Visual Components Simulation
Scalable Robotic & Material Flow

Production Simulation
on one platform

Create a complete simulation and share it with colleagues or customers
Design, analyse and compare alternatives to choose the best solution
Choose the right investment based on best in class production simulation
Test production in advance to reduce ramp up time and costs
Finnish simulation expert Visual Components has joined Mitsubishi Electric’s e-F@ctory alliance to provide Robot and Automation simulation software which can integrate all Mitsubishi Robots into its modular software. The ready-made robot models are available through an online component catalogue for all products in the suite, covering: 3DAuto-mate, 3DCreate, 3DSimulate, 3DRealize R and 3DRealize.

For simulating and optimizing complete cells and lines the Mitsubishi PLC range is integrated and can be accessed through the optional PLC add-on.

An image says more than a 1000 words

Visual Components not only offer an image, they offer a fully animated 3D PDF of the simulation which can be opened with Adobe Acrobat Reader®. This means you are able to move through your application, turn by turn, zoom, fly and look behind the corner. The PDF is also small enough to share by email.

Today’s automation engineers as well as sales people, have to sell their solution to management as well as potential users of the machines etc.

Therefore, it is much easier to sell your solution or one of the designed alternatives when people are able to see a real production (including NC machines), with robots that are moving and the conveyor and all parts fully animated.

Customers expectations can therefore be better integrated before incurring unnecessary costs.

CAD import

Inside the Visual Components Suite it is very easy to design the production machine, cell or line. Robots, parts, machines, housings, walls and all other required elements of a cell are included in component libraries and it is also possible to import your own CAD files from different CAD suppliers.

Design alternatives

Customers usually have to compare a manual solution with an automated solution, but with Visual Components it is not a problem. Inside the library for simulation there is also an animated human resource to show the difference and to optimize human actions.

Examples of animated 3D PDF capability
Factory simulation libraries

The software includes a comprehensive selection of simulation libraries. These include: Order Picking, Palletizing, Pick’n’Place, Conveyors, Operators and Forklift trucks etc.

Optimization

The 3D simulation enables you to optimize your production with:
- Capacity estimates
- Work in Progress (WIP)
- Bottleneck analysis
- Buffer size optimization
- Production strategy studies

By using simulation you can avoid making the wrong decisions, as you can see the result in advance.

Direct integration

Inside the Visual Components Suite there is a component library including all Mitsubishi robot types. Select the scara or articulated robot and place all other components around. The system automatically checks if the robot with gripper is able to reach all points. This also includes the direction of the tool, e.g. it checks that the robot can really place a part inside your machinery. All positions can be calculated automatically and can be transferred to the robot. Also the simulated program can easily be adapted to use Mitsubishi Robot controllers.

Path definition for complex shapes, e.g. for gluing, can be calculated and optimized in advance and real testing is reduced to a minimum.

Collision detection between several robots and the automation equipment is integrated in the simulation environment.

A complete solution

For a complete solution Visual Components also offers an Add-on for PLC connectivity. Testing and validating the PLC code in advance by connecting the I/O’s to the digital machines ensures that errors are eliminated in the design phase. Visual Components is able to simulate the whole production based on real Mitsubishi PLC programs for FX, System Q and L Series enabling the real PLC code to be tested in a virtual environment.

Overall benefits:
- PLC Code validation without hardware
- Visualization based on real PLC Code
- Less problems during ramp up
- Train operators in a virtual environment

Simulation covers the complete production layout
The simulation tools are suitable from SME’s (Small and medium enterprises) up to large corporations.