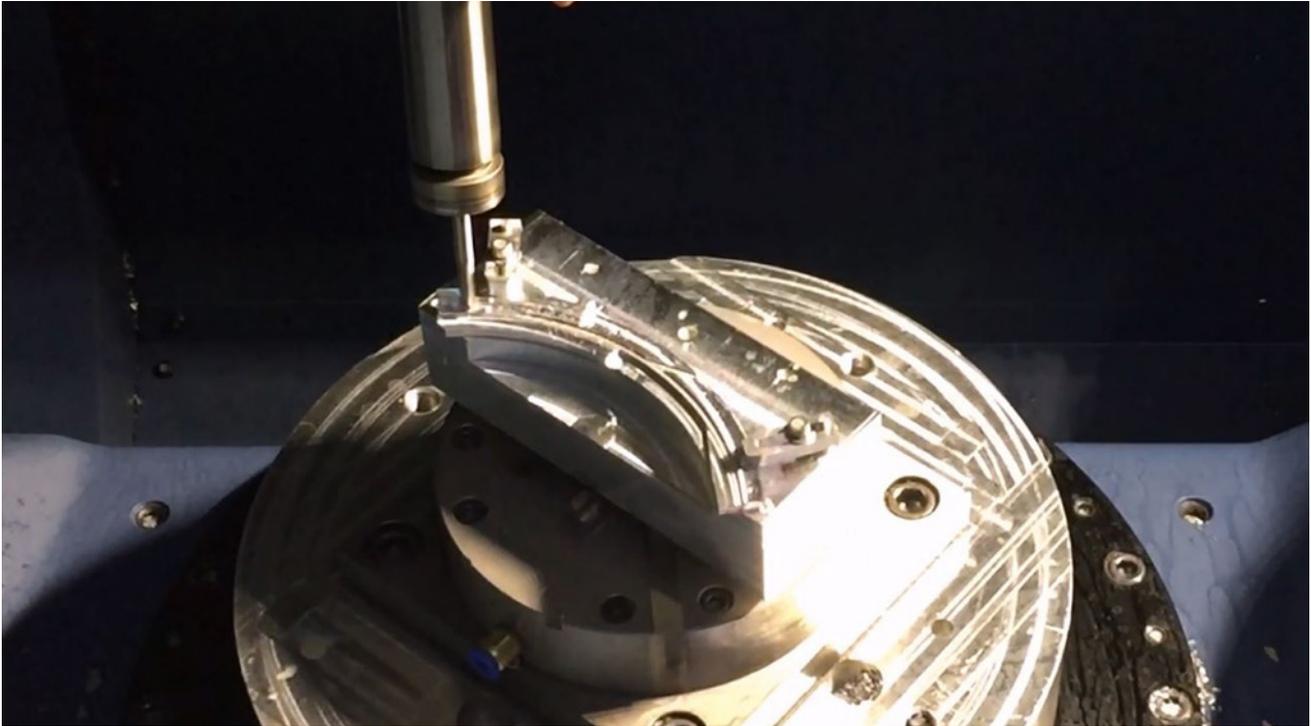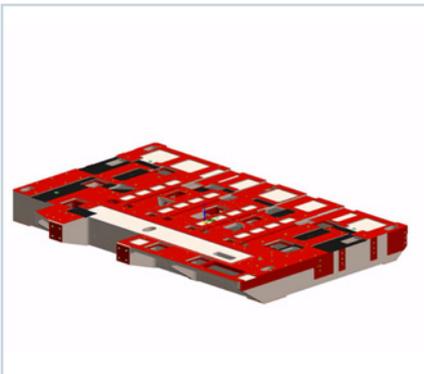# Smart manufacturing

Networked design and manufacturing with Siemens PLM Software secures market lead

ASM Pacific Technology Ltd. (ASM) is a world market leader in the production of semi-conductors and equipment used in the manufacture of LEDs for chip producers around the globe.

ASM has addressed the challenge of developing increasingly complex products within ever shorter manufacturing cycles by creating a close link between computer-aided design and manufacturing.

Shenzhen, China. ASM Pacific Technology Ltd. (ASM) produces semi-conductors and equipment used in the manufacture of LEDs (light-emitting diodes) for chip producers the world over. To create a closer link between computer-based design and production, and to reduce engineering times, ASM has opted to use solutions from Siemens PLM Software. This decision has enabled ASM to improve its manufacturing efficiency and product quality by up 70 percent.

Like a great many other companies, world market leader ASM faces the challenge of engineering and manufacturing increasingly complex products within ever shorter manufacturing cycle times. To be sure of maintaining its position at the leading edge of the industry, ASM earmarks ten percent of its profit every year for investment in product development. However, development was compromised in terms of speed and quality

by the geographical separation of its design, development and production facilities. One difficulty encountered was the impossibility of transferring 3D product models directly into the manufacturing process due to incomplete product information. The exchange of data between computer-aided design (CAD) and manufacturing (CAM) was also time-consuming and difficult. The key to achieving an optimum production process was to implement digitalization using the NX software from the Siemens PLM Software solution portfolio.

Seamless link between CAD and CAM

"We began using NX CAM software from Siemens PLM Software in manufacturing factories in 2000," recalls Chen Lizhi, Head of MIS Information and Telecommunications Technology at ASM. "We have deployed more than 100 suites in factories all over

the world." The digital transformation using the Siemens solution has been a resounding success, enabling ASM to raise its productivity to a whole new level. The most clearly evident effect was the trouble free link created between design and manufacturing. ASM achieves this by using the NX feature FBM (feature-based machining) which allows NX CAM (computer-aided manufacturing) to automatically read product and manufacturing information (PMI), tolerances, information about surface machining and a whole host of other data stored in the 3D model. The system is also able to use this information as the basis for automatic calculation of the optimum machining method. The simulation and verification function integrated in NX CAM also reduces potential sources of er-
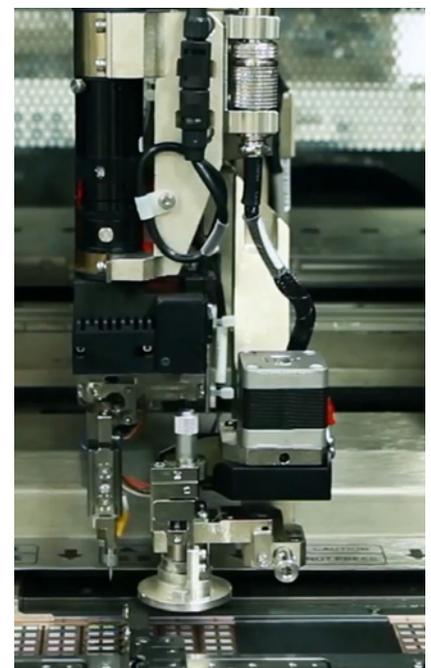
ror, as the ASM engineers no longer need to carry out physical tests.

70 percent quality and efficiency improvement

"NX CAM's feature-based machining enables us to truly experience the seamless connection between CAD and CAM, enabling manufacturing to respond more quickly to design changes, thus significantly reducing the time of responding to user requirements and reducing time-to-market," says Hu Dewen, senior CAD/CAM manufacturing manager at ASM. "Our statistical results show that feature-based machining and PMI have improved the production efficiency and quality of ASM by 70 percent, thus saving a lot of valuable time."

The use of Siemens solutions has enabled ASM to increase its manufacturing efficiency and product quality by up to 70 percent.

ASM is using NX software from the Siemens PLM Software solution portfolio to shape its digital transformation.

Driving global production using NX CAM