

INNOVATION, PERFORMANCE, EXCELLENCE



DESIGN, INDUSTRIALIZATION,  
MANUFACTURING

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

**ENI**

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.



- ▲ **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**

**CNIM Systèmes Industriels**

**1** CNIM GROUP'S COMPANY  
**100 million euros** IN TURNOVER  
**700** EMPLOYEES INCLUDING **200** ENGINEERS  
**> 60 000 sqm** OF WORKSHOPS  
**4 subsidiaries**  
 CNIM HONG KONG (SINCE 1985)  
 CNIM INDUSTRIAL SYSTEMS CHINA (SINCE 2005)  
 CNIM SINGAPORE (SINCE 2008)  
 CNIM AIR SPACE (SINCE 2019)

2019 KEY FIGURES



**CNIM Systèmes Industriels, working in leading sectors**



▲ **DEFENSE**

Air  
 Deterrence  
 Naval  
 Land



▲ **NUCLEAR**

Civil  
 Military  
 Research reactors



▲ **BIG SCIENCE**

Fusion  
 High energy physics  
 Science of matter



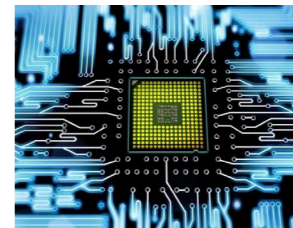
▲ **SPACE**

Large revolving parts  
 Pressure tanks  
 Mechanical structures



▲ **NEW ENERGIES**

Hydrogen



▲ **SEMICONDUCTOR MACHINE**

Mechanical structures

**160 YEARS OF INDUSTRIAL ADVENTURE**

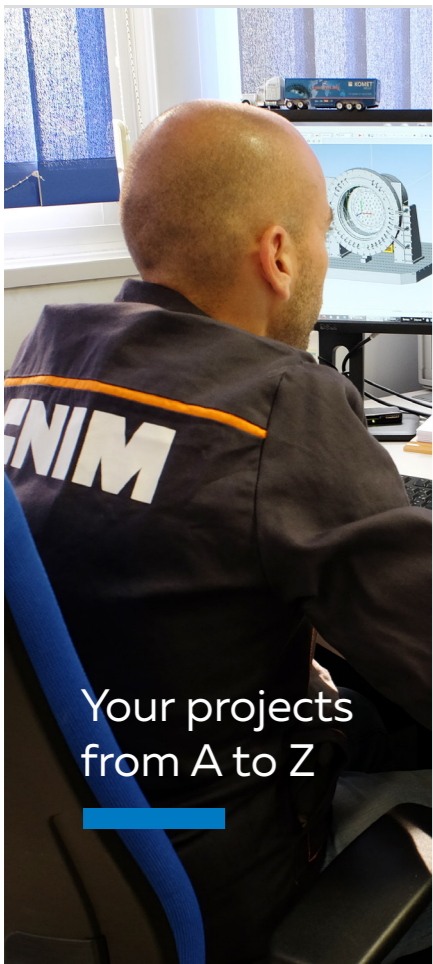
CNIM Systèmes Industriels is an independent company from CNIM Group's company which history dates back to 1856 with the shipyards at La Seyne-sur-Mer.



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.

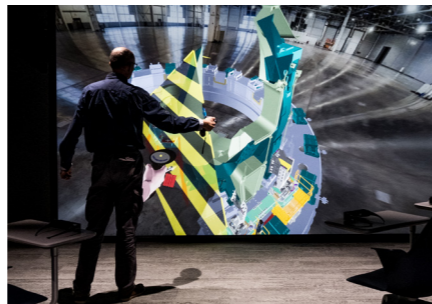
Technological innovation is at the heart of the equipment and services designed and produced. They contribute to the production of cleaner and more competitive energy, to the reduction of the environmental impact of industrial activities, to the security of sensitive installations and infrastructures,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



Your projects from A to Z

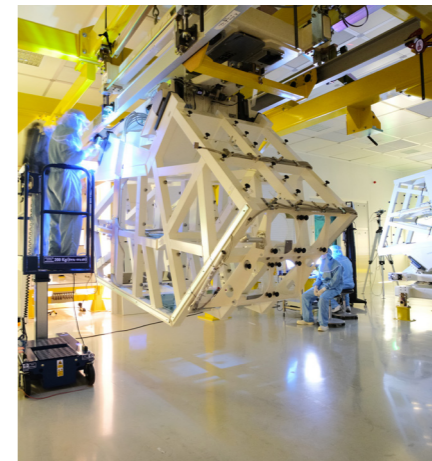
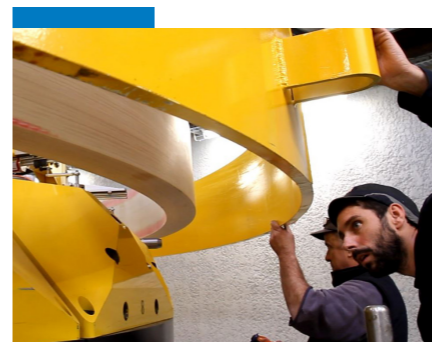
### Delivering across the entire value chain

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.

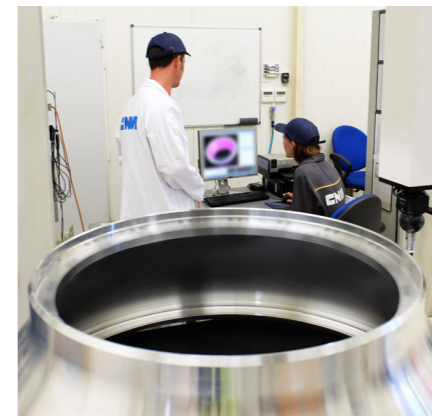


Our industrial tool, from manufacturing to controls, is adapted to large size and high precision components.

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



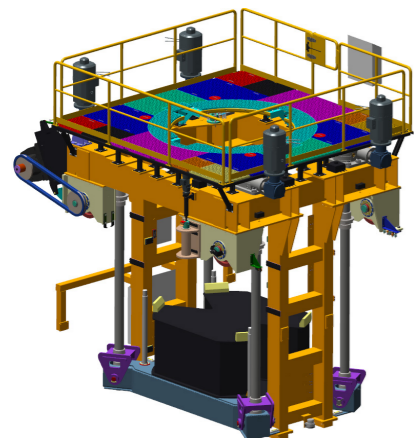
The most complex and demanding assemblies are carried out in an ISO 6 clean room.



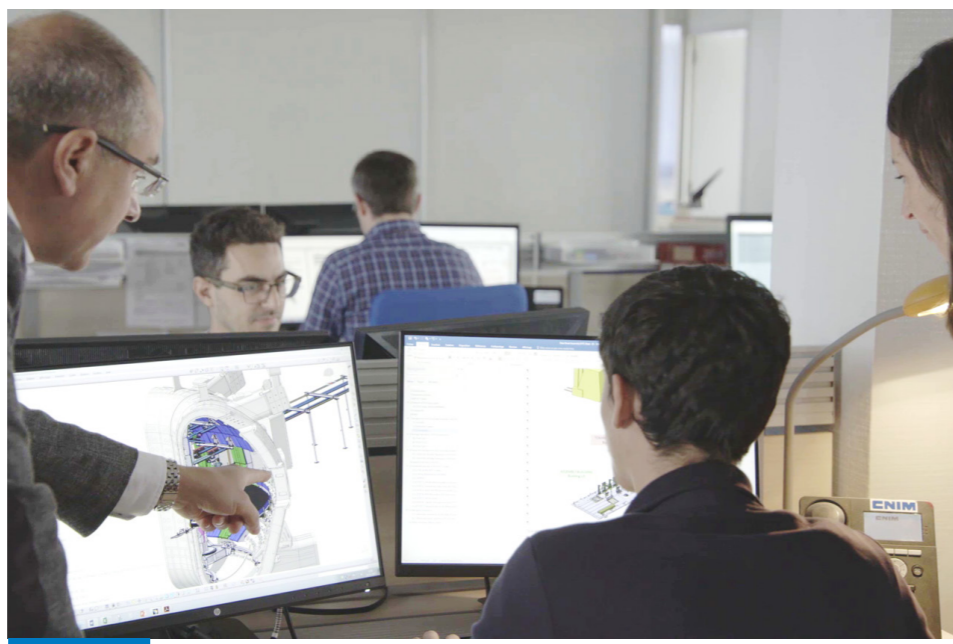
# Design and industrialization

## 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.



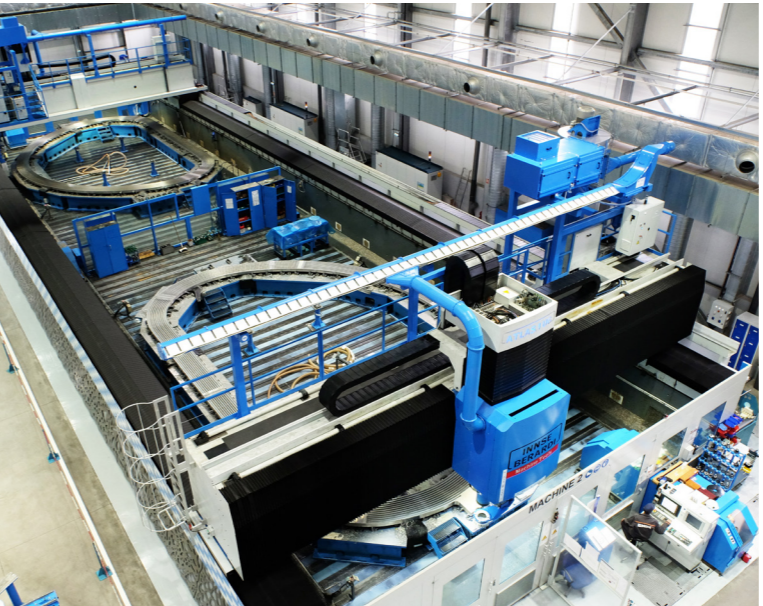
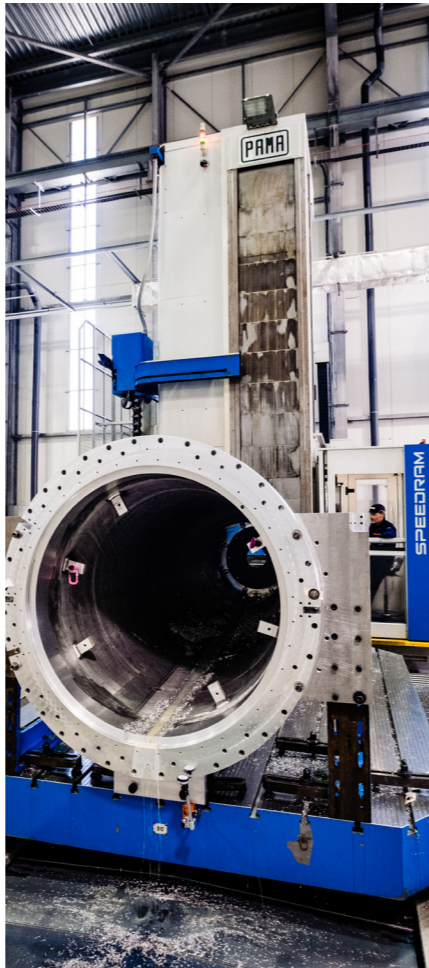
The virtual reality room helps optimize product design by bringing together multidisciplinary experts and several CSI departments.

# 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.



Brand new large boring machine (above). Large boring machine (right).



Double gantry 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

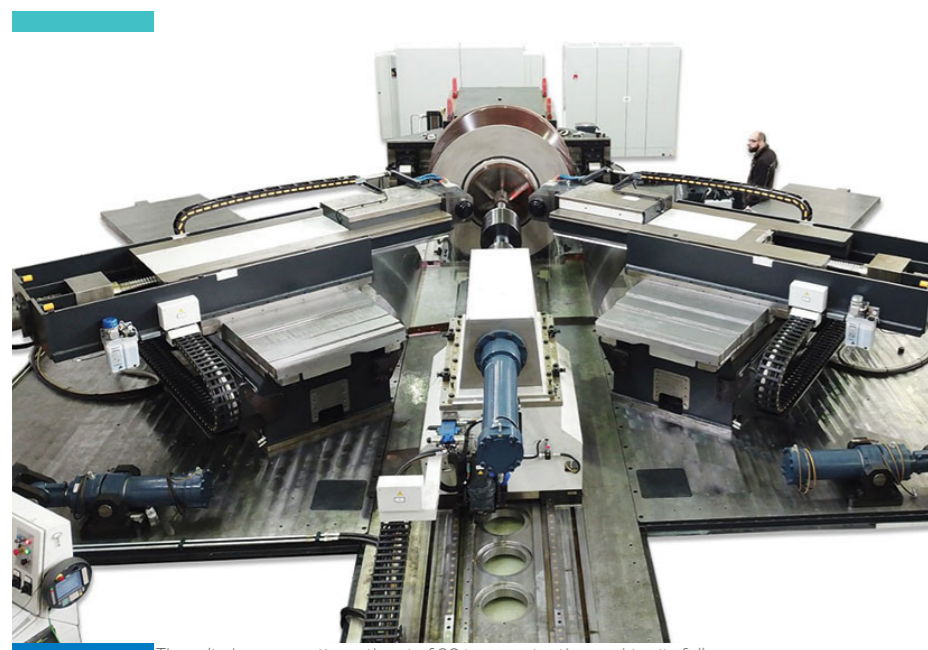
Produce small and medium series for leading industrial companies

- / Three machining centers
- / 15000 to 24000 RPM



# Manufacturing Innovative Processes

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



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

## 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.



## 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.



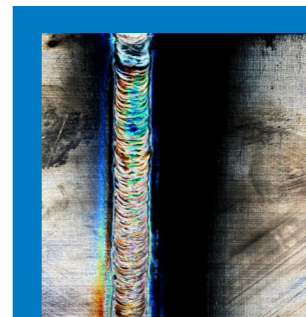
Element of the Jules Horowitz reactor's core.



Local vacuum welding: perfect for very large parts.

### Welding facilities

Volume: 230 m<sup>3</sup>  
 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.

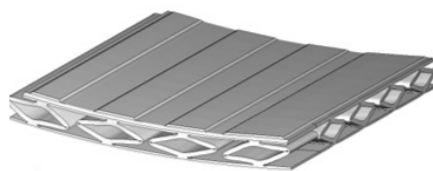


Robotic polyurethane spraying.

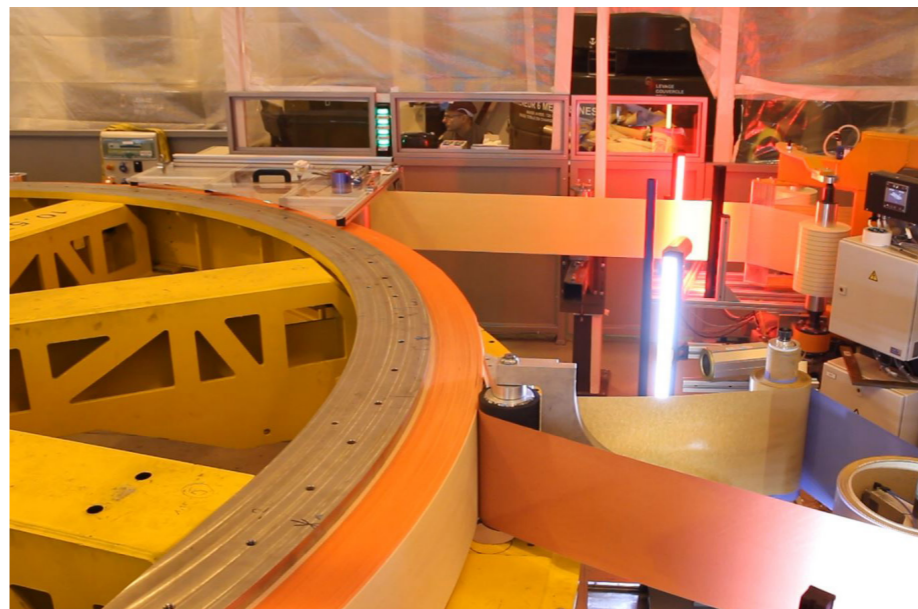
## Polyurethane

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

Our suspension systems and airtight 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

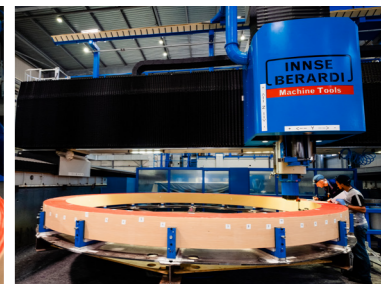
- WINDING OF PULTRUDED MATERIAL
- FILAMENT WINDING
- INFUSION
- PRE-IMPREGNATION / AUTOCLAVE
- DRY MACHINING



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.



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

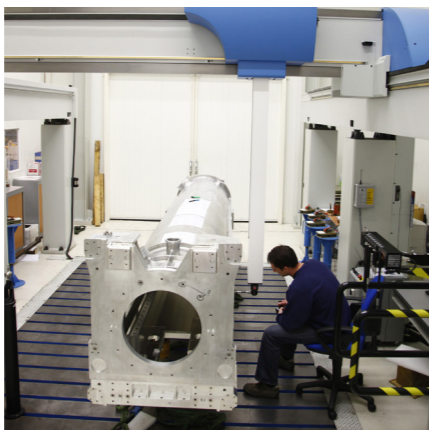


### Top level "three-dimensional measurements" experts

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

CERTIFICATIONS



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 bench 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

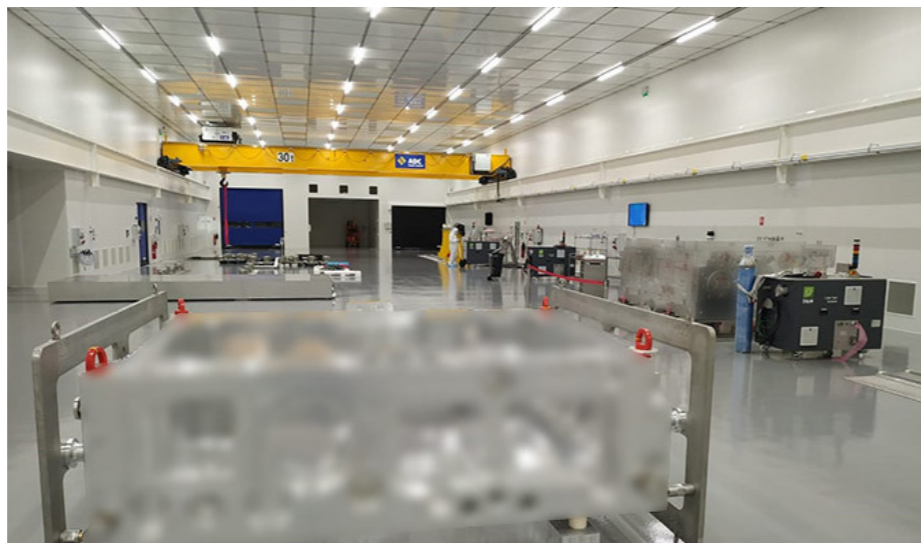
##### ISO 6-8 clean room

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

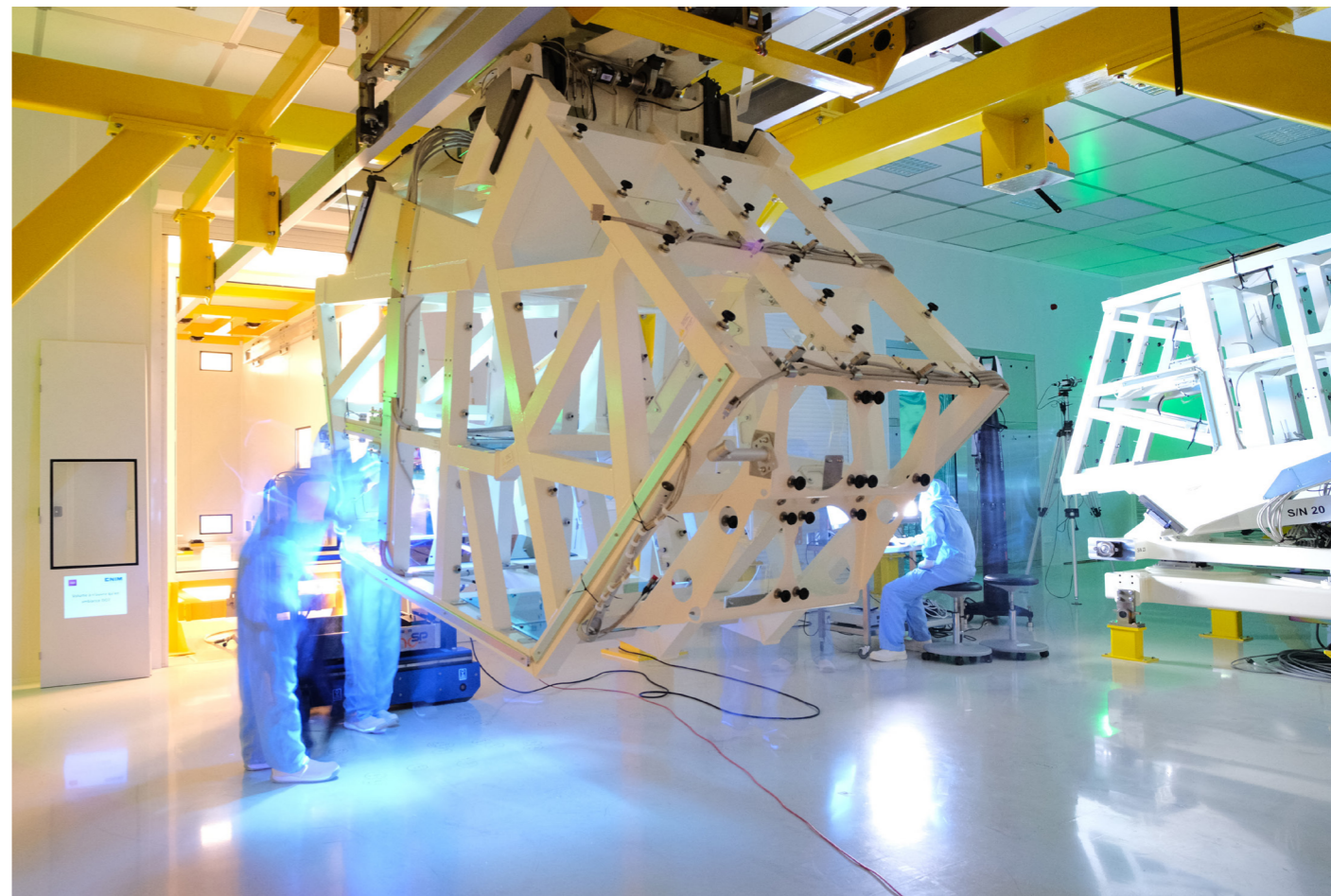
SURFACE: 2500 sqm  
- 1000 sqm FOR PARTICULATE CLEANING  
- 1500 sqm FOR ASSEMBLY

##### 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.



# CNIM Industrial Systems China : international synergies

In order to offer the best technical and economic equation, CNIM Systèmes Industriels works in synergy with its Chinese subsidiary.

Electromechanical systems, high-quality boilermaking, secure handling system: the activities of CNIM Industrial Systems China are complementary to its French counterpart.

- ▲ ISO 9001:2015
- ISO 14001:2015
- ISO 45001:2018



**ENIM CHINA**

**2005** CREATION

**100%** OWNED BY THE CNIM GROUP

**20,000sqm** WORKSHOPS

**150** EMPLOYEES

**30%** MULTIDISCIPLINARY ENGINEERS

**CHIFFRES CLÉS**

**Main offer**  
DESIGN AND MANUFACTURE OF ELECTROMECHANICAL HANDLING SOLUTIONS

**Sectors**  
AUTOMOTIVE, NUCLEAR, MEDICAL, ESCALATORS FOR INTENSIVE USE

Want to work with us?  
Contact us!  
[contact@cnim.com](mailto:contact@cnim.com)



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**CNIM**

Systèmes Industriels

**Headquarters**

Zone portuaire de Bregailon, CS 60208  
83507 La Seyne-sur-Mer Cedex, France  
[contact@cnim.com](mailto:contact@cnim.com)  
[www.cnim.com](http://www.cnim.com)