

# Press Release

## **Constellium gathers top aerospace scientists and manufacturers to discuss the latest aluminium technological developments**

**Voreppe, November 22<sup>nd</sup>, 2011:** Materials' experts from the top French aerospace manufacturers and university research laboratories - Airbus, Aubert & Duval, CNRS, Dassault Aviation, EADS Innovation Works, IFMA, INSA Lyon, INP Grenoble – gathered at Constellium's research centre at Voreppe (France) to discuss aluminium's new developments for the aerospace industry.

This seminar, organised in partnership with the French Association of Aeronautics and Astronautics (3AF), was an opportunity to stress to industry players the importance of aluminium in the aerospace value chain. This material not only has well-known and well-managed properties, but is also a source of innovation. Aluminium is involved in many new developments to enhance the performance of aeronautical structures, from machining and welding to microstructural characterization.

*"In the context of ongoing competition between aluminium and composites, there are many reasons to be optimistic about the use of aluminium in the aerospace industry. New aluminium technologies offer real performance improvement perspectives in terms of weight, mechanical properties and economic efficiency,"* explained Laurent Pinto, Head of the Materials and Metallic Processes Department at Airbus.

All those involved in the manufacturing of pieces for the aerospace industry have to face quality, productivity and recyclability requirements. These crucial elements are taken into consideration very early on during the design of new aluminium technologies as well as during the machining and welding processes. The microstructural characterization of new alloys and 3D modelling have, for example, allowed to anticipate, control and better understand the fatigue behaviour of the future pieces.

Innovations in the machining and welding of aluminium pieces for the aerospace industry also contribute to the economic and environmental efficiency of aircraft production processes. Friction Stir Welding avoids the use of rivets, thereby reducing the weight and manufacturing time and cost of the pieces. New aluminium solutions, combined with new welding techniques and the re-design of pieces have resulted in significant weight reductions of at least 25%. This is of great interest to aircraft manufacturers.

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*“Friction Stir Welding is a mature process which allows in particular reducing the manufacturing costs for assembling applications of fuselage and wing sub structures. This process is already used on other aircraft programs certified by the FAA. Our goal at Dassault Aviation is to enable our Falcon aircrafts to benefit from this technology,”* highlighted Gilles Surdon, Head of Engineering and Process Simulation at Dassault Aviation.

OFELIA is another concrete industry programme designed to further enhance efficiency throughout the value chain. Manufacturers and research laboratories work side by side to optimize production and recycling processes for manufactured pieces using Constellium’s flagship AIRWARE™ technology.

*“Our discussions confirm the key role of these research programmes dedicated to aluminium at every level – processes and products, tests in laboratories and on an industrial scale”* said Bruno Chenal, Director of Technology and Innovation for Constellium’s Transport & Industry, Global Aerospace Division. *“The new aluminium developments presented here today will enable us to take advantage of this material’s full potential to the benefit of the whole aerospace industry, airlines, suppliers and OEMs. This conference also highlights the collaborative approach between industrial partners and university research teams over the use of aluminium by the aerospace industry and will help to strengthen existing partnerships and to establish new ones.”*

#### **About Constellium**

Constellium (formerly Alcan EP) is a global sector leader in manufacturing innovative value-added aluminium products for a broad scope of markets and applications, including the aerospace, mass transportation, automotive, packaging, energy and building industries.

Constellium, employs around 9 500 people in 26 countries and has a commercial presence in more than 60 markets. Constellium has 4 Divisions: Global Aerospace Transport and Industry, Specialty Sheet, Extrusions & Automotive Structures and AIN, its international trading network. Constellium is headquartered in Paris and owned by Apollo Management (51%), Rio Tinto (39%) and the Fonds Stratégique d’Investissements FSI (10%). It generated revenues of \$4.4 billion in 2010.

[www.constellium.com](http://www.constellium.com)

#### **About 3AF**

3AF - French Association of Aeronautics and Astronautics - is the scientific society of reference in the aerospace sector, both civil and military. Thanks to its High Scientific Council, its technical commissions and the events it organizes, 3AF contributes to preparing the future. Through its regional groups, it ensures the circulation of knowledge as well as the sector's scientific and technical culture.

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