IRISH AVIATION AUTHORITY SAFETY REGULATION DIVISION

IRISH STATE PLAN FOR AVIATION SAFETY 2023-2025

VOLUME I

Strategic Safety Priorities

Introduction

Welcome to the 13th edition of the State Plan for Aviation Safety (SPAS) in Ireland issued by the Irish Aviation Authority Safety Regulation Division (IAA) on behalf of the State. This SPAS is issued following a period of great disruption for the aviation community due to the COVID-19 pandemic, however, even in the face of the new challenges, aviation safety and security remains of paramount importance.

The purpose of the SPAS is to identify the actions taken at State level to address the main safety issues in civil aviation in Ireland. The IAA has implemented State level aviation safety management processes the purpose of which is to identify key safety issues and to drive continuing improvements in aviation safety performance in Ireland. These safety management processes meet the Standards of ICAO Annex 19 and align with safety management processes in ICAO and EASA, as well as with organisational Safety Management Systems.

The COVID-19 pandemic had an immediate and dramatic impact on passenger air transport that caused a huge reduction in flight operations and supporting services during 2020 and 2021, however the industry showed remarkable resilience and began the recovery phase quickly during 2022. The IAA safety priorities were focused on continued regulatory support to organisations and the management of risks during the COVID-19 recovery phase.

The SPAS recognises that safety priorities must be agile and reactive to changing circumstances and this Volume 1 provides the overall strategic direction of the SPAS for the reference period 2023-2025. In a change from previous versions, the SPAS now provides separate focus on the risks within the various aviation domains (ie flight operations, air navigation services, aerodrome operations, airworthiness, general aviation, drone operations). This change should provide easier access to the information in different domains and will also help to focus the key risk areas and associated actions more specifically toward different stakeholders in these domains.

The SPAS continues to evolve in a proactive manner to address the known operational risks and the risks emerging from new technologies, operating concepts and environmental commitments in aviation. The IAA will continue to work with stakeholders in the civil aviation system to help identify and mitigate the risks and to strive for continuous improvement in aviation safety.

The SPAS focuses on the key risks to civil aviation in Ireland with due regard to the risks identified globally via the Global Aviation Safety Plan (GASP), and within the EU in the European Plan for Aviation Safety (EPAS). The IAA participates in the development of the GASP and the EPAS through related ICAO Panels and EASA Advisory Bodies. The IAA works with stakeholders in the Irish civil aviation system to help identify and mitigate the risks and to strive for continuous improvement in aviation safety.

The SPAS consists of two volumes:

- **Volume I** - focuses on the strategic safety priorities for the SPAS
- **Volume II** - provides the safety objectives and actions at the detailed level necessary to implement the strategic safety priorities.

The IAA consults with stakeholders in respect of the strategic safety priorities in the State through standing consultation forums, including State Safety Programme Co-ordination Committee, domain-centric and cross-domain industry consultation groups and the General Aviation Safety Council of Ireland. The SPAS Strategy (ie Volume I) was also subject to public consultation during the third quarter of 2022.

The SPAS 2023-2025 Volumes I and II are available on
https://www.iaa.ie/safety/state-safety-plan

1. The Irish Civil Aviation System

1.1 Irish Civil Aviation System Overview

The aviation sector has emerged from a period of great disruption for the aviation community due to the COVID-19 pandemic. 2022 saw commercial operations ramping up quickly, with some airlines approaching and even exceeding traffic and passenger levels last seen during 2019, pre-pandemic.

Safety remained paramount during the pandemic and afterwards. The work done in implementing safety management systems at both State and industry level has supported efforts to ensure that even during unprecedented disruption caused by COVID-19 to the aviation organisations and the people working in them, the aviation sector showed tremendous agility and resilience, whilst continuing to operate aircraft safely.

The following table summarises the main sectors of the Irish civil aviation system for 2019, 2020 and 2021 that shows the evolving impact of the pandemic.

Sector	End 2019	End 2020	End 2021
Aircraft Register			
Commercial Aircraft	800	625	549
Commercial Aircraft in Storage	32	78	130
General Aviation (incl Annex 1)	532	547	552
AOC Holders			
Aeroplane AOC	13	14	14
Rotorcraft AOC	3	4	3
Aeroplane NCC	9	9	11
Rotorcraft SPO	4	5	11
Airworthiness Organisations			
Maintenance - Part 145	45	38	35
Maintenance Management	32	28	32
Design – DOA	2	2	2
Production - POA	2	2	4
Personnel Licencing			
Commercial Pilot	12,271	13,191	13,991
General Aviation Pilot	1,236	1,476	1,719
Maintenance Engineer	2,508	2,721	2,871
ATCO/Student ATCO Licences	229	246	228

Training			
Approved Training Organisations (Flight Crew)	10	12	14
Declared Training Organisations/Registered Training Facilities (Flight Crew)	30	30	30
Flight Simulators	15	15	14
Maintenance Training Organisation	9	5	5
Approved Security Training Organisations	19	25	24
Aerodromes			
EASA Certified	8	8	8
Nationally Licenced	14	14	16

1.2 IAA responsibilities

The IAA is responsible for the safety certification and oversight of the Irish Civil aviation system which is does through:

- Establishing and implementing safety oversight policies and regulations, in conjunction with Department of Transport, as necessary

- Providing the safety oversight resources required, commensurate with the size and scope of the civil aviation system

- Conducting audits, inspections and tests to ensure regulated entities meet the regulatory requirements on an ongoing basis, including requirements for safety management systems

- Implementing safety management processes to identify the main risks to civil aviation and identifying mitigating actions at State level to address these risks

- Monitoring the performance of the civil aviation system in Ireland

- Providing guidance to civil aviation stakeholders on the implementation of safety regulations and safety management

- Promoting safety awareness and the sharing and exchange of safety information with the aviation community to foster continuing improvement in safety and to support the development of a positive safety culture

The IAA is also responsible for the oversight of security as set out in the National Civil Aviation Security Programme (NCASP) which it does through:

- Establishing and implementing security oversight policies and regulations, in conjunction with the Department of Transport

- Providing security oversight resources as required, commensurate with the size and scope of civil aviation in Ireland.

- Conducting audits, inspections and tests to ensure regulated entities meet the regulatory requirements on an ongoing basis, including requirements for security management systems.

- Implementing security management processes to identify the main risks to civil aviation and identifying mitigating actions at State level to address these risks.

- Monitoring the security performance of civil aviation in Ireland.

- Providing guidance to relevant stakeholders on the implementation of security regulations and legislation.

- Promoting security awareness and the sharing and exchange of security information with the aviation community to foster the maintenance and improvement of security and to support the development of a positive security culture.

- Reviewing and approving security programmes of regulated entities.

2. State Plan for Aviation Safety (SPAS) - Overview

2.1 Context for SPAS

The State Plan for Aviation Safety (SPAS) in Ireland is built on a proactive approach to managing the safety of Irish civil aviation, as required by ICAO Annex 19 (Safety Management) and Regulation (EC) 2018/1139 (EASA Basic Regulation). The SPAS is therefore contextualised in global and European safety management as depicted in the following figure:

Global Aviation Safety Plan (GASP)	**Current version GASP 2023-2025** **Contains Safety Enhancement Initiatives for States that are addressed in the Irish SPAS**
European Aviation Safety Programme	**Defines the aviation safety framework (regulations and activities) at European Level** **Provides the framework at EU level for development of EPAS**
European Plan for Aviation Safety (EPAS)	**Consulted with EU MS through EASA Advisory Bodies and contains specific actions for EU Member States that are incorporated in the Irish SPAS**
State Safety Programme for Ireland	**Defines the aviation safety framework implemented in Ireland** **Current SSP document Jan 2015 - update planned in 2023**
State Plan for Aviation Safety in Ireland (SPAS)	**Reference period of three years 2023-2025** **Consulted with State bodies, industry groups, and via public consultation on IAA website**

2.2 Link to GASP/EPAS

The Irish SPAS is consistent with the goals and objectives of the Global Aviation Safety Plan (GASP) and the European Plan for Aviation Safety (EPAS). The EPAS includes recommended actions for EU Member States (MST Tasks) and these recommendations are included in this Plan, as appropriate for Ireland. SPAS Volume II provides specific cross references to GASP Safety Enhancement Initiatives and EPAS MST tasks as appropriate in each of the key safety areas addressed in SPAS.

At the time of writing the IAA had access to, and reviewed, ICAO GASP 2023-2025 and draft EPAS 2023-2025 to ensure alignment of this version of SPAS with latest plans at global and European levels.

The IAA contributes to the global safety management processes primarily through its active participation in the ICAO Safety Management Panel and other technical panels, the EASA Advisory Bodies, including the Member States Advisory Body (MAB), Technical Boards (TeB), Collaborative Analysis Groups (CAG), Network of Analysts and the EASA Safety Promotion Network. This international collaboration provides the opportunity for the IAA to influence the global and European safety management process based on its own risk assessments, as well as the opportunity to consider lessons learned through the safety management pro-cesses employed in ICAO, EASA and other States. The safety issues that impact the Irish civil aviation system are subject to the IAA safety management processes and contribute to the strategic safety priorities in the SPAS.

2.3 Safety management at State level

Each State is responsible for developing its own SPAS, based on its own civil aviation system and associated risks and safety priorities, and the IAA is the responsible authority for devel-oping the SPAS for Ireland. The **safety management** system implemented by the IAA safety regulation division includes risk management processes to;

- **Identify** hazards in civil aviation

- **Risk** assess the associated safety issues to prioritise actions

- **Plan** actions to address the main safety issues (e.g. as published in SPAS)

- **Implement** the planned actions

- **Monitor** the results

Hazards are identified from analysis of safety information obtained from regulatory oversight activities, safety occurrence reporting and performance monitoring, and are subject to risk assessment to develop safety priorities. Actions are planned to mitigate the risks and the actions that address the key safety issues are included in the SPAS Volume II. The IAA monitors safety performance at State, sector and organisational levels to establish if the safety objectives to continuously improve aviation safety are being met.

2.4 SPAS safety objectives

Volume II of the SPAS identifies the key safety issues that have emerged from the IAA safety management processes, the actions planned by the IAA (State safety regulator) to mitigate the associated risks and the safety objectives that contribute to the overall goal of improving safety performance.

Safety objectives provide a tangible link between the State and regulated organisations and persons in respect of safety management. ICAO Annex 19 and EU Regulations pertaining to safety management require regulated organisations to implement safety management systems. Individual organisations must identify risks specific to their operations and implement risk mitigation strategies to reduce these risks. Organisations must therefore identify and manage their own safety objectives; however, organisations should also consider the safety objectives identified in this Plan, for applicability within their own safety management system(s).

2.5 SPAS Development and Update Cycle

The SPAS development cycle is changing this year to better align with the EASA EPAS update cycle and to facilitate more extensive consultation on SPAS Volume I, namely, the strategic safety priorities for SPAS.

The amended SPAS development and update cycle now extends to three years as follows:

ID	Task Name	Date
1	Consult SPAS Vol 1 - RP 2023-2025	01/07
2	End consultation SPAS Vol I - RP 2023-2025	31/08
3	Publish SPAS Volumes 1 and II - RP 2023-2025	16/12
4	Publish SPAS Volume II 2023 update	15/12
5	Publish SPAS Volume II 2024 update	13/12
6	Consult SPAS Volume I - RP 2026-2028	30/06
7	Publish SPAS Volumes I and II - RP 2026-2028	12/12

SPAS Volume I (Strategy):
- SPAS Volume I will be subject to update and consultation once every three years

- It will establish the SPAS strategy for the following three years, which will be the reference period (RP) for the SPAS.

SPAS Volume II (Actions)
- The first issue of SPAS Volume II will be released along with SPAS Volume I for reference period 2023-2025 at the end of 2022.

- SPAS Volume II will be updated by end of the year for each year of the SPAS reference period:

    - To provide the latest status of the detailed actions in the SPAS.

    - To include new or amended actions to address safety issues that emerge within the SPAS reference period.

3. Strategic Safety Priorities

The strategic safety priorities in SPAS address two separate areas as depicted in the following figure.

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                    ┌─────────────────────┐
                    │   Strategic Safety  │
                    │     Priorities      │
                    └──────────┬──────────┘
              ┌────────────────┴────────────────┐
  ┌───────────────────────┐          ┌───────────────────────┐
  │   Systemic safety     │          │  Operational risks    │
  │   management at       │          │  in civil aviation    │
  │   State level         │          │  (Chapter 3.2)        │
  │   (Chapter 3.1)       │          │                       │
  └───────────────────────┘          └───────────────────────┘
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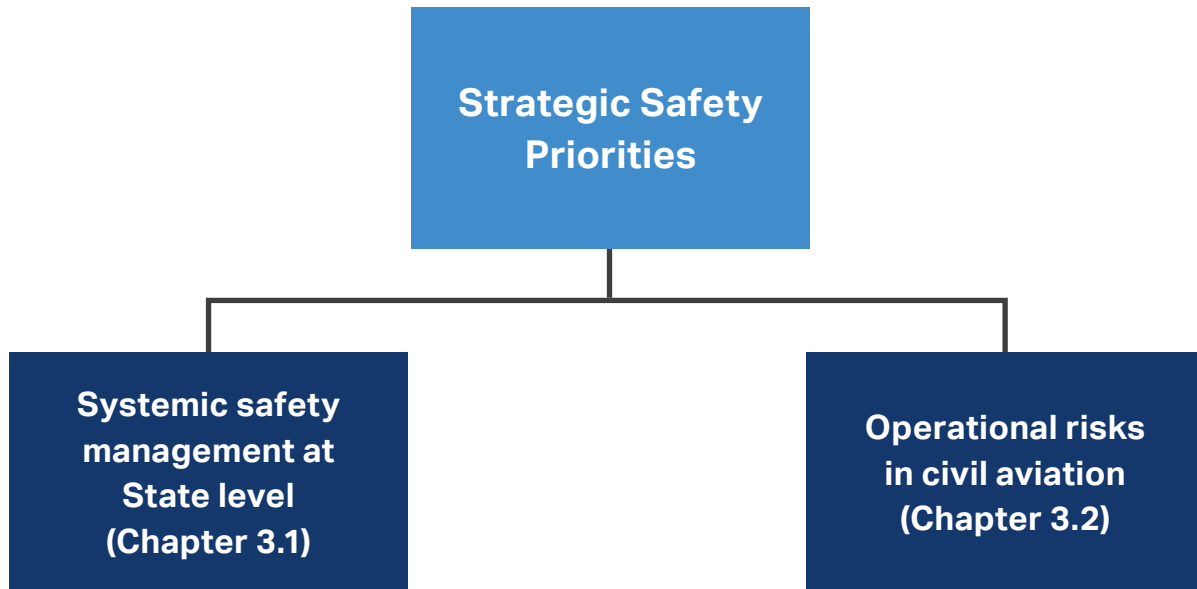
3.1 Systemic Safety Management at State Level

The safety issues addressed in this chapter include the following

Systemic Safety Management at State level	3.1.1 Continued safety of operations post COVID-19
	3.1.2 Continuously improve safety management at State level
	3.1.3 Separation of IAA safety regulation and service provision functions
	3.1.4 Integrated Risk Management
	3.1.5 Implementation of Risk-Based Oversight
	3.1.6 Competency of regulatory personnel
	3.1.7 Digitalisation
	3.1.8 Oversight of group operations and complex business models
	3.1.9 Regulatory change management

3.1.1 Continued safety of operations post COVID-19

The COVID-19 pandemic had a significant impact on aviation regulatory functions during 2020 and 2021. The severe disruption felt by all sectors of the aviation industry necessitated the agile implementation of risk management processes to assess the new safety risks introduced by COVID-19 on continued safe operations by regulated organisations and persons, as well as on the IAA regulatory oversight functions. The risk management process was conducted in conjunction with ICAO and European partner NAA's with due regard for ICAO Document 10144 and related work with EASA Advisory bodies to develop EU wide guidance for the aviation industry in managing the safety risks associated with the pandemic.

Dedicated COVID-19 risk registers were subject to on-going review and update as the pandemic persisted longer than originally anticipated. Safety oversight functions continued using remote oversight practices where necessary due to COVID-19 related health restrictions, and IAA promoted the key COVID-19 safety messages to assist commercial and private operators during the pandemic. The safety oversight programme has returned to normal during 2022, however lessons learned from the pandemic related oversight activities are being reviewed as part of future oversight planning.

The actions in SPAS Volume II, Chapter 1.1 include the continued provision of regulatory support and safety promotion to all sectors of Irish civil aviation as aviation operations ramp back up in the post-COVID environment. Regulatory oversight plans are targeting 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. No new actions are proposed in this version of SPAS in this area.

3.1.2 Continuously improve safety management at State level

The SPAS seeks to continuously improve State-level safety management processes, including enhancing regulatory oversight of organisations SMS, to ensure that these processes continue to comply with evolving ICAO SARPS and EU regulations. The IAA must also ensure that these State- level safety management processes remain fit for purpose in line with the rate of change in aviation, including organisational and technical evolutions.

Some key actions addressed in SPAS Volume II, Chapter 1.2 include:

- Engaging with ICAO, EU/EASA and other States to help develop rules and implementing guidance for safety management systems

- Continuously Improving State level processes for risk management, performance monitoring and safety promotion

- Improving the processes for sharing safety information to enhance safety management at both State and organisational level

- Improving safety culture in all domains of the Irish civil aviation system

- Verifying that Human Factors principles are fully integrated into organisational safety management systems

- Implementation of a Flight Data Monitoring (FDM) Forum for Irish operators

New actions in this version of SPAS include:

- The establishment of a standing stakeholders forum for persons (including licence holders) to further enhance co-ordination between the regulator and all stakeholders on aviation safety management

- The assessment of safety culture in Irish civil aviation beginning with safety culture in air operators. The IAA also supports industry led safety culture improvement mechanisms in airports, such as the Eurocontrol Safety Culture Stack, as an indicator of SMS maturity.

- Performing a review of the effectiveness of airline provisions concerning peer support programmes.

3.1.3 Separation of IAA safety regulation and service provision functions

In accordance with Irish Government policy and the requirement in EU regulation to ensure that national competent authorities are independent, the safety regulation and air navigation services provision functions of the Irish Aviation Authority is planned to be separated in 2022 and the IAA safety regulatory function will merge with the economic Civil Aviation Regulator (CAR). This major organisational change impacts the State Safety Programme and robust change management procedures must be applied to ensure there is no disruption to regulatory functions or air navigation services, during or after the change.

Change management and risk management procedures are subject to aviation safety regulations pertaining to both the regulator and the regulated entities, with associated safety oversight activities by EASA and IAA.

The change requires new primary legislation which is addressed in the Air Navigation Transport Bill 2020 (ANTB) available at https://www.oireachtas.ie/en/bills/bill/2020/72 . The primary purpose of the ANTB is to remove the air navigation service provider from the IAA and establish it as a separate commercial company, and to dissolve CAR and to transfer its functions and personnel to the IAA. The ANTB was enacted on 7th December 2022 and commencement orders to formalise the legal separation are expected by end 2022.

The SPAS Volume II, Chapter 1.2 includes actions that focus on the continuity of regulatory functions and air navigation services during, and after, the organisational change project. One of the over-riding principles of the separation project, is that there should be minimal impact on the workload of IAA staff responsible for performing key operational tasks in safety regulation and in the provision of air navigation services. No new actions are proposed in this version of the Plan and it is expected that the SPAS actions in this regard will be fully addressed during 2023.

3.1.4 Integrated Risk Management (Safety and Security)

The integration of risk management to address the interfaces between aviation safety and aviation security was introduced as a safety priority for the Irish SPAS in 2021. This is in recognition of the emerging risks posed to all aviation sectors in respect of cybersecurity and the fact that the implementation of security measures in airports and on aircraft can directly impact aviation safety.

SPAS Volume II, Chapter 1.3 currently addresses the subject of integrated risk management of aviation safety and aviation security. The SPAS actions reflect the preparatory work for implementing forthcoming EU regulations (Part-IS) on information security management systems, as well as addressing the need for greater sharing of safety information of mutual interest, between the authorities responsible for aviation safety and aviation security (e.g. assaults, security breaches, laser attacks). The actions also address the provision of guidance to regulated entities on these requirements.

The national cybersecurity requirement (NIS Directive) is also being updated (NIS 2) during 2022. The IAA is working with Department of Transport and national cybersecurity experts responsible for oversight of the NIS directive, to establish synergies in the oversight of these separate regulatory regimes and help avoid unnecessary duplication of oversight activities for aviation organisations subject to both regulatory regimes.

A new action is introduced in this version of the plan to address the risks arising to aviation following the invasion by the Russian federation into Ukraine.

3.1.5 Implementation of Risk-Based Oversight

The IAA has implemented, and maintains, a comprehensive regulatory oversight programme to oversee the activities of organisations and persons involved in the Irish civil aviation system. This regulatory oversight programme consists of a range of audits, inspections, tests and checks, using competent staff supported by regulations, policies, procedures, tools and training, to allow the IAA to fulfil its obligations.

In compliance with Annex 19 and associated guidance, the traditional compliance-based safety oversight process employed by the IAA is now adapted using a risk-based approach in oversight planning to ensure that the IAA targets it resources towards areas of greater safety concern. The IAA process, which depends on ongoing risk assessment, risk profiling and performance monitoring at all levels in the civil aviation system, was used successfully in a very real sense during 2020/2021, when the COVID-19 pandemic significantly impacted the normal operational environment and the regulatory oversight programme had to be agile enough to quickly respond to identify and target the areas of greatest risk.

Risk-based oversight should to the greatest extent possible be based on data-based decision making and the actions in SPAS Volume II, Chapter 1.5 are focused on developing data collection and analysis methods and tools to support the risk assessment and risk profiling processes across all aviation domains. Lessons learned from analysis of occurrence reports and oversight activities play an important role in this regard.

In addition to the integration of risk management at State level the SPAS also addresses the integrated approach to risk management at organisational level. As part of its own risk management process the IAA organises Cross-domain Safety Workshops with Irish organisations in order to help identify and address risks at the interfaces between domains (e.g. air operations, airports and ATM/ANS providers).

The benefits of an integrated approach to safety management within individual organisations is also recognised by the IAA. The Plan includes actions to address how the IAA will further support this activity by planning oversight to minimise the amount of repetition in oversight of complementary rules in domain specific regulations (e.g. Management Systems in air operations and airworthiness) in cases where an integrated approach is taken by an organisation. As SMS regulatory requirements role out in different domains (e.g. airworthiness) the IAA would like to provide better support to organisations, particularly small organisations, with their SMS implementation proportionate to the size of the organisation and the complexity of its operations. The IAA will use best international guidance in this respect.

In addition, this version of SPAS addresses the EPAS action MST.0041 for the harmonisation of processes, procedures and documents in respect of small helicopter AOC approvals.

3.1.6 Competency of regulatory personnel

The IAA must ensure continued availability of competent personnel in the face of strong demand for resources from external organisations both within and outside of civil aviation. The IAA ensures it offers competitive terms and conditions to retain staff and attract new staff as and when needed. The IAA continuously reviews existing resources in the context of the new obligations arising from the regulatory changes and organisational change management, as well as meeting the strategic safety priorities outlined in the SPAS. In many cases competency requirements for inspectors are defined by ICAO (e.g. Doc 10070) and in the EU regulatory framework with associated implementation guidance for authorities. Inspector competency requirements are also subject to ICAO comprehensive systems audit and EASA Standardisation Inspections.

Chapter 3.1.5 above addresses the need for a risk-based approach to support planning of State safety oversight activities. The execution of the risk-based oversight plans affects all levels of the States Safety Oversight System including policy and regulation development, organisation structure, qualification and competence of staff, safety oversight activities and safety promotion. The execution of safety oversight (surveillance) is driven by traditional compliance-based oversight activities supplemented by performance-based oversight activities to address the oversight of SMS and other performance-based regulations (e.g. fuel management schemes).

SPAS Volume II Chapter 1.6 identifies current actions to address development of inspector competencies in risk-based and performance-based oversight and safety analysis, as well as oversight of SMS and Human Factors. Actions on competency requirements relating to technical requirements such as oversight of EBT/CBT, oversight of fuel planning/management schemes and flight time limitations were completed and closed in previous versions of the SPAS.

New inspector competency requirements are being developed to address oversight of cyber-security (e.g. ISMS) and oversight of emerging technologies, including drones/urban air mobility, U-Space and high airspace operations. Over the course of this reference period, it is expected that new competencies will also be required to address future regulations relating to Climate Change, such as hydrogen and electric propulsion and alternative fuels.

3.1.7 Digitalisation

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

The IAA Digitalisation project represents a large capital investment by the IAA to transform the current safety regulation service offering through maximising business activity within the digital environment. This project will see business processes, such as client management, applications processes (approvals, registration, certification, licensing etc.) and oversight management processes migrate to online platforms across all domains over the next few years.

Safety management is greatly enhanced through data-based decision making, and the new platform will greatly improve the ability of the IAA to extract safety intelligence from the new digital platform. In addition, the new platform creates the potential for digital communications portals to facilitate exchange of safety information between the regulator and regulated entities.

SPAS Volume II, Chapter 1.7, addresses the roll-out plans for the regulatory oversight applications on the new IAA digital platform MySRS. In addition, this chapter addresses the upgrade of the occurrence reporting system (ie ICAO SDCPS) from ECCAIRS I to ECCAIRS II in support of a pan-European project. The occurrence reporting system is hosted on a separate platform to MySRS, however a business intelligence application is under development that will enhance the capability to analyse data from both platforms on a common system to support safety management processes.

A new action has been added to address the implementation of Qualified Electronic Signatures (QES) which will support digital certification and licensing tasks.

3.1.8 Group operations and complex business models

The aviation industry continues to evolve, and this has led to increased complexity in the business models employed by aviation organisations and the number, types and geographic spread of the interfaces between the organisations and their contracted services. This increasing complexity provides increased challenges for the organisations Management Systems, as well as for safety oversight.

Group operations have also emerged which adds further challenges, in that Group Safety Management Systems may support certificate holders included within the group, that have been certified and are overseen in different jurisdictions by different regulatory authorities, thereby requiring enhanced co-ordination between the regulatory authorities involved.

The current actions in SPAS Volume II, Chapter 1.8 reflects the leading role the IAA plays in this regard within Europe. The IAA helped develop the EASA Guidance document "Practical Guide – Management of Hazards related to new business models of commercial air transport" and is reviewing the implementation of the related recommendations by affected Irish organisations during safety oversight activities. In addition, the IAA assisted EASA in developing EU guidance for regulators on the effective oversight of group operations, which was issued in mid-2022.

A new action is added in this version of SPAS to address the development of procedures to support a single CAMO in Group operations.

3.1.9 Cross Domain – Significant Regulatory changes

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

1. To work with EASA and Department of Transport to ensure that the regulatory framework for civil aviation in Ireland is current and commensurate with the size and scope of aviation activities in Ireland

2. To implement the requirements for competent authorities and provide guidance to industry stakeholders on the implementation of requirements for regulated entities, including assisting in the interpretation of requirements and means of compliance, and review/acceptance of alternative means of compliance.

The safety regulatory framework is constantly being updated to improve safety and efficiency in aviation and to support fair competition within EU. Regulators and regulated entities employ robust regulatory change management processes to ensure continued compliance with the regulations. Whereas many of the regulatory changes are minor in scope and focused on specific topics or within specific domains, some regulatory changes present significant implementation challenges, often involving cross domain interfaces, that need enhanced co-ordination between the regulator and regulated entities to support their implementation.

This version of SPAS includes specific chapters to address operational risks in the different aviation domains. Significant regulatory changes that are primarily focused in a single domain (e.g. Drone regulations) are addressed in the domain specific chapters. SPAS Chapter 1.9 is reserved for those forthcoming significant regulatory changes that have impact across multiple domains and this version of SPAS includes regulations in development to address Higher Airspace Operations/Space Transportation.

The safety implications of changes necessary to support sustainable aviation need to be considered. Currently, the European Plan for Aviation Safety, addresses the certification of new environmentally friendly technologies and aviation fuels, which are within the competence of EASA (ref EPAS). The IAA focus is on impact of climate change (e.g. severe weather events) on safe operations of aircraft, as well as developing the competency requirements required to oversee new "green" technologies.

3.2 Operational Safety

3.2.1 Introduction

Operational risks are the risks of negative safety outcomes arising from aviation operational activities across all sectors of the civil aviation system. 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 https://www.easa.europa.eu/document-library/general-publications/european-plan-aviation-safety-2022-2026.

The following aviation sectors are subject to risk assessment by the IAA:

- Flight Operations Fixed Wing (Part OPS/Part NCC)

- Rotorcraft operations

- Air Traffic Management / Air Navigation Services

- Aerodrome Operations

- Airworthiness

- General Aviation

- Drones 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 management 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.

The SPAS strategic priorities for each of these sectors are addressed separately in the following chapters.

3.2.2 Flight Operations – 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 include provisions for private operators to use complex aircraft (e.g. jet aircraft) for business purposes (traditional 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 EASA Air Operations Community Network https://www.easa.europa.eu/community/content/air-operations-together4safety is a very useful resource to keep updated on latest pan-EU information on safety issues and associated safety promotion material in this domain.

The key risk areas identified for fixed wing Part OPS/NCC fixed-wing operations are:

Loss of Control-Inflight

Controlled Flight into terrain

Mid-Air Collision

Runway Incursions

Runway Excursions

Ground Operations

Bird/Wildlife Strikes

Aircraft Environment

The SPAS Volume II, Chapter 2 include actions to address these key risk areas including:

- targeted oversight tasks;
  - oversight planning targeting ramping up of operations post-COVID
  - oversight planning targeting the management of SPAS key risk areas by AOC Holders/ NCC declared operators (e.g. during SMS oversight), as applicable to the operator
  - review of the level of implementation by AOC Holders/NCC declared operators of recommendations for improving aviation safety, including GAPPRE (RE), EAPPRI (RI) and EARAIRR (MAC)
  - focus on continuous improvement in training for flight crews on runway excursion prevention
  - harmonisation in AOC approvals, procedures and documents
- safety promotion tasks;
  - to address the hazards relating to the carriage of lithium batteries (CABIN)
  - to address hazards caused by unruly passenger behaviour in aircraft (CABIN)

New actions may be added during the reference period based on ongoing updates to IAA sector risk registers and associated risk assessment.

3.2.3 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, offshore operations, search and rescue, survey work and others. This area includes four types of operations:

- Commercial operations conducted by AOC holders
- Specialised operations (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 and are thus addressed in a common rotorcraft risk register.

The top risks areas for rotorcraft operations identified in Ireland and in wider EU/Global assessments are:

Rotorcraft upset (incl following technical failures)

Collision with obstacles during take-off and landing

Collision with terrain

Airborne collision (including with light aircraft or drones)

The IAA is actively supporting the EASA initiatives to help improve the safety of rotorcraft operations in accordance with the EASA Rotorcraft Safety Roadmap. This roadmap addresses many issues to improve rotorcraft safety including rotorcraft design, training and safety promotion. The EASA Rotorcraft Community Network https://www.easa.europa.eu/community/rotorcraft is a very useful resource to keep updated on latest pan-EU information on rotorcraft safety issues and associated safety promotion material.

The actions in SPAS Volume II, Chapter 3 (Rotorcraft) address the establishment of a dedicated rotorcraft flight operations forum involving the IAA and Irish rotorcraft operators, and the need for ongoing safety promotion in this domain. An additional action is included in Chapter 4 (ATM/ANS) to address the implementation of PinS navigation procedures to support rotorcraft operations.

In common with many other EU Member States, certified rotorcrafts 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 version of SPAS is focused on an IAA initiative to develop a set of EU standards to address this topic which would also support cross-border SAR operations within EU.

New actions may be added during the reference period based on updates to IAA sector risk registers and associated risk assessment.

3.2.4 Air Traffic Management / Air Navigation Services (ATM/ANS)

The IAA ATM/ANS service provider (to be re-branded as AirNav Ireland upon enactment of the Air Navigation Transport Bill) provides ATM/ANS in controlled airspace in Ireland, including:

- Air Traffic Services, including

    - Air Traffic Control

    - Flight Information

    - Alerting

- Communication, Navigation and Surveillance services

- Aeronautical information

- Airspace Management

- Air Traffic Flow Management.

The IAA service provider provides enroute services for North Atlantic Traffic at Shannon ACC and North Atlantic Communications at Ballygireen, Co Clare, as well as terminal services at the three State airports (Dublin, Shannon and Cork). In addition, the IAA service provider operates the Aeronautical Rescue Co-ordination Centre for Ireland. Limited Air Navigation Services are also provided by approved service providers at six non-State airports.

The key operational risk areas identified in the ATM/ANS domain are:

Mid-Air Collision (incl Drones)

Runway Incursions

Runway Excursions

The actions in the SPAS Volume II, Chapter 4 address the key risk areas for ATM/ANS, including:
- targeted oversight tasks;

    - oversight planning targeting the management of SPAS key risk areas by organisations (e.g. during SMS oversight), as applicable to the organisation

    - review of the level of implementation by ANSP's of recommendations for improving aviation safety, including GAPPRE/EAPPRE (RE) and EAPPRI (RI)

    - auditing effectiveness of local runway safety teams (RE/RI)

- monitoring implementation of recommendations relating to Drone incident management at aerodromes (refer to Ch 8 for more details)

• safety policy driven tasks;

  - encouraging the implementation of SESAR Solutions that could help mitigate operational risks (e.g. MAC, RI)

  - implementation of significant regulatory change concerning the approval of ATM systems and constituents

  - establishment of National Runway Safety Forum (GAPPRE Recommendation)

  - implementation of PinS navigation procedures to support rotorcraft operations

• safety analysis tasks;

  - risk modelling and assessment of runway safety in the ATM/ANS domain (RI/RE)

New actions may be added during the reference periods based on updates to IAA sector risk registers and associated risk assessment.

3.2.5 Aerodrome Operations

Aerodromes within Ireland consist of three 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 5 nationally licensed public aerodromes in Ireland.

• Nationally licensed private aerodromes, which are not open to public use but require to be licensed (eg to facilitate flight training). There are currently 9 nationally licensed private aerodromes in Ireland.

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

In limited circumstances, a declaration can also be made to the Authority to allow for the use of an unlicensed aerodrome by aircraft engaged in instruction in flying, there are currently 5 airfields where such a declaration is in place.

The key operations risk areas identified in the Aerodromes domain are:

Runway Incursions

Runway Excursions

Ground Operations

Bird/Wildlife Strikes

Drone Infringements

Ground operations includes a number of different activities that fall under the remit of the SPAS, including but not limited to, ground handling, ground vehicle operations, runway condition monitoring, aircraft de-icing, aircraft loading, dangerous goods, The actions in the SPAS Volume II, Chapter 5 include actions to address the key risk areas for aerodromes including:

- targeted oversight tasks;
    - oversight planning targeting the management of SPAS key risk areas by organisations (e.g. during SMS oversight), as applicable to the organisation
    - review of the level of implementation by aerodrome operators of recommendations for improving aviation safety, including GAPPRE (RE) and EAPPRI (RI)
    - implementation of the recently introduced ICAO runway surface conditions Global Reporting Format (RE)
    - auditing the effectiveness of local runway safety teams (RI/RE)
    - monitoring implementation of recommendations relating to Drone incident management at aerodromes (refer to Ch 8 for details)
- safety policy driven tasks;
    - encouraging the implementation of SESAR Solutions that could help mitigate operational risks (e.g. RE/RI)
- safety analysis tasks;
    - safety analysis to support National Bird/Wildlife Hazard Committee in Ireland (WILD)

- safety promotion tasks;

    - to address hazards caused by unruly passenger behaviour on the ramp.

New actions may be added during the reference period based on updates to IAA sector risk registers and associated risk assessment.

3.2.6 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.

The implementation of an SMS is a complex task that may take a considerable length of time to mature before becoming an effective safety management tool for an organisation. SMS require-ments have been established in other aviation domains (e.g. flight operations, air navigation services, aerodromes) for many years in some cases, and the experience gained by the IAA in oversight of the SMS in these organisations can be used to assist airworthiness organisations in developing and maturing their own SMS, e.g. by providing SMS training courses specifically tailored to airworthiness organisations.

The actions in SPAS Volume II, Chapter 6 focuses on the need to assist airworthiness organ-isations in implementing SMS requirements in CAMO, Part 145 and Part 21 Production and on enhancing the risk management processes and development of organisation risk profiling and performance monitoring processes in these domains.

Additional actions are included to address an issue identified by EASA (ref EPAS MST.0035) concerning the risk of fraud in Part-147 examination, and to support Dangerous Goods training organisations during the transition from a category-based approach to a competency-based training and assessment approach (CBTA).

3.2.7 General Aviation
The SPAS also addresses the operational risks for those involved in general aviation. General Aviation (GA) in Ireland is defined as any aviation activity not categorised as Commercial Air Transport (CAT) or addressed under Part NCC declaration. It includes aviation activities regu-lated under European and National legislation such as.

- specialised operations (Part SPO) 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.

The IAA supports the General Aviation Safety Council of Ireland (GASCI) which seeks to identify flight safety risks and minimise them through education, training and shared experience amongst the general aviation community. GASCI has representatives from most sectors of general aviation in Ireland and includes representatives from the IAA and AAIU. GASCI provides safety information on its website www.GASCI.ie and twitter @gasci_ie. The IAA risk register for general aviation is informed by the key risks identified by GASCI which also considers the pan-EU identified risks in the EASA risk portfolio for this domain.

GASCI has provided a huge step-forward in safety promotion in general aviation in Ireland over the past decade by hosting safety evenings for the GA community at different venues throughout Ireland, with presentations and videos addressing the key risks, including hosting online safety evenings on zoom to overcome COVID-19 restrictions. The IAA provides financial and logistical support for GASCI activities.

The EASA General Aviation Community Network https://www.easa.europa.eu/community/ga is also a very useful resource to keep updated on latest pan-EU information concerning GA safety issues and associated safety promotion material.

The current version of SPAS addresses the following key risk areas for general aviation:

Loss of Control-Inflight

Inadvertent flight into IMC

Mid-Air Collision (incl Drones)

Airspace Infringement

Runway Excursion/Abnormal Runway Contact

Collision with obstacles

SPAS Volume II, Chapter 7 includes actions to address the key risk areas in general aviation including:

- safety promotion tasks;

  - Developing and promulgating safety information to address the key safety areas and promote a positive safety culture

  - Organising safety evenings for general aviation to present safety information

  - Promoting the use of technology to improve GA safety (e.g. iconspicuity, moving maps)

  - Using website and social media platforms to target intended audience

- safety policy driven tasks;

  - continue to support the work of GASCI

  - review airspace design to help eliminate unintentional airspace infringement at the margins of Class C/G

- targeted oversight tasks;

  - focus on learning objectives in the "Meteorological Information" part of PPL/LAPL syllabus with GA Training organisations (EPAS MST.0036 also refers)

New actions may be added during the reference period based on updates to IAA GA sector risk registers and associated risk assessment.

3.2.8 Drone Operations
Whereas the IAA is fully supportive and encourages the ongoing development of the Drone industry in Ireland, its primary focus as safety regulator is the safe integration of Drone operations in Irish airspace. UAS operations cover a wide range of use cases and scale of operations, often in non-traditional aviation sectors. Examples of activities that Drone 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 and search and rescue.

The level of drone activity in Ireland continues to grow with, at time of writing:
- 6,675 Drone operators

- 10,917 Remote Pilots A1/A3 and 1,096 Remote pilots A2

- 229 STS approvals

- 76 operational authorisations

- 2 Light UAS Operator Certificates (LUCs)

The top risks areas for drone operations identified in Ireland and in wider EU/Global assessments are:

Airborne collision between a drone and a large commercial aircraft

Airborne collision between a drone and a light aircraft (rotorcraft or fixed-wing)

Loss of control of drone leading to serious or fatal injury to persons

Infringement of drone into controlled or protected airspace leading to disruption of normal operations

Carriage of Dangerous Goods by Drones

Malicious acts, privacy breach, nuisance

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

- **Open:** Lower-risk ops, safety ensured provided the operator complies with the relevant requirements.

- **Specific:** riskier operations, safety ensured by the operator obtaining an operational authorisation from the competent aviation authority. To obtain authorisation a risk assessment is required to determine the requirements necessary for the safe operation.

- **Certified:** safety risk is high, certification of the operator, and the drone, along with the licensing of the remote pilot(s), is required to ensure safety.

In addition to the enforcement of the regulations, the use of safety promotion is a key tool used by the regulator for drone operations. The IAA has a dedicated website to support Drone operations in Ireland at https://www.iaa.ie/general-aviation/drones. In addition, the EASA website https://www.easa.europa.eu/domains/civil-drones provides further information on the European regulatory framework concerning drone operations.

The IAA encourages the reporting of Drone related aviation safety incidents to the IAA at https://www.iaa.ie/safety/safety-reporting. Such drone related incidents include actual or near collision with aircraft, infringement by drones into controlled or protected airspace, loss of control of the drone leading to serious or fatal injury to persons, loss of control of the drone leading to near miss with persons or damage to property or the drone itself, failure of drone safety features. These reports enable us to learn more about the current level of risk and thereby identify the best approach to mitigating these risks. The IAA is developing a specific drone risk register to capture and assess the risks associated with Drone operations.

The actions in the SPAS Volume II Chapter 8 address the implementation of IAA high level policy objectives for safe integration of drone operations and the implementation of the EU regulatory framework, including implementation of U-Space per EU Reg 2021-666.

An emerging activity also addressed in Chapter 8 is Innovative Air Mobility (IAM), which involves manned and unmanned aircraft operating vertical take-off and landings in urban and non-congested environments. At this time there are no specific actions in the SPAS concerning IAM but the IAA is monitoring the developments of a European Regulatory framework to address this new technology.

Chapter 8 also addresses the risk of drone infringements at aerodromes. In many cases, unauthorised drones are being reported near or inside the perimeter of airports (or in its immediate proximity) or in the arrival and departure paths of runways, which apart from presenting an immediate safety threat to the aircraft, can often lead to severe disruption to airport operations leading to airport closures and flight diversions. In 2021 EASA published guidance on "Drone Incident Management at aerodromes", and the SPAS Chapter 8 addresses actions by the IAA to monitor the implementation of this guidance by aircraft operators, aerodrome operators and ANSP's.
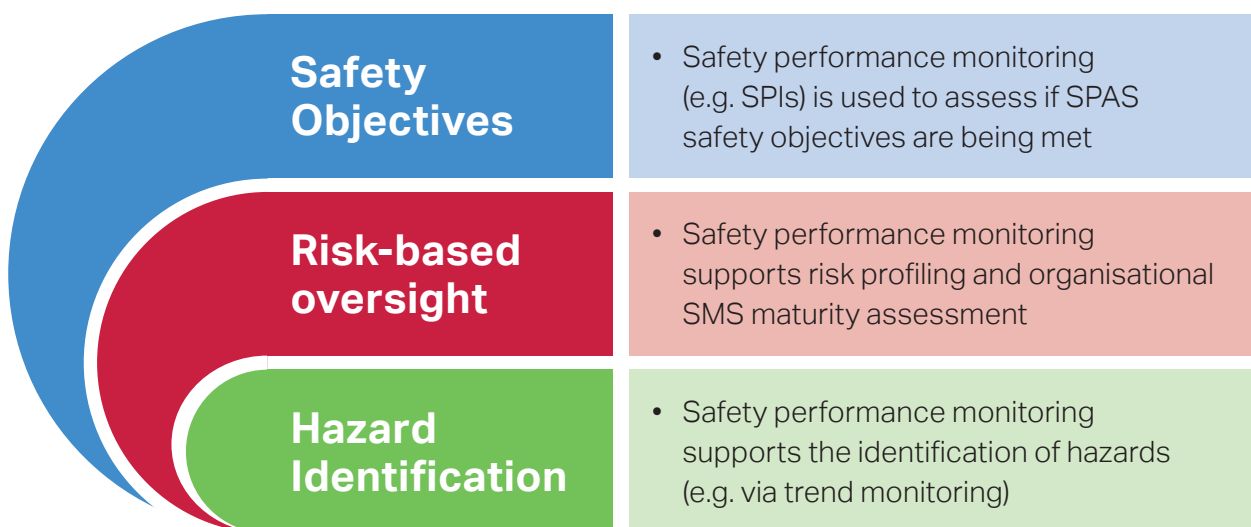
4. Safety Performance Monitoring

4.1 Performance Monitoring in IAA

4.1.1 Overview

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

Performance monitoring in the IAA supports different activities in the IAA safety management system as depicted in the following figure:

Safety Objectives	• Safety performance monitoring (e.g. SPIs) is used to assess if SPAS safety objectives are being met
Risk-based oversight	• Safety performance monitoring supports risk profiling and organisational SMS maturity assessment
Hazard Identification	• Safety performance monitoring supports the identification of hazards (e.g. via trend monitoring)

The development of safety performance indicators (SPI) and safety performance targets (SPT) across all sectors in Irish civil aviation remains a work in progress and is one of the ongoing actions in the SPAS Volume II. This will always be an ongoing task as the safety risk picture is constantly changing requiring new safety objectives to be developed and consequently creating new requirements for performance monitoring.

4.1.2 Assurance of Safety Objectives

The primary function of safety performance monitoring as envisaged in ICAO Annex 19 is to provide assurance that safety objectives are being met, and this may be accomplished through development of safety performance indicators with associated safety performance targets, where appropriate. The safety objectives of the SPAS are monitored by the IAA at the sector level. Organisations are responsible for developing their own safety objectives and associated monitoring of their own safety performance; however, organisations should consider the State level safety objectives as outlined in SPAS as part of their SMS processes, in so far as these safety objectives are appropriate to their own operations.

4.1.3 Supporting Risk-based Oversight

The safety information derived from safety performance monitoring at sector and individual organisation level can support risk-based oversight planning by providing the information necessary for purposes of risk profiling to determine areas of greater need of attention. In addition, safety performance information can provide the means to support both regulators and organisations in their assessment of the effectiveness of an organisations safety management system and to support continuing improvements in this regard.

4.1.4 Identifying new hazards

Safety information derived from safety performance monitoring may identify new hazards for a specific sector (e.g. SPI's with adverse trends across a full sector) that may be added to the sector risk registers for appropriate risk assessment and risk mitigation.

4.2 Safety Objectives, SPI's and SPT's

The SPAS identifies the safety objectives for the State and the associated safety performance indicators and targets. These are detailed in Chapter 5 below.

4.3 Safety Performance Reporting

The IAA publishes the Annual Safety Performance Review each year (https://www.iaa.ie/safety) that provides aggregated and dis-identified safety information on the main outcome-based safety performance indicators (e.g. accidents, serious incidents, occurrences) across the different aviation sectors.

More granular sector-based performance reports are developed on a weekly and quarterly basis to support the IAA safety management processes. In addition, sector-based or thematic performance reports or presentations, containing aggregated dis-identified data, are developed to support safety meetings and workshops with State level bodies (e.g. ICAO, EASA or other State Authorities) and with certified stakeholders or general aviation.

Safety information derived from safety performance monitoring may also be developed on an individual organisation basis to support IAA managers and inspectors conducting safety review meetings or safety oversight activities (e.g. SMS effectiveness).

5. SPAS Safety Objectives, SPIs and SPTs

The following two tables summarise the Safety Objectives (SO) for the State as outlined in the State Plan for Aviation Safety, the related Safety Performance Indicators (SPI) and Safety Performance Targets (SPT). In each case the table identifies the safety performance indicators the IAA has already developed and monitors from the regulator's perspective.

Individual organisations (regulated entities) are responsible for developing their own SO/SPI/SPT's as part of their Safety Management Systems, and this activity is subject to oversight by the IAA. The table clarifies the expectations of the IAA from the affected organisations in respect of each of the safety objectives contained in the SPAS. Regulated entities must develop their own SPIs as part of their own SMS processes, however the SPIs developed by the IAA at State level may be considered within the SMS of individual regulated entities, as appropriate to their own activities.

The IAA (regulator) will monitor the safety performance indicators on a sector basis primarily using the data collected from the occurrence reporting system and IAA oversight audit management systems. External data provided by ICAO (online platforms) and EASA (e.g. RAMP inspections, continuous monitoring reports) is also used as appropriate. Regulated entities are responsible for monitoring their own safety performance indicators using their own management systems, which may include the benefits of using operational data recording systems to help monitor some safety performance indicators.

Table 1: Safety Management

No.	Safety Objective	What IAA will monitor (SPIs)	What IAA expects organisations to do	Safety Performance Targets
SM.1	To ensure that appropriate safety risk management processes are applied in civil aviation during ramping up of operations post-COVID-19 pandemic.	Aircraft accidents, serious incidents, incidents and non-compliance findings attributable to inadequate management of operations post COVID-19 pandemic.	Develop and monitor their own SPI's in respect of post-COVID-19 operations, to include the related IAA SPI's as appropriate to them.	No aircraft accidents or serious incidents or significant (Level 1) findings of non-compliance attributable to inadequate risk management of operations post COVID-19 pandemic
SM.2	To continuously improve implementation of aviation safety management at State level in Ireland.	ICAO SSP Dashboards Indicators: • ICAO SSPIA PQ Self-Assessment completion • ICAO Safety Oversight Index (SOI) • ICAO USOAP EI Score • ICAO USOAP CC/EFOD Completion EASA Dashboard Indicators: • EPAS MST tasks completion • EASA Standardisation Dashboards • Use of EASA MS Assessment Tool Occurrence reporting rates of regulated organisations	N/A	ICAO SSP Dashboard Targets • SSPIA PQ self-assessment completed on ICAO OLF by end 2023 • Maintain ICAO SOI > 1 • Maintain EI Score > 90% • Maintain Average CC/EFOD completion score > 90% EASA Dashboards Targets • MST actions completed via SPAS, as appropriate • Standardisation rating index above EU average • EASA MSAT used in SMS oversight in regulated organisations including airworthiness by end 2024 Positive trends in occurrence reporting rate

SM.3	To ensure there is no disruption to regulatory functions and provision of air navigation services during the IAA separation project.	Project implementation indicators. IAA SRD Internal compliance monitoring – findings of non-compliance. Regulatory Oversight - findings of non-compliance for IAA ANSP.	Internal monitoring of change management processes	No significant adverse findings attributed to inadequate change management and risk management processes, during organisational separation project.
SM.4	To continuously improve aviation safety through an integrated approach to risk management.	Tier 1 SPI's: Rate of aircraft accidents and serious incidents caused by aviation security operations in Ireland. Trend monitoring of security related safety occurrences	Develop and monitor their own SPI's in respect of security related safety occurrences.	No security related accidents or serious incidents caused by inadequate security operations in Ireland. Positive trends in security related safety occurrences reported to IAA.
SM.5	To implement effective risk-based oversight methods across relevant sectors of the Irish civil aviation system.	Organisation risk profile completion rate Processes available to assess effectiveness of RBO methodologies	N/A	ORP's completed in >90% of regulated organisations in OPS, ADR, ANS by end 2022 and AWS by end 2024. Processes to assess the effectiveness of RBO methodologies in all domains by 2024
SM.6	To ensure that the IAA procures and maintains sufficient and competent staff to oversee the continuously evolving civil aviation system	Resource demand vs capacity in all regulatory domain Specific competencies to address risk-based oversight	N/A	Demand/Capacity maintained at <100% in all domains Specific competencies on risk-based oversight to be provided in all domains by end 2024

SM.7	To implement digital processes to support oversight management and safety management across all oversight sections in IAA.	Audit management transferred to new digital platform Availability of Business Intelligence tools to support safety management and risk-based oversight	N/A	Audit management migrated to new digital platform by end Q2 2023 Availability of BI Tools by end 2023
SM.8	To implement robust regulatory change management processes to ensure that the authority requirements are fully implemented, and related guidance provided to industry stakeholders.	Rate of non-compliance findings related to significant regulatory changes	Monitor the rate of internal non-compliance findings related to significant regulatory changes	Positive trends in rate of non-compliance findings following implementation of significant regulatory changes

Table 2: Operational Risks

No.	Safety Objective	What IAA will monitor (SPIs) – sector level	What IAA expects organisations to do	Safety Performance Targets
CAT.1	To continuously improve safety by assessing and mitigating the risks relating to Loss of Control – Inflight (LOC-I) involving Irish commercial or declared operators or operators departing from Irish airports.	*LOC-I may arise from different precursor events that result in an aircraft upset, including weather, technical failures, inflight fire, fuel events, human performance. LOC-I accidents may also arise from inadequate operations at airports, such as aircraft loading, ground handling or wildlife hazard management.* **IAA will monitor:** • Tier 1 SPI's: Rate of aircraft accidents and serious incidents involving Irish commercial/declared air operators and/or involving Irish airports. • Tier 2 SPI: Rate of occurrences involving "deviation from intended flight path" in Irish airspace. • Trend monitoring of incidents categorised as LOC-I	• Develop and monitor their own SPI's in respect of LOC-I, and consider inclusion of the IAA SPI's as appropriate to them. • Use FDM data (air operators as applicable) to support monitoring and analysis of LOC-I occurrences	No accidents or serious incidents categorised as LOC-I, involving Irish commercial or declared operators and/or caused by inadequate operations at Irish airports. Positive trends in LOC-I related occurrences.

CAT.2   To continuously improve safety by assessing and mitigating the risks of Controlled Flight into Terrain (CFIT) involving Irish commercial/declared operators or operators flying in Irish controlled airspace.

CFIT may arise from different precursor events, including loss of situational awareness by crews, navigation errors, inadequate approach procedures. It is a particular risk for intentional low-level operations (e.g. inadvertent flight into IMC during inspections, surveys, etc).

What IAA will monitor:
- Tier 1 SPI's: Rate of aircraft accidents and serious incidents involving Irish commercial/declared air operators and/or occurring in Irish controlled airspace.

- Tier 2 SPI: Rate of CFIT related occurrences.

- Trend monitoring of incidents categorised as CFIT

- Develop and monitor their own SPI's in respect of CFIT, and consider inclusion of the IAA SPI's, as appropriate to them.

- Use FDM data (air operators, as applicable) to support monitoring and analysis of CFIT occurrences

No accidents or serious incidents categorised as CFIT, involving Irish commercial/declared operators and/or by any operator flying in Irish controlled airspace.

Positive trends in CFIT related occurrences.

CAT.3	To continuously improve safety by assessing and mitigating the risks of Mid-Air Collision (MAC) involving Irish commercial operators or operators flying in Irish controlled airspace.	*MAC occurrences may arise from different precursor events such as loss of separation with other large aircraft, light aircraft or drones, loss of situational awareness by crews, inadequate or ineffective air traffic control, equipment failures.* **What IAA will monitor:** • Tier 1 SPI's: Rate of aircraft accidents and serious incidents involving Irish commercial/ declared air operators and/or occurring in Irish controlled airspace. • Tier 2 SPI (all airspace): Rate of MAC related occurrences involving Irish commercial or declared organisations. • Tier 2 SPI (Irish airspace): Rate of Deviation from ATC Clearances, Level Bust, Separation Minimum Infringement, Airspace Infringement • Trend monitoring of incidents categorised as MAC • Monitoring of incidents of potential conflict between aircraft and drones	• Develop and monitor their own SPI's in respect of MAC, and consider inclusion of the IAA SPI's, as appropriate to them. • Use FDM data (air operators, as applicable) and radar data (ANSP's) to support monitoring and analysis of MAC occurrences	No accidents categorised as MAC, involving Irish commercial or declared operators and/or in Irish controlled airspace. Positive trends in MAC, and Drone conflict, related incidents.

CAT.4 To continuously improve safety by assessing and mitigating the risks of Runway Incursion (RI) involving Irish commercial/declared air operators or at Irish certified aerodromes.

RI occurrences may arise from different precursor events such as failure to adhere to ATC clearances by Flight Crew or Ground Crew, Aircraft and vehicle ground movement errors in low visibility operations, Non-Adherence to standards in ATC communications

What IAA will monitor:
- Tier 1 SPI's: Rate of aircraft accidents and serious incidents involving Irish commercial/declared air operators and/or occurring in Irish certified aerodromes.

- Tier 2 SPI (all airspace): Rate of RI involving Irish commercial/declared air operators.

- Tier 2 SPI (Irish certified aerodromes): Rate of RI at Irish airports.

- Trend monitoring of incidents categorised as RI

- The level of implementation of EAPPRI recommendations in the State aiming to reduce the risk of runway incursions.

- Develop and monitor their own SPI's in respect of RI, and consider inclusion of the IAA SPI's as appropriate to them.

- Use FDM data (air operators, as applicable) and radar data (ANSP's) to support monitoring and analysis of RI occurrences

- Monitor the level of implementation of EAPPRI recommendations applicable to their own organisation. recommendations applicable to their own organisation.

No accidents categorised as RI, involving Irish commercial or declared operators and/or in Irish certified aerodromes.

Positive trends in RI related incidents.

No.	Safety Objective	What IAA will monitor (SPIs) – sector level	What IAA expects organisations to do	Safety Performance Targets
CAT.5	To continuously improve safety by assessing and mitigating the risks of Runway Excursion involving Irish commercial/declared air operators or at Irish certified aerodromes.	*RE occurrences may occur due to unstable approach, inadequate braking performance on runways, technical failures, weather impact, poor execution of the landing phase. These events may also lead to an Abnormal Runway Contact (ARC) event (e.g. heavy/long landing etc).* **IAA will monitor:** • Tier 1 SPI's: Rate of aircraft accidents and serious incidents involving Irish commercial/declared air operators and/or occurring in Irish certified aerodromes. • Tier 2 SPI: Rate of RI/ARC involving Irish commercial/declared air operators and/or at Irish certified aerodromes. • Trend monitoring of incidents categorised as RE/ARC • The level of implementation of GAPPRE recommendations in the State aiming to reduce the risk of a runway excursion	• Air Operators, Aerodrome Operators and ANSP's) should Develop and monitor their own SPI's in respect of RE/ARC, and consider inclusion of the IAA SPI's as applicable to them. • Use FDM data (air operators, as applicable) and radar data (ANSP's) to support monitoring and analysis of RE/ARC occurrences • Monitor the level of implementation of GAPPRE recommendations as applicable to their own organisation.	No accidents categorised as RE/ARC, involving Irish commercial/declared operators and/or in Irish certified aerodromes. Positive trends in RE related incidents.

CAT.6   To continuously improve safety by assessing and mitigating the risks due to Ground Operations by Irish commercial or declared air operators or at Irish certified aerodromes.

Ground Operations related occurrences include aircraft collision/damage, ground handling activities (aircraft ground movements, loading passengers/cargo, servicing, fuelling, de-icing), the use, failure and stowage of ground support equipment.

What IAA will monitor:

- Tier 1 SPI's: Rate of aircraft accidents and serious incidents involving Irish commercial/declared air operators and/or occurring in Irish certified/licensed aerodromes.

- Tier 2 SPI: Rate of Ground Damage involving Irish commercial/declared air operators and/or at Irish certified/licensed aerodromes.

- Trend monitoring of occurrences categorised as RAMP

- Monitoring of non-compliance findings in oversight of ground operations

- Air Operators, Aerodrome Operators and ANSP's should develop and monitor their own SPI's in respect of ground operations and consider inclusion of the IAA SPI's as applicable to them.

- Use FDM data (air operators, as applicable) and ASMGCS data (ANSP's, as applicable) to support monitoring and analysis of ground operations related occurrences

- Monitoring of non-compliance findings during internal audit of ground operations

No fatal accidents during ground operations involving Irish commercial/declared operators and/or in Irish certified/licensed aerodromes.

Positive trends in ground operations related accidents and incidents.

Positive trends in non-compliance oversight findings in respect of ground operations.

HELI.1	To continuously improve safety by assessing and mitigating the risks in rotorcraft operations in the State, involving Irish approved or declared rotorcraft operators.	Aircraft accidents, serious incidents and incidents involving approved or declared rotorcraft operations.	Develop and monitor their own SPI's in respect of their own rotorcraft operations, to include the IAA SPI's as appropriate to them.	No accidents in approved or declared rotorcraft operations Positive trends in incidents involving approved or declared rotorcraft operations.
AWS.1	To continuously improve safety by assessing and mitigating the risks relating to aircraft maintenance and maintenance management.	Aircraft accident, serious incident and incident rates and trends, related to aircraft maintenance and maintenance management issues.	Develop and monitor their own SPI's in respect of maintenance and maintenance management, to include the IAA SPI's as appropriate to them.	No aircraft accidents or serious incidents caused by inadequate aircraft maintenance and/or maintenance management. Positive trends in maintenance related incidents.
UAV.1	To continuously improve safety by assessing and mitigating the risks due to Drone operations in Irish airspace.	*Drone related occurrences include actual or near collision with aircraft, infringement by drones into controlled or protected airspace, loss of control of the drone leading to serious or fatal injury to persons, loss of control of the drone leading to near miss with persons or damage to property or the drone, failure of drone safety features.* Aircraft accident, serious incident and incident rates and trends, related to drone occurrences	Develop and monitor their own SPI's in respect of drone operations, to include the IAA SPI's as appropriate to them.	No fatalities, aircraft accidents or serious incidents, caused by inadequate safety of drone operations. Positive trends in drone related incidents.

GA.1	To share safety information within the general aviation community to help reduce the number of accidents and serious incidents involving general aviation operations in Ireland.	Number of safety evenings organised Number of safety occurrences reported by the general aviation community	Approved and declared GA organisations: • Number of safety evenings organised • Number of safety occurrences reported to them	At least 2 general aviation safety events per year Increasing trend in level of occurrence reporting in general aviation
GA.2	To continuously improve safety by assessing and mitigating the risks due to airspace infringements involving general aviation in Ireland.	Tier 1 SPI's: Number of aircraft accidents and serious incidents involving GA aircraft in Irish controlled airspace. Tier 2 SPI: Number of Airspace Infringements by general aviation aircraft	Approved and declared GA organisations: • Number of aircraft accidents, serious incidents, and incidents due to airspace infringements involving own aircraft	No accidents or serious incidents due to Airspace Infringement (AI) by GA traffic Positive trends in AI occurrences by GA traffic
GA.3	To continuously improve safety of general aviation by assessing and mitigating the key risks of LOC-I, CFIT, MAC and occurrences during take-off and landing.	Tier 1 SPI's: Number of fatalities, accidents and serious incidents involving GA aircraft.	Approved and declared GA organisations: • Develop and monitor own SPI's to include their own key risks and to consider key risks for GA identified by IAA, as appropriate to them.	No fatalities in general aviation. Positive trends in the number of accidents and serious incidents involving GA