

2nd Global RPAS Symposium

Montreal 19 september 2017

Dear ladies, dear gentlemen, distinguished guests good morning.

It is a great honor for me to speak in this wonderful assembly room, but before entering into the subject let me underline how civil aviation is continuously facing new challenges, new business models and new perspectives for development of aviation activities.

Today we are affording one of these.

When we speak about RPAS our mind immediately goes to the possible use of these innovative means and we will be surprised how long could be the list. It is really astonishing compared with the standardized services offered by the traditional aircraft.

Our first experience in Italy was to deal with medium/heavy size RPAS category, expected to cover long distances and complex mission profiles for government or research activities, with the need to use and share the same airspace used by traditional manned aircraft.

The major challenges we have faced were on the level of protection to provide to uninvolved people and the necessity to integrate RPAS in the common airspace and then to share it with aircraft with pilots on command and passengers on board.

These are basically technological challenges where the airworthiness of the aircraft systems and the availability of reliable detect and avoid system, able to provide RPAS with an autonomous capacity to avoid colliding traffic, and a safe and robust command and control system, should offer the basis for possible solution. In this sense it will be necessary to demonstrate the maturity of these new systems, including the satellite based navigation data link. Many research projects are running around the world on these issues and I think that safe and practicable solutions will be offered by industry in due time.



On the other hand, the technological level of this category of RPAS is such that, even if it is still in a continuous development, an approach to safety equivalent to the one adopted for traditional manned aviation is possible. Then the establishment of an adequate level of safety can be based on technical and operational requirements, organization provisions and so on. With this approach the use of consolidated tools like the certification and/or the approval of the main component as products, pilots, operators, can be foreseen as an acceptable regulatory tool to ensure a safe and reliable value chain.

For the time being In Italy we are affording the operations of such category of RPAS by segregating the requested airspace on case by case basis. A permit to fly is generally used to establish acceptable level of risk for operations.

An effective market for the services that these RPAS can offer is not yet developed, but what can be envisaged is a civil use by government or other public entities. The potential growth of these activities will make not possible the practice of segregating airspace, due to the heavy impact that it has on civil aviation activities, specifically to commercial transportation. Even the use of the national airspace could easily become a strong limitation for the operations of this category of RPAS.

To promote and support the development of this new promising technology, a safe and effective integration of manned and unmanned aircraft must be pursued while an internationally recognized regulatory framework will become a necessity in the near future.

But let me explore the other side of RPAS world, in the past few years new actors have taken the scene, the small RPAS, less than 25 kg and with specific concentration on the lower weights. The majority of small drones flying today in Italy is less than 7 kg.

They constitute an element of novelty, that has dramatically modified the *paradigma* of safety. Small RPASs like to fly at very low level, less than 500 ft, over the cities and just above people. They use to fly also in direct proximity of any natural or manmade construction, generally known as air navigation obstacles. It is more or less what is forbidden for safety reasons in the traditional civil aviation.

The easy access to this new technology, the low cost of it and the enormous flexibility of the product has determined a booming market either for production and for operations. The use of airspace by this new kind of aircraft constitutes a big



challenge for the civil aviation authorities, as they do not have regulatory experience and they need a different expertise to properly manage this new technology.

As far as the experience we are making in Italy small RPAS are used in many fields of applications like aerial photography, movies, precision agriculture, building inspections and thermal mapping, industrial inspections of production sites and systems, infrastructures like bridges or logistic platforms, monitoring of power lines or railways and other linear infrastructures either for safety and for security reasons.

All these activities constitute a concrete market that can be considered still in the starting phase, and it has to be supported as it can produce quality jobs and valuable benefits to the social and economic growth of our countries.

The high number of RPAS and their use in urban scenarios, either for commercial operations or for recreational use, have raised many questions about the safety of overflown uninvolved people, the malicious use of them and lastly the issue of fair competition between commercial operators and private owners offering commercial services.

To provide an answer to the general public expectation for safety, to the public institution responsible for ensuring the security of our communities and to the private operators that wish to invest in this new market, there is a need of a regulatory framework addressing all the above mentioned issues.

Having in mind the different emerging needs, we approached in Italy a very complex roadmap involving the drone community through their association, and we worked very hard to promote some basic safety concept, well known in the aviation community but almost unknown by these newcomers.

At the end of this difficult phase commercial operators recognized the need of rules that, while protecting the safety of general public, could facilitate their business, in order to plan investments, act legally, favour the acceptance by the general public, raise confidence with customer, protect their business from unfair competition.

Many Contracting States have adopted national regulations to create the conditions for the safe conduct of RPAS operations in order to ensure general public and stimulate the acceptance of this new flying object, paving the way for an equal treatment for any economic operator wishing to enter in this new market.

In Italy only RPAS used for commercial services are subject to registration. Total number is almost 6.000 drones owned by almost 4.000 operators, 700 of which operate in safety critical scenarios.



A good estimate of the number of small RPAS flying today for recreational use is almost impossible due to a lack of registration, the use of different channels of distribution, like the web, and the self made ones.

The approach ENAC has adopted for the Italian regulation in order to keep it simple, is performance oriented, based on a global assessment of the risk of operations, and centered on the role played by the pilot and his competence in assessing the risk of the specific operation on other people. The risk assessment takes in due consideration the contribution given by all the component of the value chain like RPAS and its safety features, pilot, procedures, environment, operator capabilities.

As we can easily imagine, the freedom of movement and exchange of services has lead soon in Europe to the necessity of common regulatory framework and in a broad sense the need for international standards, at least for manufacturing industry.

In this field Italy is working closely with EASA and the EU Commission to create a European regulatory framework for the benefit of our industry, as well as in international bodies supported by ICAO like the RPAS Panel and JARUS.

Let me conclude highlighting that Italy actively participates in the global effort to define widely recognized international standard and supports ICAO initiatives, having in mind the significant benefits for each Contracting State and for industry, coming from harmonized rules.

For this emerging technology, industry needs certainty to plan investments and international rules play a fundamental role in achieving this. Considering the time requested for adoption of international standards, a clear way forward should be established soon.

Thank you for listening and let me express my best wishes for a successful symposium.

Alessandro Cardi