European regulatory framework takes a risk-based approach to regulation of UAS, dividing operations into three broad categories with increasing levels of risk:

- Open category: Lower-risk operations. The UAS operator must comply with a suite of easy to understand and easy to meet regulatory requirements addressing UAS operations and remote pilot training.
- Specific category: Riskier operations. The UAS operator must obtain an operational authorisation from the competent aviation authority. To obtain authorisation a Specific Operations Risk Assessment (SORA) is required to determine the Safety Assurance and Integrity Level (SAIL) which specifies the requirements necessary for the safe operation.
- Certified category: Safety risk is high. Regulatory standards are similar to those for manned aircraft, including certification of the equipment, Air Operator's Certificate,, remote pilot licencing etc.

8.1 Safe integration of UAS operations

8.1.1 Safety Issue

The widespread growth in the use of UAS, represents an emerging risk of harm to persons on-board manned aircraft and/or persons on the ground. The safe integration of UAS operations means providing as a minimum an equivalent level of safety for the public as manned aviation. This is being addressed through a developing EU regulatory framework UAS and safety promotion activities highlighting the risks.

8.1.2 Safety Objective

To safely integrate UAS operations into the civil aviation system in Ireland to ensure that there are no fatal accidents involving UAS operations and the risk of accidents and serious incidents are minimised.

8.1.3 Safety Performance Indicators (Ref SPAS Volume I, Chapter 5 for details)

Accident, Serious Incident and Incident rates and trends related to drone operations.

8.1.4 Stakeholders/Roles

Department of Transport – national policy and regulations on UAS operations in Ireland

Irish Aviation Authority – regulatory oversight of UAS operations, including safety assurance, safety risk management and safety promotion.

Industry (UAS operators) — assessment of risks within their own area of operations and sharing safety information.

Remote pilots – reporting of safety occurrences to help improve safety management.

8.1.5 Actions

	ACTIONS	TARGET DATE
a)	The IAA will work with the Department of Transport and UAS industry stakeholders to facilitate the safe integration of UAS into the Irish civil aviation system	Q4 2024
b)	The IAA will work with aircraft operators, airport operators and ANSP's to address the risks of UAS infringements at aerodromes in accordance EASA guidance "Drone Incident Management at Aerodromes".	Q4 2025

8.1.6 Status Highlights

- Mature draft of National UAS policy framework under review
- IAA UAS Advisory Council established.
- IAA UAS implementation roadmap established including 7 workstreams:
  - WS-1: Building Operation Capacity
  - WS-2: Ensuring Effective Airspace Design & Usage
  - WS-3: Facilitating Drone Products & Airworthiness
  - WS-4: Enabling Innovation, Research & Development
  - WS-5: Assuring Oversight, Enforcement and Security
  - WS-6: Establish Market Surveillance Authority Role
  - WS-7: Ensuring Safe Integration with Manned Aviation
- IAA drone website established (https://www.iaa.ie/general-aviation/drones)
- Pilot training modules provided for UAS pilots (ie open and specific category)
- Developing risk-based oversight and enforcement policies in open/specific categories
- National legislation being drafted to address privacy rights and enforcement powers
- Implementation of EU regulation concerning U-Space Service Providers (USSPs) per EU Regulation 2021-666 effective in January 2023.
- Work in progress to address UAS geographical zones and development of the geographical zone electronic dataset
- Regulatory support provided to industry in developing research projects and UAS trials in Ireland
- Supporting EU development of regulation for certified UAS passenger operations
- Ongoing digitisation of UAS activities (e.g. applications, training, certificates etc) on IAA digital platform.
- Supporting ongoing development of Counter-UAS plans for airports
- Monitoring implementation of guidance and recommendations in accordance with EASA Guidance “Drone Incident Management at aerodromes” for aircraft operators, airports and ANSP’s.
- Developing UAS sector risk register to help identify and mitigate main operational risks
- Conducting UAS related safety promotion campaigns for open category (e.g. pre-Christmas)

Appendices

SPAS VOLUME II APPENDIX I - Link to EPAS

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

EPAS REFERENCE	SPAS VOLUME 2 - CHAPTER REFERENCE
MST.0001 Member States to give priority to the work on SSPs	Ch 1.2, 1.6
MST.0002 Promotion of Safety Material	Ch 1.2, 1.5
MST.0003 Member States should maintain a regular dialogue with their national aircraft operators on flight data monitoring (FDM) programmes	Ch 1.2
MST.0015 Rotorcraft safety events	Ch 3.1, 7.1
MST.0019 Better understanding of operators' governance structure	Ch 1.8
MST.0024 Loss of separation between civil and military aircraft	Addressed in previous version of SPAS (2018) and actions closed. Reporting of occurrences to EASA as part of ongoing process.
MST.0025 Improve the dissemination of safety messages in GA	Ch 7.1
MST.0026 SMS Assessment	Ch 1.5
MST.0027 Develop just culture in GA	Ch 1.2, 7.1
MST.0028 Member States to establish and maintain a State Plan for Aviation Safety	This Document is the SPAS. Specific actions to address key operational risks LOC-I, CFIT, MAC, RI, RE included in Chapters 2 through 5, as relevant
MST.0029 Implementation of SESAR runway safety solutions (Deleted EPAS 2024)	Ch 4.2, 5.1

MST.0030 Implementation of SESAR solutions aiming to reduce the risk of mid-air collision en-route and TMA (Deleted EPAS 2024)	Ch 4.1
MST.0031 Implementation of SESAR solutions aiming to facilitate safe IFR operations of rotorcraft (Deleted EPAS 2024)	Ch 4.5
MST.0032 Oversight capabilities focus areas	Ch 1.6, 1.8
MST.0033 Feedback on implementation of language proficiency requirements	Ch 1.6
MST.0034 Oversight focus on flight time specification schemes	Ch 1.6
MST.0035 Oversight focus on fraud in Part-147	Ch 6.2
MST.0036 PPL/LAPL learning objectives in the Meteorological Information part of the PPL/LAPL syllabus	Ch 7.3
MST.0037 Foster a common understanding and oversight of Human Factors	Ch 1.6
MST.0038 Airspace complexity and traffic congestion	Ch 7.2
MST.0039 Safety Promotion to support ramp-up and safe return to operations	Ch 1.1
MST.0040 Safety and Security reporting mechanism	Ch 1.4
MST.0041 Harmonisation in AOC approvals, procedures and documents – small rotorcraft organisations	Ch 1.5
MST.0042 Assessment of safety culture at air operators	Ch.1.2.5
MST.0043 Improvement of data quality in occurrence reporting	Ch.1.2.5

SPAS Volume II Appendix II - SPAS Statistics

Since its inception in 2010, there have been a total of 56 risk areas addressed in the Plan with 289 associated actions to address the safety issues involved. Unsurprisingly, from historical perspective, the top three risk areas of runway incursion, mid-air collision and runway excursion account for the highest number of actions addressed in the plan since its inception.

The current reference period for the SPAS is 2023-2025. SPAS Volume II is being updated in 2024 including updates to the actions and actions status. There were 2 new actions introduced in the 2024 update and 19 actions were completed and closed during 2023. 6 actions due to be completed during 2023 were deferred to 2024 due to revised priorities. There are 71 actions in the 2024 version of this Plan.

The overall summary of the status of actions in this version of the Plan is depicted in Figure 1 below:

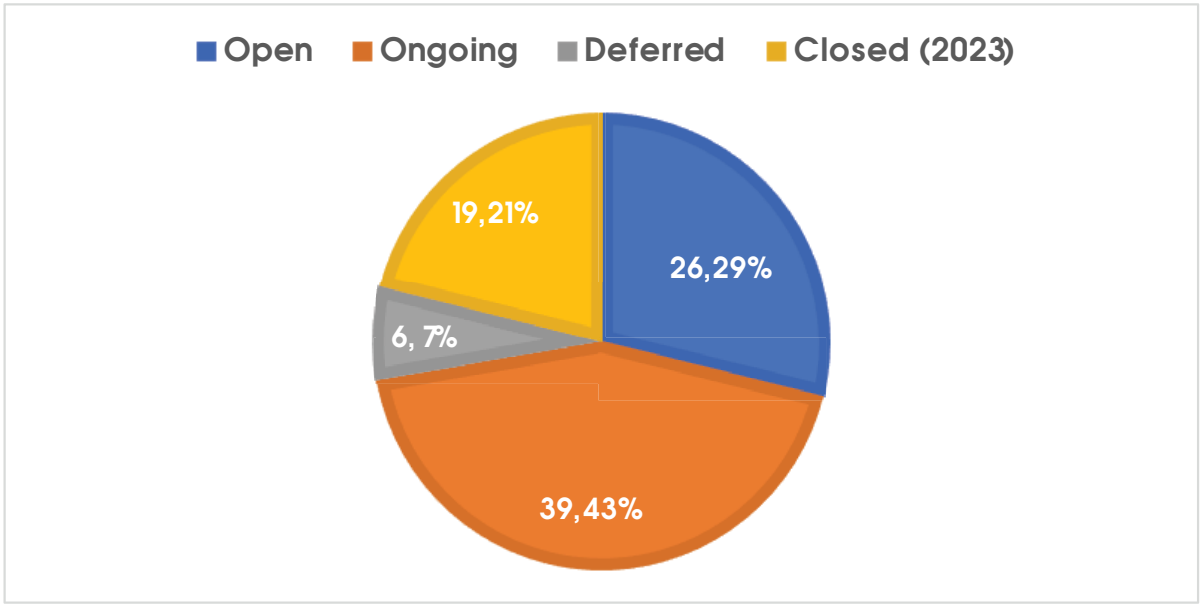

Figure 1: Overall status of actions in current version of SPAS

The breakdown of the 71 actions by SPAS chapter is shown in Figure 2 below.

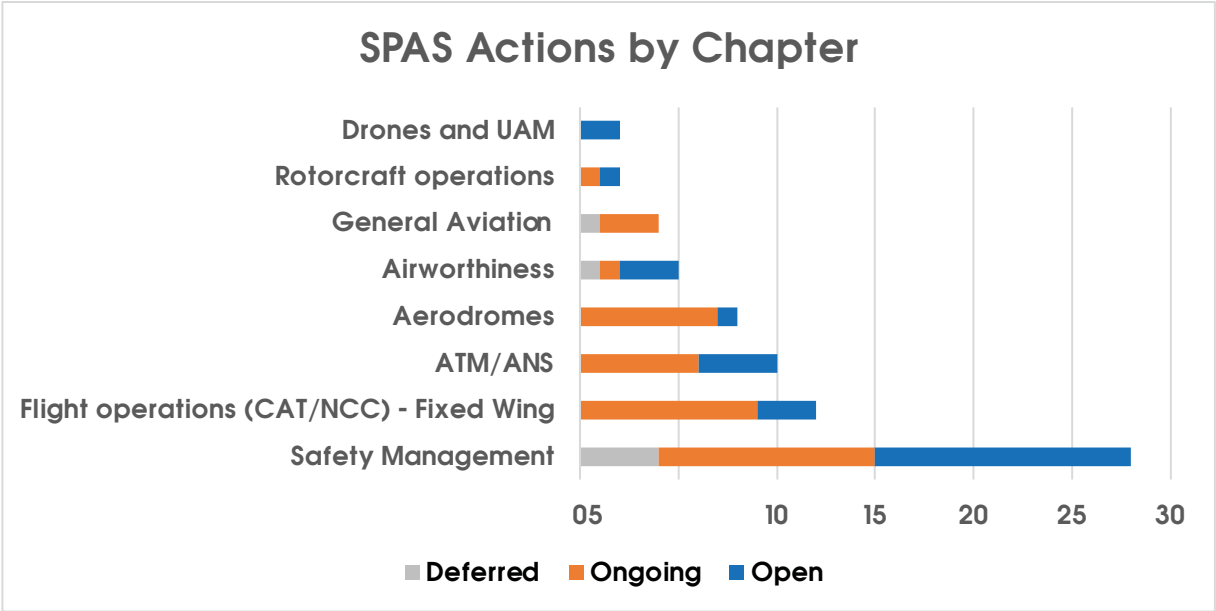

Figure 2: Breakdown of current SPAS Actions by SPAS Chapter and Status

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.

- **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 3 shows how the actions of the current version of the Plan break down between the different SSP Pillars.

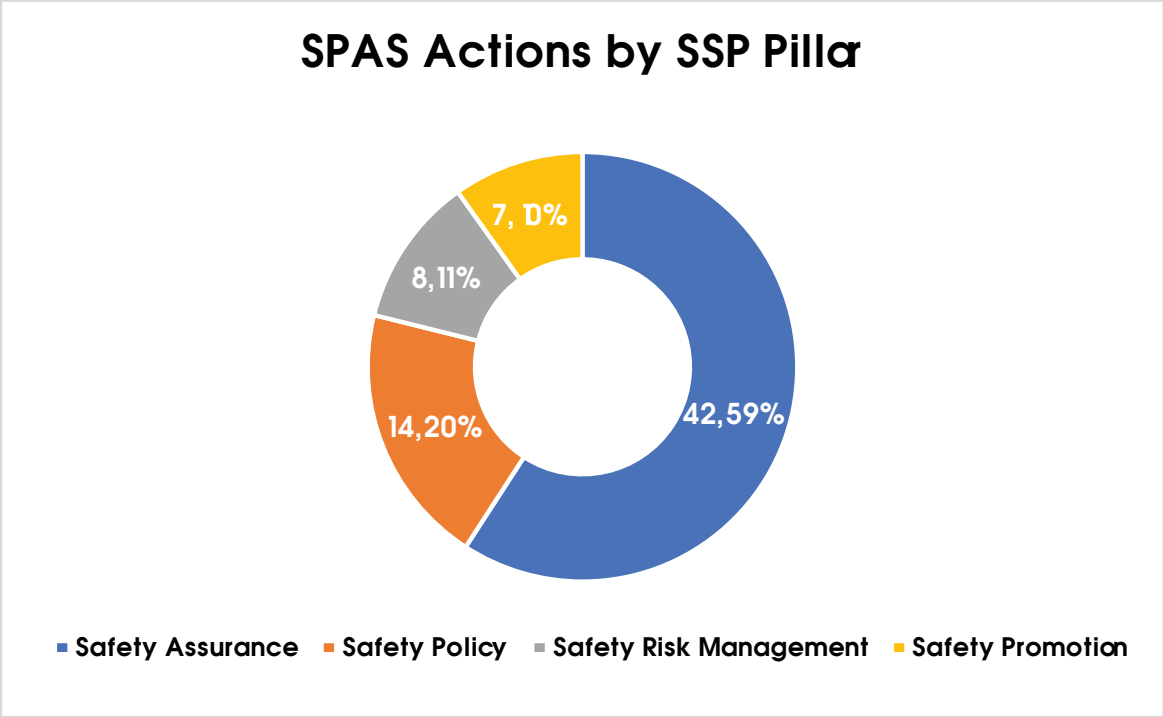

Figure 3: Breakdown of current SPAS actions by SSP framework pillar

Almost 80% of the actions are in the safety policy and safety assurance pillars which highlights the fact that at this time the SPAS is primarily driven by actions to address implementation of safety management policies and focused safety oversight tasks in key safety risk areas as well as performance monitoring.

APPENDIX III - 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
EOFDM	European Operators Flight Data Monitoring

F

FAB	Functional Airspace Block
FDM	Flight Data Monitoring

G

GA	General Aviation
GAPPRI	Global Action Plan for the Prevention of Runway Incursions
GRSAP	Global Runway Safety Action Plan
GASCI	General Aviation Safety Council of Ireland
GASP	Global Aviation Safety Plan
GASR	Global Aviation Safety Roadmap

I

IAA	Irish Aviation Authority
IAM	Innovative Air Mobility
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

SMS	Safety Management system SO
SPAS	State Plan for Aviation Safety SPI
SMS	Safety Management system SO
SPAS	State Plan for Aviation Safety SPI
SMS	Safety Management system SO
SPAS	State Plan for Aviation Safety SPI

U

UAM	Urban Air Mobility
UAS	Unmanned Aircraft Systems
UN	United Nations

Disclaimer

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