



Making the human/machine interface seamless

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Kinesix Software Releases KX EDGE Development Suite

Last month, Kinesix Software announced the release of **KX EDGE**, a real-time graphics product based on Microsoft's much-anticipated .NET architecture.

KX EDGE allows companies in almost any industry to create and use complex graphical user-interfaces for command-and-control applications. It represents one of the most innovative deployments of the increasingly popular .NET framework, a new set of Microsoft tools that are expected to become the industry standard for software protocols.

By building KX EDGE on the .NET framework, Kinesix has created a product that can seamlessly connect a wide variety of back-end data sources through dynamic graphics and data animations. In effect, Kinesix has created a product that serves as the front end to a command-and-control system – providing both data display and data input through intuitive graphics. Moreover, Kinesix has designed KX EDGE so that it requires very little graphics programming and network programming.

"The main goal of KX EDGE is to allow the user to separate graphics and networking capabilities from the primary command-and-control application, simplifying the overall development and maintenance," says Russ Jamerson, CEO of Kinesix.

Jamerson emphasizes the fact that KX EDGE allows users to monitor huge volumes of data across a networked user base via sophisticated graphics – without the need to develop or maintain complex proprietary software. "It's the perfect system

Russ Jamerson, CEO of Kinesix Software, conducts podcast interview discussing enterprise applications with eWeek Magazine

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for companies that need to make their command-and-control functions come alive with sophisticated dashboards and graphics – allowing them to concentrate on their specific domain expertise," he says.

A History of Success

KX EDGE builds on the previous successes of Kinesix's flagship dynamic data-visualization product: Sammi, a long-standing custom-graphics tool that has been used by more than 250 companies worldwide, including some of the world's largest aerospace corporations such as Lockheed Martin, NASA, the Canadian Space Agency, the Japanese Space Agency and a variety of companies with intensive SCADA environments. These include gas-pipeline operators, nuclear-power companies and mass-transit systems.

NASA, for example, uses Sammi as an integral component of the graphical displays at the Johnson Space Center Mission Control – where NASA oversees all Space Shuttle flights.

Bringing User-Friendly Benefits to the Command & Control Market

While KX EDGE offers similar capabilities to the Sammi software, it also adds a number of new user-friendly benefits tied to its innovative adoption of the .NET framework – most notably a simple non-programming format that allows users to bypass the time-consuming and expensive programming phase usually required to develop complex graphical interfaces for command and control applications.

Jamerson believes that KX EDGE's simplicity will appeal to a broad range of end users. "With KX EDGE, almost any company can produce and share vital data across their entire enterprise with impressive, dynamic graphics, and they can do it far more easily than developing them in-house," he says.

Initial KX EDGE Deployment Underway

Bigelow Aerospace is one of the first

companies to use KX EDGE. The much-watched Nevada aerospace company is using KX EDGE to create graphical displays for its mission control center in Las Vegas, where the company will oversee the deployment of its first "inflatable" space-station module later this year. The module will be rocketed into space in a compacted form, and once in orbit, will deploy itself using self-inflation technology – all of which will be visualized through KX EDGE dashboards.

"This is an exciting initial deployment for KX EDGE," says Jamerson, "and we expect several additional end users to adopt KX EDGE in coming months."

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Case Study: Canadian Space Agency's MSS Robotic Arm Simulator

THE CHALLENGE

As a collaborator on the International Space Station, the Canadian Space Agency designed the Mobile Servicing System (MSS) component – most commonly known as the station's robotic arm. This powerful device was used in the assembly of the station itself, and is now operated by astronauts and cosmonauts to move payloads, relocate astronauts performing spacewalks, capture free-flying objects, and help maintain the station.

Because of its complexity, the robotic arm requires intensive training before astronauts ever leave the ground – even mission control personnel must be fully trained. The CSA operates a ground training simulator to ensure all crew members' training is fully up to date. For safety reasons, the simulator must be able to provide an exact replica of what it is like to operate the arm in space – reaction times, graphical feedback, and other details must correspond precisely.

THE SOLUTION

When the CSA was designing and preparing to deploy the MSS robotic arm, they chose Sammi to develop its GUIs onboard the space station. It was only natural to choose Sammi for the ground training simulator as

well – using the same software provided the easiest way to replicate the user experience in space. And CSA programmers had already come to appreciate Sammi's reliability, well-documented code, ease of programming and wide variety of widgets. Developers used Sammi to create more than 50 user interfaces for a variety of simulator programs that are still in use today.

In 2006, the CSA decided to transition the MSS ground training simulator from Unix to Linux. This move was designed to bring the department onto PCs – a much easier and cheaper option than the expensive SGI machines they had been using. CSA developers weighed the advantages of continuing with Sammi or choosing a new graphics program.

The CSA chose to update to the Linux-based version of Sammi – a choice that allowed them to save thousands of dollars and man-hours, because all of the existing GUIs could easily be ported into the new version of Sammi. If they had moved to another software product, they would have had to recreate every user interface from scratch. But the transition to Sammi's Linux product was pain-free. Because of Sammi, a project that could have taken months was completed in days.

Benefits:

- Allows users to interact with GUIs identical to those on the International Space Station
- Provides reliability, ease of programming, and sophisticated graphical capabilities
- Offers a timely and cost-effective solution for updating an entire system to Linux

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