The proliferation of civil drones for professional and private use across Europe has motivated the European Commission to propose a new EU policy framework to overcome the previous, fragmented regulatory landscape. This policy constitutes a paradigm shift in the European airspace, calling for an EU single drone market and drone ecosystem. This push for European integration on an emerging, fast-evolving, disruptive and dual-use technology sector holds promise in terms of innovation, economic growth and job creation. At the same time, however, societal concerns have shaped the debate on drone use, leading to demands for a comprehensive review of safety, security, liability, privacy, and environmental issues. This policy brief examines key components and drivers of this new EU policy.

**Brief Points**

- On 1st July 2019, the new EU policy framework for civil drones entered into force. It provides common, advanced, and comprehensive technical and operational rules to replace national regulations for all drone operators.

- The commercialisation of civil drones as mass products and their multiple uses for professional and leisure activities present an enormous economic potential. However, it also raises societal concerns, as the integration of drones into the airspace will soon change the skies above us.

- The governance of emerging technologies is challenging not only the traditional aviation community, but also the European policy procedure, which has been under immense political, economic, and industrial pressures to quickly deliver a comprehensive legislative framework for drones.

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Introduction

Since the 1990s, the European airspace has been transforming at a rapid pace, driven essentially by the increase in commercial airline traffic. The European Commission proposed a deep structural reform process with the initiative European Single Sky (SES). Its adoption in 2004 transferred air traffic management (ATM) to the EU level, removing the borders in the sky and thus the national fragmentation of the European airspace.

Over the last decade, however, manned civil aviation has been challenged by a newcomer: the Remotely Piloted Aircraft System (RPAS), commonly known as a “drone”. As drones are becoming more commercialised, it has become easy and cheap to fly drones. Most drone users are not from the aviation world and are unfamiliar with its rules. This can be seen in the increasing number of incidents that are being reported, such as drone sightings around and above major airports in Europe. Thus, the conditions of drone operation and registration need to be specified.

According to the 2008 EU Regulation (called ‘Basic Regulation’ 216/2008), drones with a maximum take-off mass of less than 150 kg fall within the competence of the EU member states, while drones above 150 kg (excluding state drones) fall into the competence of the EU under the responsibility of the European Aviation Safety Agency (EASA), which includes some non-EU members, such as Norway and Switzerland. In other words, the control of big drones was harmonised at the EU level while the management of small drones – which are increasing at a fast pace – remained reliant on a patchwork of national regulations.

After consultations with relevant stakeholders, in 2014 the European Commission thus proposed a strategy to revise this outdated division. Its communication A new era for aviation: Opening the aviation market to the civil use of remotely piloted aircraft systems in a safe and sustainable manner was, contrary to its name, not restricted to the market dimension, but was intended to prepare a comprehensive framework on rules for the safe integration of civil drones into the European airspace. Today, the European policy for drones is based on the new Basic Regulation (EU) 2019/945 of 12 March 2019 on unmanned aircraft systems and on third-country operators of unmanned aircraft systems” and third, the “Commission Implementing Regulation (EU) 2019/947 of 24 May 2019 on the rules and procedures for the operation of unmanned aircraft” were published on 11 June 2019 in the Official Journal of the EU. This completed the European regulatory framework on drones that proposes rules for each type of drone operation category (open/specific/certified). It provides requirements and obligations not only for the operators, but also for the manufacturers, importers, and distributors in the upcoming single drone market based on CE marking certification. Although the EU paved the way to harmonise the integration of drones into the European airspace, it might take some time for the full capacity to take form across Europe and for the new governance to operate.

A New EU Policy for Drones

After the official announcement in the 2015 “Aviation Strategy for Europe”, and based on an extensive consultation process, including annual high level conferences on drones in Riga (2015), Warsaw (2016), Helsinki (2017), and Amsterdam (2018), the European Commission in cooperation with EASA produced three official key deliverables.

First, “Regulation (EU) 2018/1139” (or the “new Basic Regulation”) marked a turning point as it extended the competence of the EU, especially the EASA, to deal with any drones irrespective of their weight. Based on these new competences, the Commission prepared specific rules with a delegated act on technical requirements (released in March 2019) and implementing rules on operations (released in February 2019). Second, the “Commission Delegated Regulation (EU) 2019/945 of 12 March 2019 on unmanned aircraft systems and on third-country operators of unmanned aircraft systems” and third, the “Commission Implementing Regulation (EU) 2019/947 of 24 May 2019 on the rules and procedures for the operation of unmanned aircraft” were published on 11 June 2019 in the Official Journal of the EU. This completed the European regulatory framework on drones that proposes rules for each type of drone operation category (open/specific/certified). It provides requirements and obligations not only for the operators, but also for the manufacturers, importers, and distributors in the upcoming single drone market based on CE marking certification. Although the EU paved the way to harmonise the integration of drones into the European airspace, it might take some time for the full capacity to take form across Europe and for the new governance to operate.

Towards a New European Drone Governance

The three key deliverables will either replace existing national rules or introduce regulations for the very first time where no legal reference yet existed. Now that the European framework is available, member states have to adapt their national rules, though certain flexibilities continue to exist (regarding standards, the...
declaration of “drone zones”, etc.) depending on their individual needs, risk assessments, and preferences. Hence, if the new regulations allow drone operations across borders as well as free circulation within the EU, drone operators continue to need flight authorisation by the national authority in their state of registration, except for the “open” drone category.

The implementation period of the new regulations has started with a transitional period: from June 2020, when all drone operators will need to register, to 2022. From now on, member states need to coordinate, cooperate, and exchange “good practices”, notably through their participation in different expert groups within the Commission and EASA. Initiatives such as the AW Drones project (www.aw-drones.eu, funded under the EU’s Horizon 2020 programme) or associations like UVS International (uvls-international.org), which represents various stakeholders of the European RPAS community, aim at contributing to and facilitating this implementation process.

This European drone community includes a broad variety of stakeholders, consisting of representatives from industries, operators, users, associations & federations, interest groups, national/regional/international aviation regulatory authorities (such as Avisor, Eurocontrol and the ICAO), standards authorities (EUROCAE, JARUS, ASD-STAN), service providers (ANSPs), SES Air Traffic Management Research Joint Undertaking (SESAR JU), the military (EDA), and so on. Within the Commission, while DG MOVE has led the policy process as part of its civil aviation safety dossier, other DGs such as DG GROWTH, DG HOME and DG Research have contributed to the discussions on the various issues. In sum, the Commission has clearly played a leadership role in working with all actors of the drone community, public and private, civil and military, accounting for different interests, needs, and expectations, to deal with multifaceted and interlinked aspects of drone-related issues.

**Consequences and Challenges**

**Fast-evolving technology vs slow-moving policy process**

The rapid progress of drone technology has kept the pressure on the policy process. As fast-evolving technologies with a growing market – with Chinese and American producers as the main competitors – drones have required a speedy adaptation of the regulatory framework. This urgency has brought challenges to comparatively small EU agencies like EASA. In consequence, the EU drone regulation was elaborated within a surprisingly tight timeline, including the currently anticipated “U-Space” regulation (see below), which critics view as moving too fast for the appropriate maturity of the project.

Given the high pressure, EASA rule-making and consultation procedures needed to be adapted and many expert groups were created in parallel. While the Commission was still working on the new Basic Regulation proposal, the EASA was already preparing the specific rules on drone operations. After political agreement on the new Basic Regulation was found in December 2017, the European Parliament and the Council had officially adopted it by June 2018. Already before, in February 2018, EASA had presented its Opinion 1/2018 on operations for small drones in Europe as basis for the specific rules of the Commission’s regulatory framework proposal. While some criticised this speedy process as a breach of the established EU policy procedures, others welcomed it as an illustrative example for the EU’s flexibility and responsiveness in urgent cases where technology developments require a swift response from the regulatory authorities.

**Humans and the machine: remotely piloted and autonomous systems**

The disruptive potential of drone technology has provoked societal concerns about environmental aspects, the need for liability, and risks for privacy, data protection, and security. The increasing number of incidents, including at important international airports such as Gatwick, Heathrow, or Frankfurt, as well as with commercial aircrafts, called for imminent counter-drone measures. As a basic principle, the European Commission underlined the concept of “human control”: someone must always be responsible for any drone. Hence, it referred at the beginning to a “Remotely Piloted Aircraft System” (RPAS) in order to clearly stress the human involvement in it. This notwithstanding, the next developments are already on the horizon; in the digital age, progressive autonomy also in aviation seems inevitable, especially with “U-Space”, a key project with a gradual deployment proposed in the 2017 U-Space Blueprint by SESAR JU. Although new EU regulations on drones referred to “Unmanned Aircraft Systems” (UAS) to be in line with these ongoing developments, they all insist on the equipment and operator to control it remotely.

**Drones over smart cities**

U-Space is the European initiative for the “unmanned traffic management” (UTM) that will create a set of procedures for automated air navigation services. From the traditional ATM system perspective, the question of automated UTM operations and their inclusion in the “human” is a critical one, as here another level of complexity enters the daily management of an already congested air transport system.

A European Network of U-Space demonstrators was launched in October 2018, and the EASA is currently working on a regulation proposal to be presented by the end of 2019, again with the support of expert groups and consultations of various stakeholders. While U-Space will contribute to develop further the “smart city” concept, notably through the Urban Air Mobility initiative, automated flying objects will fundamentally change our cities’ skies and how we live under them.

**Civil-military dimension**

While drones are increasingly used by civil operators, they were originally developed and have been used for decades by militaries. Hence, given the dual-use character of airspace and drones, the EU regulatory framework for drones inevitably raised civil-military coordination issues.

For the last ten years, the European Commission’s actions aimed at integrating civil drones into the airspace, while the European Defence Agency (EDA) and member states have been also looking at how to integrate military drones into the – non-segregated – European airspace. The EDA has coordinated several research and technology development projects, seeking ATM compliance for the successful integration of military drones by 2025, starting from 2020 onward.

From a military perspective, the motto for the best use of the European airspace is often quoted “as civil as possible while remaining as
military as necessary”. State drones used by civil public authorities such as the police, fire fighters, ambulances, customs, and coast and border guards do not fall under the new Basic Regulation, but national authorities, including the militaries, could ask for European certification to ensure compliance with the civil rules.

In the context of ATM reforms, amidst discussions around an increasingly flexible use of airspace between civil and military users, the EDA is also involved in presenting military requirements for the U-Space development. As the 2004 establishment of European Single Sky (SES) opened a window of opportunity for civil-military cooperation and military-military coordination, the Commission’s actions to enable the safe integration of civil drones must therefore also contribute to facilitating an advanced flexible use of airspace in Europe as well (Lavallée, 2017).

### Conclusion

With the launch of the new EU policy framework for drones, the European integration project has entered into an emerging, fast-evolving, highly competitive, disruptive and dual-use technology sector. The challenge will always remain to find the appropriate balance between the development of the market, and the protection of air users as well as people on the ground. As already shown by the SES legislative framework, the re-thinking of what airspace is and how it should be managed for more safety and efficiency falls within a broader conceptualisation of technologies, security practices, economic interests, and societal concerns and the way these are co-produced and mutually constitutive.

After the inception of ambitious ATM reforms with the SES initiative, the creation of UTM with the U-Space upcoming regulation for the integration of drones further accentuates the paradigm shift in European airspace. Ultimately, the EU drone policy marks the beginning of a new governance structure, where multiple actors should coordinate their actions to better prepare Europe for the upcoming Drone Age.

### Note

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### Further Reading


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### THE PROJECT

The Transnational Academic Network for the Study of Armed Drones (TRANSAD) works towards identifying key technological, theoretical, and policy developments regarding security and defence technologies, in particular armed drones, with a look into how these technologies impact war and conflict.

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### PRIO

The Peace Research Institute Oslo (PRIO) is a non-profit peace research institute (established in 1959) whose overarching purpose is to conduct research on the conditions for peaceful relations between states, groups and people. The institute is independent, international and interdisciplinary, and explores issues related to all facets of peace and conflict.