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Distene Releases MeshGems 2.0

Distene announces the release of *MeshGems 2.0* which brings Boundary Layers generation capability, Mesh Quality enhancements and the Distributed Parallel performance, to making a new step forward in automatic meshing meshing for a wide range of physics simulations including CFD, Structures and Electro-Magnetics.

DISTENE

Surface Meshing:

- Surface **meshing on discrete geometries has been significantly improved.** MeshGems 2.0 offers a common workflow for surface meshing on continuous CAD geometry and discrete models like STL or mesh data.
- Surface Meshing introduces the possibility to drive the type of elements generated on a CAD-patch per CAD-patch basis.

Mesh Processing:

- New algorithms have been introduced for MG_Cleaner, leading to an increased success rate of the automatic correction feature.
- Partial support for required entities has been introduced specifically for when some entities should be kept unchanged .

Volume Meshing (tetrahedral):

- New enhanced boundary regeneration algorithms have been added to MG_Tetra to increase significantly the success rate on difficult cases.
- The mesh generation speed of MG_Tetra has been optimized, specifically targeting the generation of large meshes.
- The quality (aspect ratio) of the generated volume mesh has been improved.

New products:

In addition to improvements to existing components, *MeshGems 2.0* added two major new products **MG-Tetra_HPC** and **MG-Hybrid**:

- **MG-Tetra_HPC** for parallel (multithread or distributed) tetrahedral volume mesh generation. MG-Tetra_HPC benefits naturally from all the experience of the widely used MG-Tetra, and obeys to the same basic principles: the surface mesh is not changed at all by the volume meshing process, cavities can be meshed, mesh entities can be enforced in the volume, etc.

- **MG-Hybrid** for mixed element type volume mesh generation. Starting from a mixed

triangle/quadrangle surface mesh, it is able to generate a hybrid volume mesh conformal to this input surface mesh, including advanced extrusion of the surface mesh, boundary layer, a transition layer and then fill in the remaining core using either tetrahedra or hexahedra.