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PRESS RELEASE

The metallurgy of the future project lead by IRT Saint Exupéry and supported by Aubert & Duval, Airbus and Siacky, enters a new phase.

The MAMA project – Metallic Advanced Materials for Aeronautics – is entering a new phase. This ambitious R&D project is piloted by the Saint Exupéry Institute for Research in Technology in Toulouse since July 2018, with Aubert & Duval, Airbus and the American company Sciaky (specializing in wirefeed metal additive manufacturing) as industrial partners, and the "Production Engineering" laboratory of the National School of Engineering in Tarbes as academic partner.

It is about to reach a first symbolic step with the launch at ARDEM (closed-die forging Research and Development Workshop), Aubert & Duval's research lab based on its site in Pamiers, in the Ariège department, of a deported platform of the IRT dedicated to the hybridization of closed-die forging processes and wirefeed metal additive manufacturing processes. This platform will notably benefit from a 1000-tonne closed die-forging press provided by Aubert & Duval and renovated as part of the project.

The aim is to couple traditional metallurgy – high-power closed die-forging - with emerging 3D wirefeed metal additive manufacturing techniques to develop new processes for manufacturing titanium alloys aircraft parts. In this first phase, the project has a global funding of € 4,2 M of which 50% are supported by the French State as part of the "Investing in the Future" program (PIA - Programme Investissement d'Avenir), the other 50% being funded by its industrial partners.

As the pilot of the platform, Aubert & Duval is the leading private contributor to the project, followed by Airbus and the American company Sciaky, which contributes its technology in the field of wirefeed metal additive manufacturing. The "Production Engineering" laboratory of the National School of Engineering in Tarbes provides its skills and resources in the field of aeronautics titanium alloys characterization. The project also benefits the skills and resources of the IRT Saint Exupéry in the domains of additive manufacturing technologies, process simulation and mechanical and physical metallurgy applied to aeronautics alloys.

Jérôme Fabre, Chairman of Aubert & Duval, said: "*Benefiting from technological disruption to develop the metallurgy of the future is an imperative goal in France and throughout Europe. The challenge is to preserve the strategic skills and manufacturing tools of our primary industries, which are aerospace, energy and defense. The metallurgy expertise of Aubert & Duval and Eramet Group positions us as key contributors to this objective, whether by means of producing new alloys or developing new transformation processes, as is the case here. The challenge is also local as we aim to ensure the sustainability of our industrial sites, which are in some cases over a hundred years old*."

In parallel, IRT Saint Exupéry, Aubert and Duval and Ad'OCC (Occitanie Innovation Agency) are working closely to bring new SME members into the project, in order to develop and grow in the Occitanie region a new R&D eco-system dedicated to the development of hybrid manufacturing techniques.

This second phase would lead to the expansion of the platform based in Pamiers and the acquisition of additional means of manufacturing and post-processing, in order to have on-site all the technical means to validate the possibilities of the hybrid process.

ABOUT AUBERT & DUVAL

Aubert & Duval, a subsidiary of the Alloys division of the Eramet group, is a metallurgist expert and one of the world leaders in high-performance steels, superalloys, titanium and aluminum. Aubert & Duval designs and develops advanced metallurgical solutions in the form of closed-die forged or forged parts, long products or metal powders for projects in the most demanding industries: aeronautics, energy, defense, nuclear, medical. www.aubertduval.com

ABOUT THE IRT SAINT EXUPERY

The Technological Research Institute (IRT) Saint Exupéry is an accelerator of science, technological research and transfer to the aeronautics, space and embedded systems industries for the development of innovative solutions that are safe, robust, certifiable and sustainable.

Associating public and private partners for research projects backed by technological platforms and high level skills, the IRT Saint Exupéry offers on its Toulouse, Bordeaux, Sophia Antipolis and Montreal sites an integrated collaborative environment around 4 key domains:

• High Performance Multifunctional Materials: Composites, Surfaces & Assemblies - Metallic Materials & Processes

• More Electric Aircraft: Dielectrics, Conductors & Plasmas - Power Technologies & Integration - Reliability & Component Modeling

• Intelligent Systems & Communications: Systems Engineering - Intelligent Systems & Applications - Digital Signal Processing - Artificial Intelligence for Autonomous & Critical Systems

• Systems Engineering & Modeling: Optimizing Multidisciplinary Designs - Systems Engineering

ABOUT AD'OCC

AD'OCC, THE REGIONAL AGENCY FOR ECONOMIC DEVELOPMENT: SUPPORTING BUSINESSES TO CREATE JOBS

AD'OCC, the regional agency for economic development supports all businesses in the Occitanie / Pyrénées-Méditerranée region at every stage of their lives — creation, setting-up, innovation, growth, funding, export, transfer-takeover — while enhancing the region's attractiveness and ability to draw talent.

AD'OCC is the region's facilitator in terms of economic development, innovation and employment support. As such, it deploys the funding schemes offered by the region to ensure that employment is firmly rooted in the territory.

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