



## Rolls-Royce Rapidly Powers Sustainable Aviation with Ansys and Intel Technologies

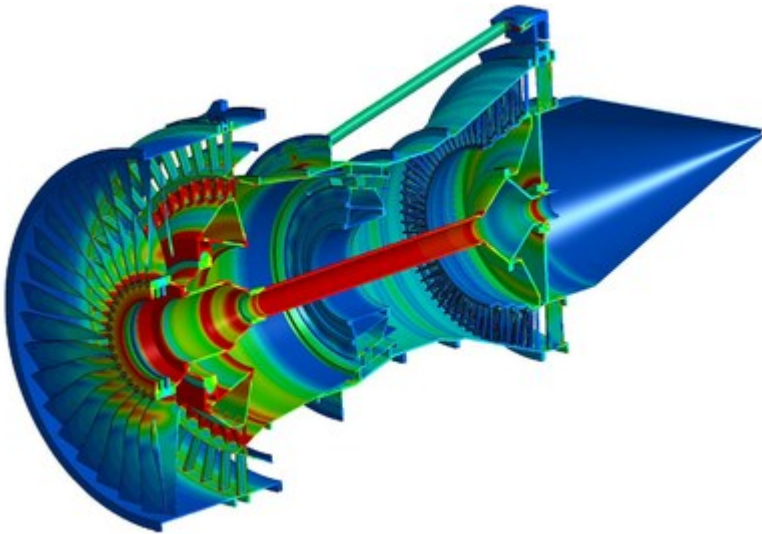
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*With joint software optimization efforts from Ansys and Intel, Rolls-Royce accelerates engineering solve times and creates virtual prototypes up to 100X faster*

### / Key Highlights

- Rolls-Royce leverages Ansys' multiphysics simulation solutions and Intel's HPC to decrease operational power consumption and physical prototyping while developing more energy- and fuel-efficient engines
- The collaboration enables Rolls-Royce to inform engine design with critical engineering insights that maximize efficiency and create high-fidelity virtual prototypes up to 100X faster than previous workflows — drastically reducing time, materials, and energy

PITTSBURGH, June 14, 2023 /PRNewswire/ -- [Ansys](#) (NASDAQ: ANSS) collaborated with Rolls-Royce and Intel to reduce the simulation time of the thermo-mechanical model of Rolls-Royce's gas-turbine engine from more than 1,000 hours to less than 10 hours, saving energy and development costs. This collaboration was also supported by the computing resources at the Oak Ridge Leadership Computing Facility, HPE, and researchers at the NCSA (National Center for Supercomputing Applications).



Powered by Ansys' best-in-class simulation and Intel's high-performance computing (HPC) technologies, Rolls-Royce leverages Ansys and Intel to accelerate engineering solve times, reduce operational power consumption, and create virtual prototypes of its energy- and fuel-efficient gas turbine engines up to 100X faster. As a result, Rolls-Royce is able to rapidly deliver clean and complex propulsion solutions for safety-critical applications in the air, at sea and on land. The advanced technology from Ansys and Intel also supports digital research and development (R&D), which incorporates simulation and digital twins to improve engine design for more sustainable, climate-neutral solutions for drive, propulsion, and power generation.

"Rolls-Royce is committed to reaching net-zero within our own operation by 2030 and to enabling the sectors in which we operate to reach net-zero by 2050," said Todd Simons, HPC expert at Rolls-Royce. "To achieve these goals and reduce emissions successfully, digital transformation is necessary. We believe cutting-edge technologies from Ansys and Intel will enable us to develop smarter, cleaner, and safer engines to power a more sustainable future for aviation while also reducing our operational carbon footprint."

Ansys helps Rolls-Royce reduce memory requirements, accelerate performance, and improve parallel efficiency. Using the Intel oneAPI Math Kernel Library MKL, [Ansys@LS-DYNA@](#) enables simulations to consume less memory and run orders of magnitude faster, which conserves power and energy consumption.

"Ansys is one of Intel's premier independent software vendor (ISV) partners and we're proud to collaborate on projects that make new innovations possible," said Scott Clark, vice president of the Super Compute Group at Intel. "Together with our shared focus of using Intel's HPC platforms and open software to unlock new levels of performance, we will enable customers like Rolls-Royce to solve their most challenging problems faster."

Rolls-Royce also leverages digital twin technology to create high-fidelity designs and virtual prototypes. By incorporating simulation and digital twins throughout the development process, Rolls-Royce gains critical engineering insights to design more efficient propulsion systems.

"Ansys is proud to collaborate with Rolls-Royce and Intel to leverage the power of simulation and related technologies to develop cleaner engines, combat climate concerns, and reduce emissions," said Shane Emswiler, senior vice president of products at Ansys. "We are confident that Ansys' simulation portfolio and Intel's compute power will equip Rolls-Royce engineers to positively impact the future of aviation."

Visit [Ansys at the 2023 Paris Air Show](#) in France from June 19-25 to learn more about simulation's impact across the aviation industry.

## / About Ansys

When visionary companies need to know how their world-changing ideas will perform, they close the gap between design and reality with Ansys simulation. For more than 50 years, Ansys software has enabled innovators across industries to push boundaries by using the predictive power of simulation. From sustainable transportation to advanced semiconductors, from satellite systems to life-saving medical devices, the next great leaps in human advancement will be powered by Ansys.

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