CGM Polyhedra

Advanced modeling operators for polygonal 3D models

CGM Polyhedra is a polyhedral modeler that can be used with the CGM Modeler, 3D ACIS Modeler, as well as any other exact geometry kernel.

CGM Polyhedra addresses the most complex and demanding workflows for additive manufacturing, robotics, mining and more.

TOMORROW'S INNOVATION, TODAY

Advancements in Design, Manufacturing and Simulation applications are driving traditional CAD-based applications to support more mesh based workflows. Further 3D modeling is spreading to new industries such as Medical and Mining with demands to robustly handle large data sets with tessellation quality issues in a performant manner. CGM Polyhedra provides groundbreaking additions to precise modeling that enables your application to add value, solve new workflows and offer new products and solutions to your customer.

OPTIMAL QUALITY

CGM Polyhedra provides APIs to check, heal, modify and query polyhedral models ensuring that they meet the requirements of your application. Algorithms in CGM Polyhedra are designed to offer robust and performant modeling operations even on the largest data sets.

REDUCE DEVELOPMENT TIME

Leverage the APIs in CGM Polyhedra, such as those for Additive Manufacturing data preparation, to quickly add new workflows to your application saving time and development cost.

Model courtesy of 3D Benchy model by Creative Tools

CGM POLYHEDRA FEATURES

Import

Spatial's polyhedral solution supports customers' many data sources including medical data, terrain data, scanned objects, raw mesh data, precise models and dozens of 3D modeling formats when combined with 3D InterOp.

Healing

CGM Polyhedra automatically repairs models where other solutions fail. Combined with evaluation adjustment and repair tools, this enables you to product models that meet manufacturability specifications.

Polyhedral Operators

CGM Polyhedra offers many APIs to enable building data preparation workflows such as Booleans, Offsets, Decimation and Slicing. CGM Polyhedra allows for Booleans of polyhedral data with exact data to obtain a final polyhedral model.

Analysis

CGM Polyhedra supports a wide range of topological queries and calculations such as wall thickness analysis, point-body-distance, extrema, mass properties and silhouettes on polyhedral models.

Uniform Interface

CGM Polyhedra and CGM Modeler share common polymorphic APIs for many operations to make implementation easy while using specialized algorithms optimized for the input data. The body data type can be either exact or polyhedral allowing data to be stored and managed in the same container streamlining code.

Additive Manufacturing

CGM Polyhedra offers a complete workflow for additive manufacturing data preparation such as wall thickness analysis, offsetting, orientation & nesting and slicing enabling faster time to market.

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Dassault Systèmes, the **3D**EXPERIENCE Company, is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating 'virtual experience twins' of the real world with our **3D**EXPERIENCE platform and applications, our customers push the boundaries of innovation, learning and production.

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