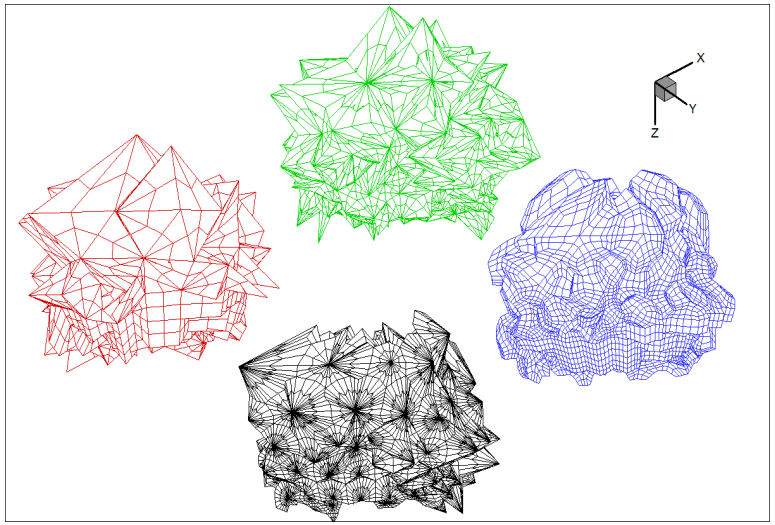
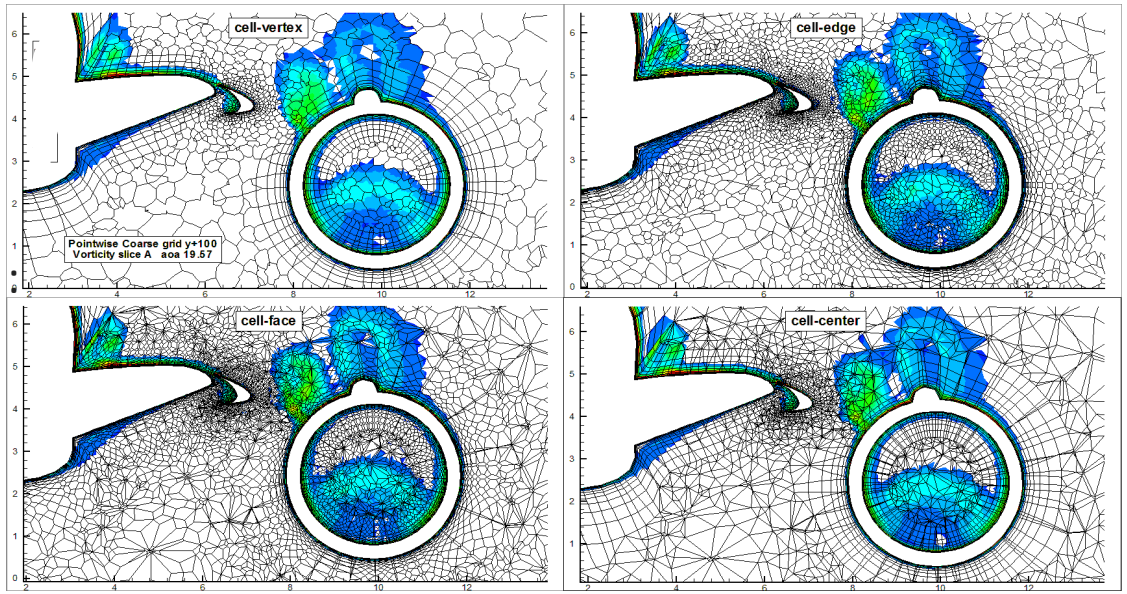
R-019 & Synapsis-AG

- Flow solver: synapsis
- Spatial discretization: 3rd order, full-base Reconstructed curvilinear FV, coupled solution on overset cell-centered, cell-vertex and diamond grids
- Time integration or iteration method: “explicit” RK3
- Name of committee grids : *CRMHL_ReferenceSolid_WingBody_2ndOrder_ RANS_*

  A-, A, B : *quadratic grid + creation of the HO dual grids in the preprocessor*
- Cases submitted: case 1
- Initialization method: uniform flow
- Turbulence model: SA-neg, wall function
- Convergence/stopping criteria: 4 digits on lift and drag
- Relevant publications related to solver and high-lift applications :



4 overset grids of a partition (unit for resolution)



Topology of plane slices through the full 4 overset grids

Le Gouez, J.M., “Coupled Solution of 3D Unstructured Finite Volume Discretizations of the RANS Equations on Q2 Primal and Dual Grids. Application to the 4th High Lift Prediction Workshop”, AIAA paper 2022-3808, AIAA Aviation 2022 Chicago, Special Session: HLPW-4 : Workshop Results VI https://doi.org/10.2514/6.2022-3808

Le Gouez, J.M., “High-Order Finite Volume Method for Gas Dynamics on geometrically HO multi-element unstructured grids”, AIAA paper 2020-1788, SciTech 2020, 6-10 January 2020, Orlando