Worldâ€™s Smallest Autopilot for Micro Aircraft

Researcher Bart Remes and his team of the Micro Aerial Vehicle (MAV) Laboratory at the TU Delft (The Netherlands) faculty of Aerospace Engineering have designed, built and tested the worldâ€™s smallest open source autopilot for small unmanned aircraft. A smaller and lighter autopilot allows these small flying robots to fly longer, fit into narrower spaces or carry more payloads, such as cameras.

The very compact design makes these mini UAVs more suitable to be used in for example rescue operations. The TU Delft team aims to make MAVs so small and light that the user can fit one in his pocket.

The world's smallest autopilot for micro aerial vehicles – small flying robots that can be used in safety and rescue operations – is called Lisa/S. It weighs 1.9 grams, more than 30 grams less than its predecessor. The autopilot measures 2 cm by 2 cm. Bart Remes, project manager at the Micro Aerial Vehicle Laboratory at TU Delft, explained they programmed new software, Superbitrf, that keeps the autopilot connected to a ground station and a normal RC transmitter at the same time. This combination of functions made it possible to miniaturise the autopilot. Making the autopilot smaller and lighter allows a micro aerial vehicle to stay up in the air longer and carry heavier cameras and sensors. This makes it easier to use MAVs in for example search and rescue operations.

A demonstration can be watched here.

Open source

The research team have chosen to develop Lisa/s open source to make it possible for users to test it and come up with suggestions for improvement. Making all the details available online also helps to make MAVs easily accessible for all. Remes said it is the their aim to make MAVs as commonplace as smartphones and laptops. Farmers can use MAVs to inspect crops for example. Their dream is that for example every fire fighter carries a MAV in his breast pocket to use for inspections of collapsed or burning buildings without having to go inside.