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Using UAV for Surveillance

A Mumbai-based company has developed an unmanned aerial vehicle which is ideal for scientific missions.

By Shyam P.V

ideaForge, a company founded by three IIT Bombay alumni, has developed Carbon, an autonomous hovering Unmanned Aerial Vehicle (UAV) which is ideal for short range reconnaissance, surveillance and scientific missions, terrain mapping, and disaster management.

According to the manufacturers, Carbon is the lightest and smallest possible UAV currently available. They have developed the smallest auto pilot for the same. The aircraft weighs less than 1.5 kilogram and can fly at a cruise speed of 25 kilometer per hour (kmph) and a maximum speed of 40 kmph. The inbuilt battery allows it to stay in air for about 30 minutes and fly up to two kilometers at a stretch.

“Carbon takes off and lands vertically allowing the user to operate the aircraft from a very small area. The aircraft is controlled from a ground control station. We have simplified the operations in such a way that with just simple mouse-clicks, one can control the entire functions of Carbon starting from take off, deciding a destination, taking photographs or videos, to landing the aircraft exactly at the take-off position. Also, even if the battery gets over or the craft loses communication with the ground control station, it will return to its take-off position on its own,” explains Rahul Singh, director of ideaForge.

The Carbon was launched at the Indesec Expo 2009 held in New Delhi between October 11 and 13 and will be showcased at the Defence Expo in Delhi in February, 2010.

“The whole technology, including the core auto pilot used for this product, has been developed by us. We also have the patent for the auto pilot technology which is a secured algorithm. Already our technology is being used for Defence Research and Development Organisation's (DRDO) Netra, for many security purposes,” says Singh.

The manufacturers believe that apart from reconnaissance, scientific missions, and disaster management, the aircraft can be used for commercial purposes also. “The vehicle can be used for brand building in a crowded area or showing the bird's view of a particular area to attract customers. A foreign institute has already placed an order for the UAV; they want prior information on snow conditions so that they can inform their employees on the ground once the avalanche begins,” concludes Singh adding that the utilization of the aircraft is aplenty.

Specifications

Weight: 1.5 kg

Dimensions: 90 cm x 90 cm

Power source: External swappable Li-Po batteries

Payload: Customized camera options with pan and tilt control, wireless video transmitter

Performance

Range: 1 km LOS

Endurance: 30 min per battery charge

Cruise speed: 25 kmph

Maximum speed: 40 kmph

Wind resistance: Up to 8 m/sec

Maximum payload: 300 gm

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