Autonomous Hybrid Drone System for Human Rescue

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Despite the rapid development of technology, it is still a significant challenge to determine the location of people lost at sea. In 2019 in the USA 3500 people died from drowning and 613 in boating accidents. It turns out that modern methods do not provide a sufficiently precise and fast determination of the victim's location. To solve this problem we designed the system which works in the following way: a few ships equipped with 10 drones each are sent to the location with the highest probability of finding lost people. Then drones autonomously start searching the area around the ship. We prepared an innovative hybrid drone. Unlike most drones which are powered by battery, it uses gasoline engine and generator to power the drone. Thanks to this is able to achieve 6 times longer flight time in comparison to commercially available drones. Our hybrid drone is equipped with a thermal camera and applies special algorithms for autonomous control and image recognition to detect people even from a far distance and in bad weather conditions. To conclude, the main advantages of our project are: 1. Much shorter search time - a given area can be searched by many drones at once. 2. Higher detection efficiency. 3. Higher safety - in case of bad weather conditions the search can still be conducted and the people do not risk their lives. 4. Much lower cost compared to the currently used methods. 5. High autonomy of the system.

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