



SAMSUNG Techwin simplifies product management with VisualDSS

THE CHALLENGE

SAMSUNG Techwin wanted to resolve communication gaps and articulate the entire project management process to make it simpler and more effective. Interaction and data sharing between Computer Aided Engineering (CAE) and Computer Aided Design (CAD) teams had to happen in a modest yet organized pattern. One of the major challenges was to transfer the boundary conditions of every component of a Surface Mount Technology (SMT) machine to the design engineers, dynamically.

THE BENEFITS

- Share realistic CAE results with CAD team,
- Reduce the time, efforts and eventually the cost by systematic project management,
- Perform a much more reliable system-level dynamic analysis,
- Benefit from better usability with an intuitive web-based system,
- Generate a reusable CAE and CAD data library.

SAMSUNG Techwin, a subsidiary of SAMSUNG Group, produces surveillance cameras, robots, Surface Mount Technology (SMT) machines, turbine machinery, and military-related machines, with over three decades in operation and innovation. SAMSUNG Techwin manufactures products ranging from cameras to military and aviation engine. Their global presence and aim to do something new every day is often challenged by having sufficient coordination and data exchange between their research and development teams spread across the globe and various departments.

SAMSUNG Techwin has worked closely with ESI's team in Korea to overcome this challenge and streamline the communication processes enhancing productivity and innovation for SMT machines.

Centralization and Precise Delivery of CAE and CAD Data

VisualDSS, ESI's End-to-End Decision Support System, was installed for the various business divisions involved



Courtesy: SAMSUNG Techwin

in design and development of SMT machines. This allowed vital CAE and CAD information to flow smoothly between various divisions and departments. In addition to this, to improve the performance of their SMT machines, SAMSUNG used ESI's physics-based module in Virtual Performance Solution for system level dynamic analysis.

The overall solution allowed SAMSUNG to regulate their design and simulation data across multiple divisions throughout the project management process.

"With this project, we were able to set-up the whole dynamic analysis process for semi-conductor related machines. This allowed CAE experts to focus strictly on system-level analysis while transferring the component-level static analysis to the design engineers."

Seonjae Lee, Manager,
SAMSUNG Techwin

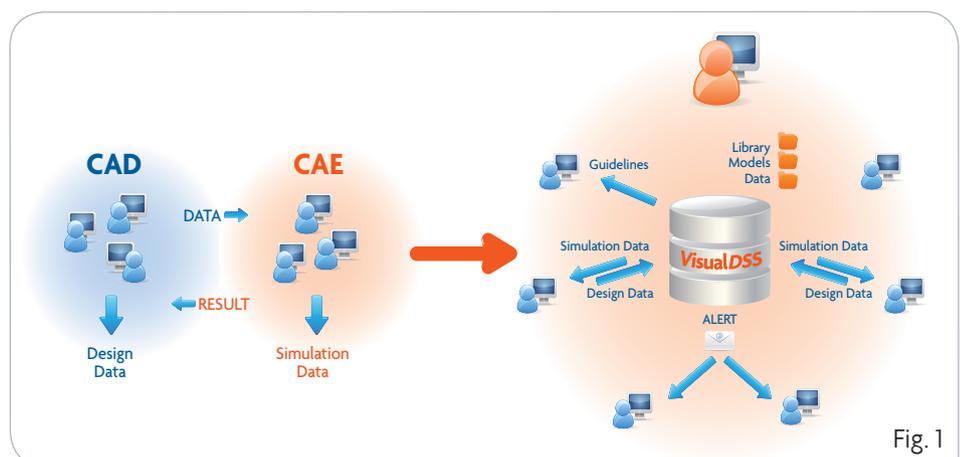


Fig. 1

Realistic Data for Design Team

The most pressing problem and major technical issue was to transfer the boundary conditions for the dynamic analysis of each component within the SMT system to the design engineers working on the same design.

The schematic diagram below (Fig. 2) shows in VisualDSS how each component is tested before freezing the design. By setting up and fine tuning the system-

level dynamic analysis process with VisualDSS, SAMSUNG design engineers can now access the boundary conditions of each component while simulations are running in parallel.

Effective Project Management within Web-Based Environment

VisualDSS communicates effectively with other databases and Product Lifecycle Management (PLM) software. This

allowed SAMSUNG to regulate and control the flow of information throughout the system, ensuring smooth project management. VisualDSS' web client (Fig. 3 and Fig. 4 below) was highly interactive and easy to manipulate. Engineers, regardless of their location, could make quality decisions, interact with several teams and have an easy access to standard and automated workflows.

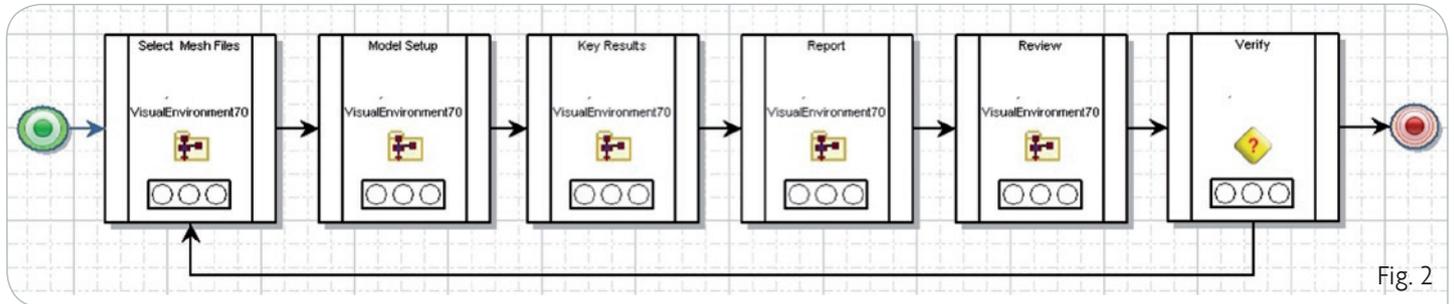


Fig. 2

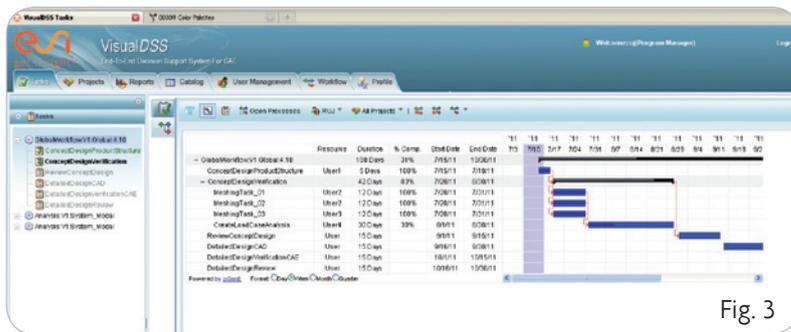


Fig. 3

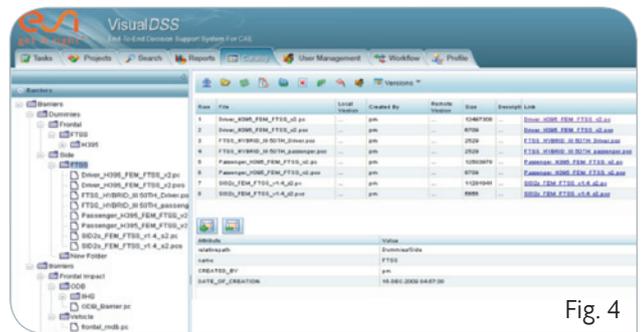


Fig. 4

Results and Conclusion

Overall SAMSUNG was able to shorten its product development time by 20% as VisualDSS was interactive, interconnected and intercommunicating. This eventually led to a 20% decrease in production cost while delivering high quality components for assembling SMT machines. At the user level, CAD engineers benefited

from realistic and real time information obtained in a structured way from the CAE division. In the near future this system will be extended across the semiconductor division of SAMSUNG Techwin and will also be implemented in other business divisions.

"We should be able to save time and cost when we develop new products. Because the head officer of Intelligent Machinery & Solution (IMS) division was very satisfied with the VisualDSS system built up in 2011, we might be able to apply the system to other business divisions."

Seonjae Lee, Manager, SAMSUNG Techwin

ABOUT SAMSUNG TECHWIN

SAMSUNG Techwin is a subsidiary of SAMSUNG Group with global presence. It is a total technology security solutions provider, with a product portfolio to satisfy a broad range of network based applications. With the best technology in precision mechatronics, the company employs 4720 employees and is headquartered in South Korea. SAMSUNG Techwin was founded in 1977, and the company established a precision instrument laboratory in 1978. It started making cameras in 1979. In technical cooperation with General Electric, it started manufacturing jet engines for Korean aircraft in 1980. Made its mark in the defense sector by manufacturing 155 mm (6.1 in) self-propelled artillery in 1984.

ABOUT ESI GROUP

ESI is a pioneer and world-leading provider in virtual prototyping for manufacturing industries that takes into account the physics of materials. ESI has developed an extensive suite of coherent, industry-oriented applications to realistically simulate a product's behavior during testing, to fine-tune manufacturing processes in accordance with desired product performance, and to evaluate the environment's impact on performance. ESI's solutions fit into a single collaborative and open environment for End-to-End Virtual Prototyping, thus eliminating the need for physical prototypes during product development. The company employs about 850 high-level specialists worldwide covering more than 30 countries. ESI Group is listed in compartment C of NYSE Euronext Paris. For further information, visit www.esi-group.com.



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