

Counter-Drone Defense Systems in the Light of International Law

Cesáreo Gutiérrez Espada
University of Murcia

The increasing use of drones, armed and unarmed, by states and non-state actors, in the framework of international and / or internal armed conflicts or in the absence of them, forces any State that intends to protect its citizens and infrastructures, as well as to its Armed Forces, bases and facilities, inside or outside the national territory, to equip itself with Defense Systems against Drones, particularly those of small size, reduced speed and limited height (LSS: Low, Slow, Small).

This paper studies the types of existing systems and the critical assessment of their possession and use in the light of International Law. And it takes advantage of the recent adoption (January 2019) of a National Concept against LSS UAVs by the Joint Center for the Development of Concepts (CCDC) of the Higher Center for Defense Studies (CESEDEN) (Ministry of Defense), to also pronounce on this text in the light of current International Law.

Keywords: non-state actors, drones, defense system, drones, legitimate defense, use of force

OBJECT OF THE STUDY AND DETAILS OF ITS CONTENT

I will refer in this paper to *Counter-Drone Defense Systems in the light of International Law* essentially for two reasons: first, because the use of drones, that is, Unmanned Aerial Vehicles (UAVs), for military purposes is growing exponentially as will be described below; and, secondly, because our country has opened a process to regulate, in all its possible aspects, the Counter-Drone Defense Systems, particularly against drones of small size. In this sense, the Joint Center for Concept Development (Centro Conjunto de Desarrollo de Conceptos - CCDC in Spanish) of the Higher Studies Center for National Defense (Centro de Estudios Superiores de la Defensa Nacional - CESEDEN in Spanish), of the Ministry of Defense¹, has elaborated a document called *National Concept C-LSS UAVs (Counter Low Slow Small Unmanned Aerial Vehicles)*, January 2019, adopted within the framework of a group of experts of diverse background and nature. I will specify below some aspects of the preparatory work and the intended scope of said text.

The Concept was approved on 23 January 2019, in use of the attributions granted by the National Defense Organic Law 05/2005, by the Chief of Defense Staff, General Fernando Alejandro Martínez.

UNMANNED AERIAL VEHICLES (DRONES) AND COUNTER-UNMANNED AERIAL VEHICLE (C-UAV) DEFENSE SYSTEMS

Unmanned Aerial Vehicles (UAVs) Are an Undeniable Reality That Will Consolidate and Expand Enormously in the Near Future

Without going into the technical analysis of these systems, it is enough to take into account that with them, an unmanned device (a drone, Unmanned Aerial Vehicle UAV) is remotely operated by a human being².

UAVs serve both civilian and military purposes. And, in the case of the latter, they can be unarmed (mainly for data collection, information purposes) or armed³.

These systems can also use small, low speed, medium or low height UAVs. Small (“limited speed” and “low altitude”) UAVs for military purposes are particularly relevant today for various reasons:

- On the one hand, their proliferation is undeniable. If in the year 2000 only 17 countries had them, by 2015 they have surpassed 76. And not only States, but also, worryingly, non-State actors (including terrorist groups and organizations).
- On the other hand, small UAVs offer their operators many advantages: their reduced cost, of course, but also the flexibility that characterizes their use: they are portable and do not require airfields or other support networks.
- Likewise, small UAVs can be armed. In fact, there is clear evidence that small armed UAVs are held by the United States, United Kingdom, Israel, China, Iran, Saudi Arabia, United Arab Emirates and Egypt. The People's Republic of China is a major supplier of these autonomous systems.
- And, finally, the tactical advantages of small UAVs are considerable: their size and relative speed generate significant difficulties in defending against them, since their visual and electronic detection is not easy; but, in addition, their possible use "in swarm" (different elements or units that coordinate and adapt their movements to give rise to an emergent and coherent whole) increases their danger and threat levels considerably⁴.
- The conclusion is self-evident: if counter-UAV Defense Systems (C-UAV systems) are necessary, they must necessarily have a response capability adapted to small UAVs⁵.

Probably the most relevant feature of UAVs is their proliferation. UAVs are growing exponentially. United States Army Colonel Matthew T. Tedesco cites a conclusive market study by the Teal Group in 2014:

- Expenditure on UAVs worldwide, estimated at \$6.4 billion dollars a year, will grow in ten years to \$11.5 billion, reaching \$91 billion dollars in twenty years.
- This will mean that the existing number of 4,000 types or classes of UAV platforms of this nature in circulation on the global market will increase enormously in the coming years.
- And, at the same time, that there are more and more States that dispose of UAVs, both large and small, of a military nature⁶.

Along with their numerical growth will come the alteration that these devices will cause in the balances existing until today in the threat/attack vs. defense dichotomy. The tactical and strategic advantages that UAVs bring to their owners generate very serious risks for the threatened/attacked party and, consequently, force them to consider the need to equip themselves with C-UAV systems as imperative⁷.

Drones and Robots (Weapons or Autonomous Systems) are not the same. Even understanding in a broad sense that Autonomous Systems would fit in the category of UAS, the particular characteristics (and also their evolution and current state of development) of Autonomous Systems leave them out of this Study. The "hard core" of the difference between drones and robots lies in the fact that Autonomous Systems make, so to speak, their “own decisions” (based on software, indeed of human design, which they bear)⁸.

It is perhaps interesting to note that some States, which use and regulate the use of drones, have expressly renounced “Armed Autonomous Aircraft Systems”⁹.

One That Explains (and Justifies) the Current Momentum of the Development of the Defense Systems Against Them (Counter-Unmanned Aerial Vehicle (C-UAV) Systems)

From at least the end of 2014, defense companies from different countries (United States, United Kingdom, Germany, France, Sweden...) have been developing systems to counter the threat of UAVs (Counter-Unmanned Aerial Vehicles [C-UAV] systems).

Episodes such as the flight of unknown drones in the vicinity of up to seven French nuclear installations or the landing on 26 January 2015 of one of these devices (of the *Phantom* type, manufactured by the Chinese company Dajiang Innovations [DJI]) in the garden of the United States White House itself, have raised concerns in this regard in not a few States.

Before commenting on the most relevant UAV Defense Systems, it may be useful to make it clear that, at present, non-kinetic systems are key to counter-drone defense, particularly in the case of small drones and “swarm” use. The use of kinetic weapons (aircraft, missiles...) against the threat of this type of drones, which are easily transportable and extremely effective in urban combat, implies a serious risk of collateral damage. Non-kinetic weapons (primarily laser weapon systems and high-powered microwave weapon systems [HPM]) neutralize these airborne threats in principle without physically destroying the hostile drone, but if they do, it is done by electromagnetic energy, which greatly minimizes collateral damage¹⁰.

A sampling of the various projects under way¹¹, leads to the conclusion that for practical purposes (taking into account, in particular, the legal and ethical implications of the projects to which I shall refer later) they can be divided into three classes:

- A. *Systems that only seek to detect (and if necessary, track) UAVs.* Such is the case, for example, of the Swedish company SAAB, which in April 2015 presented its latest version of the Giraffe AMB radar at the DSEI (Defence & Security Equipment International) Fair in London, where over 1,500 exhibitors from all over the world participated. This system is limited to detecting the flight of drones, although it can, of course, be combined with other systems to destroy them. The model, it could be added, was acquired by the United Kingdom for the defense against these threats to the Falklands (Malvinas).

Or the *Hemispheric Multi-Mission Coverage Radar (HMR)*, manufactured by the Israeli firm *Radar HMR Systems*. On August 17, 2017, the United States Armed Forces agreed with this company, for 8 million dollars, on the delivery (throughout 2017) of dozens of these devices which have demonstrated a great capacity for the location of small unmanned aerial vehicles. The HMR system can be used in urban areas (to protect, say, government buildings or events with VIP's), rural areas (to carry out military actions against asymmetric or conventional threats) or even border control¹².

- B. *Systems that disable drones that pose a threat and even take control of them (without destroying them)* like the British company Blighter Surveillance Systems' own solution. In April 2017, the Spanish Ministry of Defense awarded the company CIAC, Blighter's representative in Spain, a contract for an estimated amount of two million euros, by which it acquires the anti-UAV Defense System (AUDS) from the British company, the latter having been responsible for training the Spanish operators. The AUDS detects the drone using electronic scanning radar, then starts tracking the device with infrared cameras and advanced video software and then uses a non-kinetic frequency (RF) inhibitor to deactivate the drone (which it does at a distance of up to 10 km in approximately 15 seconds). The British company notes that the system allows the operator to take effective control of the drone and force a safe landing¹³. The AUDS is already installed at the Spanish base in Iraq.

Or the C-UAV system at the European *Airbus Defence and Space* industrial complex, which detects UAVs and assesses their threat at a distance of 5-10 km. The system can, if necessary, interrupt the connection between the vehicle and its operator or between the vehicle and its navigation system. It is even prepared to use advanced systems to take control of the unmanned vehicle that poses a threat.

INDRA, a leading Spanish company in the development of drones, presented on March 24, 2017 its intelligent ARMS system (Anti RPAS Multisensor System) that detects drones several

kilometers away and inhibits the frequency in different signal bands, which it cancels, of the geolocation equipment of the drone and its communications link with the control station that operates it. INDRA is also applying techniques to supplant the drone's position signal so that the system assumes control and can direct it to safe areas. The ARMS is designed for small drones and is particularly suitable for protecting industrial plants and airports, but especially, critical infrastructure¹⁴ or official buildings¹⁵.

Or, lastly, the Israeli company ORAD has recently presented, at the Israel Defense Exhibition (Tel Aviv), the latest version of its DROM Drone Defense System, which would detect these devices at over 3,500 meters, neutralize them and land them 2 kilometers away in a predefined location so that the information does not fall into the hands of the enemy and the location of the operator can be identified. Weighing 38 kilograms, the device comes pre-designed and assembled, is mobile and can be easily deployed on land or at sea and in all weather conditions.¹⁶

C. And, finally, there would be the *Systems that physically destroy (or shoot down) the drones that pose a threat*. Four examples could be pointed out.

The European missile company MBDA announced in June 2015 that it had succeeded in shooting down a drone using a laser generator that had previously detected and tracked the target¹⁷.

The German company *Rhein-Metall Defence*, which presented its naval laser system with unmanned aircraft at the above-mentioned London fair in 2015 (supra letter A). This is a weapon with four high-energy lasers (HEL) mounted on a turret and capable of destroying such a vehicle at a distance of 500 meters¹⁸.

On November 3, 2015, the Xinhua State News Agency of the People's Republic of China, citing a statement from the National Academy of Engineering participating in the project, made public the success of the test of a laser beam defense system against small unmanned aircraft (drones), which fly at a maximum altitude of 500 meters and at a speed of less than 50 meters per second. The system, which can be installed or transported in vehicles and would serve as a defense in cases of major events in urban areas, is capable of shooting down several devices within a radius of 2 kilometers in just 5 seconds after their location¹⁹.

In the first half of 2017, the company *Israel Aerospace Industries* (IAI) presented its *Drone Defender* or *Drone Guard* system, C-UAS system that is integrated into its well-known air attack defense system VSORAD (Very Short-Range Air Defense). The C-UAS system presented detects hostile drones, tracks them and neutralizes them; it can use two options: the "soft kill" option or the "hard kill" option (the first minimizes possible collateral damage that may be caused to civilians or non-military infrastructure). The "hard kill" option involves the use of high-power lasers. This system could be used for integration into the defensive structures of "sensitive" facilities, located to protect key points in urban areas or installed in vehicles to cover armed forces maneuvers against aircraft or drones²⁰. The *Drone Defender* System will be installed on Spanish Navy vessels participating in European Union Operations²¹. The Israeli company has recently updated the system to include the *Next Generation Drone Guard*²².

Given the exponential growth of UAVs, it is inevitable and crucial for the State to equip itself with Defense Systems against them. Even Great Powers, such as the United States, face this dilemma. Without adequate C-UAS capabilities, the United States will have more casualties and less chance of success in its missions in the world, which will influence, weakening it, in the projection of its global power to support its allies and defend its own interests; it may also limit its participation in international operations and coalitions against enemies that have UAVs. In a recent article, a US military official regretted that his country had realized so late the need for a reliable and effective C-UAV system and made up to 7 recommendations to the US Administration to improve its capabilities in this field. In short, that the Armed Forces that do not analyze the ways to defend themselves against the UAVs do not prepare themselves adequately for future conflicts²³.

These considerations, all of them, are jointly applicable to other States. This applies to Spain as well. Especially when our country is part of the Permanent Structured Cooperation (PSC) authorized by the Council of the European Union on 11 December 2017²⁴, being one of the projects to be developed within it that of " Defense against Unmanned Aircraft Systems (C-UAS)"²⁵.

IS IT IN ACCORDANCE WITH INTERNATIONAL LAW TO POSSESS C-UAV SYSTEMS?

The first theoretical question that can be raised is whether it is in accordance with International Law for Spain to have C-UAV systems.

When a High Contracting Party studies, develops, acquires or adopts a new weapon, or new means or methods of warfare, it has the obligation to determine whether its use, under certain conditions or in all circumstances, would be prohibited by this Protocol or by any other rule of international law applicable to that High Contracting Party (Article 36)²⁶.

Given the defensive nature of C-UAV Systems, which constitute a response to the existence and proliferation of UAVs, which (without going into any matter that exceeds the limits of this Study) in principle are not prohibited²⁷, (when their use respects International Law), it does not seem that our country has problems of international legality due to its decision to equip itself with UAV Defense Systems. Not even, in principle, with respect to C-UAVs, so to speak, of an armed nature, that is, that employ force to destroy UAVs or, in general, UAS Systems that are considered a threat.

The only caution that should be expressed in this regard is that, although it does not seem to be the case so far, we should make sure that our country is not part of any disarmament treaty or, if applicable, is bound by a binding international text of another nature that could eventually limit the access of the subjects parties to this type of weapons (C-UAV Systems). And, if this is the case, to ensure that, if any treaty of this nature is adopted, it is advisable for Spain not to be bound by it.

This requirement (conformity with international law of the possession of this type of weapons by Spain) is applicable, moreover, whether they are located in Spanish territory or in bases or facilities that the Spanish armed forces have in a foreign country, where they are located.

In the first case, because Spanish regulations governing systems of this nature must be adapted to the requirements of International Law; and in the second case, because every State is also required to do so.

ABOUT THE USE BY A STATE OF THEIR C-UAV SYSTEM. THE PRIMARY AND SECONDARY RULES IN GAME (*JUS AD BELLUM* AND INTERNATIONAL RESPONSIBILITY)²⁸

Consideration (The Prohibition of the Use of Armed Force and Its Exceptions in Contemporary International Law)

Given that armed drones exist (susceptible to being used by enemy States or terrorist organizations) and given also that C-UAV systems can use armed force, physically destroying the hostile drone, it seems appropriate to recall the current state of the rules of International Law on the prohibition of its use or threat to use it. And then to apply these rules to the various situations in which C-UAV systems could be used, in order to ascertain that their use is in accordance with International Law.

International law prohibits its subjects from using armed force except in cases of genuine and strict legitimate defense (Articles 2.4 and 51 of the United Nations Charter).

Legitimate defense under Article 51 of the Charter provides legal cover for the use of armed force by a State to defend itself from armed attack by another State until the United Nations Security Council takes appropriate action to restore international peace and security. The concept of armed attack, which invokes the right of self-defense, implies armed acts of a certain entity and gravity. In article 3 of the *Definition of Aggression* (resolution 3314, XXIX of 14 December 1974), we will find very clear examples, in particular in article 3, letters a, b, c and e.

However, self-defense cannot be carried out without conditions. Customary International Law requires that it be exercised in accordance with three requirements:

- Necessity.
- Immediacy.
- Proportionality.

To these three long-standing demands, the text of the Charter adds a fourth: the State acting in self-defense must immediately notify the Security Council.

Furthermore: Article 51 of the Charter finely stated (at the request of the group of Latin American States) that legitimate defense could be individual or collective. In the first case, a State defends itself from the armed attack that another State has launched against it. In the second (collective self-defense), a State uses armed force to defend a third State that is the object of an armed attack by another; in this case, the International Court of Justice, in the case of *military and paramilitary activities in and against Nicaragua* (1986), requires that collective self-defense be properly exercised:

- First, that the attacked State formally and publicly declares that it is under armed attack.
- And, secondly, that the attacked State formally and publicly requests another State or States to come to its defense based on the right of collective self-defense²⁹.

The rules of international law on this point, however, have evolved considerably since the adoption of the Charter. And in two fundamental ways, which I will now address separately, concerning the two issues that are particularly relevant today.

Legitimate Defense and Armed Attack

Current State of International Law

The majority interpretation of Article 51 of the Charter was that a response in legitimate defense was only possible when a State was under armed attack by another State. This implied that the armed attack must be in progress when the right of Self-defense was invoked. Such an interpretation would rule out the legality of what was called *pre-emptive self-defense*, an armed response prior to the launching of the attack³⁰.

Only a part of the Anglo-Saxon doctrine (well known Anglo-Saxon authors supported the majority thesis)³¹, defended the invocation of the legitimate defense in cases of "imminent" armed attacks.

An important trend was born in the early 2000s and seems today to be consolidated, according to which contemporary International Law would endorse the legitimacy of self-defense against an "imminent" threat of armed attack.

- The Institute of International Law (IIL), in its resolution of Santiago de Chile (2007), specified that an armed attack "manifestly imminent" could give rise to the right of self-defense³². It should be recalled that the IIL, in its resolutions, is an expression of the doctrine (collective doctrine in this case), and that the "doctrine of publicists of different nations" is one of the "means of determining the content of the Law" referred to in the Statute of the International Court of Justice (article 38.1.d).
- The Committee on the Use of Force of the International Law Association (ILA), also a manifestation of collective doctrine, in its Report to the Johannesburg Conference (2016), did the same³³.
- The *Tallinn Manual 2.0* (also Collective Doctrine), developed by a group of NATO experts on the application of International Law to activities in cyberspace, also defends this thesis³⁴.
- And, finally and above all, the then Secretary-General of the United Nations, the Ghanaian Koffi Annan, in his 2005 Report to the Summit of Heads of State or Government of the United Nations General Assembly, a report carried out as an organ of the Organization (the Secretary-General is, yes, one of the six main organs of the Organization), literally states that International Law has long recognized the right to self-defense in the face of imminent attacks³⁵.

Naturally, the State that invokes legitimate defense in the face of an armed attack that has not yet been launched but that it considers imminent, does so at its own risk (...).

Its Application to the Use of C-UAV Systems

If we accept this conclusion, which seems quite reasonable, the use of C-UAV systems should be in line with the following considerations.

The unauthorized intrusion of the unknown drone of a State into the airspace itself or into the security zone of the base or installations of the Armed Forces in the territory of another State implies by itself the

violation of the territorial sovereignty or, as the case may be, of the area of State jurisdiction that generates *per se* a threat against which a reaction must be made:

- In the case of an *unarmed drone* whose purposes are identified as mere reconnaissance or data collection, the use of force resulting in the physical destruction of the device is not covered by existing international law. In such cases, the use of C-UAV systems involving the neutralization of the drone and its control would be the appropriate response; once it has landed safely, the information collected could be investigated and its purposes possibly clarified.
- If it could be detected that the *hostile drone in question, unarmed*, carries “mechanisms” capable of causing the interruption or alterations in the operation of critical infrastructure, which in turn could lead to the generation of physical damage to people or property (for example, systems capable of altering the operation of air traffic control systems), and if its neutralization or takeover is not possible in time to eliminate the threat, the International Law in force would allow its physical destruction by means of the appropriate C-UAV systems. It goes without saying that a “swarm” intrusion of small drones, limited in height and speed, would *a fortiori* allow a similar response³⁶.

Finally, if an *armed drone* from another State enters national airspace or the security zone of armed forces bases or facilities in another State without authorization, the threat increases. It is clear that in itself this action could not be understood as an armed attack in the strict sense (because of the volume of the threat of force that it represents, so to speak)³⁷, so the reaction of the threatened State should be channeled firstly towards the neutralization of the aircraft and its takeover, in order to be able, after the corresponding investigation, to make the relevant international claims to the State that operates the drone.

However, if this is not possible or the time required to intercept it exceeds that required to respond effectively to the threat, it is advisable in the circumstances of the case to proceed with the physical destruction of the device. A forceful action of this nature by the C-UAV systems would be adapted and proportional to the imminent threat that an unidentified and unauthorized device, with kinetic weapons on board, and operated by a foreign State implies.

Furthermore, the same response would be appropriate in situations where a foreign State operates a “swarm” of small armed drones of reduced height and speed.

The *National Concept against LSS UAVs* adopted (January 2019) by the Joint Concept Development Centre (CCDC) of the Higher Centre for Defense Studies (CESEDEN) (Ministry of Defense)³⁸ aims to:

“*guide the development of the future holistic capacity that will make it possible to prevent, detect, identify, decide on and, where appropriate, neutralize the threat of LSS UAV used in a hostile manner, against units deployed in military operations and facilities, both inside and outside national territory*”³⁹.

And it assumes the indicated considerations:

“The recommended response to an incursion by a LSS UAV sent by a State that is taking actions that do not involve the use of force is, as a general rule, the use of measures that also do not involve the use of force” (paragraph 105).

“In the event that it is not possible to determine in advance whether the LSS UAV is intended to cause large-scale damage or whether the actions are clearly and unambiguously preparatory to a subsequent larger scale attack, or are likely to cause indirect ‘physical damage’ to persons or property, force may be used. The most legally sound response would be to neutralize the LSS UAV, although if this were not possible, it could be destroyed” (paragraph 106).

Given the scope of the *Concept*, which extends “to military operations and installations inside and outside national territory” (which would include the operations and installations of the Spanish Armed

Forces in the framework of Peacekeeping Operations decided by an international Organization of which Spain is a member in a foreign State), on the one hand, and, on the other hand, the doctrine of "effective control", it would have been, perhaps, of interest that the *Concept* had contemplated the two possible hypotheses:

- That the "effective control" of the operations and, if applicable, of the military facilities, should be of the Spanish Armed Forces.
- Or that it was of the Commanders of the Peacekeeping Operation in question⁴⁰.

Legitimate Defense Against Non-State Actors

The International Court of Justice has twice (2004 and 2005) upheld the idea that article 51 of the Charter is applicable only in the context of relations between States⁴¹. However, the dissenting opinions of two of its judges in both cases expressed their opposition to such a view.

Insofar as the Charter only requires (for the triggering of article 51) that a State be the object of an armed attack, these judges understand that when the (armed) attack comes from a non-State actor it would also be possible to invoke the article in question⁴².

Current State of International Law

Legitimate defense against armed acts of non-State actors is an open question that today rides on the back of a permissive trend.

The resolution of the IIL (2007) mentioned above⁴³, the opinion of the Committee on the use of force of the ILA (2016) also mentioned above⁴⁴, and the Tallinn Manual 2.0 (2017) equally quoted⁴⁵ are in line with the referred trend.

Moreover, resolution 2049 (2015) of 20 November, which the Security Council adopted unanimously, "calls upon" any State with the capacity to do so to use "all necessary means", given the nature of the threat posed to the international community by the self-proclaimed Islamic State (also known as Daesh), in order to eradicate it from its bases in Iraq and Syria. Invoking the aforementioned resolution (and in particular its paragraph 5), several States have proceeded in recent years to attack the bases and installations of the Daesh in both countries. In Iraq, with the consent of their Government, but in Syria without it. These States have publicly and officially proclaimed that their actions were covered by the right to individual or collective self-defense. To my knowledge, the Security Council has never subsequently raised the alleged illegality of such actions⁴⁶.

The interpretation that the right of legitimate defense is possible against non-State actors have probably found a majority acceptance both in the doctrine and in the States⁴⁷ or, in the words of Professor Casanovas:

"Based on recent practice in combating terrorism against non-State armed groups, and although there are doctrinal discrepancies, it is considered that 'the law in this respect appears to have changed'"⁴⁸.

The only point on which there is not yet a universally shared opinion is whether or not armed responses, under the cover of self-defense, against a non-State actor on the territory of a sovereign State that does not give its permission would be in conformity with existing International Law⁴⁹. The consideration that in such a case the armed actions committed would mean ignoring the territorial sovereignty of that State as well as probably causing collateral damage to it as a consequence of the attacks to the non-State actor, weighs on those who do not consider such actions in accordance with International Law⁵⁰. The advocates of such actions argue that they are directed against the non-State actor and not against the State, as well as limiting their legitimacy to the case of the State which is unwilling or unable (doctrine unable or unwilling State) to prevent non-State actors from planning, preparing and ultimately perpetrating armed acts on the territory of other States⁵¹.

Its Application to the Use Of C-UAV Systems

The application of these rules to the case of an unauthorized intrusion into the airspace of a State, Spain in our case, or into the sovereign zone of Spanish Armed Forces bases or installations abroad, of a drone operated by a non-State actor would pose an undeniable threat.

- If the drone in question is merely a *reconnaissance or information-gathering drone*, in principle its neutralization by the C-UAV systems would be an appropriate response.
- If the *device in question is equipped with means capable of altering the normal functioning of critical infrastructure or public services, with the consequent risk of producing damage to people or goods*, its neutralization, if possible in time, would be the first option, without otherwise ruling out its physical destruction.
- In the case of *armed drones*, their destruction would be, *a fortiori*, the appropriate response of the C-UAV system.

The circumstances of the case would even determine the possibility of armed action against the bases or facilities of the non-State actor from which these aircraft are operated, in order to eliminate a threat of further attacks. In this regard, it would be decisive, in order to allow the invocation of the concept of self-defense in the face of imminent armed attacks against the non-State actor (even in the territory of a State that does not authorize such actions), that the latter has proclaimed its intention to commit, when and how possible, acts of terror against the State in question, without that entity respecting (as its practice shows) any “red line” in its actions. This is precisely what the self-proclaimed Islamic State (also known as Daesh), for example, has done with certain States (including Spain).

Although there are no *expressis verbis* provisions adopted in the *Concept (2019)* that specifically address the use of non-State operated C-UAS systems, it does include among the factors that have influenced “the perception of the emerging threat posed by the use of LSS UAVs in a hostile manner against military and civilian forces and facilities”, that of their potential use by adversaries of a diverse nature, offering (in footnote 8 of its paragraph 18) a very broad categorization of the term “adversaries”:

“Adversary is the set of actors in a conflict that are recognized as potentially or openly hostile to a party’s own or its allies’ interests and against whom the use of force can be envisaged” (ECMD, PAC-01(A), “Doctrina de empleo de la FAS (Spanish Armed Forces Employment Doctrine)”, Madrid, 27 February 2018, paragraph 337”).

Thus, perhaps it would have been of interest that the *Concept* had contained in its text, in the framework of C-UAV use of force against non-State actors, the two possible hypotheses regarding the operations and, in its case, the military facilities of the Spanish Armed Forces in the framework of a Peacekeeping Operation decided by an international Organization in a foreign State (see *supra*).

ENDNOTES

1. The CCDC “shall direct and coordinate the study of new operational concepts that support the enhancement of military capabilities, maintaining with counterpart agencies in allied countries and international organizations, as well as with the Directorate General of Armaments and Equipment, the necessary relations for collaboration and information exchange. Likewise, it shall promote and coordinate the research and development of joint and combined doctrine, maintaining the necessary relations with the bodies of the Armed Forces and the international organizations responsible for this matter, through the analysis of the lessons identified and doctrinal shortcomings” (article 12, paragraphs 1.c and 4 of Order DEF/166/2015, of 21 January, developing the basic organization of the Armed Forces, *Spanish Official Gazette (SOG)* no. 35, 10 February 2015, consolidated text).
2. On the use, classes, problems and assessment, technical and legal, of these systems see *ad ex. Joint Doctrine Publication 0.30.2. Unmanned Aircraft Systems (JDP 0-30.2)*, dated August 2017, pp. 1-73 developed by the Development, Concepts and Doctrine Centre (DCDC) of the Ministry of Defence of the United Kingdom, August 2017, pp. 1-73 (available at www.gov.uk/mod/dcde).

3. On the increasing use of armed drones (particularly in the fight against terrorism) see GÓMEZ ISA, F.: “Los ataques con drones en Derecho Internacional (Drone attacks in International Law)”, *Revista Española de Derecho Internacional*, vol. 67/1, January-June 2015, pp. 61-92 (pp. 63-71).
4. On the use of “swarm” drones, CESEDEN: *Tecnologías asociadas a sistemas de enjambres de UAV (Technologies associated with UAV swarm systems)*, Ministry of Defense, Madrid, 2012 (with studies by D. ACUÑA CALVIÑO, pp. 7-10, pp. 101-148 and pp. 149-154; C. VERA SIBAJAS, pp. 11-18; M.A. BARCALA MONTEJANOS, pp. 19-44; F. MUÑOZ SANZ, pp. 45-52 and pp. 53-50; P. GONZÁLEZ SÁNCHEZ-CATALEJO, pp. 61-100).
5. FRANKE, U.E.: “The global diffusion of Unmanned Aerial Vehicles (UAVs), or ‘Drones’”, in M. Aaronson, W. Aslam, T. Dyson, R. Rauxloh (Edts): *Precision Strike Warfare and International Intervention: Strategic, Ethico-Legal, and Decisional Implications*, Routledge, New York, 2014, pp. 52-73; PALMER, TH.S. and GEIS II, J.P. “Defeating Small Civilian Unmanned Aerial Systems to Maintain Air Superiority”, *Air & Space Power Journal*, 29, issue 4, 2017, pp. 66-82; PATTERSON, D.R.: “Defeating the Threat of Small Unmanned Aerial Systems”, *Air & Space Power Journal*, 31, issue 1, 2017, pp. 12-22.
6. TEDESCO, M.T.: “Countering the Unmanned Aircraft Systems Threat”, *Military Review (The Professional Journal of the U.S. Army)* (<https://www.armyupress.army.mil>), November-December 2015, pp. 64-69 (p. 65).
7. On UAVs, their classes, their evolution and current state of development see GRUPO DE TRABAJO DE LA PLATAFORMA AEROSPACIAL ESPAÑOLA: *Sistemas de Vehículos Aéreos no Tripulados (UAS). Visión estratégica española. Resumen ejecutivo 2010 (Unmanned Aerial Vehicle (UAV) Systems. Spanish strategic vision. Executive Summary 2010)*, doc. N°: PAE/Doc-uA/1007, pp. 1-6; SÁNCHEZ GÓMEZ, R.E.: *Sistemas Aéreos No Tripulados y espacio aéreo en Europa. Una combinación estratégica (Unmanned Aerial Systems and Airspace in Europe. A strategic combination)*, Spanish Institute of Strategic Studies (IEEE in Spanish) Framework Document 14/2011, 14 December 2011, pp. 1-20; CESEDEN: *Los Sistemas No Tripulados (Unmanned Systems)*, March 2012, Ministry of Defense, Madrid; CASEY-MASLEN, S.: “Pandora’s box? Drone strikes under *jus ad bellum*, *jus in bello*, and international human rights law”, *International Review of the Red Cross*, June 2012, no. 886, pp. 1-33; EUROPA PRESS: “Defensa crea el título de operador de sistemas aéreos no tripulados para militares (Defense creates title of operator of unmanned aerial systems for military)”, 25 February 2016, pp. 1-3 (<https://www.lainformacion.com>, accessed on Monday, 17 June 2019); THALES SPAIN: *Systems and solutions for unmanned aerial vehicles*, pp. 1-9 (<https://www.thalesgroup.com>, accessed on Monday, 17 June 2019); MINISTRY OF DEFENCE: Joint Doctrine Publication 0-30.2 *Unmanned Aircraft Systems...* cit. (*supra* note 2); “Seguridad y UAS: un problema a resolver (Security and UAVs: a problem to be solved)”, 4 May 2018, pp. 1-8 (<https://www.gradiant.org/blog/seguridad-y-uas/>, accessed Monday, 17 June 2019).
8. I’ve addressed drones and robots before: see (and the bibliography cited) GUTIERREZ ESPADA, C. and CERVELL HORTAL, M^a.J.: “Sistemas de armas autónomas, drones y Derecho internacional (Autonomous weapon systems, drones and international Law)”, *Revista del Instituto Español de Estudios Estratégicos*, no. 2, 2013, pp. 1-32; also LIU, Hin-Yan: “Categorization and legality of autonomous and remote weapons systems”, *International Review of the Red Cross*, vol. 84, no. 886, 2012, pp. 627-652.; MARTÍN IBAÑEZ, E.: “La autonomía en robótica y el uso de la fuerza (Autonomy in robotics and the use of force)”, *IEEE, Opinion Paper*, 27/2017, 14 March 2017, pp. 1-15.
9. For example, the United Kingdom: “It is clear from the information above that the UK does not possess armed autonomous aircraft systems and it has no intention to develop them.” (*Joint Doctrine Publication 0-30.2. Unmanned Aircraft Systems* cit. [note 2], p. 43, paragraph 4.18).
10. A very interesting study on non-kinetic weapons, their classes, operability and operation in MARÍN DELGADO, J.A.: *El sistema de defensa aérea no cinético, clave para la defensa antidron (The non-kinetic air defense system, key to anti-drone defense)*, IEEE Framework Document 21/2018, November 29, 2018, pp. 1-58.
11. See *ad ex*. SORIANO, G.: “La industria de defensa entra en la carrera de los sistemas anti-drones. Nuevos desarrollos de C-UAV (The defence industry enters the race for anti-drone systems. New C-UAV developments)”, pp. 1-4 (<http://www.infodefensa.com>, consulted on Monday 17 June 2019).
12. DÍAZ CÁMARA, O.: “El novedoso radar anti-UAV de las Fuerzas Armadas de los Estados Unidos (The U.S. Military’s Novel C-UAV Radar)”, 21 August 2017, pp. 1-4 (<http://www.defensa.com>, accessed on Monday 17 June 2019).

13. “España adquiere un sistema capaz de desactivar drones en 15 segundos (Spain acquires a system capable of disabling drones in 15 seconds)”. 24/07/2017, pp. 1-2, <http://infodrom.es>; NIÑO ROMERO, M.: “Defensa adquiere un sistema para desactivar drones (Defense acquires a system to deactivate drones)”, pp. 1-4, <https://observatorio.cisde.es>; Galaxia Militar. Información de Defensa y Actualidad Militar: “España selecciona el sistema de defensa anti-UAV AUDES (Spain selects the AUDES C-UAV defense system)”, 10 July 2017, pp. 1-5 (<http://galaxiamilitar.es>) (all pages consulted on Monday 17 June 2019).
14. Critical infrastructure is the set of: “physical and information technology facilities, networks, systems and equipment ... whose operation is indispensable and does not allow for alternative solutions, so that their disruption or destruction would have a serious impact on essential services” (article. 2, d and e of Law 8/2011, of 28 April, establishing measures for the protection of critical infrastructures, *SOG* of 29 April 2011). The “criticality” of an infrastructure is determined by three criteria: the number of victims or serious injuries that can be generated if it is attacked; the economic impact as a function of the loss and deterioration of products or services (including the possible environmental impact); and the public impact produced by the alteration of citizen life. In Spain, the annex to Law 8/2011 on the Protection of Critical Infrastructures (which extends to the protection of European Critical Infrastructures) groups these in 12 sectors:
- Administration (basic services, facilities, active information networks, major national sites and monuments).
 - Space.
 - Nuclear industry.
 - Chemical industry.
 - Research facilities.
 - Water (reservoirs, storage, treatment and supply networks).
 - Energy (power plants and grids).
 - Health.
 - Information and Communication Technology.
 - Transport (airports, ports, intermodal facilities, railways and public transport networks, traffic control systems).
 - Food.
 - Financial and Tax System (Banking, securities, investments).
- These infrastructures are dependent on communications systems and therefore the risk of disruption from cyber-attacks has increased considerably. The Spanish critical infrastructures are detailed in a Catalogue that includes 3,700 infrastructures, 80 percent of which correspond to the private sector. Law 8/2011 establishes the creation, by the Ministry of the Interior, of a National Catalogue of Strategic Infrastructures: “An instrument that will contain all the information and assessment of the country's strategic infrastructures, among which will be included those classified as Critical or European Critical, under the conditions determined in the Regulation that develops this Law” (article 4.1).
- The Royal Decree 704/2011 of May 20 approves the Critical Infrastructure Protection Regulation (*SOG* of May 21, 2011) which regulates (Chapter II of its Title I, articles 3-5), the referred Catalogue. This is a database specifying the protection measures in the event of a threat against these infrastructures, the “criticality” and the reaction plans “that activate an agile, timely and proportionate response, in accordance with the level and characteristics of the threat in question” (article 3.2). The Catalogue, an administrative register, contains “complete, updated and contrasted” information on all the strategic infrastructures located in Spanish territory, “including the critical ones as well as those classified as European Critical affecting Spain, in accordance with Directive 2008/114/EC” (article 3.1).
- The National Catalogue of Strategic Infrastructures has, according to Spanish legislation on official secrets, “the qualification of SECRET”, conferred by Agreement of the Council of Ministers of 2 November 2007 (article 4.3).
15. “Indra presenta su solución inteligente para detectar y contrarrestar drones (Indra presents its intelligent solution to detect and counteract drones)” (<https://www.indracompany.com>, accessed on Monday 17 June 2019).
16. Itongadol: “Empresa israelí presenta nuevo Sistema de Defensa contra Aviones No Tripulados (Israeli company presents new Defense System against Unmanned Aircraft)”, <http://www.itongadol.com.ar> (accessed on Monday 17 June 2019)

17. SORIANO, G.: *op. cit.* (note 11).
18. SORIANO, G.: *op. cit.* (note 11).
19. “China prueba con éxito un sistema láser de defensa antiaérea (China successfully tests a laser air defense system)”, Wednesday, March 2, 2016 (<https://www.lainformacion.com>) (accessed on Monday, June 17, 2019).
20. CENTRO DE ESTUDIOS GENERAL MOSCONI DE PERSPECTIVA TECNOLÓGICA MILITAR, Escuela Superior Técnica, Facultad de Ingeniería del Ejército: “Drone Defender: el arma ‘contra UAV’ integrado a un sistema de defensa aéreo (VSORAD) (Drone Defender: the ‘counter-UAV’ weapon integrated into a Very Short Range Air Defense (VSORAD) system)”, 19 June 2017, pp. 1-3 (<http://www.ceptm.iue.edu.ar>, accessed on Monday 17 June 2018).
21. CARRASCO, B.: “Defensa dota a los buques de la Armada con sistemas contra UAV (Defense equips Navy vessels with C-UAV systems)”, 11 November 2017, pp. 1-3 (<http://infodron.es>, accessed on Monday 17 June 2019).
22. About it, its characteristics and advantages, “IAI actualiza su Sistema contra UAS *Drone Guard* (IAI updates its *Drone Guard* C-UAS System)” (<https://www.defensa.com>, Monday 25 February 2019) (also consulted on Monday 17 June 2019).
23. TEDESCO, M.T.: *op. cit.* (note 6), pp. 64-69.
24. Council Decision (CFSP) 2017/2315 of 11 December 2017 establishing permanent structured cooperation and determining the list of participating Member States (OG L 331, 12 December 2017, p. 57).
25. Council Decision (CFSP) 2018/1797 of 19 December 2018 amending and updating Decision (CFSP) 2018/340 establishing the list of projects to be carried out within the framework of Permanent Structured Cooperation (PSC), article 1, paragraph 1 (project no. 26) (OG L 294, 21 November 2018, p. 18).
26. Instrument of Ratification of Protocols I and II Additional to the Geneva Conventions of 12 August 1949, relating to the Protection of Victims of International Armed Conflicts with or without International Status, signed at Geneva on 8 June 1977, SOG No. 177, Wednesday 26 July 1989. For an analysis of the cited article 36, see *ad ex.* BACKSTROM, A. and HENDERSON, I.: “New capabilities in warfare: an overview of contemporary technological developments and the associated legal and engineering issues in Article 36 weapons reviews”, *International Review of the Red Cross*, Summer 2012, no. 886, pp. 1-37.
27. See GÓMEZ ISA, F.: *op. cit.* (note 3), pp. 71-74.
28. I will not address in this Study, anything beyond the relationship between the possible connections that may arise with the subject, because to do so would mean, on the one hand, breaking the essential thread of what I intend with it and, on the other hand, would excessively lengthen the analysis of the rules applicable in this case on liability. A study of the possession and use of C-UAVs in the light, specifically and particularly, of the International Law of Liability, in GUTIÉRREZ ESPADA, C.: *El desarrollo de un concepto conjunto de defensa contra sistemas aéreos no manulados (C-UAS) a la luz del derecho internacional de la responsabilidad. Una aproximación preliminar (The development of a joint concept of defense against unmanned aerial systems (UAS) in the light of international liability law. A preliminary approach)*, Documento de Investigación 19/2018, Instituto Español de Estudios Estratégicos (www.ieee.es), June 2018, pp. 1-40.
29. Judgment on the merits, 27 June 1986, *ICJ Reports/CIJ Recueil 1986*, pp. 14 ff., pp. 93 ff. (paragraphs 195 ff.).
30. See *ad ex.* BERMEJO GARCÍA, R.: “Las denominadas nuevas tendencias en la lucha contra el terrorismo internacional: el caso del Estado Islámico ()”, in C. GUTIÉRREZ ESPADA y M^a.J. CERVELL HORTAL (Directors): *El Estado Islámico (Daesh). ¿Aprenderemos la lección? (The Islamic State (Daesh). Will we learn the lesson?)*, Tirant lo Blanch Humanidades, Valencia, 2018, pp. 149-223 (pp. 155 ff., 165-171 and 201 ff.); and also the sensible considerations of COCCHINI, A.: “Intentando definir la legítima defensa ‘preventiva’ (Attempting to define ‘preventive’ self-defense)”, in M^a.J. CERVELL HORTAL, J.F. ESCUDERO ESCRIBANO and E. LÓPEZ-JACOISTE DÍAZ (Coordinators): *Liber Amicorum Romualdo Bermejo García and Cesáreo Gutiérrez Espada. El Derecho Internacional en un mundo cambiante: entre el inmovilismo y la ruptura (International Law in a changing world: between immobility and rupture)*, *Anuario Español de Derecho Internacional*, no. 34 (2018), pp. 499-524.
31. Such as Ian BROWNLIE: *International Law and the use of force by States*, Clarendon Press, Oxford, 1968 (reprinted from 1963 edition).

32. “The right of self-defence arises for the target State in case of an actual or manifestly imminent armed attack.” (TENTH COMMISSION: Present Problems of the Use of Armed Force in International Law. A. Self-defence, resolution of 27 October 2007, paragraph 3).
33. *Draft Report on Aggression and the Use of Force (May 2016)*, Johannesburg Conference [2016], Use of Force, pp. 1-20, p. 10 (<http://www.ila-hq.org/en/committees/index.cfm/cid/1036>).
34. *Tallinn Manual 2.0*, Rule 73, pp. 350-354. The (Russian) cyber-attacks on Estonia in 2007 prompted NATO to establish a Centre of Excellence for Cooperative Cyber Defence (CCDCOE) in Tallinn, the capital of Estonia. One of the first initiatives of the Centre was the creation of an International Expert Group on Defence, Security and International Law to develop a set of rules applicable to cyberspace as a theater of hostilities. This Group, chaired by Michael N. Schmitt (Professor of the Legal Department of the United States Naval War College), included jurists (academics and practitioners) supported by a team of technical experts, and the United States Committee on Cyberspace (USCYBERCOM), the International Committee of the Red Cross and NATO participated actively as observers (without voting rights) in the development of its work. The Group completed its work, after 3 years of efforts, with the Tallinn Manual (Schmitt, M.N. [Gen. Ed.]: *Tallinn Manual on International Law Applicable to Cyber Warfare*, <http://www.ccdcoe.org/249.html>). The text was published in paper format by the University of Cambridge [2013] and reprinted in 2015). The Manual consists of 95 rules, which are intended to reflect customary international law applicable to conflicts in cyberspace. A second, considerably more extensive edition was published in February 2017 (*Tallinn Manual 2.0 on the International Law Applicable to Cyber Operations, Prepared by the International Groups of Experts at the Invitation of the NATO Cooperative Cyber Defence Centre of Excellence*, Cambridge University Press, Cambridge, 2017).
35. A/59/2005, 21 March 2005, paragraph 124.
36. See *supra* note 4.
37. Professor María José Cervell has recently written that “in view of the restrictive jurisprudence of the ICJ it seems unlikely that, at least in most cases, a use of force by a UAS would be considered an armed attack, especially if it is a question of light or small artifacts” (CERVELL HORTAL, M^aJ.: *La defensa contra sistemas aéreos no tripulados [C-UAS]: una reflexión jurídica preliminar desde el punto de vista del uso de la fuerza (Defence against Unmanned Aerial Systems [UAS]: a preliminary legal reflection from the point of view of the use of force)*, Documento de Investigación 11/2018, Instituto Español de Estudios Estratégicos, July 2018, [www.ieee.es], pp. 1-30, p. 17). This is certainly the case in principle; but there are other considerations that should be taken into account (as, in my opinion, the aforementioned author does): “another question, however, would be whether such armed action is directed against targets of particular importance (think of an aircraft control tower, a military or civilian building or infrastructure of an essential nature) or which in some way represent vital state interests. The swarming of several UASs could also be considered an armed attack, as their actions would be on a larger scale”, *op. cit.*, pp. 17-18).
38. The Joint Center for Concept Development (CCDC in Spanish) leads the work of a group of experts from the Ministry of Defense (MINISDEF), the Ministry of the Interior, Industry and Academia. Annex E of the Concept (2019), pp. E1-E4, gives an account of the project team.
39. *Concept... cit.* (2019), paragraph 06. And the *Concept* specifies: “for the purposes of this concept, the categorization of the LSS UAS threat will focus on those systems which, due to their characteristics of small equivalent radar area, low infrared and/or acoustic signature, or low altitude and low speed flight, are *outside the detection, tracking, identification and neutralization envelope* of current Air Defense (AD) systems” (paragraph 23).
40. See on the issue GUTIÉRREZ ESPADA, C.: “El desarrollo de un concepto conjunto... (The development of a joint concept...)” *cit.* (note 29), pp. 8-11 (paragraph 5).
41. *Case concerning the legal consequences of the construction of a wall on occupied (Palestinian) territory*, Advisory Opinion of 9 July 2004, *ICJ Reports/CIJ Recueil 2004*, p. 194, paragraph 139; *case concerning the armed activities on the territory of the Congo*, judgment of 19 December 2005, *ICJ Reports/CIJ Recueil 2005*, p. 223, paragraph 147.
42. For example, in the case concerning armed activities on the territory of the Congo, *ICJ Reports/CIJ Recueil 2005*, Opinion of Kooijmans, p. 314, paragraphs 27-29 and Opinion of Judge Simma, pp. 336-337, paragraphs 8 and 11-12.

43. TENTH COMMISSION: Present Problems of the Use of Armed Force in International Law. A. Self-defence... *cit. (supra note 33)*, paragraph 10, i and ii.
44. ILA (Johannesburg Conference): *Draft Report on Aggression and the Use of Force (May 2016)*... *cit.* (note 34), pp. 12-13.
45. *Tallinn Manual 2.0*... *cit.* (note 35), p. 345, paragraph 19 of rule 71.
46. On the issues I am referring to, within the framework of Security Council resolution 2049 (2015), see *ad ex*. GUTIÉRREZ ESPADA, C.: “‘Choque de civilizaciones’ (el autoproclamado estado islámico). Respuesta de la comunidad internacional. ¿una ‘alianza de civilizaciones’ contra el Estado islámico? (‘Clash of civilizations’ (the self-proclaimed Islamic state). Response of the International Community: An ‘Alliance of Civilizations’ against the Islamic State?)”, *Anuario de los Cursos de Derechos Humanos de Donostia-San Sebastián*, vol. XVI (2016), Aranzadi, Cizur Menor (Navarra), 2017, pp. 111-214, II, section 3.4 (paragraphs 42-46).
47. GÓMEZ ISA, F.: *op. cit.* (note 3), p. 78; also see BERMEJO GARCÍA, R.: “Las denominadas nuevas tendencias... (The so-called new trends...)” *cit.* (note 31), particularly pp. 201 ff.
48. CASANOVAS I LA ROSA, O.: “El empleo de drones armados: una encrucijada normativa (The use of armed drones: a regulatory crossroads)”, in M^a.J. CERVELL HORTAL, J.F. ESCUDERO ESCRIBANO y E. LÓPEZ-JACOISTE DÍAZ: *Liber Amicorum*... *cit.* (note 31), pp. 463-480, p. 469.
49. See *ad ex*. GÓMEZ ISA, F.: *op. cit.* (note 3), pp. 76-78.
 Like the Manifesto presented to the firm by the Centre for International Law of the Free University of Brussels (June 2016) *Contre une invocation abusive de la légitime défense pour faire face au défi du terrorisme – A plea against the abusive invocation of self-defence as a response to terrorism*, pp. 1-3 (<http://cdi.ulb.ac.be/contre-invocation-abusive-de-legitime-defense-faire-face-defi-terrorisme/>) Or, even, ILA (Johannesburg Conference): *Draft Report on Aggression and the Use of Force (May 2016)*... *cit.* (note 34), pp. 12-13 (the Committee insists that current international law considers illegal [contrary to Article 2.4 of the Charter and in general to the prohibition of the use of armed force] armed attacks on non-state actors on the territory of a sovereign state, without the distinction between attacks in self-defence on the territory of the host state but not against the host state [but only on targets of non-state actors] being able to circumvent the violation of territorial sovereignty committed); although the Report admits that the question remains open. See CERVELL HORTAL, M^a. J.: “Sobre la doctrina *unwilling or unable State* (¿podría el fin justificar los medios?) (On the doctrine of *unwilling or unable State* (could the end justify the means?))”, *Revista Española de Derecho Internacional*, vol. 70, 1, 2018, pp. 77-100; ID.: “La defensa contra sistemas aéreos no tripulados (C-UAS): una reflexión jurídica preliminar... (The defense against unmanned aerial systems (UAS): a preliminary legal reflection...)” *cit. (supra note 38)*, p. 23
 The report with which President Obama bids farewell to the White House explains the use of force carried out in practice in particular outside the United States, and gives an account of its conformity, in his view, with international Law in force. It assumes that the right to self-defence is not limited to threats posed by States, but extends to threats posed by non-State actors (“For example, the United States currently uses force against ISIL [the self-proclaimed Islamic State] in Syria in collective self-defence of Iraq [and other States]”). He adds (relying on the doctrine of “unable or unwilling”) that international Law recognizes that “States, in accordance with the right of individual or collective self-defence when faced with an imminent or actual armed attack by non-State armed groups and the use of force is necessary because the government of the State in which the threat is located is unable or unwilling to prohibit the use of its territory by particular non-State actors to carry out such attacks (...), [they may act] in legitimate defense against non-State actors on the territory of that State without their consent”. Furthermore, specifying that this possibility is admitted “by customary international Law” (*Report on the legal and policy frameworks guiding the United States’ use of military force and related national security operations*, The White House, December 2016, pp. 1-61, pp. 9-10).