

## Siemens to Buy LMS: Closed-Loop, Systems-Driven

By Bruce Jenkins, Principal Analyst, Ora Research LLC

[Siemens announced](#) it will acquire [LMS International NV](#), the Leuven, Belgium-based provider of test and mechatronic simulation software to automotive, aerospace and other highly engineered discrete manufacturing industries. Summing up its business and technical rationale, Siemens said the acquisition will make it “the first product lifecycle management (PLM) software company to provide a closed-loop systems-driven product development solution extending all the way to integrated test management.”

We agree. In sum, the move brings Siemens:

- Deep competency in integrated physical test and simulation/test correlation.
- World-class model-based systems engineering technology of AMEsim.
- A substantial engineering services business – offering added insight to software product R&D as well as for developing engineering processes in tandem with new tool requirements.

The marketplace is used to the rhetoric around such announcements being somewhat overblown, but both key value propositions articulated by Siemens seem squarely on the mark to us:

**Closed-loop** because of LMS’s 30-year history of providing advanced test-based engineering solutions and engineering services, its decade-plus drive to develop and deliver what it calls an “integrated hybrid process solution – simulation enhanced by test,” and its more recent thrust into integrated controls and mechatronic simulation. Deeper integration with Siemens PLM’s solutions as well as those of Siemens at large promises to strengthen this even further.

**Systems-driven** because of, among other things, LMS Imagine.Lab, a model-based systems engineering environment for mechatronic systems development based on the AMEsim platform for multi-domain system simulation.

More key concepts: The acquisition will “enhance our core competencies by **adding model-based simulation, design, test and measurement capabilities** to both the virtual design and physical test process,” Siemens PLM CEO and president Chuck Grindstaff said. “**Integrating the full environment** gives our customers the ability to bring together information from the **logical model, physical model and functional model** to refine and optimize designs and measure results, which transforms decision making in product development.”

We concur. In our ongoing research among discipline leads and engineering workgroup leads, we’ve long been struck by their frustration at the disconnects between the systems modeling and 1D simulation tools used in concept engineering, and the higher-fidelity analysis tools used downstream – not to mention the hamstrung work processes

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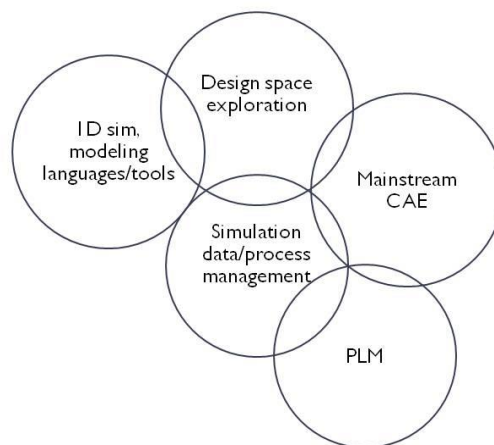
and loss of visibility caused by the persisting disconnects between all those applications and the systems that support detailed design and manufacturing engineering.

Thus, most important for engineering organizations, we believe, is the potential that this move offers Siemens and LMS to help close the loop between the systems modeling and 1D simulation tools where a project’s most crucial engineering decisions are actually made, and the remainder of the toolset chain in which those decisions are detailed and implemented. The “V” model of product development is all too apt today, in that decisions in the upper left, once made – and the tools used to make them – are difficult to revisit and re-exercise once the project starts down the greased slope of the V.

Of course much of this is due to the inherent nature of project trajectory, but discipline and program leads tell us that much could be gained from capabilities for more multi-fidelity and multi-directional workflows among all the tools across the product development lifecycle. Indeed, most report they have difficulty seeing how to advance from current-generation systems modeling tools and practices to the vision of true model-based systems engineering without the evolution of such capabilities. Against that background, we were encouraged to hear Grindstaff articulate the Siemens/LMS vision as one of “**systems-driven product development**” – a view whose holism and breadth hold high promise, especially given Siemens PLM’s long track record of making sensible, comprehensible technological commitments, then following through, robustly and on time.

The figure below shows one of our market models of today’s engineering solution/provider ecosystem. In truth, we admit that even terming this “today’s” situation is a bit optimistic. The domain we call “design space exploration” has nowhere near the recognition or acceptance that would be implied were these circles sized so as to denote that. Moreover, the degrees of functional integration communicated by the overlap between domains – scant as they are – still illustrate more the hopes that practitioners communicate to us than the technical reality they have to cope with today.

**Engineering solution/provider ecosystem  
 market model**



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What intrigues us most about the Siemens/LMS combination is its potential to entirely rearrange this ecosystem. If they deliver on their vision to radically tighten the currently too-loose and too often one-way connections between the disparate domains mapped here, they will have succeeded in transforming this leaky, poorly coordinated series of open loops into an environment for **closed-loop systems-driven product development**.

Of course, the LMS acquisition lets Siemens close the loop in another important respect as well. LMS began as an engineering service provider, and even after using this expertise to build a substantial commercial software business, it's been careful to maintain engineering services as a significant portion of its business – roughly half over the past decade, by our understanding. This deep, direct engagement with what engineering organizations actually need will afford Siemens PLM's product planning an advantage over all but a very few CAE competitors, and over its PLM rivals. Grindstaff added that this exposure will help the combined company develop engineering process expertise in tandem with new tool requirements.

To be sure, Grindstaff and his people already spend many days of their year out among customers, and more than once we've seen them lead the industry in their alertness to forward-edge practitioner needs. But the deep everyday engagement in manufacturers' product development practices by LMS's engineering service business affords Siemens PLM, and Siemens at large, an asset that at present goes beyond anything comparable we know of anywhere else in PLM.

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