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Situation Awareness System for First Responders

ResponDrone is an international project co-funded by the EU and Korean government, which is dedicated to developing and commissioning a fleet of drones operated by a single piloting team in emergency situations, providing critical information and communication services to first responders.

The three-year project aims to develop an integrated solution that allows first responders to easily operate several drones with multiple synchronized missions in order to enhance their situation assessment capacity and own protection.

The ResponDrone system will simplify and accelerate situation assessment, information sharing, decision making and operations management for first responders. It will also deliver high quality information to any involved control center through a web-based cloud platform, which will be accessible and operated from a remote site. In addition, it will serve as an on-demand airborne communications network to allow rescue teams on the ground to communicate with the command center in case of cellular coverage collapse.

By using the innovative ResponDrone system, emergency response teams will be able to respond more rapidly, effectively and efficiently to an emergency or disaster, and therefore save lives. The fleet of drones will provide enhanced capabilities to support disaster assessment, search and rescue operations, as well as forest fire fighting.

The deployment of the ResponDrone system will be very simple. Each fleet of drones will be operated in a safe and coordinated way by a single piloting team, unlike the current situation in which each drone is operated by its own pilot team.

To ensure seamless uptake and adaption by first responder organizations, ResponDrone will be fully integrated and embedded within the current processes and procedures of real emergency response agencies.





The ResponDrone System

ResponDrone will develop and validate an integrated solution for first responders to easily operate a fleet of drones with multiple synchronized missions in order to enhance their situation assessment capacity and own protection. This System of Systems will simplify and accelerate situation assessment and information sharing, decision making and operations management, while requiring a small crew to operate it.

The ResponDrone system has the following advantages:



The smart planning tools will allow a single drone team to operate multiple drones at the same time, improving significantly human resources efficiency.



Dynamically calculated flight trajectories for each drone provided by the Traffic & Mission Management (TMM) component will ensure safe UAV operations.



The ResponDrone system will be designed to fit seamlessly into emergency response operational processes currently in use by first responders.



When the responsibility for flight planning and operations monitoring is transferred from the pilot in the field to a centralized system, those pilots will require less specific training, and thereby the deployment of drones will be more efficient.



The UAVs used in ResponDrone will be capable of providing communication channels for serving first responders on the ground, allowing them to communicate between themselves and to relay data from and to the command centers or the cloud.



ResponDrone will use web-based cloud technology in order to gather, store and provide collected data to all stakeholders. Personalized access rights ensure user-oriented data distribution.



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