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FOR IMMEDIATE RELEASE **No. 3505**

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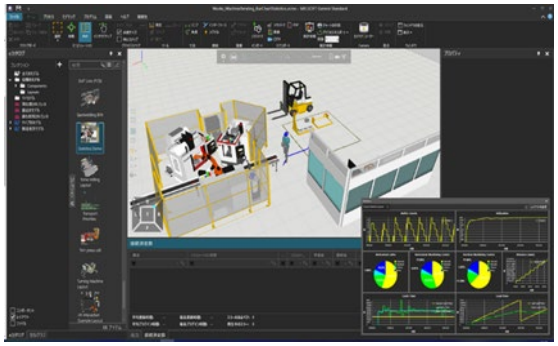
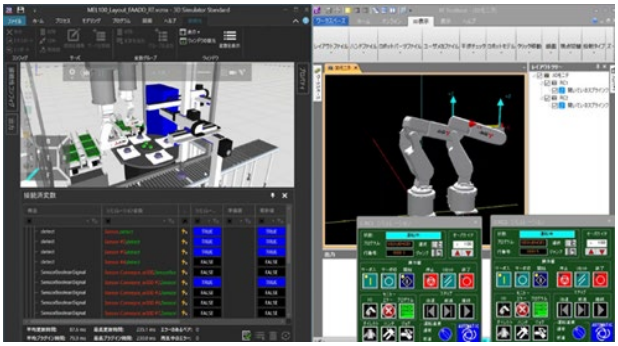
Mitsubishi Electric to Launch "MELSOFT Gemini" 3D Simulator

3D digital twin simulation will streamline design and construction of production facilities while improving quality

TOKYO, March 29, 2022 – Mitsubishi Electric Corporation (TOKYO: 6503) announced today that on April 28 it will launch the "MELSOFT Gemini" 3D simulator, which will expedite the design and construction of production facilities by using digital space to simulate and verify envisioned production operations in a 3-dimentional environment. By connecting to a variety of software and factory devices, MELSOFT Gemini will visualize, simulate and help streamline manufacturing work processes ranging from design of production facilities to operation and maintenance.



Production line simulation



Production facility design simulation

The recent pandemic has caused restrictions on human mobility and face-to-face communication, which has made it difficult for manufacturers to install and maintain production facilities. Meanwhile, the manufacturing sector is seeing growing demand for the digital transformation of factories. These industry trends have brought the spotlight on to the use of digital space for solving various issues on production sites. MELSOFT Gemini can help solve such issues and streamline processes by using digital space to simulate the operation of production facilities before they are installed and operated for real.

Going forward, Mitsubishi Electric will continue to provide value to customers throughout their manufacturing lifecycle with digital technologies.

Product Features

1) 3D digitalization of production facilities for easy verification

MELSOFT Gemini simulates the operation and control of production lines and equipment using a PC-based 3D digital space, so that digital verification can be made to support the fast and simplified launch of actual equipment and lines later on. MELSOFT Gemini connects to MELSOFT simulators, which are available separately as part of the "MELSOFT iQ Works" software package, to simulate the control of devices such as programmable logic controllers (PLCs) and motion controllers (Servos). During the verification process, facility engineers can check the status of the planned production facility by looking at the PLC sequence program, reviewing displays of operational waveforms and/or video data when an error is found.

MELSOFT Gemini directly connects to the MELSOFT simulator and factory devices without having to go through an OPC server, enabling 3D data to be updated in digital spaces approximately 12 times faster than OPC environments, according to Mitsubishi Electric as of March 29, 2022. Detailed checks for possible operational interference can also reduce the need to rework processes as well as helping to improve quality.

In the operation and maintenance phases, the causes of abnormal occurrences in the production line can be determined quickly using visual data, which is provided to line operators through MELSOFT Gemini.

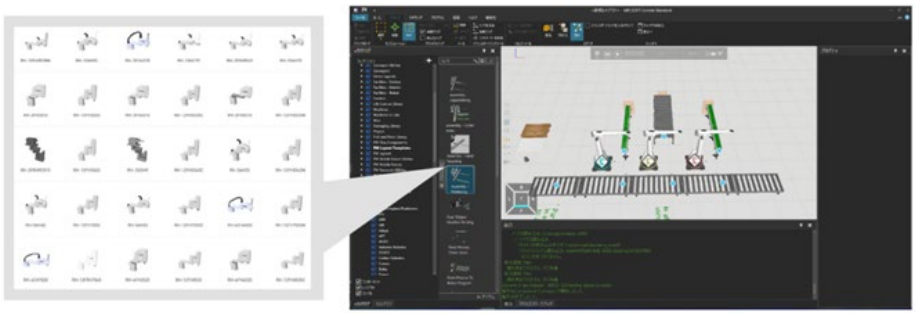
2) Diverse hardware menu as well as graphical and statistical functionality for extensive analysis

The supported hardware menu (e-catalog), offers hardware selection from approximately 2,500 types of diverse production equipment, including robots, conveyors, processing machines and more, which can be combined in a simulated 3D production facility via easy drag & drop operation. Also, various parameters can be easily set on the 3D screen to adjust the layout of the production line.

Line, area, bar and circle graphs can be used to visualize and analyze simulation data on different operating rates of production, thereby supporting the design of extra-efficient production lines. Equipment operating status, production task duration, worker wait time, etc. can also be statistically quantified and displayed with graphs to identify different production yields and operating rates, enabling lines to be designed and upgraded with efficiency.

Product Versions

Product name	Model	Terms	Price	Release
MELSOFT Gemini Professional	SW1DND-3DSIMR-MQ12	Professional Edition license with one year software maintenance contract	Open	April 28
MELSOFT Gemini Essentials	SW1DND-3DSIME-MQ12	Essentials Edition license with one year software maintenance contract		
MELSOFT Gemini Professional Maintenance	SW1DND-3DSIMR-MHQ12	One year software maintenance contract for Professional Edition		
MELSOFT Gemini Essentials Maintenance	SW1DND-3DSIME-MHQ12	One year software maintenance contract for Essentials Edition		



e-catalog　　Line layout settings

Contributions to the Environment

Mitsubishi Electric's MELSOFT Gemini 3D simulator contributes to the reduction of CO2 emissions during production by using digital spaces to optimize manufacturing processes.

Trademarks

MELSOFT Gemini and MELSOFT iQ Works are registered trademarks of Mitsubishi Electric Corporation.

Patents

One patent application is pending in Japan and another application is planned overseas.

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About Mitsubishi Electric Corporation

With 100 years of experience in providing reliable, high-quality products, Mitsubishi Electric Corporation (TOKYO: 6503) is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, energy, transportation and building equipment. Mitsubishi Electric enriches society with technology in the spirit of its "Changes for the Better." The company recorded a revenue of 4,191.4 billion yen (U.S.$ 37.8 billion*) in the fiscal year ended March 31, 2021. For more information, please visit www.MitsubishiElectric.com

*U.S. dollar amounts are translated from yen at the rate of ¥111=U.S.$1, the approximate rate on the Tokyo Foreign Exchange Market on March 31, 2021