



UNSW
SYDNEY



Hypersonic Control

Testing and analysing the performance of control methods and algorithms in flow conditions that are representative of hypersonic flight.

Competitive advantage

- Technologies developed are used to test robust control algorithms on representative configurations in hypersonic flows
- Test technologies cover both “algorithm-in-the-loop” testing in wind tunnels as well as “software-in-the-loop” testing via numerical simulation
- Technologies can be applied to evaluate novel actuation methods such as fluidic control and fluidic thrust vectoring

Impact

- Test methodologies enable a steady progression through Technology Readiness Levels of both control algorithms and control actuation approaches by testing them dynamically in flow conditions representative of hypersonic flight

Successful applications

- Development of technologies to test both control methodologies and control actuation approaches; supported by the U.S. Air Force Office of Scientific Research and BAE Systems

Capabilities and facilities

- High-speed wind tunnels including T-ADFA and the Supersonic Nozzle Test Facility
- Partner facilities at USQ and HDT at the University of Oxford
- Commercial and in-house numerical codes are utilised to predict the transient performance of control approaches and to optimise their design

More Information

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