

RIGHTS AND SCIENCE IN THE DRONE ERA ACTUAL CHALLENGES IN THE CIVIL USE OF DRONE TECHNOLOGY¹

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ABSTRACT

Although Drone technology has a great future, drones are here right now. In fact, drone is one of the current technological devices with the greatest prospects for use. It is estimated that last year the drone business mobilized more than 7 million dollars worldwide in the distribution sector, and that this figure would approach 30 million by 2021.

Certainly, although its use is very widespread in the military field, it is in the civil field where its applications, with a broad range of use, presents the greatest challenges, although the actual legal framework reduces its possibilities due to a very restricted use of these devices. Nevertheless, we need to guarantee a safe use and fundamental rights protection in the civil use of drones.

Our aim in this paper is to develop an overview on the actual EU legal framework for civil use of drones outlining these challenges, and also on the Spanish regulation as a national case example.

KEYWORDS

Drone technology. EU dronelaw. Civildrone. Fundamental rights. Drone era.

1. INTRODUCTION

Although drone technology has a great future, drones are here right now. In fact, drone is one of the current technological devices with the greatest prospects for use. It is estimated that last year the drone business mobilized more than 7 million dollars worldwide in the distribution sector, and that this figure would approach 30 million dollars by 2021 with sales growing more than 7.6% annually⁴.

Certainly, although its use is very widespread in the military field, it is in the civil field where its applications, with a broad range of use, present the greatest challenges. In fact, civil drone will include, for example, without being an exhaustive list: surveillance and security, journalism (called *dronalism*⁵), photography, product distribution, civil engineering (including applications for air quality control,

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⁴ Source BBVA: <https://www.bbva.com/es/quien-lidera-mercado-drones/> [Accessed 15.09.2017].

⁵ Goldberg has proved to be a great advocate of the use of drones in journalism, understanding that the drone really works as a technological device similar to a camera, since in the end it would be just a “flying monkey” (GOLDBERG, 2016).

cartographic applications, applications for prospecting and the exploitation of mineral resources, hydrological, agriculture, control of works and impact assessments, heritage management, safety and rescue, agricultural uses, firefighting, etc.⁶).

Therefore, our aim is to study the greatest challenges for the civil use of drone technology, particularly from a legal perspective.

2. METHODOLOGY: DRONE ACADEMIC TERMINOLOGY AND MULTILEVEL LEGAL METHODOLOGY APPROACH

One of the first problems we encounter when we approach the study of drones is terminology (SARRIÓN ESTEVE, 2017: 104). In fact, very often different terms are used in multiple news articles and reports, communications and texts - terms that are not always synonymous. This is the case, for example, with the term “*drones*”, which is borrowed from English, or acronyms of names that are also English, such as UAV (*Unmanned Aerial Vehicle*), UA (*Unmanned Aircraft*), UAS (*Unmanned Aerial System*), RPA (*Remotely Piloted Aircraft*) or RPAS (*Remotely Piloted Aircraft System*).

Therefore, it is certainly essential to make some precisions. When we speak of drones, we mean a UAV or UA, which is an unmanned aerial device or vehicle; while RPA refers to a particular type of drone, -UAV or UA-, which, in addition to being an aircraft or unmanned aerial vehicle, is also characterized by its ability to be piloted remotely. Finally, the acronyms UAS and RPAS identify the complete system, including the control system of the drones or UAVs, and of the RPAs, respectively (See Figure 1).

Taking into account the popular use of the term “drone” it seems much more appropriate to assume it for academic terminology than the term UAV.

Firstly, we believe that it is important to specify that drones can be controlled remotely (RPA) and may also include an automatic flight program. In other words, all RPAs are drones, but not all drones are RPAs. It should be noted that while European Union (EU) regulation is very general in its reference to drones, as we shall see, domestic regulation, and in particular the Spanish regulation is also quite general but only in relation to the military field, in contrast to the civil field where it exclusively specifically regulates unmanned aircraft subject to remote control, i.e., the RPAs.

Secondly, in order to study the drone technology legal framework, and rights affected by the civil use of drones, it is important to take into account the *multilevel methodology* because we live immersed in a European legal space comprised of legal systems with different levels which are increasingly interconnected (GÓMEZ SÁNCHEZ, 2011: 20). And we need this theoretical basis to approach it and try to study any element or reality included in these related legal systems, including of course in this case the civil use of drones and the drone technology use in the way it can affect fundamental rights and must be regulated in the EU multilevel system.

Certainly, it is typical - from the Law perspective - to describe the relationship between EU law and national ones in terms of a multilevel legal system, i.e., constitutional pluralism or multilevel constitutionalism. In both cases, we speak about theoretical constructions which try to explain the EU multilevel fundamental rights protection architecture⁷, and therefore the relationship and interaction of different legal

⁶ In this regard, see the wide range of applications in civil engineering (SEVERAL AUTHORS, 2015).

⁷ Although it is difficult to affirm the existence of a Human Rights or Fundamental Rights protection system in a strict sense, we are facing a system in construction.

systems or levels, particularly EU and national ones (SARRIÓN ESTEVE, 2014). These are becoming progressively more interconnected, because we need to approach this complex “legal reality” as Prof. Gómez Sánchez pointed out some years before (GÓMEZ SÁNCHEZ, 2011).

Certainly, the problem that arises is the special complexity of fundamental rights protection in this type of multilevel reality which deals with multisided systems and we need to take into account not only EU and national law, but also international law and obligations⁸ including the European Convention on Human Rights (ECHR)⁹, and other international instruments.

Therefore, there is no simple answer regarding drone technology legal framework in Europe, particularly fundamental rights protection issue. Nevertheless, in this paper we are going to try to develop an overview on the actual legal framework for the civil use of drones, including the European level, and the national one, with a focus on Spanish regulation as a case example.

3. THE CIVIL USE OF DRONES TECHNOLOGY AND THE LEGAL FRAMEWORK

Drones have been the subject of growing attention and are often the subject of discussion at conferences, congresses, as well as in training programs. In Spain, as recently highlighted by the Director of the Spanish State Air Safety Agency (AESA) already had 2241 registered drones by 23 May 2016¹⁰ and there are 2556 declared drone operators by 15 September 2017¹¹.

In Spain, at this moment - September of 2017 - we estimate that a third part of the operators registered at AESA in the first nine months of 2017 (See Figure 2). It suggest a future exponential growth in this economic sector, surely not only in Spain but in other countries, for example in UK there are 3144 authorized drone operators by 8 September 2017¹².

By activities, in Spain almost all of the companies that we have recorded in our sample (98%) say they have among their activities photography. Around a quarter of them have among their activities declared instrumental registration or research, development or monitoring. Just over 15% to aerial advertising. Of all of them, the less active activity is phytosanitary treatment, about 5% of the sample, but this activity would open many possibilities in the immediate agriculture future (See Figure 3).

⁸ We differentiate between external produced/approved law and internal produced law. Within the external law we can also point out a very relevant distinction between international law and supranational law, i.e., EU law is supranational law because EU law applies thanks to its own principles in Member States ex EU legal order.

⁹ Convention for the Protection of Human Rights and Fundamental Freedoms, Rome, 4 Nov. 1950, better known as the *European Convention on Human Rights*.

¹⁰ Director of the Spanish State Air Safety Agency (AESA). Speech at the inauguration of the first edition of the Drone Industry Summit Madrid (May 23, 2016).

¹¹ AESA Drone Operators List, available at: http://www.seguridadaerea.gob.es/media/4305572/listado_operadores.pdf [Accessed 15 September 2017].

¹² Small Unmanned Aircraft (SUA) commercial operators holding a valid CAA permission, by 8 September 2017, available at: <http://publicapps.caa.co.uk/docs/33/20170908RptUAVcurrent.pdf> [Accessed 17 September 2017]. UK regulation differences the recreational drone flights and commercial ones.

Certainly this situation opens several reflections, since at present, as we will see in this paper, we have a legal framework which reduces the possibilities of the use of drones, the opposite of a open or friendly legislation.

Of course, we need to guarantee a safe use and fundamental rights protection in the civil use of drones. But it is also important to be open to the safe use of these devices.

Today, regulations around the use of drones certainly pose major challenges, and from various perspectives, not only in the very regulation of their use (airworthiness, identification-registration, requirements for piloting and licenses, safety, safety conditions), but also in relation to the affectation of fundamental rights (in particular those of privacy, image, and data protection), the responsibility for any damages that may be caused, taxation implications, etc., therefore becoming a phenomenon which we need to study from a multidisciplinary legal perspective.

First of all it is important to note that we consider non-military operations as included within the “civilian use” of drones, and therefore we include here customs, police and similar operations, -although these have a special nature, since we are talking about the use of drones by forces and security bodies-, as well as the use of drones for commercial or professional purposes, recreational and sporting use, and domestic use.

In a preliminary approach, we have to consider the existence of regulations at different levels, in the multilevel system, highlighting on the one hand, the level of the European Union and on the other, the [domestic] level of the Member States - some of which have already approved or are developing regulations in this area¹³.

In addition to considering the possible existence of specific regulations for drones, we also cannot ignore the applicability in their use of the norms that regulate the fundamental rights that may be affected by their very use, as well as other possible regulations that could affect their use in line with the type of activity undertaken by the drone, and it would be necessary to do so across the different levels.

3.1. European Union Legal Framework for the civil use of drones

Initially, it is first necessary to take into account the existence of specific regulations at an EU level, where we find Regulation (EC) No. 216/2008 of the European Parliament and of the Council (February 20, 2008) on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, repealing Council Directive 91/670/CEE, Regulation (EC) No. 1592/2002 and Directive 2004/36/CE (hereinafter Regulation 216/2008)¹⁴, which, in regards to aircrafts, includes the regulation of drones.

¹³ The European Parliament's Resolution of 29 October 2015 cites Austria, Croatia, Denmark, France, Germany, Italy, Poland, the United Kingdom and the Czech Republic. *European Parliament resolution of 29 October 2015 on the safe use of remotely piloted aircraft systems (RPAS), commonly known as UAVs, in the field of civil aviation* (2014 / 2243 (INI)), available at: <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//NONSGML+TA+P8-TA-2015-0390+0+DOC+PDF+V0//ES> (September 27, 2016). Actually, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Poland, Romania, Sweden, Greece, Hungary, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovenia, Sweden, also UK and Spain. Date obtained from DroneRules.eu, Dronerules consortium, Facilitating Access to Regulation for Light Remotely Piloted Aircraft Systems (RPAS), <http://dronerules.eu/en/recreational/regulations>. Data updated by 2 April 2017 [Accessed 18.09.2017], and the more complete UAV Coach Master List of Drone Laws, <https://uavcoach.com/drone-laws/> [Accessed 18.09.2017].

¹⁴ Regulation (EC) No 216/2008 of the European Parliament and of the Council of 20 February 2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency and

Within its application scope, the regulation includes the design, production, maintenance and operation of aeronautical products, components and equipment, as well as personnel and organizations involved in both the design, production and maintenance of aeronautical products, components and equipment, such as the operation of an aircraft (Article 1.1 Regulation 216/2008).

However, the scope of this regulation excludes products, components, equipment, personnel and organizations involved in “military, customs, police or similar operations”, although it establishes that Member States must ensure that such operations are compatible with the objectives of the regulation (Article 1.2 Regulation 216/2008) “to the extent possible”; so not only drones for military use, but also drones for civilian use in security and police operations are excluded in this regulation, with such drones and drone operations being required to comply with national regulations.

It is important to emphasize that Art. 4 specifies the applicability of the regulation, *leaving aside those aircrafts listed in Annex II, highlighting unmanned aircraft (i.e., drones) with an operational mass not exceeding 150 kg* - that is, whose weight is lower or equal to 150 kg - [Article 4.4 and Annex II i)¹⁵ Regulation 216/2008]. Drones (both remote controlled and automated) with a mass greater than 150 kg are included¹⁶.

But Art. 4 also leaves to national regulation the *specifically designed or modified aircrafts for research or for scientific experimentation purposes*, and which may be produced in a very limited number [Art. 4.4 and Annex II b) 216/2008]; *aircraft that have been constructed in their majority, 51%, by an amateur or non-profit amateur association for their own purposes and without any commercial purpose* [Art. 4.4 and Annex II c) Regulation 216/2008], *or any aircraft that has been in the service of the military forces*, unless these are of a type for which the Agency has adopted a design standard [Art. 4.4 and Annex II d) Regulation 216/2008]¹⁷. In all these cases, we must interpret that these exclusion of the EU regulation is not linked to drone mass, and drone greater than 150 kg should therefore be excluded from the scope of Regulation 216/2008 if the requirements outlined above are met, i. e., they will be under national regulation (SARRIÓN ESTEVE, 2017: 108-109).

The following aircrafts are included within the applicability scope of the regulation pursuant to Art. 4.1 thereof:

- aircrafts designed or manufactured by an organization whose safety is overseen by the Agency or a Member State [Art. 4.1 a) of Regulation (EC) No 216/2008];
- aircrafts, personnel and aircraft operations that are registered in a Member State - unless their regulatory safety supervision has been delegated to a third country and are not used by a Community operator - [Art. 4.1. b), and Art. 4.2 and 4.3 Regulation 216/2008]; or are registered in a third country, are used by an operator who is supervised by a Member State or is used by an operator established or

repealing the Council Regulation 91/670/ EEC, Regulation (EC) 1592/2002 and Directive 2004/36/EC (OJ L 79, March, 19, 2008).

¹⁵ In relation to Letter i of Annex II to Regulation 216/2008, it should be noted a correction of errors which modifies it, and where “unmanned aircraft” is replaced by “pilotless aircraft”.

¹⁶ Certainly, the size of drones with take-off mass above 150 kg is so remarkable that we find it difficult to imagine them, at least for civilian use, except for activities such as fire fighting etc.

¹⁷ We could also include other cases for exclusion even if they are yet to occur, and which could be applicable to drones when they reach the category of historic aircraft, meeting the requirement of participation in a notable historical event, or a major development in aviation, or an important function in the armed forces of a Member State [Article 4.4 Annex II a) ii Regulation 216/2008].

residing in the Community on routes into, out of, or within the Community [Art. 4.1. c), and Art. 4.2 and 4.3 of Regulation 216/2008]; or are registered in a third country or in a Member State which has delegated its regulatory safety oversight to a third country and is used by a third country operator on routes into or out of the territory [Art. 4.1. d), and Art. 4.2 and 4.3 of Regulation 216/2008].

The norms provided for in Regulation 216/2008 govern, in a detailed manner, the airworthiness (airworthiness certificate, Art. 5 Regulation 216/2008), environmental protection requirements (Art. 6 Regulation 216/2008), requirements to be met by pilots operating aircraft in the cases provided for in Art. 4.1. b and c (Art. 7 and Annex III Regulation 216/2008), as well as the air operations outlined in these cases (Art. 8 Regulation 216/2008), and regulates the creation of the European Aviation Safety Agency (Art. 17-70 Regulation 216/2008), although we will not carry out an analysis of this here.

It should also be taken into account that a future reform of European regulation is likely in order to establish a precise common framework for drone operations, at least in the civil field, taking into account both the *Riga Declaration on Remotely Piloted Air Systems: Framing the future of aviation*, of 6 March 2015¹⁸, and the *Resolution of the European Parliament on the safe use of remotely piloted aircraft systems (RPAS), commonly known as UAVs, in the field of civil aviation [2014/2243(INI)]* (October 20, 2015) that followed (hereinafter, REP of 20 October 2015)¹⁹ as well as the proposal by the European Aviation Safety Agency (EASA) to establish common rules for drone operation in Europe from September, 2015²⁰, developed and materialized in a recent Proposed Amendment (NPA) published in 2017, which was under consultation until 15 September 2017²¹.

However, while Regulation 216/2008 refers to aircraft and drones within this group in a general way, it also therefore does so for unmanned aircraft regardless of whether they are remotely controlled or not (automated aircraft that include a flight program), whereas the REP of October 20, 2015 refers specifically to RPAs, that is, to remotely controlled drones, in this way differentiating between two different categories according to their nature, which should then be subject to different requirements within the EU regulatory framework: *those for professional use and those for recreational use*.

In addition, the REP of 20 October 2015 is clear in its anticipation of the need to “develop a clear, harmonized and proportionate European and global regulatory framework”, removing the 150 kg threshold, and “replacing it with a regulatory framework for the EU that is coherent and comprehensive”, on the basis “of a risk assessment that avoids the imposition of disproportionate regulations for companies, which are likely to undermine investment and innovation in the RPAs sector, while at

¹⁸ Riga Declaration on Remotely Piloted Air Systems: Framing the future of aviation, 6 March 2015, available at: <http://ec.europa.eu/transport/modes/air/news/doc/2015-03-06-drones/2015-03-06-riga-declaration-drones.pdf> (17.04.2017).

¹⁹ Resolution of the European Parliament of 29 October 2015 (...) cit.

²⁰ EASA. European Aviation Safety Agency, *Proposal to establish common rules for the operation of drones*, presented firstly on September 2015, available at: https://www.easa.europa.eu/download/ANPA-translations/205933_EASA_Summary%20of%20the%20ANPA_ES.pdf (27.09.2016).

²¹ EASA. European Aviation Safety Agency, Notice of Proposed Amendment 2017-5 (A) Introduction of a regulatory framework for the operation of drones, available at: <https://www.easa.europa.eu/system/files/dfu/NPA%202017-05%20%28A%29.pdf> (Accessed 18.09.2017).

the same time providing appropriate protection for citizens and helping to create sustainable and innovative jobs” (paragraphs 20 and 21).

3.2. National Legal Framework for the civil use of drones. A focus on Spanish case

As Regulation 216/2008 excludes the regulation of some of the uses of drones from its scope, it leaves Member States with the regulation of:

- a) The use of drones in the *military field* (Art. 1.2. Regulation 216/2008), or drones which have been used in the service of military forces, unless they are of a type for which the Agency has adopted a standard design [Art.4.4 and Annex II d) Regulation 216/2008], which we will not study here; and
- b) The civilian use of drones for *customs, police or similar operations* (Art. 1.2 Regulation 216/2008); *drones designed or modified for research, for purposes of scientific experimentation* that can be produced in a very limited number [Art. 4.4 and Annex II b) 216/2008]; *drones whose majority, at least 51%, is built by an amateur or a non-profit amateur association, for their own purposes and without any commercial purpose* [Art. 4.4. and Annex II c) Regulation 216/2008], and, *in general, drones with an operational mass not exceeding 150 kg* [Art. 4.4 and Annex II i) Regulation 216/2008].

Of course, we are interested in the regulation of the civilian use of drones. As we pointed out before some EU member states have already approved or are developing regulations on drones.

Actually the Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Ireland, Italy, Poland, Romania, Sweden, Greece, Hungary, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovenia, Sweden, also UK and Spain have already approved drone regulations²².

We are going to overview the regulation at domestic level in Spain as an example. According to Art. 149.1.20 of the Spanish Constitution (EC) establishes that the State has exclusive powers to regulate the “airspace, transit and air transport control, (...) and registration of aircraft”, and therefore the regulation of drones as unmanned aircraft; although there may be regional and local regulations that affect the civilian use of drones, not only because certain activities and operations with drones are excluded from the application scope of the Air Navigation Law, but also because drones are going to affect sectors governed by regional or local powers.

Logically, the possibility of domestic regulation is determined by European regulation, to the extent that we do not have a new harmonized regulation, which, as previously mentioned, is expected in the near future and would limit the possibilities of regulations at a domestic level within the civil field²³.

²² Data obtained from DroneRules.eu, Dronerules consortium, Facilitating Access to Regulation for Light Remotely Piloted Aircraft Systems (RPAS), <http://dronerules.eu/en/recreational/regulations> Data updated by 2 April 2017 [Accessed 18.09.2017], and UAV Coach Master List of Drone Laws, <https://uavcoach.com/drone-laws/> [Accessed 18.09.2017]. Although according to DroneRules.eu Spain is developing its regulation on drones, the reality is that Spain has already a drone regulation, although it has a temporary character. The UAV Coach Master List of Drone Laws is more complete.

²³ As we pointed out before, a present, Member States retain the ability to regulate the use of drones in customs, police and similar operations (Art. 1.2 Regulation 216/2008); drones designed or modified for research for purposes of scientific experimentation that can be produced in a very limited number [Art. 4.4 and Annex II b) 216/2008]; drones built in their majority, at least 51%, by an amateur or a non-profit amateur association, for their own purposes and without any commercial purpose [Art. 4.4 and Annex II

In Spain, we now have “transitional” legislative provisions adopted at an accelerated rate²⁴ and incorporated first into RD-Law 8/2014²⁵ which later became Law 18/2014, of October 15, on the approval of urgent measures for growth, competitiveness and efficiency (hereinafter Law 18/2014)²⁶ which regulates the “operation of civil aircraft piloted by remote control” in Arts. 50 and 51.

A temporary regulation that conditions its application until the entry into force of a regulatory rule set forth in its second final provision, Section 2 (Art. 50.1 Law 18/2014), which is the future Royal Decree regulating the civil use of aircraft piloted by remote control, amending Royal Decree 552/2014 of 27 June, which develops air regulations and common operational provisions for air navigation services and procedures, amending Royal Decree 57/2002 of January 18, approving the Air Circulation Regulation, which is currently being processed and has not yet entered into force²⁷.

Together with Law 18/2014, it is necessary to take into consideration the Resolution of the Director of the State Agency of Aviation Safety, adopting acceptable means of compliance and guidance material for the application of Article 50 of Royal Decree-Law 8/2014, of July 4²⁸.

c) Regulation 216/2008], and in general, drones with an operational mass not exceeding 150 kg [Art. 4.4 and Annex II i) Regulation 216/2008].

²⁴ The regulation was urgently incorporated due to the need to regulate a sector that was very necessary in order to not lose competitiveness, as well as to ensure that the activities were undertaken under safe conditions and under the control of the State Air Safety Agency. In this regard see both the Explanatory Memorandum of the regulation and GUERRERO LEBRÓN, CUERNO REJADO & MÁRQUEZ LOBILLO (2014), and FRANCO GARCÍA (2014).

²⁵ Royal Decree-Law 8/2014 of 4 July, approving urgent measures for growth, competitiveness and efficiency (BOE 163, July 5, 2014).

²⁶ Royal Decree-Law 8/2014 of 4 July, approving urgent measures for growth, competitiveness and efficiency (BOE 252, October 17, 2014).

²⁷ The first draft of this Royal Decree was initially submitted to public information by Resolution of the General Directorate of Civil Aviation of the Ministry of Public Works and Transport (BOE 256, October 22, 2014). Available at:

http://www.aeromapas.es/sites/default/files/1365_2014_10_22_52_30%281%29.pdf (September 27, 2016). The Report of the Analysis of the Normative Impact can also be accessed at: http://servicios.mpr.es/seacyp/search_def.asp.aspx?crypt=xh%8A%8Aw%98%85d%A2%B0%8DNs%90%8C%8An%87%A2%7F%8B%99tq%82sl%A3%92 (September 27, 2016). This RD project was subsequently submitted to an observation period at EU level from 5 February to 10 May 2016, available at

<http://ec.europa.eu/growth/tools-databases/tris/es/index.cfm/search/?trisaction=search.detail&year=2016&num=73&mLang=en&CFID=354368&CFTOKEN=d4654b6c5cea2bcf-855C8555-0C6C-3AA3-7E15C94530F821D9> (April 17, 2017). And finally was submitted to public information from 27 to 22 November 2016: https://www.fomento.gob.es/MFOM/LANG_CASTELLANO/ATENCION_CIUDADANO/PARTICIPACION_PUBLICA/IP_AERONAVESCONTROLREMOTO/ (April 17, 2017), and is available at: <https://www.fomento.gob.es/NR/rdonlyres/63ECAE3A-B29E-45A7-A885-D314153883EE/139826/RDRPAS27102016.pdf>.

²⁸ Resolution of the Director of the State Agency for Aviation Safety, which adopts acceptable means of compliance and guidance material for the application of Article 50 of Royal Decree-Law 8/2014, of July 4, available at: http://www.seguridadaerea.gob.es/lang_castellano/cias_empresas/trabajos/rpas/material_guia/default.aspx (September 27, 2016).

Although it was expected to enter into force in 2016, it was finally delayed until the first quarter of 2017, and is still awaiting for the Council of Ministers’ decision to try it. However, it should be noted that since we are also waiting for a new European regulation, it is possible that the new future Spanish regulations is in force only for a short time. In this work, we have chosen to give an account of the legislation currently in force, even if we make references to the future regulation, as we have preferred not to dedicate ourselves exclusively to this future legislation in case it is just a new waiting for Godot.

Regarding the regulated activities and conditions to operator with drones the preamble tells us that Law 18/2014 “deals exclusively with the operation of remotely piloted civil aircraft weighing less than 150 kg and those of a higher weight intended for fire fighting and search and rescue activities, given that, in general, the remaining aircrafts would be subject to European Union law”²⁹; a statement which is not completely correct, since as we have seen, there are other activities not subject to EU law. In fact, if we compare it with future regulation, the latter is more extensive - since its object is the definitive regulation of the RPAs “with a maximum take-off mass of less than 150 kg and those of greater take-off mass which are intended for use in customs, police, search and rescue, fire fighting, coastguard or similar operations, given that the remainder are subject to the European Union law”³⁰ (SARRIÓN ESTEVE, 2017: 113-114).

If we examine it in detail, Art. 50 provides that, until the regulatory rule provided for in the second final Provision, paragraph 2, comes into force “the operations of civil aircraft piloted by remote control are subject to the provisions of this Article” (Art. 50.1 Law 18/2014), which implies an initial will to cover all operations with remotely piloted drones (RPA) in the civil field, leaving operations with automated drones unregulated, which must then be understood as prohibited - as are also prohibited in the future Spanish regulation based on safety reasons (SARRIÓN ESTEVE, 2017: 114)³¹.

Furthermore, the activities contemplated in these provisional regulations are of two types: 1) *technical or scientific works*³² (Art. 50.3 Law 18/2014), and 2) *special flights* (Art. 50.4 Law 18/2014), so that flights not included would not be covered³³.

Certainly, Spanish regulation differs from the categories under EU law, and of course, from other national regulations, as in the UK where the regulation identify basically two types: *recreational drones and private flights* (articles 241, 94, and 95 of Air Navigation Order 2016³⁴, and *commercial operations with small drones* (articles 241, 94, and 95 of Air Navigation Order 2016)³⁵; which are limited to some requirements to guarantee safely flight and the protection of persons and property, and operating with a permissions and exemptions scheme.

In any case, Law 18/2014 will differentiate the operating conditions according to these *types of activity* to be undertaken, and furthermore, the purpose of Art. 50.2, which requires RPAs to report “the name of the operating company and the data necessary to

²⁹ Considering V, Paragraph 6 of the Preamble of Law 18/2014.

³⁰ Paragraph 7 of the future Royal Decree regulating the civil use of remotely piloted aircraft, and amending Royal Decree 552/2014 of 27 June, cit.

³¹ Certainly, in the future Spanish regulation is more clear, but it seems to me that the no regulation of the activity shows clearly that the legislator did not want to regulate or allow these kind of drone operations today.

³² It is important to note that the Spanish regulation does not use the more general concepts of business or commercial purposes.

³³ And in this sense it does not allow flights which are intended for the carriage of goods, which on the other hand, is also clearly excluded from the new regulation, as the explanatory memorandum clearly states that it “does not contemplate the possibility of authorization of other operations (...) notably transport (...) which are deferred to a subsequent regulatory development, since, as of today, there are currently no objective safety conditions for their authorization” (SARRIÓN ESTEVE, 2017: 114). We can also consider that drones with a sporting or recreational purpose are excluded from its regulatory scope and are also excluded from the Air Navigation Law (Article 150.2), which are subject to specific regulation.

³⁴ Recreational drones and private flights are under *Air Navigation Order 2016* (ANO), as the primary document for all aviation regulations within the UK, and the aircraft must have a mass of 20kg or less.

³⁵ Drones with an operating mass of more than 20 kg are subject to the whole UK Aviation regulation, and Drone operators must obtain a specific approval in a form of an Exemption.

contact it”, could be seen as being to exclusively regulate professional or commercial activities (FRANCO GARCIA, 2014), although the Spanish regulation explicitly speaks on technical or scientific works instead of “commercial” as the UK regulation, and therefore the Spanish regulator is thinking in specific types of commercial activities, and we have seen that the preamble of the law specifies that its purpose is, in general, to regulate those RPAs whose mass does not exceed 150 kg as well as the use of RPAs for fire fighting, and search and rescue operations that are included in the technical or scientific works [Article 50.3 c), Law 18/2014].

We must also assume that the use of drones by the Forces and Security bodies is excluded from regulation, a type of use that should be regulated in the specific regulations. However, we notice that no regulation has been introduced in this regard. Some authors have considered the Organic Law 4/1997, of August 4³⁶ as being applicable to drones, which regulates the use of camcorders by the Forces and Security bodies in public places, assimilating drones to the use of mobile camcorders (ELORDI VILLENA, 2014)³⁷. Nevertheless, we consider a specific regulation essential given the potential implicit in this new technology, which far exceeds those of a mobile camcorder, an issue that future regulation seems to address, since it does include these operations in its regulation, as we have mentioned before (SARRIÓN ESTEVE, 2017: 115).

The Spanish regulation establishes *RPA requirements*³⁸, and *Requirements for Pilots*³⁹, and *Requirements to carry out the activity with a RPA*, differing according to the type of operations to be performed and the RPA's weigh:

1) RPA for *technical and scientific work*, including those for fire fighting, search and rescue activities. Art. 50. 3 Law 18/2014 provides that these RPAs be only allowed to operate "during the daytime and in good visibility meteorological conditions, with a series of requirements depending on their size:

a) RPA with take-off mass of less than 2 kg, in areas outside agglomerations of buildings in cities, towns or inhabited places or in open air meetings, in uncontrolled

³⁶ Organic Law 4/1997, of August 4, regulating the use of camcorders by the security forces in public places (BOE 186, August 5, 1997).

³⁷ This is logical, if we also consider that the Art. 50(9) Law 18/2014 specifies that a Regulation (Reglamento) will establish the legal regime for the operation of civil aircraft piloted by remote control for cases other than those contemplated in the law.

³⁸ This provisional Law requires that all RPAs for civilian use have an “identification plate” fixed to their structure with the “identification of the aircraft” and the name of the operating company, along with any data necessary to make contact with, and this must be all clearly legible, visible with the naked eye, and indelible, although it differentiates with respect to other requirements taking into account the size of the RPA, since those with a maximum take-off mass exceeding 25 kg must be entered on the registry of aircraft registration and have an “airworthiness certificate”, while the RPAs with a take-off mass of 25 kg or less are exempt from having to comply with these requirements (Article 50.2 Law 18/2014).

³⁹ Pilots must demonstrate at least one of the following requirements: a) to hold a pilot's license, including that of ultralight aircraft license (or having had it in the last five years) and not having been dispossessed of it by any sanctioning procedure, or b) provide reliable proof that they have the theoretical knowledge necessary to obtain any pilot license, including that of ultralight aircraft pilot; or c) requirements are more flexible for RPA whose mass does not exceed 25 kg; a basic certificate for RPA is sufficient when flying within the pilot's visual range or an advanced certificate when it is intended to fly beyond the pilot's visual range (Art. 50.5 Law 18/2014). In addition, other requirements and conditions are established in case of not having a pilot's license, such as being over 18 years of age, a medical certificate, as well as a documentation proving that they have the appropriate knowledge of the aircraft and its systems, as well as piloting knowledge, issued by the operator, -which cannot be self-authorized- by the manufacturer or by an organization authorized by the operator [Art. 50.5 d) Law 18/2014].

airspace beyond the pilot's visual range, within the range of the radio emission of the control station and at a maximum terrain clearance altitude not exceeding 400 feet /120 meters.

It is necessary for the operator to request an issuance of NOTAM by the aeronautical information services provider to inform about the operation to the rest of the users of the airspace of the area in which it is to take place [article 50.3 a), Law 18 / 2014]⁴⁰.

b) RPAs whose take-off mass does not exceed 25 kg, in areas outside clusters of buildings in cities, towns or inhabited places or in open air meetings, in uncontrolled air space within the visual range of the pilot, at a distance from the pilot no greater than 500 m and at a height above the ground no greater than 400 ft./120 m. [Art. 50.3 b) Law 18/2014].

c) RPAs with take-off mass exceeding 25 kg or with mass of 150 kg or more, which are intended for fire fighting or search and rescue activities under the conditions and limitations set out in their airworthiness certificate issued by the State Air Safety Agency, and in uncontrolled airspace.

It is worth noting here how the RPAs for rescue or fire fighting activities are subject to the requirements of operating “during the daytime and in good visibility meteorological conditions”, because despite the difficulties, technology may enable the use of RPAs in certain cases of necessity.

2) *Special operations*

Art. 50.4 of Law 18/2014 includes the possibility of performing certain flights such as *production and maintenance test flights, demonstration flights not open to the public, flights for research programs, development flights, R&D flights, and safety test flights* with an RPA, provided that certain requirements are met, given that operations must take place “during the daytime and in good visibility meteorological conditions, in uncontrolled airspace, within the visual range of the pilot, or otherwise in an area of air space segregated to the effect and always in areas outside of any clusters of buildings in cities, towns or inhabited places or meetings of people in the open air.

With regard to the starting of the activities, Law 18/2014 establishes a *prior notification regulation* for RPAs weighing less than 25 kg, and *authorization* for RPAs with a mass over 25 kg (Sections 50.6.7 and 8 Law 18/2014)⁴¹. Both the prior communication and the authorization of the scientific or technical works provided for in Art. 50.3 qualifies for the exercise of the activity for an indefinite period, while for special operations it qualifies only the flight, which is always subject to compliance with the requirements and as long as they are maintained (Art. 50.8 Law 18/2014).

⁴⁰ These NOTAMs aim to guarantee safety and correspond to ENAIRE, which is the only provider of aeronautical information services in Spain. An explanatory Guide to the procedure and the application form can be accessed at the following link: <http://www.enaire.es/csee/Satellite/navegacion-areaa/es/Page/1237571561545/NOTAM-drones.html> (September 27, 2016).

⁴¹ The previous communication must be made at least five days before the start of the activity, to the State Agency of Aviation Safety (AESA), and in both cases include the identification data of the operator, aircraft, and pilots, as well as their conditions; the description of the RPA's characteristics; the type of technical or scientific work to be carried out, or the flights, and the characteristics of the operation; the conditions or limitations that will be applied to the operation or flight to ensure safety. Moreover, this should be accompanied by a declaration of responsibility, and, if applicable, by other additional documentation (Art. 50.6 and 7 Law 18/2014).

Moreover, in order to operate with drones is important the compliance with other regulations⁴², and of course, always to guarantee fundamental rights.

4. FUNDAMENTAL RIGHTS PROTECTION IN THE CIVIL USE OF DRONES

With regard to the fundamental rights that may be affected by the use of drones, it is essential to consider that we live in a multi-level system, as we pointed out before, and drone operations are within the scope of application of EU law - although the EU Regulation (EC) No 216/2008 is not a general one and leaves a lot margin for regulation to EU member states - with some interesting consequences.

Certainly, although EU Fundamental Rights are binding for EU member states, not only when they implement EU law but in any case within the scope of EU law (*Åkerberg Fransson*, C-617/10)⁴³, and the application of EU Fundamental Rights standard is binding, they are allowed to apply the national standard when the EU law provides a margin to do so without questioning the primacy of EU law (*Melloni*, C-399/11⁴⁴; and *Åkerberg Fransson*, C-617/10). As it is the case for drone operations.

Therefore, drone operations within the EU regulation must respect and guarantee the regulations for the protection of rights at a European level, in particular the Charter of Fundamental Rights of the European Union⁴⁵, whose Arts. 7 and 8 guarantee the right to respect private and family life, and the right to the protection of personal data, respectively, as well as the implementing legislation, in particular Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data⁴⁶, as well as the new regulations on data protection: the new Data Protection Regulation (which came into force on May 25, 2016 and will be applicable as of May 25, 2018, Art. 99)⁴⁷, and Directive 2016/680 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data by the competent authorities for the purpose of the prevention,

⁴² Law 18/2014 includes some modifications to Law 48/1960, of July 21, on Air Navigation (hereinafter Air Navigation Law) for its adaptation to the RPA (Art. 51 Law 18/2014); including the inclusion of an RPA under the concept of aircraft (Art. 11 Air Navigation Law), and subjecting civil RPAs to its regulation, “whatever its intended purpose except for those used exclusively for recreational or sporting purposes (Art. 150.2 Air Navigation Law), which - with the exception of drones used for tourist and sporting activities which are excluded - will require prior notification or authorization from the State Air Safety Agency in cases where the environment or circumstances in which these activities take place involve special risks, in order to maintain safety in aeronautical and third-party operations, and these RPAs will be subject to an inspection (Article 150.2 Air Navigation Law). Likewise the law itself states that “it does not exempt the operator, who is, in any case, responsible for the aircraft and the operation, from compliance with all other applicable regulations, in particular with respect to the use of radio spectrum, data protection or aerial imaging, or from their liability for damages caused by the operation or aircraft” (Art. 50.1, second paragraph, Law 18/2014).

⁴³ CJEU, C-617/10, *Åkerberg Fransson*.

⁴⁴ CJEU, C-399/11, *Melloni*.

⁴⁵ Without prejudice that these rights must also be guaranteed in accordance with Art. 8 of the European Convention on Human Rights, which recognizes the right to respect for private and family life and at the EU level constitutes a minimum standard of protection.

⁴⁶ Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (OJ, November 23, 1995).

⁴⁷ Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (General Data Protection Regulation) (OJ, May 4, 2016). Available at: <http://eur-lex.europa.eu/legal-content/ES/TXT/PDF/?uri=CELEX:32016R0679&from=ES> (September 27, 2016).

investigation, detection or prosecution of criminal offenses or the execution of criminal sanctions, and to the free movement of such data, repealing Council Framework Decision 2008/977/JHA (which entered into force on 5 May 2016, on the day following its publication but giving Member States until 6 May 2018 for its incorporation into their national legislation, Arts. 63 and 64)⁴⁸.

Nevertheless, the EU regulation on drone operations, as we saw before, leaves for EU member states, the regulation of a lot of activities, in reality the most part of drone operations: a) the use of drones in the *military field* (Art. 1.2. Regulation 216/2008), or drones which have been used in the service of military forces, unless they are of a type for which the Agency has adopted a standard design [Art.4.4 and Annex II d) Regulation 216/2008], which we will not study here; and b) the civilian use of drones for *customs, police or similar operations* (Art. 1.2 Regulation 216/2008); *drones designed or modified for research, for purposes of scientific experimentation* that can be produced in a very limited number [Art. 4.4 and Annex II b) 216/2008]; *drones whose majority, at least 51%, is built by an amateur or a non-profit amateur association, for their own purposes and without any commercial purpose* [Art. 4.4. and Annex II c) Regulation 216/2008], and, *in general, drones with an operational mass not exceeding 150 kg* [Art. 4.4 and Annex II i) Regulation 216/2008].

In these activities, drone operations must respect national fundamental rights protection regulations. In the case of Spain, although Art. 50.1 of Act 18/2014 outlines the regulation on data protection and aerial imaging, it is also true that the use of drones must guarantee any fundamental rights that may be affected, and this necessarily implies respect for the right to honour, personal and family privacy, and self-image (Article 18.1 SC) as well as the right to the protection of personal data (Article 18.4 SC).

Of course, it should not be forgotten that they must be object to interpretation according to Art. 10.2 of the Spanish Constitution in accordance with “the Universal Declaration of Human Rights and international treaties and agreements on the same matters ratified by Spain”, which necessarily includes -among others- the European Convention on Human Rights (Article 8) and The Charter of Fundamental Rights of the European Union (Articles 7 and 8).

We should also take into account the regulations governing the protection of these rights, Organic Law 1/1982, of civil protection of the right to honour, to personal and family privacy and to self-image⁴⁹, the Organic Law on Personal Data Protection (LOPD)⁵⁰ and its Development Regulation⁵¹; and with respect to the security forces and bodies, Organic Law 4/1997 as mentioned above, at least until the approval of the future Regulation, which does include provisions regarding the use of RPA by security forces and bodies.

⁴⁸ Directive 2016/680 of the European Parliament and of the Council, of 27 April 2016, on the protection of individuals with regard to the processing of personal data by competent authorities for the purposes of prevention, investigation, detection or prosecution of criminal offenses or the execution of criminal sanctions, and to the free movement of such data and repealing Council Framework Decision 2008/977/JHA (OJ, May 4, 2016).

⁴⁹ Organic Law 1/1982 of 5 May, on civil protection of the right to honour, personal and family privacy and self-image (BOE 115, May 14, 1982).

⁵⁰ Organic Law 15/1999, of December 13, on the Protection of Personal Data (BOE 298, December 14, 1999).

⁵¹ Royal Decree 1720/2007 of 21 December, which approves the Regulation implementing Organic Law 15/1999, of 13 December, on the protection of personal data (BOE 17, January 19, 2008).

Although some legal analysis has already been carried out on some relevant issues that have arisen for the protection of these fundamental rights in the use of drones or in the face of such use at a domestic level⁵²; it is no less true that much work remains to be done, especially considering that the technologies that drones can match are very diverse and are not limited to cameras for capturing images, although we have not been able to complete this work here.

5. CONCLUSIONS

Although Drone technology has a great future, drones are here right now, we are at the door of the Drone Era.

As we pointed out in the paper, drone is one of the current technological devices with the greatest prospects for use, and it is estimated that last year the drone business mobilized more than 7 million dollars worldwide in the distribution sector, and that this figure would approach 30 million by 2021.

And is particularly in the civil field where its applications, with a broad range of use (commercial, recreation, security), presents the greatest challenges, because we need to guarantee a safe use and fundamental rights protection in the civil use of drones.

However, the actual legal framework reduces its possibilities due to a the temporal nature and the restricted use of these devices, not always base in secure reasons.

Our aim in this paper was to develop an overview on the actual challenges for the civil use of drones, the use of this new technology, at EU level, and a national one, with the focus of Spanish regulation as case example.

The drone technology phenomenon requires a multidisciplinary attention, particularly from the legal perspective. In this area, we are in a situation of temporally in the regulation for several reasons; firstly, the existing regulation at a European Union level (Regulation 216/2008) does not cover the entire scope of drones in the EU, but only when referring to drones weighing over 150 kg, also excluding some types of use, such as military or police use. However, a future European regulation of harmonization is expected to regulate the civilian use of drones, including drones with a weight equal to, or less than, 150 kg.

At a national level, and looking at the Spanish case, we have analysed the current Law 18/2014, which is transitional and pending a future regulation to be approved. The current law only regulates the civil use of RPAs (remotely piloted drones) excluding automated drones. And although it has been initially established to cover all operations using remotely piloted drones (RPAs) in the civil area weighing less than or equal to 150 kg, as well as activities excluded from the European regulation, we have seen that this has not been achieved. However, the future regulation seems to be seeking more comprehensive regulation, although it consciously excludes transport activities, which will necessarily merit regulation in the future.

Furthermore, it is very important to take into account the need to ensure respect for any fundamental rights that may be affected by the use of drones (privacy, image, data protection), and this depending on the level (EU, domestic), and there is a possibility

⁵² See Report 12/2014 in relation to the query raised by a university about the exercise of ARCO rights in the use of “drones”, of the Catalan Data Protection Authority, available at: http://www.apd.cat/media/dictamen/ca_643.pdf%20 (September 27, 2016); as well as the work by Cristina Pauner Chulvi (PAUNER CHULVI, 2016).

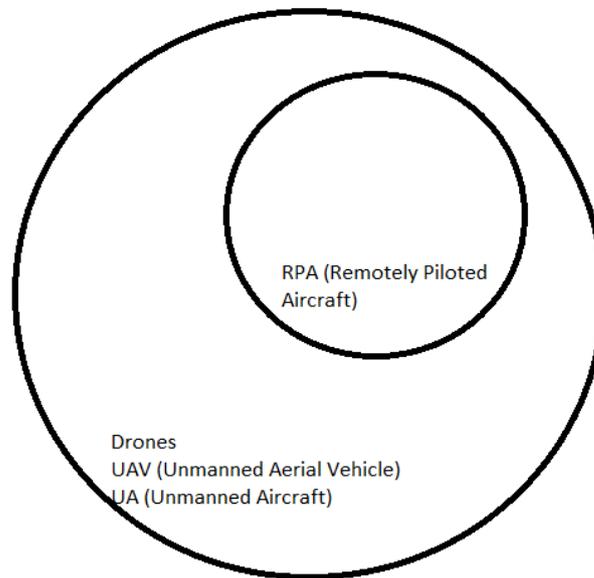
that the impact may vary -and it likely will- as the technology these aircraft can incorporate progresses and as such it will be necessary to analyse these as any advances are incorporated.

Nonetheless, the reality is that we live in a provisional situation as we are waiting for a new and more harmonized

EU regulation and the new Spanish one too. We hope to study soon the new regulation⁵³.

6. FIGURES

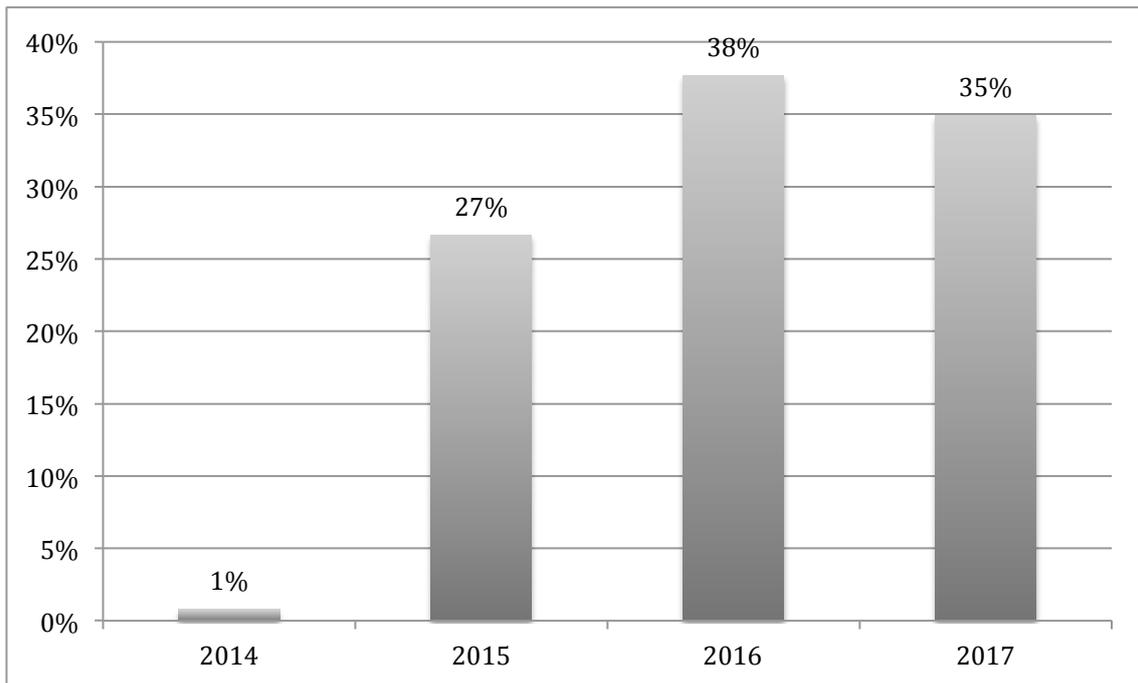
Figure 1. Explanatory drawing of the terms in relation to the drone categories, UAV or UA, and RPA



Source: own elaboration.

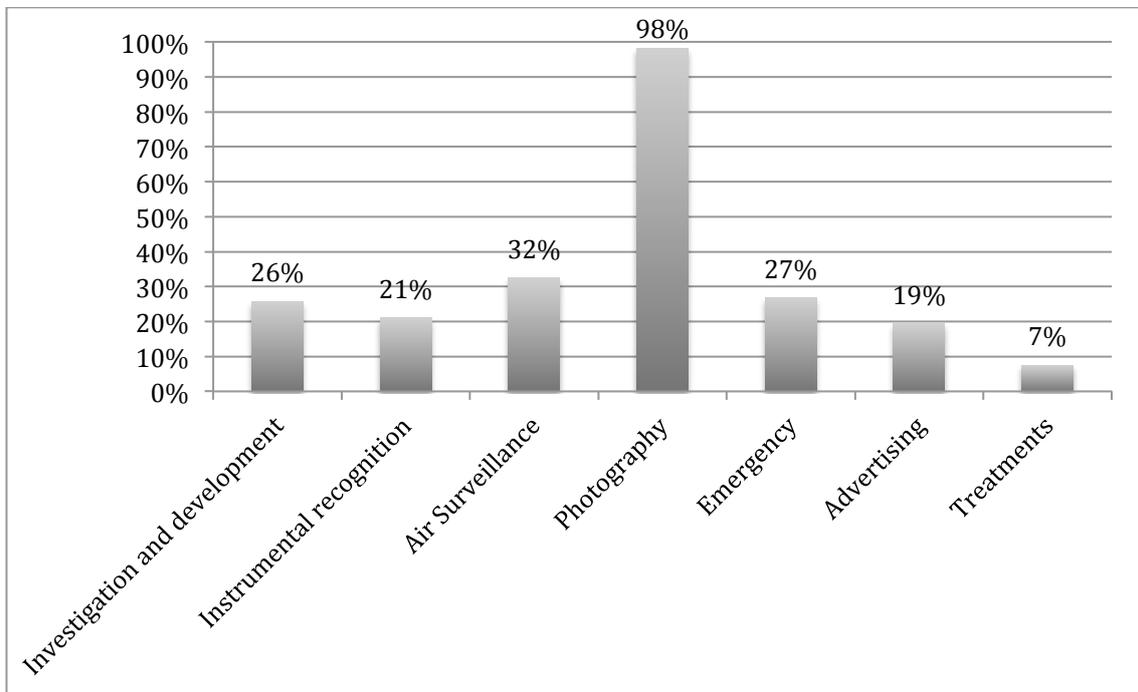
⁵³ If a man thought that the actual regulations are to stay much longer, he would tell himself that “*We are no longer alone, waiting for the night, waiting for Godot*”.

Figure 2. Drone operators per year of registration⁵⁴



Source. Own elaboration based on AESA data

Figure 3. Drone operators per registered activity⁵⁵



Source. Own elaboration based on AESA data

⁵⁴ Estimated from a sample of 30% of operators registered on September 1, 2017 by the AESA.

⁵⁵ Estimated from a sample of 30% of operators registered on September 1, 2017 by the AESA.

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