

ROGUE DRONE AND PILOT DETECTION BY RADIO- FREQUENCY ANALYSIS

To counter the new drone security threats, HYDRA³⁰⁰ is the absolute CUAS system whether you are looking for a versatile solution or a high performing detection technology to be integrated in a multilayer Command and Control system.



The photos and graphics of our design are non contractual

Drones: a growing concern

Because drones can guarantee the **anonymity and impunity of their pilots**, they have become the perfect tool for malevolent actors. **Small, nimble, inconspicuous, affordable, easy-to-use** and able to transport diverse payloads with increasing levels of autonomy, drones today bypass all traditional security measures and put all critical sites at risk. Risk of attack or collision, vector of espionage or contraband: malevolent drone intrusion scenarios are numerous.

Our mission

Since 2015, CERBAIR has **secured its clients' near airspace** with high-tech solutions. To cope with the **asymmetrical threat** posed by drones, CERBAIR aims at **democratizing high performing solutions** to protect the many with its unique approach:

- Highest Cost-Efficiency on the market
- Mobility and Simplicity of use
- Modularity and Upgradability

HYDRA

CERBAIR's core technology, HYDRA is a range of drone detection solutions based on **radiofrequency analysis**. Similar to the mythological multi-headed snake, HYDRA relies on a **scalable number of sensors** (see visual on right corner) installed on top of a mast and working together thanks to our **signal intelligence algorithms**.



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Key takeaways

- Drone and pilot detection
- Direction finding on drone and pilot (bearing $\pm 03^\circ$)
- Average detection range: 2km
- Drone type identification
- Very low rate of false alarms
- Passive solution: zero interference
- Ease of installation: 20 min / 2 PAX
- Modular, evolutive and highly configurable

Why detect?

Drones are becoming **more and more discrete** to the point that it has now become unrealistic to expect detecting them with one's own senses. Without proper detection, no action can be taken. Therefore it is crucial to be able **to detect, identify and locate the drone threat in time**. Indeed, these steps are necessary to trigger a countermeasure so as to neutralize the drone or alternatively to indirectly nullify the drone threat (pilot arrest, VIP extraction...).

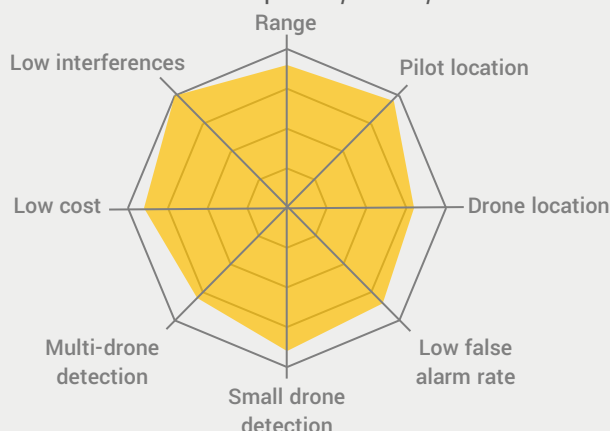
Several technologies allow to detect drones: RF, radar, acoustics and EO/IR. Although each presents its own strengths and weaknesses, radiofrequency analysis undoubtedly is **the most balanced drone detection**.

Because it is a **high performing, affordable and non interfering technology**, radiofrequency analysis is a **powerful 1st line of defense** to detect the presence of rogue drones, especially in complex urban environments.

Of course, given that no technology is infallible, the **integration of complementary drone detection technologies** can help counter the most sophisticated drone attack scenarios.



Radiofrequency Analysis



HYDRA solutions composition

Hardware

- Detection pod : 4 sensors.
- Client server or hypervisor integration.

Software

- Perpetual software license.
- Major functionalities:
 - Dashboard with 2D satellite views.
 - Sensors and effectors settings.
 - Alert history for FORENSIC.
 - Real-time RF spectrum scanning.

Service

- Site reconnaissance.
- System calibration and training.
- Hardware warranty and software maintenance.



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SOLUTIONS
CHARACTERISTICS

HYDRA 300



AVERAGE RANGE	2 km
RF SPECTRUM COVERAGE	433MHz ⁽¹⁾ / 868MHz ⁽¹⁾ / 915 MHz ⁽¹⁾ / 2,4GHz ⁽²⁾ / 5,8 GHz ⁽²⁾ / 400 MHz-6GHz ⁽³⁾ (1) Azimuth (2) Azimuth and Elevation (3) Direction Finding
ACCURACY	3° RMS
SENSORS	90° (Azimuth and Elevation) with 1 sensor
DETECTION METHOD	ULTRA (U ltimate R ecognition A lgorithm) : low false alarm rate
SENSOR PROTECTION	IP65
OPERATION TEMPERATURE OF SENSORS	-40°C to +60°C (-40°F to 140°F)
SENSOR DIMENSIONS	72x58x25 cm
SENSOR WEIGHT	20 kg
SENSOR CONNECTIVITY	4G / Ethernet 1000 Base T
CONSUMPTION	< 200 W

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Client references



French Ministry of Defense

CERBAIR is proud to equip several units of the French Army with its anti drone solutions.

G7 in Biarritz

CERBAIR was honored to take part in securing the 2019 G7 summit from drone threats.



Colombian Air Force

CERBAIR actively protects some bases of the Colombian Air Force from potential drone attacks.



“ CERBAIR proved to be a company that perfectly understood the drone threats and the means to protect from them. [...] Their deep knowledge of anti drone technologies involved in detection, identification and neutralization [...] their toolbox approach [...] are key assets to secure your near airspace from malicious drones with the highest level of professionalism.

Stéphane Durand, CEO



CERBAIR's radiofrequency based technology detects the vast majority of civilian drones in the air today. It is easy to install, integrates seamlessly into existing security systems and is controlled by a user-friendly interface that allows its operations to be up and running quickly, saving time and money.

Jean-Michel Aulas, Chairman ”



SCAN ME

Partner of **MBDA**
MISSILE SYSTEMS

CERBAIR is supported by several prestigious investors including MBDA (European leader in missile and missile guidance system), ensuring the sustainability of the company. Together, we work hard on designing complete anti drone solutions for armies.