

## Aviation Electronics Leader Soars with Reactivity



### Background

Rockwell Collins is a worldwide leader in the design, production, and support of communication and aviation electronics for commercial and government customers. The company's 17,000 employees in 27 countries deliver industry-leading communication, navigation, surveillance, display, flight control, in-flight entertainment, information management, and maintenance, training and simulation solutions for commercial airlines and allied military aircraft.

In an effort to continuously improve service provided to customers and partners, Rockwell Collins' Manager of Web Delivery proposed the creation of a service oriented architecture based on Web Services in early 2004. His proposal leveraged XML and Web services to provide a reusable and interoperable method for delivering information via the company's portal infrastructure as well as directly by the company's customers and partners systems. Shawn thought the initiative was shelved in early 2005 when the customer care business team informed him that they had a contractual deadline to provide a real-time repair status and repair initiation service in addition to the service already provided via the company's customer portal. Shawn was tasked to lead the initiative that would offer their clients the level of support they need to conduct business with a competitive advantage.

*"We've already made Reactivity a foundational piece for everything [XML-based] we do; we use it for internal and external services. We want to start with everything being managed, everything secure, everything inspected, and if we need to expose that service to an external partner it's ready to go. The Reactivity Gateway will be a fundamental part of our infrastructure going forward."*

*~Shawn Furgason, Manager of Web Delivery for the e-business organization of Rockwell Collins Inc.*

### The Challenge

Rockwell Collins needed to augment their portals with system-to-system information delivery capabilities to meet customer expectations, and implement an architecture for future growth. Initial drivers included customer demand for direct system to system access to information on repair scheduling, status and inventory availability in real-time, 24/7. Those same services, accessing SAP and custom programs, would then be available for direct connections by Rockwell Collins' customers' computers. With a global security-sensitive clientele, Rockwell Collins needed to be able to securely and rapidly meet the needs of all customers at all times.

There were three main issues Furgason needed to address in this project:

- Authenticating users and the portal to ensure that private information is only shared with appropriate users
- Protecting the privacy of information between the portal and the back-end systems including SAP and custom programs
- Mediating between the portal's preferred formats/transport and the different back-end systems' expectations.

To complicate matters, an insecure approach to Web services wasn't going to work as Rockwell Collins' security policies don't allow HTTP traffic through the firewall. Addressing scalable security was an absolute necessity for the project's success.

After doing initial research on technologies focused on message traffic inspection, Furgason and his team realized that an XML web services gateway would be the fastest, least inexpensive, and most secure solution to deliver a real-time interactive support system.

They also found that the vendors in this market consisted mainly of small, young companies, which was an additional challenge for Furgason as his management team was concerned about the viability of these unknown companies.

Rockwell Collins corporate security policy prohibited routing insecure external internet traffic to internal systems within the company. Rockwell Collins identified that Rockwell Collins required a secure XML router in the DMZ that would receive all traffic and only route secure messages to their back-end systems. In addition, Rockwell Collins planned to add additional XML routers internally so that internal XML messages did not need to enter the DMZ. Rockwell Collins' detailed requirements included that the new device had to be introduced into their network transparently to the web service providers and consumers thus requiring no code changes. Rockwell Collins required confidence and proof that the new device would enable them to meet SLA requirements by offloading expensive operations. Finally, the new device had to be rapidly deployable and deliver robust control over application security policy and XML message processing.

## The Solution

Rockwell Collins selected the Reactivity XML Security Gateways to power their service oriented architecture and give their customers the real-time information exchange they needed to succeed. Not only did the Gateways meet all of the technical requirements for the project, Reactivity could also meet the project's aggressive time frame. Rockwell Collins was also impressed with the Gateways' scalability, viability and policy workflow feature. The Reactivity XML Security Gateway is one of Reactivity's Gateway family comprised of the XML Security Gateway, XML Access Gateway, and XML Message Gateway – rapidly XML enabling networks for faster service availability, robust security and seamless interoperability. Rockwell Collins deployed XML Security Gateways in their DMZ for comprehensive deep XML message inspection & security, access control, and threat defense. The XML Security Gateway also accelerates authentication and authorization functions while centralizing IAM integration and delivering high performance message processing power. See Figure 1.

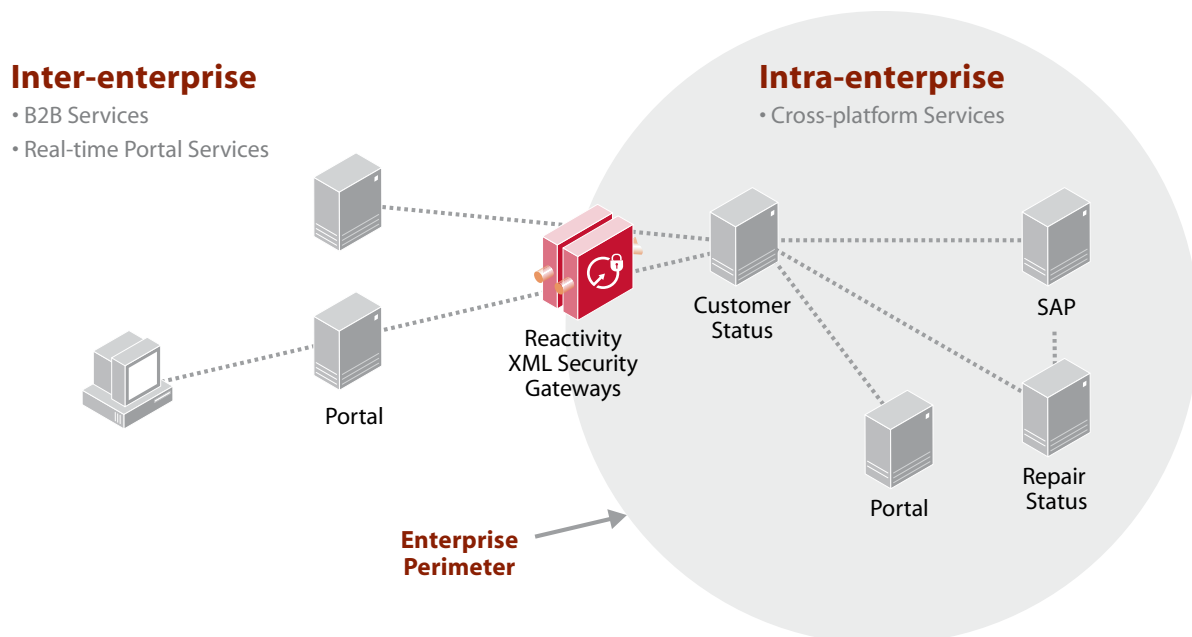


Figure 1

Reactivity's patented Deep Message Inspection provides continuous acceleration with robust perimeter and internal security, accelerates message processing, and enforces security based on content as well as context. Reactivity's service virtualization enables Rockwell Collins to rapidly deploy and version services with unlimited secure virtual interfaces to a single service, secure and controlled routing to service instances, and central integration to diverse identity and security infrastructure.

## The Results

Within two months, Shawn's team developed the required services. Within six weeks the Reactivity Gateway infrastructure was installed, the services were deployed, tested, and exposed as secure production services. Using the Reactivity Gateways, Rockwell Collins is able to create secure SSL connections between the portal and back-end servers; authenticate and authorize back-end system access; accelerate XML processing by offloading XML validation and transformation. This was accomplished with no changes to their back-end servers. As a result of this new architecture, Rockwell Collins identified an opportunity to eliminate the development of duplicate capabilities that resulted in saving the company approximately \$70,000 in development costs.

## What's Next?

Over the course of the next year, Furgason's group has requirements to build another eight services, including enhancement to the repair status service, inventory requests, parts purchasing, material forecasting, requirements flow, order status, and repair/contract reporting as well as directly connect those services with their customers' systems. Rockwell Collins also has plans to implement a supply chain pilot, and is planning to use the Reactivity Gateways to secure access to their UDDI, while looking for synergies to replace existing EDI capabilities.