

AIRBUS QUICK NEWS - SINGAPORE AIRSHOW 2018 EDITION

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A330neo programme development and flight testing on track

Following the first flights of the first A330neo test aircraft (MSN1795) on 19th October 2017 and the second (MSN1813) on the 4th of December, both are fully operational and are now flying on a daily basis. They have already accumulated more than 290 flight hours and over 80 flights (as of 24th January). This represents a very strong start to the campaign and confirms that the aircraft behaviour is in line with predictions. Much has been achieved: The aircraft flight envelope has been fully opened (normal and direct laws); Anemometry has been calibrated; Engine calibration points have been completed in high and low speed; Flutter tests and loads calibration have been performed; Stall tests have been performed and strake configuration has been frozen; Autopilot tests have started (including automatic landing) and climb and high speed performance tests are fully underway

Over the next three months, both aircraft will focus on the external campaigns: MSN1795 will perform the cold weather campaign and the external noise tests and MSN1813 will undertake the natural icing tests and the first part of the warm and hot weather campaigns. In parallel, handling qualities and identification flights will continue on both aircraft while

maturing overall aircraft components and systems.

In the meantime, Airbus is progressing rapidly on readying the next A330neo aircraft to fly -- the third flight test-aircraft and the first A330-800, MSN1888. This aircraft has now completed its structural assembly and flight-test instrumentation installation is on-going. Very soon the aircraft enter the painting hangar to receive its external livery. Moreover, production aircraft are progressing according to plan in the Final Assembly Line and Airbus has completed the installation of the first brand new Airspace cabin.

Airbus partners with ONERA and DLR research facilities to develop next-generation Computational Fluid Dynamics (CFD) capabilities

Following a recent joint agreement in Toulouse, Airbus is partnering with ONERA, a French aerospace research centre, and DLR, the German aerospace research centre, with the goal of jointly developing common next-generation computational fluid dynamics (CFD) capabilities for advanced airflow prediction, which will play a key role in the development of any future aircraft. These new CFD capabilities, once they are validated and mature, will provide engineers with a powerful tool – in particular to simulate aerodynamics for very complex aircraft manoeuvres – encompassing the entire flight envelope. This partnership brings together France and Germany's best talents in CFD technology and will play an important role in securing long-term collaborative development projects. In particular, it will allow ONERA, DLR and Airbus to accelerate their activities far beyond what a single entity could achieve, with the ultimate goal to design the best aircraft possible.

“CityAirbus” demonstrator achieves Iron-Bird ‘Power On’

Airbus’ “CityAirbus” electrical urban-air-mobility demonstrator programme has reached an important milestone: the completion and “power on” of the “iron bird” ground test facility in Taufkirchen, Germany. This enables the verification of the entire electric propulsion system of CityAirbus, developed by Airbus’ E-Aircraft Systems unit. After being matured and verified on the iron bird, the propulsion system will be embedded on the demonstrator by mid-2018. The test bench configuration reflects the CityAirbus architecture including motors, power electronics and distribution boxes – developed and produced by Siemens. Meanwhile the development of the CityAirbus airframe vehicle itself is on-going. The first structural parts have already been produced and are on the way to being assembled. These development steps pave the way to the CityAirbus’ first flight before the end of 2018. CityAirbus is a multi-passenger, self-piloted battery-powered vertical take-off and landing vehicle. It is designed to carry up to four passengers over congested megacities in a fast, affordable and environmentally friendly way.

Airbus selected for the next-generation European Satellite-Based Augmentation System (SBAS) – “EGNOS V3”

Airbus has been selected by the European Space Agency (ESA) as the prime contractor to develop EGNOS V3 – the next generation of the European Satellite Based Augmentation System (SBAS). EGNOS V3 will ensure a full continuity of service for the next decade and will be the first operational SBAS implementing the dual frequency and multi constellation world standard, with both GPS and Galileo, replacing EGNOS V2 which has been in operation since 2011.

As ‘prime contractor’, Airbus will be leading a consortium with contributors from France, Germany, Spain and Switzerland. Airbus will be responsible for the development, integration, deployment and preparation of EGNOS V3 operations, the overall performance of the system and the Central Processing Facility which is at the heart of the real-time navigation algorithms. The A350 XWB is

the first Airbus aircraft to offer SBAS operations supported by Airbus' Satellite Landing System (SLS) aircraft guidance function (certified on the A350 since EIS).

Airbus acquires new US Training Centre

Airbus has acquired the Strategic Simulation Solutions flight training centre in Aurora, Colorado, a Denver suburb. Currently, the training centre primarily supports Frontier Airlines and has significant room for growth. Prior to this acquisition, Airbus provided training to the North American region primarily from its Miami, Florida-based training centre. The addition of the new facility will help Airbus meet its long-term growth in expanding markets throughout the Americas. Over the past two years Airbus has expanded its training capacity for customers in the Americas with the addition of training centres in Mexico City, Mexico and in Campinas, Brazil. Currently, the Aurora training centre has two FAA Level-D 'full-flight' A320 Family simulators for training of Frontier Airlines pilots on the airline's all-Airbus fleet. Additional simulators will be added at the Denver facility in 2018 to address anticipated increased demand for training.

Navblue and Honeywell offer combined runway safety solution

Following a two-year period of joint development, the Airbus subsidiary Navblue and Honeywell are firmly offering a combined solution: Honeywell's SmartLanding together with Airbus' ROPS (Runway Overrun Prevention System). This solution, which is built in co-innovation with Lufthansa Group, is planned to be certified on both Airbus and non-Airbus aircraft. The collaboration combines the strengths of the two technologies: The performance-based runway overrun protection of ROPS and the increased situational awareness during approach and landing of SmartLanding – a software enhancement to Honeywell's Enhanced Ground Proximity Warning System. In July 2016 Lufthansa Group, Honeywell Aerospace and Airbus signed a Memorandum of Understanding (MOU) to work jointly on the development of a runway safety solution combining the best of both systems. Lufthansa Group contributed to the solution design and evaluation with the involvement of flight crews from the early stage of development.

Skywise enlists dedicated 4G global telephony partner: Transatel

Airbus has selected Transatel, a leading global Mobile Virtual Network Enabler/Aggregator to add new levels of performance and speed to its connectivity solution on Skywise. The partnership with Transatel means Airbus can assure fast data transfer in any given region, country or, airport, to ensure optimum delivery of Skywise services to its customers. It is the on-board flight operations and maintenance exchanger (FOMAX) which will make use of these data transfer services. FOMAX is a compact connectivity unit which collects aircraft maintenance and performance data from on-board sensors and automatically sends it to ground-based operations. Transatel's add-on will allow for a seamless and secure transfer of this data during layovers between flights, with industry leading performance via 4G network access.

“Hangar of the future” getting closer to enhance aircraft maintenance...

Airbus will showcase its 'Hangar of the Future' (HoF) at the Singapore Air Show. HoF, a logical continuity of Airbus' successful manufacturing digitisation, is a project to digitise and automate maintenance activities to increase the overall maintenance process efficiency. HoF combines the use of innovative technologies and smart, IoT (internet of Things)-connected equipment such as 'cobots' (collaborative robots), drones, scanners, cameras, non-destructive sensors, with aircraft technical documentation and aircraft in-service data collated through Airbus' open data platform, Skywise. Based on data analytics, Skywise-based applications will predict the required maintenance tasks for a given aircraft and optimise maintenance planning and maintenance task

execution in order to minimize aircraft on ground time. Following HoF's initial unveiling in 2016, Airbus affirmed the project in March 2017 with the Temasek Polytechnic education institution in Singapore, and is co-funded by the Singapore Economic Development Board and by Airbus.

Airbus' subsidiary Metron wins air traffic flow management contract from Civil Aviation Authority of Singapore

The Civil Aviation Authority of Singapore (CAAS) has awarded Metron Aviation, a subsidiary of Airbus, an Air Traffic Flow Management (ATFM) system contract. This system will be located at the Singapore Air Traffic Control Centre (SATCC). Metron will be responsible for the design, supply, delivery, installation, integration, testing and commissioning of the ATFM System over a 23-month period and a 10-year after sales support service beginning after initial system acceptance. Metron will supply its "Harmony" flagship ATFM automation product for air navigation service providers. For the project, Metron Aviation is teamed with Singapore Technologies Electronic Limited, which will provide in-country services to include acquisition, storage, installation and maintenance of the primary equipment, as well as spare parts, for the duration of the contract.

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