

## **Draft position paper of the European Helicopter Association (EHA) about the U-Space principles**

**The U-Space principles as they have been defined by the present regulatory framework and projects, would not fulfil all the scope of air-safety requirements for the rotorcraft operations in the face of drone activities.**

In a controlled airspace, navigating in the airways and in VFR transit in accordance with semi circular flight level rules, promotion of UAT in general using ADSB as one means in every flying machine in the sky would probably suit quite well.

However, those are not the flight styles in which helicopters are mainly exposed to an unexpected encounter with a drone.

So even if the rotorcraft community acknowledges that a data multi-link network would be helpful for safer air traffic management, to share information that are updated in flight, this will not address the drone traffic concerns efficiently for all affected vertical flight operations.

Putting aside the technical and economic consequences of that approach regarding modifications of the existing helicopter fleet, this option would not really address the main threat of UAV / Helicopter traffic conflicts. For specific missions that need unpredictable and/or repetitive manoeuvres at low altitude, a network would not be reliable enough. Addressing traffic deconfliction with drones would certainly need to consider the implication of "embarked only" resources (direct reporting and identification between flying vehicles) along with adapted regulation for the management of the air space in the vicinity of the helicopters.

So, amongst other parameters, the following arguments need to be considered:

- 1. In order to still make possible safe helicopter emergency operations at low altitude, segregation should not be implemented, even as an option, in U-Spaces.** The view expressed by the EDA (European Defence Agency) is that the future regulatory framework & procedures for drone operation management, must be defined so the military and police aircraft (manned or not) will have the ability to fly safely, confidentially and anonymously with no notice in and out the U-spaces. This has been discussed in our advisory committee and needs to be considered. Except the confidentiality aspects, this reflects the helicopter commercial sector's concerns in most respects.
- 2. Some members of the U-Space coordination meeting would highlight that classic manned aviation already meets the electronic conspicuity requirements because the aircraft that they represent are transponder- equipped. The helicopter community acknowledges the truth of this statement, but not the idea that it would be sufficient to fulfil the safety of most of their operations against drone traffic threats, even inside the U-spaces.** Due to the very nature of its tasking, a helicopter needs to hover, to take off and land almost everywhere in cities as in remote countryside, often with no notice.

They fly most of the time out of VHF range of other aircraft, of ATC, of radars and of any sort of electronic network, even in urban environment because of the low / very low altitude of their flight profiles, and sometimes that includes the GSM mobile phone network.

For this reason amongst others, the great majority of the commercial helicopters that are working onshore are not ADSB equipped. That would simply be useless. In any case, the number of transponder-equipped aircraft seems under-evaluated. For example in France only probably more than two third of the 15 000 microlight aircrafts and at least half of the 2000 gliders & motor-gliders do not have a transponder. Therefore, the argument that says that traditional aviation is already compliant with electronic conspicuity requirements, would probably not win the debate with third parties.

**3. The most important kinds of activities that are tasked to helicopters are related to rescue and crisis management. Those events are subject to attracting the media.** At more and more occasions, rescue teams have experienced the need to postpone a sequence of the current operation, event to interrupt their flight due to close encounters with unexpected, uncoordinated drone activity that often turned out not to be legal ones.

**4. The use of the Internet, in particular its "radio segment" (4G, 5G) doesn't seem easy to consider for the purpose of any air traffic coordination for the moment,** due the reluctance of Internet surveillance authorities, and to the strong opposition of the Web services providers. The preliminary discussions about this concern have highlighted issues that will probably be hard to mitigate at first glance, at least according to the urgent schedule that one would have to fulfil:

- 1. No warranty about the continuous speed of the data flow.*
- 2. No possibility to prioritize the data transmission according to its importance in case of jam.*
- 3. Little resilience against cyber criminality or interference. In an emergency, the only efficient procedure in case of a hard bug popping up, or of hacking is to disconnect the service from the network.*
- 4. Questionable technical capacity of the GSM network to address the increase of air to ground data traffic with the announced increase in drone, EVTOL activity.*

Presently, in the responsibility & limitations conditions of the sales contract of each smartphone, it is still written that its connection to the GSM network is not allowed in flight. So none of the apps that are dedicated to flight management with the need to be Web connected, are theoretically legal. However, considering the use of the GSM network and protocol in order to manage U-Space traffic would be probably the best way to make I-Conspicuity compliance easily acceptable by all of the parts of the aviation community.

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However, the helicopter community does not think that a simple drone traffic awareness electronic process would be sufficient to fulfil the safety of helicopters in rescue or aerial work.

So, apart the technical propositions to be studied to address the drone issues, the current position of the European helicopter sector is:

A)

The growth of the UAV activity must be addressed urgently in order to preserve the safety of manned aircraft as the indisputable top priority, above all other considerations regarding the promotion of the drone industry.

B)

Manned aviation industry should not have to support both the technical, the regulatory and the financial burdens of this evolution of air traffic management. That must be shouldered by the new-coming industry along with the political entities that have decided to support it.

C)

All of the standing working programs and advisory bodies that are tasked to prepare the position papers and to define the strategy about this topic must be coordinated in a continuous way.

D)

There is an urgent need to clarify the legal use of non-aviation data network in flight regarding both the immunity of the certificated avionics, and the (GSM) cellular network regulation.

E)

Because helicopter task is very often related to emergencies to address at low/very low altitude and in congested environment, in such conditions that do not always allow them to engage avoidance manoeuvre, the safety and the priority of their circulation must be achieved irrespectively to the U-Space principles.

1. Outside of U-Spaces, the absence of legal drones must be guaranteed.
2. Against the rogue drones everywhere, and also the legal drone operations inside U-Spaces, the helicopter working at low altitude will need to be "**protected**" as well as practicable from the UAV traffic by both the regulation and the forthcoming electronic provision, and not only "**informed**" about this traffic.