DASSAULT SYSTEMES

Defense & Space Korea
Aerospace & Defense Case Study

DNSK
Defense & Space Korea

Challenge
Defense & Space Korea (DNSK) needed to ensure growth by providing powerful training simulation tools and delivering fast and flexible responses to changing customer requirements.

Solution
DNSK uses the Dassault Systèmes' 3DVIA application, part of the **3D**EXPERIENCE Platform, to develop its training simulation solutions.

Benefits
DNSK improved employee efficiency by 50% and saved up to 20% in costs. As a result, it was able to spend more time on detailed design and increase the reliability of its overall solutions.

Developing simulation training solutions with 3DExperience technology
Established in 2010, Defense & Space Korea (DNSK) develops aviation Simulators used to train pilots and aircraft maintenance crews. Based on his many years in the aircraft maintenance sector, DNSK Chairman KC Choo founded the company with the goal of creating Korea's top air defense system developer.

The ever-growing importance of software in aviation equipment and a firm belief that hardware should no longer be a major focus for companies prompted Choo to center DNSK's efforts on software development. He created DNSK by combining the aviation maintenance business unit and simulator development team of his former company.

Optimizing next-generation simulation system development
The virtual maintenance training system (VMTS) developed by DNSK is a next-generation simulation system that connects real life with the virtual environment. It depicts all possible real-life maintenance issues as simulation modules and uses 3D virtual mock-ups to simulate maintenance and defense situations. The result is a virtual training system that raises existing process-based training to the next level.

Based on experience using various development tools, DNSK decided that 3DVIA, the application for online 3D lifelike experiences from Dassault Systèmes (3DS), the **3D**EXPERIENCE Company and world leader in 3D Design, Digital Mock-Up (3D-DMU) and Product Lifecycle Management (3D-PLM), was the best software to use in developing this system."3DVIA technology allows us to generate the data required for constructive simulation, in which simulated people use simulated systems," said Dae-Hyun Yoo, chief planning officer, DNSK. "3DVIA enabled us to take simulation to new heights."

By nature, simulation development requires varied engineering data for mechanical and operational analysis of the equipment. According to Yoo, the ability to acquire such data is one of the major advantages of utilizing diverse solutions provided by 3DS.

With 3DVIA, the simulator development team produces training simulation programs for helicopter maintenance, naval-gun firing, aircraft surveillance, e-learning for pilots, gunnery, and air traffic control. "Virtual simulation is essential in aircraft maintenance and training," Choo said. "We have received positive feedback at trade shows and exhibitions featuring our simulator using Dassault Systèmes technology."

A single simulation engine reduces revision time
Before adopting its 3DS technology, DNSK used both commercial and in-house simulation engines to develop products. This sometimes required it to use as many as six different simulation engines to create top-level aircraft simulators. To provide a high degree of realism also required numerous revisions and corrections throughout the development process, resulting in loss of development speed and flexibility.

Using 3DVIA, DNSK was able to use a single application and implement revisions more efficiently, resulting in a dramatic reduction in project overall time. "With our previous development tools, it was hard to respond to constantly changing customer requirements in a timely

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Less design time, more reliability

3DVIA enabled DNSK's developers to try different design approaches easily and quickly during the initial project development phase, helping reduce the time needed to build prototypes by 50%. This enabled DNSK developers to spend more time on design and reliability in the main development phase, improving their productivity and the value of their work experience. Another major value is that DNSK can also create training content using immersive 3D technology such as augmented reality, instead of traditional static 2D content delivery forms such as Flash or video.

Expanding to new markets

Through its collaboration with Dassault Systèmes, DNSK plans to extend its simulation platform to address the maintenance and training needs of companies in the shipbuilding and automotive industries. Additionally, a new interface device that connects the real-life and virtual space, similar to products such as the Xbox 360 Kinect or Nintendo Wii, is underway. The device will be optimized for 3D images and transparent displays.

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Dae-Hyun Yoo, Chief Planning Officer, DNSK

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Dassault Systèmes, the **3D**EXPERIENCE Company, provides business and people with virtual universes to imagine sustainable innovations. Its world-leading solutions transform the way products are designed, produced, and supported. Dassault Systèmes' collaborative solutions foster social innovation, expanding possibilities for the virtual world to improve the real world. The group brings value to over 150,000 customers of all sizes, in all industries, in more than 80 countries. For more information, visit www.3ds.com.

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