

# ONERA and Drones



**F**or the drone market to really take off, a number of technological barriers must first be lifted. At ONERA, we call on more than a decade of cutting-edge research to rise to this challenge, based on proven technological building blocks, methods and resources, ready to be shared with industry.

ONERA has developed multidisciplinary expertise, with the technologies and resources needed to help you develop innovative products and services. We offer custom-tailored solutions to address the inherent complexity of increasingly intelligent drones, and make sure they can be operated safely and efficiently.

## **A multidisciplinary, comprehensive approach**

ONERA's multidisciplinary capabilities mean that we take a holistic system approach to meet the challenges facing the actual implementation of drone systems.

### **Enhanced flight safety**

Our aim at ONERA is to support the development of drones, from both the technological and regulatory viewpoints. This will ensure their integration in civilian airspace, while also guaranteeing the safety of both people and property on the ground and in the air.

- High-reliability avionics and navigation systems
- Robust control laws
- In-flight reconfiguration
- Expert aid for certification procedures
- Secure, efficient human-machine interfaces

### Higher-performance drones

ONERA offers proven research skills and expertise in the key enabling technologies for drone development, helping you develop both platforms and payloads tailored to each application.

- Sensors: optical, radar, lidar
- Signal processing and post-processing
- Data fusion from multiple sensors
- High-performance onboard computing
- Data and transmission security
- Energetics and propulsion
- Aerodynamics

### More autonomous drones

By making drones more intelligent, we also pave the way for a broader scope of applications. In addition to our cutting-edge expertise in science and technology, ONERA deploys a wide-ranging fleet of experimental drones, backed by the test ranges and systems needed for your projects.

- Embedded intelligence for single or networked drones
- Mission planning and reconfiguration
- Onboard perception
- Onboard decision-making

## Presence across the value chain

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ONERA has always worked closely with industry. Today, we offer our partners a broad array of advantages.

- **State-of-the-art** expertise in the underlying disciplines for drones. Created over 60 years ago, ONERA has always carried out fundamental research to understand the full scope of complex problems. Drawing on our advanced knowledge of these basis phenomena, we offer innovative solutions to support your projects.
- **Numerical simulation and experimentation: a complementary approach.** You benefit from our complementary expertise in numerical simulation and experimentation, to save both time and money.
- **A pivotal player.** ONERA works with entities of all types and sizes, enriching our research into underlying phenomena and giving our partners an unrivaled network of contacts.

## ONERA, a proven partner

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We have already established successful research partnerships with several drone manufacturers and operators, showing that we know how to come up with solutions tailored to your exact requirements.