Dassault Systèmes' Green Suite:

The Lean, Green, and Compliant Industry Solution Experience

CIMdata Commentary

Key takeaways:

- *The transportation trend most visible to consumers is the requirement to reduce the environmental footprint of new vehicles*
- *Dassault Systèmes' **3D**EXPERIENCE platform promises to deliver on the industry solutions needed to enable a dramatic evolution in eco-friendly vehicle design*

Dassault Systèmes continues to roll out new Industry Solution Experiences built upon their **3D**EXPERIENCE platform. Solution Experiences are designed to cover the full sweep of end-to-end product development and comprise a suite of industry-tuned process application modules that support a particular theme. The latest suite, **Lean, Green, and Compliant**, targets what Dassault Systèmes calls the Transportation & Mobility industry segment and addresses the design challenges behind environmentally friendly, yet high-performance, compliant vehicles.

In the automotive industry the trend most visible to consumers is the requirement to reduce the environmental footprint of new vehicles. The IBM Automotive 2020 Global Study report[1] based on collaborative interviews with 125 automotive industry leaders indicates that the two leading factors considered by the buying public are fuel efficiency and eco-friendliness. Based on these opinions the automotive industry has targeted pushing new-vehicle production based on fossil fuels down to 65% and recyclability upwards to 88% by the year 2020.

All of this must be accomplished while at the same time dealing with major technological innovations. We have all seen the revolution in automotive design over the past decade—the dramatic increase in electrical and embedded software components. In the coming years expect to see major improvements in propulsion, materials, and performance. Industry leaders have expressed the belief that the industry will experience more change in the next decade than it has in the last fifty years.

Dassault Systèmes' **3D**EXPERIENCE platform targets the industry solutions needed to enable this dramatic evolution in eco-friendly vehicle design. From its ability to search both structured and unstructured data, vehicle planners should be able to pull together detailed requirements and also develop performance targets. Collaboration tools seek to establish an environment that gives stakeholders the ability to communicate and contribute to the product model from across the globe. In addition, developers and consumers will be able to communicate throughout the entire development process, opening opportunities for radical innovation unmatched by traditional solutions.

As a vehicle design progresses through the development cycle, Dassault Systèmes' Lean, Green, and Compliant Solution Experience supports process modules to define, optimize, and track vehicle characteristics critical to an eco-friendly design. These modules will help

[1] Rishi, Sanjay, et al. Automotive 2020: Clarity beyond the chaos. IBM Report. http://www-935.ibm.com/services/us/gbs/bus/pdf/gbe03079-usen-auto2020.pdf

designers to optimize vehicle weight and energy management including fuel consumption and emissions. Dassault Systèmes reports special focus is paid to support electric vehicle (EV) and hybrid electric vehicle (HEV) design.

The focus on optimization carries over into vehicle physical performance and the product simulations needed to maximize design efficiency in noise, vibration, and harshness (NVH); aerodynamics; and durability. The Dassault Systèmes industry process modules attempt to foster realistic vehicle design simulation at all stages of development. In addition, by bringing together the virtual and real worlds, developers should be able to validate physical test results with virtual simulations, more efficiently satisfying vehicle requirements.

Figure 1: Virtually Experiencing the Lean, Green, and Compliant Industry Solution Experience (Courtesy of Dassault Systèmes)

As a green vehicle advances towards release, one of the critical factors developers must ensure in order to be certified as compliant is that the product meets all regulatory criteria. The Dassault Systèmes solution reportedly checks regulatory compliance and develops environmental impact scores as the design progresses, and helps produce final documentation to confirm compliance upon delivery.

In an automotive industry undergoing such radical change and with the added pressures imposed upon it for eco-friendly products, CIMdata believes the Dassault Systèmes Lean, Green, and Compliant Industry Solution Experience promises to offer leading automotive OEMs and suppliers the needed answers to their requirements. The combination of industry-tuned process modules for EcoDesign; ideation to requirements; cost, weight, and energy tracking; and simulation and regulatory compliance, has the potential to deliver a powerful set of tools for developers to remain competitive in the coming decade.

About CIMdata

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