INNOVATION, PERFORMANCE, EXCELLENCE

DESIGN, INDUSTRIALIZATION, MANUFACTURING

Site of La Seyne-sur-Mer (South of France)

CNIM
Systèmes Industriels

High-performance solutions meeting the needs of **demanding customers.**

CNIM Systèmes Industriels designs and manufactures high added value, large and high precision systems and equipment in La Seyne-sur-Mer in the South of France. Since 2022, CSI is a REEL group company.

- **BE** A LONG-TERM PARTNER
- **EMBODY** INNOVATION AND PIONEERING SPIRIT
- **RECRUIT** PASSIONATE WOMEN AND MEN
- **INTEGRATE** ALL STAGES OF A PROJECT
- **OWN** FIRST-CLASS INDUSTRIAL MEANS

2022 KEY FIGURES

CNIM Systèmes Industriels

74 million euros IN TURNOVER

400 EMPLOYEES

> 60 000 sqm OF WORKSHOPS

CNIM Systèmes Industriels, working in leading sectors

DEFENSE

Deterrence
Naval
Land

NUCLEAR

Civil
Military
Research reactors

BIG SCIENCE

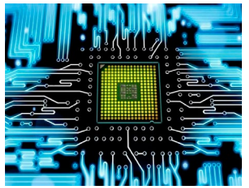
Fusion
High energy physics
Science of matter

SPACE

Large revolving parts
Pressure tanks
Mechanical structures

NEW ENERGIES

Hydrogen



SEMICONDUCTOR MACHINE

Mechanical structures

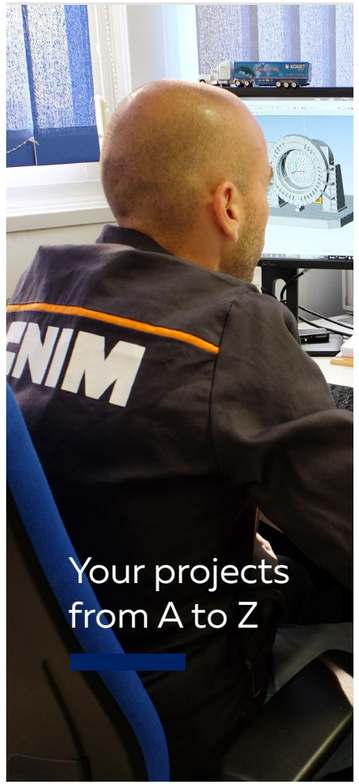
160 YEARS OF INDUSTRIAL ADVENTURE

CNIM Systèmes Industriels is an independent company from CNIM Group's company which history dates back to 1856 with the shipyards at La Seyne-sur-Mer.

CNIM Systèmes Industriels is a French equipment manufacturer and industrial contractor operating on a worldwide basis.

Servicing large private and public companies, local communities and states, CNIM Systèmes Industriels operates in the Environment, Energy, Defense and High Technology sectors.

Technological innovation is at the heart of the equipment and services designed and produced. They contribute to the production of cleaner and more competitive energy, to the reduction of the environmental impact of industrial activities, to the security of sensitive installations and infrastructures, to the protection of people and states.

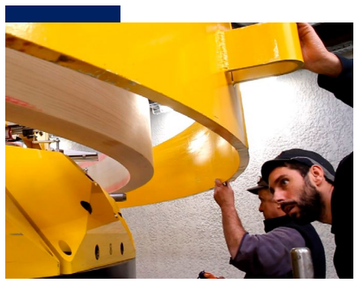


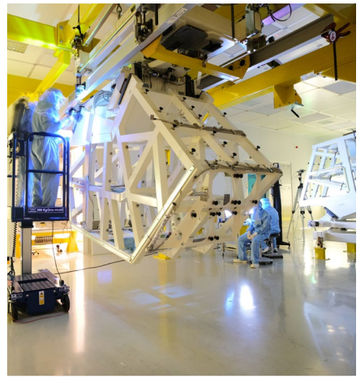
Delivering across the entire value chain

CNIM Systèmes Industriels (CSI) is involved in all stages of your project. Our Engineering office, with its multidisciplinary experts, associated with the Methods and Manufacturing departments allows us to support you from the start of your project to its testing and installation phases on site.

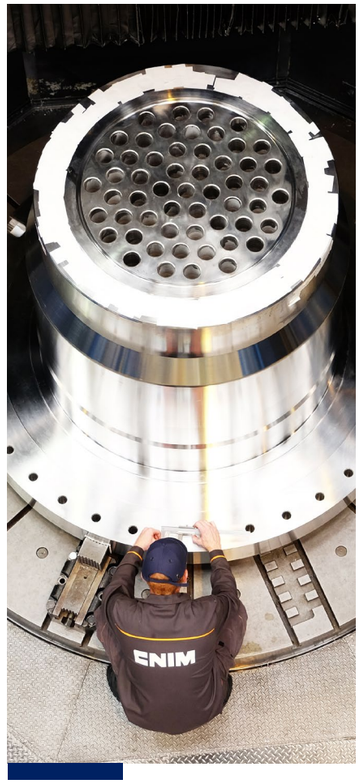
Our industrial tool, from manufacturing to controls, is adapted to large size and high precision components.

- LARGE DIMENSION MANUFACTURING
- ELECTRON BEAM WELDING
- FLOW FORMING
- COMPOSITE & POLYURETHANE
- METROLOGY
- TEST BENCHES
- ISO 6 CLEAN ROOMS
- TREATMENTS





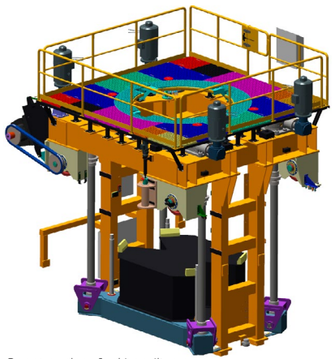
The most complex and demanding assemblies are carried out in an ISO 6 clean room.



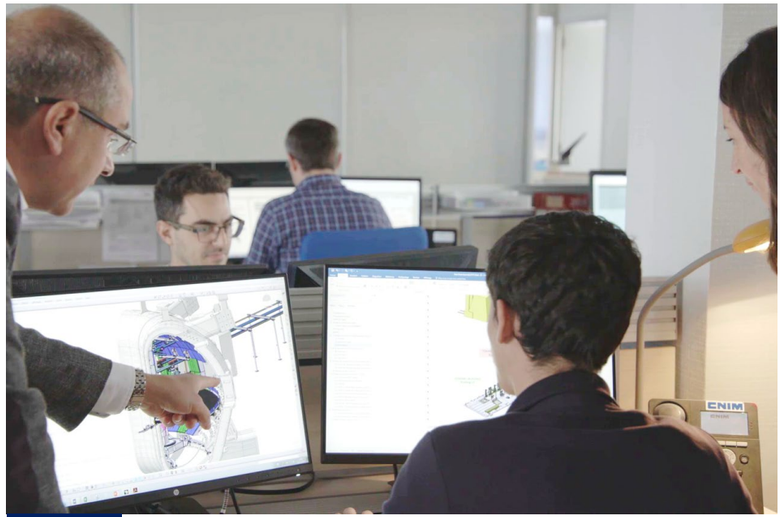
Design and **industrialization**

Support you from the start

One of CSI's major assets is its ability to design, industrialize and manufacture its clients' projects. Each project has a dedicated team.
CSI's industrial experience and the use of cutting-edge design tools allow the creation of systems and equipment with high added value while respecting quality, costs and deadlines.



Spent nuclear fuel handling system for deep storage.



MATRIX ORGANIZATION

To efficiently respond to customer requests and benefit from the feedback of its engineers, our design office is organized in a matrix.

SPECIALIZED ENGINEERING

With more than 80% of engineers, these teams work on product family and addresses CSI's business sectors. They also carry out R&D on new products, materials and processes.

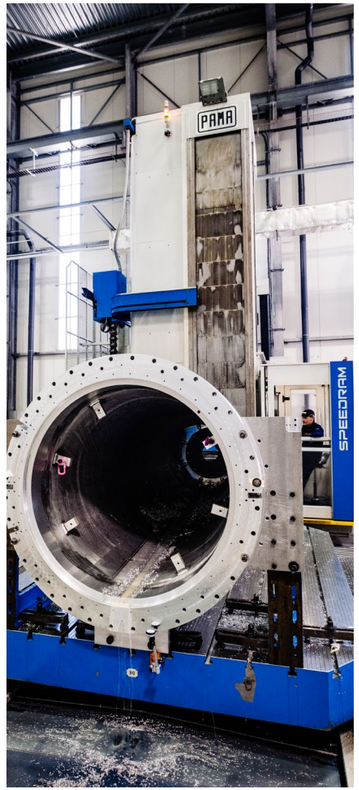
CROSS-FUNCTIONAL CLUSTERS

These teams of specialists (calculations, laboratory tests, systems and control), make their expertise available to the project teams as needed.

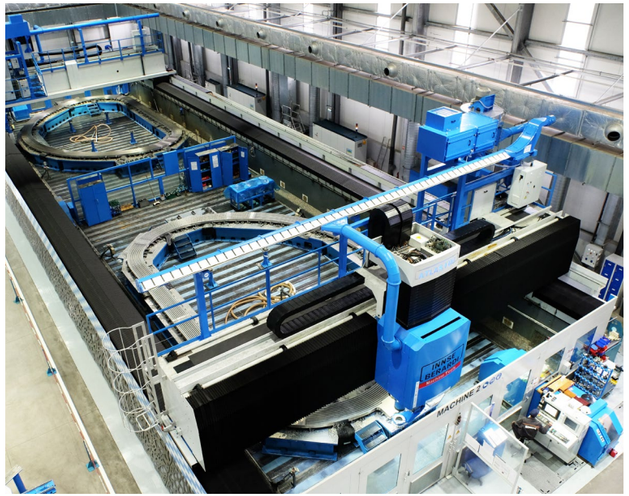
The virtual reality room helps optimize product design by bringing together multidisciplinary experts and several CSI departments.

Large size manufacturing

CNIM Systèmes Industriels' workshops in La Seyne-sur-Mer are equipped with cutting-edge machines, including several vertical and one horizontal lathes, three boring machines for machining parts with complex geometry, a double gantry milling machine and three high speed machining centers allowing the machining of parts combining large dimensions and high levels of precision. The machined parts measure from 1 to 15 meters.



Large milling machine with 2 columns (above). Large boring machine (right).



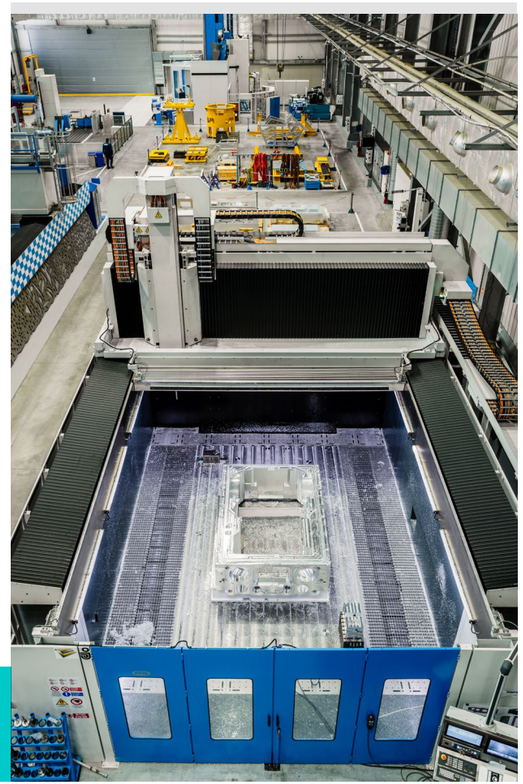
Double gantryl milling machine (X 30000, Y 9000, Z 1250 mm, maximum load: 5 tons / sqm).

Horizontal lathe (L 15000 mm, maximum load 40 tons).

HIGH SPEED MACHINING

Produce small and medium series for leading industrial companies

- Tree machining centers
- 15000 to 24000 RPM



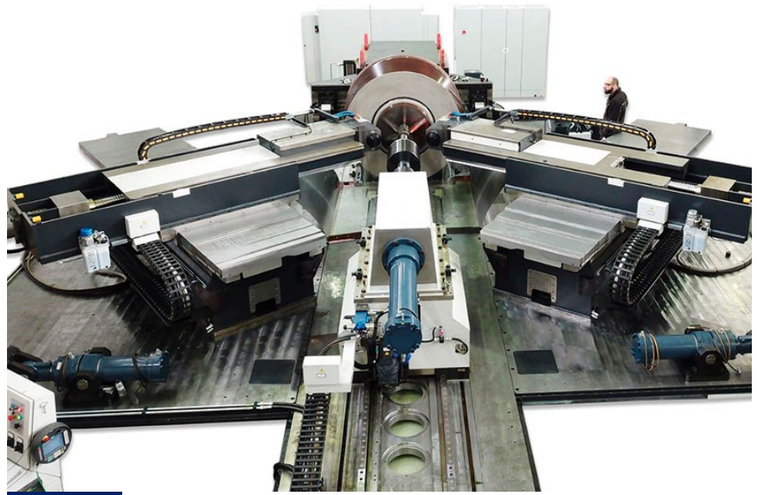
Manufacturing
Innovative Processes

CSI has the most powerful and one of the largest flow forming machines in Europe.

Large size
Flow forming

Adapted by CNIM Systèmes Industriels to large-scale revolution parts, flow forming saves both time and material.

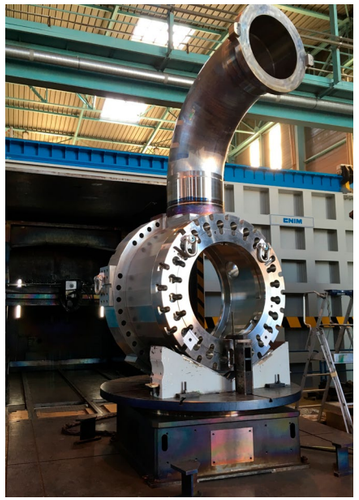
In stainless steel, aluminum, steel or other alloy, the parts are produced in series, with high levels of both quality and precision.



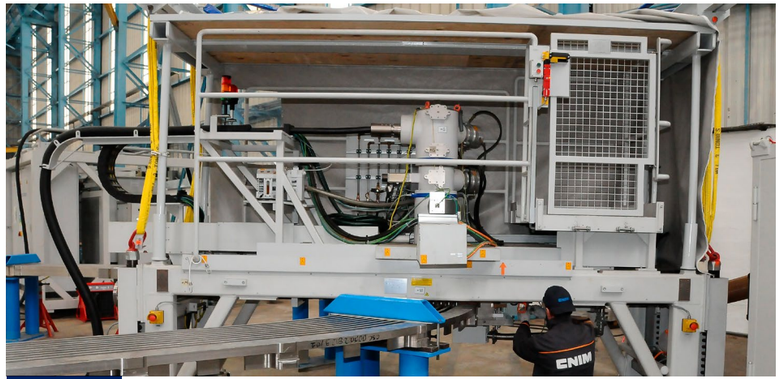
The cylinders generating a thrust of 30 tonnes give the machine its full power.

Electron beam welding
/ Multi-material
/ High thickness
/ Local vacuum

Since 1988, CNIM Systèmes Industriels has been performing electron beam welding on large parts thick from 1 to 125 mm.



Element of the Jules Horowitz reactor's core.



Local vacuum welding: perfect for very large parts.

Welding facilities
Volume: 230 m^3
Dimension: L 7400 x l 5500 x H 5050 mm
Capacity: 30 tons

WELDED MATERIALS

Welding of homogeneous materials

ALLOY STEELS, STAINLESS STEELS, REFRACTORY STEELS, ZIRCALOY

TITANIUM, TANTALUM, NIOBIUM, ZIRCONIUM

COPPER, MONEL, ALUMINUM

Welding of heterogeneous materials

STAINLESS STEEL WITH COPPER / MOLYBDENUM / NICKEL / NIOBIUM

ALUMINUM / COPPER

Manufacturing
Innovative Processes

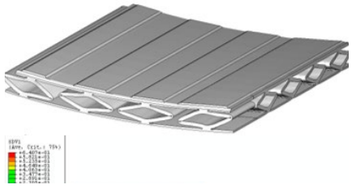
Designing and shaping of composite and polyurethane parts.

Robotic polyurethane spraying.

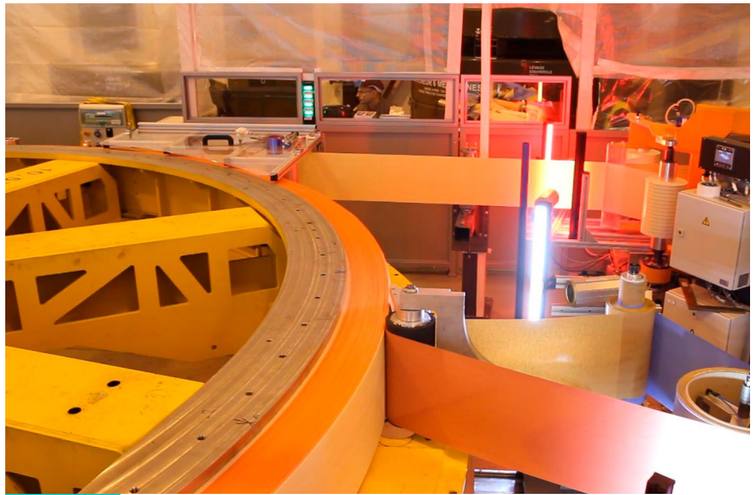
Polyurethane

/ Easy implementation
/ Extended lifespan in extreme environment or during heavy mechanical stress

Our suspension systems and airthight membranes meet the very high requirements of our customers: high tightness, resistance to the strongest earthquakes, permanent pressure, suspension, damping.



Part of the membrane sealing Chernobyl Safe Confinement.



Winding and bonding workshop of pultruded material.

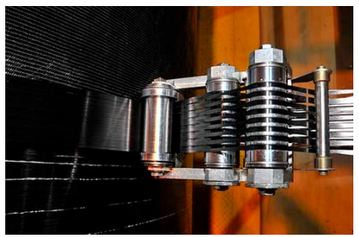
Composite

/ Corrosion resistance
/ Exceptional mechanical performances
/ Low maintenance cost in operational conditions
/ Lightness

CSI produces composite parts to achieve a significant reduction in weight and better resistance to corrosion. Composite solutions offer the best technical and economic compromise while offering high-level mechanical strength capabilities. Our manufacturing processes are automated.

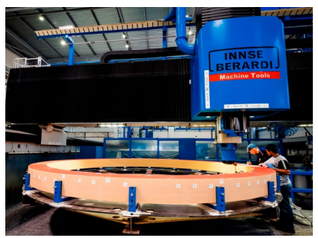
Composite technologies

- Winding of pultruded material
- Filament winding
- Infusion
- Pre-impregnation / autoclave
- Dry machining



Filament winding.

Dry machining of composite parts.



Qualification
Metrology

To guarantee the best quality, CNIM Industrial Systems' metrology means are entirely consistent with the production means: they are adapted to large size and high precision.

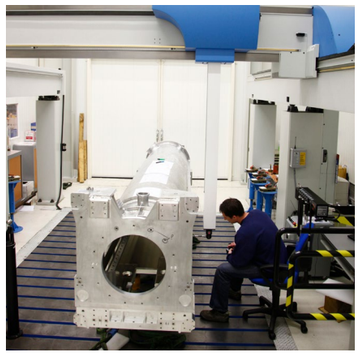
CERTIFICATIONS

Top level "three-dimensional measurements" experts

CNIM'S EXPERTS ARE CERTIFIED BY COFFMET* UP TO **COFFMET 3**, THE HIGHEST LEVEL.

**COFFMET : French Committee for Training in Three-dimensional Measurement, an independent body delivering internationally recognized certifications*

Check to the nearest tenth of a millimeter with the ZEISS MMZ-G machine. (X 4000 Y 8000 Z 2000 mm)



DELTA three-dimensional control machine.

More than 30 qualified experts for welding control

Our experts have high level COFREND* qualifications for non-destructive testing of welds.

/ Visual testing (VT), up to VT3, the highest level.
/ Penetrant testing (PT), up to PT3
/ Magnetoscopy Testing (MT)
/ Ultrasonic Testing (UT), including Phased Array et TOFD, up to UT3
/ Radiographic Testing (RT), up to RT3
/ Leak Testing (LT), including VP and GT, up to LT3

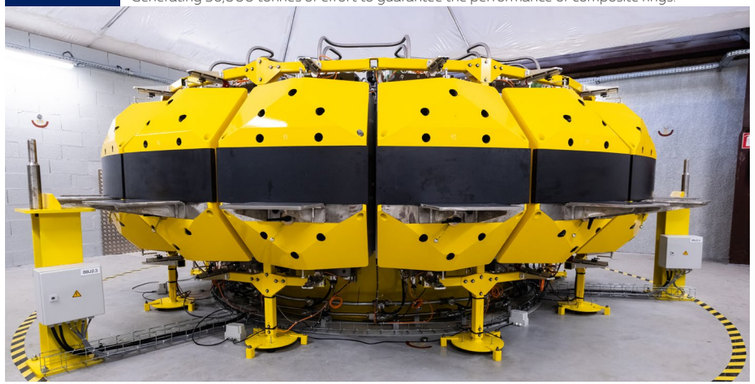
Qualification
Special test benches

For projects where the highest level of safety is required, in particular in the nuclear environment, CNIM Industrial Systems is developing specific test benches to guarantee that performances will be achieved under extreme conditions.

A test benche dedicated to the latest generation of aircraft engines.

Testing one of the tools for mounting components for the ITER fusion reactor.

Generating 36,000 tonnes of effort to guarantee the performance of composite rings.



Assembly and Integration

ISO 6 to ISO 8 large clean rooms

Manufacturing parts that meet the highest requirements of cleanliness: this is CNIM Systèmes Industriels' everyday challenge. Already possessing an ISO 6 clean room of 220 sqm since 2010, CSI built another clean room of 2500 sqm in La Seyne-sur-Mer for cleaning and assembling parts of which the highest level of cleanliness is required.

Two clean rooms adapted to the large size and high precision

ISO 6-8 clean room

DEDICATED TO CLEANING, ASSEMBLY, TESTING AND QUALIFICATION OF COMPLEX PARTS

SURFACE: 2500 sqm
- 1000 sqm FOR PARTICULATE CLEANING
- 1500 sqm FOR ASSEMBLY

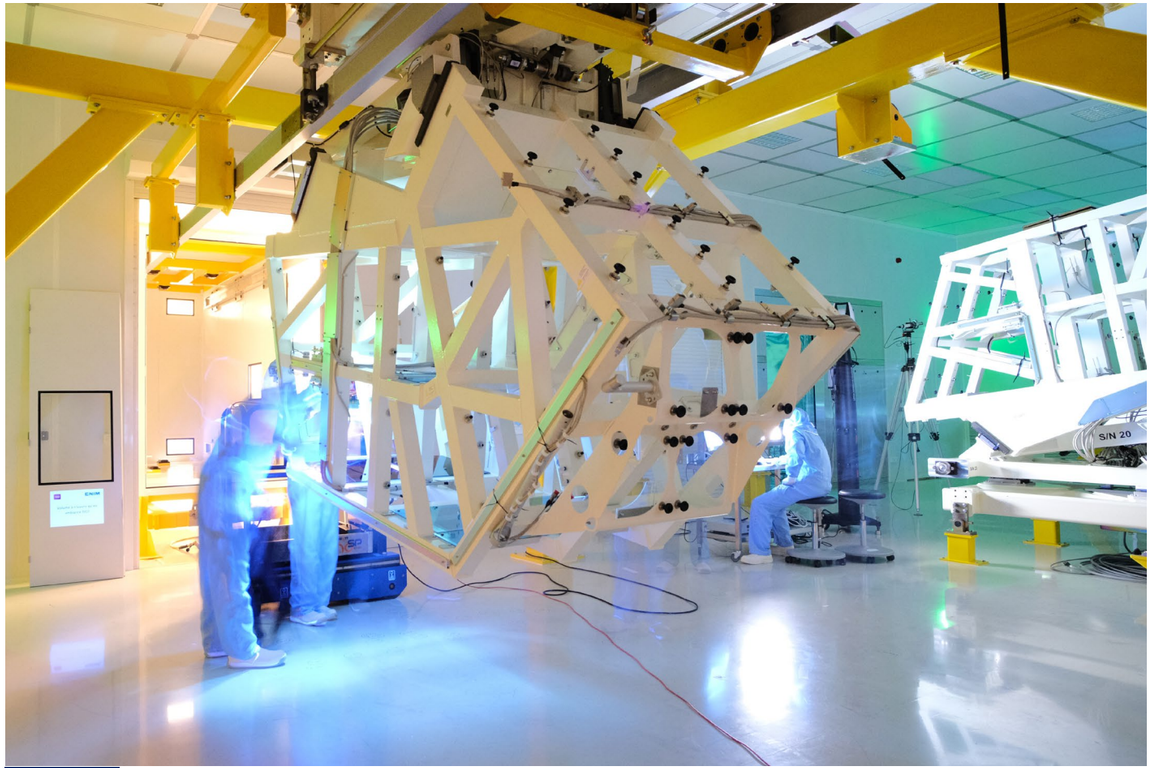
ISO 6-7 clean room

SURFACE: 220 sqm

HEIGHT: 4,5 m

GANTRY CAPACITY: 1,5 tons

New clean room in service since 2021



Assembly of the laser beam alignment systems of the MegaJoule Laser. A series production of 44 systems for the CEA since 2010.

Surface treatments and completion

Large capacity furnaces, sandblasting and painting facilities: CSI's industrial tool is suitable for manufacturing large parts up to their finalization stages to guarantee their performances over time and in the harshest environment.

Large ovens: up to 3,5 x 3,6 x 16 m³ of useful volume.

Autoclave oven for composite parts.

Cutting-edge industrial tool adapted to large size manufacturing

Photo credits : CNIM Systèmes Industriels, IStock Photo. September 2023

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