

Press release

International Paris Air Show, June 18, 2025

LISI AEROSPACE AND CETIM ANNOUNCE A COLLABORATIVE R&D CONTRACT FOR THE MASTERY OF BOLTED ASSEMBLIES

Objective: to design and validate by 2027 a breakthrough technology ensuring an accurate and industrialized control of fastener tightening, going beyond current limitations in terms of accuracy, reliability and compatibility with production lines and in-service monitoring operations.

On the occasion of the International Paris Air Show 2025, LISI AEROSPACE, a global supplier of assembly solutions and structural components for the aerospace industry, and Cetim, leading technological accelerator for industry, **announce the signature of the DIGIFAST research collaboration contract**. The aim of this ambitious R&D project is to develop, by 2027, high-performance, reliable, easy-to-use **preload measurement and control equipment** that can be integrated into industrial production lines.

Based on **innovative ultrasonic measurement technology**, this future system will meet the requirements of the aerospace industry, as well as those of other industrial sectors (automotive, energy, etc.) where tightening control also represents a critical performance and safety issue.

A STRATEGIC CHALLENGE FOR THE RELIABILITY OF AEROSPACE ASSEMBLIES

In the aerospace sector, the fasteners preload is a critical parameter for guaranteeing the reliability of bolted assemblies. However, current control methods have their limitations:

- **Torque measurement** cannot accurately estimate the preload, nor can it check the preload of a fastener that has already been installed,
- **Ultrasonic measurement**, while more reliable, is either costly and complex, or highly operator-dependent and therefore incompatible with industrial constraints. (e.g. sensors glued to fasteners, coupling agents, etc.).

DIGIFAST aims to respond to these challenges by providing a **non-intrusive solution, reproducible and usable on an industrial scale**.

DIGIFAST: A PROJECT BUILT ON THREE YEARS OF COLLABORATIVE RESEARCH

DIGIFAST is a continuation of LISI AEROSPACE's R&D program, "**SMART FASTENERS**", launched in 2022, financed as part of the French stimulus plan, with the support of CORAC and the DGAC, and the collaboration of numerous partners including Cetim and CEA. This program explored several technological approaches, including an innovative solution based on an external sensor with an integrated dry coupling agent, enabling reliable measurement without human interaction or contact gel.

The DIGIFAST project marks a new stage: it aims to **validate the robustness of this technology in representative industrial environments, and to prepare for its industrialization**.

WORKING TOGETHER TO DEVELOP A BREAKTHROUGH TECHNOLOGY

DIGIFAST will enable these advances to be structured within a collaborative framework with Cetim, which has been called on for its **knowledge and understanding of the clamping phenomenon for broad sectoral applications**, and for its **recognized know-how in industrialization**. Engineers and technicians from the Carnot-accredited Technical Center will bring their expertise in **experimental validation, modeling and the development of robust methodologies to qualify the performance of the future system in a representative semi-industrial test environment**.

A SHARED INDUSTRIAL AND SCIENTIFIC AMBITION

The main objective of DIGIFAST is to design, test and ensure the reliability of a prototype preload measurement system, with a view to increasing technological maturity **from TRL 3 to TRL 6 by 2027**.

At the end of the project, LISI AEROSPACE aims to **deploy this solution on a large scale on its products**, and to **launch the commercialization** of the measurement and control system. As part of its **knowledge transfer mission**, Cetim plans to promote the results and methodologies deployed through **scientific publications, standardization projects and support for other industrial sectors** where assembly issues are critical.

About LISI AEROSPACE

LISI AEROSPACE designs and produces a very wide range of assembly systems, hydraulic fittings and high value-added metal structural components for the world's leading players in the aerospace sector. With sales of €1.03 billion, it supports the world's leading aircraft and systems manufacturers in the development of major innovation programs, to build the safer, more environmentally-friendly aircraft of tomorrow.

The LISI AEROSPACE division is part of the LISI Group, which specializes in the manufacture of assembly solutions and high value-added components for the aerospace, automotive and medical sectors. A partner to some of the world's leading players, LISI is supported by more than 10 000 employees in 13 countries on 4 continents. With sales of €1.79 billion in 2024, LISI innovates and invests in the research and development of tomorrow's products; to meet the needs of its customers, particularly in terms of quality, safety and performance. The LISI Group differentiates itself by relying on two strategic pillars: innovation and operational excellence, while integrating a strong CSR culture.

<https://www.lisi-aerospace.com/en/>

About Cetim

Cetim is the French leading technological accelerator for industry

Cetim brings the best of research to manufacturers and offers a global solution of consulting and engineering services. Its multidisciplinary skills and its unique R&D capacity are supported by more than 1,100 experts, doctors, engineers and technicians, who transform every day manufacturing players all over the world, for the benefit of an ever more digital, efficient, positive and sustainable industry, capable of responding to the great economic and ecological challenges of our time.

<https://www.cetim-engineering.com/>

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