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on safe use of remotely piloted aircraft systems (RPAS), commonly known as
unmanned aerial vehicles (UAVs) in the field of civil aviation
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Committee on Transport and Tourism

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1. Introduction

Small, radio-controlled model aircraft have been flown by enthusiasts for many decades. Indeed, the first recorded use of a remotely piloted aircraft was in 1935, when the British Royal Navy used the DH82 Queen Bee for target practice.

The last 15 years has seen rapid growth in the use of 'Remotely Piloted Aircraft Systems (RPAS), more commonly known as 'Unmanned Aerial Vehicles' (UAVs) or drones. Technology developed primarily for military purposes is now being applied for commercial use, pushing technological and legislative boundaries.

In recognition of the rapid development of this market, RPAS is rightly being incorporated into existing aviation programmes, such as the Single European Sky Air Traffic Management Research (SESAR) Joint Undertaking and Horizon 2020.

In addition, the potential for growth in this industry, from the manufacturer to the end user is immense, for large and small businesses alike. Therefore, it is imperative that we maintain world-class standards of manufacturing.

For example, the commercial market in the UK alone has more than 600 RPAS operations providing services from photography to land surveillance. RPAS have become an increasingly popular alternative to manned aircraft for aerial surveillance activities and increasingly, search and rescue and construction repair work, amongst other things.

At the same time, small RPAS, designed for leisure and hobby use, have become increasingly popular and were described by the Daily Mail as a 'must-have gadget'.

In October 2012, the European Commission established a European RPAS Steering Group. In June 2013, the Steering Group presented its recommendations to the Commission in its 'Roadmap for the Integration of Civil Remotely Piloted Aircraft Systems', setting out a step-by-step approach and timeline for integrating RPAS into the airspace. In April 2014, the Commission published its Communication on the future of RPAS operations for civil use.

Even at this early stage, Member States, industry and the European Commission have all recognised the potential of this market and are keen to stress that any policy framework must enable growth in order to compete globally.

At the launch of the Communication, Siim Kallas, the then Vice-President of the European Commission and Commissioner for Mobility and Transport, said: "If ever there was a right time to do this, it is now" - sentiments which have been echoed by Violeta Bulc, his successor as Commissioner, who has prioritised the inclusion of RPAS in the Aviation Package, due by the end of 2015.

2. The international dimension

The US is seen by many as the leading market for the use of RPAS, albeit for military operations. However, Europe is the leader in the civilian sector - there are 2,500 European operators compared to 2,342 operators in the rest of the world.

Japan has a large number of RPAS operators and 20 years of experience, mostly in RPAS precision farming operations, such as crop spraying. It was the first country to allow RPAS technology to be used in farming activities in the mid-nineties and the number of operators multiplied within a few years.

Israel has a very active manufacturing industry, but with a direct focus on military RPAS. An integrated civil-military air navigation service now makes it easier to integrate RPAS into Israeli airspace.

Australia, China (where many of the very small RPAS are manufactured) and South Africa are among 50 other countries that are developing RPAS.

3. State of play in EU Member States

Today, every EU Member State has some RPAS activities, both for manufacturing and/or for operations. However, unless an exemption is granted, operating activities are only legal if there is national legislation in place. This is based on the ICAO rule that all operations performed by unmanned air vehicles must obtain a specific authorisation.

For example, in the UK, the Civil Aviation Authority (CAA) defines ‘small unmanned aircraft’ as being aircraft of 44lb or less. For this category, safety requirements are covered within Articles 166 and 167 of the UK Air Navigation Order, which state:

1. The operation must not endanger anyone or anything.
2. The aircraft must be kept within the visual line of sight (normally taken to be within 1,640ft horizontally and 400ft vertically) of its remote pilot (i.e. the ‘person in charge’ of it). Operations beyond these distances must be approved by the CAA (the basic premise being for the operator to prove that he/she can do this safely).
3. Small unmanned aircraft (irrespective of their mass) that are being used for surveillance purposes are subject to tighter restrictions with regard to the minimum distances that you can fly near people or properties that are not under your control. If you wish to fly within these minima, permission is required from the CAA before operations are commenced.
4. CAA permission is also required for all flights that are being conducted for aerial work.
5. The 'remote pilot' has the responsibility for satisfying him/herself that the flight can be conducted safely.¹

¹ <http://www.caa.co.uk/default.aspx?catid=1995&pageid=16012>

4. Outline of the Commission's Communication of April 2014 - COM(2014)207

The Communication outlines how the Commission proposes to address RPAS operations in a future European policy framework. It states that any regulation would need to help develop a commercial RPAS market, while safeguarding public interest.

New standards to regulate the operations of civil RPAS shall be established: They should cover safety, security, privacy, data protection, insurance and liability. The Commission aims to allow the European industry to become a global business leader for this emerging technology.

A legislative proposal is to be adopted by the end of 2015. The Commission notes that the new standards would cover the following areas:

- EU wide rules on safety authorisations: EU standards would be based on the principle that RPAS must provide an equivalent level of safety to 'manned' aviation operations, where appropriate. Moreover, EASA (European Aviation Safety Agency) will start developing EU-wide standards for RPAS;
- Safeguarding privacy and data protection: Data collected by RPAS needs to comply with the applicable data protection rules, and data protection authorities are obliged to monitor the subsequent collection and processing of personal data; the Commission would assess how to ensure that data protection rules apply fully to RPAS and propose changes or specific guidance if needed;
- Controls to ensure security: As RPAS could be used unlawfully, EASA would develop the necessary security requirements, particularly to protect information streams. It would propose legal obligations for all involved - for example, air traffic management, the operator, and telecom service providers - which would be enforced by national authorities;
- A clear framework for liability and insurance: The current third-party insurance regime has been established mostly in terms of manned aircraft, where weight (starting from 500 kilograms) determines the minimum amount of insurance; the Commission would assess the need to amend the current rules taking RPAS into account;
- Streamlining Research and Development (R&D) and supporting new industry: The Commission has indicated that they wish to streamline R&D, in particular the fund managed by SESAR Joint Undertaking, in order to ensure the integration of RPAS into SESAR as soon as possible. SMEs and start-ups in the sector would get industrial support to develop technology under the Horizon 2020 and COSME programmes.

5. Steps undertaken by your Rapporteur

Following the publication of the Commission's Communication in 2014¹, your Rapporteur organised a stakeholders meeting on 27 January 2015 in the European Parliament for representatives of the Commission, EASA and JARUS, SESAR JU, national regulators including CAA and DfT (UK), DfT (NL) as well as service providers NATS and EUROCONTROL, manufacturers BAE Systems, Airbus, Rolls Royce, ASD, and the pilots' union BALPA. Crucially, Europe Air Sports, typical of the growing recreational use of RPAS, were also represented.

It was widely recognised by participants that any regulatory framework must be proportionate to enable the sector to grow, while avoiding an unnecessary burden for an emerging industry. In addition, any framework must seek global acknowledgement to stimulate R&D.

A month later, during the TRAN delegation to Washington D.C., your Rapporteur met officials from the Federal Aviation Administration (FAA) in charge of the integration of "unmanned aircraft systems" (UAS = RPAS). The FAA has just proposed a regulation that would allow the use of certain small UAS in the US aviation system, while being open for future technological innovations.

Also in 2014, your Rapporteur met with the European Union Committee of the House of Lords on the Civilian Use of Drones in the UK. Moreover, in March 2015, your Rapporteur addressed the conference on RPAS, organised by the Latvian Presidency in Riga.

The subsequent Riga Declaration sets out five essential principles for future EU focus:

1. RPAS need to be treated as new types of aircraft with proportionate rules based on the risk of each operation on a case-by-case basis;
2. EU rules for the safe provision of RPAS services need to be developed to enable the industry to invest;
3. Technology and standards need to be developed for full integration in European airspace;
4. Public acceptance is key to the growth of RPAS services;
5. The operator of an RPAS shall be responsible for its use.

In Riga, the European aviation community committed itself to allowing businesses to provide RPAS services everywhere in Europe as of 2016.

6. Rapporteur's initial thoughts

This Committee must consider the opportunities that this nascent market could create for both investment and job creation while, at the same time, safeguarding the public interest.

A clear, global, harmonized and proportionate regulatory framework needs to be developed on a risk assessed basis, which avoids burdensome regulations for businesses that would deter investment and job creation. Industry and regulators must come together in order to avoid the

¹ COM(2014)207final: A New Era for Aviation: Opening the aviation market to the civil use of RPAS in a safe and sustainable manner

'chicken and the egg' problem, whereby industry is reluctant to invest in developing the necessary technologies without certainty about how they will be regulated, while regulators are reluctant to develop standards until industry comes forward with technologies for authorisation. However, the clear message from your Rapporteur is that we must work towards an outward, global consensus.

The Joint Authorities for Rulemaking on Unmanned Systems (JARUS) is a voluntary membership body comprising national civil aviation authorities from EU and non-EU countries and regional organisations. Its purpose is to develop technical, safety and operational requirements for the certification and safe integration of large and small RPAS into the airspace and at aerodromes.

JARUS is, therefore, ideally placed to quickly and effectively draft global safety regulations for the use of RPAS. JARUS should ensure that any future EU rules will be compatible with international arrangements in other countries, through a process of mutual recognition.

The subject of data protection and privacy is also key in order to facilitate the safe integration of RPAS into civil aviation. Your Rapporteur would therefore recommend that Member States' Data Protection Agencies work together in order to share and ensure compliance with existing data protection guidance.

For example, in the United Kingdom, the House of Lords has reported that additional technology-specific data protection legislation for RPAS is not necessary, but has recommended that the Commission, through Member States' data protection agencies, share existing specific data protection guidance for commercial RPAS.

7. Conclusion

Today in the EU, EASA is, in principle, the certifying authority for RPAS with a maximum take-off mass of more than 150 kg. RPAS of 150kg or less are under the jurisdiction of the Member State.

RPAS regulations exist or are being developed in Austria, Denmark, France Germany, Italy, Ireland, Spain and the UK. There are approved flying schools in Denmark, the UK and the Netherlands, and more than 500 licenced RPAS pilots in the Netherlands and the UK.

All RPAS rules in place in Europe are tailored to the risk of the operation. RPAS Rules are “operator centric”, instead of the usual “aircraft centric” approach of manned aviation. The risk depends not only on the kind of machine, but on many more factors, such as the area overflown, the expertise of the operator and the specific type of operation.

ICAO is the world-wide organisation for aviation. Its standards and recommended practices (SARPS) are the basis for national rules adopted by ICAO Member States. JARUS is a coordination body between National Aviation Authorities (which includes EASA, EUROCONTROL and representatives of EASA Member States, but also USA and Russia), which will deal with future RPAS regulation.

Today, the RPAS sector requires competent authorities to create global rules in order to ensure cross-border RPAS development. If no action is taken soon, there is a danger that public opinion will harden so that authorities feel compelled to restrict the use of these new systems. This could result in the economic potential and positive effects of RPAS not being fully utilised.

The European Commission is preparing a proposal to be adopted by the end of 2015. The Parliament, in particular our Committee, will play its part and come forward with constructive answers to the challenges that lie ahead.

Finally, your Rapporteur wishes to adopt an INI report with your support and participation, in order to send a strong political message signifying that we are ready for this new exciting step forward for the aviation sector.

Appendix 1: GLOSSARY

ATM	Air Traffic Management
BALPA	British Airline Pilots Association
CAA	UK Civil Aviation Authority
DfT (UK)	Department for Transport (UK)
DfT (NL)	Department for Transport (Netherlands)
EASA	European Aviation Safety Agency
FAA	Federal Aviation Administration (US)
ICAO	International Civil Aviation Organisation
JARUS	The Joint Authorities for Rulemaking on Unmanned Systems
RPAS	Remotely Piloted Aircraft Systems
SESAR	Single European Sky Air Traffic Management Research
UAS	Unmanned Aircraft Systems
UAV	Unmanned Aerial Vehicle