



SPARTAN MOTORS

Fuels Innovation, Productivity & Quality with Aras Enterprise PLM

We've already done some pretty cool things with Aras PLM that have delivered results to our bottom line, and there are a lot more opportunities to add value with Aras.

Dave Baer
Project Manager,
Enterprise Systems
Spartan Motors

Leading Provider of High-Quality Specialty Vehicles, Chassis and Truck Bodies Implements Aras PLM to Standardize Product Development Processes Enterprise-wide

Spartan Motors is a leader in the design, engineering and manufacturing of custom chassis and vehicles for the emergency-rescue, recreational vehicle and specialty vehicle markets. And the Spartan tagline says it all: *Everything's riding on it.* Whether developing fire trucks, light rescue or quick-attack vehicles under its Crimson Fire and Crimson Fire Aerials brands, Utilimaster delivery vans for UPS and FedEx, or custom Spartan Chassis for Class A motorhomes and military armored vehicles, quality counts at Spartan Motors.

Spartan was founded in 1976 when a group of enterprising engineers with an unwavering dedication to quality, value, service and innovation set out to do what they love – build high-quality vehicles for demanding environments.

Today, Spartan Motors is a successful public company with approximately 1,800 employees at 6 facilities and a customer-centric methodology that fosters innovation, speed and agility. This focus, together with a commitment to Lean continuous process improvement and Green business practices, sets Spartan apart from its competitors and assures that the ISO 9001:2008-certified manufacturer continues to deliver the premium custom products and services that its customers rely on.

Spartan Aras Implementation

- ▶ Engineering Bill of Materials (BOM)
- ▶ Enterprise Change Management
- ▶ Product Structure Management
- ▶ Configuration Management
- ▶ New Part Generation and Release
- ▶ ERP Integration

Driving Process Improvement

Spartan's products range from highly precise, engineer-to-order ladder fire trucks to high volume walk-in delivery trucks where orders may include 1,000 units or more at a



time. After a period of growth, expansion and acquisition, the company needed to standardize cross-functional processes that spanned multiple product lines and locations to achieve greater consistency, efficiency and responsiveness.

Spartan relies on SolidWorks CAD software for product design and SolidWorks Enterprise PDM for the management of CAD files and drawings. The company also had numerous stand-alone, custom databases for other product-related information.

Spartan determined that a scalable enterprise PLM solution was needed for process standardization across the product lifecycle, and they wanted a system that would not impact SolidWorks users or require the replacement of their existing SolidWorks Enterprise PDM environment.

To achieve these objectives Spartan selected Aras for enterprise PLM and rolled out the full Engineering Bill of Materials (BOM) with item-based product structure for configuration management along with Enterprise Change Management.

Prior to implementing Aras enterprise PLM, Spartan had three different engineering databases that tracked changes and a separate system that created drawing numbers, as well as a series of hard copy processes that were labor intensive and lacked company-wide visibility.

To streamline processes the individual custom databases were consolidated and replaced with Aras, giving Spartan a modern Web-based PLM solution that's Item-based and process-centric. Today, the Aras enterprise PLM solution is managing more than 1.8 million BOM lines and over 330,000 released parts with an average of 1,000 new parts created per month, delivering Spartan Motors a significant boost in efficiency and productivity.

Optimizing Investments in Engineering & Beyond

Because Spartan Motors operates a combination of engineer-to-order, configure-to-order and repetitive manufacturing processes across different product

lines, comprehensive enterprise PLM functionality was required to achieve a unified solution.

Spartan's product structure can have 600-700 lines on each Bill of Materials including parts, assemblies, components and materials. Aras's ability to manage the revisions and versions of all the items in each Engineering BOM across the various different end items is essential for configuration control. 'Where Used' functionality makes conducting Impact Analysis on proposed changes straightforward and BOM redlining capabilities make identifying the differences between revisions easy.

Business Benefits

- ▶ Standardized Processes
- ▶ Seamless Integration
- ▶ Quality Improvements
- ▶ Faster Response Time
- ▶ Better Productivity

Spartan has also automated part number and drawing number generation with Aras. When a new part number is requested, Aras issues the part number based on Spartan's established numbering schema. Then, each Part Master is managed throughout the Part Release process. Finally, the enterprise PLM is connected to the ERP system, so once approvals are complete the ERP is updated without re-keying the data.

With Aras, people from across the company are able to easily search and find parts and BOMs, increasing reuse and reducing development timelines. One unexpected productivity gain noted by Engineering is the ability to quickly find a similar BOM, create a copy and edit as needed by adding or deleting parts to create a new product.

"We have standardized our processes and now have complete visibility into product information beyond engineering, into production, purchasing and other departments across the company. It's a huge gain for



our business,” said Dave Baer, Project Manager overseeing enterprise systems at Spartan.

Realizing Enterprise Change Management

Spartan consistently processes more than 500 product changes a month. The previous manual processes were time consuming and inconsistent. Now those product changes run through a single, standardized business process management workflow in Aras that results in faster approvals and quicker cycle times.

By The Numbers

- ▶ 300,000+ Parts
- ▶ 1.8 million BOM Lines
- ▶ 23,000 Drawings
- ▶ 500+ ECOs per month

The Aras-based enterprise change management processes coordinates simultaneous updates to multiple affected items, such as a combination of parts, drawings and other documents, all at once. Enterprise Change Orders (ECOs) are automatically routed to the right people for cross-functional review and approval and, if needed, online Change Review Board (CRB) meetings can be conducted. Email notifications alert each person that action is required and graphical process maps provide status and visibility. Engineering, Finance, Sales, Compliance, Production and the buyers and planners in Purchasing are all included as required.

Once sign-off is complete and the ECO is released, the engineering BOM is updated, the ERP system is automatically updated with no manual entry, the shop floor receives notification and the change is implemented in Production based on effectivity, and users across the company know the change has been made.

“With the enterprise PLM from Aras we have a closed-loop system that spans the company. We have improved productivity and quality, and our customer response time is faster than ever,” said Baer.

Achieving a Whole New Level of Customer Service

The Spartan Recreational Service Chassis (RSC) team has taken Aras one step further, using it to improve customer satisfaction.

RSC specializes in the development of chassis for Class A motorhomes – imagine a 30,000lb bus with a 10 ton truck chassis. The accuracy of chassis specifications such as wiring, frame rail holes, etc. are critical to the successful production of the final product and, as with most engineer-to-order products, changes are common and can be costly if not handled properly.

When a customer submits a change request, Spartan’s Application Engineers initiate the change request process in Aras. The change request kicks-off an enterprise process that notifies each department which then provides feedback, enabling the Application Engineer to give the customer a comprehensive quote for the change in just 15 business days. If the customer approves the quote, the change is released and the modifications are made.

“Aras enterprise PLM has enabled us to bring customer service to a whole new level,” said Baer. “Aras has also improved our quoting, which impacts the overall profitability of our business.”

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Looking Toward the Future

“With Aras enterprise PLM we’ve already done some pretty cool things that have delivered results to our bottom line,” said Baer. “And there are a lot more opportunities to add value with Aras.”

Spartan anticipates continued expansion of Aras in support of corporate lean, green and compliance initiatives to further increase efficiency, drive quality, and achieve greater competitive advantages in the marketplace.

About Aras

Aras® provides Aras Innovator® as an enterprise open source software suite of solutions on the Microsoft platform. The enterprise production-ready software is available for download without cost and provides complete access for unlimited users.

Enterprise software for new product introduction, advanced product quality planning, and enterprise product lifecycle management provide businesses with a process-oriented approach to manage innovation and collaboration from concept through development and launch.

Aras solutions are designed to support Lean in the product development process while addressing product quality, risk management, and compliance in an integrated manner.

For more information on the Aras Innovator software solution suite and to download the software visit www.aras.com.



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