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# Drones: military weapons, surveillance or mapping tools for environmental monitoring? The need for legal framework is required

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## Abstract

Over the past few years the application of drones has shifted from traditional to more modern. Drones can now be used in the public and private sectors, in the fields of commerce, agriculture, environment, energy and surveillance. Inevitably, such a wide spread use of drones can bring alarming concerns, such as privacy protection, security, safety, insurance liability and accountability where drones are misused. The growing industry of drones is not balanced by an exhaustive regulation. The main purpose of this paper is to highlight any legal (positive and negative) implications and consequences for an ever-expanding application and misuse of drones.

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## 1. Introduction: from military to civilian uses

Over the past few years, the application of drones (common name for UASs: Unmanned Aircraft Systems, UAVs: Unmanned Aerial Vehicles or RPASs: Remotely Piloted Aircraft Systems), has shifted from traditional to more modern. Drones were originally developed for military purposes and are deployed in high-risk military areas; technology is improving and becoming more affordable<sup>2</sup>. A growing demand for the use of drones in the military sector has, recently, spread into civilian contexts.

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<sup>2</sup> House of Commons Library Standard Note Unmanned Aerial Vehicles (drones): an introduction. SN06493 2013; <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/POST-PN-479>

Indeed drones can now be possessed by private parties. They come in a variety of shapes and sizes and serve different purposes. New commercial and environmental uses of drones are increasingly common; as well as use for recreation and sport purposes: small size drones are increasingly cheaper and more popular. The Convention on International Civil Aviation (the Chicago Convention) of 1944 established safety rules for all aircraft included unmanned aircraft. Article 3 of the Convention provides that the Convention applies only to civil aircraft and not to state aircraft. State aircraft are defined as being aircraft used in military, customs and police services. No state aircraft may fly over the territory of another state without authorization. Contracting states undertake when issuing regulations for their state aircraft that they will have due regard for the safety of navigation of civil aircraft. Article 8 of the Chicago Convention<sup>3</sup> prohibits all unmanned aircraft from flying over another state's territory without its permission and also requires that each contracting state undertake to ensure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so controlled as to obviate danger to civil aircraft. Annexes 2, 7 and 13 of the Chicago Convention were amended to accommodate drones intended to be used by international civil aviation<sup>4</sup>. Warfare, in recent years, has been conducted very often by drones, which are becoming indispensable; they are armed with weapons to drop missiles on military targets. The advantage is clear: there is no pilot on board to be captured<sup>5</sup>, these operations cost less than the traditional ones and drones can fly to risky areas where a normal plane might not be able to go. Drone strikes raise an international and human rights debate which involves important issues such as international peace and security and the territorial integrity and sovereignty of states. These drones operations disregard transparency and accountability<sup>6</sup> and involve serious problems of protection of human rights and fundamental freedoms since suspect terrorists are killed without a trial, these executions being extrajudicial, summary or arbitrary<sup>7</sup>. The protection of civilians is a thorny issue<sup>8</sup>. A recent analysis by human-rights group Reprieve revealed that US drone strikes intending to target 41 men had killed 1,147 people<sup>9</sup>. Drones are of paramount importance in this war of terror and international law lacks instruments to deal with this kind of operations. Other than the traditional military uses, recently, many versatile uses of drones (since they can now be possessed by private parties and used in the fields of commerce, agriculture, scientific research, environment) are growing within different emerging sectors: surveillance, photography, videography, emergency services, critical infrastructure inspection, coastal security, search and rescue, filmmaking, transmission of meteorological data, delivery<sup>10</sup>, aerial photography, monitoring mechanism for disaster events<sup>11</sup> or illegal resource extraction. Indeed drones can be used to drop medicines in remote villages<sup>12</sup>, to survey farm crops, to detect and count protected wildlife, to monitor and protect natural resources, to collect data in inaccessible regions, and to study wildlife and polar ice melting. A new emerging sector where drones can be very useful and lucrative is the energy industry. Sensor-equipped drones fitted out with a high-resolution camera, can in an easy and low cost way, monitor power lines, roads, storage tanks, buildings and bridges, inspect cooling towers and oil and gas pipelines, check wind turbines and solar panels, respond to oil spills, and fly over nuclear power plants. All these important services are offered without having to send a team of workers which involve high costs; the service offered by drones is quicker and cheaper. Using a drone instead than a helicopter reduces not only costs but also fuel use and emissions with benefits for the environment and also reduces noise<sup>13</sup>. In the US, the Federal Aviation Administration (FAA), the regulatory agency governing US airspace, allows the use of drones in the energy sector since this sector involves

<sup>3</sup> Article 8 Chicago Convention: "Pilotless aircraft. No aircraft capable of being flown without a pilot aircraft shall be flown without a pilot over the territory of a contracting State without special authorization by that State and in accordance with the terms of such authorization. Each contracting State undertakes to insure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so controlled as to obviate danger to civil aircraft"; see [http://www.icao.int/publications/Documents/7300\\_orig.pdf](http://www.icao.int/publications/Documents/7300_orig.pdf)

<sup>4</sup> See Bernauw, K., 2016. Drones the emerging era of unmanned civil aviation, *Zhornik PFZ*, 66 (2-3) 236.

<sup>5</sup> A Jordanian pilot was captured in 2015 by Islamic State and burned alive.

<sup>6</sup> <http://www.reprieve.org.uk/case-study/drone-strikes/>

<sup>7</sup> The CIA and U.S. Special Operations forces launched, at the end of 2015, a secret drone campaign targeted to kill Islamic State terrorism suspects in Syria; [https://www.washingtonpost.com/world/national-security/us-launches-secret-drone-campaign-to-hunt-islamic-state-leaders-in-syria/2015/09/01/723b3e04-5033-11e5-933e-7d06c647a395\\_story.html](https://www.washingtonpost.com/world/national-security/us-launches-secret-drone-campaign-to-hunt-islamic-state-leaders-in-syria/2015/09/01/723b3e04-5033-11e5-933e-7d06c647a395_story.html)

<sup>8</sup> <http://www.theguardian.com/world/2015/apr/23/us-drone-strike-killed-american-italian-al-qaida>

<sup>9</sup> <http://www.theguardian.com/world/2015/apr/23/us-drone-strike-killed-american-italian-al-qaida>

<sup>10</sup> Amazon plans to deliver packages through drones.

<sup>11</sup> [http://www.huffingtonpost.com/2015/05/07/nepal-earthquake-drones\\_n\\_7232764.html](http://www.huffingtonpost.com/2015/05/07/nepal-earthquake-drones_n_7232764.html); Drones are a crucial tool for humanitarian response; they were first used after Haiti's 2010 earthquake and the 2013 typhoon in the Philippines. During the earthquake in Nepal of 25<sup>th</sup> of April 2015 drones were sent to remote areas to map and assess destruction in order to speed up search-and-rescue operations.

<sup>12</sup> [http://www.huffingtonpost.com/2015/05/07/nepal-earthquake-drones\\_n\\_7232764.html](http://www.huffingtonpost.com/2015/05/07/nepal-earthquake-drones_n_7232764.html); drones were used in test runs to deliver saliva samples for tuberculosis testing in Papua New Guinea and to send antibiotics to remote villages in Bhutan.

<sup>13</sup> [http://ec.europa.eu/clima/policies/package/index\\_en.htm](http://ec.europa.eu/clima/policies/package/index_en.htm)

fewer safety issues as energy devices are located especially in low population areas. Indeed some companies received approval from the federal government to operate drones for commercial purposes and also for the oil and gas industry<sup>14</sup>. In the UK BP surveyed a cooling tower with a drone<sup>15</sup>. It is easier, safer and cheaper to send a drone into a remote location rather than a survey crew: it is an effective cost-cutting revolution. In addition some inspections can be dangerous for human beings; consequently, drones are useful in order to avoid loss of lives. The new untapped potential for drones includes producing new forms of energy generation especially wind generation and solar power generation. Drones connected to the ground like a kite can now produce wind energy in a cheaper way than normal turbines and they have the advantage of being able to fly at high altitude in order to reach stronger winds and produce more energy<sup>16</sup>. In this way their devices are portable, they can fly over the oceans where often winds are stronger than on the land and they do not require supporting structure. Wind drones<sup>17</sup> instead of wind turbines indeed offer several benefits including the fact that wind turbines have a negative impact on the landscape. The main problem is to integrate this new technology into airspace in a safe manner to avoid collisions with other aircraft. Certainly, there is a growing demand for the use of drones in civilian contexts; government authorities (such as law enforcement agencies), corporations and private individuals have identified the economic potentials and all the advantages that drones can offer to society in terms of new services and new jobs.

### 1.1. Drones in the Public Sector

A growing expansion in drone use is expected by government agencies, for example police and fire departments. Common public uses include law enforcement, surveillance and monitoring of individuals, infrastructure protection, targeted criminal investigation, public security, public event monitoring, interception of communications and of electronic devices, border patrol, firefighting, disaster relief, military training, search and rescue. For example, Brazilian Environmental Police uses drones to monitor deforestation in the Amazon, deter poachers and discover illegal mining operation. Another new recent use of drones is related to the emergency of migrants in the Mediterranean Sea: the EU is considering using drones to monitor borders and spot illegal incoming migrants; this new type of maritime surveillance can create safety problems because also manned aircraft are normally flying in the same airspace. All these applications involve concerns about privacy protection, security, insurance liability and accountability. Indeed misuses of drones by the public administration can create unregulated surveillance and invasion of privacy since information can be collected without consent and without balancing the public interest with other interests. It is necessary to protect these technological systems from intentional and even unintentional interferences. A question arises where drones belong to the public administration and have public uses: do we have to consider the public administration when using drones as an air carrier? Are the set of rules applicable, for example, to British Airways valid also for a public administration using drones? Which rules can apply to a public administration when using drones? Are the rules different than in the private sector? And also is the opposite true: must all rules applicable to the public administration apply also to government agencies using drones? For example, in the US, does the Freedom of Information Act (hereinafter called the FOIA) apply? Recently the Federal Aviation Administration (FAA) posted a large database showing the city, state and zip code of each registered drone owner. The FAA did not post the names and street addresses of registered owners because the data was exempt from disclosure under a FOIA exemption due to personal privacy concerns. The new uses of drones involve serious legal issues.

## 2. Legislation on Drones

The expansion of drones is not balanced by an exhaustive regulation. Due to a lack of a single harmonised international instrument, a comparative analysis of different levels of legal control is the most appropriate method to be employed herein. Removing the pilot from the aircraft raises important technical issues, the extent of which has been recently studied<sup>18</sup>. Drones are

<sup>14</sup> <http://www.energyfuse.org/drones-could-become-commonplace-in-the-oil-industry/>

<sup>15</sup> <http://www.energyfuse.org/drones-could-become-commonplace-in-the-oil-industry/>

<sup>16</sup> <http://lanyrd.com/2015/interdrone/sdmzcm/>

<sup>17</sup> <http://lanyrd.com/2015/interdrone/sdmzcm/>

<sup>18</sup> <http://ec.europa.eu/transport/modes/air/news/doc/2015-03-06-drones/2015-03-06-riga-declaration-drones.pdf>; See Bernauw, K., 2016. Drones the emerging era of unmanned civil aviation, *Zbornik PFZ*, 66 (2-3) 226.

part of the aviation system and must be integrated guaranteeing improved safety and efficiency<sup>19</sup>. A robust regulatory framework must be developed as soon as possible. The International Civil Aviation Organization (ICAO) published Circular 328 in 2011 as a first step in order to regulate drones<sup>20</sup>. ICAO aims, in addressing unmanned aviation, to provide the fundamental international regulatory framework through Standards and Recommended Practices (SARPs), with supporting Procedures for Air Navigation Services (PANS) and guidance material<sup>21</sup>. The ICAO published a Manual in 2015<sup>22</sup>. A key point is the difference between the person flying a drone from a ground (the “remote pilot”) and the “operator” who takes responsibility for all operations: maintenance, qualification of the remote pilot, authorizations and procedures, insurance, liability and privacy protection. This point is underlined also in the Riga Declaration<sup>23</sup>. The ICAO plans to develop new safety standards for 2018 but it is considering also helping countries to draft domestic legislation. Indeed common global safety standards, such as licensing and pilot qualifications, are compulsory and once approved, will guide ICAO’s 191 member states in setting their domestic regulations<sup>24</sup>. Existing manned aviation provisions can, at the moment, cover the gaps. Drones provide material for new legal arguments: how high off the ground do you need to go before it is no longer considered your property? Should legislation govern what you fly in your garden<sup>25</sup>?

### 2.1. EU Legislation

In Europe several countries have already promulgated legislation on civil drones. Many Member States already have a regulatory system regarding civil drones with an operating mass of 150 kg or less but the regulatory framework is fragmented. Conditions for mutual recognition between EU countries have not been reached as to legislation on such matters as mass, operational and altitude limits. An EU regulatory framework can help to ensure a true European single market for aerial services; the new standards must cover safety, security, privacy, data protection, insurance and liability. The responsibility for civil drones over 150 kg is left to the European Aviation Safety Agency (EASA) and they fall under Regulation 216/2008/EC. The Commission is revising EASA’s Basic Regulation in order to regulate all drones including low and medium risk drones. Toy drones, capable of flying but not equipped with internal combustion engine, are subject to Directive 2009/48/EC<sup>26</sup> on safety of toys. The EP’s Committee on Transport and Tourism calls for proportionate and risk-based rules<sup>27</sup>. Safety requirements are in relation to the risk; the greater the risk the higher the requirements. The risks of drones’ operations do not depend on the mass of the drone. Drones are aircraft and consequently have to comply with aviation safety rules. International Rules (UN)<sup>28</sup> forbid unmanned aircraft to fly unless the national competent authorities issue a specific individual authorization. The EU has plans for a new Directive on this topic. The European Commission is collecting data and proposals from member states. The EU wants to adopt a legal framework addressing safety and security concerns. On the 6<sup>th</sup> of March 2015 in Riga “the Riga Declaration on remotely piloted aircraft, framing the future of aviation” was adopted. By the end of 2016 a Directive is expected for publication. In Riga some principles that will guide the coming EU legislation were established: drones need to be treated as new types of aircraft with proportionate rules based on the risk of each operation. The categories are: Open (low risk and consequently minimal rules), Specific (medium risk, so each risk must be analyzed via a safety risk assessment, and authorisation given by a National Aviation Authority) and Certified (higher risk and consequently the rules are similar to manned aircraft)<sup>29</sup>. Safety rules, including on remote pilot and operator qualifications, should be developed at the European level by the European Aviation Safety

<sup>19</sup> [http://www.icao.int/Meetings/UAS/Documents/Circular%20328\\_en.pdf](http://www.icao.int/Meetings/UAS/Documents/Circular%20328_en.pdf)

<sup>20</sup> <https://easa.europa.eu/unmanned-aircraft-systems-uas-and-remotely-piloted-aircraft-systems-rpas>

<sup>21</sup> [http://www.icao.int/Meetings/UAS/Documents/Circular%20328\\_en.pdf](http://www.icao.int/Meetings/UAS/Documents/Circular%20328_en.pdf)

<sup>22</sup> [http://www.uasvision.com/2015/01/07/icao-to-publish-manual-on-rpas-in-march-2015/;](http://www.uasvision.com/2015/01/07/icao-to-publish-manual-on-rpas-in-march-2015/) <http://www.wyvernlted.com/wp-content/uploads/2015/05/ICAO-10019-RPAS.pdf>

<sup>23</sup> <http://ec.europa.eu/transport/modes/air/news/doc/2015-03-06-drones/2015-03-06-riga-declaration-drones.pdf>

<sup>24</sup> <http://www.ainonline.com/aviation-news/aerospace/2015-01-06/icao-panel-will-recommend-first-uav-standards-2018>

<sup>25</sup> [www.bbc.com/news/technology-36584515](http://www.bbc.com/news/technology-36584515), a case in Kentucky is pondering vertical property ownership

<sup>26</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:170:0001:0037:en:PDF>

<sup>27</sup> [http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/571305/EPRS\\_BRI\(2015\)571305\\_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/BRIE/2015/571305/EPRS_BRI(2015)571305_EN.pdf)

<sup>28</sup> Article 8 Chicago Convention: “Pilotless aircraft. No aircraft capable of being flown without a pilot shall be flown without a pilot over the territory of a contracting State without special authorization by that State and in accordance with the terms of such authorization. Each contracting State undertakes to insure that the flight of such aircraft without a pilot in regions open to civil aircraft shall be so controlled as to obviate danger to civil aircraft”; see [http://www.icao.int/publications/Documents/7300\\_orig.pdf](http://www.icao.int/publications/Documents/7300_orig.pdf)

<sup>29</sup> <http://ec.europa.eu/transport/modes/air/news/doc/2015-03-06-drones/2015-03-06-riga-declaration-drones.pdf>

Agency. EU Member States' legislation<sup>30</sup>, technologies and standards need to be introduced for the full integration of drones in the European airspace<sup>31</sup>. Respect for citizens' fundamental rights (for example the right to privacy) must be guaranteed in order also to avoid security risks<sup>32</sup>, and place responsibility on the operator of a drone for its use<sup>33</sup>. Indeed this last principle is very important to underline the difference between pilot and operator. On the ground there is a "remote pilot" but still a "pilot" who is different from the "operator". For the Riga declaration the operator of a drone is responsible for its use and consequently takes responsibility for all operations: maintenance, qualification of the remote pilot, authorizations and procedures, insurance, liability and privacy protection<sup>34</sup>. If an accident happens Member States must monitor the compensation for victims, liability regime and insurance. Those responsible for accidents must be identifiable and able to meet their financial obligations. It is also important to establish a fund to cover victims of accidents caused by uninsured drone users<sup>35</sup>, since this new important technology must not jeopardize citizens' fundamental rights. Article 7 of Regulation 785/2004/EC<sup>36</sup> on insurance requirements for air carriers and aircraft operators was established for manned aircraft where mass (500 kg) determines the minimum amount of third party insurance. Consequently, in order to include drones, amendments are required. The European Aviation Safety Agency (EASA) published a proposed regulatory roadmap. EU legislation is useful also to allow companies to easily sell drones in other European countries. By the end of 2016 EASA will draft regulation on civil drone use on behalf of the European Commission.

## 2.2. US legislation: FAA rules

In 2012 the American Congress gave the Federal Aviation Administration (FAA) until 2015 to develop rules for military, commercial and privately owned drones to operate in US airspace. The FAA missed the deadline of 2015 for a complete set of rules regarding drones and it will be released by 2016. The US has one of the most complex and busiest airspace in the world, and consequently, introducing drones into the US airspace is challenging for the FAA<sup>37</sup>. The US Administration is committed to maintain the current level of aviation safety promoting the responsible use of this new emerging technology, safeguarding, at the same time, personal privacy and addressing concerns about accountability. FAA rules are designed to exploit the economic potential of drones without jeopardizing aviation safety since all operations conducted in civil airspace must meet minimum levels of safety. From a legal point of view there are two possible approaches regarding regulation of drones: the federal government can be responsible to regulate drones; or states can be responsible to regulate with the federal government being responsible to give general rules and uniformity to states' regulations. According to FAA rules, public UAS operators can self-certify, whereas, civil operators are certified by the FAA. Public expectation for a safe aviation environment requires high standards. The United States Government has exclusive sovereignty of airspace of the United States and the FAA prescribes air traffic regulations<sup>38</sup>. A model aircraft for recreation or hobby does not need approval from the FAA if it is used not for business purposes. It should be flown a sufficient distance from airshows, sporting events<sup>39</sup>, populated areas and full scale aircraft, should be kept within the visual line of sight of the operator and should weigh less than 55 lbs. The parameters of a model aircraft operation are outlined in Section 336 of Public Law 112-95 (the FAA Modernization and Reform Act of 2012). Any flight outside these parameters always requires FAA authorization<sup>40</sup>. Approval from the FAA is compulsory in order to fly a drone for business purposes. It is obtained through a Special Airworthiness Certificate, an Airworthiness Certificate in the Restricted Category, or a Petition for Exemption with a civil Certificate of Waiver or Authorization (COA) for civil aircraft to perform commercial operations in low-risk areas<sup>41</sup>. Any company willing to use a drone has to obtain a special exemption from the FAA (Section 333 waiver). In March 2015 the FAA adopted an interim policy that grants Section 333 waiver holders free use of

<sup>30</sup> <http://ec.europa.eu/transport/modes/air/news/doc/2015-03-06-drones/2015-03-06-riga-declaration-drones.pdf>, cooperation with JARUS (Joint Authorities for Rulemaking of Unmanned Systems) and ICAO is of paramount importance in order to have globalized and harmonised set of rules. EASA has a key role.

<sup>31</sup> <http://ec.europa.eu/transport/modes/air/news/doc/2015-03-06-drones/2015-03-06-riga-declaration-drones.pdf>

<sup>32</sup> <http://ec.europa.eu/transport/modes/air/news/doc/2015-03-06-drones/2015-03-06-riga-declaration-drones.pdf>

<sup>33</sup> <http://ec.europa.eu/transport/modes/air/news/doc/2015-03-06-drones/2015-03-06-riga-declaration-drones.pdf>

<sup>34</sup> <http://www.thedigitalpost.eu/2015/channel-digital-single-market/drones-invasion-how-the-eu-is-coping-with-it>

<sup>35</sup> <http://ec.europa.eu/transport/modes/air/news/doc/2015-03-06-drones/2015-03-06-riga-declaration-drones.pdf>

<sup>36</sup> <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:138:0001:0006:EN:PDF>

<sup>37</sup> [www.faa.gov/uas](http://www.faa.gov/uas)

<sup>38</sup> [www.faa.gov/uas](http://www.faa.gov/uas)

<sup>39</sup> In September 2015, a small drone flew over Louis Armstrong Stadium, during the US Open tennis match between the winner Flavia Pennetta and Monica Niculescu, creating chaos and security concerns when it crashed into the stands. Cities visited by the Pope during his visit to the US in September 2015 were no fly zones.

<sup>40</sup> [www.faa.gov/uas](http://www.faa.gov/uas)

<sup>41</sup> [www.faa.gov/uas](http://www.faa.gov/uas)

drones below 200 feet of elevation<sup>42</sup>. News media need a FAA authorization. Under Section 333 the FAA decides on a case by case basis. This FAA case-by-case approach created an “undue burden”<sup>43</sup>. Public Aircraft operations are limited by federal statute to certain government operations within US airspace, their status depending on ownership, operator and purpose of the flight<sup>44</sup>. For public aircraft operations the FAA issues a Certificate of Waiver or Authorization (COA) for a specific period including specific safety provisions in order not to jeopardize the safety of other aviation operations. The purpose of the COA is to guarantee parameters that ensure a level of safety equivalent to manned aircraft<sup>45</sup>. A civil aircraft, which is different from a public aircraft, since it does not meet all criteria mentioned above, must be flown in accordance with all FAA regulations applicable. Two forms of FAA authorization to fly civil UASs are available: a Section 333 Exemption and a COA (this method can be used for commercial operations in low-risk and controlled environments), and a Special Airworthiness Certificate (SAC)<sup>46</sup>. In February 2016 FAA required that all drones be registered online. In June 2016 it amended its regulations to adopt specific rules for the operation of small unmanned aircraft systems in the national airspace by allowing a broad range of businesses to use drones under 55 pounds in weight but with several restrictions. These changes address the classification of drones, certification of remote pilots and operational limitations. The advisory circular released on the 21<sup>st</sup> of June 2016 provided guidance for conducting drone operations in the national airspace in accordance with Title 14 of the Code of Regulations (14 CFR) part. 107<sup>47</sup>. These new Rules will be effective on the 29<sup>th</sup> of August 2016 and will create new opportunities for business and government to use drones, opening pathways towards fully integrating UASs into the nation’s airspace<sup>48</sup>. The new rules for non-hobbyist small unmanned aircraft operations cover several commercial uses for drones weighing less than 55 pounds but also prescribe several restrictions: the drones must be operated by a pilot who has passed a written test and is at least 16 years old or be directly supervised by someone with such a certificate, and can only be flown below 400 feet, during the day<sup>49</sup> and at least five miles away from airports. The pilot must also maintain a “visual line of sight”. The new regulations also address height and speed restriction and other operational limits. These rules, for now, make delivering packages unfeasible, stopping all efforts of Amazon and Google to achieve this. The new rules require that any drone-related incident that results in at least \$ 500 worth of damage or causes serious injury be reported to the FAA within 10 days<sup>50</sup>. Also FAA rules establish a risk-based federal approach for operating drones nationwide that balances the need to deploy this new valuable technology with public safety. The FAA is offering a process to waive some restrictions if you can show that your proposed operation can be safely conducted under a waiver<sup>51</sup>. Privacy violations or aerial trespass are not regulated under federal law; however the FAA encourages all drone pilots to check local and state laws before gathering data and information.

### 3. Privacy

The second part of this paper focuses on a critical examination of detrimental implications of the private misuse of drones and reveals the vulnerability of private information in what this author terms a “selfie era”. This part will also discuss ways in which the existing EU (and UK) legislation provides individuals with protection of their rights to privacy, and identify any deficits in the current legislative framework. Drones are one of the end products of growing popularity of video surveillance technology; that is to say drones can collect, store, and disseminate a large amount of data including personal data (photographic images and video recordings of living individuals). Now that drones have become very accessible and popular amongst people for their own leisure purposes, this key feature of drones has led to numerous alarming problems. Needless to say, a drone *per se* seems not to be a problem; the problem is the fact the drone can be unlawfully and unethically misused by way of collecting, storing personal data with a view to publication of such. The advanced technology has provided a forum for those who wish to take an unfair advantage of it. One of the consequences is that an individual’s right to privacy is now in danger of violation.

<sup>42</sup> <http://www.energyfuse.org/drones-could-become-commonplace-in-the-oil-industry/>

<sup>43</sup> Paul Voss of Smith College in Northampton, Massachusetts.

<sup>44</sup> [www.faa.gov/uas](http://www.faa.gov/uas)

<sup>45</sup> [www.faa.gov/uas](http://www.faa.gov/uas)

<sup>46</sup> The Department of Transportation’s Federal Aviation Administration proposed a framework of regulations that would allow the use of small unmanned aircraft systems (UASs). The FAA proposed safety rules for small UASs (under 55 pounds in weight) conducting non-recreational operations.

<sup>47</sup> [https://www.faa.gov/regulations\\_policies/advisory\\_circulars/index.cfm/go/document.information/documentID/1019962;](https://www.faa.gov/regulations_policies/advisory_circulars/index.cfm/go/document.information/documentID/1019962;)

<sup>48</sup> [http://www.faa.gov/uas/media/ac\\_107-2\\_afs-1\\_signed.pdf](http://www.faa.gov/uas/media/ac_107-2_afs-1_signed.pdf)

<sup>49</sup> [https://www.faa.gov/news/press\\_releases/news\\_story.cfm?newsId=20515](https://www.faa.gov/news/press_releases/news_story.cfm?newsId=20515)

<sup>50</sup> During twilight if the drone has anti-collision lights.

<sup>51</sup> <http://arstechnica.com/tech-policy/2016/06/new-faa-drone-rules-require-pilot-certificate/>

<sup>51</sup> [www.faa.gov/news/press\\_releases](http://www.faa.gov/news/press_releases)

### 3.1. Notion of protecting the individual's privacy and private information

Recently, the EU judiciary has moved forward (arguably) to recognise a new emerging aspect of 'right to privacy' which is a 'right to be forgotten' and a 'right to erase the personal data'<sup>52</sup> from the internet. This particular right relates to one of the functions of the internet – the archiving function. Once a piece of information has been made available *via* the internet, it remains accessible for the unlimited period of time through any search engines. This function causes an adverse effect where the particular information is likely to harm or lower the individual's reputation. This point was the heart of argument in *Google Spain*<sup>53</sup>, in which the Court of Justice positively referred to the term 'right to be forgotten'<sup>54</sup>. Although the CJEU did not actively create a *general* right to be forgotten<sup>55</sup>, practice has now been informed to ensure observance of this right. As was briefly mentioned, since technology keeps progressing in an unexpectedly fast pace, as a result, any situations where the rights to privacy can be violated become more diversified. It is, thus, important for us to visit and examine how drone technology can have an adverse impact on protecting our rights to privacy. For the argument's sake, the term 'privacy' in this part is employed to indicate the private information which can be collected and stored by private use of drones by private parties. The discussion of public uses has been covered in a previous section. The terms 'information' and 'data' can be used interchangeably. In this section, the author will explore the current legal framework as to how the right to privacy online can be protected and will examine its efficacy. By way of background, the legal framework relating to the protection of personal data includes art 8 of the EU Charter of Fundamental rights; art 16 of the Treaty of Functioning of European Union (TFEU); and art 8 of the European Convention on Human Rights (ECHR) (which grants the right to respect for family and private life, but does not state the protection of 'personal data' unlike the EU Charter or the TFEU).

### 3.2. Recent Discussion

According to the House of Lords Report entitled *Civilian Use of Drones in the EU*<sup>56</sup> there is a "chicken and egg problem"<sup>57</sup> that is to say "...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 validation"<sup>58</sup>. This report confirms the point made earlier in this part, that the current regulatory framework is not sufficiently flexible to accommodate the possible but unexpected changes which may result from future technology. In the view of the author, it is particularly necessary for law to be able to "play with" unforeseeable future led by the power of innovation. The House of Lords Report also makes the important point that the privacy violation caused by the misuse of data collected by the inappropriate use of the drones is considered to be the domain of the EU Data Protection Directive<sup>59</sup> and therefore, the Data Protection Act (herein after the DPA)<sup>60</sup>. Furthermore, the Report commends the EU as a legislator body for having "a well-established competence"<sup>61</sup> in relation to data protection [by virtue of the EU Data Protection Directive]. The Report explains that "the EU Data Protection Directive provides that Members States may restrict the scope of the obligations contained in the Directive for reasons of national or public security, defence, or the investigation of criminal offences. Moreover, the Directive does not apply to the processing of data by individuals in the course of purely personal or household activities. However, the latter exemption no longer applies if data collected in a personal capacity are published and publicly accessible online"<sup>62</sup>. The Directive therefore only applies to users of commercial drones, and personal and/or private users, such as hobbyists are exempt from the regulatory subject matter. As a result, regrettably, the data protection law is not applicable here *anyway*. The Report states that the data collected by drones ought

<sup>52</sup> *Google Spain SL v Agencia Espanola de Proteccion de Datos (AEPD)* (C-131/12) [2014] ECDR 16 (hereinafter *Google Spain*)

<sup>53</sup> *Google Spain* (C-131/12) [2014] ECDR 16.

<sup>54</sup> *Google Spain* (C-131/12) [2014] ECDR 16.

<sup>56</sup> <http://www.publications.parliament.uk/pa/ld201415/ldselect/ldecom/122/122.pdf>

<sup>57</sup> See Report on Civilian Use of Drones para 133.

<sup>58</sup> See Report on Civilian Use of Drones para 133.

<sup>59</sup> 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. Official Journal L 281 , 23/11/1995 P. 0031 - 0050

<sup>60</sup> Data Protection Act 1988 c.29.

<sup>61</sup> See Report on Civilian Use of Drones, para 160.

<sup>62</sup> See Report on Civilian Use of Drones, para 161.

to be treated as if collected by the CCTV<sup>63</sup>. In this sense, the private users of drones with camera and video recording devices would have to follow the CCTV Code of Practice<sup>64</sup> issued by the ICO (Information Commissioner's Office). When drones which weigh less than 20 kg (hereinafter called ">20kg drones") are used in a more professional way, which might include "paparazzi drones", then the user of the drones might be required to comply with the UK DPA. Since interpreting whether or not the use of a drone in question is professional is difficult, this is not of help in preventing any misuse of drones with cameras from occurring.

#### 4. Data Protection Law: Current Legal Framework

This section explores a number of legal platforms available under the EU and UK regimes to regulate the misuse of private data collected by drones. The author limits the scope of arguments to the private misuse of drones with cameras. By way of background, a brief overview of the legal framework which regulates use of drones in a broader sense will now be provided. There is EU Regulation No. 216/2008, which regulates drones that weighs over 150kg<sup>65</sup>. If drones weigh less than 150kg, their use is regulated at the national level. For example, in the UK, the relevant regulatory body is the CAA (Civil Aviation Authority), which regulates use of drones which weigh less than 150kg. Interestingly >20kg drones are dealt with differently. Articles 166 and 167 of the Air Navigation Order 2009<sup>66</sup> states that >20kg drones are outside regulation on the condition that these can only fly to a maximum height of 400ft, and a maximum distance of 500m. In July 2015, the CAA launched a 'Dronecode' which provides a "list of tips that will ensure recreational users can enjoy their drone without posing any risk to aircraft and other airspace users<sup>67</sup>. Therefore, owners of >20kg drones enjoys a regulation free zone. It is clear that under both EU and UK legislation >20kg drones with camera shall be subject to the data protection law regime. In the UK, the EU Data Protection Directive (95/46/EC), has been incorporated into the UK national law by enacting the Data Protection Act 1998 (hereinafter called the DPA). Moreover, there is a very recent remarkable change in attitude of protecting privacy, which has a great impact on an interpretation of the DPA<sup>68</sup>. The purpose of the EU Data Protection Directive 95/46/EC is two-fold: (i) the Directive facilitates free movement of data within the EU<sup>69</sup>; (ii) it creates the individual rights including protection of privacy, and transparency of data<sup>70</sup>. In other words, the law empowers the individual<sup>71</sup> and facilitates a smooth movement of personal data within the EU member states<sup>72</sup>, though there are some exceptions. The DPA is intended to ensure the privacy of the data subject, whose personal data is collected. The subject matter of the DPA is mainly personal data, including the information that can identify a living individual<sup>73</sup> and sensitive data<sup>74</sup>, such as ethnicity<sup>75</sup>, political opinion<sup>76</sup>, sexual life<sup>77</sup> and so on<sup>78</sup>.

The data protection law regulates the data controller, who is in a position to decide the purposes and the manner of holding and processing the data<sup>79</sup> in the process of them collecting, recording and processing personal data. In addition, an important update needs to be made here. The General Data Protection Regulation, which has replaced 95/46/EC, came into force on 25<sup>th</sup> May, 2016. The EU Member States have to transpose it into their national laws by 6<sup>th</sup> May 2018, and therefore, the new Regulation is likely to reshape the landscape of the EU data protection law regime. Although some developments can be

<sup>63</sup> See Report on Civilian Use of Drones, para 160.

<sup>64</sup> The full text of the Code is available at <https://ico.org.uk/media/for-organisations/documents/1542/cctv-code-of-practice.pdf>. [last accessed on 25/09/15].

<sup>65</sup> Regulation (EC) No 216/2008 on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, and repealing Council Directive 91/670/EEC, Regulation (EC) No 1592/2002 and Directive 2004/36/E

<sup>66</sup> The Air Navigation Order 2009, No.3015.

<sup>67</sup> <http://researchbriefings.files.parliament.uk/documents/LIF-2016-0013/LIF-2016-0013.pdf> [last accessed on 22/08/16].

<sup>68</sup> See *Google v Vidal-Hall* [2015] EWCA Civ 311

<sup>69</sup> Preamble (1), (3), (7), and art 1 of 95/46/EC.

<sup>70</sup> Section 7 of the DPA 1998.

<sup>71</sup> Section 7.

<sup>72</sup> Preamble (1), (3), (7) and art 1 of 95/46/EC.

<sup>73</sup> Section 1(1) of the DPA 1998 for an interpretation of 'data subject'.

<sup>74</sup> Section 2.

<sup>75</sup> Section 2(a)

<sup>76</sup> Section 2(b)

<sup>77</sup> Section 2(f)

<sup>78</sup> See Section 2(a)-(h) for an exhaustive list of the sensitive data.

<sup>79</sup> Section 1(1) of the DPA 1998 for an interpretation of 'data controller'.



anticipated, a detailed discussion of the existing legislation, which forms the foundation of the data protection principles, will be of benefit, and therefore, the focus of the paper will stay in the existing current legal framework. There are some alternatives for a victim of personal data abuse to claim financial compensation by: (i) invoking Article 8 ECHR which is incorporated into UK law by the Human Rights Act 1998, which came into force in 2<sup>nd</sup> October 2000, and; (ii) applying a cause of action in tort. A recent decision<sup>80</sup> confirmed that a misuse of private information can create tortious liability<sup>81</sup> (although permission to appeal has been granted by UK Supreme Court and therefore the case is to be heard before Supreme Court<sup>82</sup>). One of the potential practical implications of *Google v Vidal-Hall* can be noted that greater protection arguably may well be afforded to the victim, because such an approach seems to focus more on the *conducts* relating to the misuse of private information than the relationship between the victim and the infringer<sup>83</sup>. Another is that non-pecuniary damage has now officially been included as recoverable damages, a wider range of victims can possibly bring a claim and be awarded financial remedies.

#### 4.1. Application of the Data Protection Law to the Hypothetical Situations

This section explores ways in which the EU Directive (and the DPA) can operate at the micro level (*i.e.* a dispute between private parties as opposed to public bodies, termed the macro level), and how effective and pragmatic its protection can be to deal with violations, which are likely to occur on a day to day basis to the average citizens. The author will introduce the following hypothetical situations to illustrate a number of possible violations, which can be caused by misuse of drones, to examine the efficacy of the current legal framework, which aims to provide a sufficient level of the protection to individuals' private and family lives from drones' invasion<sup>84</sup>. It should be emphasised that a wide spread use of drones by private individual is merely one example of how easy it is for our rights of privacy to be violated by the detrimental use of advanced technology. Scenario 1: a private party Alex infringes the privacy of a private party Brenda without obtaining financial gain: Alex owns a drone, which is flown over Brenda's house, and takes photographs of Brenda having a shower. Alex transfers photographic data of Brenda gathered by the drone onto Alex's personal computer and stores it there. Scenario 2: a private party, the CCC newspaper, infringes the privacy of Daniel (a politician) with financial gain. The CCC newspaper owns a drone, which is flown over Daniel's house, then takes photographs of Daniel, who is a politician – a public figure having an affair with Gemma. The CCC newspaper publishes a photograph about this in the newspaper and on its webpage and thereby obtains economic gain. This publication by the CCC *WILL* happen, so the victim can trace the user of the drone. Scenario 3: a private party, the EEE magazine infringes the privacy of a private party Fletcher (a so-called 'celebrity') with economic gain brought to. The EEE magazine owns a drone, which is flown over Fletcher's house, and takes photographs of Fletcher, who is a football player as well as a TV presenter, having an affair with Helen. EEE magazine publishes a photograph about this in its magazine and thereby obtains financial gain. Fletcher is a footballer, which is a different type of a 'public figure' to politicians, but can be considered as a role model. This publication by the EEE magazine *WILL* happen, so the victim can trace the user of the drone. [Note that this has already been happening and this type of drones is called "paparazzi drone"<sup>85</sup>]. The author argues that the current data protection appears to be deficient in providing an adequate protection for privacy violation caused by the misuse of drones in the following respects.

The way in which the information can be obtained has moved away from direct to indirect means, such as phone tapping and flying drones. The fundamental legal problem has remained similar. However, the ways in which the right can be violated become diverse and easier, and ensuring such protection is given becomes more challenging.

<sup>80</sup> Historically speaking, English law has been reluctant to recognise a violation of the right to privacy as an independent cause of action in tort. See for example, *Kaye v Robertson* [1991] FSR 62

<sup>81</sup> *Google v Vidal-Hall* [2015] EWCA Civ 311

<sup>82</sup> *Google v Vidal-Hall* [2015] EWCA Civ 311, and see Nick Pantlin, Miriam Everett and Michael Butterworth 'UK: Google granted leave to appeal Vidal-Hall decision' C.L.S. Rev. 2015, 31(6), 819.

<sup>83</sup> Joshua Folkard 'Privacy and conflicts in the Court of Appeal' L.Q.R. 2016, 132(Jan), 31-35

<sup>84</sup> Article 8 of the European Convention of Human Rights, and art 8 of EU Charter of Fundamental Rights for the protection of the personal data.

<sup>85</sup> In the US, a pop star Miley Cyrus tweeted in relation to paparazzi drones that the drones were flown over her house. See <https://twitter.com/mileycyrus/status/485623569834311680>. [last accessed on 25/09/15]

## 5. Pitfalls of the application of the data protection law

The key facts of Situation 1 are: Brenda is not a public figure, and the information is only obtained and not disseminated by unidentifiable person. The key facts of Situation 2 are: Daniel is a public figure (a politician), and the private information is obtained and disseminated by the CCC. The key facts of Situation 3 is that Fletcher is a different type of the public figure to politicians; a footballer, and the private information is obtained and disseminated by the EEE. These situations delineate three potential problems as follows: (i) inability to identify the data controller (situation 1); (ii) no actionable (actual) harm/damage done to the data subject (situations 1, 2, and 3); and; (iii) even if the data subject successfully identified the data controller, the wide range of exceptional clauses applicable to the data controller enable him to invoke defences (situations 1, 2, and 3).

### 5.1. Difficulty in identifying the data controller

A first, and presumably the most challenging hurdle that a data subject needs to overcome is difficulty in identifying the data controller, who flies the drone and collects, possesses, and processes the personal data. As a result, the data subject cannot exercise his/her right to prevent processing likely to cause substantial damage or substantial distress<sup>86</sup>. In the other words, the data controller is likely to escape his/her legal obligation to inform the data subject of data collecting activities<sup>87</sup>. A real life example of this problem can be seen by Miley Cyrus's tweet. Miley Cyrus, the America popular singer, was able to spot the drone flying over her house, and tweeted that she had seen a drone flying over her house<sup>88</sup>; nonetheless, she could not identify who was controlling the drone. This is problematic not only because she did not know who controlled the drone but she also did not have knowledge as to whether the personal data had been collected and was likely to be misused. In addition to that, drones can be flown at anytime from anywhere. It is likely that data subjects are NOT only made aware of the drones' activities but also data being collected by drones. This point is absolutely crucial, as we cannot lodge a complaint without being able to identify the defendant. Situation 1 is, in the view of this author, the most elementary form of art 8 ECHR violation in comparison with Situations 2 and 3, as there is no dissemination of the private information. However, under this circumstance, regrettably, no further action can be taken by the claimant unless the perpetrator can be identified. If the data controller cannot be identified, there seems very little that the data subject can do unless, as a consequence of personal data being collected by drones and misused, there is unauthorized publication of the personal data<sup>89</sup>. Having said that, a difficulty in bringing a claim when the victim cannot identify the perpetrator may well overcome with application to one of the principle established by *Google v Vidal-Hall*<sup>90</sup>. Due to the significance of the case, very brief facts of the case will be given: three claimants sued the defendant, Google alleging that the private information had been collected without consents of the claimants via use of the cookies on Apple Safari browsers. Google previously announced that no private information would be collected unless users consented to the use of cookies. The court was asked to answer: (i) whether the misuse of the private information was a tort; and (ii) whether under the meaning of damage in s13 DPA, the claimant could claim compensation for non-pecuniary damage. In short, the CA answered 'yes' to both. The Court of Appeal affirmed Justice Tugendhat's decision that misuse of private information was categorised as a tort. Equally remarkably, the court held that non-pecuniary loss/non material loss was recognised as a recoverable damage under s13 DPA. Recognition of a misuse of private information being tortious could possibly put an emphasis more on the *conducts* relating to the misuse of private information than the relationship between the victim and the infringer<sup>91</sup>. In consequence, the burden of proof imposed on the victim can be lifted.

### 5.2. No actionable harm/damage done to the data subject

A difficulty in bringing a claim when the victim does not suffer from pecuniary damage, might possibly overcome with application to the principle of the landmark case, *Google v Vidal-Hall*<sup>92</sup>. Therefore, the data subject without proving actual damage may recover damages. Although the caution that this does not create a new cause of action in tort was given, it is plain that the court has given a 'correct' legal label to one which already exists. The purpose of s13 DPA was to implement Art 23 of

<sup>86</sup> S 10 DPA

<sup>87</sup> Art 10 of 95/46/EC, and s 7(1) DPA.

<sup>88</sup> Miley Cyrus' tweet : "@mileycyrus: Drone Pap wtf?". Her tweet is no longer officially available, but can be found at <http://ohnotheydidnt.livejournal.com/89497534.html>. [last accessed 21/03/2016].

<sup>89</sup> See *Naomi Campbell v Mirror Group Newspapers* (hereinafter *Campbell v MGN*) [2004] UKHL 22 [2004] 2 AC 457.

<sup>90</sup> [2015] EWCA Civ 311

<sup>91</sup> Joshua Folkard 'Privacy and conflicts in the Court of Appeal' *LQR*.2016, 132(Jan), 31-35

<sup>92</sup> [2015] EWCA Civ 311

the EU Data Directive, which intended to protect Art 8 ECHR rights. It was understood that Art 8 ECHR had allowed for a recovery of non-pecuniary loss, and therefore, this ought to be reflected in the interpretation of s 13 DPA. *Google v Vidal-Hall* is a remarkable decision in a number of ways. Therefore, the misuse of private information creates a tortious liability, and non-pecuniary loss can be recoverable under s 13 DPA.

### 5.3. A (arguably) wide range of exemption clause

Under s 36 DPA the data controller can have a legitimate defence as long as the purpose of collecting, processing, and restoring data is for the purpose of (i) journalism; (ii) research; (iii) freedom of expression; or (iv) artistic/literary purposes. S 36 DPA provides exemption for ‘household purposes’ processed by individual only for that individual’s personal family or household affairs including recreational purposes. A number of cases provide us with a useful yardstick to illustrate when and how the court has raised the bar for exemptions. The application of such was discussed in a notorious case of *Campbell*<sup>93</sup>. The brief facts of the case were that the claimant, a very famous model, Naomi Campbell, had previously denied of her involvement with drugs. The defendant newspaper, the Mirror, published an article stating details of Naomi’s drug addiction including the fact that she was receiving a treatment from Narcotics Anonymous (NA) in Chelsea, and photographs of her leaving a clinic. The claimant sued the defendant for breach of confidence and the breach of s13 DPA. At the trial, she awarded damages of £3,500 in total, and the defendant appealed to the Court of Appeal. The CA allowed the appeal, but the House of Lords restored the judgment of the High Court on the basis that the claimant’s art 8 right outweighed the Defendant’s art 10 right to freedom of expression. Out of the majority only Baroness Hale referred to the DPA claim: she said it was agreed that it added nothing to the claim for breach of confidence. In addition, s36 DPA provides exemption for ‘house hold purposes’ processed by individual only for that individual’s personal family or household affairs including recreational purpose.

### 5.4. Insufficiency of an amount of damages awarded by the data protection law

Right to compensation is an entitlement to any person under art 23 EU Directive<sup>94</sup>, and s 3 the DPA. Although the General Data Protection Regulation brings some changes at the EU level by introducing stricter sanctions, which is likely to impact on national law, the interpretation of Article 23 and determination of the level of damages to be awarded to the victim will still be left to national judicial interpretation. It can, nonetheless, be noted that *Google v Vidal-Hall* gives hope to have the positive implications for the victims. As will become clear, the amount of damages awarded to the data subject under the DPA by court seems remarkably small in comparison to damages awarded under, for example, breach of Art 8 ECHR or breach of confidence. In *Campbell*, Naomi Campbell received damages of £2,500 for the distress and injury to feelings the articles had caused<sup>95</sup>, and aggravated damages of £1,000 for breach of confidence and, alternatively, compensation under DPA<sup>96</sup>. To sum up, a total sum of £3,500 was awarded to the claimant. A total sum of £14,600 was granted to Michael Douglas and Catherine Zeta-Jones by the court and £50 of which the total sum was a nominal damage under the DPA in *Douglas v Hello!*<sup>97</sup>. The brief facts of the case focusing on the claim under the DPA were as follows: Michael Douglas and Catherine Zeta Jones made an agreement with the OK magazine by which the OK magazine was given an exclusive right to take photographs of the couple at their wedding. At the wedding and its reception, taking photographs by anyone else was prohibited; guests were searched for cameras at the entrance and employees at the wedding signed contracts on confidentiality. Shortly after the wedding, the couple made aware that the Hello magazine was planning to publish photographs of the couple’s wedding. Who took these photographs, and how the Hello magazine manage to obtain the photos is not known. Although an injunction was not given on appeal, the claim for breach of confidence and data protection was succeeded on trial. As a result, the couple were awarded a total sum of £14,600 incorporating a shocking sum of £50 each for the nominal damage under DPA<sup>98</sup>. The cases above clearly demonstrate the low level of damages awarded to victims under the DPA. The author submits that such deficiencies can undermine not only the data protection

<sup>93</sup> *Campbell v MGN* [2004] UKHL 22 [2004] 2 AC 457.

<sup>94</sup> Directive 95/46/EC.

<sup>95</sup> *Campbell v MGN* [2004] UKHL 22 [2004] 2 AC 457.

<sup>96</sup> *Campbell v MGN* [2004] UKHL 22 [2004] 2 AC 457.

<sup>97</sup> *Douglas v Hello!* (No3) [2005] EWCA Civ 595

<sup>98</sup> *Douglas v Hello!* (No3) [2005] EWCA Civ 595

principle, but the value and thus normative application of law. The victim needs to bring a separate claim in, for example, breach of confidence to recover the appropriate amount of damages to satisfy victims for harm they have suffered. Following the landmark decision in *Vidal-Hall v Google*<sup>99</sup>, damages under s13 DPA ought to be substantially increased to reflect non-pecuniary damage. We have seen that a rather small sum of damages in the breach of the DPA has been awarded. From these cases, we can somehow draw in conclusion that we shall expect to have a very little damages under the DPA. In some cases, this might not be satisfactory, and can be seen as a deficit of the data protection law. In short, it can say that thus far damages under the DPA have played a very minor role in comparison to actions for breach of confidence and of art 8 ECHR, but this may change after the judgment in *Google v Vidal-Hall*.

## 6. Conclusions

There are several new potential uses of drones, as we have seen in the previous sections, in the public and in the private sectors, and in the agriculture, commerce, environment, and energy sectors. At the same time, drones pose serious risks of security and safety since they have been spotted close to airports, have injured people and have crashed. It is necessary, therefore, not only to adopt and enforce new legislation, but also to adapt current legislation. Cooperation between nations in regards to airspace jurisdiction is compulsory, common standards and common regulations must be adopted to ensure the safety of people and property on the ground, and insurance liability is of paramount importance here. An ever-expanding application and misuse of drones can have legal (positive and negative) implications and consequences. One of the aspects of misuse of drones is that private information can be collected by public bodies and private parties without consent. The drones industry can adopt voluntary regulations in order to develop this new technology guaranteeing safety standards; misuse of drones and violation of privacy should be prevented by, for example, prohibiting high-resolution cameras near sensitive areas if it is not necessary<sup>100</sup>; and current privacy legislation can apply to drones and new legislation must be adopted at international level. In addition, the safety of people and property on the ground must be ensured and legislation regarding insurance in the aviation system must be extended to drones. The potential benefits that drones can bring to society and potential harms that misuse of drones can cause to individuals ought to be somehow balanced. New regulations must be created and enforced to provide possible solutions, but also the current law can be interpreted in order to incorporate new emerging uses of the drones. Drones have a big potential in many fields, but an exhaustive legal framework is essential. The American approach regarding legislation on drones is a pragmatic approach of the kind to be expected in common law countries since the FAA grants case by case exceptions. The EU approach is a civil law approach since EU is working on general set of rules regarding all aspects related to drones. Recently new rules have been adopted in the US by the FAA and welcomed by drones' industry: in this way it will be easier to develop this technology following a risk assessment. Rules are proportionate to the level of risks and from this point of view EU and US approaches are similar.

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<sup>99</sup> *Vidal-Hall v Google Inc* [2015] EWCA Civ 311

<sup>100</sup> See Volovelsky, U. 2014, Civilian uses of unmanned aerial vehicles and the threat to the right of privacy-An Israeli case study, in *Computer Law & Security Report*, 30 (3), 306-320.