

PlantTwin is a discrete manufacturing simulation tool.

PlantTwin supports decision making for strategic and medium-term production planning of factory shops, enterprises and groups of enterprises.

Key application areas of PlantTwin are: machine-building, aerospace, ship-building industries.



Examples of problems being solved

- Evaluating adequacy of productive capacity of a shop, enterprise or group of enterprises for production target delivery
- Justification of investment in modernization of existing and creation of new production facilities
- Checking production plan feasibility using simulation modelling and Monte-Carlo analysis
- Generating a feasible schedule to complete production plan on time
- Scenario analysis of work distribution and coordination policies between plants of a holding company

PlantTwin considers:

- Hierarchical BOMs structure
- Production routes, including assembly operations
- Setup and cleaning durations
- Operating schedule of factory shops, production units and personnel
- Operations of external contractors
- Consumption and replenishment of purchased component stocks
- Sizes of production batches
- Equipment maintenance and repair schedules

Three modules of PlantTwin allow performing the tasks of planning in a more efficient way

Scenario editor

Prepares inputs for scenario analysis, forms an interrelated data set and maintains correctness and consistency of the data

- ✓ User-friendly interface for editing strongly interrelated data
- ✓ Import and export of any data to MS Excel with built-in error-checking
- ✓ Automatic check of data completeness and correctness

Scheduler

Verifies theoretic feasibility of a production program, identifies bottle necks in a system

- ✓ Generation of feasible schedule for realization of a production program
- ✓ Identification of bottlenecks, scarce resources and critical paths of the schedule
- ✓ Representation of the plan as a set of interactive graphs, tables and diagrams

Simulation model

Verifies feasibility of a production program considering real-world variabilities and interdependencies

- ✓ Estimation of the likelihood of on-time completion of production program
- ✓ Consideration of random factors, such as delays in fulfillment of operation, components supply disruptions
- ✓ Ability to verify plans generated by other systems like MES

The PlantTwin planner checks the theoretic feasibility of a production program, identifies bottlenecks in a system

Simulation model checks the feasibility of a production program taking into account probabilistic factors that cannot be considered during analytical planning

