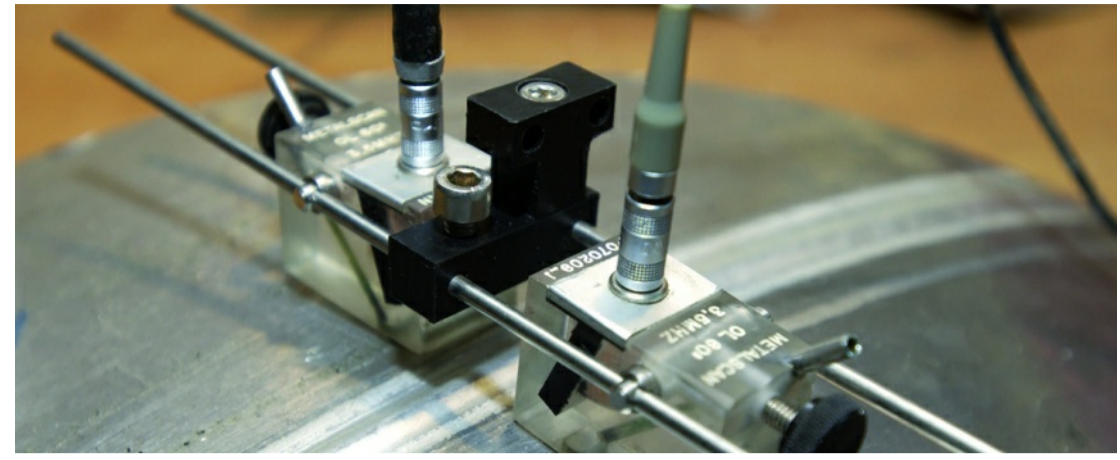


# EXPERTISE IN NON-DESTRUCTIVE TESTING (NDT)



**NDT, as a preventive measure, according to regulations or subsequent to a failure**

## Your expectations

You want to automate/robotize your production control, inspect your equipment or get an external opinion on a metal, composite or multi-material product and you need :

A solution to automate or robotise the “in line” testing on one or more stations of a production line

A solution to detect or characterise defects

An expert investigation or a confidential second opinion from a neutral organisation

To have standard tests carried out by certified technicians

To comply with standards and codes or update your compliance

## Our solutions

Cetim supports you on all or part of a global value chain, from the definition of functional and organic specifications to the ‘industrial’ control solution

Based on an analysis of your requirements, recommendations regarding the most appropriate testing method, from amongst a panel of conventional or innovative techniques (ultrasonic imaging, TOFD, ultrasonic phased array testing, active infrared thermography and guided waves...).

Carrying out feasibility tests using digital simulation or mock-ups, design of testing equipment, probes, supports, optimisation of testing parameters via simulation or on standard parts

Preparation of specifications for the automated testing system, identification of suppliers, monitoring of performance, acceptance, support and training for your staff

Design and optimisation of tests using simulation software

Performance of tests by COFREND-certified technicians (CIFM and COSAC) in methods such as penetrant testing, magnetic particle testing, ultrasonic testing, Eddy current testing, acoustic emission testing and X-ray testing.

### ZOOM ON HYDROGEN

[HyMEET](#), our technological platform dedicated to H<sub>2</sub>, provides mechanical engineering with resources and skills needed to master low-carbon hydrogen production, distribution, storage and utilization technologies. HyMEET combines an ambitious R&D program with a €25 million investment in resources dedicated to characterization and validation tests (up to 1000 bar and in a range of temperatures from deep cryogenics to high temperatures) as well as consulting and training.

### Its activities are dedicated to:

Characterizing the behavior of materials in contact with hydrogen

Development of specific test methods

Characterization of specific mechanical equipment and systems in severe hydrogen environments.

**Our equipment enables:**

Mechanical characterization of materials using fatigue machines in a high-pressure hydrogen environment

Control of sealing systems and plant containment, with test benches developed to study gas diffusion phenomena, resistance to rapid decompression and sealing performance under severe conditions

The study of the ageing of test specimens in high-pressure autoclaves

Tests under cryogenic conditions for the use of hydrogen in liquid form, with several cryostats fed by a helium-hydrogen liquefier

Multiphysics tests with pressure, temperature and .... cycling.

Manufacture of thermoplastic composite parts (tanks, tubes) by in-situ deposition and consolidation (in real time, with no further steps required) using our HySPIDE TP robotized cell.

**Our specific services dedicated to H2 equipment :**

Monitoring of manufacturing processes and final inspections

NDT of type IV tanks (US, tomography)

Characterisation and monitoring of performance under operational conditions (burst tests, acoustic emission, etc.).

## Your benefits

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Methods specifically tailored to your context, as several testing methods can be used during the same service

Deliverables: an automated/robotised testing system, a detailed and explicit report with potential proposals for corrective actions (failure analysis, redesign, etc.)

Cetim is an independent organisation



**Question and Answer Service**

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