



← BACK

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GCAP Consortium Expands Partnership Toward First Flight

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This step represents the transition from national contracting to fully integrated international collaboration, laying the foundation for the detailed design and development of GCAP's all-new fighter engine. This development builds on the successful progress of the all-new centreline GCAP engine demonstrator. The three companies signed an evolved collaboration agreement that allows them to engage directly with Edgewing – the newly formed joint venture between BAE Systems, Leonardo and JAIEC of Japan.

As a consortium, Rolls-Royce, Avio Aero and IHI are transforming how they work to enable continued innovation and advance combat air propulsion technology to meet the timeline for GCAP's first flight.

Pierfederico Scarpa, Senior Vice President Marketing & Sales,
Avio Aero:



At Avio Aero we are proud to contribute our well-established expertise and knowledge in the design, development and production of advanced engine technologies to this key international partnership. By working in lockstep with Rolls-Royce and IHI, we are not just developing the power and propulsion system for GCAP, we are shaping the future of the three nations aerospace collaboration.”

Phil Townley, Director Defence Aerospace – Future Programmes, Rolls-Royce:



This new agreement is a pivotal step – it allows us to move from national programmes to a truly international, one-team approach. By combining our complementary expertise, we're accelerating technology breakthroughs in materials, manufacturing and design that will power GCAP and strengthen the defence industrial base across the UK, Italy and Japan.”

Atsushi Sato, President Aero Engine, Space Defense Business Area, IHI Corporation:



This collaboration represents a new era for combat air propulsion. By combining Japanese innovation in advanced technologies with the strengths of our UK and Italian partners, we are creating an engine that will deliver unmatched performance for GCAP while also reinforcing the shared industrial foundations of our three nations.”

The partners are delivering progress on the engine demonstrator, advancing technologies in additive manufacturing, cooling systems and high-pressure compressor design, and more. The engineering teams of the three consortium partners have already conducted several trilateral reviews to approve the engine demonstrator design, following the completion of joint design iterations and have initiated the hardware procurement.

Among the recent milestones was a successful test of a revolutionary combustor developed with enhanced Additive Layer Manufacturing techniques to create unique geometric cooling pathways. The next-generation advanced cooling and material technologies enable higher operating temperatures for the turbine while allowing components to run cooler for extended range to enhance durability and sustainability across the engine's service life.

Together, the three companies form the propulsion consortium at the heart of GCAP, driving innovation and industrial collaboration across three nations to deliver the fighter engine of the future.

The partners collectively bring a wealth of global experience to enable continued innovation and advance combat air propulsion technology.

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About Rolls-Royce Holdings plc



About Avio Aero (Italy)





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