CHIMERA
CERBAIR

Spec Sheet

Version 06/2020

PORTABLE AND INTEGRATED ANTI DRONE SOLUTION

CHIMERA fights the widespread drone threats by offering security operators a complete, high performing, integrated, extremely mobile and highly configurable solution. Pioneering a unique integrated and dynamic operational concept, CHIMERA is the interoperable anti drone « Swiss knife ».

MINISTÈRE DES ARMÉES
Liberté Égalité Fraternité

European Commission · SEAL OF EXCELLENCE

MBDA MISSILE SYSTEMS · iA 19 INNOVATION AWARDS

BY GICAT

CERCLE DE L'ARBALÈTE

SEAstart

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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

CHIMERA

It is the real **anti drone « Swiss knife »**. Similar to the fantastic creature, CHIMERA is the long-dreamt **fusion of detection, location and neutralization technologies into a unified portable format** for demanding security operators. This highly configurable platform provides flexibility to larger C2 it can connect with.

1st GENERATION

Key takeaways

- Detection of drone and pilot
- Location of drone/pilote via direction finding ±15°
- Neutralization via BVLOS directional jamming
- Average range > 1 km
- High portability
- Stealth: passive and non interfering detection
- Possible integration into larger C2 via tablet
- Evolutive and interoperable platform

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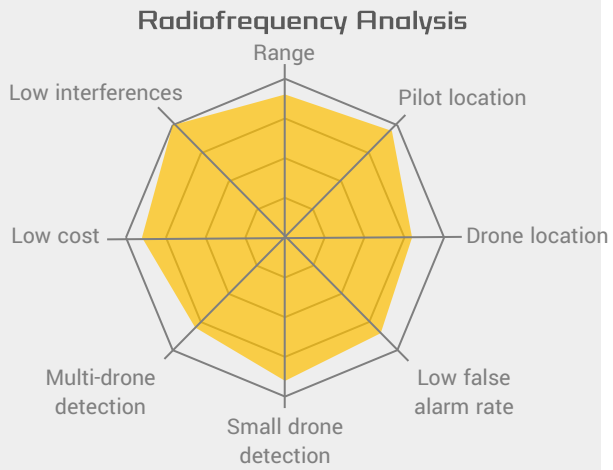
Why not a mere dronegun?

Droneguns have **real ranges limited to the visual and acoustic senses of their operators** as they need to be aimed at the drone since they are highly directional to protect the operators from emissions. Consequently, their **real ranges do not exceed 100m,** which is **way too short** to counter popular attack scenarios in which malevolent actors fly they drones high so as to not be detected. By combining detection, location and neutralization, **CHIMERA increases the operator reaction time and allows him to engage a rogue drone Beyond his Visual Line Of Sight (BVLOS) or even arrest the pilot**.



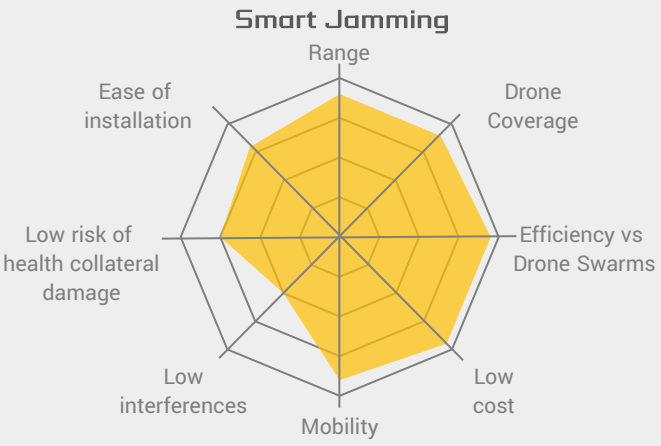
Why radio technologies?

Radiofrequency analysis is the most balanced detection technology in order to:

- Give early warnings thanks to long ranges.
- Detect and locate drones and their pilots.
- Limit false alarm risks.
- Stay stealthy and non interfering since passive.

Smart jamming also is the most balanced drone countermeasure thanks to:

- Long range.
- High drone coverage.
- Instantaneous effect.
- Efficiency against drone swarms.



CHIMERA solutions composition

Hardware

- Manpack for omni and passive detection.
- Rugged tablet for alert, tracking and connectivity.
- Effector for direction finding and neutralization.

Software

- Perpetual software license:
  - Dashboard: alerts in real time.
  - Direction finding on drone and pilot.
  - Control of manpack and effector.
  - Alert history.

Service

- Training.
- Hardware warranty and software maintenance.

**The purchase and utilization of such technologies is strongly regulated and requires export license on CERBAIR's side. Please liaise with your local regulator to make sure you are entitled to import and use this equipment.*

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SOLUTIONS CHARACTERISTICS	CHIMERA 100	
MANPACK		
OMNI DETECTION RANGE	1 km	
ACTION ON RF SPECTRUM	Omnidirectional and passive detection on 2.4/5.8 GHz	
INSTALLATION	On tactical vest	
DIMENSIONS	28 x 31 x 8.5 cm	
WEIGHT	8 kg	
NORMS	IP65, MIL STD 810G and MIL STD 461G	
OPERATION TEMPERATURE	-20°C to +49°C (-4°F to 120°F)	
POWER SOURCE	Standard militarized battery with hotswap compatibility (4h detection / 1h jamming)	
AUDIO	Jack port for audio alerts	
RUGGED TABLET		
MODEL	GETAC MX50	
CONTROL	Tactile and mechanical	
OPERATING SYSTEM	Android 7	
DIMENSIONS	188 x 105 x 188 mm	
WEIGHT	400 g	
NORMS	IP67, MIL STD 810G and MIL STD 461G	
OPERATION TEMPERATURE	-20°C to +49°C (-4°F to 120°F)	

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SOLUTIONS CHARACTERISTICS	CHIMERA 100
EFFECTOR	
DIRECTION FINDING RANGE	2 km
ACTION ON RF SPECTRUM	Passive direction finding on 2.4 / 5.8 GHz Jamming on 2.4 / 5.8 GHz / L
ACTIVATION	Manual
DEGRADED MODE	Integrated control panel with key functions
WEIGHT	5 kg
NORMS	MIL STD 810G and MIL STD 461G
OPERATION TEMPERATURE	-20°C to +49°C (-4°F to 120°F)

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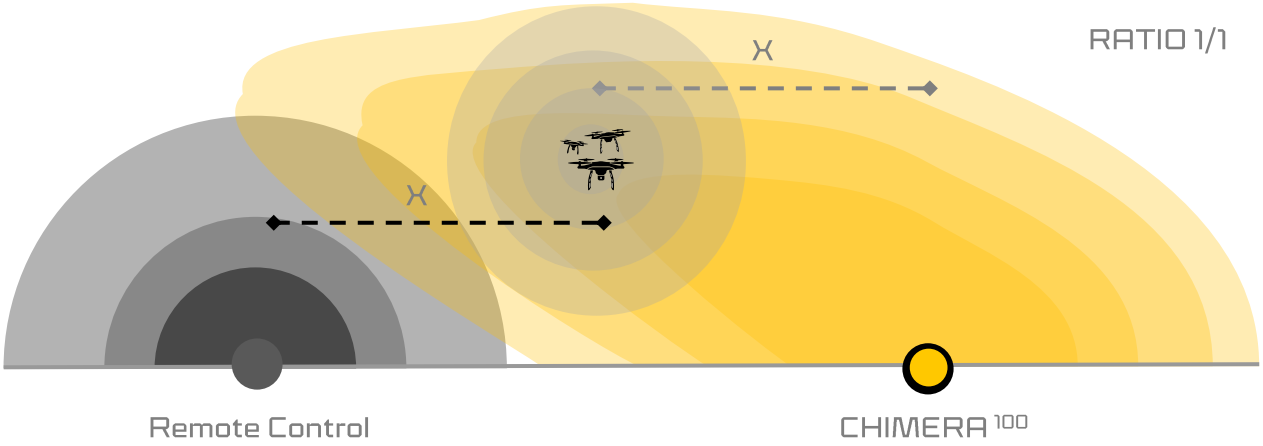
How jamming affects drones

- Jamming **interferes with the communications** that drones rely on, namely the uplink, downlink and GNSS reception.
- Once one or several of these channels is jammed, the drone automatically triggers its **emergency procedure** that its pilot chose before take-off:
  - Safe landing.
  - Return to Home.
  - Hover until battery is depleted, then safe landing.
- If GNSS reception is also saturated, the drone will not be able to Return To Home and will therefore trigger its safe landing by default.

Range

Several factors can impact neutralization ranges such as the distance ratio [CHIMERA – Drone] / [Drone – Remote Control], the drone model, local RF pollution, topography, surrounding constructions or weather conditions.



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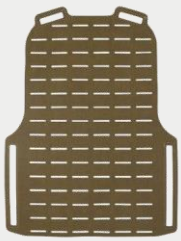
Included accessories

Battery

- BT-70757BV
- Li-Ion
- Certified by US DoD
- 105 x 37 x 99 mm
- 0.54 kg
- Capacity: 24 V / 3.4 Ah

Battery Charger

- BTC-70791-MR
- Powered in 100 – 240 Vac, 200 VA, 50/60 Hz
- 84 x 56 x 51 mm
- 0.50 kg



MOLLE conversion plate

- Mounts the manpack on the tactical vest
- Quick release
- MOLLE attachment points

MOLLE clips and Sling

- Clips to attach the plate to the tactical vest
- Sling to transport the effector

Tablet mounting

- GETAC GMCMX1
- Compatible with MX50
- 160 x 240 x 50 mm
- 210 g

Transport cases

- Pelicase to transport CHIMERA and its accessories

Customization options

Long endurance battery

- BB-2590/U
- Li-Ion
- Certified by US DoD
- 112 x 61 x 127 mm
- 1.40 kg
- Capacity: 24 V / 7.5 Ah

Multi-battery charger

- BTC-70819-1
- Powered in 22 V – 33 V DC, 13 A, 90 – 260 Vac, 47 to 440 Hz
- 349 x 261 x 194 mm
- 5.90 kg

Tactical Vest

- Material: Nylon 500D
- Water resistant
- Can hold 2 SAPI
- GrabDrag handle
- MOLLE attachment points

Earpiece & maintenance cable

- Earpiece to hear audio alarms
- Maintenance cable for remote update

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Client references

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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.

G7 FRANCE BIARRITZ 2019

Colombian Air Force

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

Client testimonies

dgac DSNA

"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

OLYMPIQUE LYONNAIS — OL GROUPE

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"

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.

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