Press Release

Annecy (Haute-Savoie, France), 27 April 2016

NTN-SNR at the forefront of aerospace innovation

NTN-SNR Clean Sky bearings honoured by the European Union

NTN-SNR's project to supply bearings for Snecma's Open-Rotor engine demonstrator was among the 10 projects of the European Clean Sky research programme to be shortlisted to receive one of three innovation awards granted in Brussels on 4 April 2016. This nomination acknowledges NTN-SNR's capacity for innovation in the field of aerospace where its bearings are already present in all new-generation turboshaft jet engines used on the major civil aviation programmes: the Leading Edge Aviation Propulsion (LEAP) engine of CFMI (Snecma and GE), the Geared Turbofan (GTF) of Pratt & Whitney and the Trent XWB of Rolls-Royce. Beyond the technology demonstrator engine, the bearings developed for the Open-Rotor will serve as the basis for developments for other new generation engines of the future. NTN-SNR is therefore well positioned for next generation engines and confirms its role as a major provider of bearings for the aerospace market.

From futuristic demonstrator to next generation engines

Cutting-edge innovations for the engines of the future

Snecma's Open-Rotor demonstrator engine features two rows of unshrouded, counter-rotating fan blades for which NTN-SNR has developed specific blade root bearings which allows the blade angle to be varied during the various stages of flight. NTN-SNR had to meet numerous technical constraints imposed by the engine architecture, developing an innovative sealing system and complex tribological solution in response to the harsh conditions associated with an environment that combines high temperatures and high centrifugal forces. Torque loads also had to be minimised in order to allow the control system to easily actuate the blades with minimum effort.

A futuristic project with benefits for the near future

This 1.5 million Euro development project, financed 50 % by the European Union, engaged the NTN-SNR teams for nearly 3 years. Although the entry into service date for the Open-Rotor demonstrator may be in 2030, the technologies developed by NTN-SNR will have positive benefits in the shorter term and can be adapted for engines that already exist. Certain new generation engines currently under development foresee blade orientation control (this time inside the fan module) in order to increase performance. The technology developed by NTN-SNR within the scope of the Open-Rotor programme has already provided a good platform for these promising projects.

NTN-SNR, a major player in the aerospace industry for today and tomorrow

Initial flights and production deliveries for NTN-SNR

Today, NTN-SNR is present in all new-generation engines installed in the new civil aviation programmes and present on the maiden flight of 29 January 2016 of the Boeing 737 MAX equipped with a LEAP engine produced by CFMI. NTN-SNR has also made its first delivery of production bearings for the GTF engine by Pratt & Whitney which has already flown on the Airbus A320neo. Among the bearings delivered were new, very high speed, tapered roller bearings, specifically developed for engine applications. NTN-SNR is also present on Rolls Royce's new Trent XWB engine which is now in service.

NTN-SNR's research aligned to meet continuing challenges

R&D work to increase engine performance naturally involves reducing CO_2 emissions by improving efficiency through reducing torque and weight. NTN-SNR has also developed innovative surface coatings and optimised the internal geometry of bearings to meet the severe conditions when operating without lubrication. Further areas of research are in the development of ceramic rolling elements, new bearing materials and 2nd generation high-speed tapered roller bearings.

NTN-SNR is also exploring the use of mechatronics to monitor and improve reliability of bearings in helicopters and jet engines. It is an interesting opportunity to extend the technologies already used by NTN-SNR in the wind turbine industry.

Argonay's new production unit soon to be operational

Announced last year, the 27 million euro "Take off" project will expand the dedicated aerospace production unit in Argonay (France, Haute-Savoie region), by 4,000 m^2. The extension, nearing completion, should make its first production parts in the 3rd quarter of 2016.

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NTN-SNR ROULEMENTS, with a head office at Annecy (Haute-Savoie, France), belongs to the Japanese group NTN Corporation, one of the world leaders in bearings. NTN-SNR ensures the management and development of all NTN activities for the EMEA region and Brazil. A major player as a designer, developer and manufacturer of bearings and sub-assemblies for automotive, industrial and aerospace markets. NTN-SNR also offers a comprehensive range of maintenance services and solutions. NTN-SNR employs 4,225 people at 9 production sites, including 6 in France, as well as 18 European regional offices.

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