



360FUSION

FIRST 3D ANTI-CRASH SOLUTION EMBEDDED IN A DRONE

+ WHAT IS 360FUSION?

Leti's 360FUSION is the first low-power 3D fusion-sensor solution that can be embedded in drones. In combination with miniaturized sensors, 360FUSION software collects, analyzes and transforms millions of incoming 3D distance data items into relevant, actionable information.

Fitted on a mass-market microcontroller, this technology detects any dynamic obstacle in real-time. Compatible with all types of sensors (lidars, radars, sonars, cameras, etc), while leveraging data from the best of them, 360FUSION's flexible solution gives companies freedom to choose among various applications.

Leti develops perception technologies for robotics — cars, drones, robots — and safety. The institute developed 360FUSION leveraging its SigmaFusion™ multi-patent technology.

+ APPLICATIONS

Leisure

Drones are expensive and fragile. This system provides consumers with a reliable and affordable integrated anti-crash system.

Civil Security

Saving lives and protecting people are a race against time. This technology ensures safe navigation and enables prompt action.

Military

Anti-crash systems are vital for reliable anti-terrorism operations. 360FUSION ensures fast response combined with maximum performance and accuracy.

+ WHAT'S NEW?

360FUSION highlights include:

- First obstacle-avoidance algorithm in a dynamic environment based on cutting-edge laser sensor technology, embedded in a drone
- Ultra-compact and miniaturized solution: fits into a low-cost mass-market microcontroller
- In average 10x cheaper than comparable systems
- Highly integrated perception solution weighs less than 40g
- Seamless integration: integrates existing drone technologies

+ WHAT'S NEXT?

Leti is working on:

- Equipping a fleet of drones with this technology. Drones could detect nearby drones and avoid collisions
- Coordination between drones
- Fitting miniaturized radar sensors on fleet of drones
- Enabling detours to a safe route when an obstacle is detected
- Autonomous flight

KEY FACT

- Prototype based on CrazyFlie platform, including STMicroelectronics' STM32 Cortex M4 Microcontroller and 6 Lidar VL53XL
- 2 patents common with Sigma fusion solution for safe autonomous driving



INTERESTED IN THIS TECHNOLOGY?

Contact:

Stéphane Bailly

stephane.bailly@cea.fr

+33 438 786 555

Marie-sophie Masselot

marie-sophie.masselot@cea.fr

+33 438 783 830

Leti, technology research institute

Commissariat à l'énergie atomique et aux énergies alternatives
Minatec Campus | 17 rue des Martyrs | 38054 Grenoble Cedex 9 | France
www.leti-cea.com

