

R-025: Cadence Design Systems Inc.

- **Flow solver:** Fidelity CFD 2023.2
- **Spatial discretization:** Cell-centered finite volume, central matrix dissipation
- **Time integration or iteration method:** Explicit time-marching scheme with CPU Booster® (local time stepping)
- **Name of committee grids:** TC1: 1.R.09 / TC2: 2.R.03 (PW Voxel Meshes)
- **Cases submitted:** TC1.0, TC2.2, TC2.3, TC2.4
- **Initialization method:** Cold start from free-stream conditions for most cases, except for TC2.2 (23.0 deg and 23.8 deg) and TC2.3 (20.7 deg), which are hot-started
- **Turbulence Model:** Standard Spalart-Allmaras (SA) model
- **Convergence/stopping criteria:** Density residual (root-mean-square, RMS) converged below 1.0E-08 while making sure CD variation has reached within +/- 0.0001 (variation of standard deviation is less than 1.0%)
- **Relevant publications related to solver and/or high-lift applications:**
 - High fidelity gust simulations over a supercritical airfoil (AIAA 2018-3634)
 - Sensitivity to Turbulence Models and Numerical Dissipation of the CRM Drag Prediction (AIAA 2018-3332)
 - Monté, S., et al. "A novel EARSM model for separated flows." 11th International ERCOFTAC Symposium on Engineering Turbulence Modelling and Measurements. 2016