



# Jaguar Land Rover: Transforming its business with Version 6

By Nick Lerner

Jaguar Land Rover, in partnership with Dassault Systèmes, is deploying Version 6 PLM across its extended enterprise. This bold move delivers important engineering, technical and commercial benefits for sustainability, business and vehicle development.



Use your smartphone to learn more about how Jaguar Land Rover uses Version 6

Jaguar Land Rover's heritage comprises some of the world's most iconic vehicles, including the Jaguar Mark II, the E-Type, and the Land Rover Defender. Having passed through the corporate hands of Ford, Jaguar Land Rover (JLR) has emerged within Tata Motors as an exciting, dynamic global enterprise.

A glance at the Jaguar C-X16, C-X75 and Land Rover DC100 shows the shape of things to come, while press acclaim greeted Range Rover's recent launch of the lighter, greener Evoque. Turning heads from Chicago to the foothills of Kanchenjunga, Nepal, Evoque is a true inheritor of its parent brand's hard-won esteem.

## COMPLEX HISTORY

Due to its varied ownership history, JLR inherited a complex and mixture of auto industry software from its previous owners, not scaled or supportive of JLR's aggressive business plan.

Paul Davies, JLR's director of Product Development Operations, leads the teams that define JLR's vehicle development processes, tooling technology, and project and Product Lifecycle Management (PLM) technologies for the worldwide engineering community of 8,000 JLR people. "The challenge of expanding JLR's vehicle portfolio into segment-defining products requires strong technical foundations," Davies says. "Our IT history has generated more than 600 islands and silos of JLR legacy data. The majority is not inter-

compatible. To flourish in business, all our data must be interoperably integrated and intuitively available to every JLR stakeholder."

To enhance innovation and reduce development time, JLR has partnered with Dassault Systèmes (DS) to deploy Version 6 in a business transformation program called i-PLM. "Many business users, and even suppliers of PLM strategies, fail to understand its end-to-end power," Davies says. "They see PLM as a data management system rather than a business transformation (BT) tool, as IT rather than BT. Version 6 provides a powerful yet simple out-of-the-box PLM solution with ENOVIA as its backbone and CATIA, DELMIA, SIMULIA, and 3DVIA to deliver business and engineering value across the JLR organizations."

JLR i-PLM covers the entire vehicle definition and features across 14 domains. These include bills of material, parts and assembly, requirements and verification, plus in-vehicle embedded software, which accounts for 60% of new car development. Electrical design, styling, and computer-aided engineering, including multi-physics and FEA, are also included. >>

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**Paul Davies**  
Director of Product Development Operations, Jaguar Land Rover



» “Version 6 empowers data users and managers with live 3D visualizations of all product data and manufacturing operations,” Davies says. “Assembly and disassembly routines with legislative parts and vehicle governance data are readily available in manageable formats. The immediate benefit of creating, seeing, experiencing and sharing data in a Version 6 environment is translating into time savings of up to 40% for some specific roles in product development.”

#### SMOOTH IS FAST

Version 6 deployment also delivers improvements in vehicle volumes and quality at JLR. For example, i-PLM produces precise cost-benefit criteria for more informed decision making. “Version 6 delivers extra time for innovation so that JLR can build more and better vehicles,” Davies remarks. “Version 6 provides a seamless operating world, with extensive Tier-One supplier involvement. These factors, and the considerable financial and business benefits that i-PLM delivers, mean that JLR can add vehicle programs and smoothly accelerate global product development.”

John Knight Gregson is i-PLM program lead at JLR. “JLR deploys DS Version 6 from vehicle design concept, through engineering and manufacturing, to marketing and sales,” Knight-Gregson says. “It’s a robust, seamless and integrated solution that delivers data consistency across suppliers, financial control and supply chains. An ERP interface provides further systems and process synchronization and management. Working with Version 6 generates a single version of the truth at JLR and brings high-percentage efficiency returns. Data that is entered once is shared and reused many times. Concurrent engineering between teams across the world generates collaboration with a guarantee of accuracy that cuts waste while improving productivity.”

i-PLM facilitates bringing 3D digital models and product definitions into context and further use by JLR and its suppliers, Knight Gregson comments. “Version 6 provides enterprise wide availability of CATIA 3D product simulation

60%

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assets. This allows people to more fully engage with JLR and its spirit of innovation. Sharing designs synchronizes teams at JLR and its suppliers. Engineers, manufacturers, marketing and sales, feasibility, sourcing, and finance can collaborate earlier with the joint vision Version 6 delivers.”

3DVIA extends digital enfranchisement even further, providing accurate, live, current and fully validated 3D data within and beyond JLR. It reduces errors, losses and waste by providing accurate, timely information. These factors raise morale as people work with PLM solutions matched to their needs.

#### TEAM CHALLENGE

As design progresses, DELMIA Version 6 simulates and validates JLR production environments virtually, including buildings, production cells and even technicians, who are represented by lifelike digital manikins. “Simulated digital representations in DELMIA enable optimization of our production environments,” Knight Gregson explains. “3D digital factory overviews, coupled with highly detailed machining operations, allow us to more fully understand and further optimize operations. This also enhances processes and their interactions at JLR. These measures augment sustainable development through efficiencies leading to reduced energy and resource usage.

ENOVIA Version 6, meanwhile, gives JLR a single source for regulatory and materials compliance data that is available to all stakeholders. This helps JLR increase scale and volume of products with confidence of compliance. ENOVIA Version 6



Program Central, for example, manages collaboration and helps to deliver business acceleration through concurrent development. “When information is open and shared, skills can be deployed more effectively,” Davies says. “This data availability means people can work up to 20% more efficiently.”

Knight-Gregson adds: “i-PLM makes better use of resources, including time. It also introduces multiple efficiencies.” For example, SIMULIA Version 6 enables JLR to perform virtual tests of vehicle and material performance in a virtual 3D environment. Errors are detected and corrected earlier to produce significant savings. “In addition, virtual build improves physical build quality and productivity through enhanced training and cognition for production engineers,” Knight Gregson says. “It also values fitted parts in real-time, providing an accurate business cost of each vehicle made.”

i-PLM with Version 6 also extends beyond the JLR enterprise, supporting access by JLR dealers, service engineers, and customers. “This allows vehicle purchasers and drivers to more fully understand ranges and option choices for better driving, owning and servicing experiences,” Davies says.

Version 6 and i-PLM are being jointly developed by Jaguar Land Rover and Dassault Systèmes to become the automotive industry’s most advanced PLM system.

“We chose Dassault Systèmes as a partner, not just on technical or commercial merit, but because they display the same level of passion and pride in their business as Jaguar Land Rover does,” Davies says. “Together we are building a lifelike product experience system that connects us to our products and communicates throughout the enterprise using the universal language of 3D. Harnessing the power of our partnership with Dassault Systèmes, i-PLM helps Jaguar Land Rover confidently and successfully build on its heritage through Version 6 business transformation.”



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