



DEFENCE AND SECURITY

# *Industrial* **CAPABILITIES**

# The CAPABILITIES



## MACHINING CAPABILITIES

Precision machining and advanced manufacturing processes for small to large parts, from prototypes to batch production. Includes CNC milling and turning, multi-axis machining, grinding, laser machining, tight-tolerance finishing, and associated planning, inspection and industrial documentation. Solutions focus on accuracy, repeatability, surface quality and reliable delivery for demanding industrial applications.



## SPECIAL PROCESS CAPABILITIES

Certified special processes used to enhance the performance, durability, protection and manufacturability of parts and assemblies. Includes coatings, heat treatment, welding and brazing, bonding, additive manufacturing, advanced forming processes and qualified assembly operations. Solutions focus on repeatability, qualification, compliance and industrial reliability.



## MATERIALS

Materials and material-based solutions used to ensure protection, performance and durability in demanding defence environments. Includes metals, composites, engineered polymers, conductive or shielding materials, and construction or protection materials. Solutions focus on qualification, traceability, availability and lifecycle performance.



## INDUSTRIAL MACHINES

Industrial machines and associated equipment used to enable, automate and control industrial production operations. Includes machine tools, forming equipment, additive systems, robotic cells, retrofit of production means, and industrial control equipment. Solutions focus on precision, productivity, reliability and scalability.



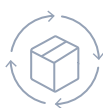
## INDUSTRIAL INFRASTRUCTURE

The ability to design, deploy and sustain the facilities, technical environments and industrial support means required for secure, resilient and scalable industrial operations. Includes workshops, controlled areas, storage, handling means, safety systems, test and maintenance environments, digital shop-floor connectivity and industrial coordination. Solutions support continuity, lifecycle support, compliance and controlled flows from prototyping to ramp-up.



## INDUSTRIAL TEST BENCHES

The ability to design and deliver test and qualification means to validate products, subsystems and production processes. Includes functional test rigs, environmental and endurance testing, metrology, calibration and acceptance testing. Solutions enable repeatable measurements, reporting and configuration traceability. The focus is on compliance, reliability demonstration and production release.



## TRANSPORT & LOGISTICS

The ability to secure, efficient and timely movement of materials, components and finished products across the industrial supply chain. This includes handling, storage, packaging, transport coordination and traceability systems. Solutions support both domestic and international flows under strict regulatory and security constraints. The focus is on reliability, flexibility and end-to-end visibility.



### ADDITIVE MANUFACTURING

Materials, processes and industrial means required for additive manufacturing of metal, polymer and composite parts. This includes feedstock production and qualification, design for additive manufacturing (DfAM), printing technologies, post-processing and quality assurance. Solutions support rapid prototyping, tooling and serial production of complex components with optimized performance and reduced lead times. The focus is on qualification, repeatability and industrial scalability.












### CIRCULAR INDUSTRIAL SOLUTIONS










Capabilities enabling the transition towards more sustainable and resource-efficient industrial operations. This includes refurbishment, remanufacturing, reuse of equipment, waste reduction and lifecycle extension programs. Solutions contribute to supply-chain resilience, cost optimization and environmental performance while supporting industrial sovereignty objectives.

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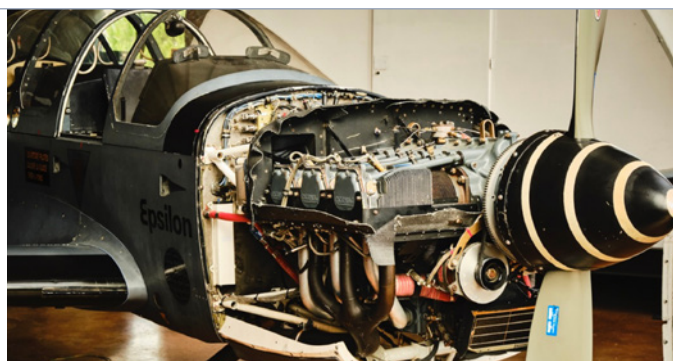
	Machining Capabilities	Special process capabilities	Materials	Industrial machines	Industrial infrastructure	Industrial test benches	Transport & Logistics	Additive Manufacturing	Circular Industrial Solutions
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	Machining Capabilities	Special process capabilities	Materials	Industrial machines	Industrial infrastructure	Industrial test benches	Transport & Logistics	Additive Manufacturing	Circular Industrial Solutions
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**MEMBERSHIP**  
*directory*

# AC-DISMANTLING

*Committed to decarbonizing the aeronautical sector, we offer a complete solution for the removal, dismantling, and recycling of aircraft. Our mission: to provide solutions to the growing need for fleet renewal, the daily demand for affordable maintenance parts, and the challenges of sourcing strategic metals. We accept aircraft in flying condition or collect them for dismantling and recycling. Our on-site pre-dismantling strategy caters to needs of all sizes, including the recycling of professional drones, which are subject to confidentiality requirements.*



## OUR EXPERTISE AT THE SERVICE OF THE AEROSPACE INDUSTRY



### Abandoned aircraft removal

AC-Dismantling handles the removal of grounded, damaged, or non-airworthy aircraft, wherever they are located. With specialized logistics and experienced teams, we ensure their safe transportation to our facilities or any destination designated by the client.

### Certified spare parts sales

We recover, inspect, and store certified aircraft parts to ensure full traceability and compliance with industry standards. Our inventory enables operators, maintenance organizations, and aircraft owners to quickly access reliable, ready-to-use components.

### Fleet dismantling & recycling

AC-Dismantling provides complete aircraft dismantling services in accordance with environmental regulations and aviation industry requirements. Reusable components are recovered for further use, while recyclable materials are processed through responsible and sustainable recycling channels.

### End-of-life aircraft purchase

We offer aircraft acquisition solutions for assets that have reached the end of their operational life or are no longer economically viable. Following a technical and financial assessment, we provide a straightforward, efficient, and transparent process to maximize the value of your aircraft.



# AUBERT & DUVAL

*Committed to support the defense industry in the fields of land, air and sea. Our expertise covers the most demanding materials: special steels, superalloys, titanium, aluminum and metal powders for additive manufacturing. We can design steel grades as well as design and manufacture open die forgings or closed-die forging parts. Along with supplying raw materials and semifinished products.*



## ARTILLERY

For the defense sector and artillery manufacturers, Aubert & Duval provides a comprehensive range of outstanding metallurgical solutions from materials design to forged blank parts, including forged gun barrels, breech block, breech ring and other critical components.

Field towed guns, Tank guns, Self-propelled howitzers, Naval guns, Mortars  
Other critical components: breech ring, breech block, ...



## STRUCTURAL PARTS

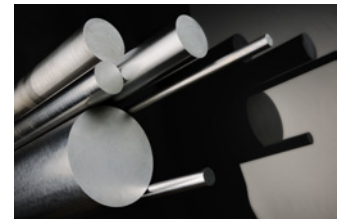
Aubert & Duval offers solutions for critical parts:

- + Closed die-forgings needed to bring strength to critical areas, including armored vehicle parts such as wheels or hatches
- + Titanium armor plates and solutions
- + Bars & blocks in special steels, superalloys, aluminum alloys and titanium alloys



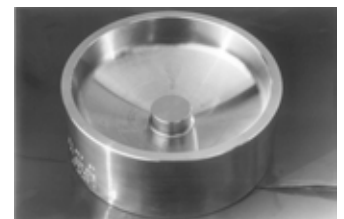
## FIREARMS

Aubert & Duval is a leading supplier of high performance steels for defense applications, including firearms. Aubert & Duval serves the firearm manufacturing sector for all types of small caliber barrel manufacturing, including cut rifling, button rifling, and hammer forging, as well as various grades suitable for other firearm components. Aubert & Duval offers martensitic steel grades achieving the best high strength / toughness compromise on the market:



## MISSILES

Aubert & Duval is a leading supplier of high performance steels for defense applications, including missile systems, with a long history of supplying material to missile manufacturers worldwide. Aubert & Duval meets the defense industry's material requirements for armored vehicles. By producing high performance materials for advanced structural parts. These parts are critical for the soldier's safety and product reliability in the battlefield.



## POWDERS FOR ADDITIVE MANUFACTURING

Aubert & Duval is a world leading producer of gas atomized metal powders. Our powder range named Stellar® includes Nickel-base alloys and steels for additive manufacturing processes. We have developed a portfolio of unique and innovative powder superalloys for additive manufacturing designed for turbine applications and use at high temperatures such as ABD®-900AM® designed for AM offering a temperature resistance up to 900°C and high mechanical properties, enabling performance increase & weight reduction.



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# AVL FRANCE

## Land, Sea, and Air Next-Gen Security and Defense Testing Solutions

Building on our strong legacy in test instrumentation, automation, and complete testing solutions, we support applications across e-mobility, internal combustion engines (ICE), hybrid systems, hydrogen, and fuel cells. This expertise is successfully applied to the defense sector, where our tailored testing solutions address the unique demands of land, naval, and aviation platforms.



### TEST SOFTWARE



Our technologies reduce efforts by enabling streamlined testing, Hardware-in-the-loop (HiL), virtual testing, and digital twin applications. The portfolio is continuously evolving and includes intelligent automation solutions, advanced software for data analysis, calibration, and cybersecurity solutions. We strive to support our customers in validating their systems more efficiently and accurately, ensuring successful system operations under dynamic and demanding defense scenarios.



### TEST SYSTEMS



We provide turnkey solutions from test beds to complete test laboratories

- Electrified applications (E-Motor, E-Axle, Inverter, Thermal management, NVH, EMC, AVL Copper Bird)
- ICE, hybrid and alternative fuel propulsion/powertrain
- Hydrogen and fuel cell applications (incl. hydrogen combustion and fuel cell electric propulsion systems)
- Battery performance and safety (incl. high-altitude endurance for aviation)
- Full Vehicles (Chassis Dynos, and Powertrain Testbeds)



### TEST SERVICES



AVL Global Customer Services ensures stable, efficient, and highly available test operations through rapid-response support, embedded technical expertise, and disciplined service execution. Our teams enhance testbed utilization, minimize downtime, and maintain the performance of complex defense testing environments with consistency and precision. With lifecycle-aligned modernization, robust documentation practices, and a worldwide service network, AVL delivers long-term reliability and sustained operational readiness across propulsion and vehicle testing applications.

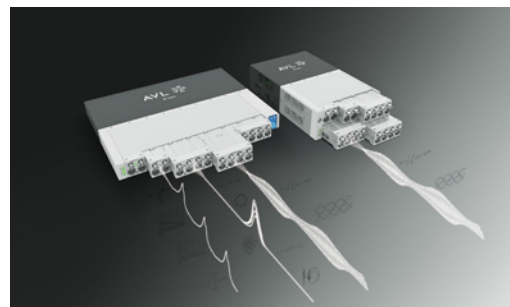


### TEST INSTRUMENTS



AVL delivers high-precision instrumentation to measure and analyze reliable, high-quality data. With intelligent sensors, modular systems, and seamless integration, we enable efficient and scalable testing in our customers' environments. For every purpose, we offer a comprehensive range of standalone testing instruments.

- Combustion analysis
- Emission analysis and measurement
- Data acquisition
- Battery test and emulation solutions
- And many more



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# BEG INGENIERIE

*BEG Ingénierie the trusted and dedicated engineering partner for critical infrastructure.*

*Specialises in engineering, design-build and the project set-up for industrial Defence and MRO buildings, logistics platforms, in France and internationally.*



For 60 years, BEG Ingénierie has revealed, designed, and achieved ambitious and complex property projects in France and abroad. Thanks to our design office and our multidisciplinary expertise, we propose innovative and eco-friendly solutions, which are tailored to/customized to the stakes of the energy transition and to the expectations of tomorrow's industry.



## **A confident partner for diversified and complex projects**

Whether for industrial, service or logistics sector buildings, our commitment remains the same: design and achieve functional and innovative buildings with high added value.

With subsidiaries in Europe and Africa, BEG Ingénierie assists its clients in the long term, by providing them with a wide range of skills and an ability to adapt to the local features.

We supply effective and sustainable solutions while including societal and environmental stakes.

Complexity is BEG Ingénierie's driver. New buildings, extensions, refurbishing, complex phasing in occupied sites, city center projects: We love challenges. We will support you at every stage of your project. We will offer you advice and build a project that meets your needs and expectations and that will comply with constraints, specific standards and environmental requirements.

## **A leading player in the eco-design**

Our ambition is to reinvent our practices to improve the quality of life and to become a leading player in the eco-design. Thanks to our constant monitoring and our committed approach, namely through LUCIE 26000, we develop solutions with low environmental impact and innovate to reduce carbon emissions and resources consumption.

## **A committed company for its clients and collaborators**

We believe in the value of human expertise. We support our clients and partners. At BEG Ingénierie, we cultivate a fulfilling work environment, encouraging the development of our collaborators' skills and commitments. While providing collective intelligence to our projects, we are creating a more sustainable future together.

BEG Ingénierie is a team of experienced engineers, architects and technicians, a department of design/architecture, an in-house design and engineering office, legal, quality and sustainable development experts who work together to understand your needs and provide tailored and innovative solutions.

Excellence, Trust, Confidentiality, and Sovereignty are the BEG Ingénierie's values that make all the difference.



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# CLECIM SAS

*CLECIM SAS, a French company, who recently joined Fouré Lagadec (SNEF Group), is renowned for its expertise in managing complex engineering projects, machining, and manufacturing large-scale components. CLECIM operates a highly specialized production site capable of meeting the technical demands of defense sectors. Its unique expertise enables it to handle large-scale industrial projects from design to manufacturing, including rigorous testing conducted directly at its facility.*

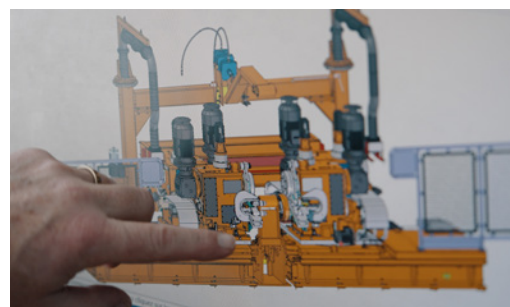


## ENGINEERING & DESIGN



76 engineers and technicians. Engineering capacity between 2,000h and 50,000h. Calculations and dimensioning. Reverse engineering and 3D inspection.

Disciplines : Mechanics, Civil engineering, Steel structures, Fluids / chemical processes, Electricity and Automation.



## MANUFACTURING & MACHINING



Plant Manufacturing : assembly, fitting, controls, methods project management, delivery. Controls and Inspection : non-destructive testing (resuage, magnetic particle inspection, ultrasound), 3D arm, laser Tracker. Authorised economic operator (AEO). Erection and Commissioning by the customer.

Machining : 12 CNC machines Horizontal lathes: L max 13 m - Ø max 1.7 m load Max 40T Vertical lathes: Ø max 4 m - H max 2 m Max load 50T Boring / Milling machines: W max 14.8 m - H max 5 m load Max 80T



## EXPERTISE & REPAIR - REVERSE ENGINEERING



Dismantling - Cleaning - Assessment - Expert report with detailed refurbishment proposal and improvement proposal - Design review - Repair and reassembly - Tests and inspection report.

Reverse engineering is used to recreate the design (plans, 3D files) and technical specifications from existing parts to enable its repair, reproduction, or improvement.



## TEST BENCH - TESTING RIG



Based on a customer's functional specification, we can provide tailor-made solutions ranging from the design of production tooling to the development of special-purpose equipment.



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# DEDIENNE AEROSPACE

*Dedienne Aerospace is a global leader in aerospace maintenance tooling and associated services for civil and defense markets, with more than 75 years of industrial expertise. We design and manufacture defense tooling and mission-critical equipment supporting air, land and naval defense programs. We support defense OEMs, MROs and government organizations from early design phases through qualification, production and in-service operations, ensuring alignment with program requirements, defense standards and security constraints.*



## INDUSTRIAL PARTICIPATION AND OFFSETS

Dedienne Aerospace supports industrial participation strategies, including local content and offset obligations where applicable, while maintaining quality, schedule performance, and data protection. We work with customers to identify opportunities, define compliance strategies, and implement plans using qualified partners and controlled processes.

- Worldwide industrial participation and offset management
- Supply chain deployment and program coordination
- Local manufacturing options



## INDUSTRIAL EXCELLENCE

Dedienne Aerospace combines in-house engineering and manufacturing capability to deliver high-precision tooling and GSE with consistent quality.

We support program schedules through on-time delivery performance aligned with program requirements.

- Cutting, machining, welding
- Surface preparation (sandblasting) and painting
- Special packaging
- Assembly shop with operational test capability
- Composites
- Electrical integration
- Hydraulic integration
- Protective covers and woven protection solutions
- 3D printing and additive manufacturing



## CUSTOMER SERVICES & LIFECYCLE SERVICES

Dedienne Aerospace Customer Support helps keep your tooling and GSE available, serviceable, and mission-ready wherever you operate. We provide lifecycle services for the equipment we deliver, supporting long-term readiness and safe operation.

- Periodic inspection and recertification
- Calibration
- Repair
- Full refurbishment
- Upgrades and modifications
- Loaner solutions (as available)
- Training
- Spare parts



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# EASYCUBE

*EASYCUBE – DREYER Group*

*Off-site modular and containerised construction solutions for industrial continuity and resilience.*

*From design and engineering to on-site coordination and construction, EASYCUBE draws on its expertise in deploying modular buildings and containerised solutions built for complex industrial environments and the most demanding production requirements, in France and worldwide.*

## OUR OFFER FOR INDUSTRIAL CAPABILITIES

1. SECURITY & INFRASTRUCTURE PROTECTION - Surveillance posts, secure storage, ATEX-rated modules
2. ENERGY & RESOURCES - Power containers, hybrid battery systems, solar-powered solutions, water and waste management & treatment, potabilization water stations
3. LOGISTICS & OPERATIONAL SUPPORT - Infrastructure for equipment and vehicle maintenance, storage, and preparation

This is a focused selection — our full offering extends well beyond



## INTERNATIONAL TRANSPORT & LOGISTICS

EASYCUBE ensures the **secure and efficient movement** of its modular structures across the international supply chain. Our solutions are optimised for air, sea and land transport, with full handling, packaging and transport coordination capabilities. Each module is designed for easy loading, unloading and rapid on-site assembly, ensuring end-to-end visibility and traceability from our French manufacturing facilities to the final deployment site, under strict regulatory and security constraints.



## HIGH-PERFORMANCE CONSTRUCTION MATERIALS

EASYCUBE selects and controls **high-quality insulating materials** to ensure the durability, performance and resilience of every structure. Our expertise covers material characterisation, supply-chain qualification and lifecycle management, with solutions designed to withstand shock, vibration, temperature extremes and harsh environments. The focus is on **compliance, availability and long-term sustainability**, supporting both temporary deployments and permanent industrial installations.



## THE STRENGTH OF AN INDUSTRIAL GROUP

As a member of the DREYER Group, EASYCUBE draws on the synergies, technical expertise, and industrial capabilities of its group entities to deliver a dedicated offering to meet the needs of armed forces and strategic projects worldwide. This structure guarantees our partners the highest standards of quality, reliability, and control in the management of sensitive, high-stakes operational projects.



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# ECRIN SYSTEMS

*50 Years of Expertise in Mission-Critical Embedded Systems*

*Design, integration and industrialization of rugged computing solutions for critical environments.*

*ECRIN Systems supports its customers in the industrial, defence, energy and transport sectors by offering them innovative, robust and sustainable solutions.*



## NANO-ONYX



### Ultra Small, Low Power & Modular Rugged Computer

Based on the latest generation of Intel processors and qualified according to the military equipment environmental standards (DO-160, MIL-STD-810 & MIL-STD-461), the nanoONYX is a low-power, rugged, and scalable computing solution for air, land and sea systems.

Being the most compact of a complete range of rugged computers, the nanoONYX is ideal for any demanding application requiring both high performance in a dense passively cooled system and the support of functions such as AI, graphics, and cybersecurity.

With its modular and robust design, the nanoONYX offers the embedded market a completely mil-qualified and customizable solution benefitting from a long-term support.



## ONYX-AGX



### Rugged AI computing for real-time vidéo analytics

ONYX-AGX is a ruggedised edge AI computer designed to meet the demands of critical embedded applications requiring intensive real-time data processing. Specifically designed for video analysis and object recognition, it is based on an advanced hardware architecture derived from the NVIDIA Jetson AGX Orin Industrial module.

Thanks to its combination of computing power, connectivity and robustness, the ONYX-AGX fits naturally into environments where operational constraints are severe and data processing demands are high.



## QUARTZ



### Rugged 10 ports Ethernet Switch

The Quartz is a cutting-edge rugged switch designed for performance and reliability in challenging environments. This robust solution features Gigabit and 10 Gigabit Ethernet ports, with configurations supporting up to 8 copper and 2 optical ports, ensuring flexible connectivity for various network setups.

Built to endure extreme environmental conditions, it guarantees reliable and resilient operation, even in the harshest industrial or outdoor settings.



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# EMITECH GROUP

*The Emitech Group is France's leading group of independent testing laboratories, specialising in testing and qualification for the defence and industrial sectors.*

*With 680 experts across 18 sites, we design and operate testing and qualification facilities covering EMC, climatic, mechanical and electrical testing... in accordance with MIL-STD, DO-160, STANAG and NATO standards.*



## CUSTOM-BUILT TEST BENCHES: FROM CONCEPT TO COMMISSIONING



Emitech Group designs and manufactures tailor-made test benches for defence and industrial applications.

Our 360° approach covers pre-project, design, simulation, integration, assembly and maintenance. No project is too complex: recoil brake benches, aeronautic cylinder rigs, EMC Faraday chambers, hydraulic and environmental test cells.

All benches are driven by PULSAR, our in-house control and data acquisition software.

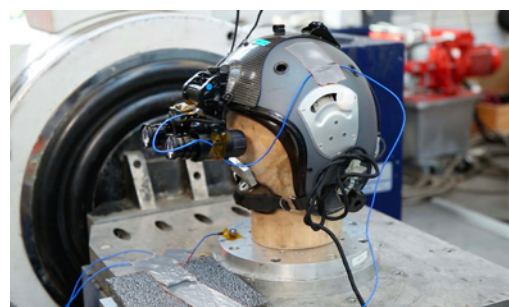


## MILITARY EQUIPMENT TESTING & QUALIFICATION



Emitech Group is a key player in defence equipment qualification, running up to 230 simultaneous test campaigns across 18 accredited sites. Our laboratories cover environmental, mechanical, EMC and electrical testing to MIL-STD 461/810/704, DEF STAN, DO-160 and STANAG.

Acting as an independent third party, we clarify requirements, conduct tests and interpret results with rigorous impartiality.



## FRANCE'S LARGEST SEMI-ANECHOIC EMC CHAMBER



Emitech's Montigny-le-Bretonneux facility houses the largest and most recent Faraday cage built in France (27\*18\*10.5 m), with a 40-tonne support zone and 9.45 m useful height.

Designed to qualify complete military systems - vehicles, radars, drones - to AIRBUS, DASSAULT, NEXTER, ARQUUS, SCORPION and FELIN requirements, it integrates a roller bench simulating speeds up to 120 km/h.



## METROLOGY, CALIBRATION & TEST TOOL DESIGN



Emitech Group provides COFRAC-accredited metrology and calibration services to sustain measurement accuracy across R&D, qualification and production campaigns.

We design bespoke test tools and jigs for production line and in-situ acceptance testing.

Full measurement traceability, calibration documentation and configuration control are ensured to ISO 17025, supporting compliance throughout the product lifecycle.



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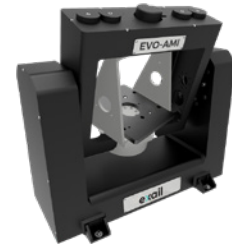
*Exail is a leading high-tech industrial company specializing in navigation, positioning, and robotics. Through its Motion System division, the company delivers premier testing and calibration solutions—including multi-axis positioning tables and centrifuges—for inertial systems and optronic devices. Leveraging unique proprietary expertise, Exail ensures unrivaled performance, reliability, and safety for civil and defense clients operating in severe environments. Backed by a global workforce of 2,200+ professionals, Exail stands as a trusted strategic partner in over 80 countries.*



## TESTING OF R&D AND PROTOTYPING EQUIPMENT



Exail's range of simulation tables starts with 1 to 3-axis tables that are designed for testing accelerometers and inertial components of navigation systems during their prototyping or development phase. Compact and easy to install, these tables can accommodate small and lightweight sensors weighing up to 20 kg while offering excellent dynamics for testing products at their maximum capacity. They provide the best cost/performance ratio for testing in a variety of fields, making them an ideal choice for starting product development process on a limited budget.



## LARGE-SCALE SIMULATION ON MASS PRODUCTION SENSORS



The EVO-10M and EVO-20 Series tables are designed for high-capacity testing of high-performance products, from commercial-grade MEMS to tactical-grade inertial systems, during their mass production phase. With large platforms and a payload capacity up to 50 kg, these rate tables can handle substantial systems and multiple products for simultaneous testing. Featuring positioning and repeatability accuracies of up to 1 arcsec, they ensure high levels of precision and reliability under harsh conditions. They can further be equipped with thermal chambers for optimal testing conditions.



## HWIL SIMULATION ON COMPLETE SYSTEMS



Designed for the final phase of product development, the EVO-30L is a robust table suited for testing complex systems for demanding applications. This 3-axis rate table supports complete systems for HWIL (Hardware-In-The-Loop) simulation, where the tested system is integrated into a simulated environment to create a realistic test scenario. This allows engineers to test the system's performance, behavior, and reliability under harsh environments, high vibrations, and accelerations while ensuring a controlled and safe testing environment. The EVO-30L provides real-time functionality and optional reflective memory control, enabling users to repeat HWIL simulations and get real-time feedback on the system's behavior.



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# GCA SUPPLY

*GCA Supply 4 Industry is a subsidiary of the Charles André Group, a French, family-owned, and independent group since 1932.*

*Its industrial logistics division has 600,000 m<sup>2</sup> of storage and 70 warehouses in the defense, aerospace, and energy sectors.*

*It offers solutions in:*

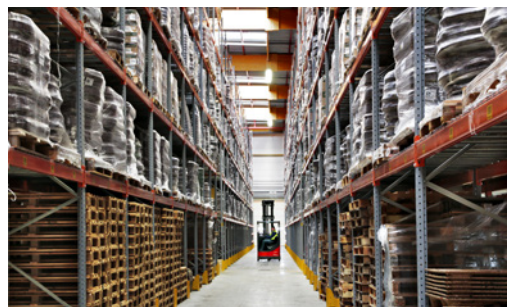
- industrial/contract logistics
- technical and industrial packaging
- transportation
- lifting and handling



## INDUSTRIAL LOGISTICS



- In-situ, ex-situ storage, fully secured vehicle fleet, storage of A2 war material
- In-situ, ex-situ flow management: reception, inspection, preparation, shipping, stock management
- Industrial services: material cutting, quality control, painting, repair workshop



## TECHNICAL AND INDUSTRIAL PACKAGING



- Design and production of technical packaging in all materials, including NATO standards
- Industrial packaging services, including on the client site



## MILITARY AND SPECIFIC TRANSPORTATION



- Transport of ammunition, military vehicles
- Bulk transport, flatbed
- Exceptional transport - 1st, 2<sup>nd</sup>, and 3<sup>rd</sup> categories
- Rail and inland waterway transport with complete End-to-End solution



## HANDLING - LIFTING



- All lifting operations throughout the French territory
- More than 111 mobile cranes (from 35T to 750T) and crawler cranes (up to 650T)
- High-altitude aerial work platforms on truck or crawler from 43 to 90 m



**SUPPLY**  
4 INDUSTRY

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# GEODIS

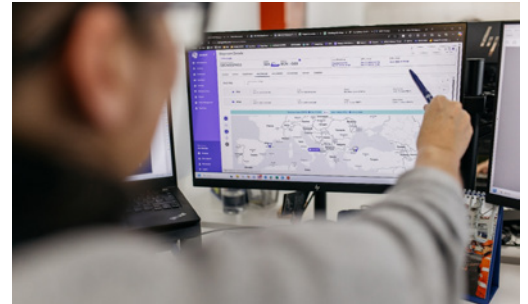
*GEODIS is a global leader in the fields of transportation and logistics. We support defense and security players in their operational challenges with innovative and resilient solutions. As a subsidiary of the SNCF Group, GEODIS has a global network and recognized expertise. We manage strategic flows, complex project logistics and operational deployments in full compliance with regulations and security issues in non-permissive environments.*



## INTERNATIONAL TRANSPORT



Transport solutions for all sizes, origin-to-destination transport solutions for the rapid deployment of military equipment to operation theatres and assembly lines around the world by air, sea, land and rail, and customs management. We develop advanced logistics information systems for the visibility, prediction, monitoring and real-time management of defense flows.



## MANUFACTURING LOGISTICS



On-site logistics, inter-factory shuttles, warehousing and storage, small assembly, distribution in batches or full truckloads, dedicated, international and national.



## REPLENISHMENT AND MAINTENANCE



Supply of oil, liquid, petroleum, spare parts, critical equipment, deployable infrastructures, generators.



## REVERSE LOGISTICS & LIFECYCLE MANAGEMENT



Recovery, repair, maintenance and overhaul of equipment.



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# GETELEC

At GETELEC, we design the invisible to secure what matters most.

We develop innovative, customized, and high-end EMC solutions for critical environments and the demands of tomorrow. From cutting-edge engineering to high-performance manufacturing, we control every step to guarantee uncompromising standards.

Our mission: to transform technology into a decisive advantage.



## SOLUTIONS FOR COMMUNICATION SYSTEMS (C3IS)



In environments saturated with tactical radios, satellite communications, and surveillance systems, even the slightest interference can compromise mission success. Our high-performance protection solutions preserve signal integrity and data accuracy, ensuring operational success and the reliability of the entire command chain.

Discover our dual-material IP/EMC solutions :

- Combined IP/EMC protection
- Salt spray resistant
- Compact dimensions
- Custom engineered
- Extended service life compared with single-material solutions



## TACTICAL EQUIPMENT



Our innovative technologies ensure the reliability of critical systems and the continuity of field communications, even under the most demanding operating conditions.

By enhancing the robustness and electromagnetic discretion of your equipment, Getelec helps maintain your technological superiority.

Discover the key advantages of our conductive elastomers:

- Electrical continuity
- Mechanical performance
- High-performance under extreme temperatures
- **Excellent shielding effectiveness at very high frequencies (above 55 GHz)**



## AEROSPACE & NAVAL DEFENSE



In demanding environments with high-power radars, lightning, and electronic warfare, electromagnetic compatibility is strategic. Getelec secures your operations and boosts platform survivability **by reducing EM signatures for enhanced discretion and resilience.**

Discover our dedicated products range :

- **GT602 absorbers:** high-performance narrowband absorption with excellent power density (>1 W/cm<sup>2</sup>)
- **Thermally conductive pads:** four product ranges offering conductivities from 1 to 10 W/m.K.



# GRUPE TRA-C INDUSTRIE

*With around ten production sites across France, the TRA-C industrie group supports defence sector organisations in the design, industrialisation, manufacture and integration of complex, high-value-added systems. The group is involved throughout the entire industrial lifecycle: engineering, prototyping, series production, robotic integration and the optimisation of industrial processes.*

*A recognised specialist in metalworking, TRA-C Industrie possesses extensive expertise in the manufacture of equipment for the demanding environments of land, air and naval defence. Our expertise covers, in particular: sheet metal work, boiler making, machining, surface treatment/painting, assembly, cabling, automation, the manufacture of composite assemblies, and the integration of technical assemblies and sub-assemblies... The group is notably a European leader in the innovative technology of Friction Stir Welding (FSW), which delivers significant gains in performance, strength and weight reduction for structures.*

## ENGINEERING AND PRODUCTION



With 10 production sites and over 20 years of industrial experience, the TRA-C industrie Group possesses comprehensive expertise in the integration of complex solutions and high-value-added industrial solutions designed for the most demanding environments.

The TRA-C industrie group's design offices bring together around fifty engineers and technicians specialising in the development of complex systems for the defence sector. The Group is involved throughout the entire industrial cycle: design, industrialisation, prototyping, series production, final assembly and the integration of specific industrial equipment.

The group also handles finishing and surface treatment operations through its subsidiary A.P.L.P., which specialises in industrial painting for demanding environments and is certified to meet the requirements of the defence sector.

TRA-C industrie is particularly involved in the development, manufacture and integration of strategic equipment such as armoured structures for the Jaguar, Serval, Griffon and Leclerc programmes, drone recovery systems, simulation cockpits for military vehicles, as well as specialist equipment for special forces, such as assault ladders.



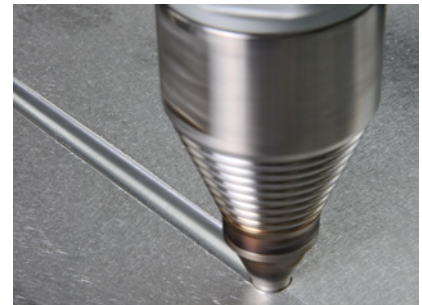
## FRICTION STIR WELDING



TRA-C industrie has recognised expertise in the development and integration of Friction Stir Welding (FSW) solutions, a solid-state welding process. Supported by the DGA through several RAPID projects, the company assists its clients with all their specific FSW-related needs: subcontracting, R&D, prototyping, machine and cell integration, programming, training, maintenance, etc.

Turnkey equipment can incorporate various technological options depending on the customer's needs: automation, robotisation, process control, supervision, or integration into existing production lines.

TRA-C industrie has notably supported prime contractors in industrialising strategic projects using the FSW process. The group has developed several FSW machines and all the dedicated tooling, notably for the SERVAL and SYFRALL programmes. These facilities represent the largest capacities in Europe and enable the welding of three-dimensional parts up to 40 mm thick.



## ROBOTIC INTEGRATION



TRA-C industrie designs, manufactures and integrates robotic cells and specialised machinery for industrial environments with demanding technical requirements. The group supports its customers from the initial needs analysis through to the commissioning of the equipment, handling mechanical and automation design, manufacturing, assembly, robot programming, testing, training and maintenance.

TRA-C industrie develops comprehensive solutions integrating robots, welding systems, handling, conveying, distribution and specialist equipment to optimise industrial performance, process repeatability and production rates. In particular, TRA-C industrie has deployed several robotic stations for the welding of armoured structures for the defence sector.



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# INDUSTEEL ARCELORMITTAL GROUP

*Industeel is a subsidiary of ArcelorMittal, producing hot-rolled plates, ingots and formed pieces in special steels (low alloy or stainless steels) and nickel based alloys. Industeel regroups three plate mills (Charleroi, Chateaufort and Le Creusot), two tailor-made forming workshops (Saint-Chamond, Dunkirk) and one R&D center having all a long tradition of metallurgical know-how. All our steel melting shops are equipped with Electrical Arc Furnace melting scraps allowing us to produce low carbone steel.*

*We offer a complete range of grades designed to meet the most stringent specifications in domains like energy, transportation, mine and quarries, mechanical applications or defense industry. Thanks to our three mills located in France and Belgium, we offer the world's widest dimensional range, from 2.5 mm to more than 1000 mm thick and up to 4300 mm wide*

## MARS® PROTECTION STEEL



Producing steel armor plates since more than 150 years in our mills in Le Creusot and Loire, we have developed a complete range of grades with hardness from 280 to 650 HBW, marketed under brand Mars®.

Their properties are specially adapted to the production of protected structures, including blast resistant floors, but also of add-on armor panels.

Thanks to our specific oil quenching process, our Mars® plates possess a very good homogeneity, tight thickness tolerances, very-low internal residual stress and an excellent flatness, our products are globally recognized and highly valued.

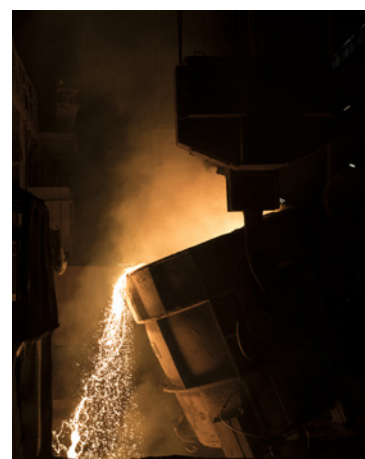
Ranging from 280 to 650 HB, our Mars® portfolio offers versatile solutions: ammunition testing blocks, armored vehicle sheets, infrastructure protection, and lightweight multi-layer configurations.

## SAFE 500



Safe 500 is a protection steel that combined an optimized chemical composition with a carefully controlled heating, rolling and heat treatment sequence that gives an optimal combination of weldability, bendability, ballistic protection performance and superior flatness.

These characteristics make it ideal for civilian protection, including armored vehicles (sedans, SUVs), cash-in-transit vans, police cars, bulletproof doors, window frames, or wall panels.



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## ***A global engineering partner for complex defence and critical infrastructure projects***

*Ingérop is an independent French engineering and consulting group with more than 3,500 employees worldwide. For over 60 years, we have supported complex infrastructure, industrial and building projects from strategy to delivery. Our teams combine technical excellence, project management expertise and a deep understanding of critical environments.*

*In the defence sector, Ingérop contributes to the design of resilient, secure and high-performance facilities. We help public and industrial clients turn strategic ambitions into operational, sustainable assets.*

### **OUR SOLUTIONS**



**Ingérop supports defence and industrial clients across the full project lifecycle, from feasibility studies and site master planning to final handover of infrastructure.**

Our teams provide Concept Design, Preliminary Design, Basic Design / Feed, Detailed Design and Tender Documentation, integrating civil works, utilities, process interfaces, safety and security requirements.

We also deliver procurement support, construction supervision, project controls, cost and schedule management, ensuring alignment between design intent, operational needs and delivery constraints. Up to commissioning, acceptance tests and final handover



### **OUR EXPERTISES**



- Design and construction: factories, workshops, secure storage facilities, maintenance centers, and test benches
- Industrialization studies: Optimization of production resources, automation, and ramp-up management
- Process engineering & architecture
- Flow simulation and technological integration.
- Pyrotechnic engineering and safety, integrating explosive-risk management, regulatory compliance, hazardous-area layouts and operational safety requirements from early design through commissioning.
- All-trades design: Geotechnics, structural engineering, process, building, electricity, and HVAC.
- Security and compliance: Industrial risk management, cybersecurity, and safety.



# INTEGRIS COMPOSITES SAS

*We fully understand the value of lighter and better protection.*

*We have made it our business to be the leader in this field.*

*We hold the technology and materials we create to the highest standards, knowing they must be to save lives.*

*We are here to design, engineer, and manufacture the highest-performing, fit-for-purpose armor and survivability solutions.*



## HIGH-PRECISION CAPABILITIES FOR COMPLEX PARTS



At Integris, we don't just talk about advanced technologies — we operate them.

We deliver high-performance manufacturing through fully integrated 5-axis machining and 5-axis waterjet cutting capabilities, enabling us to produce complex geometries in a single setup with tight tolerances, superior surface finishes, and excellent repeatability.

Our advanced waterjet technology allows multi-angle cutting on metals (steel, aluminum, alloys), composites, plastics, and technical materials of all shapes, without thermal impact.

This cold process eliminates composite delamination and distortion, preserving material integrity and ensuring flawless edges.

The result: faster lead times, fewer operations, reduced costs, and right-first-time quality, combined with the flexibility to handle the most demanding designs.

At Primarette, we leverage advanced industrial capabilities to turn complexity into performance and deliver tangible value to our customers.



## FROM PRESSURE TO PERFORMANCE



At Integris France – Primarette, we deliver advanced manufacturing through high-performance high-pressure pressing technologies, enabling the production of structural composite components with unmatched precision, consistency, and mechanical performance.

By applying controlled heat and pressure, we ensure uniform material densification, optimal resin distribution, and elimination of internal defects, resulting in parts with superior strength, durability, and structural integrity.

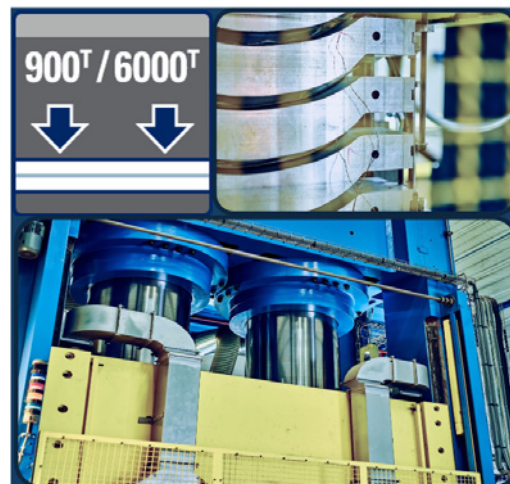
Our pressing capabilities allow the production of complex geometries with high dimensional accuracy and excellent surface finishes, while maintaining tight tolerances, high repeatability, and stable industrial processes.

Through precise control of pressure, temperature, and cycle parameters, we guarantee consistent quality across production runs and minimize variability.

This high-pressure process ensures perfect fiber impregnation, reduced porosity, and elimination of defects such as voids or weak zones, delivering high-performance composite parts ready for demanding applications.

In addition, optimized cycle times and reduced material waste contribute to improved efficiency and cost control.

At Primarette, we combine advanced press technology, process expertise, and industrial control to deliver robust, repeatable, and high-quality molded components—turning pressure into performance and enabling our customers to achieve their most ambitious designs.



INTEGRIS

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# IREPA LASER

*For more than 40 years, IREPA LASER has supported industry in the development, industrialization and integration of laser processes, while training teams in their safe implementation and use. Specialized in laser welding, laser DED additive manufacturing and laser machining, IREPA LASER serves the most demanding sectors, including defense, aerospace, space and electric mobility. Leveraging its experts, robotic platforms and R&D capabilities, IREPA LASER supports each project from design to production, including the development of tailor-made processes, technological risk mitigation, qualification, technology transfer and series production of laser assemblies. In parallel, its training center provides yearly training to more than 1,300 professionals in laser safety and laser processes, while also supporting manufacturers through audits and consulting services. This 360° approach helps accelerate and secure the transition to industrial-scale production.*

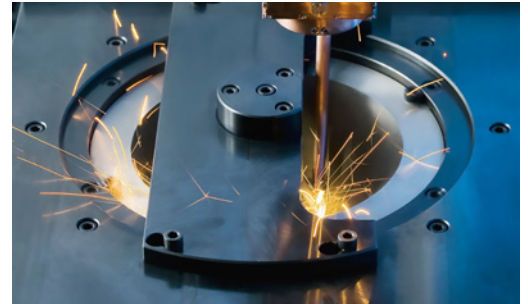
## LASER WELDING PRODUCTION



### High-precision laser welding for your industrial production

IREPA LASER manufactures metallic assemblies through industrial laser welding for small and medium production runs, with full control of traceability and industrial quality requirements.

Our production capabilities combine high-power fiber lasers up to 10 kW, robotic cells, multi-axis systems and integrated quality control to deliver reliable, repeatable and fully qualified assemblies from the very first part. We weld a wide range of materials — including steels, stainless steels, aluminum, copper, nickel alloys and titanium alloys — and produce both precision components and large structural assemblies up to 5 meters in length and 10 mm thick.



## DED LASER ADDITIVE MANUFACTURING PRODUCTION



### Metal additive manufacturing for functional parts and critical applications

IREPA LASER produces metal parts using DED laser additive manufacturing, from proof of concept to small series production, for industrial applications requiring precision, performance and metallurgical control. Our capabilities combine wire-based and powder-based DED laser technologies to address a wide range of industrial needs, including repair of critical components, cladding, near-net-shape preforms for finish machining, feature addition and modification of existing parts.

Our industrial platform integrates lasers up to 10 kW, multi-axis robotic cells with up to 15 axes and in-line quality control systems to ensure reliable, repeatable and fully qualified production.

We process a wide range of advanced materials — including aluminum, titanium, Inconel, stainless steels and specialty alloys — including under controlled atmosphere for sensitive materials and applications with high metallurgical requirements.



## PRECISION LASER MACHINING



### Advanced laser processes for the most demanding industrial applications

IREPA LASER develops and implements high-precision USP laser machining solutions for complex geometries, surface functionalization and micro-fabrication of critical components.

Our capabilities include laser drilling, surface texturing and micro-cutting, with full mastery of nanosecond, picosecond and femtosecond technologies, enabling each process to be adapted to material requirements, tolerances and targeted functional performance.

Thanks to our industrial laser platforms and process expertise, we perform ultra-high-precision operations on a wide range of materials, including metals and engineering alloys, composites, ceramics, technical polymers and heat-sensitive materials.



**IREPA LASER**  
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# JOHN COCKERILL DEFENSE

*John Cockerill is an international industrial group specializing in technological solutions for energy, industry, and defense. Within the Group, John Cockerill Defense develops and integrates armored vehicles and advanced weapon systems for land platforms, combining firepower, mobility, precision, and operational adaptability to meet the requirements of modern armed forces.*

## JOHN COCKERILL DEFENSE, INDUSTRIAL EXCELLENCE



European leader in protected land mobility and now part of John Cockerill Defense, Arqus is one of the leading players in the French defense industry. With the integration of Arqus within the John Cockerill Defense perimeter, the group combines complementary expertise across protected mobility, weapon systems, survivability, and integrated land defense solutions. Arqus' know-how ranges from vehicle design, propulsion, and mobility to systems integration, automation, and support services. Manufacturer of globally recognized vehicles such as the VAB, VBL, BASTION, and SHERPA ranges, Arqus is a trusted partner in more than 60 countries worldwide. John Cockerill Defense also develops globally recognized turret systems such as the Cockerill 3000 Series and the Cockerill 1030, with more than 1,000 turrets currently in service around the world. The group further strengthens its portfolio through the Hornet remote weapon stations, designed to enhance crew protection and operational efficiency, as well as through Agueris simulation and training systems dedicated to operational preparedness and mission training.

The group relies on a network of specialized industrial sites, each dedicated to specific areas of expertise. This organization enables a high level of technical mastery across production, maintenance, armored structures, mechanical systems, weapon systems, and support activities, while optimizing industrial efficiency and operational performance.

- The Arqus Limoges site is dedicated to the production of new vehicles and plays a major role in the SCORPION program, notably through the preparation of mobility kits for the Jaguar and Griffon vehicles.
- The Arqus Saint-Nazaire site specializes in the maintenance and modernization of military vehicles operated by the French Army, building on decades of industrial expertise.
- The Arqus Garchizy site focuses on the production of armored cabins and spare parts distribution, supported by advanced welding expertise.
- The Arqus Lisses site ensures the manufacturing and refurbishment of mechanical components, supporting assembly, testing, painting, packaging, and logistics activities across the group's programs.
- The Distroff site in France strengthens the group's maintenance, integration, and support capabilities for long-term operational readiness.
- In Belgium, the Loncin site specializes in engineering capabilities and the production of advanced weapon systems and turrets.
- Also in Belgium, the Aubange site specializes in production, maintenance, and machining capabilities supporting the group's defense activities.
- In Saudi Arabia, the group operates a dedicated support and maintenance site to ensure long-term operational readiness and local customer support.

Together, these complementary sites reinforce the group's ability to deliver scalable, high-performance land defense solutions while supporting armed forces throughout the entire lifecycle of their systems.



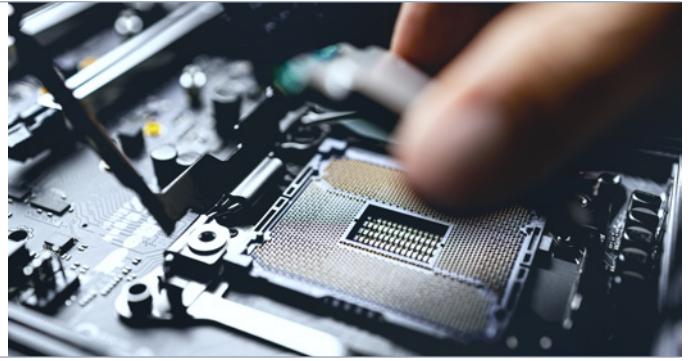
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*LGM is a mid-sized group specializing in niche technological engineering solutions and services, as well as in advanced industrial-scale electronic design & production.*

*Our mission is dedicated to meeting the efficiency and sovereignty requirements of major Defence programs.*

*The promise of our "Critical Electronics" solution: to ensure the excellence and reliability of secure and critical electronic systems.*



## TEST EQUIPMENT & TEST BENCHES: AUTOMATIC & GROUND SUPPORT EQUIPMENT



### EXPERTISE :

- Development of real-time system integration test benches
- Development of production test benches
- Development of mobile test equipment
- Production of prototypes and series

### TECHNOLOGIES :

#### • Radiofrequency / microwave test bench

RF amplifier up to 6 kWc

Communication by pulsed RF signals

Frequency converter step-up / step-down

#### • Mechatronics test bench

Running-in and characterization

Measurement of speed, force, torque

Custom connector system adapted to the test rate

#### • Power bench

Specific power supplies

High current relay and stamping (> 200 A)

Thermal studies

Custom resistive / inductive / capacitive loads



# LUTRINGER INDUSTRIES

*Specialized in high-precision machining company dedicated to the production of complex mechanical parts for demanding sectors, with a strong commitment to the defence industry.*

*Based in France, we manufacture complex parts and small assemblies, from unit parts to small and medium series, in strict compliance with your technical, quality and traceability requirements.*



## CNC TURNING



CNC turning is an integral part of LUTRINGER Industries' expertise. We operate modern CNC lathes to produce high-precision cylindrical parts, from prototypes to small and medium series. Our team ensures tight tolerances, repeatability and full traceability to meet demanding industrial and defence requirements.



## CNC MILLING



CNC milling is a core capability of LUTRINGER Industries. We use modern 3- to 5-axis machining centres to produce complex, high-precision parts and small assemblies. From prototypes to small and medium batches, we ensure tight tolerances, reliable lead times and full traceability for demanding applications.



## OUR EXPERTISE



We bring over 20 years of expertise in precision machining to the land, air, and naval defense sectors. Our expertise of manufacturing processes, combined with rigorous quality control and recognized certifications, enables us to support the most demanding defense programs, ensuring precision, compliance, and durability in the most challenging operational environments.



## TRIPLE CERTIFICATION



LUTRINGER Industries is triple certified ISO 9001, EN 9100 and ISO 14001. This integrated management system guarantees rigorous quality, full traceability and controlled environmental impact. It reflects our long-term commitment to continuous improvement and to meeting the most demanding industrial and defence requirements.



# MANUTAN

*Manutan is a French family-owned group and a leading European B2B supplier of equipment and operational solutions for industry, defence and aerospace.*

*The company supports armed forces, aerospace organizations and defence industrial players in equipping and operating their bases, workshops, warehouses and technical facilities. Through a comprehensive offering combining procurement expertise, logistics performance and sustainable solutions, Manutan helps its customers improve operational efficiency, secure supply chains and optimize total cost of ownership.*

*With a strong European footprint, a robust logistics network and a recognized commitment to sustainability, Manutan delivers reliable, responsible and readily available solutions for demanding environments.*

## REFURBISHED OFFERING



### **Manutan Refurbished Offering: Performance, Cost Control and Sustainable Commitment**

To meet the operational and regulatory requirements of your environments, Manutan offers a comprehensive range of refurbished solutions, certified, inspected and restored by experts. A reliable and readily available alternative, designed to combine efficiency, budgetary discipline and environmental responsibility.

#### **Why choose Manutan refurbished products?**

- Up to 30% savings without compromising on quality
- Measurable reduction of your carbon footprint
- Immediate availability to meet urgent operational requirements
- Strict quality controls and full traceability
- Compatibility with demanding and sensitive environments

#### **A broad, operational and readily deployable offering**

- Professional and office furniture: chairs, desks, cabinets, lockers
- Warehouse and technical area fit-out solutions
- Storage solutions and containers: pallet boxes, bins, Europool containers
- Material handling equipment: trolleys, hand trucks and associated equipment

#### **Manutan expertise: a key performance factor**

- A structured multi-category catalogue (9 product families) covering all your needs
- Deliveries adapted to regulated and sensitive sites
- A high-performance and sovereign European logistics network (13 warehouses)
- Suppliers rigorously selected and audited
- Digitalized procurement processes (PunchOut, EDI, reporting) for greater efficiency
- A recognized CSR approach, certified by EcoVadis

#### **Move towards a more agile and responsible procurement approach**

With Manutan refurbished solutions, transform your constraints into opportunities: optimize your costs, secure your supplies and make a tangible contribution to your environmental objectives.

**Discover the full scope of our offering at: [manutan.fr](https://manutan.fr)**



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# MUSTHANE

*Musthane is a French company specialized in the design and manufacturing of flexible composites made from rubber-coated reinforced textiles. Our solutions enhance the survivability and mobility of operations and vehicles in marine, land, and air environments.*

*We control the entire supply chain, from raw material formulation and manufacturing to final product delivery, ensuring process control, traceability, quality, and reliable lead times.*

*In the defense sector, our expertise is structured around two complementary pillars:*

*Design to Flexibility® - Solutions based on flexible and resilient structures: flexible tanks, inflatable jacks, pneumatic pipe plugs, lifting bags.*

*Design to Mobility® - Equipment designed for rapid deployment operations: helicopter landing mats, forward area refueling systems, temporary access roads.*

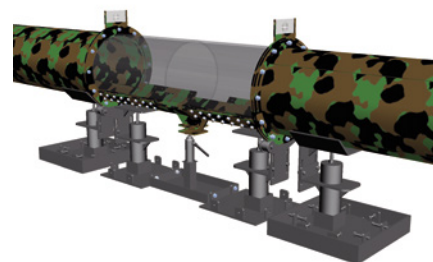
## ENGINEERING DEPARTMENT



Musthane is specialized in the formulation and testing of advanced coated technical textiles. We develop and qualify the raw materials according to the customer's specifications and the operational environments in which the solutions will be deployed, ensuring the materials meet the required mechanical, chemical and environmental performance.

Building on this expertise, Musthane's Engineering Department ensures the selection, qualification and control of materials used in our solutions, including engineered fabrics, elastomers and composite materials.

This integrated approach ensures regulatory compliance, material availability and lifecycle control, while delivering reliable and durable solutions adapted to demanding operational applications.



# Musthane

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# NEFAB

*Nefab supports defense supply chains with engineered packaging solutions designed to lower total logistics cost while safeguarding critical, high-value equipment. Through smarter packaging design, optimized material use, and improved transport and handling efficiency, we help reduce damage, waste, and operational complexity—delivering reliable performance and sustainable cost savings across storage, distribution, and deployment.*



## DEFENSE PACKAGING & LOGISTICS SOLUTIONS



### PACKAGING SOLUTIONS

Nefab designs and manufactures complete, lightweight packaging solutions that ensure reliable protection during transport, storage, and field operations. Our solutions are tested and approved to meet military and industry standards, and Nefab is a tier-one supplier to leading NATO defense forces.



By delivering standardized, proven, and efficient packaging and logistics solutions, Nefab supports the rapid rearming of Europe and aligns with the European Commission's focus on supply-chain optimization and cost savings—without compromising operational readiness.

### MULTIMATERIAL PACKAGING EXPERTISE

Packaging solutions tailored to specific products and logistics flows, supported by a global engineering network and validated according to applicable UN, NATO, military, and industry standards. These solutions unlock immediate savings potential within the defense supply chain, requiring no major investments, no technological compromises, and no reduction in operational standards.

### LOGISTICS SOLUTIONS

In addition to packaging, Nefab provides logistics and value-added services such as contract logistics, packing services, and returnable packaging pooling, improving efficiency, availability, and lifecycle management.

Through supply-chain optimization, Nefab reduces cost and environmental impact while delivering ethical, reliable solutions that strengthen Europe's defense readiness and long-term sustainability.



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# NOVAKAMP

*NovaKamp and its affiliated companies operate in the energy and infrastructure sectors. We design, manufacture and integrate smart-off grid energies and critical services for remote sites : from energy production, transformation and distribution, to mobile water treatment and purification units, or waste treatment.*



## TEST BENCH FOR GENERATOR SETS



eV-Teknology, company subsidiary of the group NovaKamp, is a French manufacturer of generator sets and hybrid systems. It produces a wide range of power generation solutions for fixed, integrated, and/or mobile applications.

All generator sets are tested before leaving the factory in accordance with ISO 8528 standards. To this end, eV-Teknology has a test bench dedicated to diesel (backup) and gas/biogas (cogeneration) generator sets and power plants, but it can also be used to test other industrial equipment.



The installed exhaust system allows us to set up to three generator sets, each with a capacity of 3,300 kVA. Equipped with a high-performance data acquisition system, our test bench efficiently verifies the products being tested.

## SERVICES OFFERED

- Verification that all mechanical and electrical equipment is present and in accordance with the specifications.
- Verification that appropriate safety equipment, including mechanical and electrical safeguards, is in place.
- Adjustment and inspection of electrical equipment in accordance with the electrical diagram .
- Functional testing of electrical and mechanical equipment.
- Conducting endurance and load impact tests with automatic recording of electrical and mechanical parameters.
- Verifying compliance with the performance class through standardized load impacts (NF EN ISO 8528-5 standard).
- Acceptance of equipment in the presence of the customer at our factory.

## OUTDOOR TEST AREA

- Space available for testing or storage: 2 platforms, each 140 m<sup>2</sup> (capable of accommodating remote air coolers)
- Power loading capabilities for generators: 3 600 kW resistive load banks (option to add resistive/capacitive or inductive load banks)
- Power circuit connection facilities: 3 separate busbar sets (i.e., 1 set per load bank)
- Fuel storage: 1 main tank, 15,000 L
- Natural gas: 1 gas supply line, 250 m<sup>3</sup>/h
- External material handling equipment: 3 forklifts (4, 7, and 12 tons)

## INDOOR TEST AREA

- Available test area: 1 platform measuring 81 m<sup>2</sup>, of which 52 m<sup>2</sup> is usable
- Power circuit connection points: 3 terminals 3 x 2 x 240 mm<sup>2</sup>/phase
- Exhaust circuit connection points: 6 mufflers
- Fuel circuit connection points: 3 supply/return terminals and 1 500-liter daily fuel tank
- Material handling equipment: 2 12.5-ton overhead cranes

## TEST CONTROL ROOM

- Equipment for measuring the electrical performance of generator set (P, 3U, 3I, Hz) : 1 DEWETRON data acquisition system (max. sampling rate 200 kHz/s), capable of measuring multiple sources simultaneously by adding additional cards
- Equipment for measuring various parameters (temperature, pressure, etc.) : 13 PT100 sensors, 5 type T thermocouples, 2 type K thermocouples, 2 4-20 mA pressure sensors, 2 0-30 V inputs, 6 4-20 mA inputs (the number of sensors on the measurement input can be increased)



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# NTF / NAVI-TRADE FORWARDERS

*NTF (Navi-Trade Forwarders) is an independent French freight forwarder with more than 40 years of expertise in international transport and logistics, specialized in the handling and coordination of sensitive cargo, including IMDG-classified and regulated goods.*

*Referenced on the NATO Support and Procurement Agency platform and certified as an Authorized Economic Operator Full Security & Safety (AEO Full S&S), NTF guarantees a high level of customs compliance, cargo security, and end-to-end supply chain control.*



## END-TO-END FREIGHT FORWARDING & PROJECT LOGISTICS MANAGEMENT

NTF provides **integrated freight forwarding** and **project logistics management** for complex industrial shipments. We design and implement **tailored transport solutions** adapted to cargo specifications, regulatory constraints, lead times and operational requirements, for both **import and export** flows.

NTF delivers a **fully integrated end-to-end logistics solution** ensuring complete management of international shipments from **origin to final destination**.

Our scope of services includes :

- **Transport engineering and routing optimization** (multimodal : ocean, road, air, inland waterways)
- **Carrier sourcing and procurement** (shipping lines, airlines, specialized operators)
- **Coordination of pre-carriage and inland transportation** from production site to port, airport, or final destination
- **Customs clearance and regulatory compliance**
- **Preparation and control of transport and regulatory documentation**
- **Operational coordination, shipment monitoring, and on-site supervision**

Acting as a **single point of contact**, NTF manages the **entire logistics chain**, ensuring a **high level of control, compliance, reliability, and operational efficiency** at every stage.



## DANGEROUS GOODS LOGISTICS, CUSTOMS & DELIVERY OPERATIONS

NTF manages the **secure transportation of goods, customs formalities**, and **final delivery** between production sites, international gateways, and consignee premises, for both **import and export operations**.

Our teams oversee all **logistics, operational, and administrative processes** to ensure **compliance, operational continuity, and full control** throughout the supply chain.

Our scope of services includes :

- **Coordination of multimodal transport** and terminal operations
- **Management of pickups, deliveries, and customs formalities**
- **Preparation and control of transport and regulatory documentation**
- **Handling of licenses, regulated cargo, and IMDG-classified shipments**
- **Operational tracking of shipments** and delivery supervision
- **Management of administrative and regulatory procedures** with authorities

NTF guarantees **reliable logistics flow management** from origin to final delivery, ensuring a high level of **control, compliance, and operational efficiency**.



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# OERLIKON

*Oerlikon is a global leader in AM, surface technologies, equipment and advanced materials, and an established, industry-certified, and OEM-qualified solution provider for the defense industry. With a unique portfolio spanning surface engineering, high-performance materials, coating equipment and components, we make products better by enhancing performance, efficiency and sustainability.*



## HEAT EXCHANGERS, COLD PLATES AND RF COMPONENTS IN ADDITIVE MANUFACTURING



Our heat exchangers and cold plates are engineered for advanced thermal management in weapons and mission systems. Additive Manufacturing enables complex, optimized internal geometries that increase heat transfer, lower pressure drop, enhance durability, and reduce costs. Additively manufactured waveguides, antennas, and housings integrate features that improve signal integrity, reduce part count, and support compact, lightweight, high-performance RF designs.



## COATINGS FOR HIGH-VOLUME COMPONENTS AND EXTENDED LIFE



Carbon-based coatings play a key role in the production of high-volume components such as cartridges. They prevent material adhesion to tools and reduce friction, enabling smooth, reliable forming processes, and flawless surface quality. Our global network offers all major thermal spray technologies, including High Velocity Oxy-Fuel (HVOF), Atmospheric Plasma Spray (APS), Electric Wire Arc, Combustion Powder, Combustion Wire, and Vacuum Plasma Spray.



## THERMAL SPRAY AND PVD EQUIPMENT



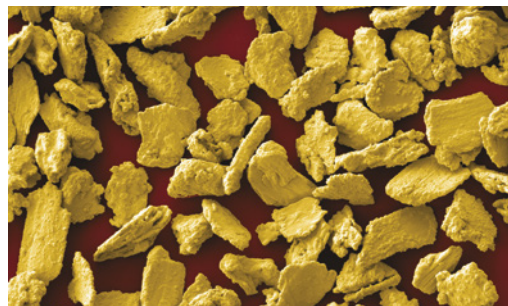
For defense organizations managing high-volume production, we offer turnkey equipment and complete production lines. Advanced thermal spray equipment enables precise application of protective coatings, shielding components from extreme wear, heat, and corrosion. For larger volumes or serial production, Oerlikon Metco offers scalable systems that deliver consistent quality and high throughput for defense applications.



## COMPOSITE POWDERS FOR EMI/RFI SHIELDING



For protection of sensitive defense components and systems against Electromagnetic (EMI) and Radio Frequency Interference (RFI), we manufacture advanced EMI/RFI shielding composite powders, engineered to ensure signal integrity and operational reliability in high-performance environments.



# oerlikon



# PANOPTÈS

*Traceability, RFID, IoT and connectivity expertise are at the core of Panoptès' business.*

*Panoptès is a French technology player specializing in the capture and use of field data for supply chain, industry and critical operations. The Panoptès Group designs software platforms and connected solutions combining RFID, IoT, mobility and artificial intelligence to transform every physical event into actionable data.*

*Panoptès offers an integrated approach combining software development, systems integration and field equipment, backed by more than 30 years of expertise in the traceability of equipment, products and goods flows through large-scale national deployments for major players in defence and security, industry, energy, aerospace, transport and logistics.*

*Its solutions help optimize flows, automate operations and strengthen real-time visibility of assets throughout all their movements.*

## ATHOS MRO



**Athos MRO** is Panoptès' software platform for maintenance and lifecycle management of critical assets. Compliant with ATA Spec 2000 and NATO requirements, it ensures asset traceability, configuration control, maintenance tracking and logistics management.

By integrating RFID, IoT and secure mobility, it automates field data capture, improves operational availability and supports compliance in aerospace, defence and industry.



## KLIK



**KLIK** is Panoptès' RFID solution dedicated to industry and asset management. Instant inventories, flow tracking across factories and warehouses, and real-time stock reconciliation without any break in traceability.

Natively connected to Moov&Track, **KLIK** turns every read point into actionable data. Fast to deploy, it adapts to the most demanding operational constraints.



## MOOV&TRACK



**Moov&Track** is Panoptès' sovereign data hub: a central engine that aggregates, orchestrates and delivers traceability data from all sources — RFID, AutoID, geolocation, IoT and third-party solutions.

Multi-site, real-time, and hosted in France, it is the technical foundation for **KLIK** and **ATHOS**. It integrates seamlessly with Panoptès solutions as well as with the full range of identification and mobility systems available on the market.



# SELECTARC

*In the defense sector, industrial sovereignty is a major strategic challenge. **SELECTARC**, the French manufacturer of **welding and brazing filler metals**, brings its expertise to the most demanding applications. We support ground, naval and aerospace defense with reliable solutions, consistent quality, a controlled supply chain, the backing of our R&D laboratory and ISO 9001 / ISO 19443 certifications.*



SELECTARC - Grandvillars' plant (France)

## COATED ELECTRODES



Developed for manual arc welding, **SELECTARC's** coated electrodes ensure **reliable and consistent performance**, both in **assembly, maintenance & repair**.

Our wide range covers rutile, basic, cellulose and specific electrodes in a wide variety of alloys.

They offer **arc stability, controlled implementation and regular cord quality**.

We also develop **custom coatings for specific applications** in our **R&D laboratory** and conduct **tests and performance measurements**.



SELECTARC - Coated Electrodes

## TIG, MIG/MAG WELDING WIRES



Designed for the most demanding applications, **SELECTARC's** **TIG** rods and **MIG/MAG** wires processes combine industrial and metallurgical expertises :

- For **TIG welding** : our filler metals offer **excellent surface quality** thanks to our wire cleaning system. The range covers a broad selection of alloys, orbital TIG, maintenance, rebuilding and micro-laser wires starting from 0.2 mm for high-precision welding
- For **MIG/MAG welding** : consistent diameter, precise winding and smooth feeding ensure arc stability and **long-lasting performance**.



SELECTARC - TIG / MIG / MAG wires

## FLUX-CORED WIRES



**SELECTARC's** flux cored wires are a powerful solution for **increasing productivity** while ensuring **constant assembly quality**.

Our range includes tubular and pinched wires, with gas shielded or open arc, dedicated to the assembly of non-alloy or low-alloy steels as well as for hardfacing.

Available in a **wide selection of alloys**, they offer arc stability, excellent current transfer, high welding speed and low diffusible hydrogen content. Depending on the references, they also allow welding in all positions and **high mechanical performance**.



SELECTARC - FCW

## LOCKING WIRES



**SELECTARC's** locking wires are designed for **mechanical braking** operations and securing threaded assemblies subjected to vibrations, shocks or heavy loads.

Used on screws, nuts, bolts or sensitive equipment, they ensure **reliable and long-lasting support**.

Developed with recognized **metallurgical expertise**, they offer excellent implementation aptitude, resistance adapted to demanding environments and high quality consistency.

A **trusted solution for critical applications** in the most demanding sectors like aerospace.



SELECTARC - Locking wires



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*SNI specializes in cable and wire harness assembly for small and medium production runs.*

*With 28 experts, it delivers strong expertise in connector integration and complex assemblies.*

*IPC-A-620 compliant, it ensures quality and traceability while supporting clients from prototyping to production.*



## CABLE ASSEMBLY



SNI specializes in the manufacturing of cables and wire harnesses for small and medium production runs, delivering reliable and high-quality solutions for demanding industries.

With over 20 years of experience and a team of 28 skilled professionals, the company has developed strong expertise in the integration of a wide variety of connector systems, including Amphenol, Stäubli, TE Connectivity, and Deutsch.

From standard cables to highly complex harnesses and wiring assemblies, SNI adapts its production to the specific technical requirements of each customer.

All manufacturing is carried out in-house at the Grenoble facility, ensuring complete control over quality, lead times, and traceability.

Each assembly is individually tested in compliance with IPC-A-620 standards. SNI supports customers from prototype development to small and medium series production across sectors such as defense, medical, and rail.



## INTEGRATION & ASSEMBLY



In addition to cable and wire harness manufacturing, SNI provides complete integration services for electronic and electromechanical systems.

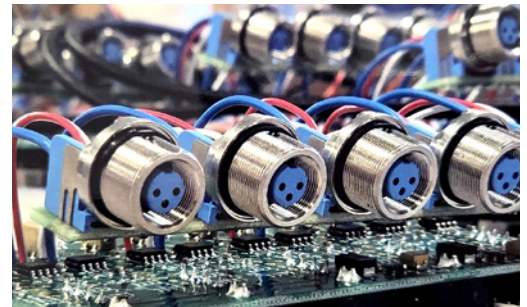
The company supports customers throughout the entire project lifecycle, from prototype design and industrialization to small and medium series production.

Thanks to its expertise in wiring, connectors, assembly, and testing, SNI delivers fully integrated and ready-to-use solutions tailored to demanding applications.

All operations are performed internally at the Grenoble production site, allowing strict quality control, full traceability, and excellent responsiveness.

Working closely with its customers, SNI adapts to specific technical constraints and production requirements while ensuring high reliability and consistent performance.

Since 2005, SNI has been serving strategic industries such as defense, medical, and rail, where precision, durability, and compliance with strict standards are essential.



# SOFRAME

*Soframe develops, manufactures, and supports **high-performance tactical mobility and logistics platforms for global defense and security applications**. Building on a legacy of innovation (formerly Lohr Défense), Soframe combines French engineering excellence with strategic international partnerships to deliver durable, reliable solutions tailored to the most demanding operational environments*

*Within the **Lohr Group**, we share cross-business, state-of-the-art, production facility.*

*To support your manufacturing projects we offer this industrial capabilities enabling :*

- *specific needs adress with controlled quality and cost efficiency*
- *scalable capacity for quick ramp-up and short lead-times*

## METAL PROCESSING



### Laser Cutting:

6x CO2 and 1x fiber CNC machine, up to 12kW, up to 3.2m x 12m

### Oxy-Cutting:

1x CNC oxy-cutting table with 3 torches, 3m x 9m

### Sheet Metal Bending:

5x CNC press brakes, up to 1300ton capacity, up to 10.4m length

1x stamping line (400T capacity, up to 4.5m formats)

### Tube Bending:

2x tube bending CNC machines, diameters 6-50mm, up to 4m length



## STRUCTURAL WELDING



### Welding Capabilities:

100 MIG/MAG welding generators and 15 TIG welding generators

11 welding robots with length up to 18m, weight up to 10 tons and thickness range from 2mm to 50mm

### NDT methods:

Visual inspection / Dye penetrant / Magnetic particle inspection / UT

### Certifications:

NF EN ISO 3834-2 / NF EN 15085-2 level CL1 / DIN 2303 level Q3



## HEAVY COMPONENTS PAINTING



### Equipments:

Abrasive surface preparation and painting booths (max 23m length)

Drying ovens (maximum 80°C temperature)

1 overhead conveyor (3-ton capacity, 14m long, 2.6m wide, 2.7m high)

### Applied products:

Liquid paint (solvent and water-based)

PU, Anti-gravel and Anti-slip coatings

Anti-corrosion wax protection

Welding joints sealant

Adhesive transfer marking



## SPECIFIC ASSEMBLY



### Assembly Lines:

Organized by product sectors with lean manufacturing principles

Digital production management (Manufacturing Execution System)

### Capabilities include:

Mechanical/Hydraulic/Electrical/Pneumatic assembly

Gluing operations



# SOGECLAIR

*SOGECLAIR COMPOSITE & ADDITIVE MANUFACTURING delivers advanced industrial solutions including thermoplastic composites, additive manufacturing and thermofluidic testing for demanding sectors such as aerospace and defense. From engineering and innovative process development to qualification and production, our expertise enables lightweight, high-performance and reliable solutions tailored to the most challenging applications.*



## SOGECLAIR ADDITIVE MANUFACTURING EXPERTISE



Since 2015, SOGECLAIR's Additive Manufacturing department has specialized in the design and production of metal 3D-printed parts using French-made machines. Our technology enables lighter, more compact, and higher-performance solutions while meeting demanding prototyping, series and production lead times. We can develop and/or manufacture innovative structures, thermal and hydraulic solutions, electronic packaging, and components such as pilot grips, silencers, heat exchangers, actuators, and cases with integrated cooling for aerospace, defense, industrial and energie applications.



## THERMOFLUIDIC TESTING PLATFORM



Since July 2024, SOGECLAIR has reinforced its industrial capabilities with an in-house thermofluidic test bench dedicated to thermofluidic equipment. From design and manufacturing to qualification testing, all services are provided on a single site. Performance, pressure and leak testing, multi-fluid compatibility, high-precision measurements, and operation at temperatures up to 450°C ensure reliable validation under the most demanding conditions.



## ADVANCED THERMOPLASTIC COMPOSITE SOLUTIONS FOR AEROSPACE



We specialize in high-value thermoplastic composite solutions for demanding industries such as aerospace and are a key supplier of fuel access doors for major aircraft programs. We develop innovative part concepts as well as ensure advanced automated manufacturing processes, including stamping, waterjet cutting, and induction welding, to deliver lightweight, high-performance structures optimized for serial production. Our expertise covers engineering, industrialization, process qualification, and certification to FAA and EASA standards, supporting greater efficiency, reliability, and sustainability.



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# TOUTENKAMION GROUP

*Toutenkamion Group is a French industrial group specialising in mobile mission-critical solutions, with annual revenues of €50 million and a workforce of more than 400 employees. The Group is recognised as a European leader in the design, manufacturing, and transformation of truck cabs, mobile units, and shelters for defense and other high-demand operational environments.*

*Building on strong engineering expertise and a wide range of integrated technologies, we develop high-value solutions tailored to demanding operational and defense applications, positioning Toutenkamion Group as a trusted partner for complex mobility and embedded systems projects.*

*Supporting customers at every stage of the project lifecycle, Toutenkamion Group provides end-to-end expertise, from system design and qualification to in-service support, MRO services, and spare parts management.*

## DEFENSE COATINGS



Capability to prepare large-scale components up to 18 metres in length using mechanical or chemical surface treatment processes, followed by the application of NORMDEF 0003-qualified defense coatings validated by major defense system manufacturers and organizations, including Thales, Safran, MBDA, Arquus, Renault Trucks Defence Division, and the French Defence Procurement Agency (DGA).

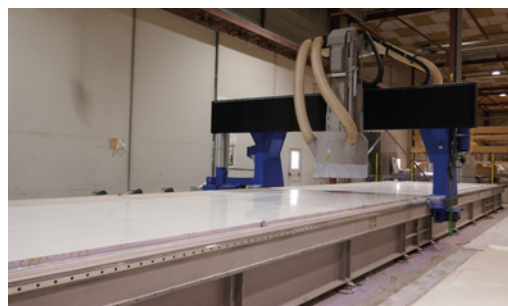


## LARGE-SCALE COMPONENTS UP TO 15 METERS



Manufacturing of complex multi-material subassemblies and complete systems combining aluminum, composites, steel, and stainless steel through bonding, welding, machining, and mechanical assembly processes.

The value of this expertise lies in optimizing material selection against mechanical constraints and environmental performance requirements, including weight reduction, acoustic performance, and thermal efficiency. Our manufacturing processes are designed to maximize reliability and long-term durability.



## WELDING EXPERTISE



Manufacturing of complex multi-material assemblies and subassemblies (aluminum, steel, and stainless steel) through continuous welding performed by externally certified welders and supported by our in-house welding engineering experts.

Mastery of this capability ensures both technical and regulatory compliance of our systems, particularly regarding:

- > Personnel and asset protection through internal and external protective structures
- > Technological protection with high EMC performance requirements



## ROBOTIC WELDING CAPABILITIES



Two robotic welding systems dedicated to the welding of complex subassemblies such as shelters up to 40 feet in length.

High-performance capabilities including: high welding speeds, thin sections welding, precision welding, excellent weld seam consistency.

From prototyping to full-scale production, our processes support applications involving steel, stainless steel, and aluminum.

The qualification of our welders, certified welding procedures, and periodic verification of our equipment ensure the highest standards of manufacturing quality.



*Quand l'excellence  
devient **VITALE***



**Groupement des industries  
françaises de défense et de sécurité  
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