CUSTOMERS DEMAND FASTER SOLUTIONS AT A LOWER COST

This represents a challenge and opportunity for application developers:
- Shorter development schedules apply pressure to project scope, quality and budget
- Limited solutions that focus only on specific market segments may not fully address workflows and don’t scale

3D ACIS MODELER UNLOCKS INNOVATION

- 3D ACIS Modeler offers features and capabilities to enable the development of market leading applications
- By using the industry proven components of 3D ACIS Modeler, developers avoid the cost and risks associated with internally developed components
- 3D ACIS Modeler accelerates time to revenue by enabling the rapid development and delivery of applications

3D ACIS Modeler delivers flexible modeling capabilities that enable manufacturing, engineering and design application providers to meet market demands for higher quality 3D applications in less time and with lower development costs. Whether the need is for direct modeling capabilities to support a history-free CAD application or for tolerant modeling to remove gap errors in modified models, 3D ACIS Modeler provides broad solutions trusted across a variety of industries.

ENABLE PRODUCT DIFFERENTIATION

As the foundation for 3D modeling, 3D ACIS Modeler provides functions to create, modify, and query objects as well as provide visualization, simulation, and analysis. 3D ACIS Modeler delivers innovative, patented technologies, accuracy of modeling operations, ease of implementation, and robust data manipulation. Developers can focus their efforts on delivering unique product capabilities, rather than basic application infrastructure and standard functions.

LOWER DEVELOPMENT COST AND RISK

Powering hundreds of commercial and internal applications with over 2 million seats in use worldwide, 3D ACIS Modeler is industry proven. This allows development teams to reduce both the cost and risk of developing 3D modeling technology. Cross-industry use of 3D ACIS Modeler in the most demanding applications, combined with rigorous quality procedures, ensures that it is capable of handling the most complex challenges. Lower risk means reduced development costs!

SOLUTIONS FOR A BROAD RANGE OF MARKETS AND INDUSTRIES

While the capabilities of 3D ACIS Modeler were initially developed to meet the demanding requirements of CAD/CAM/CRE, applications in areas such as automated machinery for robotics and metal-working also benefit from this technology. Additional markets such as Additive Manufacturing, Building Information Modeling (BIM), Shipbuilding and Electronic Design Automation (EDA) rely on 3D ACIS Modeler for model generation, import and modification capabilities.
## Key Feature | Benefit
---|---
Boundary Representation (B-rep) Modeling | 3D ACIS Modeler delivers precision and performance to create, modify, and query the geometry of simple through complex B-rep models.
Multi-Threaded Architecture | To maximize performance, 3D ACIS Modeler allows multi-threaded applications to take advantage of multicore hardware and achieve near linear performance gains.
Direct Editing | Direct editing enables creation and modification of geometry without constraints, allowing manipulation of local areas of a model while managing surrounding topology.
History Based Modeling | 3D ACIS Modeler bulletin-board functions and model change tracking supports relationships between features thereby capturing design intent.
Non-Manifold Modeling | To handle thin plate objects, such as composite materials, 3D ACIS Modeler provides support for both manifold and non-manifold regions within the same function.
User-Defined Geometry | 3D ACIS Modeler allows creation of custom equations to easily define complex surfaces, for example, the Laws function, can model complex shapes such as a helix for fastener and machine tool industries.
Attribute Management | To simplify data management, 3D ACIS Modeler allows application data, such as PMI, to be associated with any model entity and exchanged with other applications.
Model Analysis Tools | 3D ACIS Modeler provides a comprehensive set of tools to query and analyze a given model. CAM and CAE systems make heavy use of point body distance, clash detection, ray firing, mass properties, and model quality tests.
Faceting | Faceting produces an approximate polygonal representation of the 3D model, useful for rendering, clearance analysis and to speed calculations.
Analysis | The surface mesh is used to generate volumetric mesh for analysis applications such as EDA, Computational Fluid Dynamics (CFD) and Robotics.
Assembly Modeling | 3D ACIS Modeler provides operators to assemble, manipulate, query, and save/restore a set of assembly and part models, providing grouping structure and properties for kinematics, FEA, interference checking, and bill of materials generation.

### Application Components - ACIS-based 3D modeling components that target a specific industrial challenge or application workflow

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>3D Advanced Covering</strong></td>
<td>Enables end-capping, post-translation model correction, and surface definition from curve data for consumer product design, manufacturing, and engineering applications.</td>
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<tr>
<td><strong>3D Defeaturing</strong></td>
<td>Automatically identifies and removes small features that CAE analysts typically want to eliminate prior to meshing.</td>
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<tr>
<td><strong>Hidden Line Removal (HLR)</strong></td>
<td>Generates precise 2D projections of 3D ACIS models for use in engineering, design, and manufacturing applications.</td>
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<tr>
<td><strong>Deformable Modeling</strong></td>
<td>Provides Interactive sculpting of 3D models while maintaining high quality, manufacturable surfaces.</td>
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**Our 3DEXPERIENCE® platform powers our brand applications, serving 12 industries, and provides a rich portfolio of industry solution experiences.**

Dassault Systèmes, the 3DEXPERIENCE® Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes’ collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 190,000 customers of all sizes in all industries in more than 140 countries. For more information, visit [www.spatial.com](http://www.spatial.com).