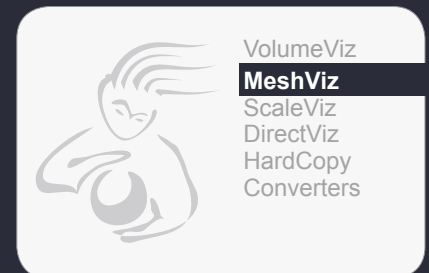


# MeshViz Extension

## The High-performance 3D Scientific Data Visualization Toolkit

- Supports any type of regular and unstructured 3D/2D meshes from CAE, FEA, CFD and reservoir engineering applications
- Advanced representations for multidimensional data
- Fast, high-quality rendering techniques
- Support of very large meshes\*
- High-level objects for axes and legends
- Broad range of chart representations to enhance output quality
- Full access to advanced feature extraction methods\*



**MeshViz is a high-level data visualization development toolkit designed for scientific, manufacturing, finite element, fluid dynamics, and reservoir engineering software tools.**

MeshViz brings an extensive set of object-oriented classes to handle complex 2D and 3D meshes, including advanced data mapping and mesh extractions, and a comprehensive collection of charting objects.

MeshViz XLM delivers even more performance, by providing a unique Advanced Virtual Programming Interface (AVPI), that allows support of any kind of mesh and unique memory optimization for data storage.

- Take advantage of the Open Inventor® optimized engine, which offers the best level of performance for dynamic data updates.
- Transform complex data sets into effective representations and position them in a three-dimensional visual space.
- Understand multi-physics simulation using high-end visualization techniques.
- Manage data efficiently for post-processing of large simulation data.

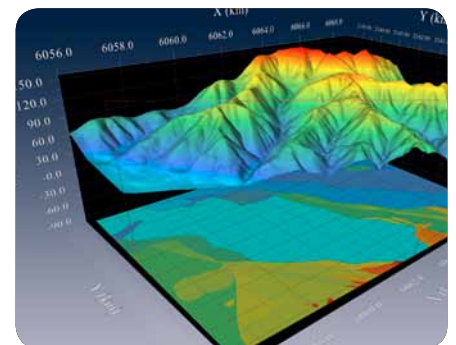
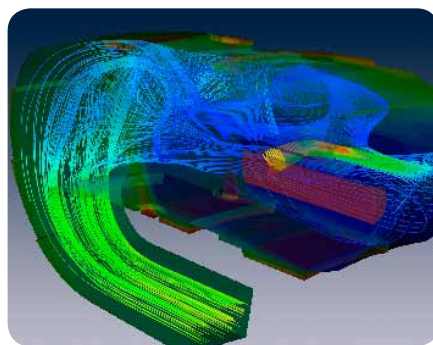
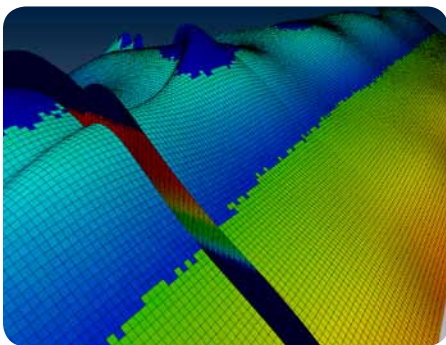
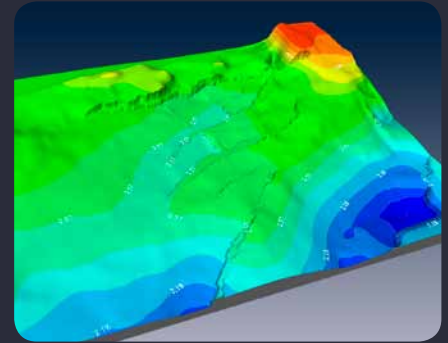
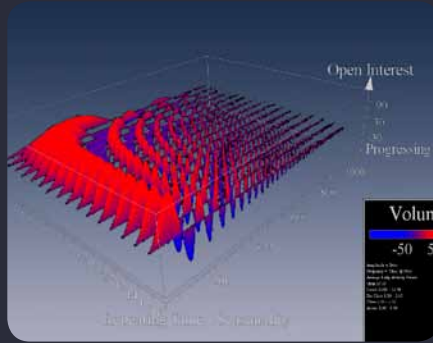
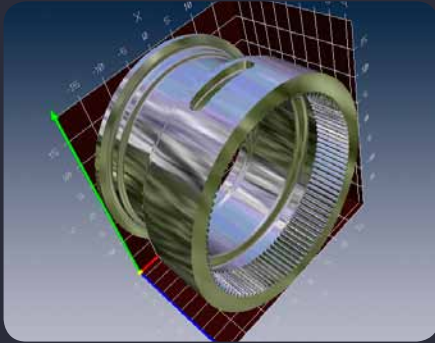


Image: Geovariances

\* Using MeshViz XLM

# MeshViz Extension

## The High-performance 3D Scientific Data Visualization Toolkit



### Support of any kind of Mesh

- 2D/3D structured meshes: cartesian, regular, irregular
- Unstructured volume meshes: tetrahedron, hexahedron, pyramid, and wedge

#### MeshViz XLM

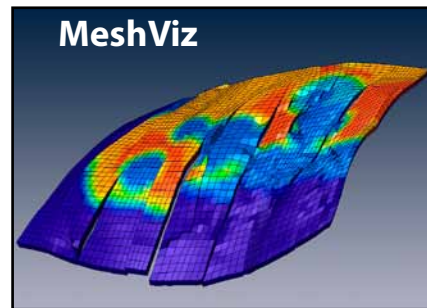
- Polygonal surfaces meshes: triangle, quadrangle, and polygonal
- Unstructured IJK meshes compatible with reservoir simulation
- Non-linear (Quadratic) meshes
- Polyhedral 3D meshes
- Any type of mesh defined by the Advanced Virtual Programming Interface (AVPI)

### Rich Set of Effective Representations

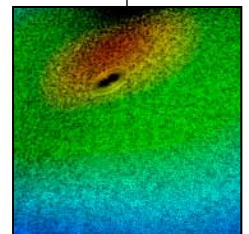
- Level surfaces (isosurface)
- Mesh skins
- Cross-sections and cross-contours
- Mesh limits and mesh edges
- Annotated contouring lines
- 2D and 3D vector fields and streamlines
- 3D wireframe skeletons
- Any number of scalar or vector data sets attached to mesh points or cells
- Undefined values, dead cells, and cell filtering support
- Advanced data-to-color mapping techniques
- Highly optimized probing tools

### Wide Range of Charting Types

- 2D/3D Cartesian, angular, polar, or time axes
- 2D/3D linear, logarithmic, or generalized multi-axis system
- 2D/3D linear, stair, spline, histogram, or raised points curve
- Legends
- Statistical representations: single and multiple histograms, or 2D/3D pie chart
- High/low/close charts, error curves, or point field bars
- 2D/3D generalized primitives: parallelograms, circles, circle arcs, arrows, labels, or markers



XLM



MeshViz is an extension of Open Inventor®, available for C++, .NET and Java.

MeshViz XLM is available for C++ only through a separate license. MeshViz XLM expands most of MeshViz capabilities by providing an Advanced Virtual Programming Interface (AVPI), that does not require to copy the mesh in memory, and that allows support of user-defined types of mesh.

### Bricks for Building Solutions

VSG provides a full range of high-level software components that help create value-added solutions for industrial-strength applications:

- **Open Inventor®** delivers a complete object-oriented 3D graphics toolkit for the development of 3D graphics applications.
- **VolumeViz extension** enables interactive visualization of very large datasets.
- **ScaleViz extension** enables rendering distribution on clusters for Open Inventor®-based applications.
- **HardCopy extension** allows applications to output graphics in several vector formats (HPGL, Postscript, CGM, GDI/EMF, and others), and to publish interactive 3D models in PDF documents.

[www.vsg3d.com](http://www.vsg3d.com)



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