

## Technological challenge 4

### Department that propose the challenge:

- Ministry of Health

### 1. - Areas/topics that the department wishes to investigate/innovate with the aim of improving the delivery of public services through UAVs.

Within the activity of Healthcare Emergencies of Galicia - 061. It should be taken into account that there are normal operations involving both emergency and response to health emergencies that come, such as consultation and medical advice phone. Exceptionally it presents episodes, which involve multiple victims (multiple casualty incidents and disasters)

Apparatus capable of bringing medical supplies to remote areas or isolated in different situations:

- 3) Semi-automatic defibrillators (DESAS) situated in strategic zones. These devices can be used by first responders (people without medical training at the bedside) or can serve as temporary primary care points when due to a breakdown they are left without them.
- 4) Extra material contribution necessary in resolving massive episodes (usually collected in bins) from storage and logistic bases.

Moreover, our service may be interested in used rescue equipment, comprehensive view of complex scenarios, search....

### 2. - Activities or resource intensive processes that can improve the department by using UAV based solutions.

On a day-to-day basis: strengthening healthcare activity in remote areas for Cardiopulmonary Resuscitation situations.

Obviously, in this application it should take into account: the capacity and response time of devices (dependent on both services and possible locations), and moreover the respective cost-effectiveness compared with other modalities.

Note: In the case of DESAS, based on the evolution of technology and prices, although at the moment they are stated as utilities to bring to remote areas, at any given time they could be used in cities to increase the responsiveness of health emergencies services.

In the exceptional sense collaboration with other agencies (Emergency), who have already invested in UAV technology. It can use these devices to obtain aerial perspectives of multiple victim accidents, material transport facilitation of material for individual resolution in areas of difficult access, location of people.

It can evaluate the possibility of favouring the management of heavy equipment (such as disaster chests) in accident with multiple victim situations in remote locations, where mobile resources take time to arrive.

### **3. Technical or technological challenges that should solve these solutions (this section includes the integration of solutions into existing processes or technology platforms department)**

#### To focus on site:

- DESAS: Integrated incorporation of electromedicine + images and voice transmission.
- Material management: Transport capacity of no less than 30 Kg.

#### In both cases:

- Geopositioning interaction
- Georeferenced direct flight without pilot intervention.
- Usually with broad autonomy and responsiveness at great distances.

### **4. Management and technical team provided by the department to collaborate with technological partner.**

Healthcare emergency of Galicia - it has 061 service systems and information technology, technical staff who know the operation and possibilities of technology.

Operationally, it has central coordination, which has technological and advanced communication, self-designed platform, from which it responds to demand for healthcare and coordinate the necessary means for its resolution. From the same, it has been developing for some years activities related to telemedicine and distance medical consultation.

It also has its own healthcare network that transmits activity to this Centre.

We are able to offer our experience in piloting new projects.

In this particular project it may have direct involvement of 1 technology department head and when necessary service operation managers.

### **5. Operational improvement, process optimization, cost reduction ... that it expects to achieve by implementing solutions based on UAVs**

UAVs can be a complementary method of healthcare activity in the field clearly decreasing response times in remote areas. In a scenario of increasing affordability of these devices, it could even improve response times in case of cardiac arrest in urban areas.

They can also serve to support the activity of the points on call in case of breakdowns of indispensable material.

Applications observation tasks, search and rescue can also be efficient these technologies, although its use provide important synergies with other departments and agencies.