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A EUROPEAN DRONE SPACE

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ABSTRACT

The massive military potential offered by drones has placed them at the heart of modern militaries. Their incontrovertible strategic benefits have prompted several European states to pursue the joint development of a Medium-Altitude Long-Endurance (MALE) drone. It is an ambitious challenge, thus cooperative development is necessary to share the substantial investment costs and compete with the United States and Israel. Although military drone cooperation has progressed slowly in Europe, recent civilian drone initiatives may spark new momentum and stimulate civilian-military synergy. In order to manage the risks and take advantage of potential opportunities, there is a new political impulse in Europe to regulate the use and development of civilian drones. The goal is to integrate them into European airspace, with adapted regulations, research funding and a common market that will place Europe in strong position in this highly competitive sector. This research paper seeks to evaluate the nature and scope of current discussions and initiatives concerning the use of civilian and military drones in the European Union.

CONTENT

INTRODUCTION

Remotely Piloted Aircraft Systems (RPAS), more commonly known as drones, are one of the most dynamic areas of the aviation sector. In 2016, the world drone market had an estimated value of 8.5 billion dollars and is expected to exceed 12 billion dollars by 2021.[1] The civilian drone market is booming, although the military market still remains dominant. Drones are often presented as "emerging" technologies, even though the first experiments of powered unmanned aerial vehicles date back to 1917.[2] The first tests were conducted at the same rate as during the massive adoption of aviation in the American and French armies. Over the course of the 20th century, drones became increasingly central to military exercises and missions. For several decades the United States has turned to using drones outside its borders. However, it was the Obama administration's (2009-2017) targeted drone strikes in Afghanistan, Yemen and Somalia, as part of the War on Terror that put drones in the spotlight. There have been significant amounts of academic literature on this new phenomenon, analysing the political, ethical and industrial questions posed by the United States' use of armed drones.[3] These problems have led to several studies of "drone killings".[4] In contrast, there are still relatively few publications studying the broader debate on drones or the various European civilian and military drone initiatives, with a few exceptions that focus on armed drones.[5]

Since the early 2000s, European Union (EU) member states, institutions and agencies have repeatedly attempted to boost cooperation in the drone sector. Initially this took place in the military sector, with the development of a European Medium-Altitude Long-Endurance (MALE) drone[6] and, more recently, in the civil sector, with a view to establish a European political framework. A new wave of European cooperation is arising, with two goals. First, it aims to strengthen the European Defence Technological and Industrial Base (EDTIB), through the development – and even pooling – of military capacity. Second, it is driven by the shared desire to regulate the growing and increasingly diverse use of civilian drones.

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1. Divya Joshi, "Commercial Unmanned Aerial Vehicle (UAV) Market Analysis – Industry trends, companies and what you should know," *Business insider*, 8 August 2017.

2. Océane Zubeldia, *Histoire des drones*, Perrin, 2012.

3. Dave Sloggett, *Drone warfare: the development of unmanned aerial conflict*, Skyhorse publishing, 2015; *Drone wars, Transforming conflict, Law, and Policy,* Peter Bergen and Daniel Rothenberg eds., Cambridge Press, 2015; John Kaag, John and Sarah Kreps, *Drone Warfare*, Cambridge, Polity Press, 2014; Benjamin Medea, *Drone Warfare, Killing by remote control*, London, Verso, 2012; David Hastings Dunn, "Drones: disembodied aerial warfare and the unarticulated threat," *International Affairs* 89:5, 2013, p. 1237-1246.

4. André Barrinha and Sarah da Mota, "Drones and the uninsurable security subjects," *Third World Quarterly*, 2016; Michael J. Boyle, "The legal and ethical implications of drone warfare," *The International Journal of Human Rights* 19:2, 2015, p. 105-126; Caroline Holmqvist, "Undoing War: War Ontologies and the Materiality of Drone Warfare," *Millennium – Journal of International Studies* 41:3, 2013, p. 535-552; Grégoire Chamayou, *La Théorie du drone*, La Fabrique, 2013; Noel Sharkey, "The Automation and Proliferation of Military Drones and the Protection of Civilians," *Law, Innovation and Technology* 3:2, 2011, p. 229-240.

5. Christophe Paulussen and Jessica Dorsey, "Towards an EU Position on Armed Drones and Targeted Killing?" in *Fundamental Rights in International and European Law. Public and Private Law Perspective,* C. Paulussen, T. Takacs, V. Lazic and E. V Rompuy eds., Berlin, Springer, 2016, p. 9-44; Bruno Oliveira Martins, "The European Union and Armed Drones: Framing the Debate," *Global Affairs* 1:3, 2015, p. 247-250.

6. The MALE drone is a medium-altitude, long-endurance unmanned aerial vehicle (UAV) used for information, surveillance, targeting and reconnaissance missions.

The widespread commercialisation of civilian drones poses a regulatory challenge for national and European authorities. It has led to a rapid increase in the number of users and their variety, offering a vast range of applications. This dynamic growth has created jobs and driven the development of the technological and industrial sector, along with numerous services and products. However, the increasing use of civilian drones has aroused concerns of the risks and potential harm they may pose. Discussions are therefore taking place at both international and European levels on how to insert drones into the airspace and the accompanying regulation required.

This research paper presents an overview of European military and civilian drone initiatives. It analyses the challenges faced by the EU in finding a place in this cutting-edge sector. The paper first examines the various attempts to develop the European MALE drone and to integrate it into the European aviation system. It then analyses the nature and scope of the civilian initiatives, ushering in a new spirit of cooperation that opens the door to greater civilian-military synergy. Finally, the paper evaluates the role of the EU in the European aviation system, in the light of recent European political developments.

THE DEVELOPMENT OF A EUROPEAN MALE DRONE

Europe has often been criticised for lagging behind in drone technologies and industry, compared to the United States and Israel, the two dominant countries in the sector. However, European's attempts to catch up are less well known. Nevertheless, these attempts help to explain why Europe's "drone capacity" has been limping along for more than fifteen years. The European MALE drone project is one of the most representative examples.

In 2004, the European Aeronautic Defence and Space Company (EADS)[7] launched the first European programme for a "long-endurance" drone, named Euromale.[8] This project aimed to develop a system that could meet the operational requirements of the theatre of operations – namely endurance, versatility and availability.[9] However, the project was aborted due disagreements between France and Germany over the drone's technologies and capabilities, in particular its autonomy, altitude and payload. Three years later, EADS relaunched the programme under the name *Advanced UAV*.[10] At the same time, Dassault Aviation, Thalès and Indra undertook a joint venture to develop a MALE drone, the Heron

7. The creation of EADS originated in the desire of France, Germany and Spain to create a European aviation industry that could compete with the USA's. In 2014, EADS became the Airbus Group.

8. Its partners are France, Spain, the Netherlands and Finland. This project was originally intended to include additional partners, such as Sweden, which pulled out due to the project's financial cost, and Germany, which, through NATO, was already committed to the HALE (High-Altitude Long-Endurance) drone.

9. Maryse Berger-Lavigne and Philippe Nogrix, "Les drones dans l'armée française," Rapport d'Information, No. 215, recorded at the Senate on 22 February 2006, Commission for Foreign Affairs, Defence and the Armed Forces. For further details see http://www.senat.fr/rap/r05-215/r05-2156.html, http://www.senat.fr/ rap/r05-215/r05-2155.html.

10. Laurent Lagneau, "Drones : EADS propose son Advanced UAV," *Zone Militaire*, 10 June 2009.

TP,[11] but no more successfully. Subsequently, in 2010, EADS developed a new project, the "Talarion",[12] which met the same fate as the previous attempts.

Despite the changing names and companies, all these projects are relatively similar. They all faced the same challenges and obstacles. This phenomenon has been dubbed the "drone war"[13] in the press, due to the many setbacks, industrial rivalries and the impossibility of jointly developing a MALE drone programme. These failures can be explained by the lack of political will show by European states, given the connection to their vital national interests, in particular intelligence and how national military forces are deployed in external operations. The attractiveness of the American and Israeli programmes and their "domination" of the world drone market explain why Europeans have long hesitated to embark upon a project of this scale, not to mention the emergence of new competitors such as China. After almost a decade of effort and investment, this situation has left a bitter taste in the mouths of European industries.

Competition is not the only difficulty faced in the development of a European MALE drone. The operational needs of the armed forces, the economic challenges of establishing a DTIB, let alone a genuine European DTIB, and the resulting national interests create a high level of risk in joint drone projects.[14] In addition, there are the political challenges and diverging visions and interests. The various commitments between states do not necessarily converge on the European level. A striking example is the 2010 Lancaster House Treaties between France and the United Kingdom, relaunching their bilateral defence cooperation outside the EU.[15] The Treaties facilitated cooperation between BAE Systems and Dassault Aviation to develop a new MALE system, Telemos, to be operational by 2020.[16] It also aimed to establish research centres dedicated to the MALE programme.[17] During this period, competition has remained fierce, putting pressure on the various bilateral and European initiatives. For example, EADS's modernised Harfang drone project[18] was competing with the MQ-9 Reaper from the Predator B family of American rival General Atomics.[19] For fifteen years, it has therefore been difficult for the European MALE drone to move from concept to reality. There is no clear end in sight to this saga.

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11. This drone project is based on the drone developed by the Israeli company Israel Aerospace Industries (IAI) Laurent Lagneau, "Front commun de Dassault Aviation, Thalès et Indra sur les drones MALE."

12. Joint project between Germany, France and Spain.

13. Vincent Lamigeon, "EADS ou Dassault : qui va gagner la guerre des drones ?," *Challenges*, 12 June 2012.

14. Louis-Marie Clouet and Laurence Nardon, "Les drones MALE : Quelles options pour l'Europe ?," *Note de l'Institut français des relations internationales*, IFRI, May 2010, p. 4.

15. "On the question of the MALE (Medium-Altitude Long-Endurance) drone, the French Defence Minister and his British counterpart indicated that France and the UK would continue to work together to establish joint solutions and mutual options." Margaux Thuriot, "Coopération franco-britannique de défense : avancée et enjeux," *Actualités*, 31 October 2012.

16. Véronique Guillermard, "Accord franco-britannique sur l'avion de combat du futur," *Le Figaro*, 15 July 2014.

17. Yannick Smaldore, "MALE 2020 : les études techniques du nouveau drone européen sont enfin lancées," *Portail aviation.*

18. In 2009, the French Air Force used the Harfang drone for the first time during overseas operations in Afghanistan. A few years later, EADS, in partnership with IAI, planned to modernise the system by proposing a "new-generation" drone. Valérie Lion, "Dassault-EADS, la guerre des drones," *L'Express*, 9 December 2011.

19. In the early 2000s, Sagem Défense Sécurité and General Atomics conducted joint studies on the development of a Predator drone adapted to French needs, through the Horus programme. Océane Zubeldia, "Les drones : La situation de la France et ses perspectives," *Défense* 162, Institut des hautes études de défense nationale – IHEDN, May-June 2013, p. 26-29.

However, European institutions, which had previously taken a back seat, gradually began to encourage cooperation in the sector. The European Council[20] agreed to the European MALE drone project at its December 2013 European defence summit. It even made the project one of its European military capability development priorities.[21] Drones are seen as an especially important way to strengthen the EU's strategic autonomy by 2025, and hence Germany, Italy, France and Spain have all committed to the European MALE drone programme.[22] The participating states plan to use this drone for intelligence, surveillance, targeting and reconnaissance missions overseas. To this end, the Organisation for Joint Armament Cooperation (*Organisation Conjointe de Coopération en matière d'Armement* – OCCAR) is working with the European Defence Agency (EDA) to integrate drones into European air traffic, optimise budgetary resources, attain operational autonomy and strengthen European advanced technological expertise. The definition phase of the project, launched in August 2016, is managed by OCCAR,[23] while the two-year study to define the basic characteristics of the programme has been entrusted to Airbus Defence and Space, Dassault Aviation and Leonardo-Finmeccanica.[24] A "user community of European MALE drone systems" has also been established. This community is foremost a discussion forum for exchanging information and best practices, as well as for evaluating opportunities for cooperation. It currently brings together representatives from France, Germany, Greece, Spain, Italy, the Netherlands and Poland – countries that "possess, use or will develop"[25] a MALE capacity.

While these European initiatives are promising, there are several obstacles to their practical implementation. Some fear that political will fade before this cooperation is truly underway, or even that some member states will exploit the European initiatives simply to promote their own national programmes. The chances of success for the drone initiatives will necessarily depend on the European context at the time. The debate on an adapted European regulatory system will prove decisive.[26] How to insert drones into the European airspace is one of the key concerns relating to their military and civilian use.

To address these concerns, since 2009 the EDA has been coordinating the MIDair Collision Avoidance System (MIDCAS) pilot project to improve "sense and avoid" functionality, i.e. the ability for drones to detect and avoid other flying objects.[27] In 2012, in conjunction with the European Space Agency (ESA), the EDA also established the DeSIRE (Demonstration of Satellites enabling the Insertion of RPAS in Europe) project.[28] In the long-term, this project

20. The European Council comprises the president of the European Council, the heads of state and heads of government of the member states and the president of the European Commission.

21. European Council, "Conseil européen 19 et 20 décembre 2013," EUCO 217/13, Brussels, 20 December 2013, p. 5.

22. The companies Airbus Defence and Space, Dassault Aviation and Leonardo-Finmeccanica, "Le programmeme de drone européen MALE RPAS (Medium Altitude Long Endurance Remotely Piloted Aircraft System) décolle."

23. *OCCAR,* New office for the MALE RPAS Programmeme Division opened.

24. Dassault Aviation, "Le programmeme de drone européen MALE RPAS..."

25. *OCCAR,* European MALE RPAS Definition Study contract awarded.

26. Cédric Perrin *et al.*, "Drones d'observation et drones armés : un enjeu de souveraineté," Rapport d'Information No. 559 (2016-2017), Commision for Foreign Affairs, Defence and the Armed Forces, 23 May 2017. "Moreover, the increasingly widespread use of drones raises certain technical or legal difficulties. The main preoccupation concerns airworthiness standards and the rules of integration in air traffic, which, at present considerably restrict the use of drones, at least on French territory and in Europe" (p. 10).

27. *See EDA,* Remotely Piloted Aircraft Systems – RPAS.

28. The objective is to use satellite communications to ensure the integration of drones in European airspace. ESA, DeSIRE – Demonstration of Satellites enabling the Insertion of RPAS in Europe.

is intended to be adopted by users in France, Germany, Italy, the Netherlands and Spain. It aims to consolidate the operational and regulatory requirements for the evolving use of drones in non-segregated airspace,[29] which is not limited to reserved, restrained and temporary zones.

The EDA also launched the Enhanced RPAS Automation (ERA) project in December 2015, for a period of 42 months and with a budget of 31 million euros.[30] The EDA coordinates a consortium of sixteen companies from different countries, including France, Italy, Poland, Sweden and Germany.[31] Under the direction of Airbus Defence and Space, it aims to integrate civilian and military drones into the European airspace.[32] The dual-use nature of these drones means that it is essential to define regulations for their use. Whereas, in the past, drones were only used for military purposes, their expanding civilian applications have an increasingly apparent strategic dimension. The military could certainly benefit from this development and evaluate the possible synergies. Specifically, establishing a Single European Sky may offer new military possibilities.[33]

THE INSERTION OF CIVILIAN DRONES INTO THE EUROPEAN AIRSPACE

In 2004, the adoption of the regulation on the creation of a Single European Sky transferred the responsibility for managing air traffic from the member states to the EU.[34] Launched on the initiative of the European Commission, this ambitious project aimed to reform the air traffic management (ATM) system to end the fragmentation of the European airspace.[35] The Council and the European Parliament accepted the Commission's proposal on the Single European Sky in line with the EU's economic and political integration. The guiding principle is that "Europe cannot keep the frontiers in the sky that it has managed to eliminate on the ground."[36] The Single European Sky is also intended to enable the development of common standards for safety, airspace management, cost transparency and interoperability between national systems.

In 2007, the EU and the European Organisation for the Safety of Air Navigation (Eurocontrol) created the Single European Sky Air Traffic Management Research Joint Undertaking (SESAR JU) to promote research in the sector. SESAR JU is funded jointly by the EU, Eurocontrol and industry partners, each contributing one third. It aims to coordinate

29. *See EDA*, EDA and ESA launch DeSIRE II demonstration project, *Press Centre*, 18 May 2015.
30. Beth Stevenson, "EDA and ESA kick off DESIRE II UAV project," *Flight Global*, 18 May 2015.
31. See EDA, "New project to facilitate integration of RPAS into European airspace," Press Centre, 11 February 2016.
32. *Ibid.*
33. Chantal Lavallée, "The Single European Sky: a Window of Opportunity for EU-NATO Relations," *European Security* 26:3, 2017, p. 415-434.
34. EU, "Regulation (EC) No 549/2004 of the European Parliament and of the Council of 10 March 2004 laying down the framework for the creation of the single European sky," *Official Journal of the European Union* (31 March 2004), L 96/1-L96/8.
35. European Commission, "The creation of the single European sky," COM (1999) 614 final (Brussels, 1 December 1999).
36. *Ibid.*, p. 5.

the research and development necessary for the future air traffic management system.[37] The SESAR 2015 action plan (ATM Master Plan) marked a turning point in the implementation of the Single European Sky. For the first time, the project benefited from the military's recommendations, derived from coordinated consultation between the EDA, Eurocontrol and NATO. Although the European Commission had proposed this since the launch of the Single European Sky, military participation only began informally in 2010 and more formally in 2013. Since the third phase of SESAR, the EDA coordinated and supported the implementation of projects based on the new systems.[38] Besides, again for the first time, the 2015 Action Plan explicitly included the possibility for research funding for the insertion of civilian drones into the Single European Sky.

More specifically, the European Commission was concerned by the increased commercialisation of civilian drones, leading to a series of consultations from 2009 to 2012.[39] The absence of an EU-wide regulatory system, harmonised European standards and, in almost half the member states, even any national regulations impeded drone development. The increasing use of recreational drones was also raising increasing worries for personal privacy and physical safety. Furthermore, new possibilities for professional and commercial use were emerging (surveillance, transport, detection, protection of infrastructure, data collection), making regulations imperative. The Commission consequently sought the opinion of the European RPAS Steering Group, composed of representatives of the member states, industry and experts. In its report, submitted in June 2013, this group identified challenges and proposed a roadmap to guide the progressive integration of civilian drones into the European aviation system.[40]

In April 2014, on the basis of this series of consultations, the European Commission presented its strategy in its communication *Opening the aviation market to the civil use of remotely piloted aircraft systems*,[41] with the ambition of establishing a single RPAS market. The European Commission fundamentally needed to establish standards to guide industry in the development of unmanned systems. According to the Commission, once the legal barriers are overcome, European industry will be able to produce drones in line with the European standards at more competitive prices. Additionally, in the words of Horowitz *et al.*, "ongoing trends in the development of commercial drones could reduce the cost of drones and make them financially advantageous for militaries to acquire."[42] At present,

37. *SESAR JU,* Discover SESAR.

38. European Commission, "Commission Implementing Regulation (EU) No 409/2013 of 3 May 2013 on the definition of common projects, the establishment of governance and the identification of incentives supporting the implementation of the European Air Traffic Management Master Plan," *Official Journal of the European Union,* 4 May 2013, Article 8.4 (b), p. L 123/5. See also Chantal Lavallée, "The Single European Sky...".

39. European Commission, "Hearing on Light Unmanned Aircraft Systems," Brussels, 8 October 2009; "Conclusions of the First European High-level Conference on Unmanned Aircraft Systems," Brussels, 1 July 2010; "Towards a European Strategy for the Development of Civil Applications of Remotely Piloted Aircraft Systems (RPAS)," SWD (2012) 259 final, Brussels, 4 September 2012.

40. *European RPAS Steering Group, Roadmap for the integration of civil Remotely-Piloted Aircraft Systems into the European Aviation System,* Final Report, June 2013.

41. European Commission, "A new era for aviation. Opening the aviation market to the civil use of remotely piloted aircraft systems in a safe and sustainable manner," COM (2014) 207 final, Brussels, 8 April 2014.

42. Michael C. Horowitz, Sarah E. Kreps and Matthew Fuhrmann, "Separating Fact from Fiction in the Debate over Drone Proliferation," *International Security* 41:2, 2016, p. 40.

aviation safety rules are unsuitable for drones,[43] and, in cases where such rules do exist, they are fragmented, as in the case of issuing individual operating permits. This problem is compounded by the increasing number of incidents of drones flying over cities, airports and nuclear power plants or even coming near important political figures, such as the German chancellor Angela Merkel in September 2013.[44]

The guiding principles for a future European regulatory system and the European Commission's strategy were laid down in the *Riga Declaration* on 6 March 2015. This declaration was endorsed by the "European aviation community," i.e. EU member states and institutions, industry and users.[45] The regulations are guided by the following principles: 1) the rules must be proportional to the risks, 2) the European Aviation Safety Agency (EASA), whose role has been broadened to cover all drones (not just larger, high altitude ones), has been tasked with developing the European standards. These must be compatible with the International Civil Aviation Organisation (ICAO)'s standards. Specifically, the norms must be inspired by those developed by the group of experts from the national and regional aviation safety authorities, JARUS (Joint Authorities for Rulemaking on Unmanned Systems), on the basis of a broad consultation process. The aim is to ensure consistency between European and international standards, as, in the long term, even non-European drone manufacturers will have to comply with European standards in order to sell their products in Europe. 3) In Riga, the representatives insisted on coordinating European financing efforts in order to develop new technologies. This point will be underlined to in the next section. 4) There was consensus on the importance of public acceptance, who demands strict regulations on the use of drones as a matter of public safety. 5) Finally, it is essential to identify responsibility, meaning that the operator or owner of the drone must be identifiable at all times. In the event of an accident, the question of insurance and compensation for the victims must be clarified.[46]

In December 2015, the communication *An aviation strategy for Europe* continued this process by defining the principles for future European regulations on the civil use of drones, allowing their insertion into the European airspace.[47] However, initially planned for 2016, this insertion is now scheduled to begin gradually in 2019. The process will take place over the medium term. Discussions no longer focus on whether a regulatory system is necessary but instead on its terms and implementation. For example, the creation of U-Space aims to provide the security to operate all types of civilian drones, especially in urban areas.[48]

43. European Commission, "An aviation strategy for Europe," COM (2015) 598 final, Brussels, 7 December 2015, p. 14.
44. "Allemagne : un drone perturbe un meeting d'Angela Merkel," *Le Figaro,* 16 September 2013; "Paris survolé par de multiples drones lundi soir," *Le Figaro*, 24 February 2015.
45. European Commission, Riga Declaration, 6 March 2015.
46. *Ibid.*
47. European Commission, "An aviation strategy for Europe."
48. SESAR-JU, U-Space Blueprint, 9 June 2017.

TOWARDS A GREATER EU ROLE IN THE EUROPEAN AVIATION SYSTEM

The development of the technologies and military capabilities necessary to insert drones into the European airspace requires substantial financing, the consolidation of the EDITB and, above all, a firm political commitment by the EU to pursue this cooperation. The *Global Strategy for the European Union's Foreign and Security Policy*, presented to the European Council in June 2016 by the High Representative of the Union for Foreign Affairs and Security Policy/Vice-president of the European Commission (HR/VP), Federica Mogherini, advocates a relaunch of the European security cooperation and the strengthening of the EU's strategic autonomy.[49] Improving surveillance and reconnaissance, in particular using drones, has been identified as a priority.[50]

The multifunctionality of drones has therefore convinced EU representatives to pursue a global approach. Within the limits of its competencies, the Commission is using all the tools at its disposal – research, market, legal and financial instruments – to promote the European cooperation. The 2013 European Council also insisted on the need for the EDA to coordinate its work on MALE drones with the European Commission, over civilian drones research with the Horizon 2020 programme. For example, in the July 2013 communication, *Towards a more competitive and efficient defence and security sector*, the European Commission proposed "to explore synergies in the development of dual-use applications with a clear security dimension or other dual-use technologies, such as those supporting the insertion of civil RPAS into the European aviation system, within the framework of the SESAR Joint Undertaking."[51] Additionally, on 30 November 2016, the Commission presented a European Defence Action Plan, which recommended the launch of a European Defence Fund. It includes a research window and a capability window, to encourage joint projects.[52] The European Defence Fund was launched by the Commission in June 2017. The first three calls for tender, managed by the EDA, all involved unmanned systems.[53] The Action Plan also aims to promote civilian-military synergies concerning the Single European Sky and, particularly, the use of drones.[54] On 21 and 22 November 2017, the annual conference on drones in Helsinki invited the stakeholders from the drone community, including military representatives from the EDA, NATO and Defence Ministries, to discuss the roadmap and possible synergies. The conference ended with the adoption of the *Helsinki Drones Declaration*, which sets out the priorities for future cooperation.[55]

The European initiatives presented here, both military and civilian, are not developed in a vacuum. Within the EU, not all the member states have the same ambitions or interests.

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49. European External Action Service, "Shared Vision, Common Action: A Stronger Europe. A Global Strategy for the European Union's Foreign and Security Policy," Brussels, June 2016.
50. *Ibid.*, p. 45.
51. European Commission, "Towards a more competitive and efficient defence and security sector," COM (2013) 542 final, Brussels, 24 July 2013, p. 12.
52. European Commission, "European Defence Action Plan," COM (2016) 950 final, Brussels, 30 November 2016.
53. European Commission, "A European Defence Fund: €5.5 billion per year to boost Europe's defence capabilities," Press release, 7 June 2017.
54. European Commission, "European Defence Action Plan," 21.
55. European Commission, Drones Helsinki Declaration, 22 November 2017.

They have different resources and perceptions, which partly explains why cooperation in the EDA programmes varies so widely. Some countries already use and produce drones (France, Sweden and the UK), while others wish to develop the means to do so, as demonstrated by the discussions in the European MALE drone user community. The member states' future use of the European MALE drone, once it is fully operational, remains to be clarified. The intensification of the terrorist threat in Europe and the routes taken by millions of illegal migrants have revealed problems of border surveillance on both land and at sea. The MALE drones could thus become an additional tool for Frontex.

Regulations for the civilian use of drones are already codified in certain countries, such as France,[56] Germany, Sweden, Belgium and the United Kingdom, but not in others. The existing national standards, in addition to the international standards, serve as reference for EASA, which is tasked with proposing the future European standards on the basis of a vast consultation process. Although they currently differ between countries, national regulations have had the effect of boosting industrial innovation. It has led to the blossoming of new start-ups and small and medium-sized enterprises, working on the development of new drones and as many new applications, as well as creating new services and professions.[57]

The Commission's proposals presented in the European Defence Action Plan aim to meet the challenge of international competition by providing new resources to the member states. The main competitors in the global drone market are the United States and Israel. However, there is an underlying problem. There are considerable advantages offered by these drones in theatres of operation, in terms of performance, autonomy and speed. The current equipment therefore depends on satisfying the current operating requirements of the member states' armed forces. For the time being, these requirements are satisfied by American and Israeli technologies, which cover Europe's capability gap. Only regulatory tools could enable Europe to compete and give EU member states access to a competitive and operational market. For this reason, "the challenge is to manage to satisfy a shared military need at a cost that is able to create a market."[58] These choices return to a fundamental shared responsibility, but with an additional requirement of the regulation of a Single European Sky. For civilian drones, their commercialisation and the exponentially increasing number of possible applications has opened up new markets, where several Chinese and Brazilian companies already seem to be taking up position.[59]

56. The 2012 decree has been revised and simplified by the decree of 17 December 2015 concerning the design of unmanned air vehicles, the conditions of their use and the required capabilities of the persons using them, and the decree of 17 December 2015 concerning the use of the airspace by unmanned air vehicles.

57. Fédération professionnelle du drone civil, Les applications civiles.

58. Cédric Perrin *et al.*, "Information Report," Commission for Foreign Affairs, Defence and the Armed forces, No. 559 (2016-2017), 23 May 2017.

59. In the following activities: cinema, food industry, industrial and buildings inspection, mining, security and search and rescue operations. Cathy Lai, "La société chinoise DJI veut se développer sur le marché du 'drone' au Brésil," *Macauhub*, 6 December 2017.

CONCLUSION

In short, this overview of the various European drone initiatives reveals two main trends. First, the examination of initial attempts to develop a European MALE drone highlights the political, technological and financial difficulties of establishing genuine European cooperation and shows that, even once launched, under the auspices of EDA, it has progressed inconsistently. Second, the surge in the sale and use of civilian drones has stimulated cooperation in the EU to create a common regulatory system. However, discussions to enable the insertion of both civilian and military drones in the European airspace are converging, since this insertion is inseparable from the development of the required (often dual-use) technologies, the consolidation of the market and the establishment of the appropriate regulations. Therefore, the political impetus from EU representatives, both from member states and institutions, looks set to usher in new civilian-military synergies in the drone sector.

English translation revised by Andreas CAPSTACK

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