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Engines without a casing: How the Open Fan is set to change aviation in the 2030s

👤 Paul Schmitt ⌚ yesterday, 12:23

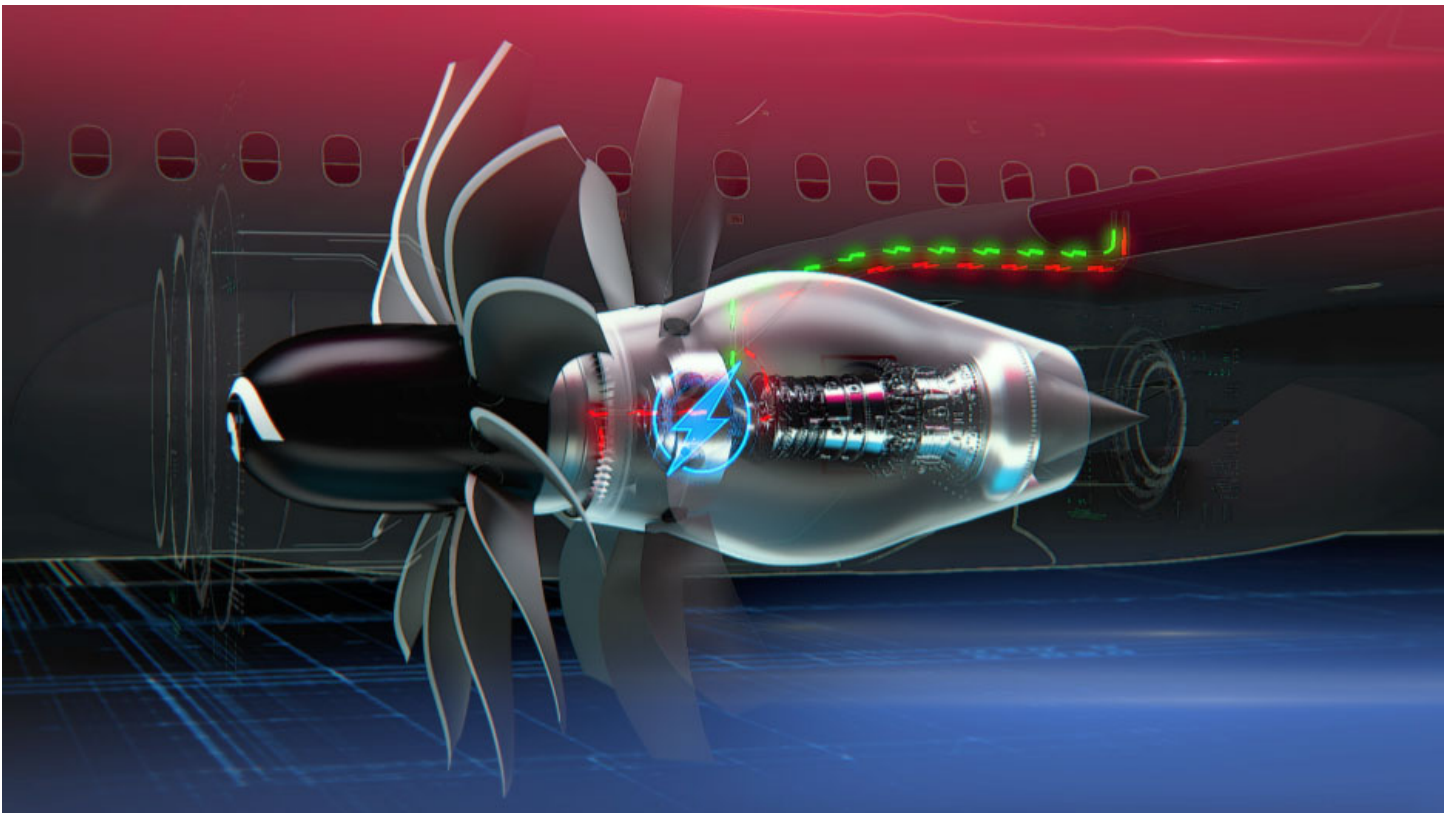


Open-fan engine concept. Illustration: CFM International. Source: Safran

CFM International – the joint venture between [GE Aerospace](#) and [Safran Aircraft Engines](#) – is working on an engine without a traditional nacelle. The program, called RISE (Revolutionary Innovation for Sustainable Engines), utilizes an open-fan architecture: a freely rotating, large fan without a protective outer casing. The goal is fuel consumption that is 20 percent lower than that of today's top-performing engines – a figure that is of interest to both airlines and regulators.

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Open-fan engine concept. Illustration: CFM International

The status of the tests

More than 2,000 CFM engineers are driving the program forward. For months, stress tests have been underway on a new test rig in Villaroche, France, going far beyond mere aerodynamics: bird strikes, icing, and sand and dust ingestion are all part of the program. According to AirInsight, the low-pressure turbine has already completed over 1,000 operating hours, confirming its performance and thermal characteristics. Wind tunnel tests were conducted at the Dutch institute DNW, and noise measurements show parity with the current CFM LEAP engines.

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endangers the useage.

Furthermore, Boeing and Pratt & Whitney are skeptical of the concept and are developing their own alternatives, [reports Simple Flying](#). Internally, CFM is also said to be working on a conventional backup engine – the so-called Advanced Ducted-Large – in case the Open Fan fails to meet the mid-2030s timeline. For now, Safran and Airbus remain the driving forces behind the program; the involvement of German engine suppliers has not yet been publicly confirmed.

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