



By adding **3DEXPERIENCE** Works data management, collaboration, and simulation solutions to its SOLIDWORKS implementation, KOSES has reduced design cycles and development costs for its precision semiconductor production systems.

Challenge:

Improve data management, collaboration, and communication in anticipation of global growth, while also accelerating design validation and optimization, through the use of data management, simulation, and collaboration solutions.

Solution:

Add **3DEXPERIENCE Works** data management, collaboration, and simulation tools—including Collaborative Designer for SOLIDWORKS, Collaborative Industry Innovator, Collaborative Business Innovator, and Structural Performance Engineer—to its existing SOLIDWORKS installation.

Results:

- Shortened product development cycles by 20 percent
- Reduced development costs by 7 percent
- Slashed design validation and optimization time by 40 percent
- Improved data management and collaboration

A leading Korean information technology (IT) company, KOSSES (Korea Semiconductor System), has grown steadily since its establishment in 1990, with the goal of expanding beyond the Korean market to become a global leader in the rapidly changing IT industry. The company's products run the gamut of semiconductor manufacturing systems: solder ball attachment, flux pre-cleaning, substrate merge/sorting, package stack, pick and place, and loader/offloader systems, to name a few. Leveraging its accumulated technical knowledge and excellent human resources, KOSSES is on track to leap forward as a world-class producer of advanced semiconductor manufacturing equipment.

As the company has grown over the past two decades, the design and engineering tools that it uses to develop its systems have evolved much in the same way as its semiconductor production systems have, according to CTO Jung Jai-Lee. KOSSES had used AutoCAD® 2D design tools to develop its systems until 2014, when the company moved to SOLIDWORKS® 3D design for product development. While the move to SOLIDWORKS resulted in the productivity gains that sparked the company's initial growth spurt, the growing company then faced data management and collaboration challenges.

"In 2014, SOLIDWORKS was first introduced and the existing 2D-oriented design method was converted into 3D," Jai-Lee recalls. "As the number of departments and personnel increased continuously, internal design collaboration and data management were limited. Initially, we sought another solution and moved to Autodesk® Inventor® but we changed back to SOLIDWORKS again after encountering design cycle delays related to design and modeling errors."



"We ... used to outsource vibration analysis, which took longer. Based on our experience, it takes 40 percent less time to run vibration simulations in the cloud using Structural Performance Engineer versus outsourcing analysis. With **3DEXPERIENCE Works** solutions, we have been able to shorten product development time overall by about 20 percent."

— Jung Jai-Lee, CTO

KOSSES was still looking for solutions to its data management and collaboration challenges when it learned of **3DEXPERIENCE Works** solutions on the cloud-based **3DEXPERIENCE** platform from its SOLIDWORKS reseller, Node DATA. "While we initially were interested in **3DEXPERIENCE Works** collaboration and data management solutions, we also were excited to begin using **3DEXPERIENCE Works** simulation tools, which use the Abaqus® solver," Jai-Lee recounts.

The semiconductor equipment manufacturer added **3DEXPERIENCE Works** collaboration, data management, and simulation solutions—including Collaborative Designer for SOLIDWORKS, Collaborative Industry Innovator, Collaborative Business Innovator, and Structural Performance Engineer—to its existing SOLIDWORKS installation in 2021. In addition to helping KOSSES resolve data management, collaboration, and simulation challenges, **3DEXPERIENCE Works** solutions provide the capabilities the company needs to continue to grow and remain competitive.

"As the semiconductor market is being refined to a three-nano process, it is necessary to develop precision processing equipment in line with this, which presents challenges in securing future market competitiveness," Jai-Lee explains. "Development of precision processing equipment requires the ability to apply new ideas to design rather than traditional product design methods, and **3DEXPERIENCE Works** solutions provide the ability to embody these ideas, which makes it possible to effectively manage and collaborate on data from the idea stage through the manufacturing process more efficiently and successfully than with other solutions."

SAVING TIME, IMPROVING COLLABORATION AND DATA MANAGEMENT

Since adding **3DEXPERIENCE Works** solutions to its existing SOLIDWORKS installation, KOSSES has used the tools to complete the design of a semiconductor offloading system. Not only have **3DEXPERIENCE Works** solutions helped the company improve collaboration and data management, they have also shortened the product development cycle for the OffLoader. "**3DEXPERIENCE Works** solutions have so many

capabilities available on the cloud-based **3DEXPERIENCE** platform, so adding **3DEXPERIENCE** Works to SOLIDWORKS has many advantages,” Jai-Lee stresses.

“The ease of collaboration between departments and people with access and approval rights enables them to access the **3DEXPERIENCE** platform at any time and from any location to check the progress of projects and leave comments, which is also a significant benefit of moving to the cloud,” Jai-Lee adds. “We also used to outsource vibration analysis, which took longer. Based on our experience, it takes 40 percent less time to run vibration simulations in the cloud using Structural Performance Engineer versus outsourcing analysis. With **3DEXPERIENCE** Works solutions, we have been able to shorten product development time overall by about 20 percent.”

SHORTER DESIGN CYCLES REDUCE COSTS

In addition to shortening design cycles, **3DEXPERIENCE** Works solutions are helping KOSES reduce development costs that extend beyond outsourced analysis fees. For example, a five-person development team using **3DEXPERIENCE** Works solutions completed work on the OffLoader in record time, resulting in substantial cost savings.

“Based on the fact that the application of **3DEXPERIENCE** Works solutions has reduced the duration of the design cycle completed by a five-person development team by 10 days, it’s expected to reduce the total development cost for the OffLoader by about 7 percent.”

SOLUTION SCALABILITY SUPPORTS GROWTH

KOSES also values the scalability afforded by the cloud-based **3DEXPERIENCE** platform and **3DEXPERIENCE** Works solutions because the company can cost-effectively tap additional capabilities when they are needed as the company grows and leverage the cloud-based platform to work more efficiently with partners. “Dassault Systèmes offers the SOLIDWORKS desktop solution, and the **3DEXPERIENCE** Works solutions, so we can choose and use the solutions when needed depending on the situation,” Jai-Lee notes.

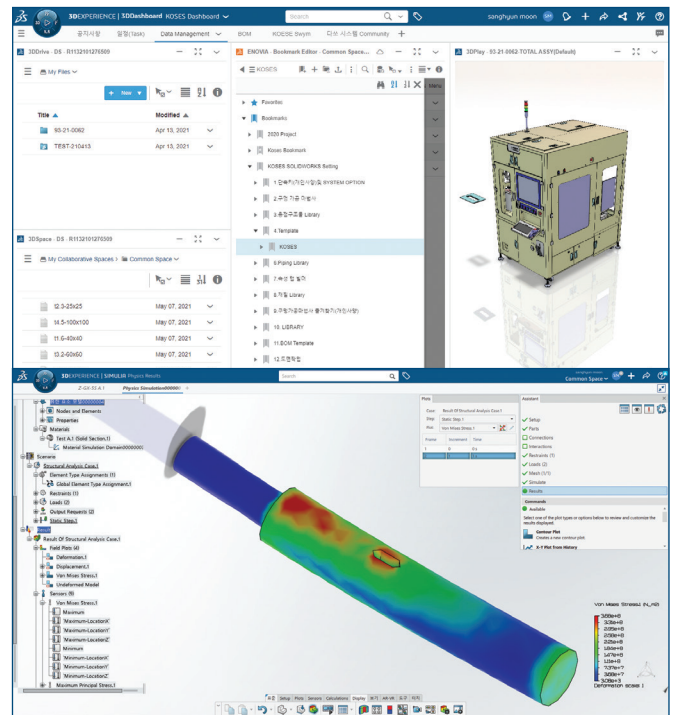
“Plus, multiple times a year, new versions of the **3DEXPERIENCE** Works solutions with additional features are released on the cloud, continually improving their design efficiency without needing to update them locally,” Jai-Lee continues. “The

Focus on KOSES Co., Ltd.
VAR: Node DATA, Seoul, Korea

Headquarters: 62, Saneop-ro, Ojeong-gu
Bucheon-si, Gyeonggi-do, 14402
Korea
Phone: +32 662 2224

For more information
www.koses.co.kr

advantages of the cloud—the ease of use wherever you go—will not only increase the efficiency of our internal operations but also help accelerate time to market by allowing us to easily share and collaborate with external partners.”



With **3DEXPERIENCE** Works solutions, KOSES development team members can collaborate on semiconductor production system designs from anywhere, at any time, and on any device, and can also run simulations on design performance, enabling the company to save additional time and money by bringing vibration analysis in-house.

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.



©2022 Dassault Systèmes. All rights reserved. **3DEXPERIENCE**, the Compass icon, the 3DS logo, CATIA, SOLIDWORKS, ENOVIA, DELMIA, SIMULIA, GEVIA, E-XALEAD, 3D VR, BIOVIA, NETVIBES, IPWE and 3DEXITE are commercial trademarks or registered trademarks of Dassault Systèmes, a French “société européenne” (Versailles/Commercial Register # B 222 306 440), or its subsidiaries in the United States and/or other countries. All other trademarks are owned by their respective owners. Use of any Dassault Systèmes or its subsidiaries trademarks is subject to their express written approval. MKDCSCSENG062