

First Cloud-Ready Geometry Kernel Introduction at IMTS 2024

Kubotek Kosmos 3D Framework Adds WebAssembly Component

MARLBOROUGH, MA, USA, August 22, 2024 /EINPresswire.com/ -- Kubotek Kosmos, a leader in geometric software technology, will introduce at IMTS 2024 a new WebAssembly component as part of the 6.0 major release of its [3D Framework libraries](#).

This addition utilizes the open WebAssembly standard to support the development of high-performance and secure SaaS applications for environments such as the web. Combined with the 3D Framework's optimized modeling, CAD translation, and WebGL display components, the new component enables rapid development of precise 3D engineering and manufacturing applications for desktop, client/server, and web-embedded architectures.



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Ram Eswaran, Kubotek Kosmos CTO/COO

Efficient Libraries for Downstream Use

The key cloud-ready innovation is that the Kosmos technology is able to minimize the number of transactions needed between client and server applications. Its libraries have a small enough memory footprint to execute directly embedded in a website, within a web browser extension, or inside a light client app combined with traditional server-side resources. Providing a compiled Wasm library further improves load times and processing performance over exclusive use of interpreted languages like JavaScript.

A major advantage client-side processing provides is precise query operations such as mass properties, pattern recognition, or tessellation don't incur a performance delay due to back-and-forth communication across the internet to a server, as other kernels typically do. There is a secondary advantage for the vendor in reducing costs of hosted server utilization. Mixing this client-side processing strategy into a cloud application architecture is ideal for 3D apps used by

manufacturing, inspection, and maintenance groups who need to re-use precise CAD part models published by engineering.

“We believe this WebAssembly component is a milestone of speed and portability for the building blocks of specialized cloud-based precise 3D applications,” said Ram Eswaran, Kubotek Kosmos CTO/COO. “Previous-generation geometric modeling kernels are too monolithic and entrenched in traditional operating systems to be adapted to new platforms so rapidly. We are excited to be helping established desktop development partners quickly deliver these capabilities for their key customers,” added Eswaran.

Unique Capabilities for the Model-based Supply Chain

Manufacturers with sophisticated supply chains are rapidly transitioning to make 3D Model-Based Definition (MBD) the standard authority in place of engineering drawings. For example, earlier this year Lockheed Martin published the first edition of a Model-Based Enterprise Supply Chain Playbook [1]. In a recent study Deloitte found savings of 70-80% for model-based enterprises and has declared “the future of product development is model-based” [2].

The 6.0 release of the Kubotek Kosmos 3D Framework also features another major new component which adds comprehensive support for MBD data as part of its Kosmos Core Model (KCM) database. Having these capabilities in a single API — geometric modeling, CAD translation, graphical display, and manufacturing annotations/tolerances — allows 3D application developers to quickly build support for reading MBD datasets and authoring derivative data to preserve a digital thread to the original part definition.

IMTS 2024

Key software engineering staff will be available in the [Kubotek Kosmos booth \(#133151\)](#) at the International Manufacturing Technology Show (IMTS) in Chicago, September 9–14, to consult with teams looking to build cloud and/or manufacturing apps.

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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1. Lockheed Martin's Model-Based Enterprise Playbook for Suppliers, 2024, Lockheed Martin Corporation, <https://www.lockheedmartin.com/content/dam/lockheed-martin/eo/documents/suppliers/training-2023-mbe-playbook.pdf>
2. Navigating the Transition to a Model-Based Enterprise, 2022, Deloitte Development LLC, <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/process-and-operations/mbe-navigating-the-transition.pdf>

John W McCullough
Kubotek Kosmos
[email us here](#)

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