

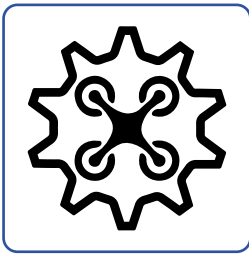
DEFENCE

Robotics and Drones



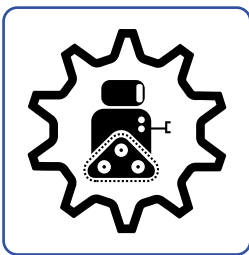
GICAT

The French land defence and security industry association



UAV DESIGN, ENGINEERING AND COMPONENTS

Roaming and dominating the battlefield, UAVs have become a game changer in modern warfare. Largely derived from civilian technology, UAVs for military applications vary greatly in weight from a few hundred grams up to several hundred kilograms. Able to fulfil a large variety of missions (ISR, target designation, jamming/decoy, transport...), they use multiple forms of architecture (quad copters, fixed wing...), using high-technology components. Whatever their payload, a sound design and reliable/efficient components are mandatory features. UAVs will participate tomorrow in collaborative combat alongside manned vehicles, alone or in swarms.



UGV DESIGN, ENGINEERING AND COMPONENTS

UGVs are involved in the next significant changes on the battlefield, starting from an engineering role for mine clearance or route opening work, through to armed UGVs. Other applications involve ISR missions, jamming/decoy missions and logistics missions facilitating supplies near the front. Designs imply autonomous mobility, remote operations, use of sensors especially to know the immediate environment, etc. The most widely used detection technologies are currently based on lidar, radar, visible band and IR cameras. UGVs can be associated with UAVs which provide them with remote vision. UGVs and UAVs will participate tomorrow in collaborative combat alongside manned vehicles, alone or in packs.



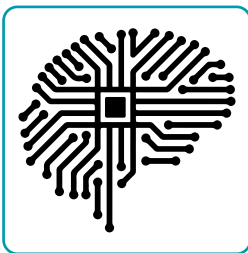
COMMAND AND CONTROL

Being remotely operated, UAVs and UGVs require reliable, user friendly and efficient C2 (command & control) allowing the operation of the systems in all conditions. In addition, the intermeshing, fluid and versatile nature of modern combat requires information control through C2 systems and integration of battle management systems (IFF, «blue force tracking» and platform cooperation). Issues related to coordination and management of embarked subsystems play a decisive role in terms of structure dimension as the number of UAVs and UGVs is constantly increasing, calling for new remote management as well as an optimization on the crew and command level, for each platform.



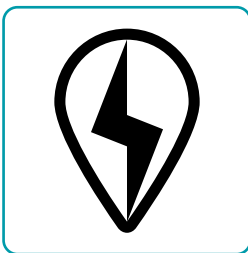
COMMUNICATION SYSTEMS

Communications systems are critical for remotely operated UAVs and UGVs. The capability of operating at long range for UAVs, or in a chaotic land battlefield environment for UGVs is critical, especially as electronic and cyber warfare aspects are imperative as the threats against embedded software and communication networks expand.



ARTIFICIAL INTELLIGENCE AND SOFTWARE

Artificial intelligence (AI) and software are of critical importance as more and more UAVs and UGVs are present on the future battlefield, hence the need to alleviate the operator workload and improve the efficiency of these weapons. Software and AI allowing them to operate in swarms (UAVs) or packs (UGVs) will increase their effectiveness in the future.



MOBILITY, PROPULSION AND ENERGY

UAVs and UGVs, with the development of their capabilities and uses on the battlefield, require increased mobility and endurance to operate in these environments. Thus propulsion systems are becoming a critical point of their development to provide these systems with the level of performance they require.



NAVIGATION

As UAVs and UGVs are remotely operated in increasingly dense electronic warfare environments, sophisticated navigation systems are required to enable them to complete their missions in such challenging environments.



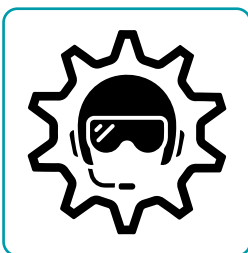
PAYLOAD AND SENSORS

Payloads are critical to UAVs and UGVs, whether they are SIGINT, jamming, IMINT, warheads... We are only at the beginning of a period where imagination will be the sole limit on the development of new payloads for this type of vehicle, designed to be able to operate both day and night and in all weather conditions.



LOITERING MUNITION DESIGN AND ENGINEERING

Loitering munitions (and kamikaze UAVs) have disrupted the modern battlefield. Circling above it, they have become the major threat, whether for a single infantryman in his trench or a heavily armoured vehicle.




SUPPORT AND SERVICES

These new weapon systems pose new challenges for the Army: how do you maintain them, resupply them with spare parts and train your crews, especially considering the rapidly evolving technology in this field? In terms of maintenance and training, support systems for these systems will use «as is» support, thereby limiting preventive maintenance (reduced logistic footprint and maintenance hours). Training and simulation will allow the acquisition of technical and tactical know-how, in static as well as dynamic situations (simulators or «real» conditions).

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AERIX SYSTEMS

Aerix Systems omnidirectional propulsion for hypermaneuverable high-speed drone :

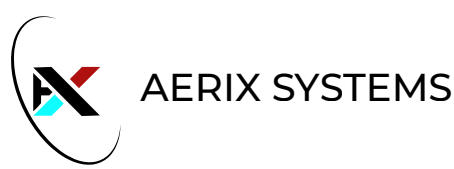
Thrust vector control with no rotation limits.

Aerix Systems is a French company developing high-speed, hypermaneuverable UAVs for dual-use applications, with defense applications dedicated to anti-drone warfare and mini cruise missiles. Based on its proprietary omnidirectional propulsion technology, our integration-agnostic UAV platforms enable new airborne capabilities.


The company currently has the possibility to sell its unique propulsions with its own internal software. These thrusters are plug-and-play, and can be used with our general autopilot to build a drone. Two thrusters are available on the shelf, in 10 inches size and in 16 inches size respectively named AERIX T-10 and AERIX T-16. Although our solutions are designed to be available in both larger and smaller sizes.

Our leading product is the 16 inch omnidirectional propulsion with these specifications :


- 16 kg max. thrust
- Turnable at 1 rotation per second with no rotation limits
- 3G acceleration
- Customizable aerodynamics for specific use cases
- 6S tension at minimum
- Real time controlled
- Plug and play in term of connection and software
 - Electronic contact and power interface
 - CAN or UART bus-controlled



 Hugo MAYOUNOVE | President & Co-founder








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UAV DESIGN, ENGINEERING AND COMPONENTS	UGV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	COMMUNICATION SYSTEMS	MOBILITY PROPULSION AND ENERGY	PAYLOAD AND SENSORS	LOITERING MUNITION DESIGN AND ENGINEERING

BELINK SOLUTIONS

Our Commitment, the efficiency of defence industry

BeLink Solutions is a centre of excellence in Electronics. With more than 40 years of experience in PCBA & electronic systems manufacturing, our company is at the forefront of quality, technology and production in this industry at a worldwide scale.

BeLink Defence & Aerospace.

BD&A is our dedicated business unit for Defence, Aeronautics, Security & governments solutions.

We deliver a large scope of high-level expertise, from co-design, prototyping, industrialization to manufacturing & assembly of electronic boards in small, medium, and large series.

BeLink Solutions is also one of the most advanced companies in Printed Electronics.

In our factory located close to Paris (1h30), we provide a large range of services such as innovation, studies, purchasing, climatic stress-tests, subgroups & end-products assembly from basic to complex systems & MOC.

A new world requires a new vision.

Automotive industry is our historic core business. We are certified IATF 16949 & compliant with the most demanding certifications in electronics. BeLink Solutions is bringing to the defence industry a new offer of services based on a partnership approach: our clients are in the heart of our organization, and we deliver them a high level of international competitiveness.

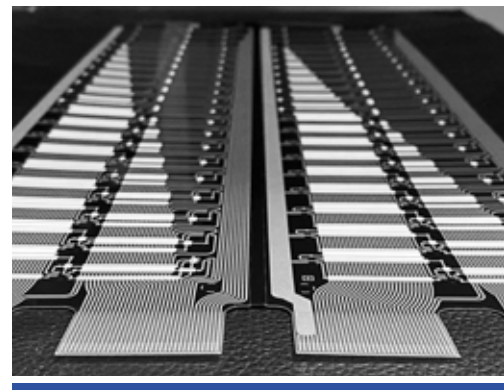
To cope with the new international challenges, our industries need a new vision.

BeLink Solutions duty is to fulfil our clients' expectations by offering its expertise based on SERVICES, FLEXIBILITY, PERFORMANCE, REACTIVITY, COST EFFICIENCY & SERENITY.

Manufacturing know-how for drone war requirements

BeLink Defence & Aerospace has a strong background in automatism and mechatronics with robotics integration through our inhouse department GEEOE. We produce for drone manufacturers and defence industry electronic boards for navigation, avionics, energy management systems, communication & remote equipment.

For all your ground, marine & aircrafts drones & robotics systems, BeLink produces and assembles your electronics Solutions.



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PAYLOAD
AND
SENSORS



BERTIN

BERTIN TECHNOLOGIES is a French industrial group in high-end instrumentation that designs and manufactures, in France and in Europe, measurement, observation and detection systems and instruments for critical or scientific applications. Every day, Bertin Technologies pursues technological advances in the fields of Nuclear, Defense, Space, Big Science, Life Sciences and Health.

As threats constantly evolve, drones are increasingly being used in defense applications because of their many advantages. They offer enhanced surveillance and reconnaissance capabilities, allowing forces to detect enemy positions, identify potential targets and gather intelligence in real time. Drones can also be used for observation and intelligence missions in areas that are dangerous or difficult for human forces to access.

Bertin Technologies offers a complete range of optronics for day/night detection in harsh environments. Lightweight, compact, and rugged, the CamSight family of OEM thermal camera modules meets the needs of surveillance and on-board drone observation. It stands out in the LWIR infrared camera module market thanks to its ability to adapt and innovate by integrating cutting-edge capabilities such as onboard artificial intelligence, patented shutterless technology, high-quality digital zoom, contouring and polarization algorithms.

Bertin Environics, a branch of Bertin Technologies, specializes in developing CBRN monitoring sensors that can be effortlessly integrated into UAVs and UGVs. These sensors cover the full CBRN spectrum, offering accurate measurements and threat mapping in real time through an easy-to-use command and control interface. Additionally, all sensors are simple to decontaminate post-use.



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BREN-TRONICS INTERNATIONAL SOLUTIONS

Innovative Battery Solutions for Military Robotics and Drones

Bren-Tronics has been a pioneer in delivering advanced battery and power solutions for the Defense sector. Our innovations are critical in the realm of military robotics and drones, providing reliable power in the most demanding environments.

We design rechargeable batteries that power both robots and their controllers. Our products are rigorously field-tested, ensuring durability even in the harshest conditions, and are built to meet DOD standards. Here are some of our key products used in military robotics:

BB-2590/U

The BB-2590/U line of lithium rechargeable batteries is widely used in communications gear, robots, and jammers. These batteries are designed to sustain different amp hours, with versions available for maximum runtime and extreme temperature tolerance, whether in intense heat or frigid cold.

Brenergy™ 6T Battery Series

The Brenergy™ 6T Battery Series sets the lithium-ion standard for military vehicles, making it ideal for high-demand power applications such as robotics and unmanned vehicles. These batteries offer the necessary power and energy for larger robotics and have been field-tested in the most challenging environments.

In addition to powering the robots themselves, we have developed batteries for handheld devices used to control these robots:

BB-2557/U


The BB-2557/U is a rechargeable lithium-ion battery certified by the DOD for military use. It is compatible with a range of applications, including powering remote controls for unmanned vehicles. This battery ensures reliable performance for operators in critical situations.

MBITR

Our MBITR series of rechargeable lithium-ion batteries is specifically designed to meet military durability specifications. These batteries are versatile and compatible with various Defense applications, including powering handheld devices for unmanned vehicles. Bren-Tronics continues to lead in providing reliable, field-proven power solutions for military robotics and drones, ensuring that operators have the energy they need to succeed in any mission.



 **Mathyas PETIT** | Director Business Development








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UAV DESIGN, ENGINEERING AND COMPONENTS	UGV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	COMMUNICATION SYSTEMS	ARTIFICIAL INTELLIGENCE AND SOFTWARE	NAVIGATION	SUPPORT AND SERVICES



CAPGEMINI TECHNOLOGY SERVICES

For over 55 years, CAPGEMINI has been a trusted partner in the business and technological transformation of industrial companies and public players in the defense sector. CAPGEMINI is mobilizing its talents to help master drone ecosystems and ensure interoperability, regardless of the hardware used.

CAPGEMINI's expertise at the service of an ecosystem in the industrialization stage

CAPGEMINI is one of the key players in the Defense Technological and Industrial Base, serving other DTIB players through its in-depth understanding of hardware and software for the industrialization of high value-added use cases.

CAPGEMINI supports you in structuring your operational requirements, integrating hardware/software/connectivity/data and scaling your UAV/UGV ecosystems:


- We design the functional perimeter by integrating and validating your operational constraints to select the relevant systems and hardware
- We integrate new components (sensors, etc.) and systems (AI, pilot UX, localization, command & control, connectivity, new functionalities, etc.), ensuring their operational resilience and interoperability with existing systems
- We validate and strengthen cybersecurity hardware and software layers
- We integrate your systems for military use within military connectivity bubbles
- We optimize the collection, transmission, automated processing and security of the data generated
- And we help you improve your production processes and scale-up

CAPGEMINI's expertise

CAPGEMINI has established exceptional partnerships with international start-ups and world-class research centers to offer a wide range of innovations, from TRL 3 to 9, based on key functionalities such as GPS-free localization, route optimization for aerial and ground drones, 5G network connection, improving the performance of existing equipment and, of course, artificial intelligence sensors analysis (3D, segmentation, ...)




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CARMENTA FRANCE

Carmenta's geospatial technology provides a robust platform for geospatial data visualization and analysis for UAS C2-Systems. Our technology enhances situational awareness for commanders, facilitating informed decision-making in real-time.

EMPOWERS YOU TO SEE MORE, KNOW MORE, AND MAKE BETTER DECISIONS.

Real-time visualization and analysis

Command and control (C2) systems are crucial for drone operations, providing infrastructure for communication, management, and decision-making for Unmanned Aerial Systems (UAS). A key consideration is when and where a drone operation is best executed. With real-time calculations such as shadow calculation, terrain exposure, terrain features, and weather analysis, Carmenta technology offers a decisive advantage in mission planning.

Tactical UAS Routing

Carmenta's tactical UAS routing utilizes geospatial analyses and tactical information to calculate the optimal UAS routes for the intended mission. This means that restricted areas, enemy positions, and sensor coverage can be considered and avoided. The real-time calculation also makes it possible to immediately react to tactical changes and adjust the calculated route accordingly.

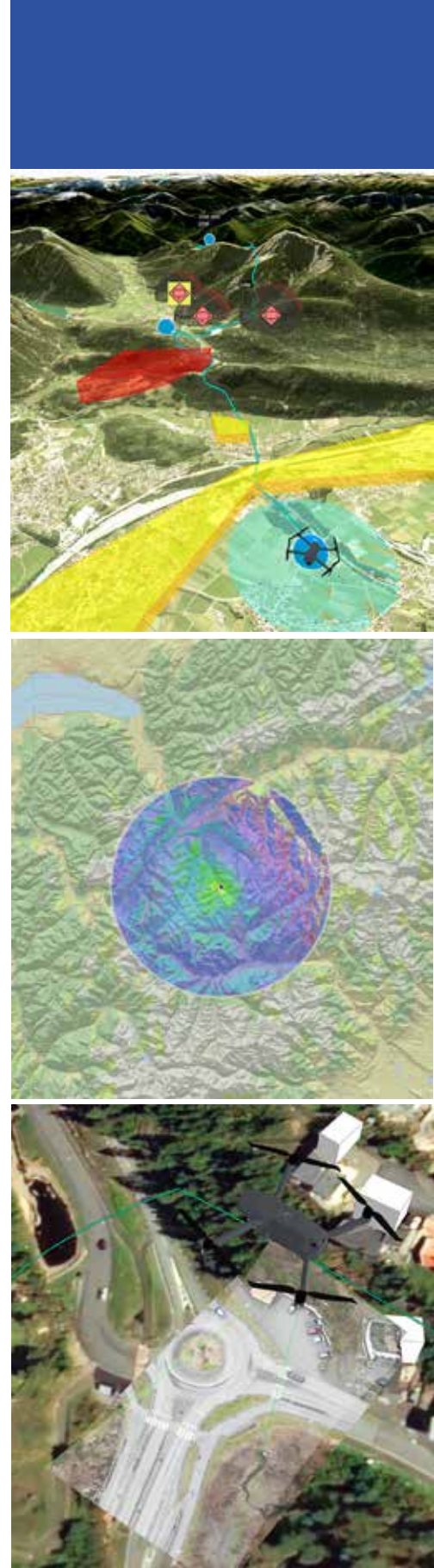
Radio Coverage Calculations

Carmenta's radio coverage calculation for both conventional radio systems and more complex systems such as MANET (Mobile Ad-hoc Network), supports the planning of positions for optimized radio coverage, as well as the planning of UAS flight routes.


Live Data Feeds

Carmenta technology can georeference incoming data streams and project them onto a map in real-time. This capability is particularly beneficial for live video feeds, with immediate georeferencing of all incoming data. Additionally, object detection can be integrated, making it possible to identify and track objects on the map.

By providing accurate, timely, and actionable information, Carmenta provides capabilities for informed decision-making by military personnel or autonomous systems that make a crucial difference on the battlefield.



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CERBAIR

CERBAIR, the French leader in radiofrequency drone control

CERBAIR is the French leader in counter-UAV systems for the detection, characterization and neutralization of unauthorized drones. Leveraging its expertise in radio-frequency signal processing, ensures the design, deployment, and maintenance of systems that protect airspace for critical infrastructures, military bases, warships and national events, against the evolving drone threat. Specialized in radio frequency technology applied to anti-drone warfare, CERBAIR has quickly become a reference in protocols recognition associated with a range of passive detection systems and smart jamming systems.

CERBAIR has established itself as a leader for complete air defense systems by building trust of major institutional actors in France and abroad. MBDA, the European leader in missiles design, is a historic shareholder of CERBAIR.




Expertise

- The most complete database on the market
- Signal processing with precise matching of received signals
- Drones and pilots detection
- On-site reconnaissance for a customized protection level
- Export and international developments with the support of French Ministry of the Interior
- Systems designed and manufactured in France



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UGV DESIGN ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	PAYLOAD AND SENSORS

CNIM SYSTÈMES INDUSTRIELS

As a major partner in the defense and security industry, CNIM Systèmes Industriels has been supporting armed forces since 1856.

CNIM Systèmes Industriels provides support to armed forces in their missions and offers a range of reliable equipment and solutions, fully tested and at the leading edge of technology.

ROCUS, THE ROUTE CLEARANCE UNMANNED SYSTEM

In current conflicts, IEDs (Improved Explosive Devices) are responsible for many human and material losses.

CNIM Systèmes Industriels has developed a route clearance system based on the TheMIS platform (MILREM Robotics) in order to meet the security needs of military convoys on the field.

ROCUS is able to operate in difficult terrain, combining endurance and robustness. It can inspect, confirm and neutralise the threat to ensure the safety of soldiers and the progress of convoys. ROCUS is an unmanned vehicle, remotely piloted by sappers who are thus far from the mined area.

Tracked vehicle, the ROCUS has a high mobility and a low ground pressure. It can intervene in all environments and follow troops in the most remote areas (10 hours autonomy).


With an instinctive interface and Bird View mode, the ROCUS is easy to set up and operate.

Its 4m manipulator arm allows it to lift loads up to 100kg.

ROCUS systems are in operation in Ukraine.




 Monsieur Fabrice NOGUERA | Sales director (Land systems)
| Defense Business Unit

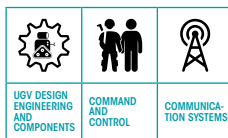
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CNIM
Systèmes Industriels



DATAHERTZ

Go where other Unmanned Systems can't!

Today, UAVs, UGVs and ASVs have transformed the way we operate and using MPU5 radios it takes it a step further.

Through various partnerships and being the exclusive distributor for France of Persistent Systems MPU5 Wave Relay® radios, DataHertz is committed to promote interoperability between, ground vehicles and drones in mobile ad-hoc network (MANET) to enable them to communicate and coordinate effectively. As all these systems are on the same network, any operator connected to the network can stream video directly from them – or control them.

An MPU5 radio system is built on 3x3 Multiple Input Multiple Output (MIMO) technology allowing extended range in complex environments – both line-of-sight (LOS) and non-line-of-sight (NLOS)

Stream HD video:

The MPU5 radio nodes enable you to encode and stream live audio and video by directly connecting HD and SD camera systems via analog, digital and IP video inputs at resolutions ranging from 320x240 to Full HD 1080p and 720p.

Voice, data and video Network:

An MPU5 MANET allows a group of mobile users to communicate continuously and efficiently without the need for fixed infrastructure. Every MPU5 communicates with each other, forming a true peer-to-peer network with no master node and a maximum bandwidth of 150Mbps.

Swarming and autonomy:

By sharing a common network, MPU5 allows multiple unmanned systems and operators to talk to each other and share data. An integrated Android™ computer allows you to build a foundation for data fusion, artificial intelligence, and in-network computing.

Wave Relay® Display:

Specifically designed for use with autonomous platforms and information sharing through C2, the Wave Relay® display provides a rugged display interface between operator and vehicle to control various UAV or UGV. Dual thumb-sticks provides control with pin-point accuracy, whilst physical configurable shortcut keys can be programmed to access the most frequently-used commands.



Olivier ESCAFFRE | Business Development Director






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UAV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	COMMUNICATION SYSTEMS	PAYLOAD AND SENSORS	SUPPORT AND SERVICES

DCI GROUP

DÉFENSE CONSEIL INTERNATIONAL (DCI GROUP)

The operator of the French ministry for the armed forces.

DCI group is the operator of the French Ministry for the Armed

Forces for the transfer of French armed forces' know-how to international partners.

We offer our institutional and industrial partners customized solutions for all their capability development needs to tackle international and regional security challenges.

We advise and train partner's armed forces while taking into account the extensive know-how and operational feedbacks from the French armed forces over the last 50 years.

Our UAV and Counter-UAV expertises include:

- Mini, tactical and MALE drones
- UAV Traffic Management (UTM) and Counter-UAV
- Drone as a Service: land & naval ISR, maritime pollution detection, cargo, opposition force...

Our land forces expertises include:

- Cavalry & Armoured vehicles
- Infantry & Anti-Tank missiles
- Artillery & Mortars
- Ground-Based Air Defence
- Engineering & EOD
- Maintenance & Logistics
- Mountain, Urban & Amphibious Warfare





Our solutions include consulting & assistance (ex: doctrines, Concepts of Operations, organization), operational trainings for all grades and levels (basic, intermediate, advanced) and the set-up of dedicated training centers.

We have trained more than 600+ officers, NCOs and soldiers trained at the French CIF-D center in all fields and more than 250 RPAS pilots and sensor operators trained in France & abroad.



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UAV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	PAYLOAD AND SENSORS	SUPPORT AND SERVICES



DRONE VOLT

Professional drone manufacturer with a range of solutions dedicated to the defense and security sector. As a global partner, DRONE VOLT offers its customers “tailored” solutions, including drone services, training and R&D.

RANGE OF UAVs DEDICATED TO DEFENSE AND SECURITY PROFESSIONALS

DRONE VOLT KOBRA

The intelligent professional drone designed to enhance operational efficiency.

This made-in-Europe drone is the ultimate multi-purpose vehicle. Our flying platform embeds an AI ready nanocomputer, giving it great flexibility and an infinite combination of configurations. Its modularity, made possible by a variety of external ports, enables the integration of multiple payloads (camera, LiDAR, gas detector, etc.), helping our clients to succeed in every mission. Our quadcopter combines 4 strategic assets: Intelligence, Power, Connectivity and Modularity.

HELIPLANE LRS PRO Series

HELIPLANE LRS, a range of long-endurance VTOL drones for surveillance missions (frontiers, coastline, maritime, etc)


Our VTOL drones combine the advantages of multirotor drones with those of fixed-wing UAVs. The transition between the two flight modes frees up take-off and landing runways. It can achieve 140 minutes of flight time and carry up to 10 kg payload. Thanks to its relay antenna, video streaming on the remote controller is possible up to 80 km distance. Polyvalent, this drone can carry multiple payloads that will fit to diverse missions (RGB / thermal camera, LiDAR).

HERCULES 20

This robust heavy-lift drone is an ideal tool for carrying heavy loads up to 15 kg, in difficult-to-access areas.


Equipped with its winch or dropper, it can transport and drop emergency equipment for intervention and rescue forces (defibrillator, tools, food supplies, etc.) With each of these payloads, an integrated camera provides video feedback to the remote controller, allowing you to operate a precise drop on a determined area.

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UAV DESIGN, ENGINEERING AND COMPONENTS	UGV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	MOBILITY PROPULSION AND ENERGY	SUPPORT AND SERVICES

EHP²

EHP2 distinguishes itself as a leader in the engineering and manufacturing of advanced powertrains. We are committed to provide tailored-made solutions, from design to certification, for a diverse B2B customers' base. Our product range includes batteries, combustion and electric engines, and hybrid powertrains. EHP2 is present in the aeronautic, defense, space and automotive markets.

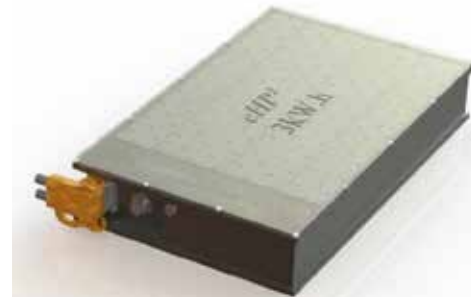
EHP2 aim to become a global player in the design and manufacturing of carbon-free powertrain components, while guaranteeing independence and strategic sovereignty in the defense, aeronautic and space sectors.

Strategy and Commitment

EHP2's strategy is based on the constant development of its technical and industrial skills to meet market requirements in terms of innovation and technological advances. Currently, we are focusing our efforts on three main product lines: batteries, electric motors and decarbonized internal combustion engines, with a clear vision to industrialize them on a large scale.

Innovation and National Sovereignty

EHP2 is committed to support national sovereignty by developing cutting-edge technologies on French soil. As a company focused on differentiation through technology, we are developing a limited number of key technological assets to strengthen our competitiveness and industrial efficiency. Since its creation, EHP2 has surrounded itself with world-renowned French engine experts. By investing in research and development, we not only guarantee the excellence of our products, but also our strategic independence in a constantly changing global environment.



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UAV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	COMMUNICATION SYSTEMS	ARTIFICIAL INTELLIGENCE AND SOFTWARE

ELISTAIR

Created in 2014, Elistair designs and manufactures smart and automated tethered drone systems for perimeter protection, border surveillance and large event security. Thanks to its micro-tether technology, Elistair solves the problem of drone battery life.

Our products are used by armed forces, civil security services and private companies in more than 70 countries.

Khronos - DroneBox

Khronos is a fully automated system including the tethered drone, tethered station, and its ground control station. It can be integrated into a fixed platform or a vehicle to safely enhance static or mobile operations and increase operational flexibility.

Khronos meets the needs of aerial surveillance in hostile environments at a height of 60m and for up to 24 hours continuously. Its automated flight functions enable rapid deployment to obtain key information while limiting operators' exposure to danger.

Orion 2.2 TE - Tactical Tethered Drone

The Orion 2.2 TE is a 2-in-1 tethered drone system. It can operate at 90 m above ground for 50 hours with its day/night stabilized camera, or communications relay. By simply switching its arms to an Heavylift configuration, the Orion 2.2 TE is able to carry payloads of up to 5kg at an altitude of 50m.

Safe-T 2 - Smart Tethered Drone Station


Safe-T 2 is an advanced tethered station for UAVs, offering real-time persistent observation and surveillance capabilities at altitudes of up to 100 meters above ground. Compatible with commercially available drones and payloads on the market, it is especially suited for day-night aerial surveillance and telecommunications (Fiber optics, 4G, Wi-Fi, radio).

Ligh-T 4 - Compact Tethered Drone Station

Ligh-T 4 is a compact man portable tethered drone station. Multi-drone compatible, the Ligh-T 4 offers continuous aerial observation capabilities to first responders and drone operators who need to fly longer than a standard battery charge.



 David Moisan | Sales Director





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UAV DESIGN, ENGINEERING AND COMPONENTS	UAV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	COMMUNICATION SYSTEMS	MOBILITY PROPULSION AND ENERGY	NAVIGATION	PAYLOAD AND SENSORS	LOITERING MUNITION DESIGN AND ENGINEERING	SUPPORT AND SERVICES

EMITECH GROUP: EXPERT UAV TESTING AND ENGINEERING SOLUTIONS

The Emitech Group is the first notified body by the DSAC to the European Commission for the assessment of class C0, C1, C2, C3, and C4 UAVs in France. This «civil» recognition for UAVs attests to real expertise in the specific requirements applicable to them and complements the Group's existing expertise in aeronautical qualification.

Global services

We offer a global approach to your testing and engineering needs


- Safety testing
- Environmental testing
- Cybersecurity testing
- ElectroMagnetic Compatibility testing
- Radio Equipment Directive testing
- Mechanical: Vibration & shock, Impact
- Climatic: temperature & humidity
- Salt mist test
- Water and dust tightness test
- Additional Testing*


Specific drone requirements

The Emitech Group is developing its own expertise in the specific requirements of UAVs, in particular those defined in standards EN 4709-001 to 8.

- 1 - Label, MTOM: Maximum Take-Off Mass, Max Speed, Max Attainable Height, Safety Controllability, Minimize Injury to People, Power, Follow Me Mode, Information Notice, Ground Impact, Mechanical Strength, Loss of Data Link, Sound Power, Battery Low Level, Unique Serial Number, C2 Link, Tethered Drone, Low Speed Mode, Airframe Specifications Limitation, Safety Performances (HQR+), Automatic Control Mode
- 2 - DRI: Detect, Recognize, Identify
- 3 - Geo-awareness, Airspace Limitations
- 4 - Lights
- 5 - Geocaging
- 6 - FTS: Flight Termination System
- 7 - General Requirements
- 8 - Accessories Kit



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**Our job: to contribute
to protect you**






**The French defense industry
and security works for you daily**



GICAT

The French land defence and security
industry association

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UAV DESIGN, ENGINEERING AND COMPONENTS	UGV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	NAVIGATION	SUPPORT AND SERVICES

EXAIL

Advanced robotics for operations safety

Exail is a leading high-tech industrial company specializing in defense robotics, delivering unrivaled performance, reliability and safety to its clients operating in severe environments. At Exail, we empower civil and military forces worldwide to conduct their operations with maximum efficiency and security through our advanced solutions, specially designed to make a disruptive impact on both land and air battlefields.

From UGV and UAV platforms to full Mission Systems

Exail's land defense area offers advanced combat-proven robotics solutions from Teleoperation Systems for large vehicles, Unmanned Ground Vehicles, Unmanned Aerial Systems and Mission Systems.

Exail's UGVs (Iguana, Cameleon, Cobra) are designed to operate in extremely severe environments for EOD, Intelligence and CBRN missions.


Exail's UAVs (IT180-60 & Cargo15) are crafted for intelligence, target acquisition, recognition missions or last-mile logistics and can carry up to 15 kg payload. Our UAVs provide unrivaled robustness and superior tracking capabilities in very harsh weather conditions, trusted and used by military forces worldwide.


Exail also provides a full Mission System capable of controlling and coordinating multiple UGVs and UAVs from a single command & control system from a remote protected area. Our Mission System is fully customized to meet the unique mission requirements of any land or air vehicle and will streamline operations, guaranteeing a consistent sharing of information between all platforms in action.

Undisrupted Navigation and Pointing for Land Operations

Based on Fiber-Optic Gyroscope (FOG) technology, Exail Advans Series Inertial Navigation Systems (INS) are designed to provide highly accurate positioning and pointing. North-seeking even in GNSS-denied environments, they cover the needs of the full range of land applications from tactical navigation to high-grade artillery systems. Compact and adaptable to any communication protocol, they are developed from the same architecture, making them easy to integrate and operate.




 Thomas DURAND | Head of sales Air & Land systems

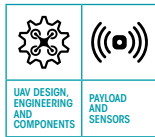
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FULLSCALE

FullScale is an electronic design expert in high performance thermal imaging solutions. Since 12 years, FullScale helps you to see invisible by designing electronic boards and thermal core camera that include advanced image enhancement.

EXPERT IN ELECTRONIC AND THERMAL IMAGING
EXPERT IN HELPING YOU TO SEE THE INVISIBLE

Electronics solutions

In most of the case, thermal imaging cameras are made of optical parts, detector, enclosure and of course high-end electronic parts. The aim of this electronic boards is to manage (non exhaustive list) detector interface, detector control, image enhancement, image processing, image recording, shutter control, external interface to a computer or micro-Display, ...

Since 12 years, FullScale imagines, defines, designs, manufactures, tests and validates such electronics. We provide to our customers these critical sub parts that can be integrated in any thermal imaging camera.


Thermal Core Modules

To better help our customers integrating their thermal camera, FullScale designed a complete series of thermal cores modules. Ernest and Eileen thermal core series are small size, low power and allow you to embed image processing, image enhancement or thermography.

For the Defense market, our modules can equip goggles, Thermal Weapon Sight, tracking systems or targeting systems and can be mounted on drones, robotic arms, rifles, guns, vehicles, rockets/missiles or as infantry personal equipment.

Each time a thermal imaging camera may be needed, FullScale can provide the electronic solutions to help their customers saving time, money and effort.

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UAV DESIGN, ENGINEERING AND COMPONENTS	PAYLOAD AND SENSORS	SUPPORT AND SERVICES

HEXADRONE

HEXADRONE has been active in the drone market since 2014. Specializing in the development of mechatronic solutions for professional and military applications, the company combines several synergistic activities: drone design and construction, R&D for specific developments, training, and trading with over 3500 products on offer (OEM). HEXADRONE develops and manufactures the TUNDRA 2, an innovative drone that is fully customizable and capable of adapting to a wide range of needs.

The TUNDRA 2: A Revolution in the Drone World

A multi-missions drone

Designed to break away from the «One drone, one utilisation» concept dominating the market, the TUNDRA 2 was designed to be as standard and generic as possible. Modular, its numerous configurations allow it to meet a multitude of needs, particularly in the security, surveillance, defense, and rescue fields.

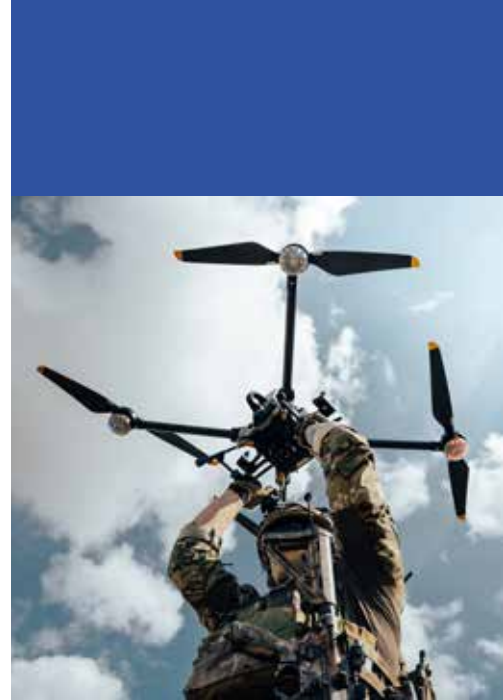
A revolutionary Plug & Play system






Our new universal standard interface makes it easy to interface payloads, ground stations, and power supplies. With this Plug & Play system, it takes less than 3 minutes to change the drone's configuration, which is automatically set up by its integrated computer. The TUNDRA 2 can currently accommodate around a hundred different types of payloads (such as cameras, lidars, sensors, winches, etc.).

Hardened, modular, repairable, IP 54 rated, scalable, with very low noise levels, the TUNDRA 2 also features several types of arms that vary its payload capacity up to 8 kg.









A recognized sovereign product in the Defense world

Drones are increasingly used in theaters of operations for reconnaissance, surveillance, and attack. In this context, sovereignty is essential to guarantee the security and independence of nations. Our Made in France products, with the UAF label, are notably used by French special forces.



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UGV DESIGN ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	COMMUNICA- TION SYSTEMS	ARTIFICIAL INTELLIGENCE AND SOFTWARE	MOBILITY PROPULSION AND ENERGY	NAVIGATION	PAYLOAD AND SENSORS	SUPPORT AND SERVICES

KNDS FRANCE ROBOTICS

KNDS France Robotics is a wholly owned subsidiary of KNDS France and fully dedicated to the development of unmanned Military and Security systems working for both the military and civil areas. The main purpose of the company aims at designing, developing, industrializing, producing, marketing and supporting terrestrial and land-based robots and their related mission components and modules.

KNDS France Robotics collaborates with the French and foreign armies by supplying robots assigned to different kinds of tasks: reconnaissance, anti-IED (Improvised Explosive Devices, opening route), automated conveying (logistics platforms) and protection of soldiers (weaponized remote-controlled platforms). The range considered is going from few kilograms to several tons Robots.

The Company addresses 2 main segments of Robotics systems:

First segment is made up of small multi-mission tactical robots represented by the NERVA family. These multi-mission robots are highly robust (they can be thrown away, they are waterproof) and can be equipped with more than 20 different mission modules to extend their basic 360° observation capability; so, a single system can be configured to address all-conditions and tackle all kinds of missions: discreet Reconnaissance, CBRN detection, Counter-IED, and can be equipped with Less Than Lethal weapons or other payloads that will be developed in partnership with customers and end-users to meet their specific needs in response to their field experiences and the new threats they will face.

Second segment is made up of KNDS France's new range of Multi-Missions Tactical Robotics Systems (MMTRS). The newborn CENTURIO® is a worthy representative of this range of MMTRS's UGV capable of implementing multiple payloads according to the end-user requirements. This new range of UGV product meets an emerging need for the use of heavy UGV on the battlefield, both in combat as a weapon station with the OPTIO®-X20 and on a more logistical level with the ULTRO®.



KNDS

ⓧ Joel MORILLON | Directeur général délégué de KNDS France Robotics

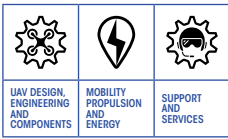
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LN INNOV'

LN Innov' and the new VF65 electrical motor for big payload eVTOL : A 100% French motor

LN Innov', a French company in Occitanie and creator of value, has an industrial offer dedicated to civil and military drones with the development and production of 100% French electric motors, including the new VF65 model, with a power of 10Kw for heavy load up to 60kg. Compact and light, it is customizable on request and suitable for all E-Vtol drone missions.

LN Innov' and its expertise in industrial winding combined with its strong involvement in research and technological innovation, provides a range of French electric motors.

French innovations made on this motor make it possible to obtain unrivaled and competitive performance in order to respond to a dual market, both French and international.

It benefits from an integrated design office with manufacturing lines dedicated to the production of electric motors ranging from 3 kW to 2 MW, and a repair activity for all types of DC, AC and ATEX electric motors.

LN Innov' also has an ecosystem of innovative companies, from SMEs to ETIs, around complementary skills to meet the needs for global solutions in the defense and civil markets. The activities / professions make it possible to support the Client in the drafting of its Specifications, from development to qualification, industrialization and MCO of electronic equipment in the Defense, Transport and Energy.



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COMMAND AND CONTROL	ARTIFICIAL INTELLIGENCE AND SOFTWARE	LOITERING MUNITION DESIGN AND ENGINEERING	SUPPORT AND SERVICES



MBDA

The rapidly changing operational environment demands higher levels of agility, resilience and adaptability, in support of virtual and physical battlefields. The key issues are to get tactical superiority on land by sharing the tactical situation on the battlefield.

Lynkeus and Ground Warden Systems

Lynkeus is the system combining drones and AKERON missiles to deliver NLOS firings.

Ground Warden system provides AKERON small units (platoon or section) tactical commanders, drone teams and AKERON teams with assistance to prepare their manoeuvre, coordinate and conduct LOS and mainly NLOS firings. It includes AI to update and share in real-time all relevant combat information automatically. Both are developed by MBDA when NX70 micro-drone, the first sensor integrated in these systems is by NOVADEM.

Other manned or unmanned, mounted or dismounted sensors are to be also in this system in order to optimize and enhance use and efficiency of MBDA Akeron family on the battlefield.

AKERON Remotely Controlled Ammunition

Free and modifiable trajectory shaping at any time

Large spectrum of mobile or static targets: dismounted troops, guns or collective weapons, combat posts, command posts, soft skin vehicles, light armoured vehicles, etc) day/night capacity with IR/TV sensors.

Automated choice of the best trajectory and final guidance after designation of the target by the operator after positive identification and lock-on (Man in the Loop).


Reversible attack up to the last seconds before impact and ability to be reoriented to an other target.







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UAV DESIGN, ENGINEERING AND COMPONENTS	UGV DESIGN ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	PAYLOAD AND SENSORS

METRAVIB DEFENCE

Metravib Defence: Specialized in equipment for Force Protection

Supplier of acoustic gunshot detectors for an enhanced Situational Awareness and for a greater protection of the vehicles, dismounted soldiers and sensitive sites. For over 30 years, Metravib Defence, subsidiary of ACOEM Group, designs and produces high-performance threat surveillance, detection and localization solutions for the defence and civil protection sectors. Our solutions are Combat Proven in more than 45 countries.

Robotization of Armed Forces

Metravib Defence is acting to bring the power of acoustic detection to the on-going robotization of the Armed Forces and therefore has initiated industrial collaborations in order to be able to integrate its acoustic sensors on future Land Robots for a large spectrum of missions from:

- Support to logistics,
- Observation to detection,
- Surveillance to combat support; these robot which could be the new allies of soldiers in theaters of operations.

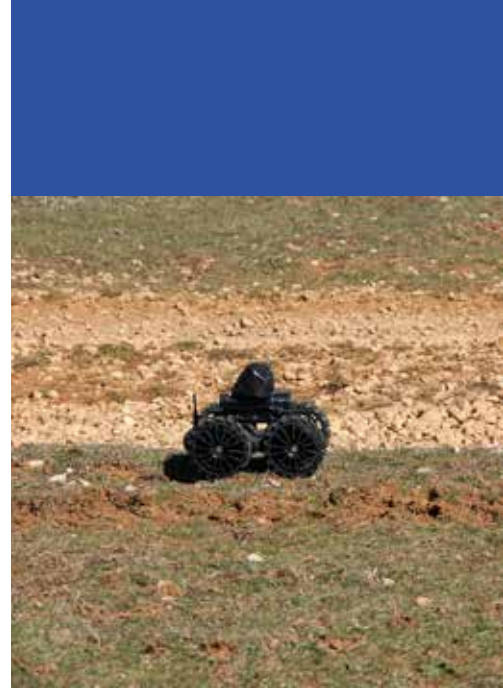
Essential payload for robotics






The existing PEARL military of the shelf acoustic gunshot detector of Metravib Defence and the under development new miniaturized and distributed sensors as part of the product road map of Metravib Defence will be the ideal payload for future ground robots for increasing operational capabilities and for a greater Force Protection.

Versatile Design and Interoperable






Metravib Defence offers a full range of acoustic sensors to be able to democratize the acoustic detection feature to the unmanned systems (such as multiple-purpose medium size robots for reconnaissance and support to operations, reconnaissance drones, etc.) and that can be interoperable with other payloads to gain operational efficiency:

- To contribute to field intelligence, day and night,
- For slew-to-cue capabilities with Remote Weapon Station



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UAV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	COMMUNICATION SYSTEMS	PAYLOAD AND SENSORS	SUPPORT AND SERVICES



MILTON

MILTON develops and manufactures military-grade drones and automated systems dedicated to Information, Surveillance, Reconnaissance (ISR) and security applications. With its very own R&D department, the company provides 100% modular products tailored to the customer's missions.

MILTON IS AN EXPERT IN PROFESSIONAL DRONES AND PROVIDES A COMPLETE OFFER FROM TRAINING TO MAINTENANCE

Professional drones and payloads

Created to answer ISR and security needs, MILTON designs two types of drones: **The Long-Range Observer** is a VTOL fixed wing drone able to fly up to 3h30 on an 80km radius, making it the best MAME drone for long distance surveillance.

As for the **SKY KEEPER**, with its 10kg carrying capacity, is the most versatile drone able to carry out surveillance and security missions. Manufactured in our very own R&D department, our drones can carry up to two payloads at the same time (EO/IR + Specific).

The MILTON drones are compatible with a large catalog of payloads: IMINT, SIGINT, sensors, transportation pod...

100% modular gimbal

With our very own Research & Development department in our locals, every MILTON drone is entirely modular and can integrate both in-house payloads and third-parties'.

A complete offer - from training to maintenance


As our technologies are entirely built in MILTON, we control the entire lifecycle of our products allowing us to provide unparalleled support to our clients from training to maintenance.

With ex-military pilots and experts in aeronautics, we can give operational and piloting training tailored to your domain.

As for maintenance and after-sales, our engineers and technicians provide a complete support for your drone so it can always be operational.


Milton is now part of Etienne Lacroix Group

 Alison BERGERET | Laura ASTIÉ | Export Business Developer

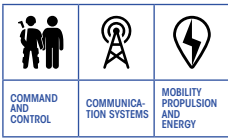
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PROENGIN

Revolutionizing Chemical Threat Detection: The Advent of Robotic and Drone Integration with Proengin's Universal Threat Detection Solutions.

In CBRN threat management, robots and drones drive a transformative era. Proengin's cutting-edge detection solutions, designed for seamless integration with these unmanned systems, are at the forefront of this technological evolution. The AP4C detector series, renowned for its high performance in detection, mounts on drones and robots, allowing aerial surveillance and robots for ground operations.

Those integrations elevate our detection capabilities to a new level. We can now control our very sensitive, robust, and universal detectors from afar. They can find a huge variety of threats in gas and aerosol forms, including CWA, TICS, TIMS, and PBAs, as well as new, unconventional threats, homemade mixtures, and toxic mixes. Our solutions are robust and designed to withstand challenging environments such as extreme temperatures, high speeds, and varying humidity levels, ensuring reliability and efficiency in critical situations.

FPD Integration ensures safer operations by maintaining a secure distance from risks, facilitating obstacle navigation, accessing hazardous spaces with enhanced security, offering CBRN bubble perimeter protection, offering a 3D view of the zone, better visibility of the zone and any danger sources, or even by offering faster progression and quicker information relay for better decision-making. This technology not only offers easier and safer missions, but it's also a real strategic advantage thanks to real-time detection data transmission, allowing immediate awareness and better response capabilities, vital in crisis situations.

Proengin's open communication protocol facilitates integration with any drone or robot, supported by comprehensive assistance. Improve your operations' safety and efficiency with Proengin's advanced detection solutions.



Naomi Kamara | Events & Inbound marketing manager

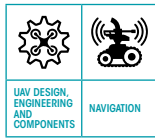
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Proengin



SAFRAN ELECTRONICS & DEFENSE

The European leader in long-endurance, multi-mission and multi-sensor tactical UAV

Safran holds world or European leadership positions in optronics, avionics, electronics and critical software. Safran is the No. 1 company in Europe and No. 3 worldwide for inertial navigation systems used in air, land and naval applications. It is also the world leader in helicopter flight controls and the European leader in optronics and tactical UAV systems.


Patroller™ is a multi-sensor and multi-mission long-endurance tactical UAV system. This system is designed to carry out intelligence, surveillance and targeting missions.

It can be operated for external operations as well as homeland security and maritime surveillance missions. It features a modular design, enabling it to carry a payload up to 250 kg with an endurance exceeding 20 hours at a ceiling of 20,000 ft.

Patroller™ operates simultaneously different high-performance sensors: optronic (EO/IR) pod, SAR/MTI radar, electronic warfare system, distress beacon detector and automatic identification system. Patroller™ is easy to deploy, does not need any infrastructure, has a small logistic footprint and reduced operating costs. For all of these capabilities, the French Army selected Patroller™ in 2016.



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SHARK ROBOTICS

BARAKUDA is a versatile mule robot used in security and defense fields. It provides crucial benefits: load-bearing capacity, soldier relief, mobility, reconnaissance, resupply, autonomy, adaptability, risk reduction. BARAKUDA can carry heavy loads in challenging terrains, reduce physical strain and fatigue on troops, navigate rugged and unpredictable environments, operate quietly for stealth missions, gather intelligence and assess threats, provide troops with essential supplies, handle logistical tasks autonomously, and it minimize human exposure to dangers.



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UAV DESIGN, ENGINEERING AND COMPONENTS	UGV DESIGN, ENGINEERING AND COMPONENTS	MOBILITY PROPULSION AND ENERGY	SUPPORT AND SERVICES

SKF FRANCE



SKF is a world-leading provider of innovative solutions that help industries become more competitive and sustainable. By making products lighter, more efficient, longer lasting, and repairable, we help our customers improve their rotating equipment performance and reduce their environmental impact. Our offering around the rotating shaft includes bearings, seals, lubrication management, condition monitoring, and services.

A LEADING PLAYER OFFERING LESS FRICTION AND HIGHER PRECISION TO OPTIMIZE PERFORMANCE

Advanced engineering and manufacturing capabilities

From the stifling deserts of the middle east to the emptiness of outer space, SKF solutions are proven choices for critical applications. For combat, recon or simple transportation, today's designs demand innovation as well as performance. Both are SKF specialties, thanks to top-flight engineering and manufacturing teams with all the appropriate certifications.

- Space and weight saving products plus reliable, accurate positioning.
- Integration of civilian technology into military products for faster, more economic performance improvement.
- Comprehensive technical support and long term commitment.
- Decades of rotating equipment experience and engineering expertise.
- Leading industry brands with proven experience and active service references.

Specialized solutions

For critical applications involving radial, axial or moment loads and tough environmental conditions, you need SKF Kaydon Bearings. We have a tremendous range of slewing bearings including Wire Race bearing technology and Reali-Slim® thin section bearings designed for applications such as:


- Turrets and artillery, azimuth and elevation bearings
- Radar and acquisition, target & sighting systems
- Drones and counter-measure systems

Solutions for Powertrain

SKF bearings for Powertrain boast lower operating temperature, longer lubricant life, reduced noise and vibration level, increased wear and contamination resistance, improved bearing service life and excellent high-speed performance.



 Bernard Tauveron | Global Industry Leader Defense

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SOGECLAIR EQUIPMENT

As a mechanical engineering company, SOGECLAIR EQUIPMENT is specialized in the design and manufacturing of special vehicles and offers a recognized expertise in the fields of defense, civil, robotics and simulation.

PHOBOS : Multi-Missions modular unmanned ground vehicle

Driven by its commitment to always identify and anticipate needs in the field of ground mobility, SOGECLAIR EQUIPMENT has launched PHOBOS, its Unmanned Ground Vehicle (UGV).

This remotely operated modular robotic carrier of less than two tons net weight, and with one ton payload, has been designed to accommodate various tools and sensors: surveillance, acquisition, reconnaissance, armament, etc. Its 4-wheel drive with reinforced suspensions can easily follow at high speed the tracks of armoured vehicles in service on any type of terrain. In addition, its diesel engine and large tank supply electrical and hydraulic power to all embedded equipment.

SOUVIM : Counter-mining systems

Engineered to secure routes against mines and improvised explosive devices (IEDs), the SOUVIM offers various versions equipped with decoy, mine detection, and buried object detection capabilities, even in the absence of metallic components.

Its primary objective is to support mobility operations by rapidly clearing lightly mined routes over long distances, particularly in the second echelon or rear areas of large units, such as logistics flow zones, in low-intensity conflict scenarios. In post-conflict phases, the SOUVIM can also be deployed to clear a route ahead of an escorted logistical convoy, thereby enhancing travel security.

Engineering & simulation tools

The company's DNA is founded around the simulation, the dynamic and the behavior of vehicles, while maximizing their robustness and their autonomy.

We offer a comprehensive range of services, encompassing static and dynamic performance simulation, chassis dynamics and component integration, bodywork, hydraulic and pneumatic systems, as well as testing benches and certifications.



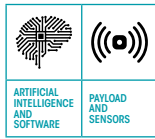
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SOGITEC

As a world leader in simulation systems dedicated to aeronautical training, SOGITEC supports its parent company, Dassault Aviation, in defining and promoting comprehensive training offers for its French and foreign customers, across the entire spectrum of military aircraft: from Rafale and Mirage 2000 fighter jets to helicopters and UAS.



SOGITEC extends its offer to drone crew training.

Feedback from operational experiences shows that UAS are indispensable systems for operations, providing observation, intelligence and strike capabilities with a remarkable cost-efficiency ratio. As a result, UAS quantity and types are continuously increasing, generating significant training needs. To address these needs, SOGITEC has chosen to develop a lightweight, modular and generic simulator, concentrating on the most decisive part for drone crews: mission training.

Designed to simulate several types of UAS (MALE UAS, tactical UAS, small UAS) and payloads (optronics, radar and even weapons), SOGITEC GENIUS simulator provides a complex environment (terrain database, land, air and sea entities) tailored to the needs of UAS crews.



Interoperability in simulation: an obligation to meet the new needs of Joint All Domain training.

Current conflicts are giving rise to new requirements, mainly in training for complex operations (joint, multinational, etc.). As a consequence, training increasingly calls for interoperability of simulation resources. GENIUS enables numerous interconnections with other aeronautical and land simulators, as well as C2s. It thus meets the strong need for interoperability inherent to the UAS environment.



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COMMAND AND CONTROL	COMMUNICATION SYSTEMS	ARTIFICIAL INTELLIGENCE AND SOFTWARE	SUPPORT AND SERVICES

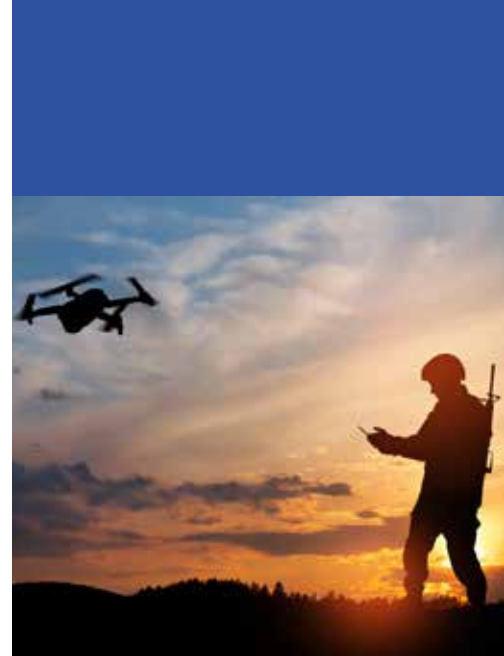
TERNWAVES

Golden Modulation™: a disruptive connectivity for drones.

TERNWAVES has invented and developed a disruptive connectivity technology called Golden Modulation™.

Here are the major differentiators of this new waveform:

- It unlocks the connectivity range with drones while using very compact antennas. It is the solution to communicate with drones over ranges which have not been achieved so far.
- It achieves a breakthrough robustness to interferences and jamming.
- It is extremely stealth, crucial for drones' pilot to not be detected.
- It is fully asynchronous and thus the ideal solution for communications with a swarm of drones - no need for complex synchronization between the drones for them to communicate, while multiple drones can communicate simultaneously with no impact on connectivity reliability.
- Its implementation requests low processing power and is very compact.



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UAV DESIGN, ENGINEERING AND COMPONENTS	UGV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	COMMUNICATION SYSTEMS	ARTIFICIAL INTELLIGENCE AND SOFTWARE	NAVIGATION	PAYLOAD AND SENSORS	LOITERING MUNITION DESIGN AND ENGINEERING	SUPPORT AND SERVICES



THALES

Pioneering the Future of Robotics

As warfare enters the age of digital transformation, advanced technologies such as drones and robotics, infused with Artificial Intelligence, are quickly becoming integral extensions of soldiers' capabilities on the battlefield. Unmanned systems are reshaping conflicts, forging a path towards a more collaborative operational environment. As a global leader in drones, robotics and automated mission systems, Thales is at the heart of this monumental shift.

Automation enables soldiers to deploy a massive number of drones and robots in the field with minimal human intervention, for a variety of never-before-seen collaborative capabilities: observation, manouver, protection end engagement. Of course, the final decision rests with the soldier.

During the second Cohoma challenge (French acronym of Man-Machine-Teaming) organised by the French Army, Thales and its partners deployed numerous autonomous systems, winning first place. The team managed to coordinate 19 drones and robots of different sizes, in a complex scenario using a single vehicle equipped with the Combat Digital Platform, operating "Contrats d'autonomie" (a Thales solution for controlled autonomy delegation to UxVs), manned by only 3 operators. It is the core mission system designed to collect, share, analyse and exploit data using intuitive User Experience and AI decision support tools. It guarantees information superiority and successful operation of partially autonomous UxVs to the forces deployed in the theatre of operations.

At the heart of this breakthrough is Thales's commitment to collaborate with partners, suppliers, and users. The input from end-users nurtures a solution that marries technical specifications with practical User Experience.

Whether it's offering enhanced protection for military personnel, aiding in dangerous tasks, or enabling precise and comprehensive surveillance, Thales's expertise in robotics is building a future where technology seamlessly integrates with human operations.





TOUTENKAMION GROUP, A KEY MANUFACTURER FOR ALL YOUR MOBILITY PROJECTS

As combat methods evolve and drones and robotics become essential strategic tools in modern warfare, we offer solutions between IT, mobility and security allowing the transport of equipment and then the piloting of these technologies in external operations.

DESIGN CAPACITIES, TECHNOLOGIES, TAILOR-MADE

Toutenkamion Group designs, manufactures and transforms truck cabs, mobile units and shelters able to cover a wide spectrum of operational applications.

With our means, know-how and experience, we support you in your mobility projects on trucks, semitrailers, shelters, specific containers, expandable or not.

Our teams are fully listening to your needs and advising you during your projects, from the study to the approval/qualification of your solution.

The aluminum or polyester composite technologies we use for our large size panels, combined with adhesive bonding or continuous welding assembly processes, ensure the operational efficiency, light weight, strength and durability of our products.

TRANSPORT AND CONTROL OF ROBOTICS AND DRONES CLOSEST TO THE THEATER OF WAR

Whatever the environmental and climatic conditions, we ensure the transport of all types of electronic equipment: computers, underwater vectors, aerial drones, etc.

Our expertise also allows us to integrate advanced systems into mobile command and control units. These mobile solutions allow the piloting of robots and drones as well as measurement readings in complete safety, with EMC shielding if needed.



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TRAAK

TRAAK - Where no one else can

TRAAK is a French startup specialized in the development of innovative geolocation and biometric tracking solutions for challenging environments. Conceived entirely in France, TRAAK's products range provides to its users confidential and sovereign solutions.

TRAAK can meet all the needs of special forces and law enforcement agencies for outdoor and indoor geolocation, and in environments where GPS is jammed or inoperable. Our expertise encompasses the full range of geolocation technologies, including jamming- and decoy-resistant capabilities, ensuring data generation and communication even in the most complex situations.






TRAAK has also developed expertise in GPS Denied navigation for Drones (UAVs) and Robots, indoors, underground, or in environments with allied or adversarial jamming in contested areas.



TRAAK offers several products in this regard.

BASILIK is based on data fusion algorithms using multiple data sources including inertial, RF and video (VNS) technologies. This solution enables drones to be positioned and to pursue their missions deep in GPS denied environments.



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UAV DESIGN, ENGINEERING AND COMPONENTS	UGV DESIGN, ENGINEERING AND COMPONENTS	COMMAND AND CONTROL	COMMUNICATION SYSTEMS	MOBILITY PROPULSION AND ENERGY	SUPPORT AND SERVICES

ZHENDRE

Zhendre, the expertise and know-how brand of Eiffage Énergie Systèmes, has been recognized for over 70 years for its mobile solutions adapted to extreme conditions. Specialized in the design and implementation of containerized solutions, mobile air conditioners, and cold rooms, we offer tailor-made solutions capable of meeting all levels of requirements.

SYSTEM & STORAGE CONTAINERS FOR SPECIFIC PURPOSE DEPLOYABLE ON CONFLICT THEATER

Specific Storage Containers

Focus on the client constraints and the environment they are evolving in, we adapt our containers to face harsh climatic conditions. Our solutions are designed to be used onboard of the Forces vessels. To face the constraint encountered by the autonomous systems mainly propelled electrically with embedded batteries our products are protected against fire. Our shelters are equipped to store but also to conduct MRO phases of the submarines drones (USV).

Operation Containers

Our clients have developed Communication Systems to follow and guarantee the link with UAV when they are operating. We adapt and equip the containers with the right component to guarantee the inside temperature covering a wide range of area in the world. We integrate the power supply connection and secure their access to energy with UPS solutions.


Our solutions are designed to operate on the ground as well as on ships and are suited to be transported by military air transportation.

Preparation & Demining Robots containers

Our clients develop robots and drones to ensure risky missions that were led by humans before. Our mission is to help them to set, equip and prepare the land robots for exploration or demining missions. We work closely with our client and DGA in the aim to ensure a solution that is air-droppable and can be deployed in the best lead times at the heart of the battlefield. We propose tailor-made solutions designed on-demand to fit the client's needs.




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ZHENDRE

Our job: to contribute to protect you

The French defense industry and security works for you daily



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