

Rolls-Royce taking steps into the future of civil aerospace

Rolls-Royce announced two new innovative developments at the Dubai Airshow and in tandem at AFRAA's 49th AGA.



Advance3 (Image Supplied)

A new milestone in the development of next generation of civil aerospace engines

Rolls-Royce is reaching a new milestone in the development of its next generation of civil aerospace engines with the first run of its Advance3 demonstrator. The demonstrator will test a new engine core that will deliver maximum fuel burn efficiency and low emissions. The core forms a key part of the Rolls-Royce Advance and UltraFan engine designs, both of which form part of our future technology programme.

The demonstrator engine is now complete and is being readied for a test in Derby, UK, with its first run expected in the coming days. Testing will initially confirm operational parameters with future tests designed to gather data on the performance of the engine across more than 2,800 parameters.

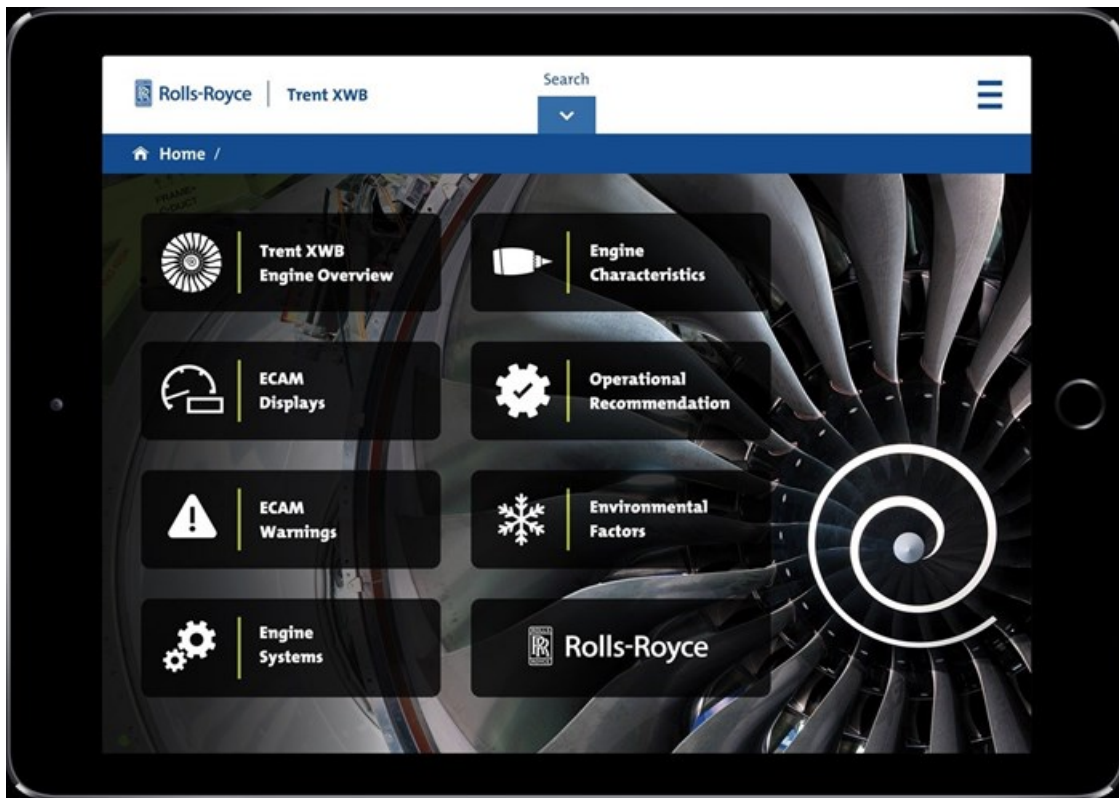
The Advance3 core features a new “work split” with a two-stage high-pressure turbine and a single-stage intermediate pressure turbine. Engineers have attached the core to a Trent XWB fan system and a Trent 1000 low-pressure turbine to create the completed demonstrator engine.

Other key technologies for UltraFan are also making significant progress. The engine features a high-power gearbox, designed to deliver efficiency at high bypass ratios, which earlier this year achieved 70,000hp while on test in Dahlewitz, Germany, a new record in the aerospace industry. UltraFan will offer a 25 per cent fuel efficiency improvement compared with the first generation of Trent engine and will be available for service from 2025.

Eric Schulz, Rolls-Royce president – civil aerospace, said: “We are about to take another step towards making our future technology strategy a reality. The new core architecture being tested in this demonstrator is a critical part of our strategy and will help us to deliver even better economic and environmental performance for our customers.”

Unique new app services for airlines pilots

Rolls-Royce has launched a unique new range of apps, designed specifically for customer airline pilots, to give them a better insight into their engines. The Pilot App enables pilots and their airlines to save fuel and lower emissions by helping pilots optimise the performance of their engines.



Pilot App (Image Supplied)

The first apps available cover the Trent XWB, which powers the Airbus A350XWB and the Trent 1000 which powers the Boeing 787 Dreamliner. Both aircraft manufacturers have supported the app development programme. Further apps for the Trent 900, Trent 700 and Trent 7000 will follow in the coming months.

Tom Palmer, Rolls-Royce senior vice president – services, civil aerospace said: “We want to provide customers with service excellence and to do that we need to work ever more closely with them. This app – which we believe is unique in the industry – is another example of that, sharing best practice with the pilot and flight operations community and supporting our goal that every Rolls-Royce powered aircraft efficiently takes off and lands on time, every time.”

Phill O'Dell, Rolls-Royce director of flight operations, said: “It is complementary to the work we already do with airline flight operations teams and reinforces the processes already in place, but provides information in a fresh, user-friendly, interactive format.”

Key features include information relating to oil consumption, operating engines in a variety of environmental conditions and managing derate. The apps are designed for tablet devices with Android, iOS or Windows operating systems. They are being made available through Google Play, iTunes and Microsoft Store. Pilots will be requested to confirm their details with Rolls-Royce to enable use.

The app is launched as the Rolls-Royce powered fleet continues to grow. Rolls-Royce engines will power half the widebody aircraft in service by early in the next decade as the fleet grows from just under 4,000 engines in service today to around 8,000 by 2027.

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