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CONTENTS

SOVEREIGNTY – A BARRIER IN THE CREATION OF THE SINGLE EUROPEAN SKY

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1. SINGLE EUROPEAN SKY

1.1 General presentation

The deficient air traffic flow management generated by the lack of an air traffic management structure, prompted Loyola de Palacio, the former European Commissioner on Transportation issues, to establish, in 2000, a High Level Group[1] (HLG 2000) to analyze the opportunity to create a Single European Sky.

The HLG 2000 identified a series of challenges regarding the organization and operation of European air traffic, including an inconsistency in the design of air space, such as: the fragmentation in the provision of services; a lack of technology in point of interoperability, as well as many other issues regarding the institutional and regulatory system.[2] The European Commission analyzed the preliminary conclusions established by the HLG 2000 and recommended the creation of functional airspace blocks[3] (FABs). The scope of the FABs was to make sure that the airspace is organized based on requirements of economic and operational effectiveness, security and equity, rather than on historical and geographical boundaries.[4]

Starting from these conclusions and recommendations, the European Commission proposed a set of regulations establishing the legal, technical and operational framework to develop and implement FABs. It is this way how the first legislative package, named the Single European Sky I - SES I emerged. Considering the demand trend and that of a higher performance level in the sphere of profitability, capacity and environment protection related requirements, simultaneously with the maintenance of at least the current security level, the SES I legislative package was amended upon proposal of the European Commission in 2008 and this resulted in the SES II package. This second package came into force in December, 2009 and imposed the obligation on European Union Member States to implement FABs and make them operational by the 4th of December, 2012.

1.2 Principles of the SES legislation

The SES initiative was launched being established on concepts meant to facilitate implementation of this legislative package targets. SES objectives aim at harmonizing the configuration, the management and the regulation of airspace. They target the setting of common requirements at the level of the European Union, for the development of a legislative package applicable to a large number of civil aviation participants, such as: Air Navigation Service Providers (ANSP), Member States and National Supervisory Authorities (NSA) and the European Commission.

The SES I package established the structure of principles and concepts on which the European Single Sky is founded today:

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A. Separating service provision from supervision and setting up NSAs;
B. Certifying air navigation services providers;
C. Functional airspace blocks initiatives (FABs);
D. Flexible use of airspace (FUA);
E. Minimizing fragmentation;
F. Enhancing interoperability of the EATMN system.

1.2.a. Separating service provision from supervision and setting up NSAs
NSAs are independent from air navigation services providers. This independence is acquired by an adequate separation, at least at functional level, of the NSA from the provider.

NSAs supervise the correct implementation of the framework legislation within Member States. They are also in charge of certification and supervision of air navigation services providers.

1.2.b. Certifying air navigation service providers
All air navigation service providers in the European Union are to be certified by Member States.

Certification is conducted in the Member State where the provider has the main operation location. Certificates are issued by the National Supervisory Authority, subsequent to verification of conformity with the common requirements provided in the Service Provision Regulation.

1.2.c. Functional airspace blocks initiatives (FAB[5])
As of the 4th of December, 2012, 9 FABs were set up: the *Baltic FAB* (Lithuania and Poland), the *Danish - Swedish FAB* (Denmark and Sweden), the *NEFAB* (Estonia, Finland, Island, Latvia and Norway), the *UK - Ireland FAB*, *FABEC* (Belgium, France, Germany, Luxembourg, Holland, Switzerland, and EUROCONTROL Maastricht[6]), the *CE FAB* (Austria, Bosnia and Hertzegovina, Croatia, the Czech Republic, Hungary, Slovakia and Slovenia), the *DANUBE FAB* (Romania and Bulgaria), the *South West FAB* (Portugal and Spain) and the *Blue MED FAB* (Cyprus, Greece, Italy and Malta, also having other associated partners among third party states in relation to the UE). We can notice that these functional airspace blocks also include European Union non-Member States. A creditable initiative, the evolution of which is expected to be fabulous!

1.2.d. Flexible use of airspace (FUA)
The FUA represents a concept according to which airspace is no more considered to be ”civil” or ”military”, but a continuous space, assigned in relation to the needs of its users.

This concept facilitates the enhancement of Air Traffic Management capacity and allows for the joint use of airspace at maximum capacity, by means of a strong civil/ military cooperation. Moreover, this concept fosters temporary segregation, based on the actual use of airspace, during definite periods of time.

1.2.e. Minimizing fragmentation
Fragmentation is one of the main causes of the poor performance of the EATMN network. FABs create the necessary means for reducing fragmentation. Cooperation is a key element in achieving this specific goal of FABs. Member States should “remove obstacles”[7] to the development of these blocks and also contribute to the common

understanding of their objectives.

1.2.f. Enhancing interoperability of the EATMN system

Among the key priority areas for the FABs there is the enhancement of the interoperability of the EATMN system. Interoperability needs to be ensured through common system development, common maintenance processes and personnel, commonality in technology, global/European interoperability standards.

Thus, yet again, cooperation appears to be the core of the proper functioning of the SES package.

2. SUBSIDIARITY AND THE FABS

2.1 The subsidiarity principle

The subsidiarity principle and the proportionality principle govern the enforcement of the European Union competences. More specifically, the subsidiarity principle applies in domains where the European Union does not have exclusive competences. These principles are aimed, on the one hand, at protecting the capacity of Member States to make decisions and take measures and, on the other, at authorizing the intervention of the European Union when the objectives of an action cannot be satisfactorily completed by Member States, considering the wide scope and the effects of the action to fulfill.[8]

Art. 5 (3) of the Treaty of Lisbon, replacing art. 5 of the Treaty establishing the European Union, provides the principle of subsidiarity. The major difference between the initial art. 5 and the current art. 5 (3) is the new role which national parliaments have in granting observance of this principle.

The general aim of this principle is to guarantee the independence of authorities at a lower level in relation to a principal body or to the central government. It involves the shared use of competences between various authorities levels.

In keeping with art. 5 (3) of the Treaty of Lisbon, there are three prerequisites for the intervention of European Union institutions in keeping with the subsidiarity principle:

a. the respective domain is not under the exclusive competence of the European Union;
b. the objectives of the proposed action cannot be satisfactorily implemented by Member States;
c. the action may, given its wide scope and its effects, be implemented more successfully by the European Union.[9]

2.2 Functional airspace blocks – a reflection of subsidiarity

In keeping with the subsidiarity concept, the Single European Sky is a good example of this principle implementation and observation. Given the transnational action dimension, the creation of the Single European Sky (a sky with no borders) may only be achieved at supranational level. Thus, the Union may adopt measures to create and develop the Single Sky, while Member States may develop advanced mechanisms to implement them, adapting them to the conditions specific to the country.[10]

Doubtlessly, though, a sky with no borders may only be achieved at supranational level. This concept may be developed to the extent national consciences converge,

becoming one common conscience, with a common will and understanding, devoid of egoistic manifestations.

Victor M. Aguado, the former General Manager of EUROCONTROL said: ”For us to cope with the traffic level we are going to have in 2020, it is necessary to start creating a pan-European network of air navigation services, airports, airspace operators and users, adapted to those requirements and accommodate high traffic.”[11] Starting from this idea, the European Commission launched the Single European Sky project.

As of the moment this project was launched, the European Union Member States were accustomed to the idea of awarding sovereignty characteristics to higher forums, this thing did not imply though the state sovereignty trespassing. Neither was subsidiarity a new concept.

The Single European Sky is materialized by creating functional aerospace blocks. Functional aerospace blocks are the explicit instrument to approach airspace fragmentation, and implicitly other issues related to fragmentation are also approached by FABs: airspace fragmentation can hardly by approached in an isolated way, given the tight connection between the provision of services (operational, technical, financial, social) and supervision.[12] As mentioned before, currently there are nine functional airspace blocks, the role of which should consist in:

- Airspace organization enhancement;
- Substantial benefits for airspace users;
- Granting a maximum capacity, efficiency and safety level in air traffic management;
- Minimizing fragmentation;
- Considering actual air traffic flows and not national borders;
- Harmonizing procedures and infrastructure;
- Strengthening service provision;
- A consistent tariff schedule.[13]

Commendable as these functional airspace blocks objectives may be, currently, despite their theoretical existence, practice is relatively far from what was expected of this project and from expectations for this interval.

Among the elements that should be considered by states, for functional airspace blocks to be really operational and attain set objectives, are the following:

- Clearly setting FAB objectives and their understanding by all FAB participants;
- Understanding and accepting the common principles provided by the SES legislation;
- The process involving designing the air routes and sectors requires significant review;
- Developing harmony, interoperability and an integrated system;
- Enhancing cooperation mechanisms;
- Having the ones involved in developing FABs understand the targets and objectives, accept them and further build on them.[14]

There currently is an obvious “reticence” of states involved in a FAB to effectively take part in its development and to actually build a cooperation mechanism meant to

create a common conscience within such a functional block.

The Single European Sky should be a ”win-win-win”[15] proposal in the benefit of the clients, of the aviation companies and of the environment. Each back step, each delay, each missed deadline is detrimental to clients, aviation companies and the environment.

The currently existing functional airspace blocks at the level of the European Union are ”imperfect compromises”[16]. They are not ”functional”[17] in all senses and are not conceived around identifiable traffic areas and in consideration of actual traffic flows. They are rather national airspaces groupings, made between two and up to seven national authorities and air navigation service providers.

3. SOVEREIGNTY – AN OBSTACLE TO THE EFFECTIVE ACHIEVEMENT OF FABS

An apparently simple concept, based on a strong cooperation and on the development of a joint mechanism involving principles, understanding and enforcement, the implementation of FABs in the context of the Single European Sky is often confronted with an obstacle – sovereignty.

Sovereignty, the role of which was often associated with the subsidiarity principle,[18] originally involved the sum of four characteristics:

- A sovereign state enjoys supreme political authority and monopoly on the use of force within its territory;
- It is competent to regulate movement beyond its borders;
- It may freely chose its external policy provisions;
- It is acknowledged by other governments as an independent entity.

The issue of sovereignty is the basis of all aviation relations and stipulated in article 1 of the Chicago Convention underlining that all Contracting States recognize that every State has complete and exclusive sovereignty over the airspace above its territory[19].

This concept, expressed even in the terms of the Chicago Convention, evolved with time, acquiring new nuances. In the current context of the European Union for example, if the sovereignty concept were understood as it was originally defined, then there could not exist a supranational ”power”, and the norms drafted by an international organization would not be valid unless the state provided a special consent. It is true that the State participates in the drafting of norms within an international organization but, at times, the organization enjoys exclusive competences, as in the instance of the European Union.

In the context of globalization and of technological transformations unfolding in nowadays society, States find themselves in the impossibility to satisfactorily conduct a certain activity, in the absence of a coordination mechanism at institutional and transnational level.[20] ”In this context, there is a strong tension between the traditional sovereignty concept and international institutions.”[21] Practically, there is a dispute in progress to establish the principles according to which ”power” is assigned to these decision-making entities at supranational level, which act with authority and legitimacy.[22]

“From the perspective of international law, sovereignty of states needs to be

downsized. International cooperation requires that states be made to observe the minimum international law requirements, without allowing them to refuse to observe these norms invoking the principle of sovereignty."[23]

This concept may be frequently used to justify certain actions or to refuse to conduct certain activities or to fulfill certain obligations. That is why, the FAB concept is confronted with a challenge in its adequate implementation, since states invoke sovereignty to protect financial and commercial interests or to avoid developing certain mechanisms at FAB level as required.

This failure to accept and understand common principles, which are already established and agreed upon by the parties and on which states expressed their consent by participating in the legislative process, makes the Single European Sky a "radical loser"[24].

4. WHY DO WE NEED THE FAB

The Single European Market = the Single European Sky
In 2013 we celebrate 21 years since the establishment of the Single European Market. This period has seen numerous achievements: the creation of many work places and a significant increase of the gross domestic product. The Single European Market offered European States' citizens the possibility to freely travel in the Union, to unfold the activity in any Member State, and for young people, it created the opportunity to study abroad. This is a clear message and a proof that a Single Market generates growth, evolution and offers European citizens more chances from all perspectives.[25]

The development of the Single Market is a continuous process, and this Market needs to answer the new requirements and challenges.

"The Single Market is a key instrument to attain long term objectives, that is the vision of a competitive market economy. It improves European competitivity at world level. The coherence and complementarity between internal and external policies stimulates trade and economic growth.

Now, more than ever, we need a Single Market to support reforms, so as to increase the number of work places, strengthen confidence of citizens and of participants to economic life, offering them genuine benefits. These aspects require a continuous and joint effort."[26]

To attain these objectives, the European Commission set certain priorities. Under the transport section, the objective set by the Commission is accelerating the implementation of the Single European Sky to enhance security, capacity, efficiency and impact of aviation on the environment.

It is interesting to notice that, as of this moment, the absence of an integrated airspace management at European level generates a series of negative results on airspace users. Aircraft use by-passing ways, record significant delays of flights, which leads to economic loss and have a significant impact of civil aviation on the environment. This airspace fragmentation present at European level generates additional costs for aviation companies, estimated at an annual 5 billion euro.[27]

Passengers are the ones bearing these consequences in their turn, and the European Union economy goes down, without becoming competitive.[28]

Given the growth of air traffic, the traffic management system is no more sustainable, and displays issues negatively impacting on safety, capacity and costs.

Accelerating the Single European Sky implementation by a new series of actions, including legislative ones (clarification of the institutional system, strengthening of the principles on air navigation services provision, acceleration of the SESAR implementation, redefinition of the performance system and supplying the Commission clear implementation instruments, especially relating to functional airspace block), shall address the strong ”barriers” in the current development of the Single Market and shall contribute to the significant and visible performance and efficiency. All these entreaties will contribute to the enhancement of the safety level within the European Union, to the minimization of transport costs and to the reduction of greenhouse gas emissions.[29]

Setting FABs only at formal level generates gaps and imbalance in the development of a Single Market, while the ”masked” opposition of states only contributes to the generation of negative impacts on all participants to civil aviation.

CONCLUSIONS

Absolute sovereignty, overall equality are principles governing interstate relations and grounding civil aviation development. Professor Matte, a visionary of all times, was against these principles, stating that *“We refused (…) to accept that such rights, edicted as fundamental and maintained in the first part of the 20th century serve as a basis for international conventions and organizations today”*[30].

Wrongly understood absolute sovereignty, de facto independence and equality, intransigent in character, *“these rights, considered until recently, fundamental by States, become an obstacle”*[31] to the optimization of the advantages civil aviation brings about.

"National selfishness, fear, sometimes justified, of small states of being swallowed up by more powerful states under the pretext of internationalization, the hindrance to international cooperation based on wrongly understood sovereignty principle and on wrongly interpreted independence and equality are great challenges to the adaptation (of civil aviation) to the singularity of circulation."[32] In a society driven by such principles, technological evolution cannot generate economic and social wealth, unify spirits and create unity as expected when, in fact, state selfishness, transferred to the individual, generates opposition.

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[1] High Level Group on the Single European Sky 2000.
[2] The Commission on Performance Assessment – Assessment of airspace functional blocks initiatives (FABs) and their contribution to performance improvement - EUROCONTROL Final Report, 2008, page 6.
[3] In keeping with the Air Code of Romania, functional airspace block means an airspace block, based on the operational requirements and which reflects the need to ensure an airspace management at a more integrated level, not considering the existing borders.
[4] The Commission on Performance Assessment – Assessment of airspace functional blocks initiatives (FABs) and their contribution to performance improvement - EUROCONTROL Final Report, 2008, page 6.
[5] "functional airspace block" means an airspace block, based on the operational requirements and which reflects the need to ensure an airspace management at a more integrated level, not considering the

existing borders.
[6] The EUROCONTROL operation center, providing air navigation services for four states (Belgium, Holland, Luxembourg and North-Eastern Germany).
[7] Evaluation of Functional Airspace Block (FAB) Initiatives and their contribution to Performance Improvement – Produced by the EUROCONTROL Performance Review Commission upon the invitation of the European Comission DG-TREN, October 2008, pag. 15
[8] Vesna Naglic & Danai Papadopoulou – Fact sheet on the European Union - *The Principle of Subsidiarity*, European Parliament, page 1.
[9] Vesna Naglic & Danai Papadopoulou – *The Principle of Subsidiarity*, page 1.
[10] *National Supervisory Authority* – Single European Sky – EUROCONTROL Institute of Air Navigation Services Course, September 2009.
[11] Yael Grushka-Cockayne&Bert De Reyck – Towards a Single European Sky – Interfaces, vol.39, no.5, September – October 2009, pag.400.
[12] *Single European Sky and Functional Airspace Blocks* – Directorate General for Energy and Transport, European Commission – presentation made by Mr. Alfonso Arroyo in Montreal in June 2008.
[13] Vesna Naglic & Danai Papadopoulou – *The Principle of Subsidiarity*, page 1.
[14] *Evaluation of Functional Airsăace Blocks Initiatives and their contribution to Performance Improvement* – Performance Review Commission, EUROCONTROL 2008 page 14.
[15] Athar Husain Khan – *Everyone loses from the Single European Sky delay - Public Service Europe*, Analysis, Opinion, Debate.
[16] *Idem*.
[17] *Idem*.
[18] Professor John H. Jackson – *Sovereignty - Modern: A New Approach to an Outdated Concept* – Georgetown Law, Faculty Publications, Georgetown University Law Center, 2010, page 788.[Jackson]
[19] Convention on International Civil Aviation, signed at Chicago, on 7 December 1944, art.1.
[20] Jackson page 784.
[21] *Idem*.
[22] *Idem* page 785.
[23] *Idem* page 787.
[24] Hans Magnus Enzensberger—The ones bringing about terror—An essay on the radical loser—ART Publishing House, 2007.
[25] Communication of the Commission to the European Parliament, to the Council and to the European Economic and Social Committee and to the Committee of Regions – *Single Market Act II* – Bruxelles 2012, pag. 4.
[26] Idem.
[27] Based on the assessments documented in the reports submitted by the Performance Review Body on the assessment of Single European Sky and Performance Review Commission.
[28] Communication of the Commission to the European Parliament, to the Council and to the European Economic and Social Committee and to the Committee of Regions – *Single Market Act II* – Bruxelles 2012, page 8.
[29] Communication of the Commission to the European Parliament, to the Council and to the European Economic and Social Committee and to the Committee of Regions – *Single Market Act II* – Bruxelles 2012, page 8.
[30] Nicolas Mateesco Matte - *Aerial - Aeronautic Law Treaty* – Pedone Publishing House and the Institute and Center of Air and Space Law, McGill, 1980, page 5.
[31] *Idem*.
[32] Matte page 33.

UNMANNED AIRCRAFT SYSTEMS: A DIFFICULT INTRODUCTION IN THE INTERNATIONAL AVIATION REGULATORY FRAMEWORK

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INTRODUCTION

The Unmanned Aircraft Systems (UAS) have been enormously developed over the past 10 years. The technology has greatly evolved and UAS use has been extended to the civil and commercial areas thanks to the new capabilities of the systems. Since, UAS has become a new asset which bears a considerable potential for the aviation industry.
However, its development is not as rapid as it should be to meet the industry's expectations. The major reason for this phenomenon consists in the lack of a regulatory framework and, more specifically, a distinctive body of rules and regulations integrating UAS flight into national airspace. The international community has been working hard to cope with this lacuna through different committees and study groups and their first step was the elaboration of a consistent certification which would fit the safety requirements applicable to aviation.

The airworthiness certification is a key element in the regulatory framework. Today, such certification is time consuming and unclear. Unfortunately the analysis by the UAS users do not offer better indications regarding the certification requirements. There is an obvious void around the regulatory regimes dealing with UAS, which is the major impediment to any current and future development.
As there is no general body of regulations applicable across the border to any category of UA, operators rely on a 'patchwork' of national regulations and international standards.[1]
In general, the international community turns to the USA and EU, which are the leaders in terms of variety of sophistication and size of the UAS market.

Through different working groups at national, regional and international levels, harmonisation is sought in any attempt at regulation.
However, the reality is still disappointing. The attempt to apply the existing and working regime for manned aircraft has not been successful.
The great nations which take part of the aviation industry have to elaborate a more relevant and structured certification if they want to manufacture, certificate and integrate UAS in their national airspace. The current international regime and its drawbacks will be studied in this paper.

1. UAS: A HIGH LEVEL OF LEGAL UNCERTAINTY

1.1 A Controversial definition

The term Unmanned Aerial Vehicle (UAV) is quite recent according to the history of such aircrafts. Indeed, in the early 1990s this term replaced the existing term called remotely piloted vehicle (RPV). Following the Vietnam war, the Department of

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Defense Dictionary defined a UAV as a "A powered, aerial vehicle that does not carry a human operator, uses aerodynamic forces to provide vehicle lift, can fly autonomously or be piloted remotely, can be expendable or recoverable, and can carry a lethal or nonlethal payload. Ballistic or semi ballistic vehicles, cruise missiles, and artillery projectiles are not considered unmanned aerial vehicles. Also called UAV."[2]

1.1.a Aircrafts or vehicles?

Some authors still call them 'aircrafts' instead of the more universally applied term 'vehicle'. For instance, Anna Masutti defined the UAV as "aircrafts that fly employing a remote control system located in a ground station or in a different airspace area than the UAV's location".[3] Usually, we notice that despite the commonly accepted term 'vehicle', authors who denounce the lack of regulation in the UASs field are prone to insist on the fact that they are 'aircrafts', because aircrafts have a legal regime already well-established and intended to be used as a tool to deal with the civil UASs.

The FAA and the British Aviation Authorities describe UAS as an aircraft. The CAA of UK defines UAS as a composition of "an individual 'System elements' consisting of the unmanned aircraft (UA), the Pilot Station and any other System Elements necessary to enable flight, such as a Communication Link and Launch and Recovery Element. There may be multiple UAs, Pilot Stations or Launch and Recovery Elements within a UAS."

If the FAA and CAA prefer to use the term 'aircraft' it is conceivably because under this term they are entitled to regulate. Additionally, following the lobbying of the UASs manufacturers industry and seeing the need for civil utilisation, the authorities tried to fill the gap in government regulation. The use of the term 'aircraft' would also be the solution to this issue: as the authorities regulate aircrafts, if UASs are accepted as such, they cannot get into the civil airspace without permission. This is why in 1999, the FAA gave the name of 'remotely operated aircraft' to the UASs. The UAS name game introduced lawyers for wording preciseness. They highlighted an issue concerning the ROA terminology, as it did not encompass all types of UASs.

Considering the different definitions, the main aspect remains: UAS technology does not include passenger travel. Unfortunately, if clarification is not made on what is an aircraft and what is not, lawyers, regulators and insurers cannot act on UASs. Indeed, defining UAS as aircraft implies that the already existing legal parameters would be applicable to UAS (ICAO rules and national laws generally applicable to aircrafts). Eurocontrol, jointly with JAA stated in its final report "It should be born in mind that UAVs are regarded as aircrafts".[4] The common US-European point of view has rang as a undisputable statement: the Chicago Convention definition of aircraft is applicable to UAS.

1.2.b UAV or UAS?

It is also common to find the term 'unmanned aerial system', which confuses the readers. An Italian author supports that the 'vehicle' is reduced to the aircraft and to the ground control system whereas talking about 'system' encompasses the entire system. Hence, in 2008 the ICAO Air Navigation Commission analysed the proposal of the UAV study group that was supporting the change of term from UAV to Unmanned Aircraft System. According to this group, this change would make easier the insertion of UAS into national regulatory regimes than UAV.[5] In Europe, Sweden proposed a total system approach under the term 'system'. EASA agreed to this proposal and imposed 'UAS' to the EU in 2008.[6]

The importance brought to this terminology debate does not rally all the authors' community. Some of them stress the attention on the inhabited aspect of the vehicle. Indeed, for them UAV is the acronym of uninhabited air vehicles.[7]
Besides some authors do not make much differentiation between the terms, taking more into account their characteristics and use: "Unmanned aircraft, drones, or UAS (as) generic terms that describe a category or class of remotely-piloted aircraft used for non-recreational purposes and intended for commercial, military, governmental, or scientific purpose".[8]

A dispute about the terminology is ongoing between the various authors, but whatever their conceptions of the unmanned aircrafts are, either vehicle or system, the main issue remains in the insertion of one of those terms into a solid regulatory framework.
Presently, classifying UAS refers to a "mix of nomenclature used from a variety of sources including the military, research community, manufacturers, and professional organizations".[9]
There is an obvious lack of consensus about this classification as the different sources refer to different parameters like mass, vehicle configuration, designed application, level of autonomy, type of operation, or military level employment.
However, the current manned aircraft certification provided by the FAA and Europe rely on the UAS's weight: wether it is heavy or light and subsequently the aircraft's configuration with rotary or fixed wing attributes.

1.2 Current uses and evolution in UAS uses: the civil trend

For many decades, UAS has essentially been used for military purposes in the area of tactical and strategic reconnaissance. The UAV Task Force reported that "more than 30 nations are developing or manufacturing more than 250 models of UAVs. More than 40 countries operate more than 80 types of UAVs showing a wide range of system performance concerning speed, altitude, mission duration, and payload capability"[10].
However, the EU members have been unsuccessful in exporting UASs to non-EU members. Although they have been using UAS for decades, the EU seems to have a small capability in producing most types of Advanced UAS. This is why UASs in service are mainly manufactured by the USA or Israel. The increasing demand is met by either US UAS systems or by hybrid Israeli-EU systems. US systems generally provide a complete UAS although the Israeli systems are appointed with European sensors.
A study estimates that in 2017, the civil UAS market in the USA could reach $560 M out of a total (civil plus military) UAS market which is about 10% of the total UAS US market worth $5 Billion in 2017. It is foreseen that 1,500 civil UAS will be in service in 2017 and that approximately 85% of those will be small UAS. In 2009, approximately 20,000 UAS flights occurred in US civilian airspace (and over 2,500 hours flight) which, in terms of operations, is three times more than what was operated in 2007.
Among the wide range of UAS produced, small unmanned aircraft is the type is the highest in demand. They are defined here to encompass the Micro, Mini, and Close Range categories. They comprise of a wide range of UAS i.e very heterogeneous and with different capabilities. Those categories have the following criteria:

- maximum take off weight less than or equal to 150 kg.
- maximum range of 30 km.
- maximum altitude of 4,000 m (over sea level).

According to the weight limit, a pilot could not get onto a small UA in any case. But the principal criteria of the small UA remains limited airspace access. Indeed, small UA cannot fly into Class A airspace. This airspace limit has not been implemented by the aircraft technologic limitations. The technology has amazingly improved the small UA capabilities. The altitude limit falls into regulatory issues, especially the ones

regarding the safety in the airspace where commercial flights operate; however, the small UA would per se fly closer to the ground.
The main difference between the larger unmanned aircrafts and the small ones consists in the UAs' ability to carry mitigating technology onboard. Although the payload capacity of a small UAS is limited, it is evident that the kinetic energy stored in a 150 kg aircraft can cause significant damage to other aircrafts, buildings, and people on the ground.
Large or Small UAS, depending on the use, particularly fit mission accomplishments that would be too dangerous for the pilots. UAS is a "safer alternative" to manned aircrafts. The advantages of UAS are evident over piloted missions as they imply a cost reduction, prevent loss of pilots, and their manoeuvrability asset is undeniable. The advantages are obvious: unmanned, low cost and low visibility either for reconnaissance or other uses.
According to those specificities, African and Latin American countries may also become more interested in UAS especially because many countries in these regions have large territories and long borders to control and several are experiencing ongoing internal conflicts. UAS could be a useful instrument to help in those safety and security missions.

The international UAV industry and the specialised agencies are also claiming this extraordinary growth in the demand. In 2000 the world market for UAV systems reached the order of 1 billion € in terms of annual revenues and the 2004 report announced a growth of 7% per year for the next 15 years. This worldwide trend is expected to grow if it is not limited by the national airspace integration.
The civil and commercial markets for UASs are in their incipient phases. It exists as a bunch of applications where the available technology offers a replacement to the existing solutions. There are many areas where civil UASs could replace manned aircrafts and even many unknown areas where UASs could bring solutions.
Unfortunately, the civil utilisations have been slowed by the lack of a regulatory framework. Those utilisations consist mainly in civil missions such as "policing activities, traffic management and monitoring, fisheries protection, pipeline surveying, coverage of large public, events, border patrol, agricultural management, power line surveying, aerial photography, global environmental monitoring and security related operations (GMES)".[11]
Over the last decade, the interest for civil and public use of UAS operations has so much increased that the stakeholders have requested the access of UAS to national airspace with the same rules that apply to manned aircrafts.

1.3 Transposition of the manned aircraft regime as a defective attempt

The Chicago Convention was signed in 1944 and is administrated by the International Civil Aviation Organization (ICAO). The Convention governs the international civil aviation activities of the States parties to the Treaty, and it is complemented by technical Annexes. In a logical thought, it would be rational that ICAO be the international body issuing binding provisions between its State Members and some guidance that the rest of the international community would apply as well if they are disposed to do so.
The UAV Task Force insisted on the fact that the Chicago Convention is not the only international text ruling the utilisation of UAV. Other instruments of international law may apply as well, such as the Montreal Convention and the Cape Town Convention (see below 2.3).
Even if the general aviation regulatory regime may be broad, the focus point remains in the Chicago Convention as it addresses aircraft and airworthiness matters in general

terms which permits the establishment of a basis for drawing the UAS regime. However, the relevant provisions of the Convention regarding UAS are few.
'Article 3' limits applicability of the Convention to civil aircraft and excludes state aircraft which means that at the time being the greatest number of UASs are not ruled by the Convention as most of them bear a national flag for states or military uses.
However, the actual use of UASs should not distort the legal rule laid down in the Chicago Convention. The various discussions preceding the drafting of regulations clarify the ICAO definitions of aircraft subject to the Convention (Annexes and other complementary agreements) encompasses "any man-made contrivance that is capable of sustained flight above the immediate surface level of the earth". Moreover, there has not been any minimum/maximum size indicated in order to fall under the 'aircraft' definition. So, by exaggeration but in order to demonstrate the ICAO reasoning scope, an author concluded that "so even a radio-controlled model aircraft would be covered under a literal reading of the definition, and no legal authorities state otherwise".[12]
Hence, it is clear that in the ICAO regulatory scheme, there is no distinction made between manned and unmanned aircraft.

'Article 8' brings the opportunity to apply the Convention to UAS although it was primarily applied to manned aircraft. In it, UAS is addressed as 'pilotless aircraft' but the sovereignty of the States over their territory remains even in the case of UAS flights: "no aircraft capable of being flown without a pilot shall be flown without a pilot over the territory of a contracting State without special authorisation by that State and in accordance with the terms of such authorisation. 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".
This provision bears the weight of history as it relates to the Second World War bombing over English territory by Germany, mentioning specifically the care of duty pilotless aircrafts should fulfil during their flights to avoid damage to civil aircrafts. The main idea of the provision is that UASs are not entitled to fly over other State parties territories without authorisation.

'Article 31' establishes the requirement of certificate of airworthiness issued by the State of registry for aircraft engaged in international aviation.[13]

'Annex 8' of the Chicago Convention - Airworthiness of aircrafts – is the reference basis which has supported the establishment of a functional reference framework applicable to UAS. Indeed, the current system of airworthiness has been based on this source to be developed. The airworthiness procedures and functional requirements laid down in Annex 8 have been supplemented by a more precise regime specifically drawn to manned aircrafts.[14]

The extension of application of the requirements has been possible because the Annex 8 does not exclude UASs although it was primarily addressed to fixed wing aircraft and rotary wing aircraft (helicopters), and as well, because of the lack of definition for an aircraft.

An interesting point has to be highlighted: as there is no equivalent of the Chicago Convention for the military aircrafts, in practice States apply the criteria set out in the Convention regarding the airworthiness certification to the military UAS.
Hence, following what has been laid out by the Chicago regime, the authorisation given for over flight above another territory has to comply with the provisions set out

in the Convention and its Annexes in order to guarantee the safety of all related operations.
For an UAS to have such an authorisation, the operator would have to comply with the airworthiness requirements. If this system has been sufficient and well established for decades to the manned aircrafts, then, a major issue is held up concerning the UASs insofar as there is no technical Annexes complying with their specificities.
Thus, the whole certification process and the authorisation by other States are founded upon a deficient regime. As proof, a UAS is not designated as a 'state aircraft'. Its access to international airspace "is subject to the whim of the air traffic organisation that provides air traffic management services […]. Anyone operating in that environment without specific authorisation from the controlling authority does so at their peril".[15]
Many times the organisations that have studied UASs reported the inefficiency of the airworthiness requirements. The technical complexity and the different operating features of UAS explain this.
For instance, the Task Force Final Report highlighted the specificity of the system, as UAS flights are "operated by complex equipment from a control station and employ a link system between the station and the aircraft". The global equipment may be composed of various and numerous elements, which may be used for several vehicles in operation at the same time.[16]
The UAS system is tricky and the elaboration of an efficient safety certification raises many questions.
In 2008, the Study Group proposed a review of some ICAO Annexes in order to clarify the gaps between the existing SARPs and their compliance with the specificity of UAVs. Even though some major gaps have been identified, there has been no amendment to the ICAO Annexes.

One of the most complex situations occurs when one station controls several UASs that are of different types. In this case, what should be done regarding the issuance of certificates: either a single certificate created for the control station with consideration of its special features, or as many certificates in relevance with the number of in-flight vehicles.
The Europeans answered this problem and the EU went for a 'system' certification to make the certification easier and applicable to other vehicles.

The American aviation authority (FAA-Nicholas Sabatini) called in 2006 for "international harmonisation of unmanned aerial vehicle regulations and standards", arguing that the efforts would be most effective if they are based on a unified approach.
At an international level, the ICAO also identified the need for co-ordinating the civil unmanned aerial vehicle regulatory process at an ICAO Exploratory Meeting on Unmanned Aerial Vehicles held in May 2006.
The whole international community denounces the short term regulatory solutions for UAS and pleas for a common framework which would not only deal with civil use of UAS but which would encompass the UAS used for military purposes. The link between the civil and military is tight while dealing with UAS and the regulatory scheme should reflect this reality.
Indeed, this theory is widely supported as explained by one author that states that "in order to achieve the long term, unified approach, it is necessary to establish comprehensive and generic reference into appropriate unmanned aerial vehicle and system regulations. In particular, design and operational requirements are needed to

allow operation of unmanned aerial vehicles and systems in both civil and military airspace".[17]
There is an urgent need to design a framework that would provide the UAS with the same safety and security airworthiness as the manned aircrafts. However, as mentioned, "safety concerns are working against a quick integration of the UAV in the national airspace".

Concerning the specific aspects of UAS airworthiness, participating in the debate preceding the EU regulation, the European Economic and Social Committee expressed its concern related to those aspects and the urgency to cope with them. The proposed solution was the following: "EASA must have the necessary powers to regulate this area of the industry, not only airworthiness and design, but also the certification of ground operators, launching systems, etc".[18]
Europe has worked to solve this issue with a harmonisation perspective. The European institutions and their special agencies try to coordinate their efforts with the trend which is ongoing in the USA. Their common developments inspire the rest of the States' achievements in their regulatory efforts.

2. AIRWORTHINESS CERTIFICATION AND STANDARDS: A MUST FOR THE FUTURE OF THE UAS INDUSTRY

Recent technological developments have allowed UASs to perform longer flights. Since then, they have been subject to a new interest of civil use. UASs are no longer constrained to segregated areas. Their entry in the civil air traffic raises some concerns related to ATM, ATC and also to the safety and security aspects of those flights. The certification which is the basis of UAS authorisation to fly has been agreed upon, in a simple model: "Airworthiness means that the aircraft is safe to fly, controllable, can withstand anticipated flight loads, and can operate safely over its design life."[19] In order to promote the sector development, the international community has naturally chosen a UAS certification as close as possible from the existing one (manned aircrafts).

2.1 Actual international regulatory environment for UASs

Under the Chicago Convention, States parties are obliged to regulate the airworthiness of civil aircraft engaged in international air navigation. The requirements of Annex 8 are therefore implemented into national levels by national laws and regulations ruled by civil aviation authorities.
Contrary to what could have been expected, ICAO has not been designated for issuing specific rules applying to UAS. ICAO got involved in the UAS regulatory discussions in 2005 through consultation of some of its member States in order to outline the current use of UAS and to explore the options for issuing guidance materials. Surprisingly, a year later during an informal meeting, it was decided by 7 international organisations and 15 States that ICAO would not be the "appropriate body to lead the regulatory effort (and that although it could guide and coordinate to some extent the regulatory efforts"). Those efforts were achieved by RTCA and EUROCAE and other bodies.
For this purpose, a specific study group was appointed in 2007 with the goal of supporting the regulation and guidance development within the ICAO. The first meeting of the study group took place in Montreal, Canada in 2008. The topics discussed were mainly organisational and institutional; however, a work programme was issued as well.

2.2 The leading models : USA/EU

The current federal air regulations (FARs) and the European regulations did not anticipate the controlled UAVs' operations in the US and European civil airspace. In both regimes, there is no specific section dealing with the applicable law related to UAS.

In Europe, the main reasons for the slow commercial adoption of UASs was supported by the lack of safety standards and, first of all, the lack of airworthiness. As indicated by the EC during the UVS International Conference (Moscow, January 2009), the aim of the EC is to "elaborate in Europe the appropriate measures or, when deemed necessary, the regulations, which can enable the emergence of new markets, but with the guarantee that the highest standards of safety shall be ensured".

Secondly, the industrial justifications contributed to it (lack of dedicated command and control frequencies and spectrum and bandwidth issues) creating an obstacle for the setting of the global picture of UASs available to manufacturers and users suitable across all EU countries. At the beginning of its work (NPA of 2005) on the certification of UASs, EASA reckoned it was necessary to specify the exact type of UAVs that will be subject to this regulation and those that will, instead, be subject to rules established by national authorities only. Then, it was decided not to stay close to the manned aircrafts certification, but to bring adjustments to it. Indeed, the practice would have proved that the ATC is similar in its application either to manned aircrafts or UASs. Thus, the UAS certification should be specific but broad enough for the practitioners to operate the same way through navigation, control, rescue and operations.

In Europe, an aircraft is "deemed to be airworthy within EU if it meets or exceeds the essential requirements as defined in the EASA basic Regulation (2002)". The airworthiness requirements were complemented by the EU regulation 216/2008 which followed A-NPA 16/2005 issued by EASA. The regulation inserted majority of the comments of the Advance Notice.[20]

The regulation does not specify its application to UASs. Although the lack of an express mention could have excluded the UASs from the EU regime, the interpretation that has been done by the European institutions, and especially by EASA tends to force UASs to comply with the European rules related to airworthiness requirements and certifications. Following this path, UAV is de facto submitted for the harmonisation efforts performed by EASA. Moreover, as the regulation applies to 'aircraft', it has been of a positive decision to retain the term 'system' as it includes all the components. Basically, the regulation applies to "aircrafts, including products, parts and appliances designed or produced by an organisation for which the agency (EASA) or a State ensures safety oversight, or registered in a Member State, or registered in a third country and used by an operator for which any Member State ensures oversight of operations". The broad interpretation of 'aircraft' detailed in the regulation enables its application to UAS.

In fact, the goal was the establishment of general principles for type-verification of UAS in compliance with the 'Basic Regulation'. Unfortunately, the EASA itself recognised the incomplete work assessed by regulators. The Agency described the certification policy as a "first step in the development of comprehensive civil UAS regulation". According to EASA, their policy remains an "interim solution to aid acceptance and standardisation of UAS certification procedures". Its plan is to replace it in due course when more experience will be acquired. For illustrating that fact, there is no certification specifications (CSs) for UASs; however, the CSs designed

for manned aircrafts are usable for UAS context wherever possible. Nonetheless, dedicated UAS codes or subparts should start to emerge as soon as the experience in the certification will be gained and hence, will replace or supplement the existing CSs.

Despite these facts, the core of the airworthiness remains in the safety requirements that have been clearly stated in those words: "With no persons onboard the aircraft, the airworthiness objective is primarily targeted at the protection of people and property on the ground". Civil uses of UAV must not increase the risks compared with manned aircrafts. For routine certification, the US Part 21 is applicable through the type-certificates issuance. They are delivered when the applicant shows compliance with a type-certificate for the UA and a certificate of airworthiness. However, issuance of restricted type-certificate and/or restricted Certificate of Airworthiness may be granted.

This is a kind of 'hybrid' model ruling UAS certification: UAS are subject to a regulation which barely mentions them (only in Annexes), although the latest writings have been motivated by the will to apply a coherent text to them. As the regime ruling UAS is incorporated in a wider framework ruling the manned aircrafts, UASs will also have to comply with those requirements. Moreover, the express provisions regarding UAS in the Regulation consist in exemptions of airworthiness requirements categories. The list includes:

- UAS with an operating mass no more than 150 kg;
- Those designed for scientific or research purposes, or produced in limited numbers
- Those used for military, customs or police activities.

Hence, those three categories are subject to national law. However, a strong recommendation note encourages the States to apply the regulation for the UASs performing military, customs or police activities.[21] The US initiated their regulations towards UASs in the early 1990's, well before the EU. The regime has recently evolved facing the technology developments, and has tried to become quite consistent. It appears that the safety issues remain an ardent topic that the FAA is struggling to cope with.

Despite their efforts, the lack of regulatory guidance and standards remains and it consists in a massive barrier to civil and commercial flight missions.
The official position of the US FAA regarding this lacking focuses on safety aspects: "We are open to accommodating this new aspect of aviation, but we will not compromise the safety of the National Airspace System". According to the Authority, the design of certain UASs "make them difficult to see and, in the absence of adequate detect, sense and avoid technologies, the FAA's chief concern is to address safety implications".
Therefore, the operators of UAS are required to acquire a certificate defining the airspace in which the vehicle will fly. This airspace is agreed upon with the air control facilities. However, the UASs are still very often restrained to daylight flights and to visual control all the time.
Although the need for widespread access for UASs in national airspace is taken seriously, the fear of the FAA of the concomitant risk of collision with passengers or other aircrafts block the whole process. As confirmed by one author, this fear is comprehensible, because "the danger posed by a UAS mishap is not a hypothetical matter and informs the lethargy with which regulators have acted to integrate UAVs

into the national airspace fully".
With this knowledge, lawmakers should draft rules and policies in light of documented mishaps. In the actual situation, many outstanding questions remain regarding the safety aspects of the UASs.
The actual regime imposed to UAS started in 2007, when the FAA reviewed its definition of UAV with the knowledge that UASs could benefit from the extension of the new definition :
"Unmanned Aircraft is a device that is used, or is intended to be used, for flight in the air with no on board pilot". According to FAA, this definition encompasses all types of UASs, from Small R/C model to large full scale aircrafts and also remotely operated to fully autonomous systems. The FAA policy states that "no person may operate a UAS in the national airspace system without specific authority". The authorisations are delivered by the COA for public UAV and a special one is issued for experimental category UAS and the models.
However, the FAA has tried to change the actual regime policy by proposing a certificate applicable to both public and civil vehicles. This proposition highlights the basics of this certification which has its source in FAR Parts 61 and 91, thus recognised as the fundamentals of the certification.
"All UAS must be shown to be airworthy to conduct flight operations in the NAS. UAS should be maintained and conform to the same airworthiness standards as defined for the 14 CFR parts under which UAS are intended to be operated. The FAA recognizes that some of the requirements can differ from those for manned aircraft and appropriate changes can be defined. In the future, UAS Maintenance Technician certification will parallel existing standards for manned aviation. As with airworthiness standards, Maintenance Technicians Requirements will be reviewed as part of the data collection process".[22]

It is clear that the FAA guidance supports unmanned aircraft flight activity only if they are conducted with an 'acceptable level of safety'. Applicants not only have to comply with the normal clearances (terrain/cloud), but they also have to "demonstrate that a collision with another aircraft or other airspace user is extremely improbable".[23]
In order to get the airworthiness certification, UAV flight operations must have a designated
'pilot-in-control' (PIC), who must perform crew duties for only one UAV at a time. The PIC bears responsibility and accountability for the flights.
The regime has been consolidated by Order 8130.34 "Airworthiness Certification of Unmanned Aircraft Systems" that sets out the requirements for insurance of special airworthiness certificates in the experimental category of UAS.
These general operating and flight rules have a limited scope as they do not apply to ultralight aircrafts, which are governed by specific flight rules.

The USA in comparison with the rest of the countries have a well-established set of rules dealing with UASs, although not complete. As expressed in 2007, they have followed their "initiative to develop policies, procedures, and approval processes to enable operation of unmanned aircraft systems […] will be a collaborative FAA/ Industry approach with the establishment of an Aviation Rule Making Committee and various rulemaking activities".[24]
For the FAA, the creation of guidance which started 20 years ago seems to be a "long term" work and, unfortunately, still a "work in progress". The FAA recently issued special airworthiness certificate which only applied to the experimental vehicles, and thus for the purpose of research & development, marketing survey or crew training.

Moreover, this certification implies the requirement to have a PIC of the aircraft at all the times and an observer to analyser the activity. By doing so, the FAA has once again limited the scope of UAS's operation as the certification requires manpower and technology which cost money and thus, create a barrier to civil uses.

This limited situation has been worsened by the requirement imposed to the operator who must demonstrate that the aircraft will be operated safely. Moreover, civil UAS 'suffer' the same constraints as military ones by supplying the FAA with information regarding the number of flights, a description of the areas over which the UAS would operate, as well as drawings or details photographs of the aircraft. Currently, type-certificate are not delivered easily when UAS have civil purposes. Those activities require an experimental certificate. UAS operations for civilian commercial purposes are largely prohibited, limited to certain fields like research and development, product demonstration, or crew training which require an experimental certification. Surprisingly, despite the multitude of restrictions, applications have increased tenfold since 2003. Realising the rapid expansion of this billion-dollar industry, the FAA is taking steps toward allowing small unmanned aircrafts (under 55 pounds) to operate commercially in the national airspace. In order to achieve an issuance of regulation in the near future, the FAA urged the rulemaking process by forming an Aviation Rulemaking Committee. This Committee is entitled to develop recommendations which was supposed to lead to a published Special Federal Aviation Regulation (SFAR) by mid-2011, with a final rule expected in late 2012. Since no SFAR has been issued by mid-2011 or no CFR Notices or Proposed Rulemaking regarding the UASs, only the amendments to regular regulations applicable to UAS have new implications. Indeed, the UAS issue was discussed in 2011 in the US Congress Bill in the House of Representatives. This Bill would have required American regulation of UAS within 180 days of its passage. A few days later the US Senate passed another Bill[25] including similar concepts but ultimately, due to political wrangling, no Bill was passed into regulation. However, it is worth mentioning that both Houses in the US Congress called for regulatory plans for UAS in 2011. Thus, there is no shift from the initial regime and UAS still have to comply with experimental certificates.

In the USA and in the EU, the FAA and the European institutions asked for support in the technical aspects regarding the UAV. The FAA contacted RTCA in 2004 which formed a Committee with the Government, joined by some industry professionals and several countries. They have been working on issuing standards related to: UAS, Command, Control and Communication Systems for UAS and Sense and Avoid Systems for UAS. These standards have not been finalised yet. But in parallel, another Committee has been created whose Standards have been accepted by the FAA. The ASTM Standard Worldwide Committee has produced a dozen standards tackling different subjects, and among them is airworthiness, giving birth to "Practices for Unmanned Aircraft System Airworthiness" inserted in 14 CFR Part 21.

Europe and USA are the leaders in term of UASs numbers, operational activities and development. The European entities and JAA try to draw parallel lines in order to create a similar frameworkEurocontrol, EASA, JAA and EUROCAE all are working on various aspects of UAS certification, contributing to ICAO efforts and coordinating with FAA to ensure there is a seamless global solution. The common approach stresses the need to pass regulations on both sides. It is obvious that UAS regime is a priority in the respective US – EU agendas. However, by defaulting the agreed deadlines, the UAS stakeholders are getting impatient.

This absence of absolute legal guidance with respect to the jurisdiction of UAS regulation, the unclear and different definitions of UAS, and the (non-) integration of UASs in the national airspace prevents the optimal use of UASs and their development. The rest of the international community scrutinises the development of the regulatory framework being done in the US and at the European level. For this industry to be efficient, harmonisation at an international level is fundamental. Hence, several states recognised as major users of UAS in the EU and elsewhere are currently implementing procedures to issue special operating authorisations for UAS: Australia; Canada; Finland; Italy; Malaysia; Sweden; UK.

CONCLUSIONS

The exertions for establishing a legal regime applicable to UAS is in progress. After the study, it seems that despite the efforts in harmonising the regulatory requirements, the current international regime is still divided not only between States, but as well, in the certification of airworthiness itself as the certificates are mainly addressed to particular UAS. The generic framework for UAV airworthiness requirements has not been achieved neither by the international community at a supranational level nor by States solely.

However, some strong principles have been drawn and they were needed for any future consideration of regulation. The definition of UAS, UAV, the interpretation of the Chicago Convention and its applicability to those aircrafts were some fundamentals that needed to be discussed and made sure about before issuing any regulation regarding the requirements for certification of UAS.
Now is the time for lawmakers to address more directly UAS integration into the national airspace and this cannot be achieved without more clarifications concerning UAS certifications.
The industry showed its capabilities and regulators have the role to stimulate its advances and progress through UAS-related law and policy, "while insuring the legislative and judicial function of promoting contract, tort, property, and regulatory rights that promote the public welfare".[26]

There is no doubt of the awareness of this urgent matter but this remaining uncertainty regarding the applicable regime to UAS under public law has disastrous effects on other legal considerations regarding UAS. For instance, the private legal instruments and particularly the liabilities questioning, insurance matters, cannot be clearly set up because the regulatory authorities have not defined yet the boundaries in which UAS can operate. What is needed is regulatory instruments specifically designed towards UAS which would go further in the clarifications of requirements than general rules applicable to the manned aviation.
According to the professionals of the UAS industry, year 2012 promises to bring clarifications. At USA's end the SFAR is expected and in the EU, EASA with its reinforced powers, is in charge for issuing new regulations due at the same period.

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SPACE

TRYING TO FIT A SQUARE PEG INTO A ROUND HOLE? APPLYING AIR LAW TO MANNED COMMERCIAL SPACEFLIGHT—THE CASE STUDY OF CURACAO

Frans G. von der Dunk*

INTRODUCTION

The first properly private and commercial manned spaceflights, though considerably delayed since the X-Prize was won in October 2004, now seem right around the corner. Virgin Galactic, still likely to be the first to market, is – at the moment of this writing – aiming for 2014 for its first passengers to be flown by its SpaceShipTwo, from underneath the wings of its carrier aircraft WhiteKnightTwo, to an altitude of some 120 km.[1] Space Expedition Corporation (SXC) may soon follow as the second to market, with its single-stage XCOR-manufactured Lynx planned to achieve similar altitudes as of 2014, possibly from its home base in Curacao.[2] Several further projects planning for similar flights from a variety of places in Europe, the Middle East and East Asia are momentarily discussed as well.

The novelty of this endeavour has, naturally, led lawyers to discuss – and sometimes considerable diverge in opinion – as to how to best regulate it, internationally and nationally, in particular with a view to using existing regimes of air law and space law .[3]

The arguments put forward in favour of using air law, at least as a starting point in order not to completely reinvent the wheel, usually amount to pointing out that the vehicles so far being planned or developed for sub-orbital spaceflight generally would, could or at least should qualify as aircraft.[4] Their flight profiles certainly take them 'above' air space into the margins of outer space for only a brief part of their trip, without such flights seemingly having much to do with 'classical' space activities such as science or satellite operations. Finally, aviation has a longstanding tradition of regulating private commercial flights in particular as to their safety-aspects through an elaborate and well-weathered system of national and regional regulation within a harmonising international legal framework.[5] It thereby also handles such issues as certification of aircraft, licensing of crews and rules for the operation of aircraft and airports alike.

And indeed, the International Civil Aviation Organisation (ICAO)[6] has already a number of years ago for the first time seriously addressed the issue of whether it should not act as the proper body to regulate commercial sub-orbital flight – although at the same time it should be noted that the outcome of that 'investigation' was that, yes, sub-orbital vehicles would fall within the generic definition of aircraft as ruling in international aviation ("any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface"[7]), but no, at the time it did not seem opportune or appropriate for ICAO to actually start regulating such flights[8].

Also the European Aviation Safety Agency (EASA), established by the European Union to handle many safety aspects of aviation within the EU Internal Market[9], tinkered with the idea to develop a specific subset of regulations for sub-orbital vehicles using existing aircraft certification as the point of departure[10], although this approach now

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seems to have been shelved.
In the latter context indeed some attention has been given to what it means to actually start applying, or trying to apply, those rules to manned spaceflight. Safety regulation in aviation, however, in terms of implementation and enforcement is very much a national process, even in the case of Europe only partially elevated to the regional level. At the same time, it is guided and framed by the international legal framework developed in the context of the Chicago Convention and its Annexes[11], as well as the competence of ICAO as established by the Chicago Convention to further address issues of safety at least in the international context[12].

1. INTERNATIONAL REGULATION OF THE SAFETY OF AVIATION

It is fundamentally through the concept of 'aircraft' referred to before that the safety of aviation is regulated at the international level.
To start with, the registration of an aircraft with a particular state, in accordance with Article 17 of the Chicago Convention, provides the aircraft with the nationality of that state, entitling it to exercise its jurisdiction on a quasi-territorial basis on board – inter alia with regard to safety regulation. This entitlement at the same time comes to represent an obligation to implement safety regulations vis-à-vis that aircraft as agreed upon at the international level.
This refers for example to general requirements already imposed under the Chicago Convention itself, such as mandatory documentation related to safety that has to be available on board or the mandatory presence of radio equipment on board.[13] More importantly still are the requirements pertaining to an airworthiness certificate before flying a particular aircraft is allowed.[14] Similarly, crews should be properly licensed for their respective responsibilities and tasks.[15] Article 33 then requires mutual recognition of airworthiness certificates and crew licenses as between ICAO member states.
All further details of these safety-related requirements are to be found in the various Annexes to the Chicago Convention, which are regularly updated so as to keep track of important technological or operational developments. Amongst the 18 Annexes, the following seven incorporate the technical requirements most directly related to the safety of aviation, usually targeted at aircraft defined as referred to above: Rules of the Air (Annex 2), Operation of Aircraft (Annex 6), Airworthiness of Aircraft (Annex 8), Aeronautical Telecommunications (Annex 10); Air Traffic Services (Annex 11), Aircraft Accident and Incident Investigation (Annex 13) and the Safe Transport of Dangerous Goods by Air (Annex 18).
Whilst strictly speaking not belonging to the realm of safety-related legislation and regulation, it may be noted that also the liability for damage caused by aviation is attached to aircraft, and through those to the operators of those aircraft.[16] Similarly, the application of criminal air law is channelled through the concept of 'aircraft', being viewed as a quasi-territorial extension of the state of registration for the purpose of criminal jurisdiction.[17]

2. 'NATIONAL' IMPLEMENTATION IN THE CASE OF CURACAO: ISSUES OF APPLICABILITY

Though from an international perspective Curacao, even after the October 2010-establishment of autonomy, remains a 'Land' within the Kingdom of the Netherlands as the internationally-relevant legal entity, it has the opportunity in many contexts to deviate from national Dutch legislation otherwise generally applicable throughout the Kingdom. Aviation constitutes a prime example thereof; while the recent change of

status of Curacao may yet give rise to a reappraisal of existing legislation, so far the applicable regime essentially derives from the Aviation Ordinance ('*Luchtvaartlandsverordening*') of 20 December 2001[18], further elaborated by way of such regulations as the Decree on aviation supervision ('*Landsbesluit toezicht luchtvaart*') of 2003[19], the Decree on regulated and non-regulated air transport ('*Landsbesluit geregeld en ongeregeld luchtvervoer*') of 2005[20], and the Decree on air traffic ('*Landsbesluit luchtverkeer 2005*') of 2006[21].

Generally speaking, also Curacao's legislation on aviation principally hinges on the involvement of 'aircraft', which is defined here as "vehicles which can operate in the atmosphere with the help of the upward lift provided by the air", although certain vehicles, which would otherwise fall within this definition, may specifically be exempted therefrom.[22]

From the perspective of sub-orbital flight, most prototypes currently being developed indeed *can* so operate, at least for the lower parts of their trajectories, in airspace, and this includes XCOR's Lynx vehicle in particular – even if it *would* not *actually* on a (ny) particular flight operate with the help of the upward lift provided by the air, it would *in principle* still qualify as such.

Only military aircraft fundamentally fall outside the scope of the general regime on commercial and general aviation as otherwise applied to aircraft[23] — but obviously this is not a clause that would as such allow the craft to be used for sub-orbital spaceflights to escape applicability thereof. Also, of course, the Chicago Convention itself does not apply to military aircraft.[24]

Qualification as an 'aircraft' for Curacao's regulatory purposes as per the above consequently under public international law would in principle bring with it, firstly, the detailed obligations concerning the airworthiness certificates each aircraft is required to carry.[25] Secondly, such craft would have to comply with the regulations pertaining to mandatory equipment on board.[26] Thirdly, they would have to be registered and marked in accordance with applicable aircraft regulations.[27]

It should be noted, that as to commercial air transport conducted with aircraft, flights such as envisaged by SXC could also fall under the definition of the former as per the Chicago Convention, as this refers to any "carriage of persons, cargo or mail for remuneration or hire", made applicable also to Curacao by the local regulations.[28]

At the same time, the Chicago Convention is focused on point-to-point transportation, more precisely point-A-to-point-B transportation, which is so much deemed to be self-evident that it is not expressly referenced as such.[29] The sub-orbital hops currently envisaged by the likes of Virgin Galactic and SXC, however, are best qualified from this perspective as point-A-to-point-A flights, which normally would not be considered 'transportation' yet are strictly speaking still point-to-point – as every flight by definition is point-to-point.

Indeed, the applicable regulations in Curacao further distinguish between 'regulated air transport', being "a series of traffic flights, accessible to the public, *between two or more places*" in a frequent and scheduled manner[30] (to which sub-orbital hops, landing where they take off, do not belong), and 'non-regulated air transport', being defined as all other flights[31] (which should then *ipso facto* include sub-orbital hops).

In other words, any presumed equivalence of the legal concepts of 'transport(ation)' and 'flight' turns out not to work any longer in the context of sub-orbital flights, giving rise to potential confusion. Most of the Curacao regulation would namely remain applicable to the latter category as well, provided of course that the craft to be used for sub-orbital flights would be qualified as aircraft.

The only sub-category of non-regulated air transport further defined is that of a 'flight tour', defined as a flight starting and finishing at the same location and taking a total time of no more than 60 minutes.[32] As the XCOR Lynx to be used by SXC, would

have a flight profile of some 30 minutes only, it would indeed fit within this category.[33]

For all commercial air transport activities – whether SXC's Lynx flights would be qualified as 'flight tours' or not – an Air Operator Certificate (AOC) would be required.[34] The AOC will include amongst others a description of the activities allowed and the type(s) of aircraft allowed to undertake them with, the areas where these activities would be allowed and other special authorizations and conditions imposed by the responsible authorities.[35]

The requirements for obtaining an AOC also in Curacao are elaborated in quite some detail. Firstly, a series of demonstration flights has to be successfully completed before an AOC will be granted.[36] Then, Section 9.3 of the Civil Aviation Regulations of the Netherlands Antilles requires the existence of an Operations Manual, a training programme, an Aircraft Operating Manual, a set of 'Required Cabin Attendants' (noting that the Lynx is supposed to fly with one pilot and one passenger only!) and pilot training, as well as a host of technical conditions. Section 9.4 next provides a series of requirements related to maintenance, whereas Section 9.5 similarly includes requirements addressing threats of illegal interference with flights.

In principle, two categories of flight would be exempted from the general application of the above regime to commercial flights, whether regulated or unregulated.

One of those concerns so-called 'aerial work', which includes – but is not restricted to – flights for special services such as agriculture, construction, photography, surveying, search and rescue and aerial advertising.[37] As the list is not exhaustive, it would in principle be possible to explicitly include sub-orbital flights in this concept as well. For such flights a special authorization can be provided for up to three years, and be possibly made subject to further conditions or restrictions. [38]

The other concerns 'general aviation operations'[39], of which 'aerobatic flights' may constitute a special sub-category relevant here. Such a flight is defined as "a flight where on purpose movements are executed which result in a sudden change in the attitude, an abnormal attitude or an abnormal change in the velocity of the aircraft".[40] The sub-orbital flights envisaged by SXC would seem to at least potentially fit in with that definition.

For such aerobatic flights a specific exemption is required[41]; whereas such activities also are banned from the airspace above a city or other town, above a public open air meeting, within aviation zones adjacent to an airport, at lower than 450 m altitude or if visibility is less than 3 miles (4.8 km) – rules clearly not drafted for sub-orbital flights soaring to altitudes of over a 100 km, nevertheless potentially relevant and applicable.[42] Finally, in certain cases all passengers should be equipped with their own parachute[43] which obviously would not seem very helpful for the major part of sub-orbital flights soaring to altitudes of over a 100 km – and hence, presumably, not very appropriate.

Yet another special regime is applicable to test flights, defined as "flights that are executed to test the capabilities and proper operation of an aircraft, or to prove compliance with airworthiness requirements".[44] Such flights will be exempted from at least a number of requirements otherwise applicable; any test flights of the Lynx – so excluding those with paying passengers on board – would then qualify as such.

Then, the Aviation Ordinance allows for the designation by the authorities of certain flights as 'special activities', for which an authorization for up to five years could be granted.[45] Such an authorization will indicate "which activities the holder of the authorization is authorized to undertaken and with which aircraft it will be undertaken".[46]

General requirements related to the grant of an authorization will continue to apply also in this context. This concerns for example requirements regarding the transport

of dangerous goods (noting that SXC is also soliciting customers interested in hoisting scientific payloads into the lower margins of outer space), prohibited operations and the use of designated airport facilities.[47]
Finally, the regulations in general address 'local flights', encompassing each "flight remaining within the confinement of the island territory" of Curacao.[48] Apart from the possibility of flight paths extending to areas over the high seas close to Curacao, this raises a particularly interesting point with respect to space law.
As indicated, the highest segment of the arched trajectory of Lynx flights will – at least as intended – be above an altitude of 100 km, which of course conjures up the issue of whether a legal boundary line between airspace and outer space is acknowledged at such an altitude. To the extent such a flight segment therefore should legally be considered to take place in outer space – and there are some arguments for concluding that generally an understanding is developing that this is, indeed, with reference to exceeding an altitude of 100 km[49] – this would disallow the applicability of such a definition.
On the other hand, this definition is not yet universally accepted, whereas the phrasing of the particular clause in the Civil Aviation Regulations of the Netherlands Antilles might leave some wriggle room for a different interpretation as well – if the reference to the 'confinement of the island territory' is read as a referring to a two-dimensional confinement of territory regardless of the altitude, instead of to a three-dimensionally confined space.
In line with such an interpretation, the reason for this geographical limitation of 'local flights' refers to the possible complications resulting from flights entering another state's airspace, in view of responsibilities and competencies to provide air traffic services. In other words, as long as Curacao air traffic services would clearly be responsible, competent and in control, one could argue that also sub-orbital flights extending out over the high seas and/or into the lower realms of outer space could be encompassed by the concept without further ado.
The main benefit from a regulatory perspective would be that such an interpretation allows the Curacao aviation authorities to treat sub-orbital flights as a completely internal matter, allowing them to leave much international safety regulation, which might represent an ill or unduly complicating match for the characteristics of sub-orbital flight, out of the equation – at least as long as no airlines or other aircraft operators from outside of Curacao would be impacted by such a lack of applicability of international rules, standards and recommended practices.

3. 'NATIONAL' IMPLEMENTATION IN THE CASE OF CURACAO: ISSUES OF SUBSTANCE

Further to the above analysis of the extent to which sub-orbital flights like those planned by SXC and XCOR would, could or should fall within the scope of the general regime applicable in Curacao to entities undertaking aviation and aviation-related activities, the present paragraph presents an effort to shed some light on what such subjugation to this regime would mean in terms of its substance.
Firstly, as indicated above a certificate of airworthiness is required in accordance with the Civil Aviation Regulations of the Netherlands Antilles (which so far continue to apply to Curacao also after disbanding the Netherlands Antilles as an administrative entity).[50] In terms of substance then a special Decision on airworthiness of aircraft ('*Beschikking luchtwaardigheid van luchtvaartuigen*') of 2008[51] further provided for all the requirements related to airworthiness that aircraft have to comply with. These obligations principally apply to the registered owner or leaseholder of an aircraft registered in the Netherlands Antilles or his agent.[52]

Interestingly, with a view to the intended use of the Lynx vehicle by SXC, the Decree on aviation supervision creates a special regime for aircraft manufactured in the United States. Such aircraft will be semi-automatically provided with airworthiness certificate, "if the aircraft (a) is manufactured in conformity with applicable laws and regulations of the United States, (b) complies with all special requirements that, on the date of the request for an airworthiness certificate were applicable, (c) are provided with an certificate of airworthiness for export, granted not earlier than 60 days before the date of entry into force of the airworthiness certificate, and (d) complies with the regulations of the Netherlands Antilles [read now: Curacao] concerning the execution of flights".[53]

Part 5 of the Civil Aviation Regulations of the Netherlands Antilles distinguishes between a 'type evaluation' for the purpose of obtaining an airworthiness certificate, in case the aircraft type for which an airworthiness certificate is requested has not been certified by the Netherlands Antilles (read now Curacao) before, and a 'series evaluation' which applies where that by contrast has been the case.[54] Airworthiness certificates would then be tailor-made for a range of possible aircraft, of which 'utility aircraft', 'aerobatic aircraft', 'light aircraft' and 'special aircraft', including experimental aircraft, would come closest to being applicable and/or useful for SXC operations.[55]

In addition, Part 5 of the Civil Aviation Regulations of the Netherlands Antilles provides for the possibility to grant special certificates of airworthiness in case the aircraft concerned does not qualify for a standard certificate.[56] In such cases, only those safety- and certification-requirements will be imposed which such aircraft could reasonably comply with.

However, such special certificates can only be granted to aircraft exclusively flying 'within' Curacao and are not being used for international flights; which brings to mind the earlier discussion on 'local flights' and the boundary question – as well as whether a 'local flight' is not presumed to address point-A-to-point-B flights after all.

Part 8 of the Civil Aviation Regulations of the Netherlands Antilles lays down the specific requirements applying to certificates of airworthiness, such as mandatory documentation, maintenance, crew requirements, crew tasks, aircraft operating and performance limitations and protection against unacceptable interference with the flight.[57] A specific chapter moreover is devoted to aircraft carrying passengers, providing requirements for passenger seats, the briefing of passengers, emergency kits, refusal of passengers, transport of 'special situation passengers' and passengers with reduced mobility and evacuation options.[58]

Other elements of the regime applicable to aircraft concern the flight rules applicable to Curacao airspace, operations in controlled flight-mode, VFR-flights and IFR-flights[59], the various categories of controlled and uncontrolled airspace and the respective role of air traffic control[60], and crew and passengers[61].

Of specific interest for SXC operations is for example the requirement that only for aircraft of more than 4700 kg at least two pilots are required[62]; the Lynx *does* not fall within the scope of that requirement. On the other hand, the principled prohibition to fly passengers who represent a danger to their environment or dangerous substances (with a view to SXC's options to bring small scientific payloads into lower space) would apply to Lynx flights.

Finally, previously already reference has been made to such consequences of application of air law and relevant Curacao regulations as the requirement of cabin attendants and parachutes, as some of the most straightforward examples of where such application may lead to results that are either impracticable or absurd. More broadly, this should give rise to the conclusion that such application at the outset creates more problems than it solves, in particular where there is currently so little

actual sub-orbital flights carrying passengers and the intention would be to only put reasonable requirements in the path of these incumbent enterprises.

CONCLUSIONS

In appraising the above overview of applicable legislation and regulation to various types of flights using various types of aircraft in Curacao, it will become clear that it will not be easy to apply this regime without – much – further ado to sub-orbital flights. While perhaps on individual aspects certain definitions used may *prima facie* relatively easily apply or be made to apply, the extended details of almost all of those regimes at some point or other would likely go astray of what would make sense with respect to sub-orbital flights.

It is not accidental therefore, that the FAA has chosen to start from the other end, not trying to apply existing regulation for aircraft and aviation and then tweak it across the board to fit the specifics of sub-orbital flight, but rather start 'from scratch', and develop a *sui generis* regime which actually fits this novel activity. In the course of doing so, its huge experience with licensing and certification in the aviation sector will then certainly come in handy, but the principled approach is to work with the industry as long as neither have a real clue as to what might consistently go wrong.

Of course, in addition to a Congressional mandate to protect by way of regulation the public interests in private manned spaceflight (safety, security, protection of the environment and suchlike), the FAA also has a mandate to support an infant industry – a second mandate European aviation regulatory authorities usually do not have. And while this may apply by proxy to Curacao as well, as a part of the Kingdom of the Netherlands, the Curacao authorities indeed seem to be aware that it is also in the public interest to see such an infant industry take off on their island – and that they should at least avoid to blindly try to fit the square peg of aviation regulation into the round hole of sub-orbital spaceflight – or was it the other way around?

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[1] See http://www.virgingalactic.com

[2] See http://www.spacexc.com/en/home/

[3] The present author, from this respect, has repeatedly argued for an approach taking space law as the point of departure; cf. e.g. Space tourism, private spaceflight and the Law: Key aspects, *27 Space Policy* (2011), 146-52; also The integrated approach – Regulating private human spaceflight as space activity, aircraft operation, and high-risk adventure tourism, *92 Acta Astronautica* (2013), esp. 199-200 & literature referenced in fn. 1, 2.

[4] Current approaches range from single-stage-to-space craft (such as XCOR's Lynx) through two-stage-to-space vehicles with a carrier aircraft air launching the spacecraft properly speaking (as with Virgin Galactic) to vertical take-off and landing concepts (such as Blue Origin's New Shepard; see http://www.blueorigin.com); obviously the definition of 'aircraft' (see further *infra*, at n. 7) would apply to quite different degrees to these concepts.

[5] It should be noted that, whilst the current focus of the various spaceflight projects referred to is on short sub-orbital hops, returning to the same site where take-off took place, in the future also commercial flights between various terrestrial destinations are envisaged, effectively amounting to international air transportation making use of sub-orbital space for the major portions of the flights.

[6] ICAO was established by the Convention on International Civil Aviation (hereafter Chicago Convention; Chicago, done 7 December 1944, entered into force 4 April 1947; 15 UNTS 296; TIAS 1591; 61 Stat. 1180; Cmd. 6614; UKTS 1953 No. 8; ATS 1957 No. 5; ICAO Doc. 7300) in particular to develop an international regime for the safety of aviation, and has since developed many Standards and Recommended Practices to implement that mandate. See e.g. R.S. Jakhu & Y.O.M. Nyampong, International regulation of emerging modes of space transportation, in J.N. Pelton & R.S. Jakhu (Eds.), Space Safety Regulations and Standards (2010), 215-38.

[7] E.g. Annex 7 to the Chicago Convention, *Aircraft Nationality and Registration Marks*, 5th edition, July 2003, Definitions; Annex 8, *Airworthiness of aircraft*, 10th edition, April 2005, Definitions.

[8] See Working Paper on Concept of Suborbital Flights, ICAO Council, 175th Session, 30 May 2005, C-WP/12436

further e.g. P. van Fenema, Suborbital Flights and ICAO, 30 *Air & Space Law* (2005), 396-411.
[9] As per Regulation of the European Parliament and of the Council on common rules in the field of civil aviation and establishing a European Aviation Safety Agency, No. 1592/2002/EC, of 15 July 2002; OJ L 240/1 (2002); later replaced by Regulation of the European Parliament and of the Council 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/EC, No. 216/2008/EC, of 20 February 2008; OJ L 79/1 (2008).
[10] See e.g. J.B. Marciacq et al.,), Accommodating sub-orbital flights into the EASA regulatory system, in J.N. Pelton & R.S. Jakhu (Eds.), *Space Safety Regulations and Standards* (2010), 187-212; also S. Hobe & J. Cloppenburg, Towards a New Aerospace Convention? Selected Legal Issues of "Space Tourism", in *Proceedings of the Forty-Seventh Colloquium on the Law of Outer Space* (2005), 379.
[11] Further to Artt. 37-38, Chicago Convention.
[12] Cf. Artt. 43-66, Chicago Convention.
[13] See Artt. 29 resp. 30, Chicago Convention.
[14] See Art. 31, Chicago Convention.
[15] Cf. Art. 32, Chicago Convention.
[16] Cf. e.g. Art. 1(1), Convention for the Unification of Certain Rules Relating to International Transportation by Air, Warsaw, done 12 October 1929, entered into force 13 February 1933; 137 LNTS 11; USTS 876; UKTS 1933 No. 11; ATS 1963 No. 18; Art. 1(1), Convention for the Unification of Certain Rules for International Carriage by Air, Montreal, done 28 May 1999, entered into force 4 November 2003; 2242 UNTS 350; ICAO Doc. 9740; 48 *Zeitschrift für Luft- und Weltraumrecht 326 (*1999); and Art. 1(1), Rome Convention on Damage Caused by Foreign Aircraft to Third Parties on the Surface, Rome, done 7 October 1952, entered into force 4 February 1958; 310 UNTS 181; ATS 1959 No. 1; ICAO Doc. 7364.
[17] Cf. e.g. Art. 1, Convention on Offences and Certain Other Acts Committed on Board Aircraft, Tokyo, done 14 September 1963, entered into force 4 December 1969; 704 UNTS 219; UKTS 1969 No. 126; Cmnd. 2261; ATS 1970 No. 14; 2 ILM 1042 (1963); ICAO Doc. 8364.
[18] *Landsverordening van de 20ste december 2001 houdende nieuwe regels omtrent de luchtvaart*; P.B. 2001, no. 151.
[19] *Landsbesluit houdende algemene maatregelen van de 24e april 2003, ter uitvoering van de artikelen 2, tweede lid, onderdeel a, 5, eerste en tweede lid, 7, tweede tot en met vijfde lid, 10, eerste en tweede lid, 37, tweede lid, onderdeel a, 50, vierde lid, 66, eerste lid, onderdelen a en b, en 68 van de Luchtvaartlandsverordening;* P.B. 2003, no. 56.
[20] *Landsbesluit, houdende algemene maatregelen, van de 15e februari 2005 ter uitvoering van artikel 8, vierde lid, van de Luchtvaartlandsverordening*; P.B. 2005, no. 37.
[21] *Landsbesluit, houdende algemene maatregelen, van de 21e januari 2006 ter uitvoering van artikel 22, eerste lid, van de Luchtvaartlandsverordening*; P.B. 2006, no. 11.
[22] Art. 1(b), Aviation Ordinance. It may be noted of course that this definition is almost identical to the one provided by, e.g., Annexes 7 and 8 to the Chicago Convention for purposes of international air law.
[23] See Artt. 2, 112 ff., 126-128, Decree on aviation supervision; Art. 1(q), (v), Aviation Ordinance.
[24] See Art. 3(a), (b), Chicago Convention.
[25] See Sec. 5.1.1.1, Civil Aviation Regulations Netherlands Antilles Part 5, Airworthiness; P.B. 2008, no. 19.
[26] See Sec. 7.1.1.1, Civil Aviation Regulations Netherlands Antilles Part 7, Aircraft Instruments and Equipment; P.B. 2008, no. 22.
[27] See Secc,. 4.1.1.1, 4.1.1.2, Civil Aviation Regulations Netherlands Antilles Part 4, Aircraft Registration and Marking; P.B. 2008, no. 25.
[28] E.g. Art. 5, 7, Chicago Convention; further see Sec. 7.1.1.2, *sub* (4), Civil Aviation Regulations Netherlands Antilles Part 7, Aircraft Instruments and Equipment; Sec. 8.1.1.2, *sub* (21), Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations; P.B. 2008, no. 22; cf. also Art. 1(j), Aviation Ordinance.
[29] Cf. e.g. Artt. 5-7, Chicago Convention, through their references to territories of other states than that of the one whose aircraft is concerned implicitly assuming that flights to which the Chicago Convention applies are carrying passengers between two different places on earth.
[30] Art. 1(l), Aviation Ordinance; emphasis added.
[31] See Art. 1(m), Aviation Ordinance.
[32] See Art. 1(o), Aviation Ordinance.
[33] See information provided at http://spaceexperiencecuracao.com/about/space-line/.
[34] See Artt. 1(d), 2(1.c), 5, 8, 10, Aviation Ordinance; Art. 1, Decree on regulated and non-regulated air transport; Sec. 9.1.1.1 *sub* (b), Sec. 9.1.1.4, Civil Aviation Regulations Netherlands Antilles Part 9, Air Operator Certification and Administration; P.B. 2008, no. 21.
[35] See Sec. 9.1.1.7, -*sub* (b), Civil Aviation Regulations Netherlands Antilles Part 9, Air Operator Certification and Administration.
[36] See Sec. 9.2.3.6, Civil Aviation Regulations Netherlands Antilles Part 9, Air Operator Certification and Administration.
[37] See Sec. 8.1.1.2, *sub* (1), Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations.
[38] See also Art. 13, Aviation Ordinance.

[39] Cf. Sec. 8.1.1.2, *sub* (54), Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations.
[40] Sec. Artt. 1(y), 182-183, Decree on aviation supervision; Sec. 8.1.1.2, *sub* (4), Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations. It may be pointed out that otherwise such sudden or abnormal changes are prohibited; cf. Art. 86(1), Decree on air traffic.
[41] See Sec. 8.6.1.36, *sub* (a), Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations.
[42] See Sec. 8.6.1.36, *sub* (b), Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations.
[43] See Sec. 8.6.1.36, *sub* (c), Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations.
[44] Art. 96(1), Decree on aviation supervision.
[45] See Art. 14(1), (5), Aviation Ordinance.
[46] Art. 14(3), Aviation Ordinance.
[47] See further Artt. 16-21, 23-26, 30-43, Aviation Ordinance.
[48] Sec. 8.1.1.2, *sub* (66), Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations.
[49] Cf. e.g. the author's The Sky is the Limit – But Where Does It End?, in *Proceedings of the Forty-Eighth Colloquium on the Law of Outer Space* (2006), 84-94; and the author's Space tourism, private spaceflight and the Law: Key aspects, 27 *Space Policy* (2011), 149-50.
[50] Further to Sec. 9.2.3.1, Civil Aviation Regulations Netherlands Antilles Part 9, Air Operator Certification and Administration, this means that Civil Aviation Regulations Netherlands Antilles Part 5, Airworthiness, which provides for all the detailed requirements in this respect, becomes applicable.
[51] *Ministeriële Beschikking met Algemene Werking van de 31ste maart 2008 ter uitvoering van de artikelen 59,77, tweede lid, 83, tweede lid, onder f, 84, eerste lid, onder d, 84, derde en vierde lid, 93 derde lid, 95, eerste lid, van het Landsbesluit toezicht luchtvaart.*
[52] See Sec. 5.4.1.2(a), Civil Aviation Regulations Netherlands Antilles Part 5, Airworthiness. Cf. further Art. 3(2), Decree on aviation supervision, which makes it possible, subject to certain conditions, to include in the register aircraft owned by companies not registered in Curacao.
[53] Art. 62, Decree on aviation supervision; see also Art. 64.
[54] See Sec. 5.4.1.3, *sub* (c), Civil Aviation Regulations Netherlands Antilles Part 5, Airworthiness; also Art. 1, sub (nn) resp. (ii), & Art. 71(1) resp. (2), Decree on aviation supervision.
[55] See Sec. 5.4.1.3, *sub* (f), Civil Aviation Regulations Netherlands Antilles Part 5, Airworthiness.
[56] See Sec. 5.4.1.11, *sub* (a), Civil Aviation Regulations Netherlands Antilles Part 5, Airworthiness.
[57] See Secc. 8.2.1.10, 8.2.1.11 & 8.2.1.12; Chh. 8.3, 8.4, 8.5, 8.8, 8.12, Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations.
[58] See Secc. 8.9.1.4, 8.9.1.6, 8.9.1.10, 8.9.2.3, 8.9.2.5, 8.9.2.7, 8.9.2.12, 8.9.2.13, 8.9.2.14, 8.9.2.18 & 8.9.2.19, Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations.
[59] See Ch. 8.6, Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations, in particular Sec. 8.6.1.1.
[60] See Secc. 8.6.1.6, 8.6.2.2, 8.6.2.6, 8.6.3.7, Civil Aviation Regulations Netherlands Antilles Part 8, Aircraft Operations; cf. also Art. 22, Aviation Ordinance.
[61] See Artt. 1(r), 6, 7, 12-57, Decree on aviation supervision.
[62] See Art. 128, Decree on aviation supervision.

CASE LAW COMMENTARY

ALITALIA STATE AID CASE: THE ECJ DISMISSED RYANAIR'S APPEAL

(Judgement in Case C-287/12P, Ryanair Ltd v Commission, Italy and Alitalia)

Alessandra Laconi

The European Court of Justice (ECJ) and the General Court, but also national courts, adopted significant rulings concerning the legal relevance of guidelines published by the Commission and the requirements of state aid law. Moreover, there were important rulings that concern guarantees and loans and the notion of state aid.

In particular, in June 2013 the ECJ decided on an appeal by Ryanair against state aid supporting flag carriers. The ECJ upheld the General Court's decision[1] stating that the loan to Alitalia provided by the Italian state was unlawful, and that the sale of Alitalia assets did not involve state aid.

The facts which gave rise to the dispute in this case can be summarised as follows.

In 2008, the Italian state provided a €300 million loan to Alitalia, allowing the flag company to count this loan as equity[2]. Alitalia was then placed in extraordinary administration in order to sell its main assets. Compagnia Aerea Italiana (CAI) tendered a bid in response to a public sales procedure and finally purchased part of Alitalia assets.

In other words, the healthy part of the company was transferred to a new company formed by private shareholders, thus permitting the continuation of Italy's former flag airline.

As an application of EU competition rules, the Commission initiated a formal investigation procedure in connection with the loan and the option of counting the amount thereof as part of Alitalia's own capital. By a first decision,[3] the Commission declared that the loan constituted unlawful State aid incompatible with the common market, and ordered its recovery from Alitalia.

By a second decision,[4] the Commission found that the measure concerning the sale of Alitalia assets did not involve the grant of State aid to the purchasers, subject to full compliance with the undertakings given by the Italian authorities that the sale would be made at market price.

Moreover, the Commission confirmed that the procedure implemented by the Italian authorities entailed no economic continuity between Alitalia and the buyers of its assets and that the sale did not have the effect of circumventing the obligation to recover the State aid.

Ryanair brought an action for the partial annulment of the first contested decision and the annulment of the second one.

The General Court stated that Ryanair did not demonstrate that the fact of ordering immediate recovery of the State aid from Alitalia and not from CAI had the effect of

substantially affecting its competitive position, or that the time granted by the Commission to the Italian Republic, which had allegedly allowed the obligation to recover the aid from the beneficiary to be circumvented, affected its interests.

Furthermore, with respect to the second contested decision, Ryanair argued that the Commission did not initiate a formal investigation procedure and thereby the Commission issued an incomplete and insufficient decision which led to a violation of the applicant's procedural rights.

However, by judgment of 28 March 2012 the General Court rejected Ryanair's complaint. The court dismissed Ryanair's arguments that the Commission carried out an insufficient or incomplete examination at the preliminary phase and should have initiated a formal investigation procedure on the sale of the assets, in order to verify the possible existence of options other than the sale of assets.

The Dublin-based carrier challenged the aforementioned judgment before the ECJ, putting forward six grounds of appeal concerning its application for annulment of the second contested decision.

The ECJ rejected all arguments brought forward by Ryanair in its judgment delivered on 13 June 2013. It held that the Commission was allowed to take voluntary commitments into account during the notification of the measure.

Secondly, the ECJ agreed with the General Court holding that the Commission's examination was not incomplete as implied by Ryanair. The examination of certain advantages provided for CAI by Italian legislation was irrelevant when deciding on the question of advantage.

Thirdly, Ryanair did not prove that the necessity to ensure the continuity of Alitalia's air transport service led to a price for its assets below market price.

Finally, the ECJ reaffirmed that CAI's bid concerned the passenger air transport business, and that CAI did not tender a bid for Alitalia as a whole, thus the General Court did not distort the evidence submitted, as Ryanair asserted.

This particular case shows the difficulties arising in EU law while balancing different exigencies like the protection of fair competition in fundamental fields like air transport and the validity of state aid measures.

In our area of interest, such a delicate issue strongly comes to light in a lot of cases concerning flag carriers, which, according to Ryanair's opinion, *"repeatedly receive illegal state aid, but never have to repay it"*.

Irrespective of the different positions, the Commission Vice-President Almunia clarified that *"the next state aid guidelines will be a key ingredient for a successful and competitive European aviation industry, preserving fair competition regardless of the business model - from flag carriers to low-cost airlines and from regional airports to major hubs"*.

[1] General Court, Judgment of 28.3.2012, Ryanair Ltd. v Commission, T-123/09.
[2] At that time, Italy held 49.9 % of Alitalia's shares.

3 Commission Decision 2009/155/EC of 12 November 2008.
[4] Decision C(2008) 6745 final of 12 November 2008.

CASE LAW COMMENTARY

THE ONE-STOP FORUM PRINCIPLE IN JURISDICTION MATTERS RELATING TO CONTRACTS OF JET FUEL SUPPLY: RYANAIR LTD v. ESSO ITALIANA SRL

Francesca Grassi

The English Court of Appeal recently allowed the appeal filed by ESSO ITALIANA in case *Ryanair ltd v. Esso Italiana Srl* (November 2013) by which the appellant asked the Court to reject the jurisdiction of the English Court to hear the case.

The case arose from a lawsuit filed by defendant RYANAIR for both contractual and tortious claims for the damage suffered because ESSO ITALIANA - part of the international oil company Exxonmobil - sold fuel at an unfair price adhering to a cartel in breach of EU antitrust law.

In fact, RYANAIR's claim originated from a decision of the Italian Antitrust Authority dated 14 June 2006 considering certain oil companies selling jet fuel in Italian airports to be in breach of article 101 of the Treaty on the Functioning of the European Union (TFUE). Such provision recites *"…all agreements between undertakings, decisions by associations of undertakings and concerted practices which may affect trade between Member States and which have as their object or effect the prevention, restriction or distortion of competition within the internal market…"* shall be prohibited because are incompatible with the internal market. ESSO ITALIANA was one of the companies found to be member of the cartel in breach of the provision and therefore it was condemned to pay a fine of 66,690,000.00 Euros.

RYANAIR filed a claim before the English Court asking for: (i) 1,459,671.00 Euros for damage, including loss of profits deriving from the loss of 20 Euros per metric ton on 72.984 tons of fuel supplied between 1999 and 2006 as under the contract; and (ii) 7,487,823.19 Euros deriving from the loss of 20 Euros per metric ton on 374,391 tons of fuel supplied to it by all members of the cartel in the same period. The first claim is a claim for breach of contract (contractual claim) while the second derives from ESSO ITALIANA's breach of statutory duty (tortious claim). With respect to the latter, RYANAIR sued the oil company on the grounds that a joint liability regime applies meaning that *each member of the illegal cartel is severally and jointly liable to any member of the public for all the losses caused by the operation of the cartel* ([2013] EWCA Civ 1450).

As far as the jurisdiction issue is concerned, RYANAIR argued that the claim for breach of statutory claim (claim made pursuant to article 101 TFUE) is attracted by the same jurisdiction forum of the claim for breach of contract which is that of the English Courts by virtue of the non-exclusive English jurisdiction clause of article 12.1 of the master contract between the two companies. In fact, the contract expressly stated "*This Agreement shall be governed by the laws of England excluding its conflict of law rules and the United Nations Convention on the International Sale of Goods Act shall not apply. For the purposes of the resolution of disputes under this Agreement, each party expressly submits itself to the non-excusive jurisdiction of the Courts of England*".

Moreover, the breach of contract claim is firmly anchored to the contract provision of article 4.1 which stated that the party charged with a price not in conformity with the

applicable law needs to be indemnified *"If at any time a price or fee provided in this Agreement shall not conform to the applicable laws, regulations or orders of a government or other competent authority, appropriate price or fee adjustments will be made (...)"*.

Therefore, in the seek for compensation under the said provision, RYANAIR brought both its claims before the English Courts according to the non-exclusive jurisdiction clause. In particular, RYANAIR's thesis was premised by the presumption of the one-stop adjudication as established by the House of Lords in case *The Fiona Trust* ([2007] Bus LR 1719). That case cleared that "*rational businessmen who are parties to the contract will intend that all questions arising out of their legal relationship should be determined in the same forum, and clear words will be required to displace this "strong" presumption*" ([2013] EWCA Civ 1450). On that grounds, the Court of first instance accepted the submission of the applicant (RYANAIR) given that both claims were "*so closely knitted together (per Leggatt LJ in the Angelic Grace [1995] 1 Lloyd's Rep 87) that a reasonable businessman would have intended that both should be heard in the same tribunal*".

On appeal, ESSO ITALIANA argued that as long as the contractual claim was unfounded, the jurisdiction to hear the statutory duty claim should fall apart. The decision of the Court of Appeal found for the appellant observing, firstly, that the one-stop adjudication principle cannot apply because the contractual and the tort claim were not so closely connected (to justify such an attraction of jurisdiction forum) and, secondly, that RYANAIR contractual claim was hopeless. The Court of Appeal, therefore, concluded that "*rational businessmen would be surprised to be told that a non-exclusive jurisdiction clause bound or entitled the parties to litigate in a contractually agreed forum an entirely non-contractual claim for breach of statutory duty pursuant to [Article 101 TFEU], the essence of which depended on proof of unlawful arrangements between the seller and third parties with whom the buyer had no relationship whatsoever, and the gravamen of which was a matter which probably affected many other potential claimants, with whom such a buyer might very well wish to link itself*".

In conclusion, the decision of the Court of Appeal reveals that, even if the English Courts keep being particularly popular as forum for private antitrust litigation cases, the Court will always be very careful and thorough in establishing jurisdiction for claims of damages deriving from actions in breach of EU antitrust laws. That in light of the fact that according to other EU regulations that might be applicable to the case, jurisdiction could be established elsewhere; therefore the issue has to be addressed and solved scrupulously in order for the EU Member states courts of law not to be in contrast with EU rules.

MISCELLANEOUS MATERIAL OF INTEREST

RECENT DECISIONS TAKEN BY ICAO ASSEMBLY

Doriano Ricciutelli

The 38th ICAO Assembly was held in Montreal from the 24th September to the 4th October 2013. The Assembly is convened every three years by the Organization's Council to set out the policy guidelines for the following three years.

ICAO unites the civil aviation authorities of 191 states. During the vote for membership of the Council, which consists of 36 members, Italy was reconfirmed as one of the 11 member states of chief importance, obtaining 150 out of a 173 votes, thereby reaffirming its leading role in the field of aviation.
More that 1400 members took part in the Assembly. Some proposals concerned general items like the one on modernizing the global air traffic management system, ATM; others proposals were aimed at opening up of markets, supporting measures to update competition rules or bring about a multi-lateral agreement on the liberalization of air transport[1].

Moreover, the Assembly decided to develop by 2016 a system to reduce CO2 emissions produced by aircraft, which should entry into force by 2020.

In this framework it is worth pointing out a declaration of intent, which was signed on the 27th September between the ICAO and the European Commission on cooperation to adopt measures to reduce carbon emissions of international aviation.

Still, with the same intent of promoting action at world level, the European Commission presented on the 16th October 2013[2] a draft Directive modifying Directive 2003/87/EC establishing a scheme for greenhouse gas emission trading in the EU. With it, the Commission seeks to apply the Emissions Trading Scheme (ETS) to international flights as from 2014, based on emissions produced by flights within the EU[3].

In the field of security, the ICAO's Assembly confirmed the existing policy of promoting and enhancing a regional approach, the benefits of which have been clearly recognized by the EU. It also decided to create a global system for managing security, based on mutual recognition of the Parties' measures to protect passengers.

The Assembly's final resolution[4] contains guidelines to protect airport facilities and encourages the use of ICAO standards by the immigration and border control authorities. It also promotes the standardisation of security measures for air cargo, and capacity building in the member states which require it, as well as the adoption of a roadmap to reinforce Global Air Security[5].

The above-mentioned decisions are a summary of the work priorities for 2014-2016, established by ICAO, based on the conclusions and recommendations of ICAO High Level Conference on Aviation Security (HLCAS), held in Montreal from the 12th to the 14th September 2012[6], which greatly influenced the changes made to the previous Assembly Resolution A37-17.

MISCELLANEOUS MATERIAL OF INTEREST

[1] See Agenda, item 17 of the Executive Committee.
[2] COM (2013)722final 2013/0344(COD).
[3] See also the results of the EU's Environment Council of the 14th of October.
[4] See doc. report on Agenda 13 (A38-WP/417).
[5] See A38-WP/133-EX/50.
[6] See A38-WP/64-EX/32.

THE NEW ITALIAN REGULATION ON CERTIFICATION OF AIRPORTS GROUND-HANDLING OPERATORS: LIMITATIONS OF LIABILITY AND INDEMNITY NO MORE AVAILABLE

Isabella Colucci

On 22 November 2013, ENAC (the Italian Civil Aviation Authority) issued Circular APT. 02. B on "*certification and supervision of Airport ground- handling service suppliers*" in order to specify the access criteria to ground handling services'.

Article 8.2 ("*Insurance*") of Circular APT-02B represents the real novelty. The first paragraph states that the operator must demonstrate to have an adequate insurance in order to cover any risk associated with its activities, with the services provided to the carriers and with the suitable means in question.

The second paragraph is even more original. It provides that "*According to the combined provisions of article 2050 of the Italian Civil Code ('liability arising from exercise of dangerous activities') and 1229 of the same code ('exclusion of liability"), in order to safeguard the legal positions recognized by the national legal framework, any possible exemption from liability clause contained in the contract for the provision of the service is null* ".

The second paragraph needs to be read in comparison with provisions established by IATA - SGHA (IATA Standard Ground Handling Agreement) that previously regulated the matter with respect to the responsibility of ground-handling companies. Under article 8.1 of the IATA – SGHA the ground-handling company benefits from a total exemption of liability unless it acts with intention to cause damage or it acts recklessly.

However, ENAC endorsed the interpretation of the Italian case law highlighting that there is inconsistency between article 8.1 and the Civil Code provisions under articles 2050 and 1229. In fact, under article 1229 of the Italian Civil Code, the exclusion of liability clauses is null or void, firstly when there is a previous agreement of the parties and, secondly, when the parties act with wrongfulness or gross negligence. This provision implies a concept of negligence which is less stringent than the one implied by the words "*recklessly and with the knowledge that the damage would probably result*" which article 8.1 of IATA – SGHA refers to.

MISCELLANEOUS MATERIAL OF INTEREST

THE NEW ITALIAN AIRPORT PLAN

Alfredo Roma

The Italian Ministry of Transport published the new Airport Plan aiming to design a balanced development of the Italian airports, offer a new governance system, identify the structural priorities and optimize the global transport offer. The plan in question also intends to avoid competition conflicts between airports situated in the same region, favouring the creation of airport systems with a unique governing body.

The Italian Airport Plan has been drafted according to the EU principles which have been included also into the EU Commission communication draft on EU state-aid guidelines to airports and airlines stating that "*Except in limited cases duly justified, airports must be able to cover its costs of operation and public investment should be used to finance the construction of efficient airports in economic terms. It is necessary to avoid distortions of competition between airports and between airlines, as well as the duplication of airports not economically efficient. This balanced approach must be transparent, easy to understand and simple to apply*".

The plan identifies ten traffic basins; each basin has one strategic airport with the only exception of the "Centre-North basin" where Bologna and Pisa-Florence operates, provided that Pisa and Florence airports become totally integrated.

The ten strategic airports are: Milan Malpensa (NorthWest), Venice (North East), Bologna and Pisa-Florence (Centre-North), Rome Fiumicino (Centre), Naples (Campania), Bari (Mediterranean-Adriatic), Lamezia (Calabria), Catania (East Sicily), Palermo (West Sicily), Cagliari (Sardinia).
Other airports of national interest can be identified, provided that they can actually play an effective role in one basin and that they can assure at least a break-even point in their annual accounts.

The plan also foresees the strengthening of the airport infrastructures, the development of inter-modality, the creation of a cargo network and facilitations for general aviation.

In the next issue of ASJ we will publish a detailed analysis of the Airport Plan.

ITALY BREACHES EU LEGISLATION ON UNIFIED TAKING OFF AND LANDING AIRPORT CHARGES

Francesca Grassi

The EU Commission in 2013 filed an infringement procedure by note C (2013) 3048 of 30 May 2013 against Italy for violating EU legislation on taking off and landing airport charges with respect to article 3 of EU Directive 12/2009/CE and article 12 of the *Air Transport Agreement between the European Community and its Member States, on the one hand, and the United States of America, on the other hand* of 30 April 2007 (Open Skies Agreement).

In fact, EU Commission delivered a reasoned opinion under article 258 of the *Treaty on the Functioning of the European Union* (TFEU) leaving to the Member State in breach of its obligations under the Treaty the opportunity to submit observations on the matter.

The EU position is that Italy applied illegitimately different taking off and landing airport charges with respect to EU domestic flights and EU international flights thus, violating the non-discrimination clause of said directive which states that "*Member States shall ensure that airport charges do not discriminate among airport users, in accordance with Community law. This does not prevent the modulation of airport charges for issues of public and general interest, including environmental issues. The criteria used for such a modulation shall be relevant, objective and transparent*" (article 3, EU Directive 12/2009/CE).

In addition, the EU Commission holds that also the Open Skies Agreement has been infringed in its part relating to the prohibition of charges which result to be unjustly discriminatory as it follows: "*User charges that may be imposed by the competent charging authorities or bodies of each Party on the airlines of the other Party shall be just, reasonable, not unjustly discriminatory, and equitably apportioned among categories of users. User charges that may be imposed by the competent charging authorities or bodies of each Party on the airlines of the other Party shall be just, reasonable, not unjustly discriminatory, and equitably apportioned among categories of users*" (article 12, paragraph 1, Open Skies Agreement).

In order to respond to the EU reasoned opinion, the Italian Civil Aviation Authority (ENAC) issued few notes in 2013 trying to coordinate all major Italian airport management companies to find a common ground to adopt a plan and establish airport charges consistent with EU legislation before the deadline set by the EU Commission (which was 30 June 2013).

Subsequently, the Civil Aviation Authority finally submitted to the said airport management companies a new proposal for the unification of taking off and landing airport charges between those applying to EU domestic flights and to EU international flights from 2013 onwards.

The active role played by the Italian Civil Aviation Authority – ENAC was crucial in the definition of the infringement procedure started by the EU Commission under article

258 TFEU. In fact, it was able to collect information from all major airport management companies and to take the very first steps in the direction of unified taking off and landing airport charges accordingly to the EU principles of non-discrimination and fair treatment together with the principle of economic neutrality to which all airport management companies must be inspired.

MISCELLANEOUS MATERIAL OF INTEREST

UK OUTER SPACE ACT: PROPOSAL TO LIMIT OPERATORS' LIABILITY FOR THIRD PARTY DAMAGE TO 60 MILLION EUROS

Alfredo Roma

In March 2011 the UK Government published the "Government Growth Review" in which it was set out the intention to reform the 1986 Outer Space Act by introducing an upper limit on liability for UK operators. On 31st May 2012, the UK Space Agency issued a consultation paper on the intended reform receiving 15 responses.

Now the UK Space Agency has published the outcome of the consultation, which strongly supports the reform of the 1986 Outer Space Act (OSA), which is the legal basis for the regulation of activities in outer space carried out by organisations or individuals established in the UK or one of its Crown Dependencies or Overseas Territories. The aim of the OSA is to ensure compliance with the UK's obligations under international treaties and principles covering the use of outer space. One of these is the UN Liability Convention, under which the UK Government is ultimately unlimited liable for third party costs for accidental damage arising from UK space activities.

The licensing regime established by the OSA requires licensees to obtain a third party liability insurance (usually to a minimum of €60 million) both during the launch and while the satellite is in operation. Also, there is an indemnity from the licensee to the Government against any proven third party costs resulting from the activities. The latter point is an unlimited liability on licensees.
In many occasions UK space operators have argued that the unlimited liability placed upon them is very difficult to manage in terms of financing/underwriting. Further, they say that these licence conditions relating to insurance place them at a significant commercial disadvantage when competing for business internationally.

Responding to the six questions of the questionnaire, UK operators have stressed the importance of the proposed cap and its benefits to the space market: establish greater regulatory certainty, bring the UK in line with other nations' regulations regarding the liability of commercial space projects, encourage the expansion of the UK as a space faring Nation for private space activities, lower insurance costs, reduce commercial risk.

A special question concerned the CubeSat (nanosatellites). Responses to this question were quite varied. As a result of respondents' comments, the Government decided to reconsider its policy regarding the treatment of CubeSats and other nanosatellites.

After considering the views of respondents, the Government has decided to start the necessary process required to cap the unlimited liability to €60 million, for the majority of missions. However, the Government will retain the flexibility to increase the liability cap / insurance requirement for any non-standard, high-risk mission. For each license application, a risk assessment will be performed to consider the potential risks posed by the mission and a commensurate level of liability / insurance cover will b

be determined. In the majority of cases, involving missions employing established launchers, satellite platforms and operational profiles, this liability / insurance cover would be limited to 60 million euro.

The favoured route to achieve this is via a Legislative Reform Order (LRO), which might give the Secretary of State the power to set / vary the liability limit. LRO is a good option for giving legislative effect to necessary reform that may not otherwise find Parliamentary time, permitting the amendment of primary legislation to remove or reduce burdens.
It is difficult to give an exact date when the reform may take place but operators hope it can be achieved during the second quarter of 2014, if approved by Parliament.