

Panoptes offers obstacle-avoidance system for drones

13 March 2015, by Nancy Owano



A device designed to deliver low-speed obstacle avoidance for drones, working indoors and outdoors, is being proposed in the form of the Panoptes eBumper4 from Panoptes Systems. No question, drones are going places. Thing is, you don't want them flying blindly. You want the drone to sense obstacles and respond as necessary. The Panoptes team including Michael Humphrey, mechanical engineer, Eddy Jacinto, lead electronics engineer, Donnie Rogers, systems integration lead, Andrew Kehlenbeck lead GNC engineer and Fabrice Kunzi, chief technology officer, are out to promote their device, installed on a drone.

The net weight increase is 2.9 ounces. The minimum safe operating altitude is four feet. Supported aircraft types are the DJI Phantom line of drones and 3D Robotics Iris. They said, technically, they can integrate with any aircraft. So far, though, they have only physically integrated with Iris and the Phantom. They are evaluating which aircraft would be a good next target for integration, and have some others under consideration, which they list on the Kickstarter

FAQ section.

How it works: four sonar sensors provide the [drone](#) with information about the environment, left, right, front and above it. The drone can be navigated away from any obstruction. When eBumper4 senses an obstacle in its field of view, it prevents the drone from getting too close to the obstacle. It "bumps" off the object, keeping the drone at a safe distance. You can then navigate the drone safely away from the obstruction.

The eBumper4 features are configured via a [graphical user interface](#) available for Android and Windows PC, to tailor eBumper4 for individual needs (As for Macs or iPhones, the team said "Let us know, and we'll see what we can do.")

The team highlights the advantages of having this device for drones: It means the drone can do some feats you may not have dared to do in the past. You can move in closer to objects with more confidence. Or you can fly the drone farther away from you, where it would be hard to judge distance. In short, this is a sonar-based, small drone [obstacle avoidance](#) system. It can offer additional protection, they said, against erroneous control inputs and light wind gusts.

In the course of working up the product, the team said they realized that for users to really make the most of their eBumper4, they had to be able to customize its settings and easily write apps for it. "With the addition of that user customization capability, we felt our eBumper4 project was complete. We not only had an obstacle avoidance system, we had a sensing system the user could harness to do new things."

They said they need to make capital investments in molds and tooling and purchase materials. "We will be sourcing materials and parts from domestic and

international suppliers, and we will be doing subassembly and final assembly in the USA." They have turned to crowdfunding for support. They have set an \$80,000 goal. Pledge amounts vary and a full listing appears on the Kickstarter campaign page.

The eBumper4 comes with four sonar sensors and electronics board pre-installed in injection-molded ABS plastic housing, mounting hardware. The pledge supporter also gets an installation manual, operations manual, stickers, and lanyard for remote control. Estimated delivery dates are July and August. The system, they said, installs in about 10 to 20 minutes.

More information:

[www.kickstarter.com/projects/9 ... stacle-avoidance-for](http://www.kickstarter.com/projects/9...stacle-avoidance-for)

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