

# Simulation



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## Icons

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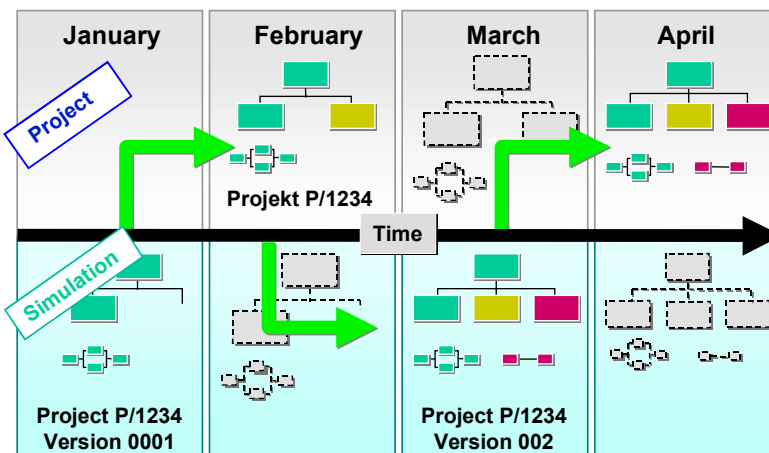
## Simulation

### Purpose

When you are planning complex projects, for instance in engineering-to-order, it is often necessary to simulate and save changes to a project, without affecting the operative project. To do so, you use simulation versions that can be changed, costed and scheduled.

### Features

You can create a new simulation versions for a project by either transferring data from an existing operative project or completely independently, for instance in the quotation phase of a project.



You can only simulate one sub-tree in a project

You use the project planning board to [edit \[Page 13\]](#) simulation versions and the *Project Information System* to [evaluate \[Page 17\]](#) them. If you have decided that a simulation version meets your requirements, you can transfer it (back) to the operative project.

You can also create several simulation versions for a project, evaluate and compare them.

### Constraints

The following functions are not available for simulations:

- Manual planning of costs, revenues and payments in WBS elements
  - If you transfer an operative project to a simulation version, the planned values are transferred to the WBS elements. However they cannot be changed directly in the simulation version.
- Leveling of Capacities
- Integration with SD (quotation processing/assembly processing)
- Integration with PP/MM

**Simulation**

- Material requirements planning
- Delivery information
- Status Management

There are no system statuses in simulation versions. You can, however, set deletion flags.

## Creating Simulation Versions

### Use

You can use this function to:

- [Create a simulation version without copying \[Page 8\]](#)
- [Create a simulation version by copying \[Page 9\]](#)

As a source for copying from, you can use an existing operative project, a standard work breakdown structure, or an existing simulation version for the same project or for another project. In addition, you can stipulate that activities are copied too.



When you create a simulation version using a template, only the structure of the template is copied into the simulation version. Plan, actual, and commitment values in the WBS elements are not transferred. Costs from the network costing only appear in the new version created from a source if you set the *Automatic costing* indicator in the network header or the costs are determined manually in the project planning board.

Actual values are only transferred if you are [copying \[Page 10\]](#) an operative project into a simulation version.

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**Creating a Simulation Version Without Copying**

## Creating a Simulation Version Without Copying

1. Choose *Logistics/Accounting* → *Project management* → *Planning*.  
(The same functions are also in the *Operative structures* menu under *Work breakdown structure*).
2. Choose *Project* → *Simulation* → *Create*.
3. Enter the [simulation version key \[Ext.\]](#), the project definition key and the project profile.
4. Choose *Continue*.  
The [project planning board \[Ext.\]](#) appears and you can enter or edit data for the simulation version.  
You can create project objects (WBS elements, activities, relationships and milestones), plan dates and resources, calculate costs, and call up reports as in an operative project.
5. Save the simulation version.

## Creating a Simulation Version by Copying from

### Procedure

1. Choose *Logistics/Accounting* → *Project management* → *Planning*.  
(The same functions are also in the *Operative structures* menu under *Work breakdown structure*).
2. Choose *Project* → *Simulation* → *Create*.
3. Enter the [simulation version key \[Ext.\]](#), the project definition key and the project profile.
4. Enter the required source. This could be:
  - a project definition
  - a project definition and a version key.
  - a standard project definition
5. If necessary set the *With activities* indicator.
6. Choose *Continue*.  
The source structure is copied into the new simulation version and the [project planning board \[Ext.\]](#) appears
7. Save the simulation version.

## Transfer of Operative Data and Simulation Data

## Transfer of Operative Data and Simulation Data

### Use

You can transfer simulation versions and operative data as follows:

Source	Target
Operative project	Simulation Version
Simulation Version	Simulation Version
	Operative project

### Features

In the standard system the following objects are transferred automatically:

- Project elements
- Material components
- Invoicing and billing plans
- Costs, revenues and payments (planned, actual and commitment values)



Actual and commitment values as well as actual dates are not transferred from a simulation version to an operative project.

Settlement rules are not transferred and you cannot maintain them in the simulation version.

In Customizing for the *Project System* you can stipulate whether PS texts, documents and long texts for the project are also transferred.

You can execute a test run before you actually transfer the data. You can then goto the project planning board or project information system, to check the effects of the data transfer.

If certain data cannot be transferred, the system produces a [log \[Ext.\]](#).

If you want to select and evaluate projects, whose simulations influence each other, create the simulation versions for these projects with the same key.



Project P1 should be realized in simulation version 0000005. You want to compare a simulation version from project P2 and P3 with project P1. Create a simulation version with key 0000005 in both projects.

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**Transfer of Operative Data and Simulation Data****Activities**

If you transfer a simulation version to an operative project, the system sets the *Transferred* indicator.

If there are other simulation versions for the project, the *Inactive* indicator is set for them, so that they cannot be processed inadvertently. You can however display these simulation versions. You can also reset the *Inactive* indicator in the [Administrative Data \[Ext.\]](#)

In general there is no point in changing operative data while you are simulating different variants of a project. If you were then to transfer a simulation version back to the operative project, the changes you have just made in the operative project would be overwritten.

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**Transferring Operative Data and Simulation Data**

## Transferring Operative Data and Simulation Data

### Procedure

1. Choose *Logistics/Accounting* → *Project management* → *Planning*.  
(The same functions are also in the *Operative structures* menu under *Work breakdown structure*).
2. Choose *Project* → *Simulation* → *Transfer project*.
3. Enter the project definition for the operative project or the simulation version.  
If you only want to transfer a sub-tree, enter the superior WBS element too.
4. In *Transfer to -> from* choose the transfer direction.  
If you are transferring from and/or to a simulation version, also enter the [key\(s\) \[Ext.\]](#) of the simulation version(s).
5. Choose *Transfer*.

## Editing Simulation Versions

### Use

You maintain simulation versions in the [project planning board \[Ext.\]](#) In a simulation version, you can make all the changes you can also make in a project. For example, you can:

- Create and change relationships and milestones
- Schedule the simulation version
- Plan resources; for instance allocate material components to activities or assign capacities to activities

However you cannot assign production resources/tools (PRT) to activities



Manually planned values are not taken into account in simulation

You can directly [delete \[Page 16\]](#) simulation versions that you no longer require, however you cannot archive them.

## Planning Costs, Revenues, and Payments

# Planning Costs, Revenues, and Payments

## Use

You can use the simulation versions to plan costs, revenues, and payments within a simulation version. This means that you can enter and evaluate alternative plans at any time, independently of the integrated system.

## Features

The simulation includes the following planning options:

- **Cost planning** based on the network costing. You can plan **revenues** using the billing plan for the WBS element.

**See also:**

[Billing Plans in WBS Elements \[Ext.\]](#)

[Planning Costs in Networks \[Ext.\]](#)

- You can plan the **payment flow** in simulations using:
  - Billing plan for WBS element (incoming payments)
  - Plan data from network maintenance taking account of the invoicing plan for the activity or material component (outgoing payments)

If you want to calculate plan costs from the invoicing plan and the planned payment data from the network, you must use [asynchronous network costing \[Ext.\]](#).

**See also:**

[Planned payment flow \[Ext.\]](#)

[Interest calculation \[Ext.\]](#)

The following planning forms are not possible in simulations:

- Manual payment planning in WBS elements
- Manual planning of costs and revenues in WBS elements
- Cost planning in WBS elements
- Statistical key figures



The simulation version supports plan version 0 only.

## Activities

To generate plan data in the simulation version:

- Maintain and cost plan data for the network

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**Planning Costs, Revenues, and Payments**

- Maintain the billing plan for WBS element (incoming payments)



Only plan cost for networks can be simulated. Plan costs in WBS elements are only copied, and then only from the active project to the simulation version.

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**Deleting Simulation Versions**

## Deleting Simulation Versions

### Procedure

1. Choose *Logistics/Accounting* → *Project management* → *Planning*.
2. Choose *Project* → *Simulation* → *Delete*.
3. Enter the version key and project definition for the simulation version
4. Choose *Continue*.

### Results

The simulation version is physically deleted from the database.



Simulation versions are not archived.

## Evaluating Simulation Versions

### Use

You can use the following reports to evaluate simulation versions:

- Hierarchy Reports
- Structure reports and scheduling reports
- Capacity load utilization reports

You can [evaluate \[Page 18\]](#) the capacity load utilization for:

- WBS elements
- A work center
- A simulation version

### Business Reporting

The plan, actual, and commitment values in the simulation version are recorded in the project info database. This means you can use the hierarchy reports and the related functions, such as creating new reports, to evaluate a simulation version. You can use the hierarchy reports to compare simulation versions with each other or with the active project.



Cost element reports do not support simulation versions.

## Evaluating Capacity Load

# Evaluating Capacity Load

For more information on capacity load, refer to [Capacity Evaluation \[Ext.\]](#).

## Procedures

### Evaluating Capacity Load for WBS Elements

1. Choose *Logistics/Accounting* → *Project management* → *Planning*.
2. Choose *Project* → *Simulation* → *Capacity load utilization* → *WBS capacity load*
3. Enter a WBS element or a range of values.
4. Choose *Goto* → *Filter* and enter the simulation version [key \[Ext.\]](#)
5. Choose *Continue*.

The capacity load for all the work centers for the network activities assigned to the selected WBS elements is displayed.

### Evaluating Capacity Load for a Work Center

1. Choose *Logistics/Accounting* → *Project management* → *Planning*.
2. Choose *Project* → *Simulation* → *Capacity load utilization* → *Work center capacity load*.
3. Enter the required data.
4. Choose *Goto* → *Filter* and enter the simulation version [key \[Ext.\]](#)
5. Choose *Continue*.

The capacity loads for the work centers that meet you selection criteria are displayed.

### Evaluating Capacity Load for a Work Center

1. Choose *Logistics/Accounting* → *Project management* → *Planning*.
2. Choose *Project* → *Simulation* → *Capacity load utilization* → *Capacity load simulation*.
3. Enter the simulation version [key \[Ext.\]](#)
4. Choose *Continue*.

The capacity load is displayed for all the work centers that are assigned to the simulation version with the selected key.