



STREAMLINING SIMULATION DATA

CONSTRUCTION MACHINERY LEADER SANY GROUP BOOSTS PRODUCT DEVELOPMENT IN THE CLOUD

About the Customer

SANY Group is an internationally renowned manufacturer of construction machinery based in Hunan, China. The company's products include concrete machinery; excavator, crane, and road machinery; mining and tunneling machinery; port machinery; wind power equipment; hydrogen energy equipment; heavy trucks; and more. The simultaneous development of such a wide variety of products poses significant challenges to SANY's Simulation Research Institute and necessitates the use of cutting-edge simulation technology and high-performance computing (HPC) to ensure efficient, high-quality product development.



The Altair Simulation Cloud Suite helps us achieve five core values: significantly improving the efficiency of simulation commissioning, greatly enhancing the efficiency of simulation delivery, ensuring the quality of delivery, establishing an online structured simulation database, and centralizing management of simulation software and hardware resources.

Lei Xinjun, deputy director,
SANY Simulation Research
Institute



Their Challenge

SANY has long been committed to digital transformation — efficiently managing simulation technology is critical toward those efforts. Their adoption of simulation analysis technology revealed shortcomings in their existing processes, including a lack of standardized simulation management, unstructured storage of simulation data, low automation levels, and the need for more efficient simulation and design collaboration. “We urgently needed to develop a simulation data management (SDM) platform tailored for product development, with functionalities covering design-simulation collaboration, simulation task and data management, product lifecycle management (PLM) system integration, and HPC integration, to achieve integrated design and simulation in the product development process,” said simulation subcommittee director Shao Wei.

Our Solution

As a pioneer in achieving breakthroughs in simulation technology in the construction machinery industry, SANY has been using solutions such as the Altair® HyperWorks® and Altair® HPCWorks® platforms for nearly a decade. After spending more than a year researching and evaluating SDM platform solutions, they chose Altair to implement the Altair Simulation Cloud Suite. This decision is a testament to the robustness of Altair’s SDM platform solutions and sets a precedent for SDM platform construction in the construction machinery industry.

For phase one of the implementation, the Simulation Cloud Suite was launched in SANY’s pumping division. It integrates multiple systems including PLM, HPC, and various simulation and design solutions. It standardizes simulation management processes, manages and executes simulation tasks, performs statistical analysis and visualization, and stores simulation data in a unified structure. “The Altair Simulation Cloud Suite helps us achieve five core values: significantly improving the efficiency of simulation commissioning, greatly enhancing the efficiency of simulation delivery, ensuring the quality of delivery, establishing an online structured simulation database, and centralizing management of simulation software and hardware resources,” said Lei Xinjun, deputy director, SANY Simulation Research Institute.

Results

After a successful phase one, SANY quickly initiated the project’s second phase: expanding the platform to more subsidiaries including their port machinery division and heavy machinery, lifting, truck, and equipment divisions. Today, SANY has achieved 100% online integrated management of simulation business processes and simulation data through the Simulation Cloud Suite. Additionally, by continuously integrating simulation software and secondary development programs, they’ve achieved modeling automation, parameterization of working conditions, standardization of norms, and intelligent evaluation. In some validation scenarios, modeling and analysis efficiency has improved by 3 to 10 times — a significant gain in simulation efficiency.

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