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12th Safran Innovation Awards spotlight the Group's creativity

Villaroche, March 29, 2017.

Safran has once again spotlighted creativity with the latest edition of the Safran Innovation Awards, taking place at the Safran Aerospace Museum in Villaroche, near Paris, with CEO Philippe Petitcolin in attendance. One of the highlights of the year for Safran, this competition attracts more and more participants each year, and recognizes the most promising initiatives from Safran's employees, partners and suppliers.

Safran has developed top-tier technologies for more than 100 years to address changing market requirements and meet tomorrow's challenges. It invents key technology solutions and undertakes extensive research & technology efforts, investing 1.7 billion euros in R&D in 2016. This is the background to the Safran Innovation Awards, a yearly contest that spotlights new ideas and awards those with the greatest potential.

There is a new category in this year's awards, the Supplier Innovation Award, which joins the existing categories: Operational Excellence and Competitiveness, Customer Satisfaction, Product-Technology-Patent, Field Innovation and the Safran Grand Prize.

Safran Executive Committee members awarded the **2017 Grand Prize to a team from Safran Nacelles** for their virtual reality project, winner of the **Operational Excellence and Competitiveness Innovation award**. The project team modeled A330neo assembly lines using a 3D immersion technique, which allows operators to perceive their environment using a virtual reality headset. Integrating virtual reality in the production engineering process produced decisive results: the A330neo nacelle development cycle was reduced from 60 to 42 months, in particular due to better anticipation of any problems that could arise during production startup, coupled with better handling of the ergonomic aspects and congestion on the assembly line.

The **Field Innovation award**, voted on by Safran employees during the two weeks leading up to this event, went to a mixed team from **Safran Aircraft Engines and Safran SA, for their project concerning a stay attached to single-crystal turbine blades during casting**. The team had noticed that the scrap rate was too high on blades during cooling of the metal in their molds; they therefore designed a metal rod, or stay, linking the two ends of the part to take up stress instead of the blade itself, and therefore reduce blade distortion and defects, as well as more evenly distributing material during the

casting process. This innovation reduced development time from nine to six months, and also significantly decreased the scrap rate, resulting in higher quality parts and lower production costs and cycles. It will be implemented on the next-generation engines from Safran.

According to Safran Chief Executive Officer Philippe Petitcolin, *"Innovation has always been part of our history and our DNA. It is essential for us to encourage new ideas that will help consolidate Safran's position as a technology and performance leader. In addition, these collaborative innovation projects underpin the development of new production techniques, which allow us to create new applications and improve existing technologies so we can address, and even anticipate, our customers' expectations."*

Safran is the third leading company in France in terms of patents filed (according to the National Institute for Intellectual Property, INPI). More than one in five Safran employees (21%) are involved in R&D.



Safran is a leading international high-technology group with three core businesses: Aerospace, Defence and Security (ongoing divestiture of Security business). Operating worldwide, the Group has 66,500 employees (Security included) and generated sales of 15.8 billion euros in 2016 (excluding Security). Working independently or in partnership, Safran holds world or European leadership positions in its core markets. The Group invests heavily in Research & Development to meet the requirements of changing markets, including expenditures of 1.7 billion euros in 2016 (excluding Security expenditures). Safran is listed on Euronext Paris and is part of the CAC40 index, as well as the Euro Stoxx 50 European index.

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