

GRANITE®: PTC's Modeling and Interoperability Kernel

The Essential Tool for Building Interoperable 3D CAD Applications

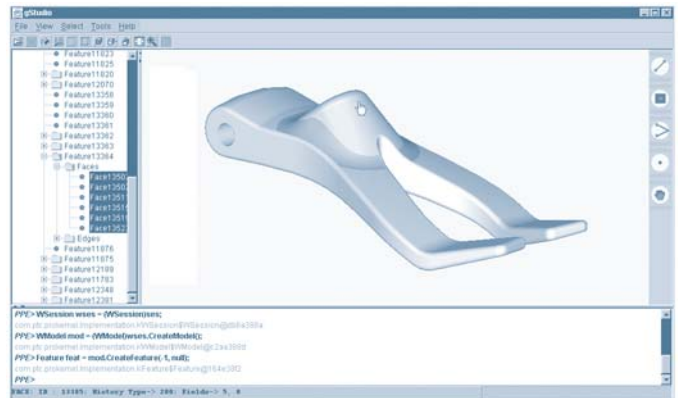
The issue of data exchange among different CAD systems, or across CAD, CAM, and CAE systems has been a chronic and costly problem that has plagued the discrete manufacturing industry and confounded engineers and designers for years. In fact, estimates have suggested that the problem of CAD incompatibility costs manufacturers between \$20 billion to \$40 billion annually. But there is a remedy. It's called GRANITE—PTC's Modeling and Interoperability Kernel—and it's available as the foundation for developing interoperable 3D CAD/CAM/CAE systems.

Today, GRANITE is invaluable to dozens of independent software vendors who are incorporating the GRANITE platform into their own products, so that users of these solutions have immediate, automatic native file access to the geometry of all other GRANITE applications. Moreover, since its introduction in 2001, end-users—engineers and designers—have been increasingly utilizing GRANITE to build their own specialty engineering applications.

Since GRANITE enables the efficient exchange of native files among “built on GRANITE” CAD, CAM, CAE systems, including Pro/ENGINEER® 2001 and Pro/ENGINEER Wildfire™, it saves significant time and effort in data translation while maintaining design integrity and eliminating bottlenecks and delays when exchanging data between applications. Also, since GRANITE files are associative, every time a change is made to data in an authoring application that has been built on GRANITE, similarly developed GRANITE applications automatically and appropriately adapt to the change without a cumbersome data export process.

Product Capabilities:

- Use a feature-based geometric 3D surface & solid modeling kernel with extensive low-level geometry creation tools
- Read native Pro/ENGINEER part and assembly files directly into your commercial or in-house application



The GRANITE gStudio Development Environment allows quick prototyping of new code and easy visualization of CAD models.

- Drive associative updates between multiple applications built on GRANITE
- Embed GRANITE model data in application's own file format yet still be directly accessible by other GRANITE based applications through gPlug technology
- Exchange geometry from major industry neutral file formats and import and export easily to communicate with non-GRANITE systems
- Access architecture and bindings with interfaces available in C++, Java, and COM

Customer Benefits:

- Associatively drive change to and from other applications built on GRANITE
- Reduce or eliminate the cost of interoperability through sharing native CAD data between applications within diverse environments
- Allow rapid development of design and analysis applications
- Expand breadth of opportunity for an application to read/write data from most industry standard geometric formats
- Increase access to re-usable CAD data coming from commercial Pro/ENGINEER licenses

“Incorporating GRANITE into our product provides us with a seamless link to Pro/ENGINEER and allows our users to better leverage PTC’s market leading design functionality.”

—Moldflow Corporation

Built-in Associativity

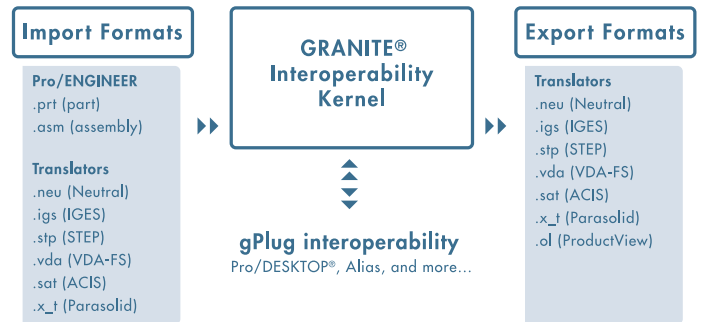
GRANITE enables the creation and referencing of feature-based solid models using the same industrial-strength algorithms and powerful associativity mechanisms at the heart of Pro/ENGINEER.

Applications built on GRANITE can read CAD files created in other authoring tools built on GRANITE by reading or creating the GRANITE data directly out of the other applications’ native files. This is achieved using a “gPlug,” a plug-in supplied by the vendor of the authoring application that knows where to find the GRANITE data in the native file. The result: No export is required and no separate CAD software is needed to read the data.

GRANITE also includes STEP, IGES, VDA-FS, and ACIS® SAT translators so users of applications built on GRANITE are empowered to interoperate with applications that rely on these industry file formats.

More Vendors Developing Applications with GRANITE

Today, GRANITE is gaining increased adoption in the industry as independent software vendors are incorporating GRANITE into their own products—and engineers everywhere are thankful. With the greater market availability of GRANITE-based applications, engineers gain immediate, automatic access to the geometry of all other GRANITE-based applications, and ultimately have a superior ability to communicate across different CAD, CAM, and CAE systems.



Implement the industry’s most powerful interoperability solution with the wide range of import and export formats supported by GRANITE.



For More Information on GRANITE

Please visit PTC on the web at www.ptc.com/products

GRANITE Licensees

Alias	Fluent	Okino Computer Graphics	Tata Motors
Altair Engineering	Gibbs and Associates	Pathtrace	Tech Soft America
Ashlar-Vellum	Informative Graphics	PlasoTech	Theorem Solutions
Bechtel Bettis Atomic Power Laboratory	IronCAD	QuadriSpace	ThermoAnalytics
CADCAM-E	ITI TranscenData	Raindrop Geomagic	Trace Parts
carat robotic innovation	Knolls Atomic Power Laboratory	Right Hemisphere	
Caterpillar	Lawrence Livermore Nat’l Lab	Sandia National Laboratory	
CNC Software	Moldflow	Simmetrix	
		Solid Concepts	