Rialtas na hÉireann
Government of Ireland

National Policy Framework for Unmanned Aircraft Systems

Department of Transport

Minister's Foreword

The use of unmanned aircraft systems (UAS), often referred to as drones, has for commercial and other purposes, grown exponentially over the past decade. UAS are accessible to a broad range of users and their use is becoming commonplace. As technology has evolved, UAS use has presented significant opportunities in both the commercial and public spheres. I recognise that the rapid pace of UAS innovation and commercialisation has created challenges, and generated real concerns among communities, particularly around issues of noise, intrusion and privacy. UAS have also required aviation regulators and local authorities to consider a new range of safety, security, environmental and privacy issues.

There is renewed focus on developing a strong, vibrant UAS sector in Europe. With pan-European UAS regulations coming fully into force, unmanned traffic systems being tested, and the implementation of the *Drone Strategy 2.0 for Europe*, the years ahead will be pivotal to the future of UAS. Given the rapid pace of development and the need to consider the impacts of increased UAS activity, it is important Ireland plans for how we would like the UAS sector to develop.

UAS present exciting opportunities for businesses and the public sector to boost productivity, improve service provision, support emergency response and infrastructure safety inspections, create high-tech jobs and boost the economy across Ireland. UAS operations will continue to expand in the coming years, and it is important that Ireland is ready to realise the economic and societal benefits from this emerging industry.

A national policy framework for UAS is required:

- to foster the development of a thriving UAS sector in Ireland while addressing societal concerns,
- to ensure the safety and security of UAS operations through responsible regulation, and
- to future-proof the responsible and sustainable development of the industry.

A collaborative approach has been taken by my department in developing the Policy Framework through public consultation, and extensive stakeholder and cross-government engagement. The extensive input received from stakeholders, including industry and the broader public, has helped to shape this robust Policy Framework. The Framework will provide a positive pathway for the development and growth of the UAS sector in Ireland, creating jobs both directly and indirectly. It will also create an environment that will encourage industry to choose Ireland as the best place to develop this innovative, fast-growing global sector while continuing to address public concerns. It will be implemented through collaborative cross-government structures, and will facilitate the addressing of matters such as planning and environmental issues by the appropriate authorities. I would like to thank all those who contributed to the shaping of the Policy Framework, and I look forward to its collective implementation.

Darragh O'Brien T.D.
Minister for Transport

Contents

Summary

Purpose of the Policy Framework

To set out the vision, strategy, and priorities for the development of the UAS sector in Ireland.

To ensure safe and secure UAS operations, planned to minimise environmental and privacy impacts.

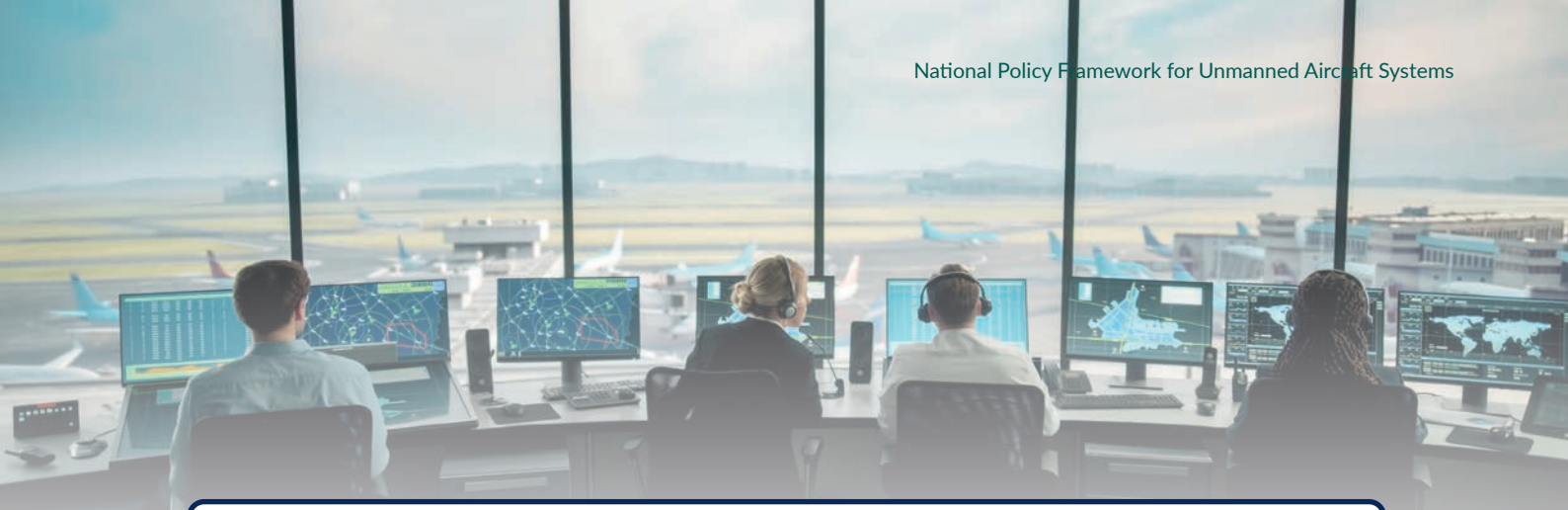
To guide high-level strategic planning and development of the UAS sector in Ireland over the next decade by supporting growth and innovation.

Policy Positions

Ireland is committed to ensuring that safe low-level airspace management for UAS operations is delivered with due consideration for cost and efficiency, and the impact on society, manned aviation, and the transport industry as a whole.

Safety and security remain Ireland's first priority in the aviation sector. Compliance in UAS operations will be managed and efficient enforcement will be enabled.

Ireland is committed to ensuring that sustainable and industry-led UAS sector development is supported with due consideration for societal concerns, efficiency and industry needs.



Policy Position

Ireland is committed to ensuring that safe low-level airspace management for UAS operations is delivered with due consideration for cost and efficiency, and the impact on society, manned aviation, and the transport industry as a whole.

Actions: The Use of the Airspace and Planning

1. The Irish Aviation Authority will collate relevant UAS operational data in order to build trend analyses and provide an evidential base for policy development over time.
2. A National Working Group on UAS Geographical Zones, led by the Irish Aviation Authority, will be established to develop transparent processes and procedures for the designation of UAS Geographical Zones.
3. Relevant State agencies, government departments and local government will determine and request UAS Geographical Zones through the Irish Aviation Authority in line with the processes and procedures developed through the National Working Group on UAS Geographical Zones.
4. The Irish Aviation Authority will identify the requirements, timeline, and costs of a U-space delivery programme.
5. A National U-space Steering Group, led by the Department of Transport, will be established to develop and effectively implement U-space capabilities and technologies in the State.
6. National, regional, and local planning policies and objectives will have due regard to new disruptive technology and Advanced/Innovative Air Mobility.
7. The Irish Aviation Authority will support the training and capacity building of local authorities and planners.

Policy Position

Safety and security remain Ireland's first priority in the aviation sector. Compliance in UAS operations will be managed, and efficient enforcement will be enabled.

Actions: Compliance and Enforcement

8. A collaborative approach will be fostered between local authorities, the Irish Aviation Authority and the UAS sector on education and awareness campaigns.

9. The Irish Aviation Authority, An Garda Síochána and the Data Protection Commission will work together to establish an operative inter-agency mechanism for the coordination of appropriate investigation of offences related to UAS.

10. The Irish Aviation Authority will provide training material and training support to An Garda Síochána enabling enforcement of UAS legislation.

11. The Department of Transport will introduce fixed charge offences for infringement of UAS regulations.

12. The Irish Aviation Authority, An Garda Síochána and the Data Protection Commission will continue, where practicable, to publicise conviction and enforcement actions relating to infringements.

Policy Position

Ireland is committed to ensuring that sustainable and industry-led UAS sector development is supported with consideration for societal concerns, efficiency and industry needs.

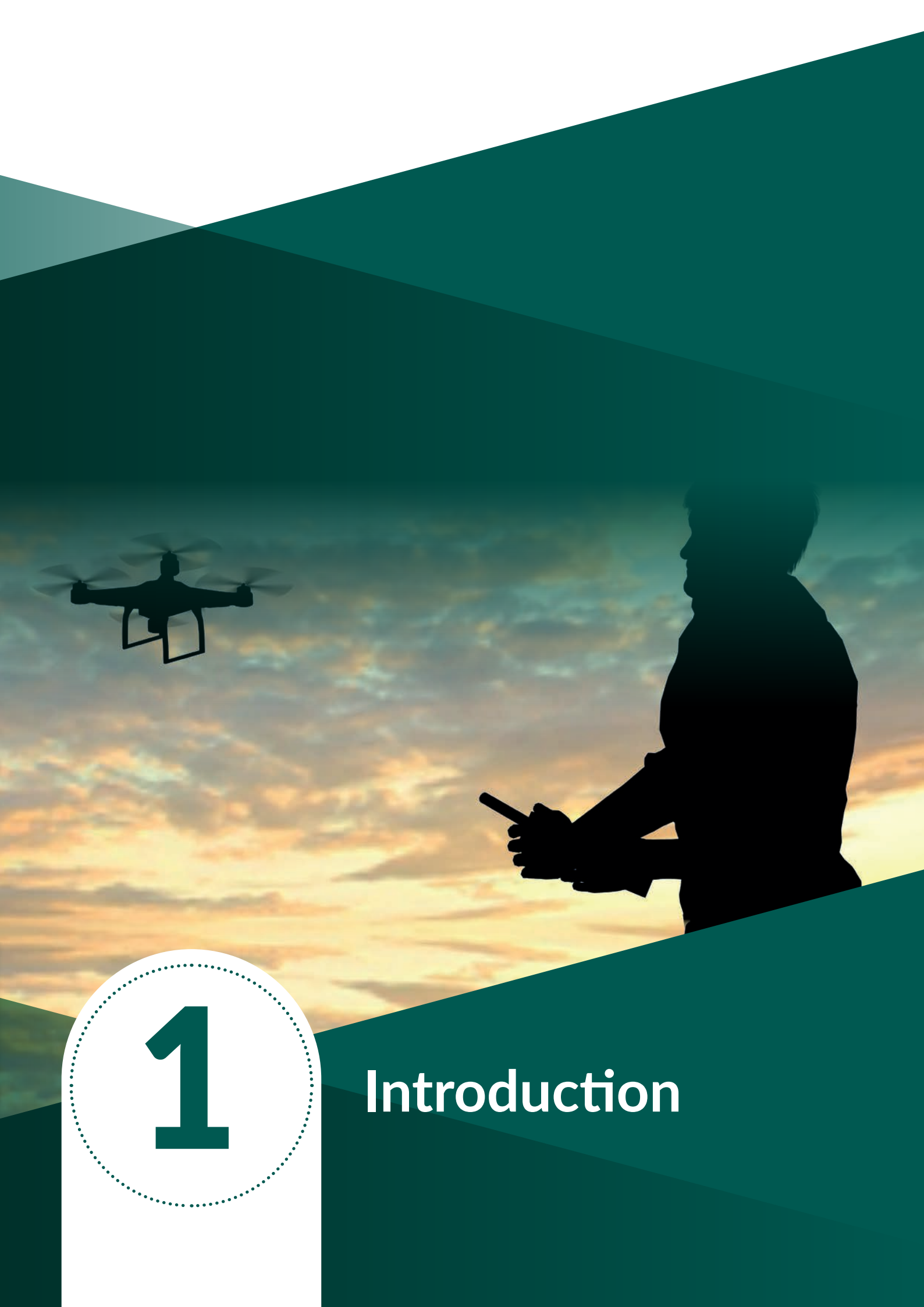
Actions: Enterprise and Innovation

13. The Minister for Transport will establish a UAS Enterprise and Innovation Leadership Group to foster the development of a robust ongoing policy on innovation and commercialisation, and to ensure the existence of pathways for industry (indigenous and FDI) and researchers.

14. The Department of Transport, in collaboration with other government departments and agencies, will establish an integrated platform for all stakeholders to share information relevant to the UAS sector.

15. The UAS sector, in conjunction with the Irish Aviation Authority, will establish and promote relevant test sites.

16. The Irish Aviation Authority will promote processes that allow for the allocation of airspace for experimental and developing UAS operations to be established.



1 Introduction

Introduction

Unmanned Aircraft Systems (UAS) means unmanned aircraft and the equipment to control them remotely. They are often referred to as 'drones'. The majority of UAS are powered electrically and come in a range of shapes and sizes, from units weighing less than 250g to large UAS capable of carrying heavy payloads. The use of UAS has become common for both commercial and non-commercial purposes, including public services. Over the last number years there has been a significant step forward in terms of UAS adoption, the expansion of usage across industries and the general awareness of the potential of UAS.

At European level, there is a focus on developing a strong, vibrant UAS sector. *The Drone Strategy 2.0 for Europe*[2] recognises the potential of UAS as a vector for smart and sustainable mobility of the future. UAS are environmentally efficient technology that can connect remote locations to much needed services. Several UAS applications are powered through electric propulsion (and other emerging technologies) and therefore have the potential to contribute to the decarbonisation and modernisation of our transport system and improving the safety and health of the public. However, the increase in UAS operations can also give rise to concerns about safety, privacy, noise and disturbance, and these concerns need to be addressed.

The next few years will be pivotal in the adoption of UAS with the pan-European UAS regulations coming into full force, further UAS and UAS operations being tested, and the implementation of the *Drone Strategy 2.0 for Europe*. The evolution of UAS technology and the developing EU regulatory approach to UAS indicates significant potential future growth. It is important for Ireland to decide where to position itself in the emerging UAS sector.

This Policy Framework addresses the civil use of UAS but does not cover the air transportation of passengers in urban environments. The use of UAS for State security, military, or law enforcement purposes and counter-UAS technology are also outside the scope of the Policy Framework.

Purpose of the Policy Framework

This Policy Framework sets out the vision, strategy, and priorities for the development of the UAS sector in Ireland. The Framework aims to guide high-level strategic planning and development of the UAS sector in Ireland over the next decade by supporting growth and innovation. The Framework also seeks to ensure safe and secure operations which are planned to minimise environmental and privacy impacts.

The Framework sets out a roadmap that supports the contribution of UAS technologies in Ireland to sustainability, competitiveness, and economic development, in line with government policy in the areas of carbon management, digitisation, innovation, disruptive technologies and balanced regional development.

The European Commission, in conjunction with Member States and the European Union Aviation Safety Agency (EASA), developed an enabling regulatory framework that allows for the safe development of a UAS services market. The European regulatory framework aims to keep UAS operations safe, secure, and green.

1. https://transport.ec.europa.eu/document/download/1cb5fb4f-4252-4f97-abf4-c4a167b1c7d2_en?filename=COM_2022_652_drone_strategy_2.0.pdf

By considering spatial planning for UAS use in urban and rural areas now, including the designation of UAS geographical zones and the possibility of establishing U-space in areas where multiple UAS operations are happening, some concerns related to privacy, security, the environment (including noise) and safety can be mitigated. The volume and complexity of UAS operations in Dublin, in particular, is moving quickly towards the level where a UAS traffic management system, such as U-space, needs to be put in place so that the State can maintain its current approach to the flexible use of airspace. The Policy Framework aims to ensure that inflexible airspace structures and restrictions that result in inefficient use of airspace are avoided.

The safe and secure use of UAS is universally recognised as a priority if Ireland and all EU Member States are to realise the full potential of UAS. However, UAS can be used for negative or harmful purposes. Often this is unintentional, where users are unaware of the law and the impact of their operating of UAS in a specific location. In other cases, misuse may be more malicious, but the consequences can be serious, whether intentional or not. Safety, security, the environment and privacy are key priorities, and the Policy Framework addresses this through actions on compliance, traffic management and enforcement.

The Policy Framework addresses how Ireland can position itself as a leader of innovation in the UAS sector. It also looks at what needs to be done to ensure our economy and society benefit from the development and uptake of new technologies and services associated with UAS. The core elements necessary for a strong, vibrant ecosystem for the UAS sector to develop in Ireland have been identified.

How the Policy Framework was Developed

The process of developing a national policy framework for UAS was launched with the establishment of an interdepartmental steering group, chaired by the Department of Transport. Many of the issues addressed by the Policy Framework fall directly within the remit of the Department of Transport, while other issues cross-over into areas of responsibility of other government departments and agencies. The membership of the Steering Group is drawn from primary stakeholders from relevant government departments and agencies to facilitate the development of a comprehensive and integrated policy. It includes representatives from the following departments and agencies:

- Department of Climate, Energy and the Environment
- Department of Culture, Communications and Sport
- Department of Enterprise, Tourism and Employment
- Department of Housing, Local Government and Heritage
- Department of Justice, Home Affairs and Migration
- The Irish Aviation Authority

Taking account of the views expressed by the interdepartmental steering group, three areas of focus were identified:

1. The Use of Airspace and Planning
2. Compliance and Enforcement
3. Enterprise and Innovation

Working groups were established to address each of the areas of focus. The working groups drew expertise from various relevant government departments and agencies, including the Department of Climate, Energy and the Environment; Department of Housing, Local Government and Heritage; Department of Justice, Home Affairs and Migration; Department of Enterprise, Tourism and Employment; Data Protection Commission; An Garda Síochána, Enterprise Ireland; IDA Ireland; Taighde Éireann – Research Ireland (formerly Science Foundation Ireland) and ComReg. Informed by the work of the three working groups, the Department of Transport held a targeted stakeholder consultation. A discussion document examining the three key areas identified was circulated prior to the hosting of a well-attended webinar. 13 written submissions were received as a follow up to the online event.

A public consultation was held at the beginning of 2024 in order to get a wider and more diverse perspective to inform the development of the Policy Framework and to ensure it provides a balanced and holistic approach. The Department of Transport developed a consultation paper that set out the background to the development of the Policy Framework, the proposed scope of the policy, and the current position and potential future of the UAS sector. Feedback was sought on several key areas, including how to respond to public concerns about the increase in use of UAS, how to position Ireland as a potential front runner in this emerging sector, and how to future-proof the responsible development of the UAS industry. In response to the consultation, 50 submissions were received from a variety of sources, including private citizens, UAS service providers, local authorities, and representative bodies.

This stakeholder engagement strongly influenced the development of the Policy Framework. The Framework will be a living document that will have to continue to evolve to keep pace with the evolution of the UAS sector internationally.

2

Use of the Airspace and Planning

Introduction

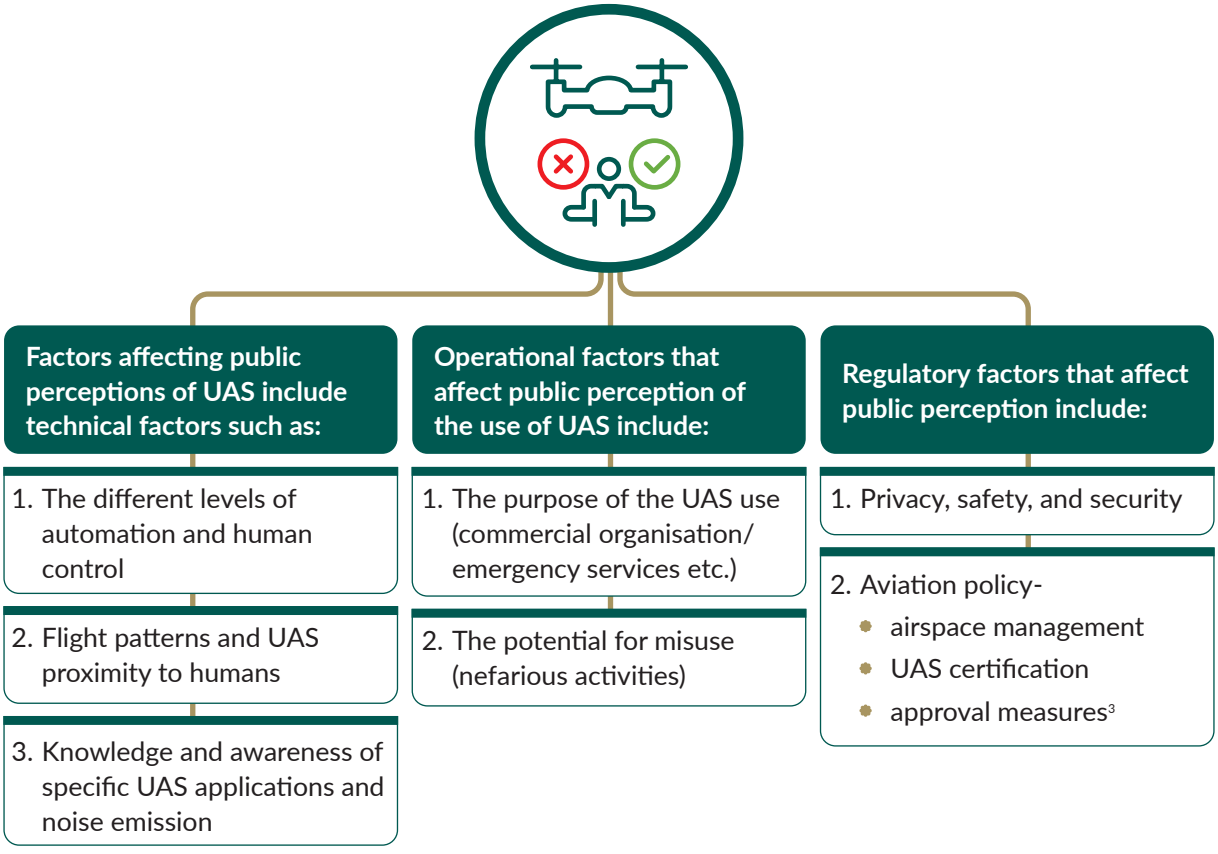
The European Union Aviation Safety Agency forecasts that the typical European city may see in the region of 30,000 drone flights per hour by the mid-2030s[2]. The scaling up of UAS services operations, where many drones are flying automatic missions Beyond Visual Line of Sight (BVLOS) over cities and towns in shared airspace and above people, is happening now at various locations in Europe, including Dublin.

The emergence of Innovative Air Mobility (IAM), the future mobility of passengers and cargo enabled by new-generation technologies such as electric vertical take-off and landing (eVTOL) vehicles, integrated into a multimodal transport system, will also place pressure on finite shared airspace.

As the UAS services sector grows and takes shape, there is a need to ensure the safe and secure integration of UAS into our airspace. In the Dublin area, several commercial companies are seeking to gain access to the limited airspace with a view to scaling up their operations to maximise efficiency and cost effectiveness. For Ireland to be in a position to benefit from the development and uptake of new technologies and services associated with UAS, future planning is required.

Public Perception and Societal Acceptance

Public perception and societal acceptance are key to the scaling up of UAS services and operations.



2. High-level regulatory framework for the U-space. EASA Opinion No. 01/2020, March 2020. https://www.easa.europa.eu/en/document-library/opinions/opinion-012020.
3. Wang, N, Mutzner,N and Blanchet, K 2023. "Societal acceptance of urban drones: A scoping literature review," Technology in Society, Elsevier, vol. 75(C) https://doi.org/10.1016/j.techsoc.2023.102377

Concerns in respect of privacy, safety, security, and the environment (including noise) will need to be mitigated in order to support societal acceptance of a UAS services sector in Ireland. Public buy-in and support for UAS technology is hard won and easily lost. This underpins the importance of transparency in decision-making and the proactive provision of information.

In terms of privacy, an operator of any UAS equipped with a sensor system capable of recording personal data (unless it falls under the EU Toy Directive 2009/48/EC), or with a Maximum Take-Off Mass (MTOM) of 250g or more, must be registered with the Irish Aviation Authority. Since 1 January 2024, certain UAS (including all UAS used for operations in the specific category) must be equipped with a direct remote identification system. The remote identification system allows any member of the public to identify UAS remotely using a smartphone app.

The Data Protection Commission (DPC) has developed guidelines[4] for UAS operators, both professional and recreational, on the use of UAS and data processing. UAS operators must be able to demonstrate that they are compliant with data protection laws. The Data Protection Commission may bring, and prosecute, summary proceedings for any offence under data protection law. The Irish Aviation Authority's updated UAS Order, S.I. No. 24 of 2023, includes a section on Privacy Rights which draws the attention of UAS operators to prepare a Data Protection Impact Assessment (DPIA), where required, in accordance with Regulation (EU) 2016/679 (General Data Protection Regulation).

UAS operators must be able to demonstrate that they are compliant with data protection laws. The Data Protection Commission may bring, and prosecute, summary proceedings for any offence under data protection law.

The aim of the European UAS rules is to achieve the same level of safety for UAS operations as in manned aviation. The Irish Aviation Authority oversees the implementation of the EU UAS rules and standards to ensure safe and secure UAS operations. Compliance and enforcement of the EU UAS rules is discussed further in Chapter 3.

4. https://www.dataprotection.ie/en/dpc-guidance/guidance-on-the-use-of-drones

The impact of a growing UAS sector will need to be considered in more depth as the sector expands. This includes the impact on the receiving environment, and the different considerations that apply to urban and rural areas. In urban areas, the potential of noise pollution is a particular concern of the public. The noise emitted from UAS does not resemble the noise of contemporary transportation vehicles and, although it may not be louder than ambient transport-related noise, its different character may disturb residents even in noisy urban environments. The European Union Aviation Safety Agency and EU Member States are developing guidelines and regulation around UAS noise.

There are a number of mitigating measures, technological and operational that can be undertaken to minimise the noise nuisance from UAS. Mitigating measures also include spatial planning for UAS use in urban and rural areas, through airspace management by the designation of UAS geographical zones and the establishment of U-space, and through input into the planning system where planning permission may be required.

Air Traffic Management

The objective of air traffic management (ATM) is to achieve the most safe and efficient use of the airspace based on actual needs and, where possible, to avoid permanent airspace segregation. Inflexible airspace structures and reservations have historically resulted in the inefficient use of airspace. The volume and complexity of UAS operations in the greater Dublin area is at a level where an unmanned traffic management system needs to be put in place to ensure the safe, fair, and efficient use of the airspace. Existing EU UAS rules provide for the designation of UAS geographical zones and U-space in respect of airspace management.

UAS Geographical Zones

UAS geographical zones are portions of airspace where UAS operations are facilitated, restricted, or excluded. Under EU UAS rules (Regulation (EU) 2019/947) the Irish Aviation Authority can establish UAS geographical zones for the purpose of:

- minimising safety risks
- protecting privacy
- addressing security issues
- dealing with environmental concerns (including noise)

The Irish Aviation Authority completed a full review of UAS geographical zones in relation to safety and security risks in January 2023 and continues to update them as required[5]. To establish UAS geographical zones in respect of privacy and environmental protection, the Irish Aviation Authority needs input from relevant agencies, local authorities, and government departments.

A transparent process to allow state agencies, government departments and local government to determine and request UAS geographical zones be established by the Irish Aviation Authority should be put in place. The process should include a continuous review process to ensure that airspace is not overly restricted and to take account of changing circumstances. The development of these procedures would benefit from the input of all relevant stakeholders. A Working Group on UAS Geographical Zones, led by the Irish Aviation Authority, in collaboration with the Department of Transport, will be established to ensure all stakeholders' views are considered and incorporated into a transparent procedure for establishing UAS geographical zones.

5. UAS Geographical Zones are detailed in Aeronautical Notice U04 which can be found on the IAA's website

U-space

The European Commission, in conjunction with the European Union Aviation Safety Agency, developed an enabling regulatory framework (Regulations (EU) 2021/664, 2021/665, and 2021/666) that allows for the safe development of the UAS services market and the integration of UAS into our airspace. Regulation (EU) 2021/664, which became applicable in January 2023, provides for a digital system that aims to keep UAS operations safe, secure, and green. The concept of U-space emerged to support commercial operations with UAS, especially those entailing greater complexity and automation, to provide for the safe integration of a number of proximate UAS flights in a volume of airspace. Regulation (EU) 2021/664 outlines the service providers and services required to establish U-space.

Essentially, U-space is a UAS geographical zone designated by Member States where UAS operations may only occur with the support of U-space services. At a minimum these must include network identification, traffic management, flight authorisation and geo-awareness. The purpose of U-space is to achieve automated UAS management and integration, allowing for a large series of operations, many of them simultaneous. This must work alongside the current air traffic management system. U-space will only be deployed in airspace with large volumes of complex BVLOS UAS operations. Implementation should enable a competitive U-space services market. In Europe, U-space full services are not envisaged until 2030.

"U-space, a bespoke, fully digital, and automated traffic management system that has been designed to enable the efficient and affordable scaling up of drone services." *(Drone Strategy 2.0 for Europe)*

The implementation of the U-space regulation will facilitate greater growth in the UAS sector by enabling increased density and Beyond Visual Line of Sight (BVLOS) operations. Establishing U-space in high density UAS use areas, such as the Dublin city area, can mitigate some concerns related to privacy, security, the environment (including noise) and safety. The establishment of a foundational U-space in Dublin city is a medium term (1-3 years) goal of Dublin City Council[6].

There are a number of challenges to be addressed before an unmanned aircraft system traffic management system (UTM), or U-space itself can be established within the State.

The U-space framework introduces a service for network remote identification that will be mandatory for all UAS operators wishing to operate in U-space airspace. There is also a requirement for a geo-awareness service to provide UAS operators with information about static and dynamic airspace information and constraints. Further steps in the implementation of U-space include the designation of U-space airspace, the certification of U-space Service Providers (USSPs) and Common Information Service Providers (CISPs). The U-space regulation leaves it up to each State to designate U-space airspace and to choose the model of provision of U-space services (centralised or distributed).

6. Drone and Urban Air Mobility Strategy for Dublin City Council 2024-2029. https://smartdublin.ie/dublin-city-drone-strategy/

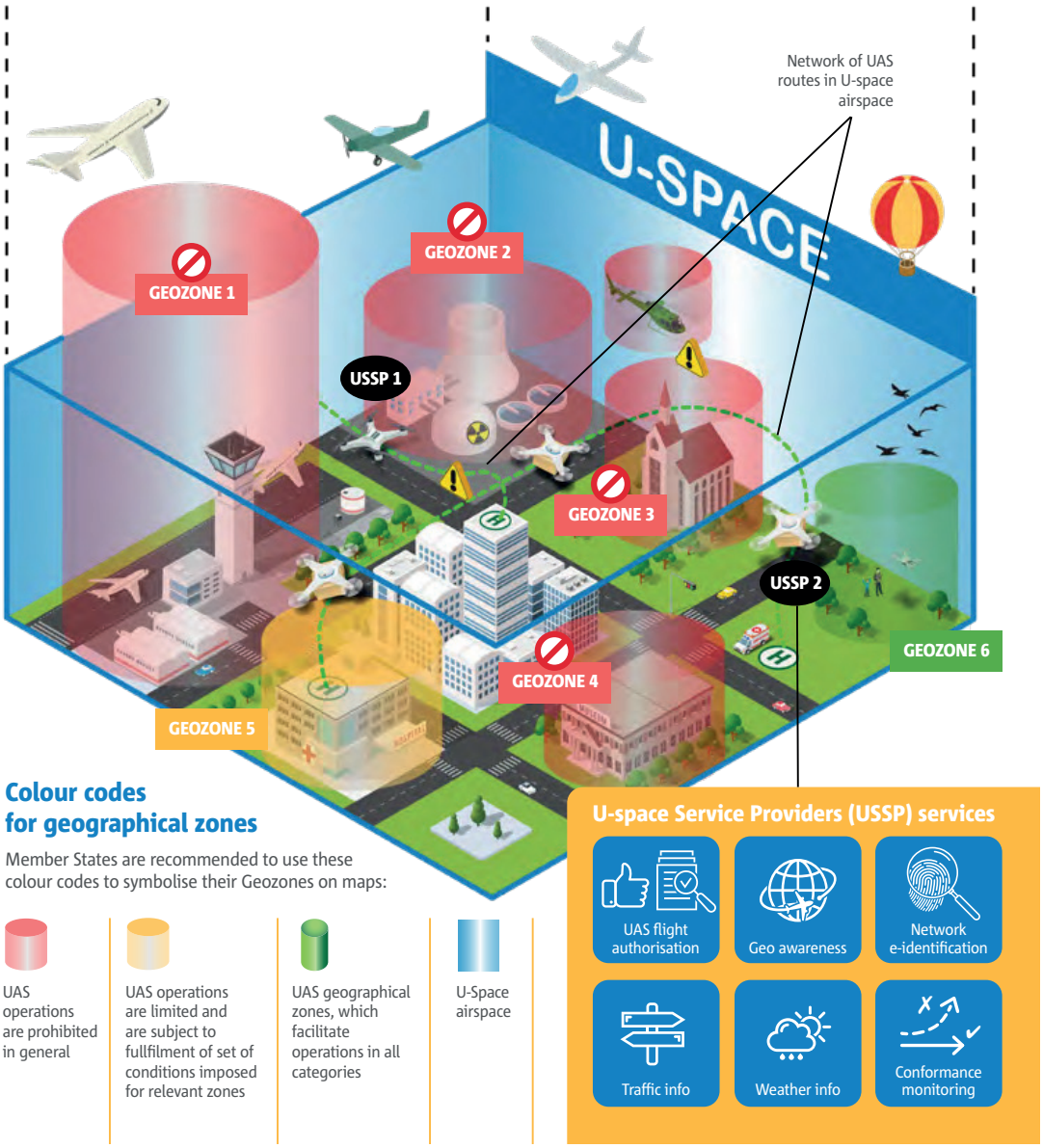


Figure 1. *U-space concept. Source: www.easa.europa.eu/en/document-library/general-publications/understanding-how-new-u-space-will-enable-safe-integration*

The implementation of U-space will require the adoption of high-level strategic decisions and possible regulatory developments, as well as close collaboration, cooperation, and coordination with relevant State entities and the UAS sector itself. As a first step, the Irish Aviation Authority has established a dedicated Airspace and U-space division that will work closely with the current UAS and Air Navigation Services Divisions on the establishment and oversight of UAS geographical zones and U-space. Experience from other European states indicates that the implementation of U-space takes a minimum of two to five years depending on the complexity and number of potential designated U-space airspace blocks.

A National U-space Steering Group shall be established to identify, develop, and effectively implement U-space capabilities and technologies in the State. The Steering Group will be led by the Department of Transport, in close collaboration with the Irish Aviation Authority, and comprise relevant industry, local authorities and research stakeholders. The Steering Group will develop a National Plan for the Implementation of U-space. The plan shall focus on:

- the designation of U-space airspace
- the choice of relevant service delivery models
- the deployment of U-space services and corresponding enablers
- the mechanism to ensure cooperation and collaboration required between all the different stakeholders

Planning

Urban and regional mobility planning should take account of, and integrate, alternative mobility solutions offered by UAS. National, regional, and local planning policies and objectives should encompass the new disruptive technology. This should allow for planning for availing of the opportunities that UAS technology and Innovative Air Mobility (IAM) can bring to local communities and for how to take local concerns on board.

To assist in the integration of UAS into planning objectives, local authorities and planners will require a good understanding of UAS and IAM technology, regulation and oversight. The Irish Aviation Authority can support local authorities and planners to acquire the necessary aviation knowledge, allowing them to integrate UAS technologies and services into their policies to the benefit of their communities.

Local authorities will play an important role in the development of an external ecosystem in which UAS innovation can flourish to the benefit of society. Dublin City Council has taken the lead, lunching its "*Drone and Urban Mobility Strategy for Dublin City Council 2024-2029*" in May 2024. The Strategy was developed through the Dublin Smart City programme which supports the Council in future-proofing the city for the application of new and emerging technologies. The Strategy recognises the importance of collaboration and engagement of a wide range of stakeholders, such as: the Irish Aviation Authority; local government; central government; the UAS sector; academia; and the public, to provide for future principles for how UAS will operate in urban areas.

Policy Position

Ireland is committed to ensuring that safe low-level airspace management for UAS operations is delivered with due consideration for cost and efficiency, and the impact on society, manned aviation, and the transport industry as a whole.

Actions: The Use of the Airspace and Planning

1. The Irish Aviation Authority will collate relevant UAS operational data in order to build trend analyses and provide an evidential base for policy development over time.
2. A National Working Group on UAS Geographical Zones, led by the Irish Aviation Authority, will be established to develop transparent processes and procedures for the designation of UAS Geographical Zones.
3. Relevant State agencies, government departments and local government will determine and request UAS Geographical Zones through the Irish Aviation Authority in line with the processes and procedures developed through the National Working Group on UAS Geographical Zones.
4. The Irish Aviation Authority will identify the requirements, timeline, and costs of U-space delivery programme.
5. A National U-space Steering Group, led by the Department of Transport, will be established to develop and effectively implement U-space capabilities and technologies in the State.
6. National, regional, and local planning policies and objectives will have due regard to new disruptive technology and Advanced/Innovative Air Mobility.
7. The Irish Aviation Authority will support the training and capacity building of local authorities and planners.

3 Compliance and Enforcement

Introduction

As with many new technologies, in addition to the many positive purposes for which UAS can be used, they can also be used for negative or harmful purposes. The increased prevalence of UAS in our skies has focused minds on compliance and the enforcement of laws that are there to ensure safe UAS operations.

Regulatory Framework

Aviation is a highly regulated industry and there is a legislative framework in place at both EU and national level to regulate UAS operations. Regulation (EU) 2019/947 sets operational rules that apply to both professional UAS operators and those flying UAS for leisure. These rules not only address safety, but also contain important building blocks to mitigate drone related security risks. Through operators' registration, remote identification and designation of geographical zones, relevant national authorities have the means to identify those who infringe UAS legislation. Since 31 December 2020, UAS operators using any UAS over 250 grams, or a UAS with a camera or sensor have to be registered with national authorities.

The rules provide for different types of UAS operations, ranging from those not requiring prior permission, to those involving certified aircraft and operators, as well as minimum remote pilot training requirements. In principle, the rules apply to all UAS regardless of weight. However, the majority of UAS in use are off-the-shelf mass-produced UAS that merely need to meet a minimum set of requirements such as registration and electronic identification.

Table 1 below depicts a simple tabular overview of the basic requirements of the 'open' category. This is the "entry level" of the three operational categories, the others being the 'specific' and 'certified' categories.

Table 1. *Source: The European Union Aviation Safety Agency 2025*

UAS		Operation		Drones Operator/pilot		
Class	**MTOM (Maximum Take-off Mass in grams/ kilograms)**	**Subcategory**	**Operational Restrictions**	**Drone Operator Registration**	**Remote Pilot Competence**	**Remote Pilot Minimum Age**
Privately built	< 250 g	A1 (can also fly in subcategory A3)	• May fly over uninvolved people (should be avoided when possible) • No flight over assemblies of people • Maintain flight altitude below 120m above ground level	No, unless camera/ sensor on board **and** drone is not a toy	• No training needed	No Minimum age
0					• Read user's manual	16*, No minimum age if drone is a toy
Legacy drones (article 20)						16*

1	< 900 g		• No expected fly over uninvolved people (if happens, should be reduced)
			• No flight over assemblies of people
			• Maintain flight altitude below 120m above ground level
				Yes	• Read user's manual
					• Obtain a 'Proof of completion for online training' for A1/A3 'open' subcategory by:
					  • Completing the online training
					  • Passing the online theoretical exam
						16*

2	< 4 kg	A2 (can also fly in subcategory A3)	• No flight over uninvolved people
			• Keep horizontal distance of 30 metres from uninvolved people (it can be reduced to 5 metres if low speed function is activated)
			• Maintain flight altitude below 120m above ground level
				Yes	• Read user's manual
					• Obtain a 'Proof of completion for online training' for A1/A3 'open' subcategory by:
					  • Completing the online training
					  • Passing the online theoretical exam
					• Pass a written exam at the CAA Civil Aviation Authority (or at recognized entity)
						16*

3	< 25 kg	A3	• Fly away from people • Fly outside of urban area (150 metres distance) • Maintain flight altitude below 120m above ground level.	Yes	• Read user's manual • Complete online training • Pass online theoretical exam	16*
4						
Privately built						
Legacy drones (article 20)						

** A State may lower the remote pilot minimum age to 12. In that case, the lowered age limit will apply only in that State.*

For professional UAS operators, the 'specific' category provides a wider range of operational possibilities. These entail Beyond Visual Line of Sight, precision agriculture (spraying), or operations of altitude higher than 120 meters above ground. An operational authorisation, which is based on a risk assessment and an operations manual, is necessary for operations in the 'specific' category. For passenger carrying and larger UAS, the 'certified' category provides the basis for regulation and compliance.

The approach taken by the European Commission, with the support of European Union Aviation Safety Agency, is to achieve the highest level of safety in unmanned aviation.

The rules are based on an assessment of the risk of operations and strike a balance between the obligations of UAS manufacturers and operators in terms of safety, respect for privacy, the environment, protection against noise, and security. For example, new UAS will be individually identifiable, allowing the authorities to trace a particular UAS if necessary.

Design requirements for small UAS have been implemented using the CE marking. The standard CE mark is accompanied by the identification of the class of the UAS and by an information sheet detailing the "do's and don'ts" of flying UAS that must be included in all UAS packaging. Based on the UAS class, the range of which is set out in the regulation, an operator will know the permitted area of operation and what competence is required.

Compliance

UAS are not like manned aviation, insofar as they are generally accessible to most of the population, at relatively low cost, and with considerably reduced requirements for licencing and training. Accordingly, many recreational UAS operators, particularly at the entry level, have only limited awareness or understanding of the UAS regulations.

The Government recognises the need for greater public awareness of UAS regulations, which will address unintentional breaches and make them less likely to occur. This is in-line with the approach taken by European Union Aviation Safety Agency in relation to compliance, which is based on education and awareness of the regulations and encouraging people to do things the right way by following the relevant rules, procedures, and processes.

A section of the Irish Aviation Authority's website is dedicated to UAS and provides guidance for operating and flying UAS safely. It also sets out the obligations placed on UAS operators, including data protection and environmental requirements and a link to the list of the current UAS geographical zones. In terms of privacy, an operator of any UAS equipped with a sensor system capable of recording personal data (unless it falls under the EU Toy Directive 2009/48/EC), or with a MTOM of 250g or greater, must be registered with the Irish Aviation Authority. The Data Protection Commission also provides guidance on its website on data protection in the context of drone usage. While education and greater awareness may address some of the unintentional breaches of UAS regulations and rules, intentional misuse of UAS must also be tackled.

Enforcement

The Irish Aviation Authority is the authority that enforces compliance with the obligations imposed by aviation and UAS specific legislation on UAS operators. The statutory enforcement powers in Ireland to bring prosecutions for breaches of the EU regulations regarding the operation of UAS are set out in Sections 73 and 74 of the Irish Aviation Authority Act 1993. Under these provisions the Irish Aviation Authority may bring summary proceedings in the District Court, where the maximum sentence is a fine not exceeding €5,000 or imprisonment for a term not exceeding six months, or both. In more serious matters a prosecution may be brought on indictment by the Office of the Director of Public Prosecutions (DPP), where the maximum sentence is a fine not exceeding €500,000 or imprisonment for a term not exceeding three years, or both.

The Irish Aviation Authority Unmanned Aircraft Systems (Drones) Order 2023 (S.I. No. 24 of 2023) came into force in February 2023. It restates the investigative and enforcement powers of the Irish Aviation Authority and provides for arrangements between An Garda Síochána and the Irish Aviation Authority in relation to enforcement of UAS regulations. It also includes a section on Privacy Rights which draws the attention of UAS operators to prepare a Data Protection Impact Assessment (DPIA), where required, in accordance with Regulation (EU) 2016/679 (General Data Protection Regulation).

The publicising of court proceedings and convictions for the illegal use or misuse of UAS should act as a deterrent and sends the message that prosecutions will be made, and these matters are taken seriously by the State.

The use of UAS may also give rise to breaches of certain General Data Protection Regulation (GDPR) provisions that are enforceable by the Data Protection Commission under data protection legislation. The Data Protection Commission may bring and prosecute summary proceedings for any offence under the data protection legislation and has the discretion to publicise any exercise of its corrective powers that it thinks fit. The Data Protection Commission also has a supervision function that may seek information outside of an inquiry type setting, so that the Data Protection Commission can promote compliance and identify deficiencies for guidance and consultation.

Misusing UAS may also infringe a range of other pieces of national legislation, including public order laws, non-fatal offences against the person and endangerment, which can be prosecuted by An Garda Síochána or the Director of Public Prosecutions (DPP). Under the Air Navigation and Transport Act 1975 anyone found guilty of an offence in relation to unlawful acts against aviation safety can face up to life imprisonment.

The publicising of court proceedings and convictions for the illegal use or misuse of UAS should act as a deterrent and send the message that prosecutions will be made, and these matters are taken seriously by the State.

The introduction of on-the-spot fines for the misuse or illegal use of UAS will augment the already extensive enforcement provisions in aviation, civil and criminal law already on the statute book. The power to introduce on-the-spot fines is provided for in a recent amendment to the Irish Aviation Authority Act 1993 (Section 63F).

The enforcement powers available to the Irish Aviation Authority, An Garda Síochána and the Data Protection Commission under the respective legislative provisions appear to be sufficient to enforce safe UAS use. However, in order for the respective bodies to work together to provide a holistic framework for enforcement, the principal requirement is the establishment of an operative inter-agency mechanism for the coordination of enforcement. In order to have a fully functioning, comprehensive, and practical enforcement system in place, clear boundaries of responsibility need to be established, as well as a means of ensuring that any potential breach of criminal law, UAS legislation, or data protection regulation, is notified to the appropriate body.

Policy Position

Safety and security remain Ireland's first priority in the aviation sector. Compliance in UAS operations will be managed and efficient enforcement will be enabled.

Actions: Compliance and Enforcement

8. A collaborative approach will be fostered between local authorities, the Irish Aviation Authority and the UAS sector on education and awareness campaigns.

9. The Irish Aviation Authority, An Garda Síochána and the Data Protection Commission will work together to establish an operative inter-agency mechanism for the coordination of appropriate investigation of offences related to UAS.

10. The Irish Aviation Authority will provide training material and training support to An Garda Síochána enabling enforcement of UAS legislation.

11. The Department of Transport will introduce fixed charge offences for infringement of UAS regulations.

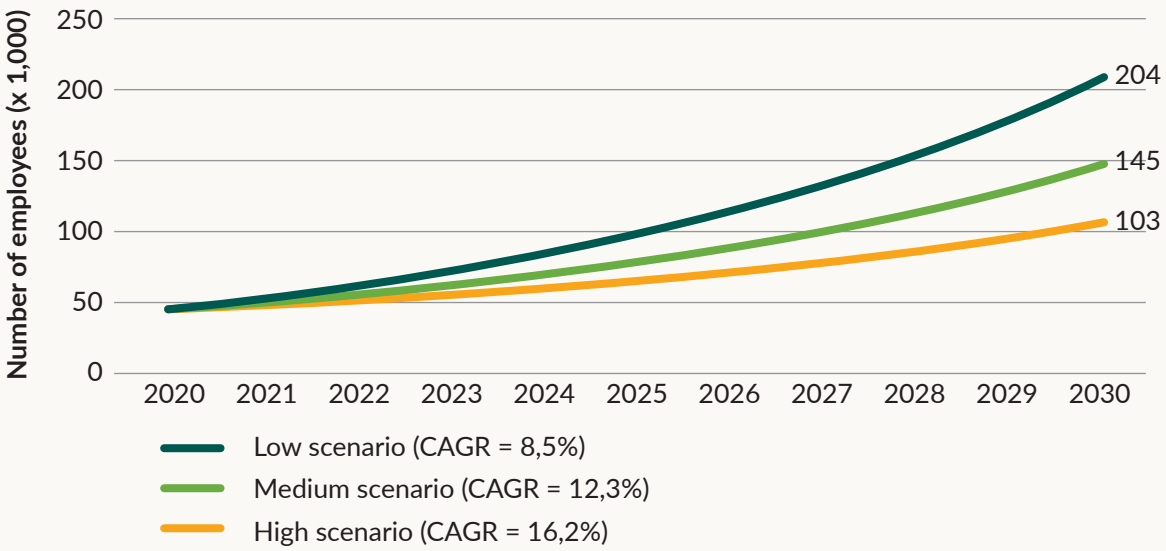
12. The Irish Aviation Authority, An Garda Síochána and the Data Protection Commission will continue, where practicable, to publicise conviction and enforcement actions relating to infringements.

4 Enterprise and Innovation

Introduction

The global UAS market size is forecast to reach US$54.6 billion (€52.5 billion) by 2030, with the commercial market growing at a 7.7% CAGR[7] (compound annual growth rate). The UAS services market in Europe could reach a value of €15 billion annually by 2030, with a compound annual growth rate of 12.3%. This involves potential jobs generation by 2030 of 145,000 direct jobs (such as localised operations, pilots, insurers, and others) and up to 400,000 indirect jobs in related sectors.[8] (Figure 2.)

Figure 2. *Estimated number of direct jobs (x 1,000) created by UAS in Europe by 2030.*



As civil aviation evolves and moves towards increased automation, UAS technology is seen as crucial for the competitiveness of the European aeronautics industry as a whole.

Ireland is in a good position to become a leader in the UAS sector. Ireland has a long aviation history, and it is recognised as a centre of excellence in global aviation and synonymous with innovation. One of the principal goals of the National Aviation Policy Ireland (2015) is:

"To foster the growth of aviation enterprise in Ireland to support job creation and position Ireland as a recognised global leader in aviation"[9].

Ireland is home to a thriving ecosystem of 250 aviation and aerospace companies that spans all aspects of the sector, from airline operations to maintenance, repair, and overhaul (MRO) to technology to aircraft leasing. Approximately 8% of the European fleet of 7,560 aircraft are Irish registered[10].

7. Global Drone Market Report 2023-2030. https://droneii.com/product/drone-market-report
8. Fact finding study preparing a "Drone Strategy 2.0", Final report, Ecorys, 2022.
9. The National Aviation Policy - https://www.gov.ie/en/publication/4de76f-national-aviation-policy/
10. Focus on Aerospace & Aviation August 2020 - https://enterprise.gov.ie/en/publications/publication-files/focus-on-aerospace-and-aviation-2020.pdf

Ireland is a global leader in the aircraft leasing industry, exhibiting a growing capability in supplying the global industry, drawing on strong competences in precision engineering and materials. Irish lessors own or manage over 60% of the world's fleet of leased aircraft. It is home to over 50 leasing companies, including 19 out of the world's 20 top lessor companies[11]. Availability of technical and financial expertise and experience in the sector, coupled with a supportive civil aviation regulator and support from the Government makes Ireland attractive to lessors.

Ireland can capitalise on being a global leader in the aircraft leasing industry[12] to build something based around a UAS 'Shared Services Model'. This may be done by exhibiting a growing capability in supplying the UAS industry and drawing on strong competences in precision engineering and materials which could target fleet operations and applications.

There are particular opportunities in areas where there are dependencies on the entire ecosystem working together to support close collaboration and accelerated UAS technology advancement. Examples of such areas that have a strong foundation in Ireland are UAS component manufacturing, UAS flight systems and UAS testing. With focus, these can become areas of European and/or global excellence in UAS technology and operations.

Development of a UAS Sector in Ireland

In the European context, Ireland's UAS sector is relatively small but dynamic. The sector is prospering with innovative UAS start-ups and on-going collaborations between the UAS sector, academia and local authorities. Strengths and some challenges identified in relation to realising the potential of UAS and the development of the UAS sector in Ireland are set out in Table 2.

Table 2. *Strengths and challenges for the development of a UAS sector in Ireland.*

Strengths	Challenges
Low tax base, young, educated workforce, aviation financing hub, with associated aviation legal and technical expertise	Limited indigenous UAS manufacturing industry driving ancillary services
A supportive and responsive civil aviation regulator	Public awareness and concerns
A low degree of separation between industry, academia, experts, regulators, and policy makers	Unauthorised UAS operations and infringement of UAS regulations
A supportive R&D system and stakeholders can very quickly be pulled together	Low population density for trialling services for high density populations (no high-rise scenarios) – difficult to scale up a commercial operation relying just on Ireland
Ongoing commercial/academic research in key areas – existing innovative UAS start-ups	Adverse weather conditions
Supportive and proactive local government and public agencies	
Ideal testing geographical areas and spectrum	
Uncongested airspace	

11. Taking Flight 2023 An economic and employment analysis of the aviation leasing industry in Ireland. PWC https://www.pwc.ie/publications/2023/taking-flight-2023.pdf
12. https://www.gov.ie/en/department-of-transport/policy-information/a-national-aviation-policy-for-ireland/

The identified challenges do not limit the future potential of the Irish UAS sector but assist in sharpening the focus on key areas of development. For example, the UAS manufacturing sector is crowded with leadership in China, the United States of America and France. However, the most important value element of the global UAS industry lies not in hardware, but in the software, components for increased automation of flight control and airspace management operations, along with data analysis, rogue UAS detection and mitigation, network communications, navigation and surveillance.

The opportunities in the UAS sector for Ireland are myriad given the emergent nature of the sector. Areas of the UAS sector where Ireland is well positioned to perform strongly include:

- Future European UAS services sector
- Innovation and UAS technology advancement
- UAS testbeds and testing sites

Future European UAS Services Sector

With low barriers to entry, the commercial use of UAS is growing. UAS are becoming indispensable tools for various industries, enhancing efficiency and safety. UAS are used as daily tools in areas such as inspection (pipeline, rail, wind turbine maintenance), agriculture, mapping, architecture, construction, real estate, energy, environment, meteorological applications and public safety. In Ireland, UAS are being rolled out across services including emergency response (e.g. by the Irish Coast Guard for search and rescue and the Dublin Fire Brigade for firefighting), dangerous building and site inspections by local authorities (e.g. Dublin City Council), environmental monitoring (Environmental Protection Agency) and goods and medical delivery (commercial drone delivery companies in Dublin).

Ireland is well positioned to perform strongly in the future European UAS services sector in the areas of designing and manufacturing payloads, automated data collection and analysing data (potentially on-board analysis – AI on the Edge) and providing services across agriculture, infrastructure monitoring, mapping, search and rescue, emergency response, and goods and medical delivery etc.

Innovation and UAS Technology Advancement

Ireland is well placed to be a leader in innovation for UAS technology and UAS technology application. Ireland has a number of innovative UAS start-ups, a supportive R&D system, and a supportive agile regulatory environment. This positions Ireland well to be a leader in innovation for UAS technology and UAS technology application. In each of the areas related to the underlying technology, UAS components, UAS flight systems and UAS testing, Ireland has a strong foundation with existing enterprises and researchers.

Ireland has a supportive civil aviation regulator, the Irish Aviation Authority (IAA), that has demonstrated responsiveness to the needs of the UAS sector. The IAA issued one of Europe's first Light UAS Operator Certificate (LUC) to allow Beyond Visual Line of Sight (BVLOS) UAS flights.

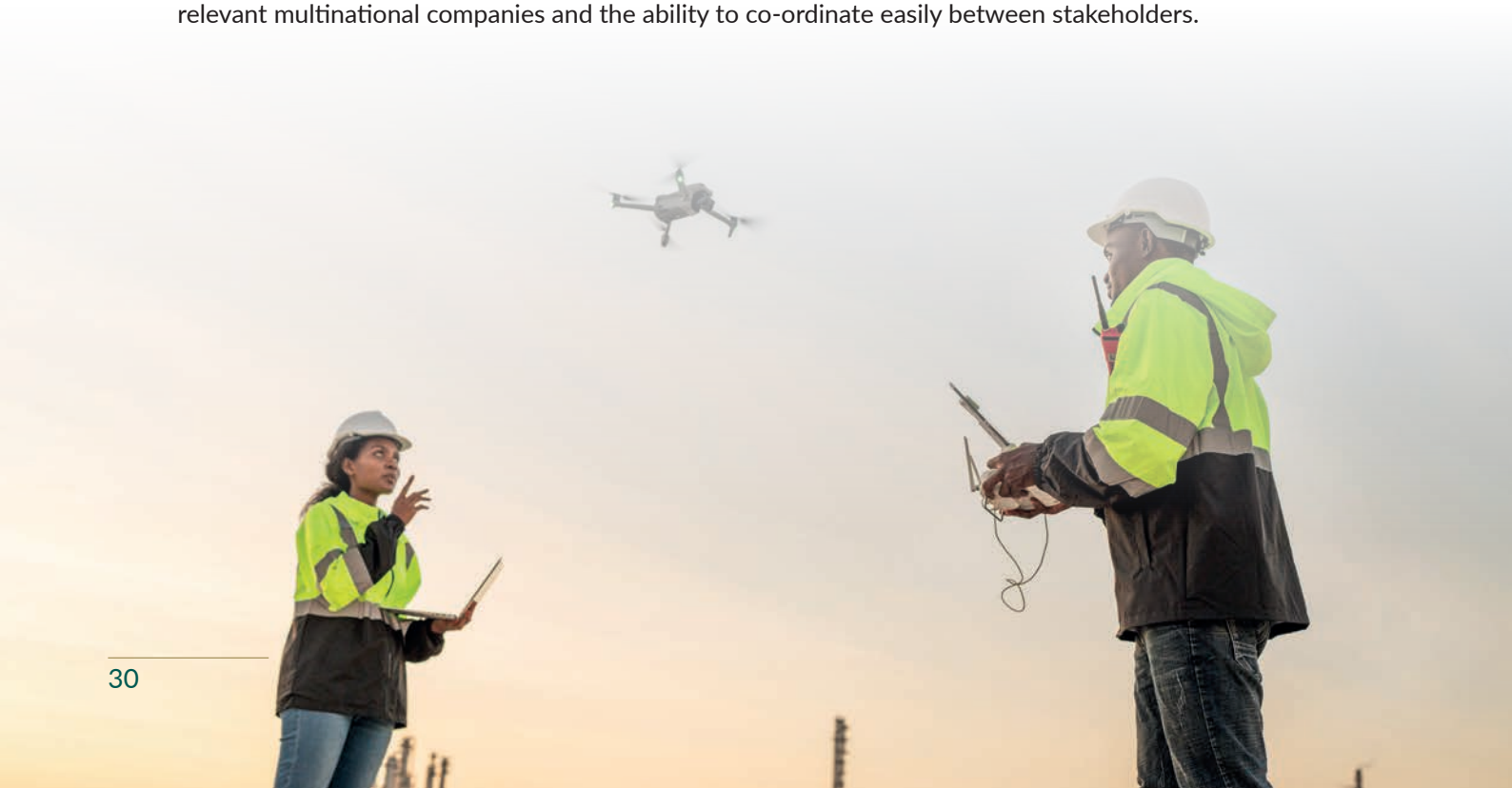
There is a low degree of separation between industry, academia, experts, regulators, and policy makers in Ireland. Relevant stakeholders can very quickly be pulled together to create innovative solutions built on UAS platforms.

Areas in which Ireland can pioneer research include wide-area BVLOS mapping, remote/long range infrastructure inspection, rural and urban deliveries and operations in Atlantic and hazardous environments. Ireland can also facilitate the development of software systems for unmanned aircraft system traffic management (UTM)/airspace as well as traffic management to assist specialist applications, for example search and rescue (automated search, target detection etc).

UAS are the next evolution of the aviation industry, a disruptive technology, and keeping pace with innovation in this space would be a major attractor to Foreign Direct Investment (FDI) and would accelerate the creation of new high-performance start-ups in Ireland.

UAS Testbeds and Testing Sites

Well-equipped UAS test sites are essential for the development of the UAS sector. Ireland can position itself as a testbed for research and development of UAS hardware, software, and services. Ireland has a relatively uncluttered airspace, with predictable traffic flows compared to our European neighbours and has prime UAS test-environments. This is coupled with a supportive R&D system, the presence of relevant multinational companies and the ability to co-ordinate easily between stakeholders.



Ireland has an opportunity to become a leader in "sandboxing"[13] and trialling autonomous technology by utilising our natural resources and highly interconnected networks between researchers, regulators and policy makers. Supporting multi-company collaborative RD&I activities will help to facilitate a cohort of Small Medium Enterprises (SMEs) to develop service specific payloads that can be integrated into UAS.

There are a number of UAS test sites already established in the State, utilised to test UAS design (software and hardware), UAS airborne wind energy systems, vertical take-off and landing vehicles (VOTLs), unmanned aerial vehicles, advances in Innovative Air Mobility (IAM)[14] among other things. There are numerous ongoing UAS trials evolving technological advances allowing BVLOS operations that will allow the scaling up of UAS operations.

Test & Trial Ireland[15], a wireless licensing service provided by the Irish communications regulator, ComReg, to encourage innovation and development of wireless communications has facilitated a number of UAS tests and test sites. The availability of access to the spectrum resource through Test & Trial Ireland can help attract UAS trials to Ireland to:

- enable innovation, research and development of a vibrant UAS sector and eco-system in Ireland
- encourage operators/manufacturers to establish research operations
- develop a process to allow allocation of airspace for experimental and developing operations
- enable UAS design and development

From a wireless communication perspective, Ireland may have greater scope than other European countries for wider UAS testing, for example in rural areas where potential of interference to other services is low.

Available Supports

There is a range of existing supports at European and State level providing guidance and funding to drive UAS innovation and research. Irish UAS researchers and the UAS sector are currently accessing funding from a range of sources including the EU's Connecting Europe Facility as part of the SESAR 3 Joint Undertaking Digital Sky Demonstrator programme and Taighde Éireann – Research Ireland grants (both large scale to academics and smaller scale to industry partnership). Taighde Éireann also funds relevant research infrastructure supporting research activities in the areas of autonomous technologies including driverless vehicles, AI, robotics and UAS. In this area Research Ireland funded the development of the National Autonomous Technologies Data Platform (NATDaP). The Disruptive Technologies Innovation Fund (DTIF) managed by the Department of Enterprise, Tourism and Employment and administered by Enterprise Ireland, provided funding for the investigation of using UAS as a replacement for satellite and aircraft ground scanning.

The existence of multiple avenues of guidance and enterprise opportunities can be very confusing for researchers and the UAS sector in Ireland resulting in some supports not being accessed to the degree they could be. Sources of state funding that are underutilised include Feasibility Studies Grants and RD&I grants for novel, scalable projects to identify or research UAS or UAS-linked technology.

It is vital that government departments and agencies acting in this space coordinate with one another to ensure information concerning UAS is as easily accessible as possible to all interested parties.

13. A sandbox is a regulatory environment designed to allow the testing of new aviation technologies, processes, and business models in a controlled and supportive setting. It offers a safe space for innovators to explore new ideas and collaborate with regulators, industry experts, and other stakeholders.
14. Innovative Air Mobility (IAM) - the safe, secure and sustainable air mobility of passengers and cargo enabled by new-generation technologies integrated into a multimodal transportation system
15. Irish Test & Trial Ireland is a wireless licensing service provided by the Irish communications regulator, ComReg, to encourage innovation and development of wireless communications.

Core Elements Necessary for the Development of the UAS Sector in Ireland

The following were identified as core elements for a strong vibrant ecosystem for the UAS sector to develop in Ireland:

- Well-equipped UAS test-site areas with functioning unmanned aircraft system traffic management and regulation in consultation with commercial operators and user communities
- Access to a secure reliable communication service, either terrestrial[16] or satellite for UAS operators
- A national expert group to foster the development and delivery of a robust ongoing policy with emphasis on innovation and commercialisation, to ensure the existence of pathways for industry (indigenous and FDI) and researchers
- State agencies supporting enterprise development and investment to develop a UAS focus (similar to Fintech, Agri etc.) to promote Irish players as they develop
- Access to UAS-related information to be provided at a single location. This would include information such as details of current research and trials and links to available sources of R&D funding. Such a platform would provide start-ups, SMEs and MNCs with contacts in academia, industry and applied research to encourage potential ecosystem players to collaborate. It should also provide easy access to UAS regulations and compliance obligations
- Public engagement around UAS innovation and expanding UAS use cases

Policy Position

Ireland is committed to ensuring that sustainable and industry-led UAS sector development is supported with consideration for societal concerns, efficiency and industry needs.

Actions: Enterprise and Innovation

13. The Minister for Transport will establish a UAS Enterprise and Innovation Leadership Group to foster the development of a robust ongoing policy on innovation and commercialisation, and to ensure the existence of pathways for industry (indigenous and FDI) and researchers.

14. The Department of Transport, in collaboration with other government departments and agencies, will establish an integrated platform for all stakeholders to share information relevant to the UAS sector.

15. The UAS sector, in conjunction with the Irish Aviation Authority, will establish and promote relevant test sites.

16. The Irish Aviation Authority will promote processes that allow for the allocation of airspace for experimental and developing UAS operations to be established.

16. Access to a secure reliable terrestrial communication service terrestrial for BVLOS operations will require use of appropriate radio spectrum and may require active engagement with mobile network operators.

5 Monitoring and Implementation of the Policy Framework

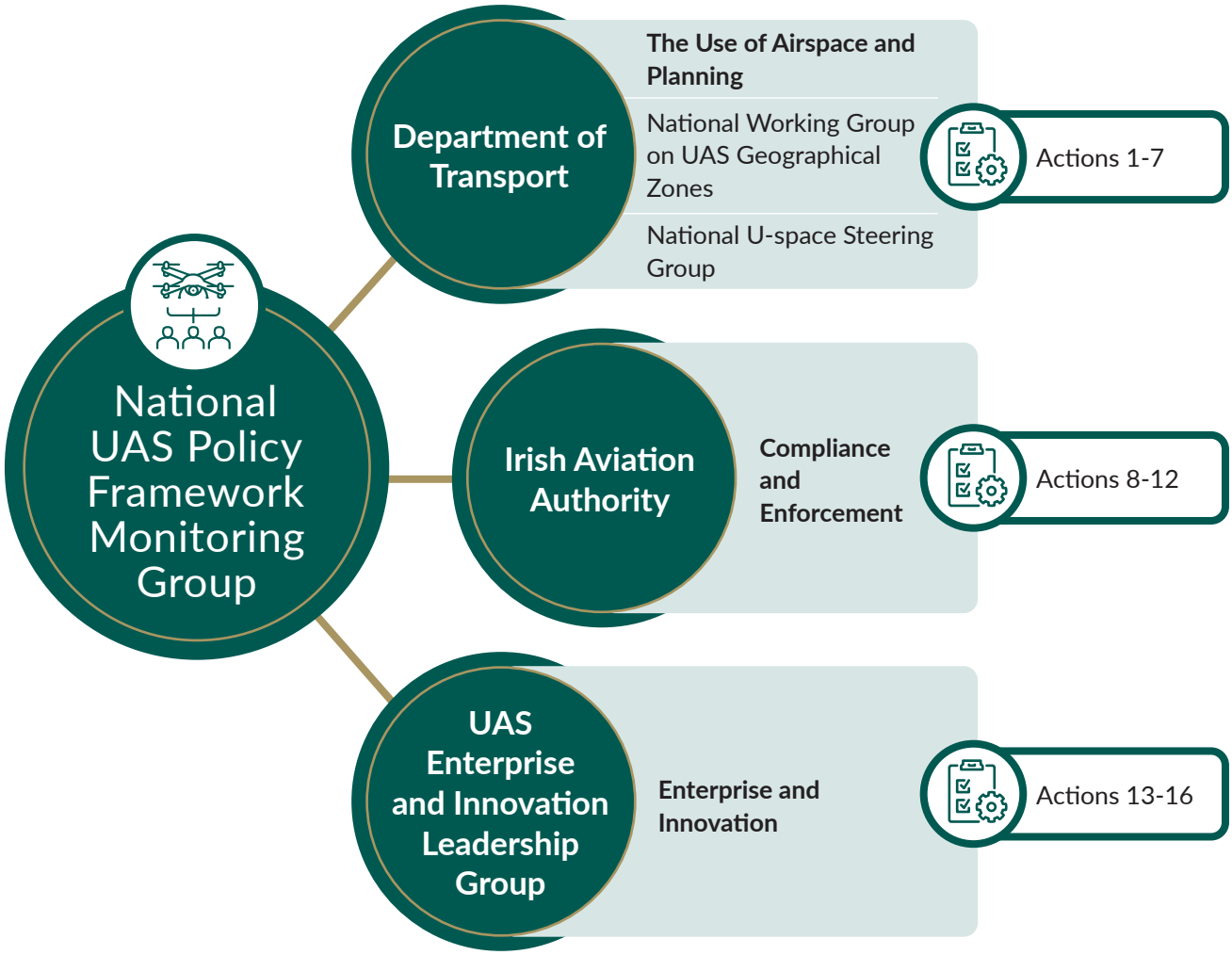
Introduction

This Policy Framework sets out national policy positions and a comprehensive suite of associated actions to guide the sustainable development of the UAS sector in Ireland over the next decade. A collaborative approach across government departments and agencies is key to delivering on a whole-of Government approach. The Policy Framework will also be implemented in collaboration with local authorities, the UAS sector and other stakeholders. Successful implementation of the Policy Framework also requires engagement from stakeholders to support innovation and the development of skills and investment that complement the strategic ambitions of the Policy Framework.

Implementation Structures

A National UAS Policy Framework Monitoring Group will be established to monitor progress of the implementation of the Policy Framework and the delivery of actions. The National UAS Policy Framework Monitoring Group will be chaired by the Department of Transport and will comprise representatives of the key stakeholders involved in leading and supporting implementation of actions. The Monitoring Group will include representatives from the Department of Climate, Energy and the Environment; Department of Culture, Communications and Sport; Department of Enterprise, Tourism and Employment; Department of Housing, Local Government and Heritage and the Department of Justice, Home Affairs and Migration. It will also include senior officials from key delivery agencies, such as the Irish Aviation Authority and the Local Government Management Agency (LGMA). The Monitoring Group shall monitor, guide, and support the delivery process, and provide a shared forum for engaging across Government and national stakeholders. The Monitoring Group will meet twice a year.

The implementation of the policy positions and actions in the three key areas (the Use of Airspace and Planning; Compliance and Enforcement; and Enterprise and Innovation) shall be monitored and reported to the National UAS Policy Framework Monitoring Group by the appropriate body. The Department of Transport will report on progress made in implementing the Use of Airspace and Planning actions (actions 1-7). The work of the National Working Group on UAS Geographical Zones and the National U-space Steering Group will contribute significantly to the implementation of these actions. The Irish Aviation Authority will report on progress made in implementing the Compliance and Enforcement actions (actions 8-12). The UAS Enterprise and Innovation Leadership Group will report on the progress made in relation to the implementation of the Enterprise and Innovation actions (actions 13-16).



The Department of Transport, in collaboration with the Irish Aviation Authority, the UAS Enterprise and Innovation Leadership Group and the National UAS Policy Framework Monitoring Group, will develop annual implementation action plans underpinned by annual progress reports to monitor progress on implementation and to consider adaptations and additions to the actions outlined in the Policy Framework during its implementation. The Department of Transport will facilitate structured engagement with stakeholders to inform the development of the annual implementation plans.

The Policy Framework is a living document that will continue to evolve to keep pace with the evolution of the UAS sector internationally and be responsive to emerging challenges and opportunities.

List of Abbreviations

AAM	Advanced Air Mobility
ATM	Air Traffic Management
AI	Artificial Intelligence
BVLOS	Beyond Visual Line of Sight
CAGR	Compound Annual Growth Rate
ComReg	Commission for Communications Regulation
C-UAS	Counter UAS (Drones)
CISP	Common Information Service Provider
DPC	Date Protection Commission
DPIA	Data Protection Impact Assessment
DPP	Director of Public Prosecutions
DTIF	Disruptive Technologies Innovation Fund
EASA	European Union Aviation Safety Agency
EU	European Union
FDI	Foreign Direct Investment
GDPR	General Data Protection Regulation - Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC
IAA	Irish Aviation Authority
IAM	Innovative Air Mobility
LGMA	Local Government Management Agency
LUC	Light UAS Operator Certificate
MNC	Multinational Corporation
MRO	Maintenance, Repair, and Overhaul
MTOM	Maximum Take-Off Mass
NATDaP	National Autonomous Technologies Data Platform
RD&I	Research, Development and Innovation
SESAR	Single European Sky ATM Research
SME	Small Medium Enterprise
UAS	Unmanned Aircraft Systems
USSP	U-Space Service Provider
UTM	Unmanned Aircraft System Traffic Management
VTOL/eVTOL	Vertical Take-off and Landing/Electric Vertical Take-off and Landing.

Lána Líosain, Baile Átha Cliath 2, D02 TR60, Éire
Leeson Lane, Dublin 2, D02 TR60, Ireland
T: +353 1 670 7444
info@transport.gov.ie
www.gov.ie/transport

An Roinn Iompair
Department of Transport