

Decision-Making Processes in Manufacturing Are Becoming Digital with MELSOFT Gemini

Increasing competition in the manufacturing world is encouraging companies to make faster decisions and make their investments more predictable. The MELSOFT Gemini digital twin technology of Mitsubishi Electric Türkiye Factory Automation Systems, which enables production lines to be tested in a virtual environment before they are physically installed, provides a strong response to these needs.

Integrating digital twin technology into operational processes enables companies to adopt processes that operate faster, deliver more consistent results and respond more quickly to changing customer expectations. Modeling production lines in a virtual environment supports investment decisions based on data rather than intuition.

With the MELSOFT Gemini digital twin technology, which enables production line equipment to be verified in a digital environment, Mitsubishi Electric Türkiye Factory Automation Systems helps businesses overcome challenges encountered in their manufacturing processes. Thanks to pre-validation studies conducted on virtual factory and equipment lines, production lines can be simulated before physical investments are made, contributing to significant improvements in time and cost during the design phase.

The MELSOFT Gemini 3D Simulator brings together all stages of production on a single platform, from layout planning to production and process flow simulation, from robot programming and cell design to virtual commissioning. During the installation of new production lines or the expansion of existing lines, the required number of robots, machines and workforce can be clearly determined through multi-scenario simulations. Investment and workforce cost analyses based on simulation results contribute to more accurate and efficient investment decisions.

Contributing to Businesses' Sustainability Goals

Digital twin technology also provides data-driven insights that can deliver savings in areas such as energy consumption and carbon emissions. MELSOFT Gemini enables real-time monitoring and optimization of energy systems, contributing to the reduction of the carbon footprint of manufacturing facilities. In this respect, MELSOFT Gemini goes beyond being merely a production tool and becomes a solution that supports businesses in achieving their sustainability goals.