



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 in a 3D environment any dynamic obstacle in real-time. Compatible with all types of sensors (lidars, radars, sonars, cameras, etc.), while leveraging the best data available, 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.

Infrastructure Inspection: 360FUSION enables safe navigation in GPS-denied environments (i.e. airport undergrounds, warehouses, lift shafts) as well as in tight infrastructures, from as little as 50-centimeter-diameter tunnels.

+ WHAT'S NEW?

360FUSION highlights include:

- Ultra-compact and miniaturized solution: fits into a low-cost mass-market microcontroller
- In average 10x cheaper than comparable systems
- Seamless integration: integrates existing drone technologies
- First obstacle-avoidance algorithm in a dynamic environment based on cutting-edge laser sensor technology, embedded in a drone
- Highly integrated perception solution weighs less than 5G
- New sensor fusion algorithm for safe navigation within tight and GPS-denied infrastructures

+ 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
- 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 multiple VL53L0/L1x Lidar sensors
- 2 patents common with Sigma fusion solution for safe autonomous driving



INTERESTED IN THIS TECHNOLOGY?

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