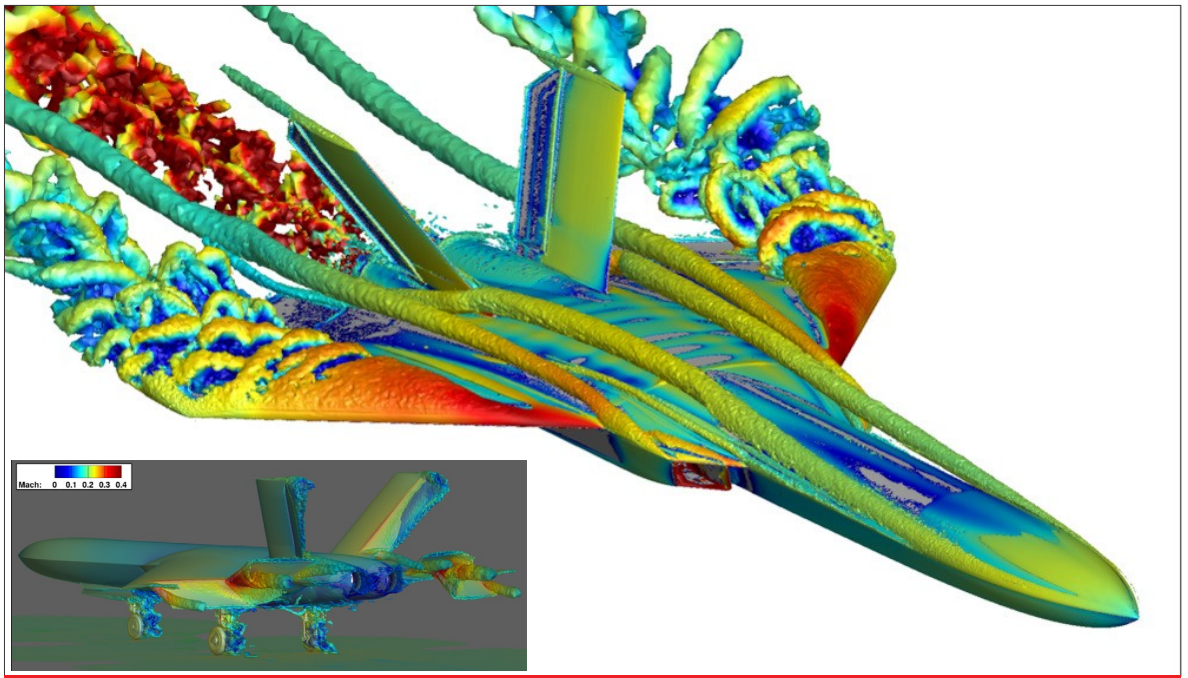
5TH GENERATION AERIAL TARGET (5GAT)

Success Story - Air Force

Attribution: Arnold Engineering Development Complex (AEDC) and QuantiTech Inc.



Air Force initial modeling and simulation of airflow dynamics using HPCMP CREATE-AV Kestrel

PROBLEM

Sierra Technical Services (STS) selected to design, build, ground, and flight test a demonstrator/prototype aircraft – ~30 months to first flight, government-owned design.

SOLUTION

The project objectives are to demo low flyaway cost -> "Break the cost curve", demo low-RCS, demo basic flight performance, and rapid prototype and flight test. HPCMP CREATE™'s Kestrel applications:

- Termination maneuver selection (airworthiness)
- High Mach directional stability / rudder effectiveness
- Engine bay cooling analysis
- Takeoff/landing dynamics: control effectiveness in-ground effect, speed brake effectiveness

IMPACT

The HPCMP developed digital model of the 5GAT aero vehicle to include integrated J85-5 engine; optimal maneuver/control settings for complex flight phases; and risk reduction in support of first flight which:

- defined the optimal termination maneuver,
- defined the effect of actuator covers on aero/S&C, and
- defined ground effect on controllability.