

A hand is shown interacting with a futuristic digital interface. The interface displays various icons and data visualizations, including a car icon, a battery icon, a satellite icon, and a chip icon. The background is a dark blue with glowing lines and patterns, suggesting a high-tech environment.

ALPS ALPINE CO., LTD.

Case Study

Challenge

Japanese electric equipment and devices manufacturer Alps Alpine wanted to increase its responsiveness to the dynamics of the mobility and high-tech industries. It needed a single platform to better integrate its electronics, systems and software development. Alps Alpine also wanted to consolidate its knowledge base to create unique customer experiences.

Solution

Alps Alpine adopted the 3DEXPERIENCE platform to integrate its diverse engineering teams, starting with its mechanical design business processes.

The company set up a single digital environment to manage and securely share information company-wide across the globe.

Benefits

The business is delivering on its goal to create new value for customers by consolidating its knowledge and integrating its engineering processes. The result is improved information sharing and more effective collaboration between remote teams and customers. They now have the ability to handle increased product complexity while ensuring the highest levels of quality.



"The **3DEXPERIENCE platform was perfect for a major transformation to support our bigger vision rather than simply making incremental improvements."**

- Shinobu Kida, Senior Manager, Structural Engineering Dept. 2, Engineering Headquarters, Alps Alpine Co., Ltd.

BECOMING A MOBILITY LIFESTYLE CREATOR

Four major trends are driving profound transformation in the automotive industry today. Experts refer to them as CASE: car connectivity, autonomous/assisted driving, shared services and electrified powertrains and components. Together, these developments are paving the way for entirely new forms of mobility, prompting original equipment manufacturers (OEMs) and their suppliers to rethink their business and the way they innovate. It's clear that they need to leverage digitization to become even more agile and customer oriented.

Alps Alpine's vision is focused on creating a seamless and smart mobility solution that starts even before the driver gets into the car. It sees a future where the car is able to adapt to suit its users' needs and preferences, such as waiting outside the office to pick you up, recognizing you and self-adjusting the seat and mirrors to suit your preferences, and detecting whether you're fully alert or not during the ride. The Japanese manufacturer, formed in 2019 as a result of a merger between Alps Electric and Alpine Electronics, produces capacitive sensors and force feedback generators among other technologies to cater to all kinds of user interfaces employed in the automotive industry as well as the industrial equipment, healthcare and high-tech sectors.

"The environment surrounding Alps Electric and Alpine Electronics was changing dramatically, particularly in the automotive electronics industry as exemplified by CASE, in addition to technical innovation including artificial intelligence (AI) and 5G, and the commoditization of the smartphone business," said Shinobu Kida, senior manager of the Structural Engineering Dept. 2 in the Engineering Headquarters at Alps Alpine. "Our integration is designed to expand the revenue of our existing businesses and develop a new entity with a common destiny. We aim to be an innovative "T-shaped" company; it's part of our mid-term business plan for the next three years to March 2022. A "T-shaped" company is one with expertise in a specific area and a wide range of knowledge."

Through its new set up, Alps Alpine aims to address two major challenges presented by CASE in its product development: helping to redefine the car's interior and overall driving experience and enabling seamless connectivity between the car and its outside environment.

"We face the challenge of providing a mobile space in the vehicle that offers an impressive high-quality comfortable feel like a room in one's own home," Kida said. "The other is the advent of an era when everything is connected to automobiles with

the rise of 5G. We would like to seamlessly connect all services surrounding automobiles – from the time before the owner gets into their vehicle all the way to after they get out."

DELIVERING ON A LONG-TERM VISION

As the complexity of Alps Alpine's products grow, the company needed a holistic design and manufacturing platform to streamline its processes and support its long-term vision. It found everything it needed in Dassault Systèmes' **3DEXPERIENCE**® platform.

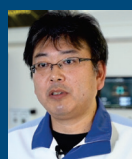
"Product development is becoming more complex every year, resulting in an increased workload," Kida said. "Under these conditions, the **3DEXPERIENCE** platform is helping to smooth the workflow by allowing us to take the RFLP (Requirements – Functional – Logical – Physical) approach. Enhanced search functions enable us to find the information we need as well as share ideas for design improvement. We can also implement AI based on past knowledge."

Working with Dassault Systèmes business partner Argo Graphics, Alps Alpine was able to assess how the **3DEXPERIENCE** platform would meet its needs and identify the specific industry solutions it required.

"We learned the characteristics of each of the platform capabilities and its future development design from Argo Graphics. This enabled us to make the right decision about which elements of the **3DEXPERIENCE** platform to use," Kida said. "Argo Graphics is a professional partner that we will continue to value in future."

A SINGLE KNOWLEDGE BASE

One of the biggest drivers for choosing the **3DEXPERIENCE** platform is its ability to consolidate all of Alps Alpine's operations and provide a single digital environment for designers and engineers to work together and share information easily.



"Using the platform has enabled a variety of data to be centrally managed and shared within the team, making it easier to assign work."

- Tomonori Otani, Structural Engineering Dept. 2, Engineering Headquarters, Alps Alpine Co., Ltd.

"The reason we chose the **3DEXPERIENCE** platform was that we had previously performed a variety of measures to improve the efficiency of design, and the many resulting databases were a burden on designers," Kida said. "The **3DEXPERIENCE** platform was perfect for a major transformation to support our bigger vision rather than simply making incremental improvements."

Manabu Sudo, member of the Structural Engineering Dept. 2 in the Engineering Headquarters at Alps Alpine uses the platform to share information with members of his team and perform 3D management and project management.

"Before, we ran everything on separate systems," Sudo said. "Consolidating everything on one single platform and connecting all information has made it possible to quickly obtain the design information everyone is looking for."

With all the information they need at their fingertips, designers can now work more efficiently and effectively.

"By using a single digital platform, we have significantly reduced the effort required to find the information that we need," Sudo said.

COLLABORATIVE WORKING

Alps Alpine is using ENOVIA on the **3DEXPERIENCE** platform to better serve and collaborate with its global customers. Designers, engineers and product managers are all connected via one single system, able to see a consolidated view of the product that can be securely shared with external parties. This shared environment allows the company to capture and enforce customer, regulatory and market-driven standards and help ensure unified requirements management and traceability. Today, all requirements are easily collected, managed, understood and fulfilled throughout the design, implementation and final testing stages. The result: everybody across the entire value chain has access to error-free, structured data, helping to speed up product development and facilitate concurrent engineering.

"Our customers are automotive manufacturers not only in Japan, but also Europe, the United States and China," Kida said. "The **3DEXPERIENCE** platform contributes to improving our efficiency and responsiveness, as the centralized management of information allows us to easily share information across all systems from design to manufacturing. With regard to rapid responses, I believe that in future we will be able to conduct all design and manufacturing work in parallel. The **3DEXPERIENCE** platform is essential for running processes simultaneously."

With ENOVIA on the **3DEXPERIENCE** platform, Alps Alpine is not only responding to customer requirements faster, but it's also improving the internal working processes, regardless of geography. Designers and engineers can now coordinate their efforts and directly embed their knowledge in the change process, which fosters design re-use. At the same time, they can build a consistent product architecture that supports variant management across all disciplines and locations.

"Using the platform has enabled a variety of data to be centrally managed and shared within the team, making it easier to assign work," Otani said. "It has also made it easier to collaborate with our overseas offices, saving us time. Since the introduction of the **3DEXPERIENCE** platform, the decision-making process within the team has improved. Sharing information about goals and backgrounds makes everything clearer and easier to understand, and this has accelerated decision-making."

A unified knowledge base encourages Alps Alpine's designers to pool their expertise and share ideas more freely, as well as encourage the re-use of past work.

"Before the platform was introduced, when an issue came up it was very hard to track the history and find the relevant information," said Tomonori Otani, member of the Structural Engineering Dept. 2 in the Engineering Headquarters at Alps Alpine. "Each person had to work individually and look for information by themselves."

More about the solution:

The Accelerated Device Industry Solution Experience powered by Dassault Systèmes' **3DEXPERIENCE** platform provides your teams with the critical capabilities they need to connect electronics, mechanical and software engineering with requirements and project management, as well as with external partners. Incorporating advanced 3D design and simulation, High-Tech companies can now innovate products at the speed of market demands.

Benefits:

- Better products and more product variants
- Reduced time to market and less project delays
- Secure, remote collaboration, also on the cloud
- Efficient integration with manufacturing planning



Top Image: Touch Input Module

Bottom image: Engineer tests and simulates the 3D model of a car radio in the **3DEXPERIENCE** platform

Focus on Alps Alpine

Alps Alpine Co., Ltd. was founded in January 2019, following the merger of Alps Electric Co., Ltd. and Alpine Electronics, Inc. The Japanese business manufactures electronic components, devices and infotainment systems, supplying original equipment manufacturers in the transportation and mobility, high tech, industrial equipment and healthcare industries.

Products: Audio equipment, information entertainment systems, medical devices and equipment

Revenue: 851 billion yen

Employees: 41,840

Headquarters: Tokyo, Japan

For more information: www.alpsalpine.com

Focus on Argo Graphics

Argo Graphics is a technical solutions and services provider that creates added value for its customers by working with them to understand their specific needs and proposing one-stop solutions. Its core business is delivering PLM and high-performance computing and server products.

For more information: <https://corp.argo-graph.co.jp/english/>

ARGO GRAPHICS

"The best thing for the team is that each person's progress and global communication have improved, increasing the efficiency of our work," Otani added.

HANDLING INCREASED COMPLEXITY

Alps Alpine's next-generation Touch Input Module is representative of some of the developments underway as the business establishes itself as a mobility lifestyle creator. The new in-vehicle input device has been developed with autonomous driving and AI in mind, fusing Alps' elemental technology with Alpine's display control technology. It includes support for hover gestures and re-creation of subtle control sensations like the push of a switch.

Our 3DEXPERIENCE® platform powers our brand applications, serving 11 industries, and provides a rich portfolio of industry solution experiences.

Dassault Systèmes, the 3DEXPERIENCE Company, is a catalyst for human progress. We provide business and people with collaborative virtual environments to imagine sustainable innovations. By creating 'virtual experience twins' of the real world with our 3DEXPERIENCE platform and applications, our customers push the boundaries of innovation, learning and production.

Dassault Systèmes' 20,000 employees are bringing value to more than 270,000 customers of all sizes, in all industries, in more than 140 countries. For more information, visit www.3ds.com.

Because Alps Alpine can now connect all information flows, integrating product, bill of materials (BOM), manufacturing and customer data on a single platform, it can ensure digital continuity, data integrity and effective change management at every stage of its product development process – regardless of how complex its products become.

"One of the strengths of our new platform is to have a consolidated view of design specifications that combine 3D modeling with BOM information," Hina Hakozaki, member of the Structural Engineering Dept. 2 in the Engineering Headquarters at Alps Alpine.

Many of the company's designers used Dassault Systèmes' CAD software CATIA before, and they found that the platform's user interface was very intuitive for them. It meant they were able to get up and running on the platform very quickly and with minimal training.

"This new platform is very easy to use for designers," Hakozaki said. "I was able to learn and adapt basic business processes and operations in three days because I was originally using CATIA."

CREATING NEW VALUE

Bringing together more than 70 years of experience from Alps Electric and Alpine Electronics, Alps Alpine hopes to deliver exciting connectivity experiences to its customers. As it looks to the future, it plans to build on its advanced production capabilities and design and software development prowess.

"The reason customers choose our company is because of our deep knowledge and expertise in core devices, and our ability to provide more value to customers than they expect by making system proposals that connect seamlessly with their software," Kida said.

With its newly consolidated operations and a modern, scalable platform on which to build its business processes, Alps Alpine is confident of its ability to continue to adapt to the changes underway in the automotive industry and strives to create new value that enriches the lives of people everywhere.

"The company's vision for the next five years is to create new value that pleases people and the planet," Kida said. "The 3DEXPERIENCE platform plays a huge role in this, helping our employees to reach new areas of value creation."

