Kubotek Kosmos Announces the 5.0 Release of its 3D Framework Modeling Kernel

Enhancements made to performance and compatibility; enabled product coming to market

MARLBOROUGH, MA, USA, April 13, 2023 /EINPresswire.com/ -- Kubotek Kosmos, a leader in engineering and manufacturing geometric software technology, today announced the 5.0 release of its 3D Framework modeling kernel and CAD interoperability library. Kubotek Kosmos licenses its 3D Framework to other software developers who need advanced, multi-platform components to maximize their ability to work with complete engineering models and data from all major MCAD databases. The 5.0 release includes numerous enhancements, performance improvements, and updates. The company also announced a new customer, Photon Engineering, will deliver a major update of its FRED software later this year utilizing Kosmos technology and file translators.
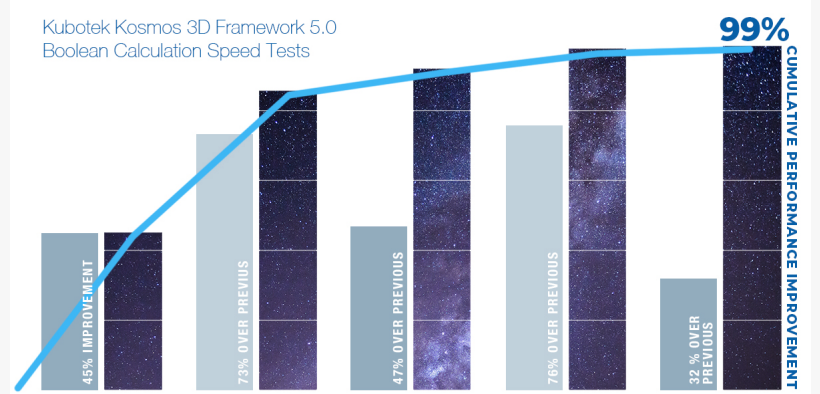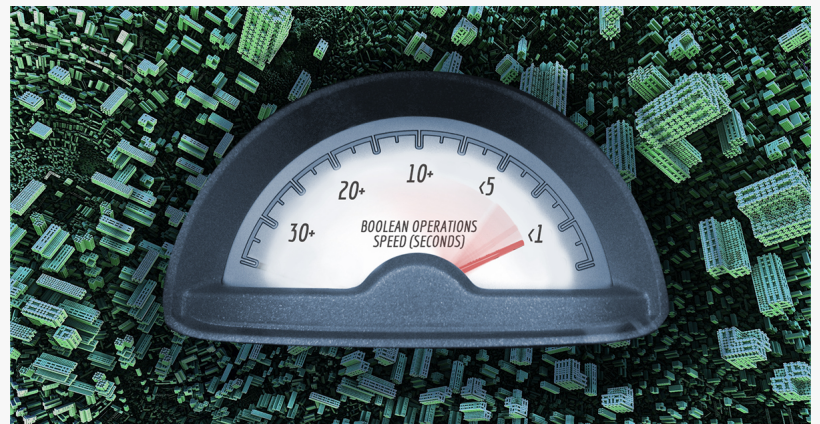

Table 1: Boolean Operation performance gains across the 5.0 development cycle measured by Kubotek Kosmos

New and Enhanced Functions
The 5.0 release adds new functions to the 3D Framework application programming interface (API) for mesh generation and analysis, and trimming of faces. Modeling functions for segmenting splines, generating smooth cover surfaces, extending surfaces, wire offsets and extruding faces have all been enhanced. The software's ability to discover features and their parameters from Boundary Representation solids has been expanded to include standard holes such as counterbores and countersinks. CAD file translators have been updated to support the

latest native formats, extended to include semantic PMI, write Parasolid files, and read and write Universal3D (U3D) data in 3D PDF files.

Expanded Sample Code and Linux and MacOS Support
Source code for substantial sample programs has been added to the installation programs for the 3D Framework. These samples support customers in quickly building a new professional application for precise engineering models and data. In addition to MFC-based samples for Windows, programs which can be easily built for Linux and MacOS platforms are now included. The installation packages and KeyGraph graphics display module have also been enhanced to improve support for the Linux and MacOS platforms.

Boolean Operation Performance Improvements
Kubotek Kosmos has dramatically improved the processing speed of modeling functions to precisely calculate the union, intersection, or difference of overlapping bodies. Testing results with sample data using the enhanced 5.0 code are 10 to 100 times faster than the same operations using previous code. These gains were achieved by elimination of duplicate calculations through optimization of data structures and face/face intersecting algorithms, refinement of initial intersection points, and simplification of the marching process for intersection curves. The code changes were made in 5 steps and performance measurements with sample data sets at each step confirmed 30% to 75% average time improvements, with cumulative results of 99% overall improvement (see Table 1).

Photon Engineering FRED Update
Kubotek Kosmos has been actively working with the development teams of several new customers and announced Photon Engineering will soon be releasing a product update based on the 3D Framework in the demanding optical engineering space. "The Photon Engineering team looked at several options to upgrade the modeling and translation kernel currently implemented in its FRED optical engineering software. We selected the Kubotek Kosmos 3D Framework due to its broad range of supported CAD formats, modeling engine that could support our FRED-specific needs (trimming in particular) and awesome support throughout our discussions," stated Richard N. Pfisterer, President of Photon Engineering.

Exhibit at Hannover Messe
Kubotek Kosmos staff will be available at the Hannover Messe 2023 show next week in Hanover, Germany, to meet with attendees and exhibitors interested to learn more about the company's modeling technology and products. Kubotek Kosmos will be joined by representatives of its European distributor and support center, ES-Tek of Vicenza, Italy. ES-Tek also offers custom software development services specialized in manufacturing and engineering applications.

Free trials of Kubotek Kosmos software are available. For more information, visit KubotekKosmos.com.

About Kubotek Kosmos

Kubotek Kosmos empowers specialized software to utilize engineering data from numerous sources at high-fidelity and optimal performance. Our applications in manufacturing assure many of the world's most advanced build-to-print suppliers creating complex aerospace components that precise part definitions are being exchanged correctly between engineering systems. Our flexible direct CAD products are popular in tooling design and unconstrained conceptual modeling. The proprietary multi-platform geometric technology, available for licensing, implements the latest hardware and software standards to speed time to market, reduce costs, and improve quality.

Kubotek Kosmos development and support staff are based in Marlborough, Massachusetts. It operates through a wholly-owned US subsidiary of Kubotek Corporation which is headquartered in Osaka, Japan (7709.T Tokyo Stock Exchange).

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John McCullough
Kubotek Kosmos
+1 508-229-7019
email us here

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