



ENABLING CAE SIMULATION

PATAC AND ALTAIR COLLABORATE TO DEVELOP ALTAIR SIMULATION CLOUD SUITE

About the Customer

Designing and developing vehicles and automotive systems has historically required a repetitive cycle of design, trial production, and iterative improvements — a lengthy and expensive undertaking. Today, with computer-aided engineering (CAE) simulation technology, automotive companies like the Pan Asian Automotive Technology Center (PATAC) — a joint venture between General Motors and SAIC Motor — can avoid that cycle, reduce costs, and improve quality and efficiency.



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Qiu Rongying, Senior Manager, PATAC Vehicle Virtual Technology



Their Challenge

The speed of automotive innovation is constantly accelerating, and vehicle designers face new challenges using CAE simulation technology. As PATAAC's analytical technology improved, the volume of its CAE analysis tasks increased. Engineers needed to store, reuse, and share models, and to collaborate within different simulation fields. At the same time, they were digitally transforming their R&D system. The PATAAC team needed a simulation management platform to effectively manage daily analysis work, systematically structure CAE data, improve visualization of results and processes, easily track analysis cases, and more.

Our Solution

Because simulation models and processes vary greatly among different enterprises, the team at PATAAC couldn't find a mature simulation management platform that suited their requirements. **They needed a platform for all areas of vehicle and subsystem analysis — and creating it wouldn't be easy.** After a nearly two-year strategy, screening, and selection process, they selected Altair as their technology partner for development and implementation. It helped that they were already using solutions including the Altair® HyperWorks® and Altair® HPCWorks® platforms. "Altair products have good openness and can be integrated with other business systems in the company," said Qiu Rongying, senior manager vehicle virtual technology, PATAAC.

This collaboration led to the Altair Simulation Cloud Suite, which PATAAC uses in areas including vehicle safety; noise, vibration, and harshness (NVH); vehicle dynamics; and structural and fluid analysis. The project included customization, integration with PATAAC's project management system, and a dashboard and modules for modeling, simulation, and process management. The platform was designed to integrate seamlessly with the Altair® PBS Professional® workload manager. Since this was a first-of-its-kind endeavor, the road ahead wasn't always clear. "In the process of building the simulation management platform, PATAAC and Altair often needed to collaborate on strategies to find the best solution because there was no precedent. Altair has shown us its professional understanding of the CAE business and its ability to customize products," Rongying said.

Results

Today, the Altair Simulation Cloud Suite includes modules for full-vehicle rapid modeling, model management, load case data management, and analysis plan management, plus a collaborative statistics dashboard. **It accommodates a wide variety of users and efficiently enables CAE simulation at PATAAC.** "In the long run," Rongying said, "the CAE simulation management platform will be advantageous not only for the efficiency of the simulation business, but also for the digital transformation of the entire company."

PATAAC and Altair collaborated to develop the Altair Simulation Cloud Suite for CAE management.