

# **Top Ten Reasons to Embrace Spatial Components in 3D Application Design**





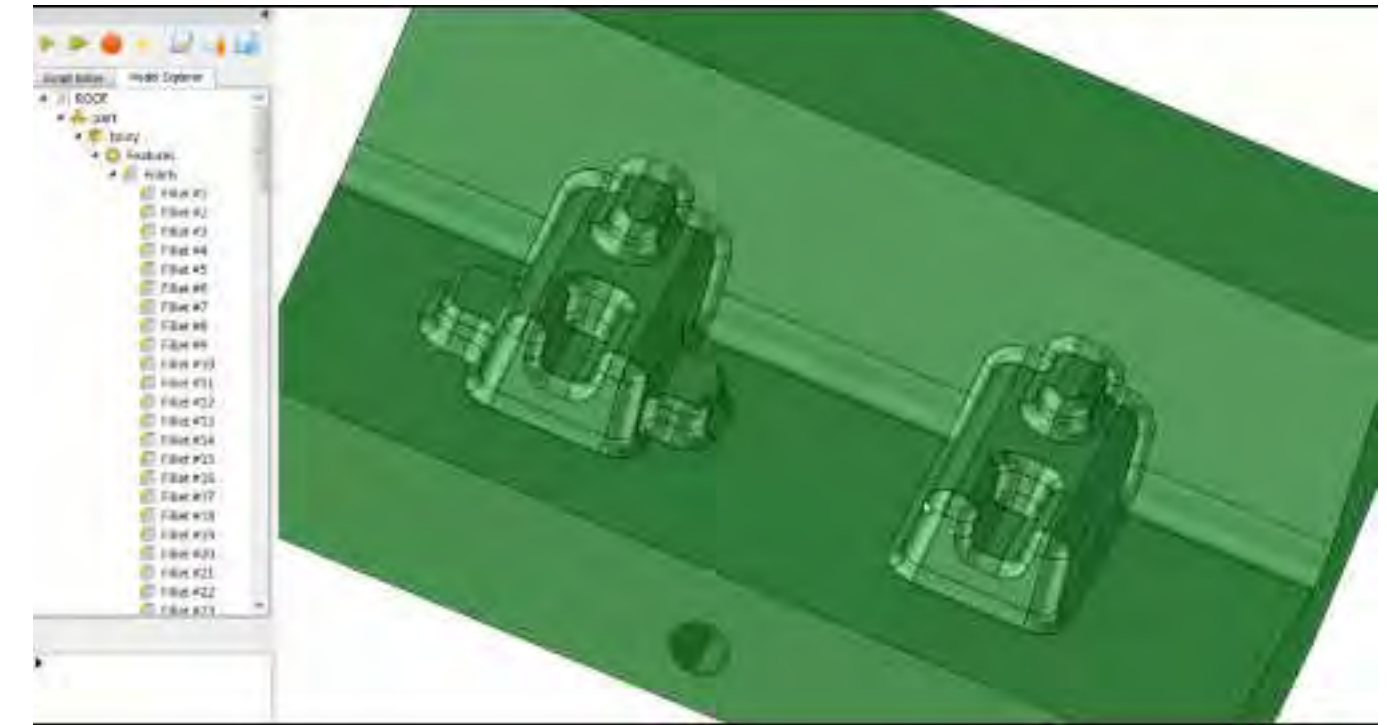
# 1 Modeling

Spatial is the premier supplier of components used in 3D modeling application development. Spatial 3D components deliver flexible modeling capabilities that enable manufacturing, engineering, and design application providers to develop higher quality 3D applications in a shorter time and with lower development costs. Using the Spatial 3D Modeling SDK, developers can focus their efforts on delivering unique product capabilities, rather than basic application infrastructure and standard functions.

Key benefits of Spatial's 3D modeling products include:

- Complete set of modeling operators including direct editing and history to support the most demanding modeling requirements
- Extensible options to target specific industrial challenges such as pressed-metal tooling, analysis small feature removal and 2D/3D constraint management
- Thread safe, enabling multi-threaded cloud based or desktop applications
- Feature recognition capabilities to simplify models for analysis, for IP protection, or to employ search techniques that improve part reusability
- Polygonal mesh generation supporting a variety of uses including additive manufacturing, visualization, analysis, and tool path simulation

*This video illustrates feature recognition in Spatial's ACIS 3D Modeler product. ACIS automatically recognizes individual fillets and lists them in the tree on the left. It also has recognized them as "constant radius" fillets. The holes are recognized as "simple type."*



“Competence: Experience, quality of products and service, business acumen, and technical expertise. We also believe it includes the attitude and commitment of your development partner.”

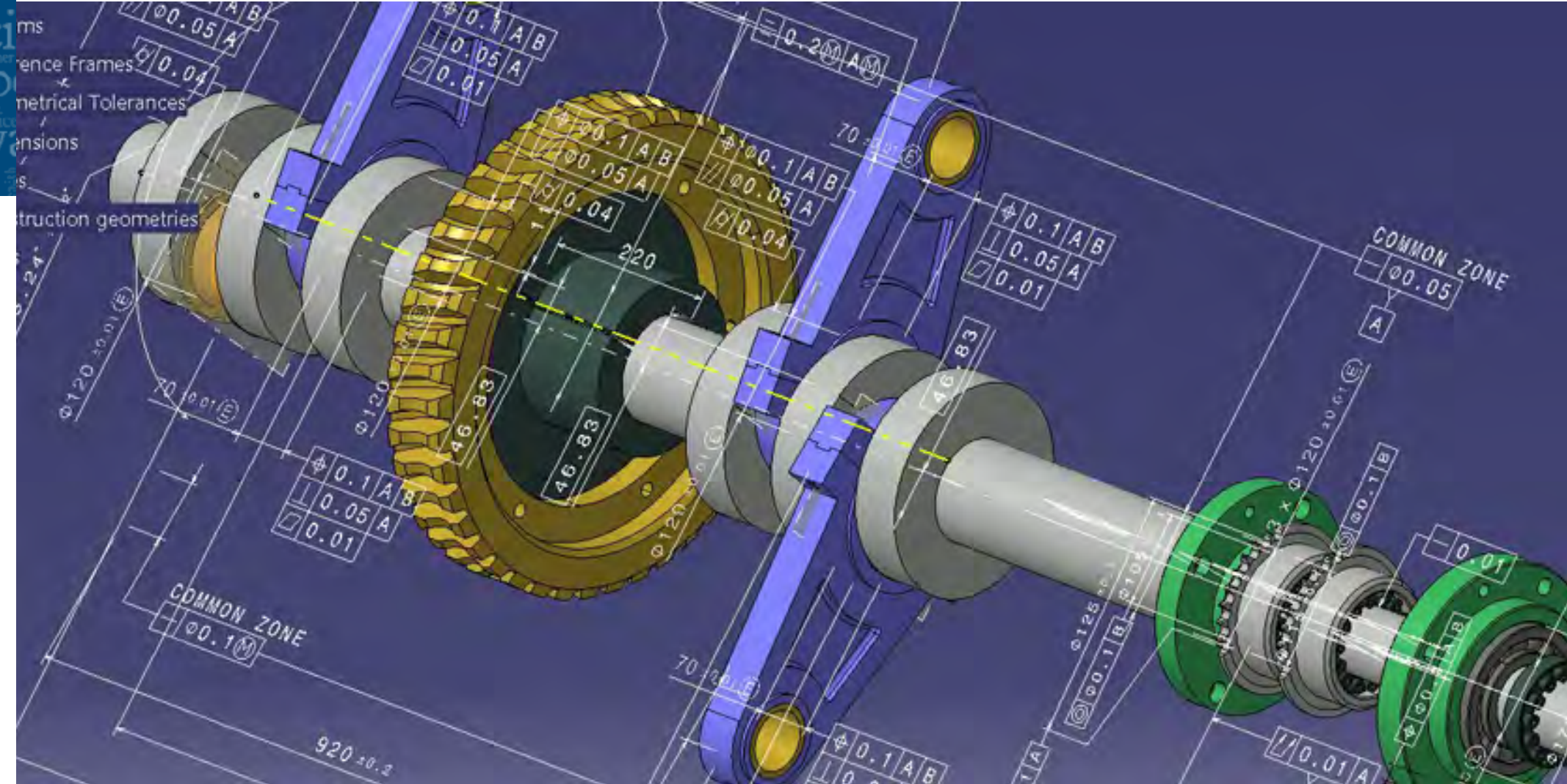
# 2 Visualization

Visualization software gives designers and engineers the ability to satisfy users' needs to visualize ideas, verify designs, create virtual prototypes, and move projects quickly to manufacturing. HOOPS Visualize, offered by Spatial, is the industry's most powerful, portable and complete graphics development component for creating or enhancing 3D applications. HOOPS Visualize helps developers accelerate the development of high-performance 3D applications for desktop, cloud, and mobile applications using the high-level graphics APIs that power applications across a range of industries.

Using an open, modular architecture, HOOPS Visualize offers API access to a powerful underlying suite of integrated components for maximum customization. HOOPS Visualize includes reference applications with source code, reducing the learning curve. The result is a flexible component suite with impressive graphics functionality providing the foundation for fast development and timely market release of customer applications.

Key benefits of HOOPS Visualize:

- Integration with ACIS 3D Modeler and CGM modeling libraries
- Rich 2D / 3D integrated scene-graph creation and management
- Support for optimal rendering on OpenGL and Direct3D
- Large Model Visualization for real-time viewing of large datasets
- Advanced sectioning on multiple planes for creating cutaway views



“Our partnership with Spatial has worked very smoothly for more than a decade. Their understanding and respect for us as a small software developer has enabled our long-term relationship.”  
—Arto Hannula, AutoPOL Product Manager, FCC Software AB

# 3 Interoperability

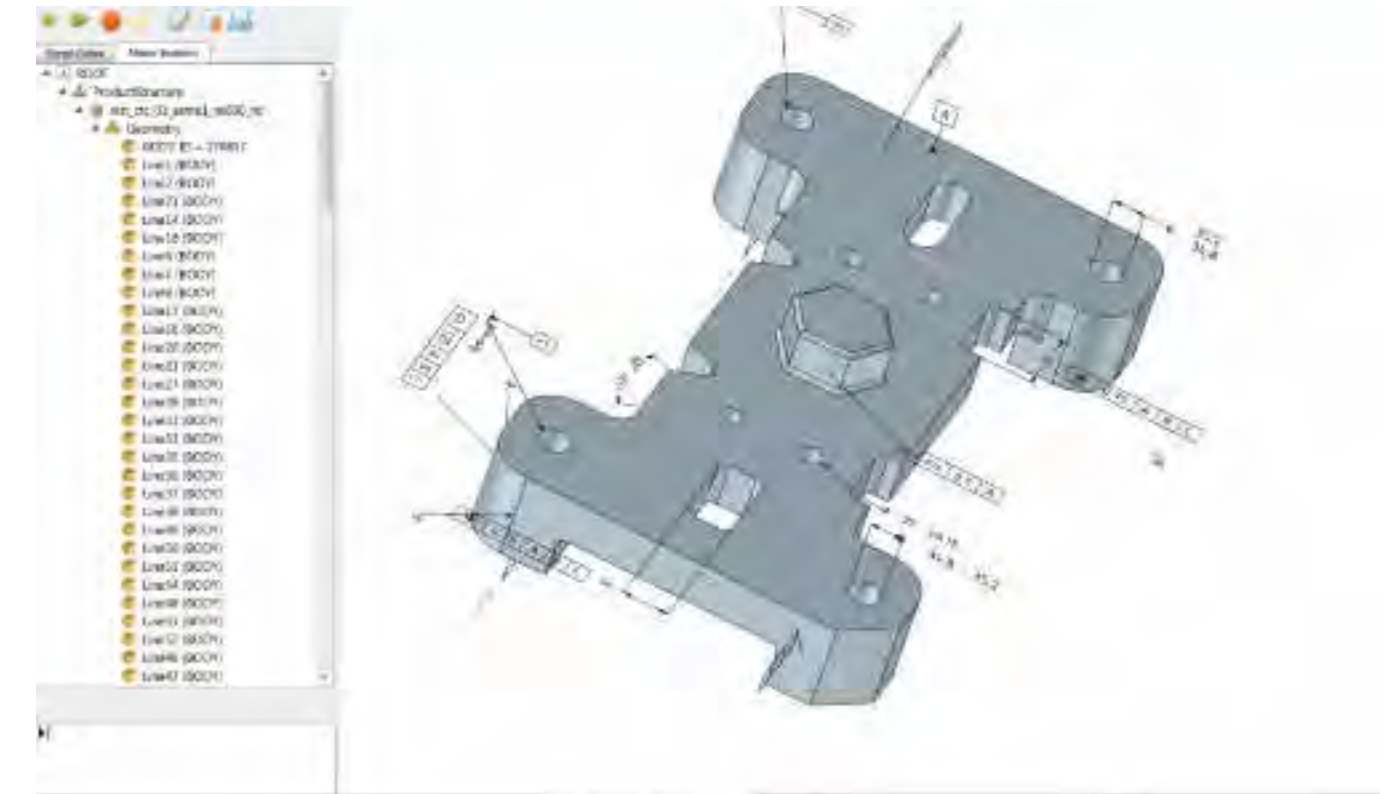
The richness and complexity of the design and analysis process in today's multi-CAD environments **often requires multiple applications to be available to engineers.** The result is the need for translation mechanisms that understand the underlying elements of each application's data, and **faithfully, accurately, and predictably present the core data to the end user and to other applications.**

Spatial components are supported by an industry-leading data interoperability solution: Spatial's 3D InterOp. 3D InterOp provides access to high-quality graphical data directly from the source model. In addition, it provides the exact visual fidelity required to render data similar to the CAD system used to design the imported model. Advanced modeling technology is used in InterOp to address geometry repair, topology repair, and tolerance resolution.

Key benefits of Spatial's 3D InterOp:

- Supports downstream modeling operations with Industry leading translation quality and robustness
- Automatically heals and repairs files containing poor quality data
- Provides access to product structure, geometry, graphical data and product manufacturing information
- Translates a wide range of CAD formats with a single programming interface
- Supports the major commercial geometry kernels (ACIS, CGM and Parasolid)

*This video shows **graphical and semantic PMI** and that data is linked to the geometry and thus can be highlighted. The PMI can be retrieved via rollover in the tree, geometry, or through the graphical PMI.*



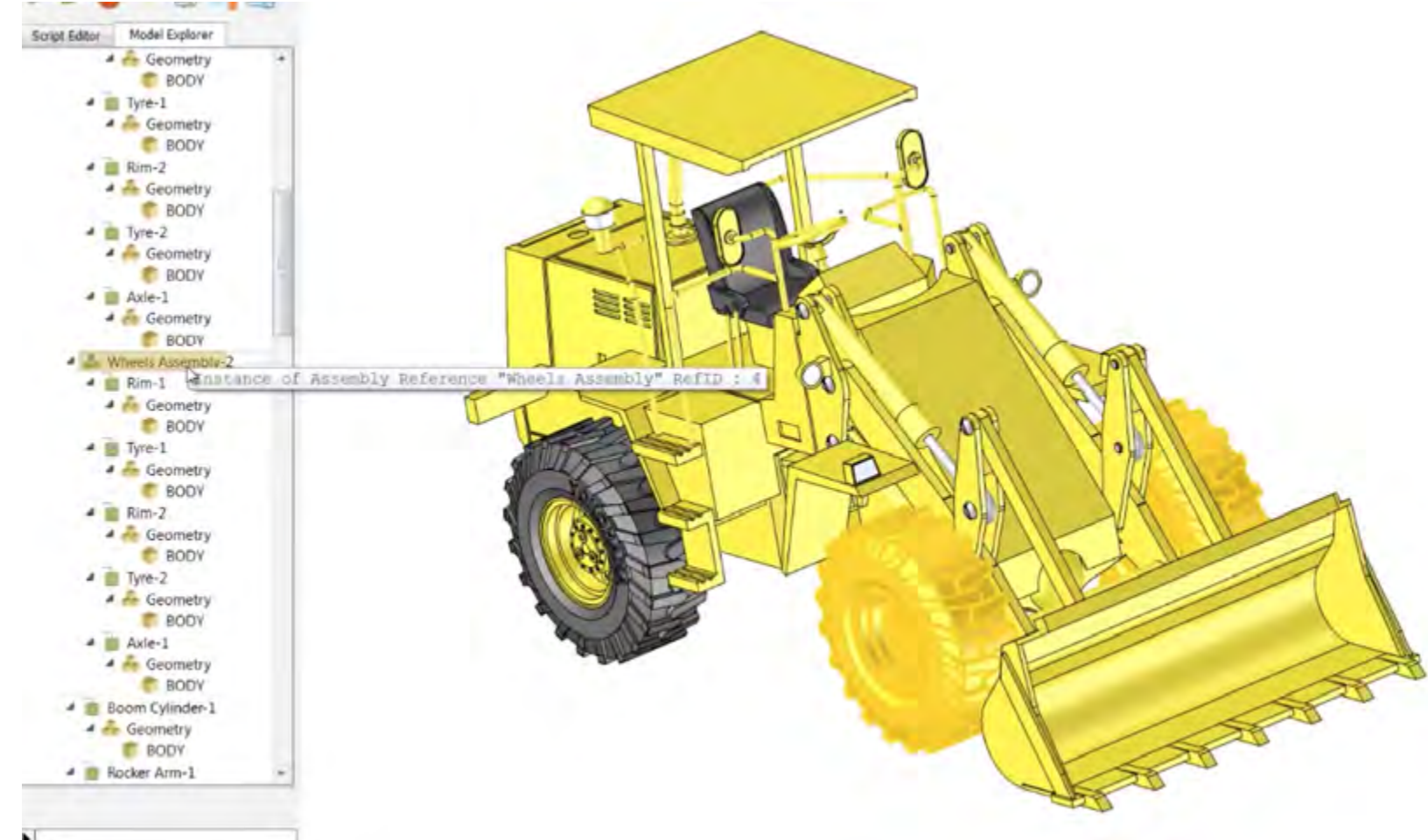
**“**This partnership enabled us to provide advanced import capabilities to our customers with a development time of a few months, while we would have needed years to develop the same tools ourselves... **”**  
**—Marc Vilcot, Sales Director, CEDRAT**

# 4 Future-proof

Having a partner that provides solid technology is fine. Keeping up with upcoming technology is quite another matter. Your applications need to adapt to the latest trends—trends that can make your applications higher quality, improve productivity, and capture new use cases that can take your applications to a whole new market or customer space.

It's not just technology—it's about doing business. Are you exploring cloud-based apps? New licensing and packaging models? Mobile apps? Spatial components are already embedded in applications in many of these areas. The ideal partner quickly embraces technological advancements so that they can be readily incorporated in your development environment.

Spatial invests in keeping abreast of business and technology trends. For example, we're developing hybrid modeling capabilities that combine exact (geometric) and non-exact (polyhedral) modeling in a single model. We develop innovative and creative ways of deploying new technology—giving you access when you need it to bring new customers online, while improving service for existing ones.



“Another important factor in the decision-making process was the responsiveness of the Spatial technical support team to our inquiries and their willingness to work with us. They go far beyond providing training, documentation and other typical technical support; they actively help us fill in holes in their offering if the need arises.”  
—Mathieu Dubé-Dallaire, , Engineering Manager, BuildIT

# 5 Quality

All aspects of quality are important in a partnership—after all, a poor quality product directly impacts your reputation and brand. In the case of components used in design and delivery of 3D modeling and visualization, not only is the quality of the delivered components important, but also the quality of interaction with the vendor.

**The robustness of Spatial's software is legendary.** Spatial solutions are used by millions of users across a wide range of industries and in thousands of applications. Such widespread deployment almost guarantees that an enormous combination of use cases has already been proven.

When it comes to quality of support, **our customers testify to the success they have achieved when they partner with Spatial Support and Professional Services team.** Customers using Spatial support and services typically experience a faster learning curve, a better understanding of component capabilities and are able to deliver more innovative applications, faster.

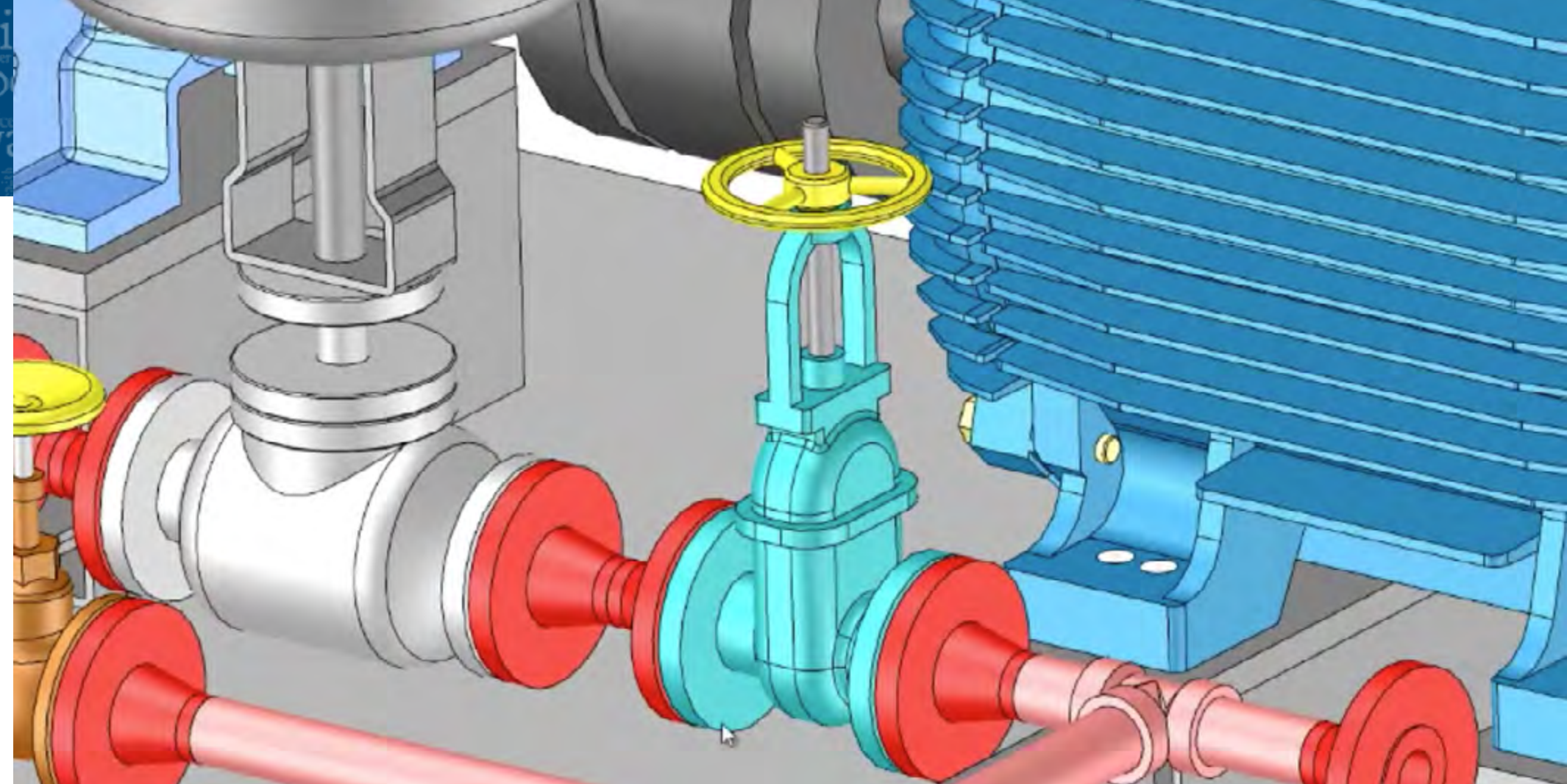


“The quality of Spatial InterOp Translators significantly reduced our development efforts, speed our time to market and enables us to offer a continuous workflow for structural and packaging designers.”  
—Richard Deroo, Product Manager, Structural Design, EskoArtwork

# 6 Predictability

Predictability is the cornerstone of successful application deployment, and is an important reason to embrace Spatial and Spatial components. Predictable means you know what you're getting—a reliable product, delivered on time, with an expected cost. A predictable business relationship means you can reliably schedule your development projects, time-to-revenue, and return on investment.

Predictability doesn't end at delivering reliable products on a given schedule; it includes the knowledge and experience of ongoing training and support services. Spatial's Support and Professional Services teams bring in-depth industry knowledge, best practices, and proven methodologies to every project—ensuring faster learning curves, a better understanding of component capabilities, and the technical expertise to deliver more robust applications.



“When I outsource software to be part of my product, the company's reputation, reliability and support infrastructure are very important to me. I am very satisfied with Spatial's technology and services and strongly recommend Spatial to other companies because of their reliability and ease with which Spatial components integrate with DAFUL components.”  
—Prof. Daesung Bae, Director of Research and Development Virtual Motion

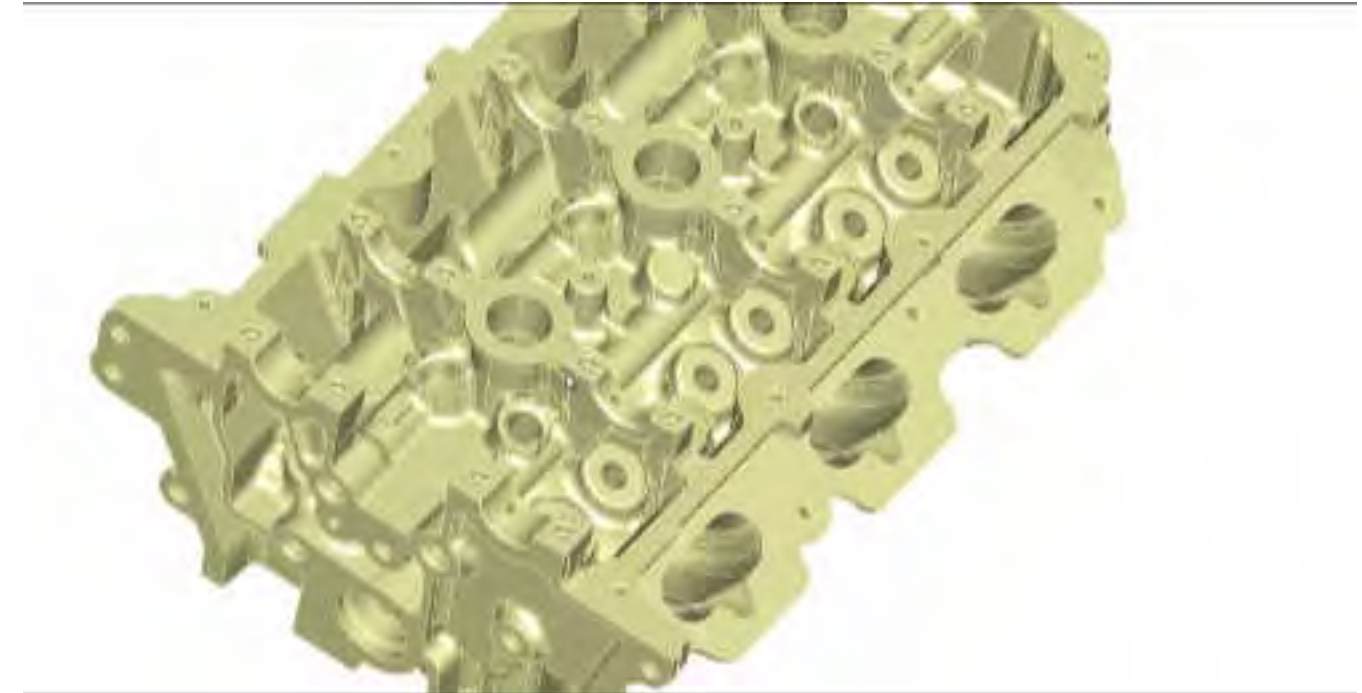


# 7 Breadth of Solutions

Today 3D modeling and visualization covers a large range of applications. From numerically controlled machines to all aspects of product lifecycle management, Spatial provides components and services that satisfy the needs of developers across a spectrum of industries. Having such a breadth of applications means Spatial can often provide everything you need, relieving you of chores related to integrating and supplying bridges between components.

A single supplier of software removes the challenges of managing multiple vendors—the inevitable finger-pointing when something isn't working, multiple vendor contracts, and having multiple contact points for support. In addition, a single supplier that has what you need allows you to leverage the economics of volume buying, reducing costs.

Finally, Spatial provides specialized components—3D modeling options that address specific industrial challenges or application workflows. These components provide very concise interfaces tailored for fast and straightforward implementation, and can accelerate application delivery time and reduce resource requirements, project risks, and development costs.



*This video shows the **Detection of Matching Entities** feature of ACIS 3D Modeler. ACIS detects all the faces on a model that have the same surface geometry as a given reference face. The resulting faces are highlighted.*

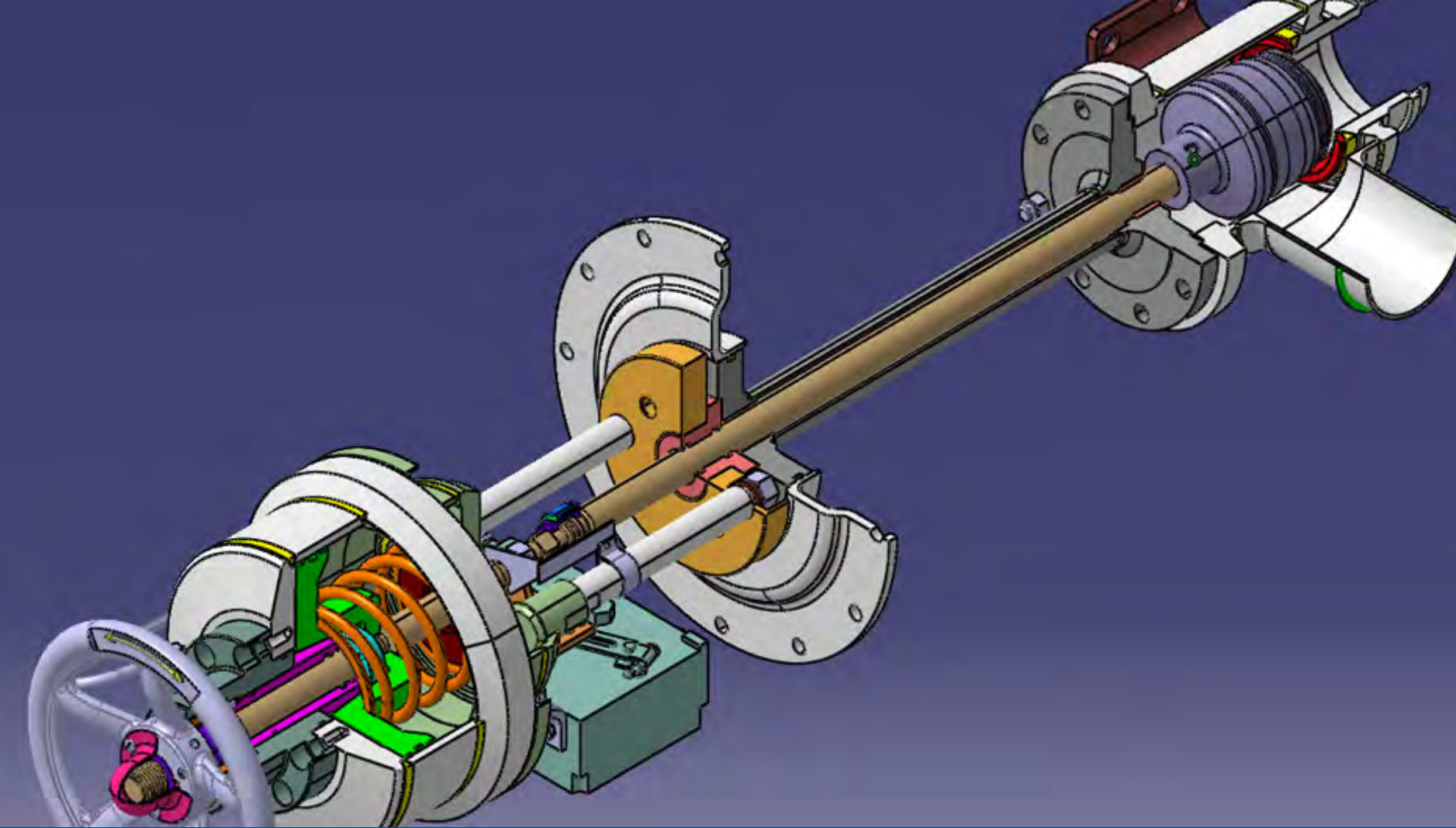
“We are excited to be working with Spatial. We feel its InterOp translators have been a great asset to our product development and we look forward to using its translators to improve the future of PolyWorks.”  
—Marc Soucy, President InnovMetric

# 8 Collaboration

The science of collaborative projects is changing—especially when it comes to development and design technologies. From using public cloud services to accessing designs on mobile devices, there’s a growing demand for technology that fosters and promotes collaboration. **Spatial’s SDKs enable our customers to develop applications that consume, modify, and share data across the room or across the world.**

In addition, collaboration is more than just technology—it’s also about how our businesses collaborate to bring your products to market. Spatial works with your business staff to understand your requirements and challenges, contributing best practices and proven methodologies to help ensure your programs are successful. In addition, our collaborative approach gives you flexibility in:

- Product packaging—allowing you to determine how best to deploy your solution.
- Pricing—a business model that delivers the flexibility needed to adapt to your market demands and business needs
- Delivery and support—tailored to your particular needs.

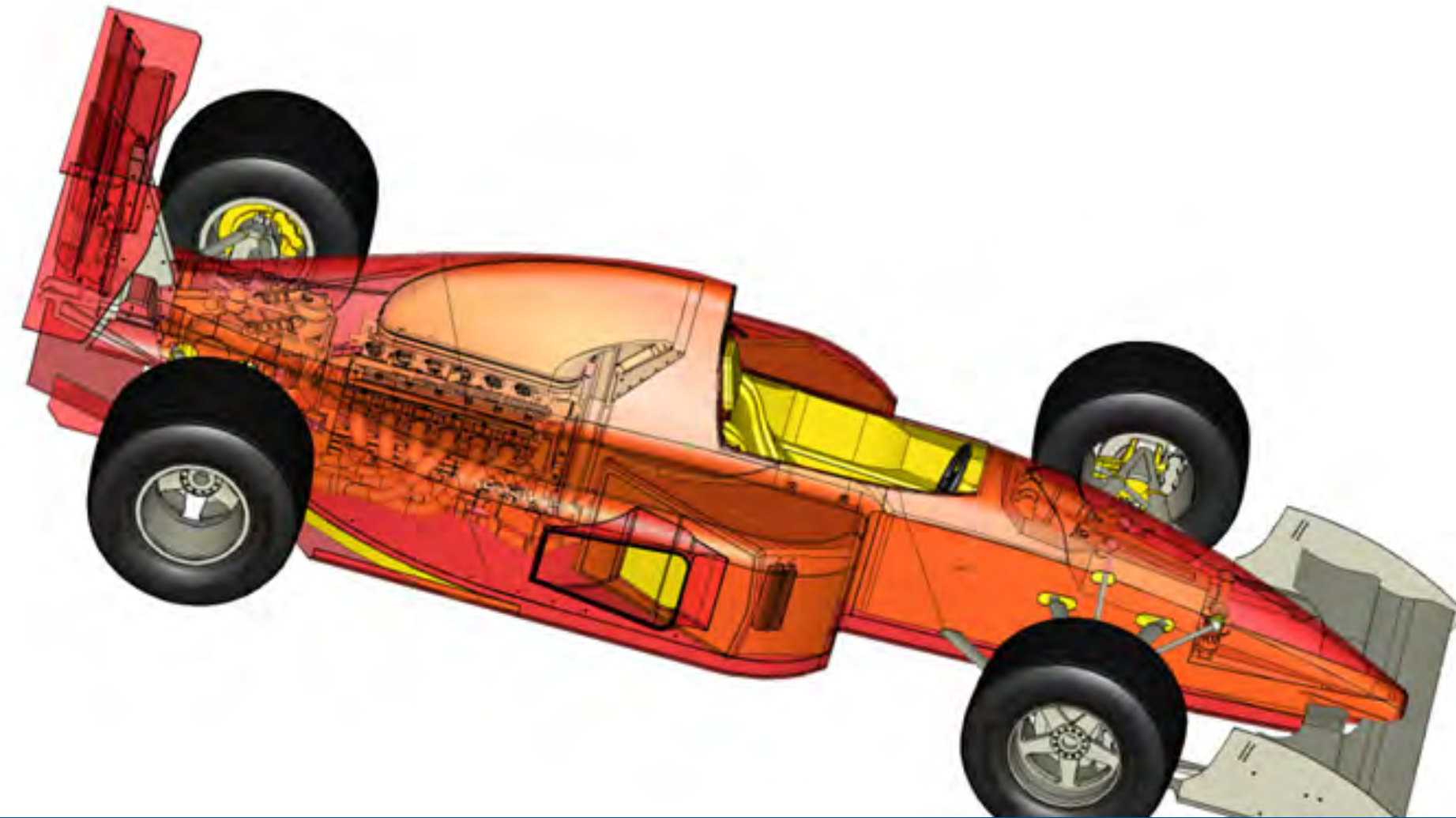


“Working with Spatial enables us to focus on our core technology competence. Because we have a reliable modeling engine available to us, we are able to concentrate our efforts on the usability part of the interface. I think this has been very well recognized in the market; and it’s something that would not be possible without Spatial.”  
—Martin Timm, Marketing Director, CST

# 9 Time-to-revenue

Your application development schedule is a critical factor in meeting revenue goals. Spatial's technology gives you a significant head start—you don't have to develop the fundamental components—leave the complexity of the math and visualization to us. By relying on our proven components you will reduce development and quality assurance time, ultimately bringing your product to market faster.

From the business side, you're not just getting technology—you're getting knowledge and experience that aids in the development and deployment of your application. You can leverage Spatial's knowledge, best practices, and services to overcome hurdles that you might otherwise encounter.

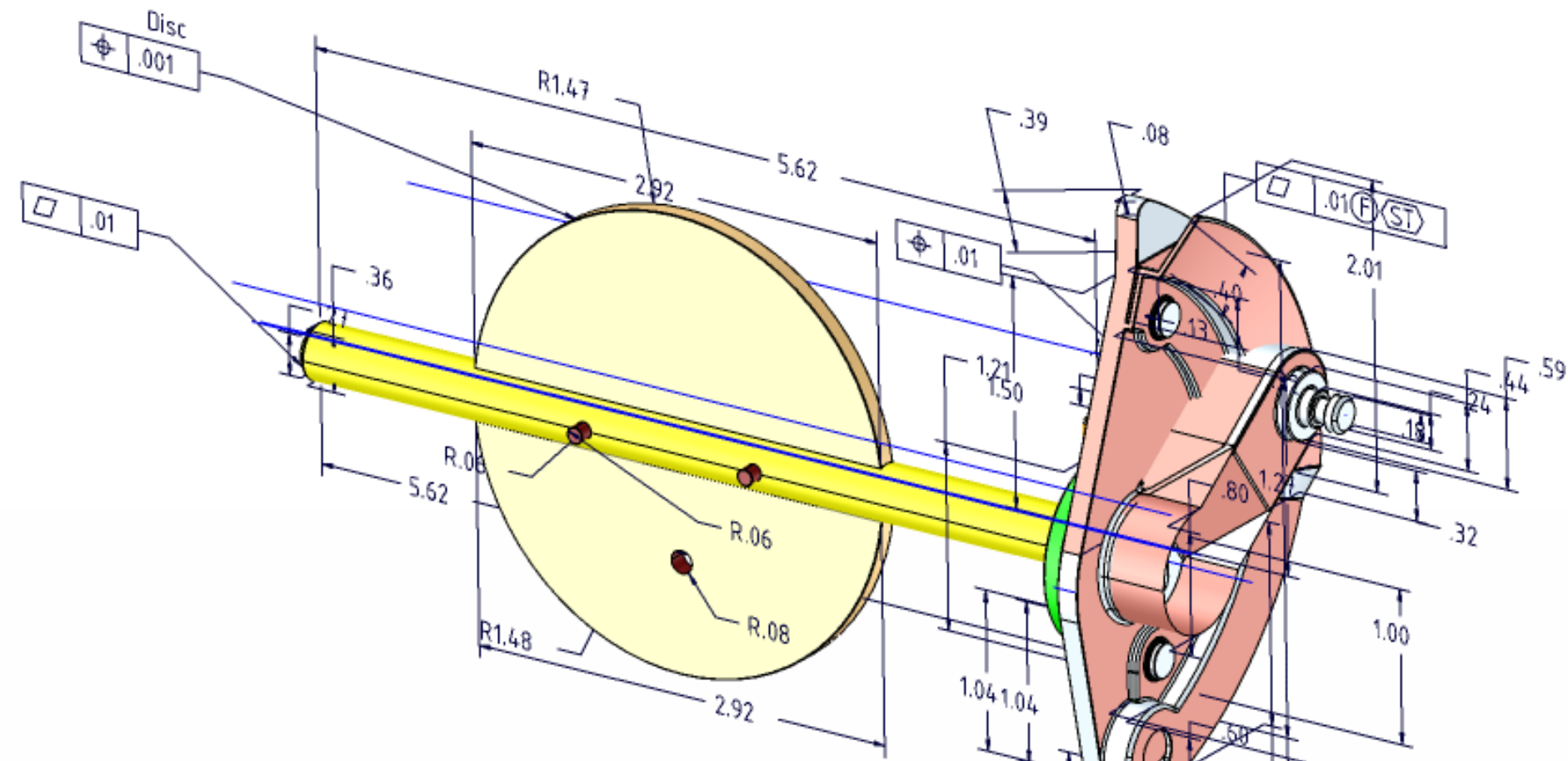


“ACIS and its extensions help our software developers bring new features to market more rapidly. Through our long-term relationship we've gained development efficiencies and are better able to respond to our customer's requests for new functionality in existing and future products.”  
—Bob Mayer, Chief Operating Officer IMSI/Design

# 10 Experienced Business Partner

You require a partner that understands technology, business models, and markets; the experience and competency of your technical partner can overshadow all of the other variables affecting the development and deployment of 3D applications.

Founded in 1986, Spatial had one main product: ACIS, the first commercially available 3D modeling kernel. Through subsequent years, Spatial has created a robust portfolio of components, **enabling ISVs and other companies that build 3D applications to innovate and develop applications that are strongly differentiated from competitors.** Today, Spatial provides a suite of 3D products that complement Dassault Systèmes' 3DEXPERIENCE: Business Experience platform, providing software solutions for every organization in a company to help in creating differentiating consumer experiences.



“Throughout the entire implementation process the Spatial team turned out to be exactly the partner we expected.”  
—Frank Nagel 3D-Tool Customer Support

# Conclusion

Software developers that create innovative, competitive products want a development partner that understands their business and their challenges. Spatial's software development kits—used in over two million seats worldwide—enable application developers to deliver market-leading products, maintain focus on core competencies, and reduce time-to-market.

As a trusted partner, Spatial provides 3D modeling, 3D visualization, and 3D CAD data translation software components that give you the tools you need to innovate, bring products to market more quickly, and deploy higher-quality applications.

For additional information, please visit [spatial.com](http://spatial.com)

