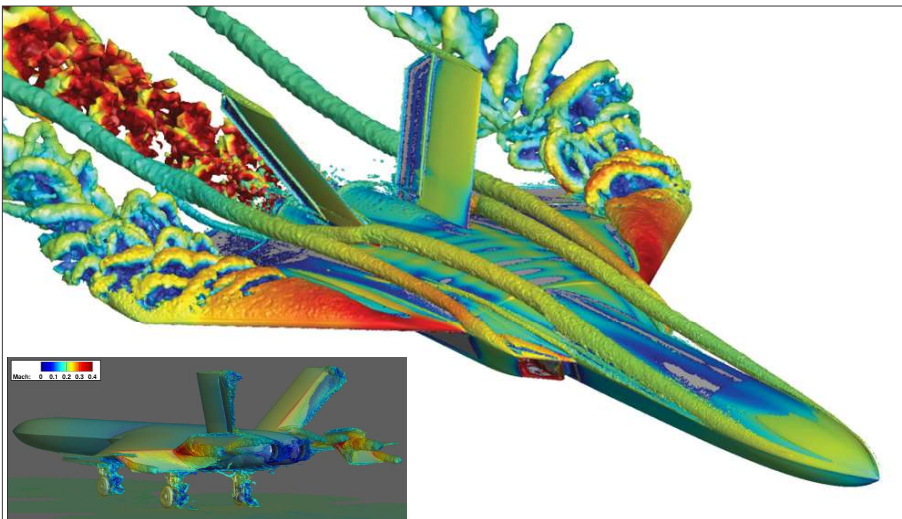


5TH GENERATION AERIAL TARGET (5GAT)

Success Story - Air Force



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

PROBLEM

Sierra Technical Services (STS) selected to design and build, then 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 for 5GAT. Specifically, demo low-RCS, demo basic flight performance, and rapid prototype and flight test. HPCMP CREATE™-AV Kestrel used to determine:

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



IMPACT

The HPCMP, through CREATE funded collaboration between STS, AF AEDC, and CREATE-AV Quality Assurance Group, 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.