



ORTIMplan

ERP interface

ORTIMplan ERP interface

Version 8.9

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With the ERP standard interface, ORTIMplan provides the capability of transferring item data from an ERP system and, after processing these, supplying these back to the ERP system. The ERP system is always the leading system in terms of the item data. ORTIMplan is the supplier of time data.

The ERP standard interface is an add-on component to the ORTIMplan standard software. The interface is available as a program module.

The ERP standard interface consists of an import and export component. Both components can be used independently of each other or together.

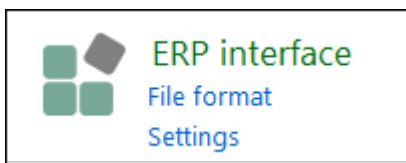
The ERP standard interface is based on the same mechanisms and program libraries as the customer-specific ERP interfaces implemented to date. The customer solutions also offer functions and procedures that are geared significantly closer to the specific needs of the particular customers.

The interface is maintained by ORTIM as part of the further development of the program, such that its functional capability will also be guaranteed in the future.

Further developments will benefit both the standard interface and the customer solutions.

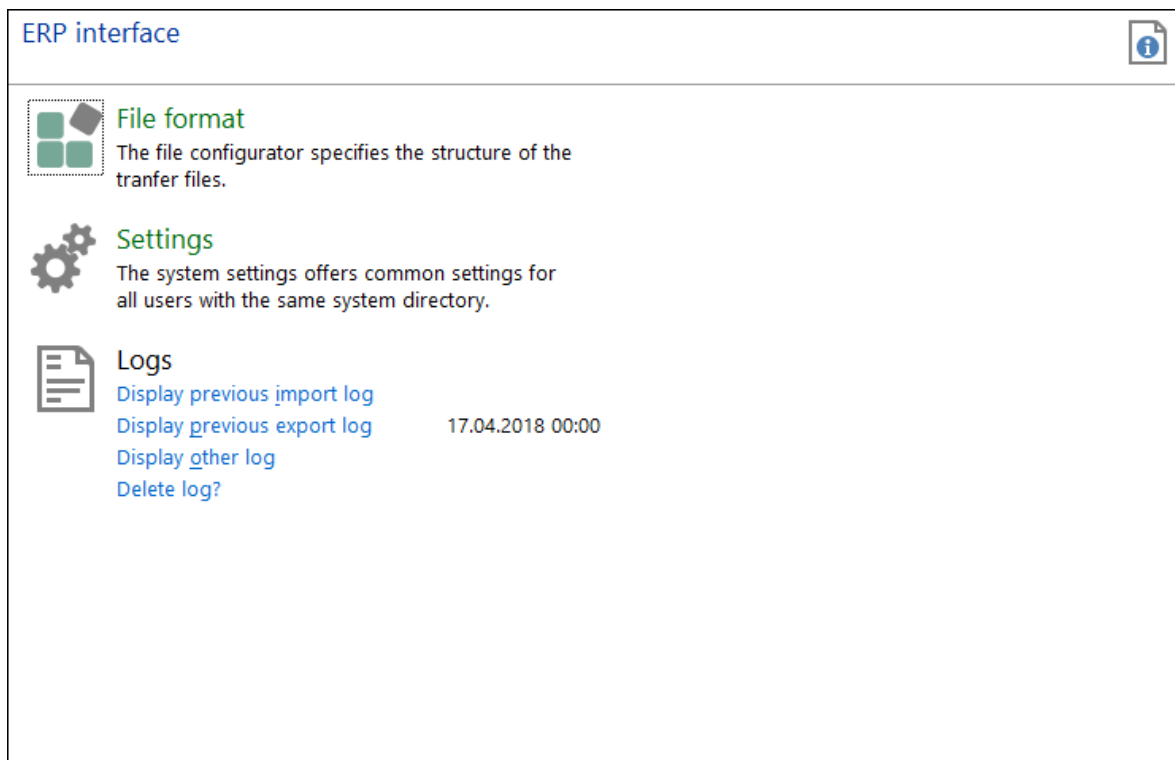
Main program window

In the main program window, you can open the most important components directly or switch to the ERP dashboard.



ERP dashboard

The ERP dashboard displays the components of the ERP interface. You also have direct access to the logs generated during imports and exports.



Procedures

The interface is based on transfer files in CSV format (Comma Separated Value).

When imported into ORTIMplan, files (which is generated by the ERP system) are read into ORTIMplan.

When exported, files are generated by ORTIMplan and made available to the ERP system. The ERP system imports these data.



The ERP standard interface does not set up a direct connection to the ERP system, thus allowing it to be used with every ERP system and beyond system confines (including via the Internet)!

The ERP system is responsible for the transfer and validity check of the data provided by ORTIMplan.

The ERP system also has the task of generating the data to be imported by ORTIMplan.

The ERP system can transfer export data made available by ORTIMplan, e.g. via a batch input function. An ERP system can generate data for ORTIMplan, for instance, via a report function. Furthermore, individual adjustments within the ERP system can offer further improvements with regard to exchanging data.



Functions for the import and export on the ERP system side are not part of the ORTIMplan ERP interface.

The transfer files are collected and made available in configurable directories. The format of the transfer files can be defined via a tool (section [File Configurator](#)^[36]) in ORTIMplan. This File Configurator allows you to define the fields to be transferred.

Contents

The ERP Interface is anchored at several points within ORTIMplan. The interface consists of an automatic and a manual component. Both of which can be used independently of each other. Both components use different settings, i.e. the settings of the automatic component do not influence those of the manual component.

A File Configurator is available for defining the contents of the transfer file.

Transfer files

ORTIMplan supports various configurations for import and export files.

Joint file format for import and export

With this method, the format of the transfer files for the import and export procedure is the same. This simplifies the task of file management. Fields that are not transferred during the import (e.g. time fields) simply remain blank. A file generated by an export can be imported without modification, since it has the same format ORTIMplan expects when importing.



We recommend not to use the common file format because it means clear restrictions on the fields offered!

Separate file format for import and export

Without record identification code

This method allows you to define different file formats for import and export procedures. Frequently, more data are imported by the ERP system to ORTIMplan than are exported. A large number of ERP data are required in ORTIMplan, e.g. for decision-making processes. Generally speaking, times are exported along with the necessary identification attributes (item number, work cycle).

Data that belong together are stored in a line of the CSV file.

Use record identification codes

With this method, data that belong together are split up into individual data records. The order of the individual data records determines which data they belong to.

Format description

The File Configurator allows you to define the fields along with their data type, length and meaning in ORTIMplan.

On the basis of the defined meaning, the data are assigned to the corresponding program objects in ORTIMplan during the import process. When exporting, the meaning is used to define which ORTIMplan properties are written into the fields of the transfer file.

Accordingly, the File Configurator provides the file description on the one hand and on the other hand defines a mapping condition between the data fields of the ERP systems and ORTIMplan.

As the file format, the commonly used CSV format is employed, which is supported by many spreadsheet programs. This offers the advantage that evaluations can be additionally performed on the transfer files. The CSV format allows you to set both field separators (, or ; or tabs), text separators (" or ') and the decimal separator (. or ,).

A data record (or a partial record when using record identification codes) is mapped in a line and concluded by a line break (CR/LF). This produces a highly readable data format.

It is possible to edit CSV files using simple text editors or spreadsheet programs (e.g. Microsoft Excel, OpenOffice.org Calc).

Data can be imported either manually via the program windows or automatically via the Task Scheduler.

The file format of the import file is described with the [file configurator \(see below\)](#) ^[36].



The text format in which the import files are saved is defined in the system settings of the ERP interface.

Supported formats: Windows ANSI and UTF-8.

Identification

When importing ERP data, the identification in ORTIMplan is a central point. The identification is used to determine whether data already exists in ORTIMplan and must be updated or re-imported.

The identification features must be specified for work plans, workflows, and for material (if imported).



The identification features **must** be assigned in such a way that the result of the examination for existence is **unambiguous**.

The identification features are AND-linked, i. H. all features must match in order to achieve a hit.

If the search result returns multiple hits, the first hit is used (this should never happen).

If possible, you should remove features such as name and code, and use system identifiers. Typically, you pass your ERP system into a unique identifier, which is stored in an indexed, non-modifiable user field in ORTIMplan and serves as the only identification feature.

Example

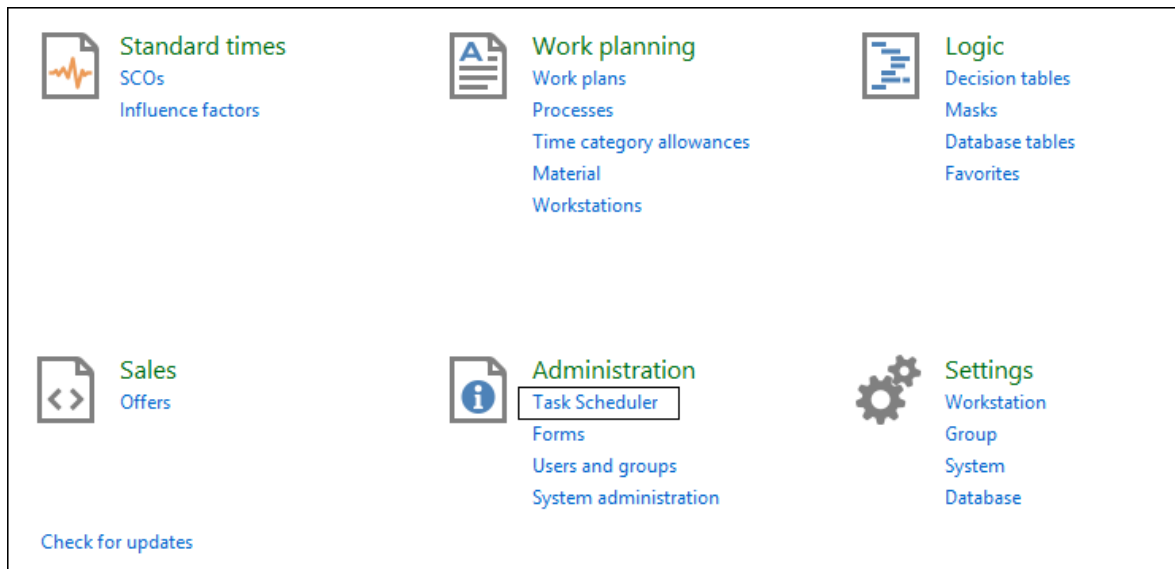
- The identifier for work plans is the code.
- A work plan with code *ABCD* is imported.

- Then there may be only one work plan with a code *ABCD* in ORTIMplan.
- If you create another work plan with code *ABCD*, the interface can not achieve a clear result when importing. The first hit of the search is then interpreted as a result, which can lead to undesirable behavior.

2.1 Automatic import

The automatic import process is executed via the Task Scheduler of ORTIMplan.

Open the Task Scheduler via the main program window.

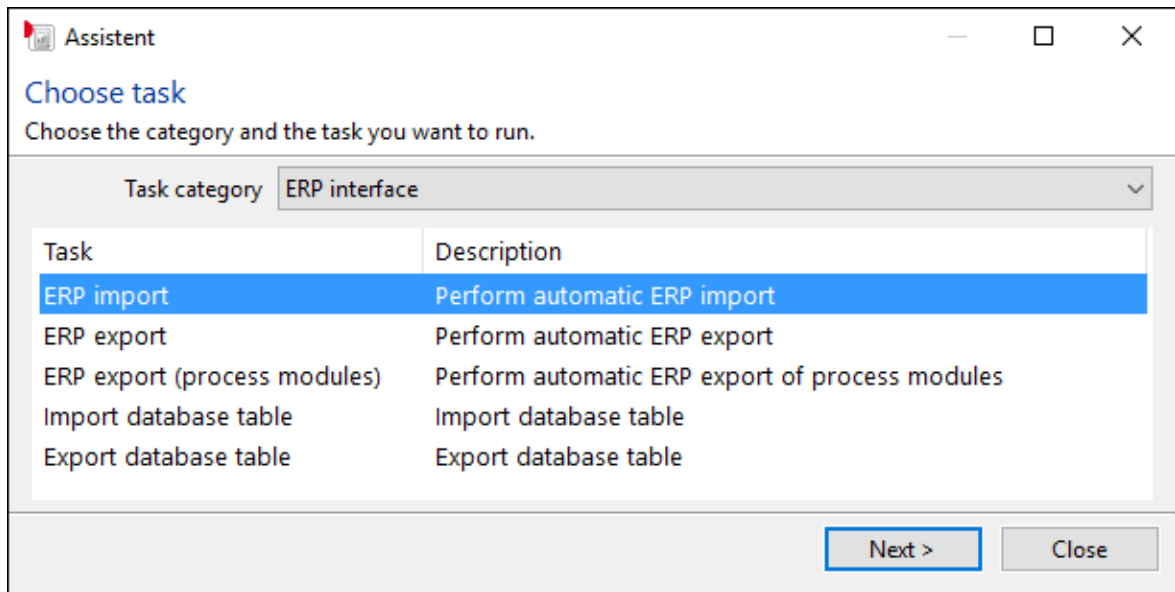


Task Scheduler

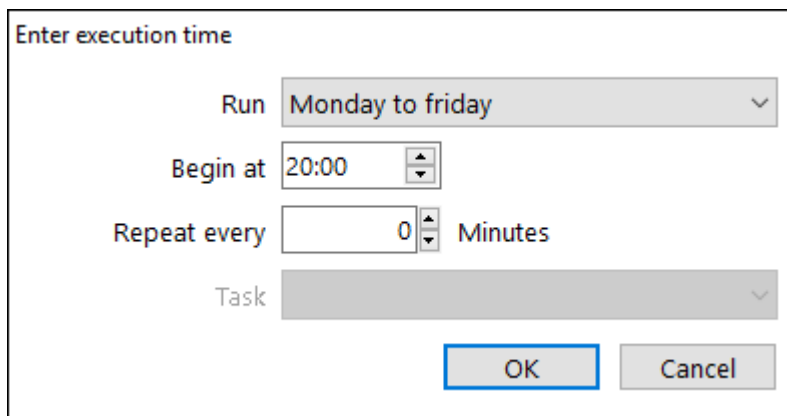
Create a new task using the *New* item in the tool bar.



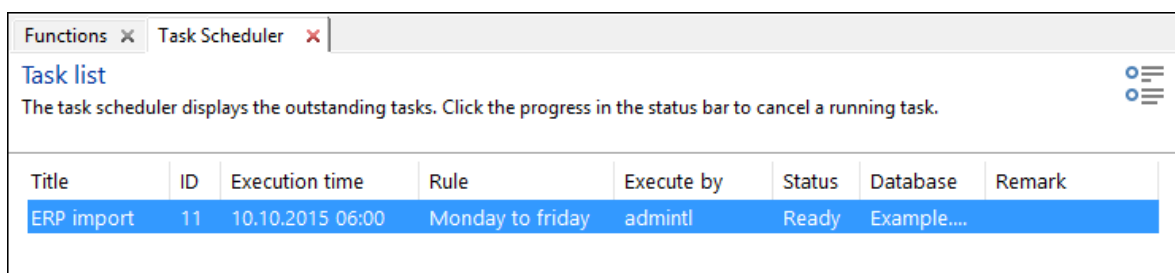
If the ERP Interface has been activated via the PIN code, the Wizard will display the task *ERP Import* for the new tasks. If this task does not appear here, either the PIN code has not been entered or has not been entered correctly. If so, repeat the registration procedure.



Select task *ERP Import* and define the time and execution rule.



Confirming your entry with *OK* creates the task, which now appears in the Task Scheduler's list of tasks.



The properties of the task *ERP import* store both the directories for the import and log file in addition to the time of the import and the rule for assigning names to the import file.

It is possible to open the properties by selecting the *Edit* item in the tool bar.



Edit properties

Task properties

You can modified the task properties here. A task is excuted on the PC with the indicated name.

Task

erp-import_no-record-flag

Execute on PC

ortim-server

Execute by user

...

Execute as user

...

Execution time

manual

...

E-mail notification

...

Import file (empty=auto.)

*_no-record-flag.import

...

Control file

D:\ProgramData\ORTIMplan 8.7.1\pps.ini

...

Data format

☒ CSV ☐ XML

Text format

UTF-8

☐ Use record flag

...

OK

Cancel

Import file

An empty field *Import file* means the same as *.*.

Control file

The control file determines the configuration (e.g. data fields, data format, text format, directories) that is to be imported.

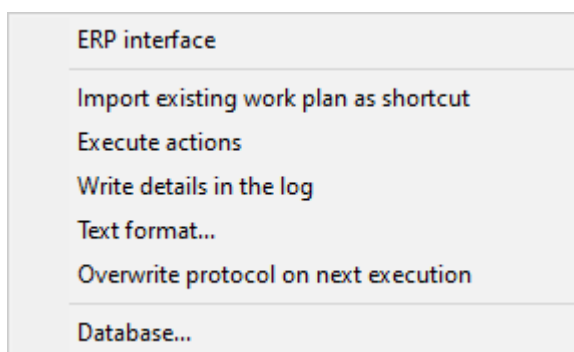
Text format

The text format used for this task. The text format is defined centrally for all imports in the system settings for the ERP interface. If you want to create have to import data in a different text format, you can change the text format here differently for the individual import.

Use record flag

Performs the import with record flag.

... menu



Import existing work plan as shortcut	If a work plan already exists, a new import creates a link to the existing work plan in the current work plan folder.
Execute actions	If actions are defined in the ERP interface, the actions <before import> and <after import> are executed here.
Write details in the log	Details from the import log file are written to the task log.
Text format	Changes the text format. Available formats are <i>Windows Ansi</i> and <i>UTF-8</i> .
Overwrite protocol on next execution	The log will be overwritten the next time the task runs.
Database...	Allows you to change the database on which the task is based. If you have created a new database with the same name, you still have to select the database again. The database is identified in the task via the invisible Dstenbank ID.

Directories

The directories are defined via the system settings.

ERP interface: Directories


☐ Use same directories for automatic and manual import/export

Automatic import/export

Manual import/export

☒ Define directories in the file system
☐ Save directories relative to the group directory

Import
 ...

Export
 ...

Log
 ...

Archive
 ...

Prior to activating the automatic import, you first need to set an number of directories.

Before the import, the import files are moved from the import directory into the archive directory. It is from here that the actual import takes place. The files are assigned a new name and remain within the archive directory until they are removed manually.

Log files are stored in the log directory. In addition, you can also find the import log in the log to the task *ERP import*. It is possible to open the task log by simply double-clicking with the mouse on the task.

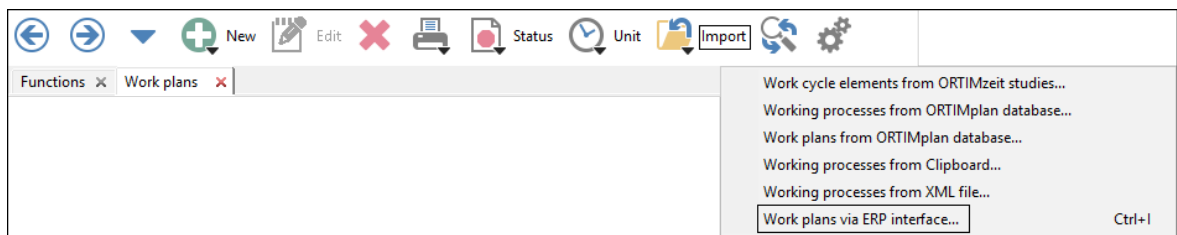
This form of treatment protects ORTIMplan from importing files multiple times and from repeating the same imports and, as such, from resetting what may already be a released status back the import status.

2.2 Manual import

The manual import function is accessed via the Route Sheet Navigator.

Route Sheet Navigator

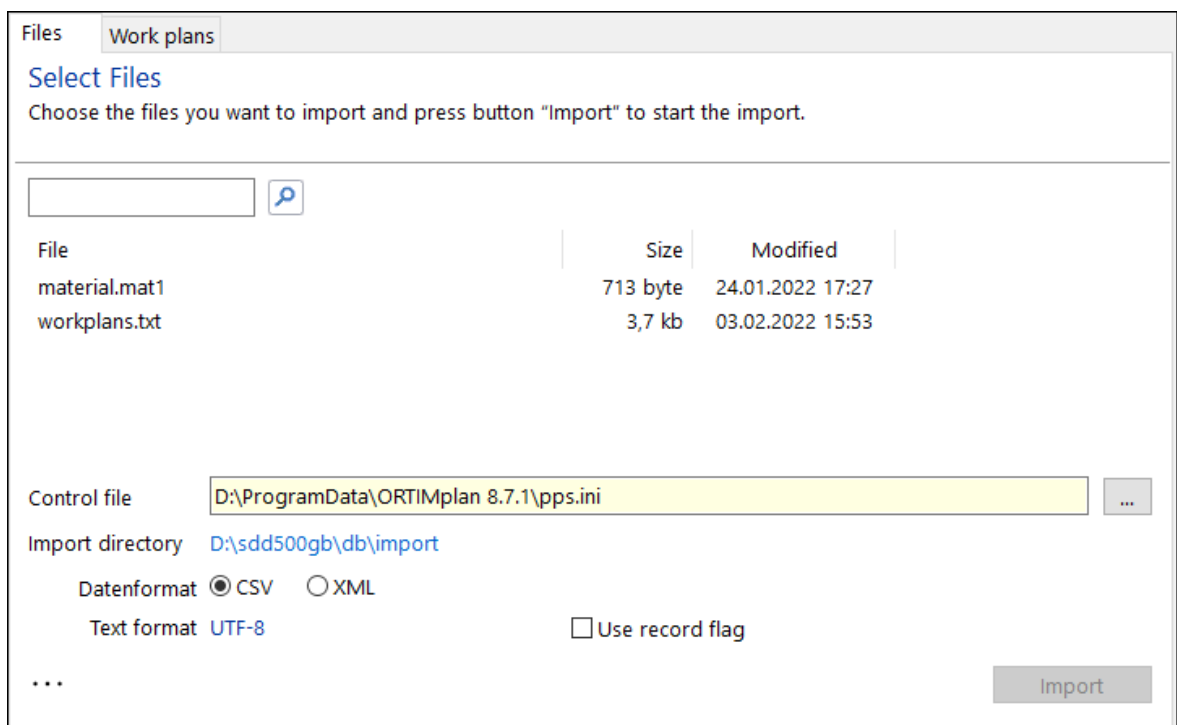
If you open the *Work plans* menu, followed by the *Import* submenu, you will find the option *Workplans via ERP interface*. This function allows you to open the Import Wizard. It is also possible to access the same function via the *Import* option in the toolbar.



Import Wizard

Using the Import Wizard, it is possible to implement all the necessary settings and to perform the actual import procedure.

Files

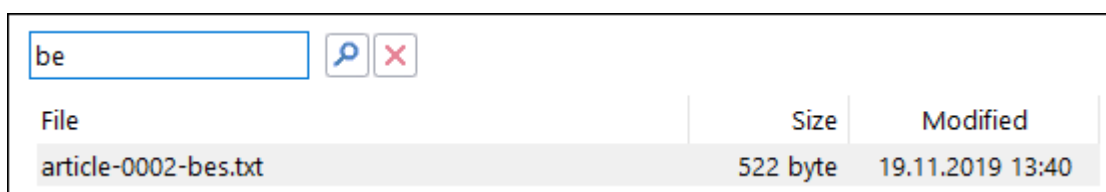


This window displays the files located in the set import directory.

Select the files you wish to import and select *Import* to execute the import.

File filter

If the list of import files is large, you can use the file filter field to display only the files that match the typed filter.



Use the delete icon to the right of the filter field to reset the filter.

Control file

The control file determines the configuration (e.g. data fields, data format, text format, directories) that is to be imported.

Import directory

Here the current import directory is displayed. A mouse click on the link opens the Windows Explorer on the directory.

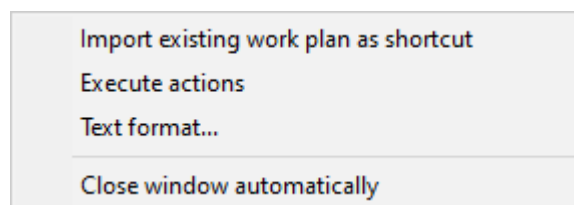
Text format

The text format used for the import data is displayed here. The text format is defined centrally for all imports in the system settings for the ERP interface. If you want to create have to import data in a different text format, you can change the text format here differently for the individual import.

Use record flag

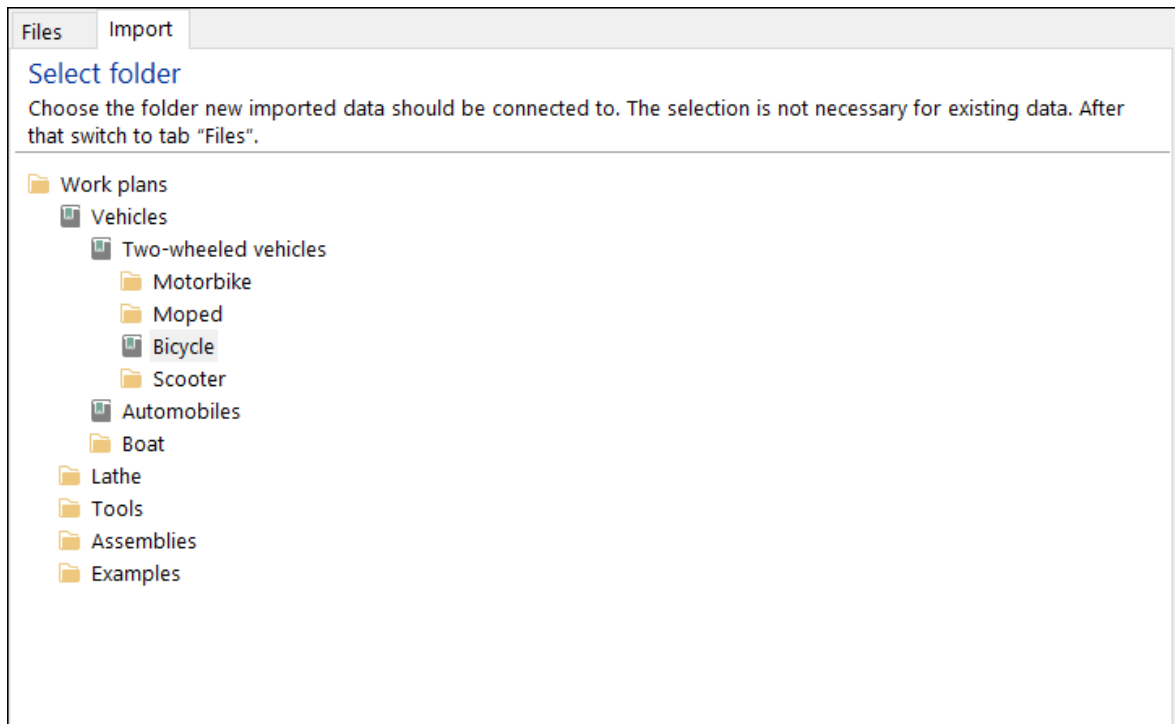
Performs the import with record flag.

... menu



Import existing work plan as shortcut	If a work plan already exists, a new import creates a link to the existing work plan in the current work plan folder.
Execute actions	If actions are defined in the ERP interface, the actions <before import> and <after import> are executed here.
Text format...	Changes the text format. Available formats are <i>Windows Ansi</i> and <i>UTF-8</i> .
Close window automatically	The import window will be closed when the import has finished.

Import



This window is used for setting the import destination. Choose the route sheet under which the imported files are to be appended. The import data are analyzed and made available in accordance with the defined import rules beneath the previously defined route sheet within the folder hierarchy.

Directories

The directories used for importing from are defined in the system settings.

ERP interface: Directories


☐ Use same directories for automatic and manual import/export

Automatic import/export

Manual import/export

☒ Define directories in the file system
☐ Save directories relative to the group directory

Import

Export

Log

Archive

When you perform the import procedure for the first time, you must first open the *Directories* tab view and set the directories that you wish to use.

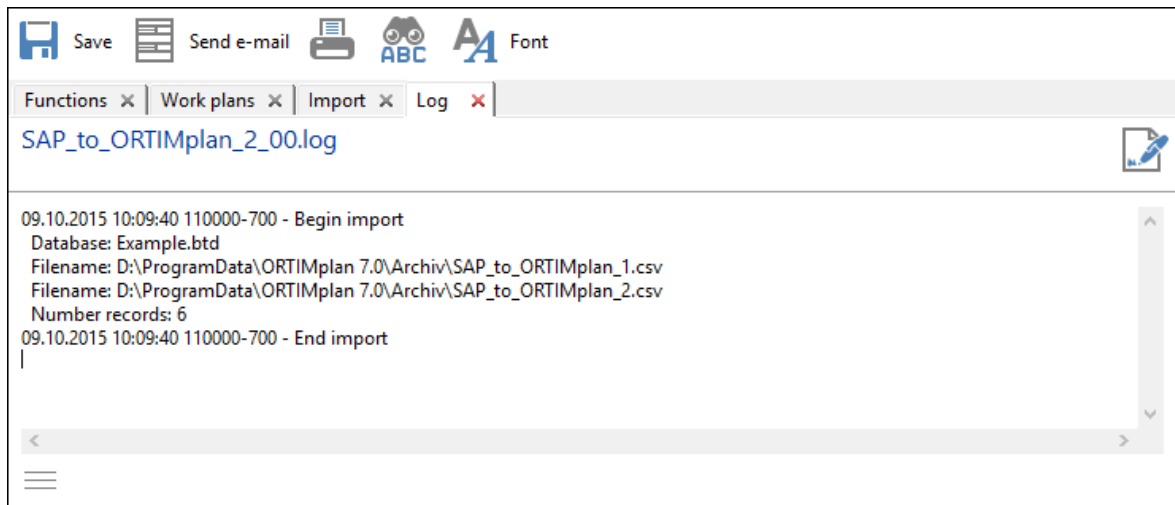


The settings for the manual import are stored within the local application data directory of the Windows user, namely in file PPS.INI.

Import directory	This is where Where Where the program looks for the import files.
Log directory	Where the program stores the import logs.
Archive directory	Where the program archives the import files.

Logs

Clicking the *Log* item in the file menu allows you to select a log file and view its contents.



The log file documents the most important data relating to the import. Any problems that may have occurred are also listed here.

2.3 Actions

User-defined, executable files can be executed before and after the ERP import. A description of how to configure these actions can be found in the Settings user manual.

It is possible to export data either manually via the program windows, or automatically via the Task Scheduler.

The file format of the export file is described with the [file configurator \(see below\)](#)^[36].



The text format in which the export files are saved is defined in the system settings of the ERP interface.

Supported formats: Windows ANSI and UTF-8.

3.1 Automatic export

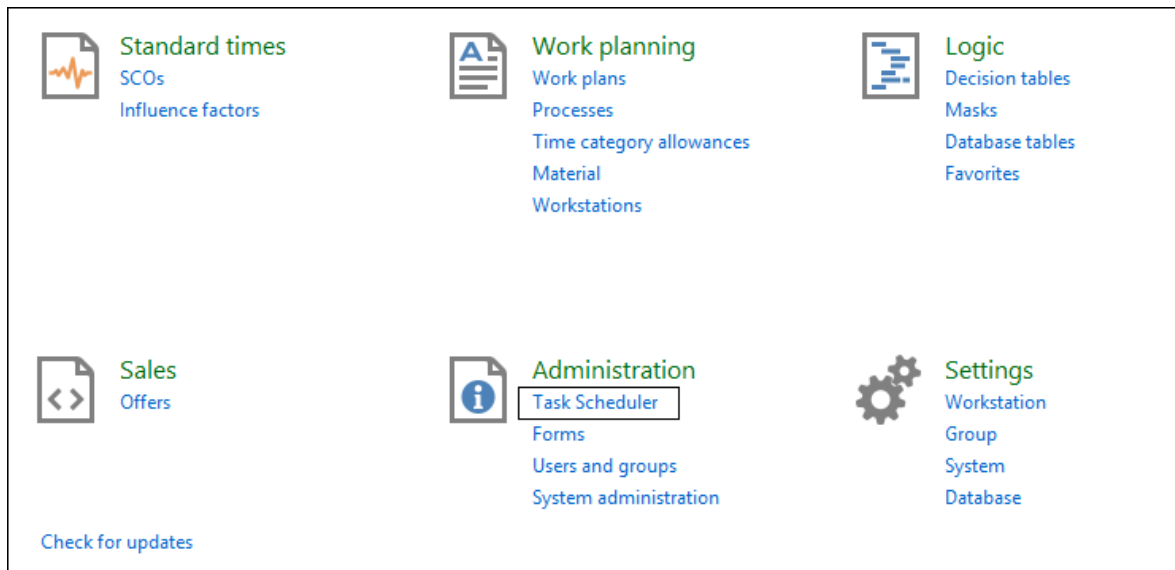
The automatic export is executed via the Task Planner within the %TITLE%> program.

Open the Task Scheduler via the main program window.

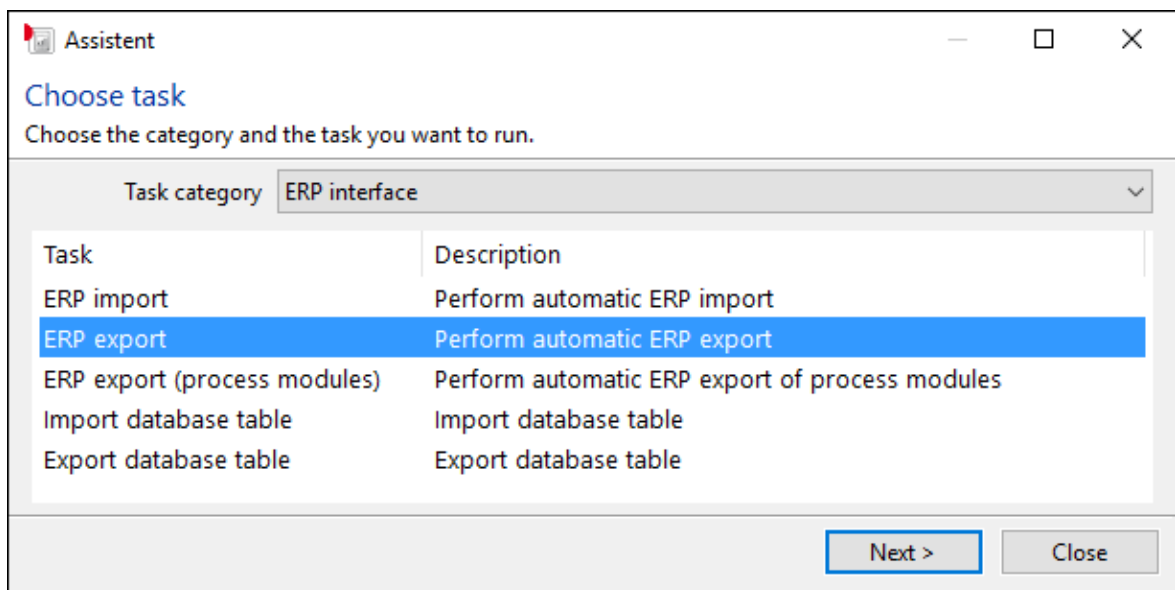
Task Scheduler

Use the *Task* menu to create a new task.

If the ERP interface has been activated via the PIN code, the Wizard will display the task *ERP export* for the new tasks. If this task does not appear here, either the PIN code has not been entered or has not been entered correctly. If so, repeat the registration procedure.



Select task *ERP export* and define the time and execution rule.



Select task *ERP Export* and define the time and execution rule.

Enter execution time

Run Monday to friday ▼

Begin at 21:00 ▲▼

Repeat every 0 ▲▼ Minutes

Task ERP import: ID=11 ▼

OK Cancel

Confirming your entry with *OK* creates the task, which now appears in the Task Planner's list of tasks.

Functions × Task Scheduler ×							
Task list The task scheduler displays the outstanding tasks. Click the progress in the status bar to cancel a running task.							
Title	ID	Execution time	Rule	Execute by	Status	Database	Remark
ERP export	11	09.10.2015 18:00	Monday to friday	admintl	Ready	Example.btd	

It is possible to open the properties by selecting the *Task* menu, followed by *Edit*.



Edit properties

Task properties

You can modified the task properties here. A task is excuted on the PC with the indicated name.

Task

ERP export

Execute on PC

Execute by user

Abel

...

Execute as user

...

Execution time

Monday to friday, 21:00

...

E-mail notification

...

Export file (empty=auto.)

...

Control file

D:\ProgramData\ORTIMplan 8.3\pps.ini

...

Priority

Standard

Number of records per export

Status

Time period

22.01.2019

00:00:01

to

22.01.2019

16:05:03

Text format

Windows Ansi

☐ Use record flag

OK

Cancel

Export file

If you enter a fixed file name (e.g. *export.csv*) this name is automatically expanded by a number, if the file already exists in the export directory (e.g. *export_01.csv*). Use an underscore as first character of the filename to disable the automatic numbering (e.g. *_export.csv*).

Control file

The control file determines the configuration (e.g. data fields, data format, text format, directories) that is to be imported.

Priority

Setting the priority allows you to define separate time periods. The time of the last export for the set priority is saved and used as the new starting time during the next export.

Number of records per export

This option allows you to restrict the number of data records transferred during export. This setting is useful in order to save memory if you are planning to export a large number of data records. If this option is not selected, the restriction will be lifted.

Status

List of status codes. A work plan or working process is exported, when its status is included in the status code list.

Time period

The four input boxes allow you to set the time period for the export directly. Normally speaking, the start time is the time of the last export performed; the end time is the current time.

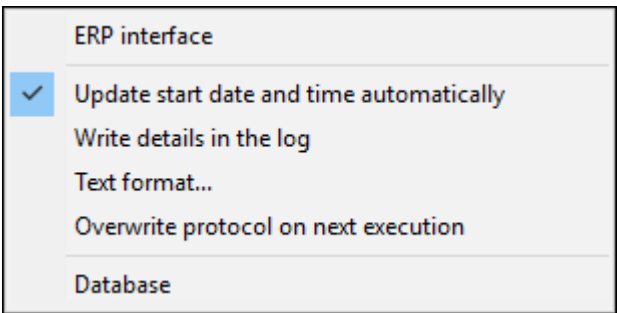
Text format

The text format used for this task. The text format is defined centrally for all exports in the system settings for the ERP interface. If you want to create have to export data in a different text format, you can change the text format here differently for the individual export.

Use record flag

Runs the export with record flag.

... menu



Update start date and time automatically

If the checkmark is set (default), the start date and time are set to the export date **after a successful export**; If not, the set date and time remain at the set values.

Write details in the log

Details from the export log file are written to the task log.

Text format

Changes the text format. Available formats are *Windows Ansi* and *UTF-8*.

Overwrite protocol on next execution - The log will be overwritten the next time the task runs.

Database... Allows you to change the database on which the task is based. If you have created a new database with the same name, you still have to select the database again. The database is identified in the task via the invisible Dstenbank ID.

Directories

The directories are defined via the system settings.

The screenshot shows a window titled "ERP interface: Directories" with a gear icon in the top right corner. Inside the window, there is a checkbox labeled "Use same directories for automatic and manual import/export". Below this are two buttons: "Automatic import/export" (highlighted in blue) and "Manual import/export" (greyed out). There are two radio buttons: "Define directories in the file system" (selected) and "Save directories relative to the group directory". Below these are four sections, each with a label and a text input field followed by a button with three dots (indicating a file browser):
- "Import" with the path "h:\oplan\erp\auto\Import"
- "Export" with the path "h:\oplan\erp\auto\Export"
- "Log" with the path "h:\oplan\erp\auto\Logs"
- "Archive" with the path "h:\oplan\erp\auto\Archive"

Prior to activating the automatic export, you first need to set a number of directories. The export directory is the destination directory for the export, where all the export files will be created.

The priority function enables you to define a specific sequence for the export procedure when working with large volumes of export data.

Log files are stored in the log directory. In addition, you can also find the export log in the log to the task *ERP export*. It is possible open the task log simply by double-clicking with the mouse on the task.

The settings for the automatic export are stored within the data directory of ORTIMplan, namely in file PPS.INI.

The directories may deviate from the directories used for the manual export.



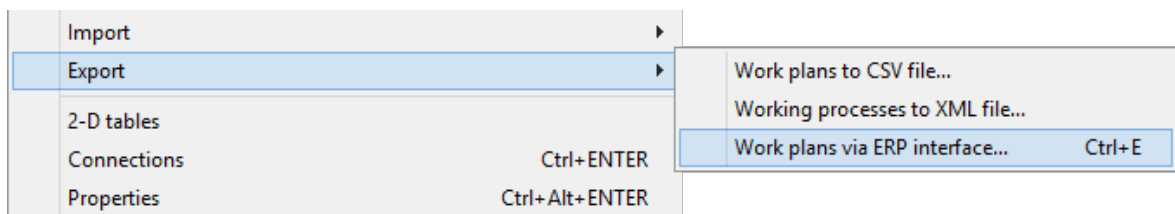
In determining the export data *work plan variants* and *reference work plans* are ignored, that means they are not exported.

3.2 Manual export

The manual export function is accessed via the Route Sheet Navigator.

Work Plan Navigator

If you open the *Work plan* menu, followed by the *Export* submenu, you will find the option *Work plans via ERP interface*. This function allows you to open the Export Wizard.



Export Wizard

Using the Export Wizard, it is possible to implement all the necessary settings and to perform the actual export procedure.

Filter

Using the *Filter* tab view allows you to define rules on the basis of which the program is to look for export data.

Filter

Export data

Export contents

On this page, you can choose the objects you want to export. If option "Query selection" is checked, the previously chosen objects are used.

☐ Search in selection
☐ Find in sub-folders

☒ Find in database

☐ All

☐ Since last change

☐ Since last export

☒ Within the last

1

days

☐ Between

08.11.2017

and

08.11.2017

Time

00:00

and

23:59

Status

User

All

Name

Code

If you have selected option *Query selection*, the program will look for the export data in the selection of the Work Plan Navigator. If option *Query database* is selected, the export data will be ascertained by means of a database search query.

Status

List of status codes. A work plan or working process is exported, when its status is included in the status code list.

User

Here you can select a user whose changes you want to export.

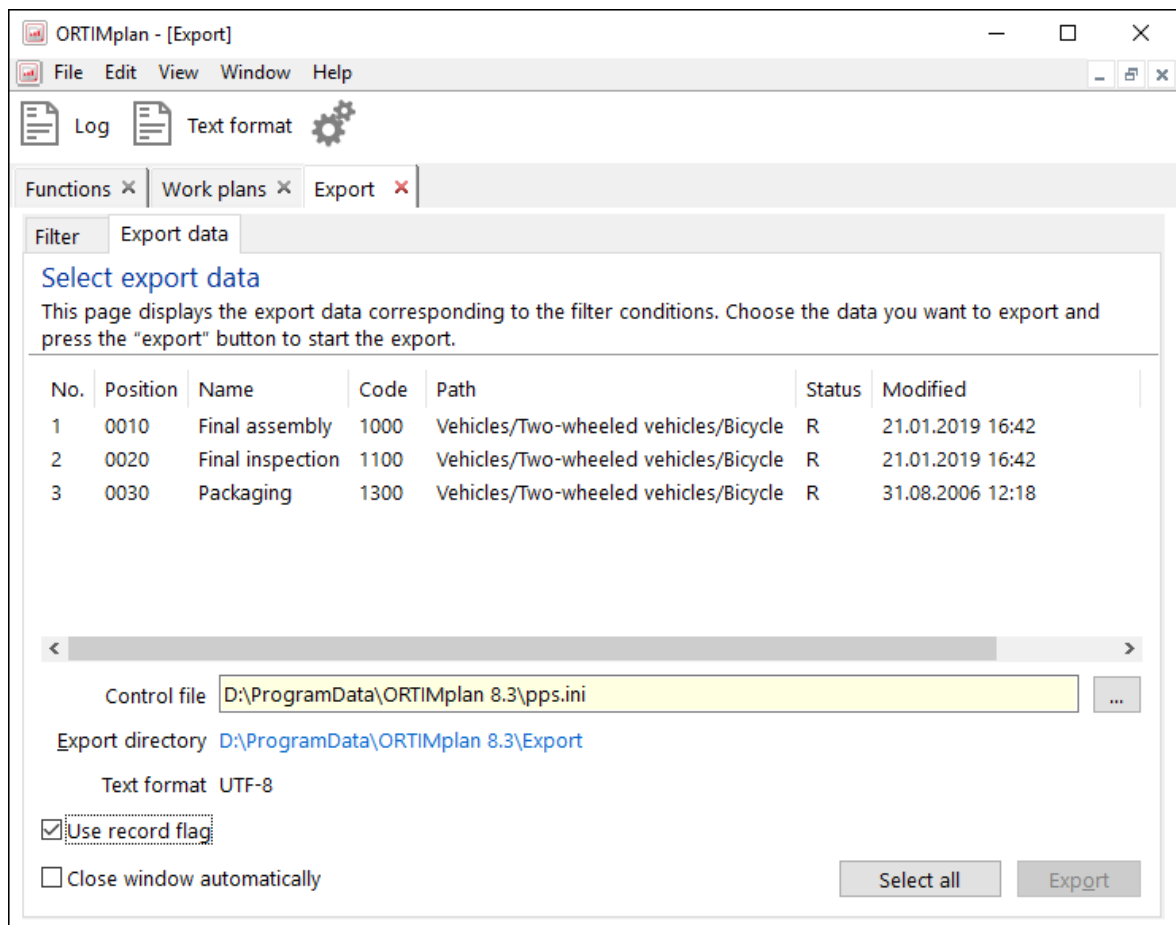
Name, Code

Here you can specify the name and code of the data you want to export.

All the other filter settings affect the previously set scope of the search query.

Export data

All the data records that satisfy the filter rules and which have the specified status code are displayed in tab view *Export data*.



Select the data records that you wish to export and then click on *Export*.

Control file

The control file determines the configuration (e.g. data fields, data format, text format, directories) that is to be imported.

Export directory

Here the current export directory is displayed. A mouse click on the link opens the Windows Explorer on the directory.

Text format

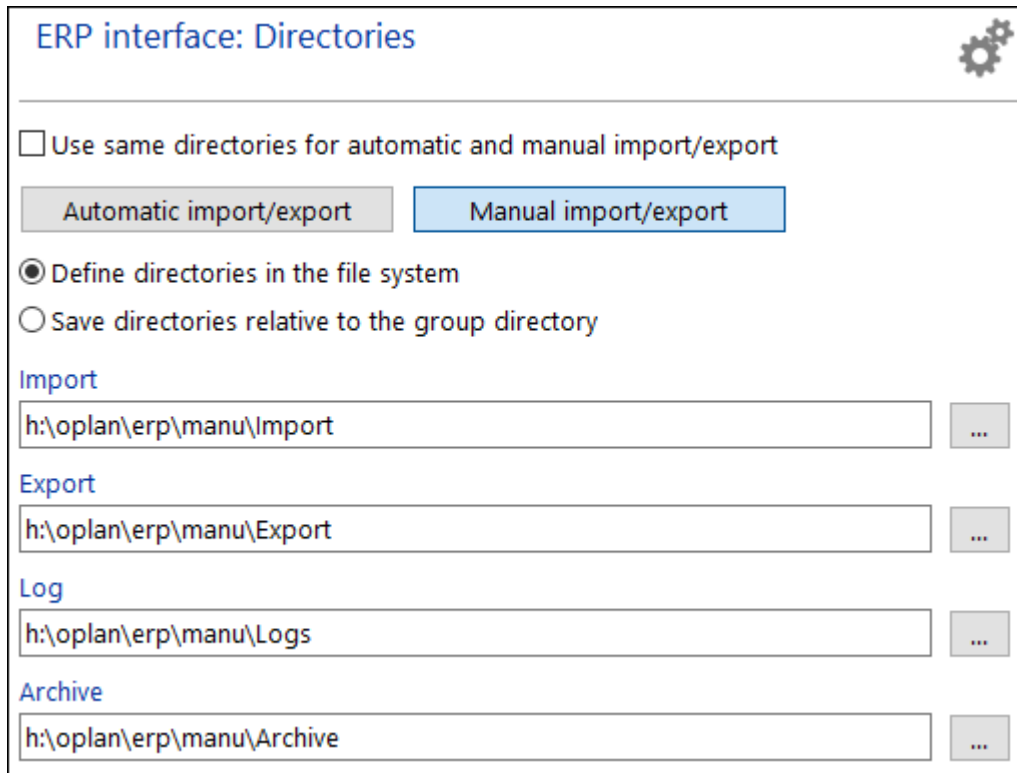
The text format used for the export data is displayed here. The text format is defined centrally for all exports in the system settings for the ERP interface. If you want to create export data in a different text format, you can change the text format here differently for the individual export.

Use record flag

Performs the import with record flag.

Directories

The directories are defined via the system settings.



ERP interface: Directories

☐ Use same directories for automatic and manual import/export

Automatic import/export Manual import/export

☒ Define directories in the file system
☐ Save directories relative to the group directory

Import
h:\oplan\erp\manu\Import ...

Export
h:\oplan\erp\manu\Export ...

Log
h:\oplan\erp\manu\Logs ...

Archive
h:\oplan\erp\manu\Archive ...

When you perform the export procedure for the first time, you must first open the *Directories* tab view and set the directories that you wish to use.



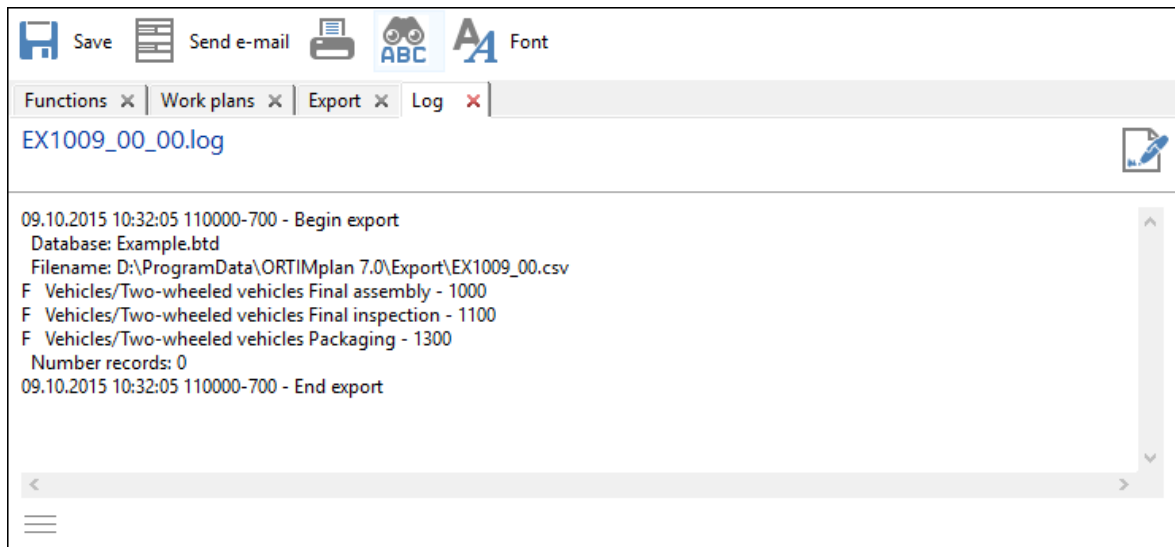
The settings for the manual export are stored in the local application data directory of the Windows user, namely in the file PPS.INI.

Export directory Where the program looks for the export files.

Log directory Where the export logs are stored.

Logs

Clicking the *Log* item in the file menu, allows you to select a log file and view its contents.



The log file documents the most important data of the export. Any problems that may have occurred are also listed here.

3.3 Time calculation

The time results can be exported in a time unit specified in the file format.



If no time unit is specified in the file format, the time unit of the work plan or working process is used.

You can specify the time unit explicitly by defining a field for the unit and assigning the meaning *work plan: unit*, *working process: unit* or *settings: unit*.



In addition to the normal time units, the internally used time unit HHM (hundredths of minutes HM) is available. Use this unit if you wish to transfer time results unaltered and without rounding differences.

During data export, the time unit is checked for validity. The unit must feature in the list of time units allowed for export (see user manual Settings, [Settings, System settings, ERP interface, Units](#)). If this is not the case, the best *suited time unit* will be determined and used.



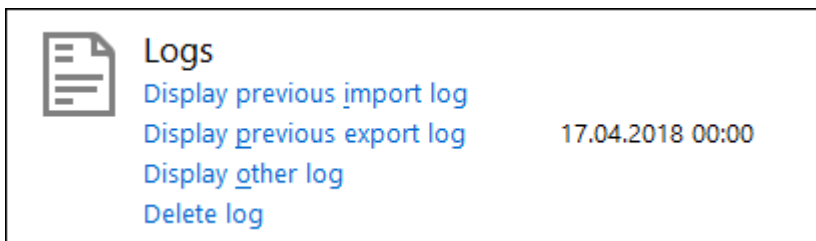
In addition to the normal time units, the internally used time unit HHM (hundredths of minutes HM) is available. Use this unit if you wish to transfer time results unaltered and without rounding differences.

3.4 Actions

User-defined, executable files can be executed before and after the ERP export. A description of how to configure these actions can be found in the Settings user manual.

All the import and export events are recorded in log files.

The log files can be viewed in the program's main window via the *File* menu by selecting the *ERP interface* submenu.



Show previous import log

Opens the import log of the last successfully performed ERP import. The import logs lists all the imported data records.

Show previous export log

Opens the export log of the last successfully performed ERP export. The export log lists the route sheets that have been supplied to the ERP system.

Show other log

Opens a standard file selection dialog, which allows you to select the log file whose contents you wish to display.

Delete log

Opens a standard file selection dialog, which allows you to select the log file you wish to delete.

Log files have the following written form PFMMDNN.LOG:

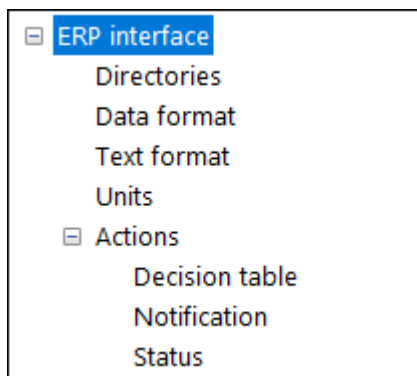
PF	File prefix: IM for import, EX for export
MM	Month

DD	Day
NN	Serial number
LOG	File extension

Example:

EX042301.LOG - export file with serial number 1, created on April 23.

The system settings for the ERP interface are described in the Settings user manual.

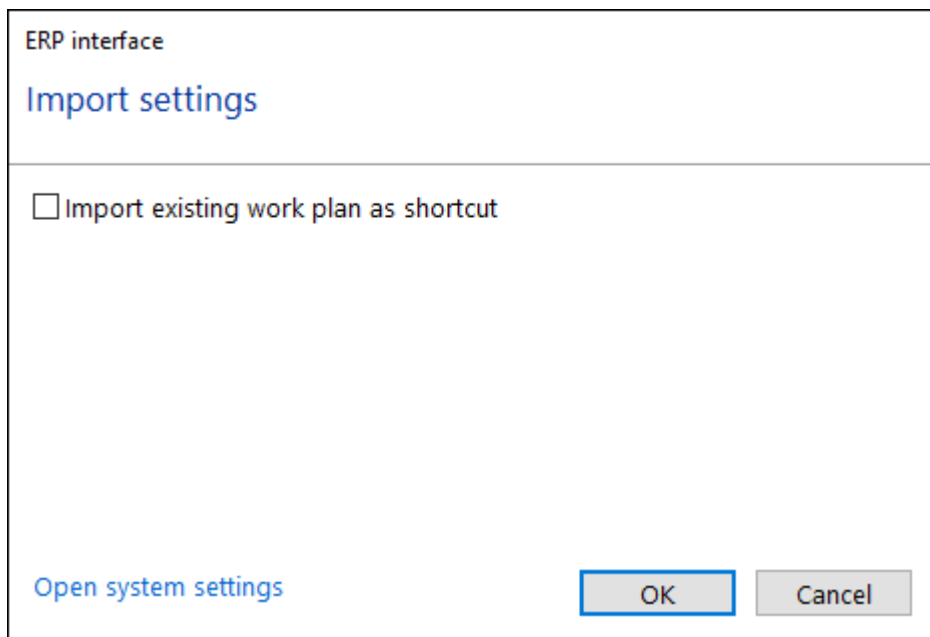


Manual settings/task settings

In addition to the ERP system settings, a number of settings are available that are individually enabled for a single import or export operation.

These settings can be defined either in the Task Scheduler or in the import/export window.

Import



The screenshot shows a dialog box titled "ERP interface" with a sub-header "Import settings". Inside the dialog, there is a checkbox labeled "Import existing work plan as shortcut" which is currently unchecked. At the bottom left, there is a link "Open system settings". At the bottom right, there are two buttons: "OK" and "Cancel".

Import existing work plan as link

Normally, an existing work plan is overwritten when re-imported.

If this option is selected, the work plan is **not overwritten** but is **inserted instead into the folder structure at an additional location**.

The file configurator allows you to describe the transfer file.

The screenshot shows the 'File format: Import' window. It includes a toolbar with icons for Open, Save, New, Delete, Rule, and navigation. The main area contains a table with the following data:

No.	Field name	Description	Type	Length	DP	Meaning	Import
1	Code					Folder: Code	☒
2	Name	Ordername	Alpha numeric			Folder: Name	☒

Below the table, there are checkboxes for 'Use same file format for import and export' (unchecked) and 'Use record flag' (checked). A dropdown menu shows 'A - Work plan folder'. To the right, there are 'Import' and 'Export' buttons. Further right, under 'Properties', there is a 'Type' dropdown set to 'Alpha numeric' and checkboxes for 'Import' (checked), 'Export' (unchecked), 'Identification' (checked), 'Notification' (unchecked), and 'Sorting' (unchecked). A 'Meaning' section lists various folder options, with 'Folder: Name' selected.

Toolbar

Open	Open a new configuration file.
Save	Saves all changes.
New	Creates a new empty field entry after the last field and opens the editor in the input box for entering the field name.
Delete	Deletes the selected field.
Rule	Opens the rule editor.

Rule: List of rules. Click *New* to create a new rule. Click *Delete* to delete the selected rule.

If field contents is: Enter the condition of the rule.

Use field from configuration file: The name of the configuration file is entered here, which is loaded if the rules match. The configuration file contains the field definitions that differ from the standard configuration file and which overwrite the standard definitions.

The specified configuration file must be located in the same directory as the standard configuration file.

[More details can be found here.](#)^[49]

Move up / move down

Moves the selected field up or down one position in the list.

Save

Saves the modifications in the underlying control file PPS.INI.

Data format

The option allows you to switch to the settings, where you can define the data format.

Use same file format for import and export

Selecting this option allows you to define whether you wish to use the same format for the import and export, or whether the import and export format are to be separate from each other. If you use separate formats, two buttons are enabled on the right of the check box, which allow you to use the *Import* and *Export* section. The remaining check boxes in the window are enabled or disabled accordingly.

Use record identification code

This option allows you to define whether you wish to work with or without record identification codes in your transfer files. Without record identification codes, all data that belongs together are stored in a line of the transfer file. With record identification codes, data that belong together are split into individual records. Each record is written into a separate line. The record identification code is the first character of a line. The possible record identification codes are described here.

Field definitions

The top left-hand section of the window displays the defined fields of the transfer file.

The values for *Field name*, *Description*, *Length* and *DP* (decimal places) are entered directly into the list (double-click on the field). The contents of the remaining columns are filled by selecting the check boxes or the list of meanings.

Field designation

Name of the field.

If you select the meaning *User field* or *Workstation*, enter the name of the user field and/or the name of the workstation here.

Description

This field allows you to enter a short field description for the purpose of documenting the field.

Length and DP

These fields allow you to enter the field length (for floating point numbers also the number of decimal places). If you do not enter any lengths, the field contents will be imported and exported as they are.

Type

This field allows you to specify a data type for the field. If you do not enter a data type, the data will be regarded as alphanumeric fields.

Meaning

The meaning allows you to map the fields to ORTIMplan properties.

Import, identification

If you wish to import the field, you need to check the *Import* option. If you do not check this option, the field will be ignored.

Using *Identification* allows you to define whether the field is used for identification when importing. This means, for example, that existing data are re-used when importing again.



It is important that the combination of identification fields for a record type leads to a unique result.

If necessary, provide by choosing multiple ID fields that the combination of fields leads to a clear conclusion. Ideal would be a unique ID transferred from the ERP system, which is stored in an indexed user field.

If no identification features are specified, ORTIMplan uses the combination of name and code to identify work plans and working processes.

Export

If you wish to export the field, you need to check the option here.

Type

The type is determined after selecting an entry from the Type list ([see types](#)⁴⁵⁾).

Import/Export

You determine whether or not the field is relevant for import and export by checking the option boxes *Import* and *Export*.

Identification

The identification attributes are used for finding work plans and working processes in the database during import. A check is always performed during import whether a data record already exists in the database. The identification attributes are used for this. If a data record already exists, the contents are updated from the interface. If the data record does not yet exist, it will be created and connected beneath the work plan folder *Automatically imported objects*.

If no identification is specified, the standard attributes *Name* and *Code* will be used.

For work plans, it is possible to use the attributes *Name* (SelName) and *Code* (SelCode) as identifiers.

For working processes, it is possible to use the attributes *Name* (CalcName), *Code* (CalcCode), *Position* (CalcPos) and *User field* (CalcUserfield) as identifiers.

Notification

If the notification property is selected, each successfully imported data record is entered into a database table (see System settings, ERP interface, Notification). You can define the database table in the system settings.



This function is useful if you wish to process the imported data with the logic module via a separate program logic. The database table is then filled by the data import and can be processed line by line.

Sorting

If this property is selected, all the *working processes* of a work plan are *sorted* after data import *on the basis of the working process number*. This means that new working processes are not appended at the back but inserted in the correct place.

6.1 Record identification codes

A record

A work plan category can be defined in an A record. The category can map a group of work plans.

S record

An S-record is used for transferring the work plan selectors. The work plan selectors represent the work plans, which are composed of individual working processes. An S record is connected to a category selector if this has been transferred previously. Otherwise, the selector is connected directly to the import selector.

C record

A C-record is used for transferring the working processes. A C record always refers to the previously defined S-record, i.e. the working processes are connected to the previously transferred work plan selector.



A transfer file for a C record must always contain an S record, since all the working processes are connected to the work plan.

T record

A T record is used for transferring lines of a table. The table refers to the previously transferred S record or C record. In ORTIMplan, 2-D tables are connected to work plans or working processes.

Meaning

Table: Name	Table designation.
Table: Code	Table code.
Table: Row	Row name.
Table: Column	Column name.

W record

Workstation data is transferred in a W record. A workstation record does not refer to any other record. Workstation records are used in ORTIMplan for generating or updating workstation resources.

Meaning

Workstationfolder	Folder to which the resource is bound.
Workstation: Name	Name of the workstation.
Workstation: Code	Code of the workstation.
Workstation: Status	Status.
Workstation: Userfield	Userfield name.

M record

An M record is used for transferring material data. A material record does not refer to any other data record. Material records are used in ORTIMplan for generating or updating material resources.

Meaning

Materialfolder	Folder to which the material is bound.
Material: Name	Name of the material.

Material: Code	Code of the material.
Material: Status	Status.
Material: Userfield	Userfield name.
Material: Amount all	Amount for all prices.
Material: Unit	Unit.
Material: Currency	Currency.
Material: Price sign	Price indicator that indicates which price is used.
Material: Amount Manual price	Amount of the Manuel price.
Material: Amount Standard price	Amount of the Standard price.
Material: Amount Floating price	Amount of the Floating price.
Material: Manual price	Manual price.
Material: Standard price	Standard price.
Material: Floating price	Floating price.

F record

An F record is used for transferring resource data. A fresource record does not refer to any other data record. Resource records are used in ORTIMplan for generating or updating free resources.

Meaning

Resourcefolder	Folder to which the resource is bound.
Resource: Name	Name of the resource.
Resource: Code	Code of the resource.
Resource: Status	Status.
Resource: Userfield	Userfield name.
Resource: Amount	Amount.
Resource: Unit	Unit.

B record

Customer data is transferred in the B record. Customers are managed in the customer administration of the calculation module.

The B-record is a separate sentence that does not affect any previous sentence. The last imported customer record or customer is saved in the import interface. A B-record can be supplemented by price records (P-record).

Meaning

Customer: Code	Unique, alphanumeric code.
Customer: Name	Any length one-line designation of the customer.
Customer: Description	Any length description.

P record

Prices are handed over in the P set. Prices are stored in the customer data in the customer administration of the calculation module.

Prices or P record can be added after customer records (B-record) or act as independent record.

Meaning

Customer: Code	See above.
Customer: Name	See above.
Customer: Description	See above.
Price: Product	Product identification.
Price: Price	Price in transferred currency.
Price: Currency	Currency.
Price: Year	Year in which the price was set.
Price: from	Date from which the price is valid.
Price: to	Date until which the price is valid.

D record

A D-record is used for transferring descriptions. A D-record refers to previously defined S, C, T or M-records. Within ORTIMplan, the descriptions are stored in the description fields of the respective objects. Multiple consecutive D-records are linked together.

U record

A U-record is used for transferring user fields. A U-record can be composed of the name, value and description of a user field. A U-record refers to previously defined S or C-records.

If a user field does not yet exist, the field will be created. The field description is only relevant for this purpose.

The use of U-records instead of user field meanings in the work plan and working process definitions offers greater versatility. All the fields do not always have to be transferred, but only those necessary in the particular context. The number of U-records can be different for each work plan or each working process. When using the user field meanings in the working processes and working process definitions, a fixed number of fields is defined. The fields must be transferred in each data record.

Meaning

User field: Name	Name of field.
User field: Wert	Field value.
User field: Beschreibung	Any length description.

R record

An R-record can be used for removing work plans and working processes.

An R-record defines the identification attributes necessary for finding the work plan or the working process. Standard attributes are the name and code. You can also define user fields as an attribute.



When using the R-record for removal purposes, always be sure to use the correct identification. The ERP interface removes - without asking for confirmation - all the work plans and working processes that match the transferred attributes.

Meaning

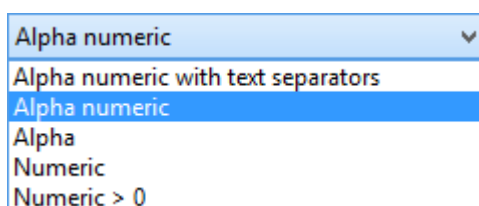
Delete: Name	Name of the object to be deleted.
--------------	-----------------------------------

Delete: Code	Code of the object to be deleted
Delete: User field	User field name of the object to be deleted.

6.2 Types

The data types are only relevant for data export. When importing data, all the fields are automatically recognized and converted accordingly before the data are transferred into ORTIMplan fields.

The following types are available



- **Alphanumeric:** This data type should be used for text fields in which all characters can occur.
- **Alphanumeric with separator:** Same data type as *Alphanumeric*, but the field contents are set inside text separators. This data type *must* be used if a text field is to be exported that contains *genuine line breaks* (*non-genuine* line breaks are line breaks translated as \r\n).
- **Alpha:** Same data type as *Alphanumeric*.
- **Numeric:** Data type for numeric values. During export, the specified decimal places are taken into account. The numeric value is *rounded* with the decimal places (not truncated).
- **Numeric > 0:** Same data type as *Numeric*, but only numeric values are exported that are greater than zero. This data type is ideally suited for time fields.



If nothing is specified, the data type *Alphanumeric* will be used.

6.3 Meanings

The list features the possible meanings that a field can have in ORTIMplan. Double-clicking with the mouse on a meaning allows you to assign it to the selected field.

You use the meaning to define how the data fields of the import/export file (transfer file) relate to the data fields of the ORTIMplan data objects (work plan, working process). The mapping rule is created via the meaning.

Import

During import, the import field contents are entered into the corresponding ORTIMplan field.



If you choose the meaning *user field*, the user field is identified by the field name.

Identification

You can use some meanings to identify existing data in the database. To do this, you have to select the *Identification* option in the bottom right corner of the file configurator.

Import without record sign

You can use the following meanings for identification.

Identification of work plans

- Work plan: name
- Work plan: code
- Work plan: status
- Work plan: user field

Identification of workstations on work plans

- Work plan: workstation name
- Work plan: workstation code
- Work plan: workstation user field

Identification of material on work plans

- Work plan: material name
- Work plan: material code
- Work plan: Material user field

Identification of working processes

- Working process: position
- Working process: Name
- Working process: code
- Working process: status
- Working process: user field

Identification of jobs at working processes

- Working process: workstation name

- Working process: workstation code
- Working process: workstation user field

Identification of material in working processes

- Working process: material name
- Working process: material code
- Working process: Material user field

Export

During export, the data are read from the ORTIMplan field and written into the export file.

Possible meanings

1. Object fields (object properties e.g. name, code, description)
2. User fields of the objects
3. System fields (e.g. date, time)
4. Settings (e.g. settings: unit)

S-record and C-record and without record sign (only import)

Work plan: Remove material connection

Working process: Remove material connection

This removes a connection between work plan and material and a working process and material.



All material fields that do not carry the identification feature are ignored when the field *Remove material connection* is filled (eg. with 1, x, yes, true). A non-filled field is not evaluated and does not remove the connection.

T-record

Table: Row

Identifies the line, in which the data is imported.

Table: Column (export only)

The column is specified, in conjunction with the row (Table: Row) indicating the cell that is the source of the exported value.

M-record (import only)

Material: Folder

A material folder with the given name is applied under the root folder. On this folder the material is appended.



If the first character of the given name is a #, the name is entered not directly, but determined by a **rule**.

Material folder rules

#{Keyword}={Orientation}{Length}|{Range}

Keywords are: **name, code,**
 date, DMY, DMy, YMD, yMD,
 time, HMS, HM

Orientations are: **L or R**

Length: a length between **1** and **n**

Range {Begin}-{End}: Begin to end of the range between **1** and **n**

Example:

Rule = #name=L3,code=L2-4

Materialname = Material 123

Materialcode = m123

Material folder name = Mat123

More examples are printed in chapter [Examples, Material import](#)^[52].

Material: Unit

Herewith the unit for all prices (manual price, standard price and floating price) is determined.

Material: Currency

Herewith the currenc for all prices (manual price, standard price and floating price) is determined.

Material: Price sign

The price tag determines which price is active. Possible tags are M, S and V. M activates the manual price, S activates the standard price, V activates the floating price.

Material: Amount All

Herewith the amount for all prices (manual price, standard price and floating price) is determined. The amount of individual prices can be passed individually.

6.4 Rules

Rules can be defined for each field.

A rule has the following form:

IF *field contents* **EQUALS** *value*

THEN reload the complete interface configuration from *configuration file*.



When using multiple configurations, we recommend defining one configuration file as a *master*. Perform all the general changes in this *master* first of all (e.g. directory settings, units, data format). Subsequently, copy the *master* configuration into a second file, open this via the configurator's File menu and modify the field definitions accordingly.

When *initializing* the interface, the field definitions are read from a configuration file (the default is PPS.INI). At the same time, the definitions are now checked for rules. The configuration files specified in the rules (e.g. PPS-R1.INI) are then also loaded and the field definitions these contain are cached.

Import

When *importing* the data via the interface, the field contents of the import file are checked for any matches with rules. If a match is found, the import of the data record is aborted and the field definitions are loaded from the specified configuration file (the complete configuration file is loaded). Subsequently, the import of the data record is repeated with the reloaded field definitions.

Export

Prior to *exporting* a data record, the field contents of the database are checked for matches with rules.

If a match is found, the field definitions are reloaded from the specified configuration file (the complete configuration file is loaded). Subsequently, the data record is exported with the reloaded field definitions.



In each case, the configuration file is reloaded only for one data record. If the data record is transferred, the old configuration is restored.



If you change the configuration by conditions and thus change the meaning or the contents of the columns, turn off the header for the export file.

6.5 Examples

Example of a joint file format

The fields listed in the example above produce a transfer file with the following contents. The file format is the same here both when importing and exporting.

Import file

```
"Item number";"Designation";"Position";"Process";"tg";"te";"Unit"
"4711";"Item 1";10;"Clamp in";;;
"4711";"Item 1";20;"Mill";;;
"4711";"Item 1";30;"Unclamp";;;
```

Export file

```
"Item number";"Designation";"Position";"Process";"tg";"te";"Unit"
"4711";;10;"Clamp in";10,0;11,0;HM
"4711";;20;"Mill";20,0;22,0;HM
"4711";;30;"Unclamp";30,0;33,0;HM
```

Since the same file format is used both for the import and export procedure, the time fields remain blank when importing and the description field remains blank when exporting.

Example of a separate file format

Import file

```
"Item number";"Designation";"Position";"Process";
"4711";"Artikel 1";10;"Clamp in"
"4711";"Artikel 1";20;"Mill"
"4711";"Artikel 1";30;"Unclamp"
```

Export file

```
"Item number";"Position";"Process";"tg";"te";"Unit"
"4711";10;"Clamp in";10,0;11,0;HM
"4711";20;"Mill";20,0;22,0;HM
"4711";30;"Unclamp";30,0;33,0;HM
```

Example of a separate file format with record identification codes

```
A;"Category 1"
```

```
S;"a001";"Item 1"
D;"Line 1: Description of article 1"
D;"Line 2: Description of article 1"
U;"User field 1";"Value 1";"Description for user field 1"
U;"User field 2";"Value 2";"Description for user field 2"
U;"User field 3";"Value 1";"Description for user field 3"
```

```

T;"s001";"Bill of materials 1";"Line 1";11;21
T;"s001";"Bill of materials 1";"Line 2";12;22
T;"s001";"Bill of materials 1";"Line 3";13;23
D;"Description of bill of materials 1"
T;"s002";"Bill of materials 2";"Line 1";11;21
T;"s002";"Bill of materials 2";"Line 2";12;22

C;"10";"working process";10;HM
D;"Line 1: Description of working process 10"
D;"Line 2: Description of working process 10"
T;"s003";"Bill of materials 3";"Line 1";11;21

C;"20";"working process";20;HM
T;"s004";"Bill of materials 4";"Line 1";11;21
T;"s004";"Bill of materials 4";"Line 2";12;22
T;"s004";"Bill of materials 4";"Line 3";13;23
T;"s004";"Bill of materials 4";"Line 4";14;24

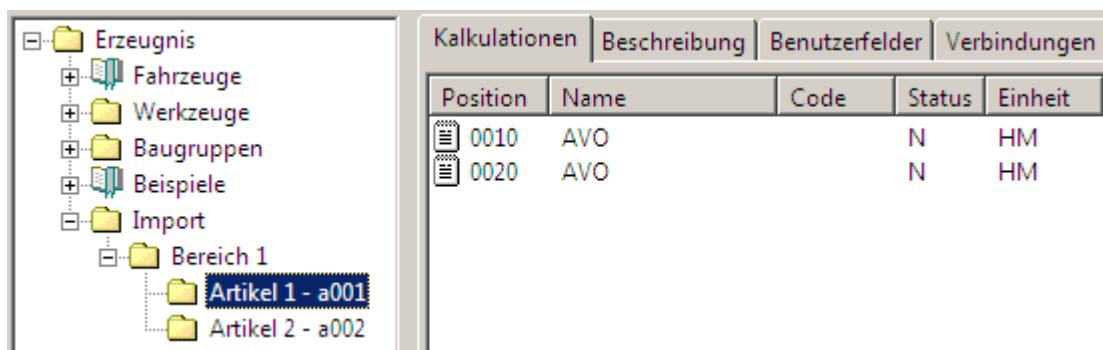
S;"a002";"Item 2"
D;"Line 1: Description of item 2"

C;"10";"working process";10;HM

R;"a001-0";"Item 1"

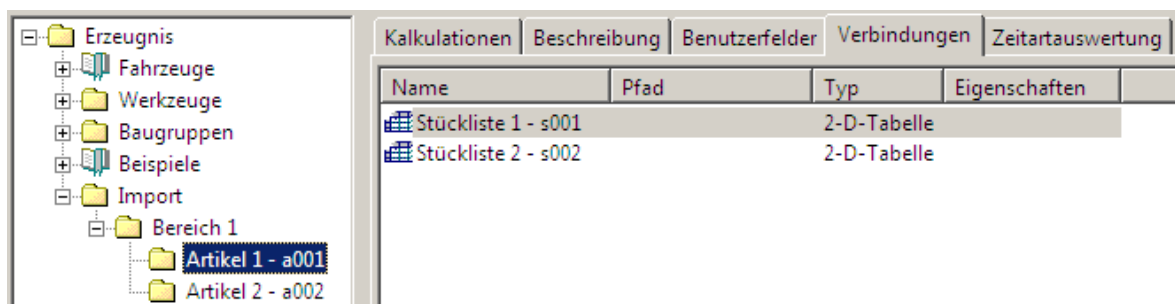
```

After being imported, these data are displayed in the Work Plan Navigator as follows:

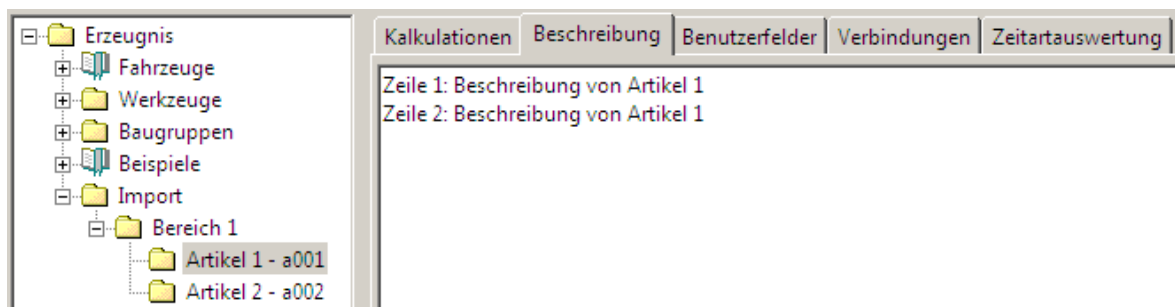


The category *Category 1* has been defined.

The route sheet *Item 1* and *Item 2* have been connected to the category folder. The processes *Working process 10* and *Working process 20* have been connected to selector *Item 1*.



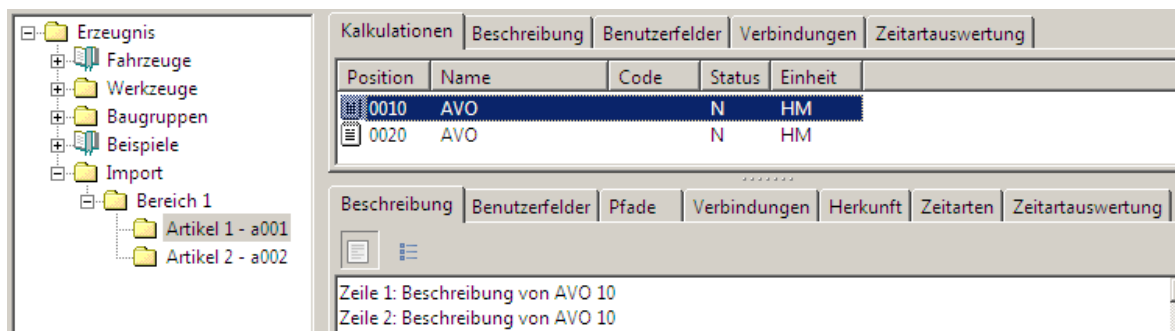
The tables *Bill of materials 1* and *Bill of materials 2* have been connected to work plan *Item 1*.



The descriptions have been entered in the work planet *Item 1*.



The table "Bill of materials 3" has been connected to working process *Working process 10*.



The descriptions have been entered in the working process *Working process 10*.

Material import

```
M;"#code=L2-3";"Material 123";"m123"
M;"#code=L2-3";"Material 124";"m124"
M;"#code=L2-3";"Material 456";"m456"
M;"#code=L2-3";"Material 789";"m789"
M;"#date";"Material 125";"m125"
M;"#DMY";"Material 126";"m126"
M;"#YMD";"Material 127";"m127"
M;"#time";"Material 128";"m128"
M;"#HMS";"Material 129";"m129"
M;"#HM";"Material 130";"m130"
M;"#name=L3,code=R3";"Material 140";"m140"
```

- [-]  Material
 - [-]  12
 -  Material 123 - m123
 -  Material 124 - m124
 - [-]  45
 -  Material 456 - m456
 - [-]  78
 -  Material 789 - m789
 - [-]  19.01.2016
 -  Material 126 - m126
 - [-]  2016.01.19
 -  Material 127 - m127
 - [-]  16:35:32
 -  Material 128 - m128
 - [-]  16:35
 -  Material 130 - m130
 - [-]  Mat140
 -  Material 140 - m140

A second method of exchanging data with an ERP system is available for database tables.

In this regard, database tables serve as an interface for your own decision logic, which accesses the contents of the database tables and reads out parameters for decision-making processes, generating and updating route sheets.

During the import procedure, it is possible to fill the contents of a database table from a CSV file. During export, a CSV file is filled from the contents of a database table.

Import and export are available as tasks in the Task Scheduler of ORTIMplan.

Import

The import files provided in the import directory are moved accordingly into the set archive folder of the specified file mask (e.g. *.*), from where the files are imported into the database tables.

Export

During export, the entire contents of a database table are written to CSV file. The CSV file is stored in the export directory when the contents are complete. The ERP system can collect and process the file from this location.

File format

It is possible to set the file format separately for each database table. The file format includes the following:

- Field separator
- Text separator
- Decimal separator
- Number of headers

The settings are defined in the database settings.

The XML files generated via the ERP interface are specially configured for ERP systems. They only contain the data that ERP systems generally process. So z. For example, no activity lines are exported because these work steps are not required.

The contents of an XML file are explained using an example

Arbeitsplan: wp-1 - Arbeitsplan
Im Arbeitsplan-Navigator werden Ihre Arbeitspläne und Arbeitsvorgänge verwaltet.

Name eingeben

Arbeitspläne

- F - wp-1 - Arbeitsplan
- F - wp-2 - Arbeitsplan

Position	Code	Name	Status	Geändert am	Geändert von	Werk
0010	wps-1	Arbeitsvorgang	F	10.03.2021 10:16	thomas.lentzsch	Kiel
0020	wps-2	Arbeitsvorgang	F	10.03.2021 10:16	thomas.lentzsch	Erfurt
0030	wps-4	Arbeitsvorgang	F	10.03.2021 10:15	thomas.lentzsch	München

Beschreibung Benutzerfelder Verbindungen

Name	Ordner	Typ	Eigenschaften
Ressourcen			
Material - m-1		Material	2,00 Stück
Material - m-2		Material	1,00 Stück
Arbeitsplatz - ws-1		Arbeitsplatz	
Arbeitspläne			
F - wp-1 - Arbeitsplan	wp-1 - Arbeitsplan	Arbeitsplan	
F - wp-2 - Arbeitsplan	wp-2 - Arbeitsplan	Arbeitsplan	

The work plan with code wp-1 is selected in the ORTIMplan work plan navigator.

There are 3 work processes. At the work process with code wps-1 a workplace is specified and 2 materials are used.

Operation with code wps-1 is also part of a second work plan.

In the following, the work plan or its 3 work processes are exported via the ERP interface.

Filter

Exportdaten

Exportdaten wählen

Hier werden die Exportdaten angezeigt, die den Filterbedingungen entsprechen. Wählen Sie die Exportdaten und betätigen dann die Schaltfläche „Exportieren“.

Nr.	Position	Name	Code	Arbeitsplan	Typ	Status	Geändert am	Benutzer
1	0010	Arbeitsvorgang	wps-1	wp-1 - Arbeitsplan	Arbeitsvorgang	F	10.03.2021 10:16	thomas.lentzsch
2	0020	Arbeitsvorgang	wps-2	wp-1 - Arbeitsplan	Arbeitsvorgang	F	10.03.2021 10:16	thomas.lentzsch
3	0030	Arbeitsvorgang	wps-4	wp-1 - Arbeitsplan	Arbeitsvorgang	F	10.03.2021 10:15	thomas.lentzsch

Steuerungsdatei

i:\ortimplan\ide\debug\pps.ini

...

Exportverzeichnis

i:\ortimplan\ide\debug\Export

Datenformat

☐ CSV
☒ XML

Textformat

UTF-8

☐ Fenster automatisch schließen

Exportieren

The XML file is saved in the specified export directory (marked in blue).

The generated XML file can be found in the [appendix to this manual](#) ⁷⁹.

8.1 Functionality

Export

The XML export exports a work plan without sub-folders.

The structure in which the work plan is integrated is also not exported.

Import

The XML import imports the work plans under the <Automatically imported objects> folder.

When importing, the data is first grouped into resources (work centers and materials), work plans and work processes.

The data is imported in this order.

The relationships between the process elements (links, connections) are established using the <ProcessElementID>.



The identification features specified in the ERP system settings are used to find existing data.

Without identification, existing work plans, workstations and materials cannot be correctly identified. As a result, the data is unwantedly re-imported.

The identification features for user fields depend on the database selected. **When changing a database, the characteristics must be adapted.**

If for example, the characteristics <Code> and user field <Plan type> are specified for work plans, work plans that match these two characteristics are searched for in the database.

Operations

Work processes are searched for and linked to the work plan.

The identification features for work processes specified in the ERP system settings apply here.

Resources (workplace, material)

Resources are integrated below the root object.

The identification features specified in the ERP system settings are used to find resources.

8.2 Header

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Generated by ORTIMplan 8.6.4 -->
<!-- Copyright (C) 2021 dmc-ortim GmbH (https://www.dmc-group.com/dmc-ortim/produkte/arbeitsplanung/ortimplan) -->
```

Standard information is displayed in the file header.

8.3 Contents

```
<Contents xmlns:xsi="https://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://www.dmc-group.com/SoftwareUpdate/ORTIMplan/XMLSchema/2.0/process-elements.xsd">
    <AllProcessElements/>
    <TimeUnitFactors/>
    <DocumentsFolder/>
    <Application/>
    <Version/>
</Contents>
```

The Contents is the bracket for all other XML elements.

8.4 AllProcessElements

```
<AllProcessElements>
  <ProcessElement Type="work plan">
  <ProcessElement Type="working process">
  <ProcessElement Type="workstation">
  <ProcessElement Type="material">
</AllProcessElements>
```

The work plan-relevant elements are listed in the list of all process elements.

In the sub-sections you will find the description of the individual elements.

Links

The process elements are linked to one another. The links refer to the unique ProcessElementID.

```
<ProcessElement Type="work plan">
  <ProcessElementID>ID1</ProcessElementID>
  <Children>
    <Link Type="working process">
      <ProcessElementID>ID2</ProcessElementID>
    </Link>
    <Link Type="workstation">
      <ProcessElementID>ID3</ProcessElementID>
    </Link>
    <Link Type="material">
      <ProcessElementID>ID4</ProcessElementID>
    </Link>
  </Children>
</ProcessElement>

<ProcessElement Type="working process">
  <ProcessElementID>ID2</ProcessElementID>
</ProcessElement>
```

```

<ProcessElement Type="workstation">
  <ProcessElementID>ID3</ProcessElementID>
</ProcessElement>

```

```

<ProcessElement Type="material">
  <ProcessElementID>ID4</ProcessElementID>
</ProcessElement>

```

ProcessElement Type="work plan"

```

<ProcessElement Type="work plan">
  <ProcessElementID>20:3791519971</ProcessElementID>
  <Coding>
    <Code Identifier="true">wp-1</Code>
  </Coding>
  <Description>
    <HeaderDescription>
      <DescriptionText>Arbeitsplan</DescriptionText>
      <Language>de-DE</Language>
    </HeaderDescription>
  </Description>
  <Userfields>
    <Userfield Identifier="true">
      <Name>Plantyp</Name>
      <Value>E</Value>
    </Userfield>
    <Userfield Identifier="true">
      <Name>Werk</Name>
      <Value>Kiel</Value>
    </Userfield>
    <Userfield>
      <Name>Revision</Name>
      <Value>7</Value>
    </Userfield>
  </Userfields>
  <Children>

```

```

    <Link Type="working process">
      <ProcessElementID>25:3791519971</ProcessElementID>
      <Info Identifier="true">10</Info>
    </Link>
    <Link Type="working process">
      <ProcessElementID>29:3791519971</ProcessElementID>
      <Info Identifier="true">20</Info>
    </Link>
    <Link Type="working process">
      <ProcessElementID>51:3791519971</ProcessElementID>
      <Info Identifier="true">30</Info>
    </Link>
    <Link Type="workstation">
      <ProcessElementID>39:3791519971</ProcessElementID>
    </Link>
    <Link Type="material">
      <ProcessElementID>42:3791519971</ProcessElementID>
      <Info>1</Info>
      <Info2>Stück</Info2>
    </Link>
  </Children>
</ProcessElement>

```

ProcessElement Type="working process"

```

<ProcessElement Type="working process">
  <ProcessElementID>25:3791519971</ProcessElementID>
  <Coding>
    <Code Identifier="true">wps-1</Code>
  </Coding>
  <Description>
    <HeaderDescription>
      <DescriptionText>Arbeitsvorgang</DescriptionText>
      <Language>de-DE</Language>
    </HeaderDescription>
    <LongText>
      <ContentLink>tltltl</ContentLink>
    </LongText>
  </Description>

```

```

        <LinkType>PlainText</LinkType>
        <Language>de-DE</Language>
    </LongText>
</Description>
<Userfields>
    <Userfield Identifier="true">
        <Name>Werk</Name>
        <Value>Kiel</Value>
    </Userfield>
    <Userfield>
        <Name>Revision</Name>
        <Value>7</Value>
    </Userfield>
    <Userfield>
        <Name>Personaleinsatz</Name>
        <Value>1</Value>
    </Userfield>
</Userfields>
<time_unit>HHM</time_unit>
<Times>
    <Human>
        <RootTimes>
            <thb>
                <time_ins>10000.0</time_ins>
                <time_unit>HHM</time_unit>
            </thb>
            <th>
                <time_ins>10000.0</time_ins>
                <time_unit>HHM</time_unit>
            </th>
            <tth>
                <time_ins>10000.0</time_ins>
                <time_unit>HHM</time_unit>
            </tth>
        </RootTimes>
        <BasicTimes>

```

```

        <tg>
            <time_cal>10000.0</time_cal>
            <time_unit>HHM</time_unit>
        </tg>
        <trg>
            <time_cal>20000.0</time_cal>
            <time_unit>HHM</time_unit>
        </trg>
    </BasicTimes>
    <ResultTimes>
        <te>
            <time_cal>10000.0</time_cal>
            <time_unit>HHM</time_unit>
        </te>
        <tr>
            <time_cal>20000.0</time_cal>
            <time_unit>HHM</time_unit>
        </tr>
    </ResultTimes>
</Human>
<Equipment>
    <RootTimes/>
    <BasicTimes>
        <tgB>
            <time_cal>30000.0</time_cal>
            <time_unit>HHM</time_unit>
        </tgB>
    </BasicTimes>
    <ResultTimes>
        <teB>
            <time_cal>30000.0</time_cal>
            <time_unit>HHM</time_unit>
        </teB>
    </ResultTimes>
</Equipment>
<Quantity>1.0</Quantity>

```

```

</Times>
<Children>
  <Link Type="workstation">
    <ProcessElementID>39:3791519971</ProcessElementID>
  </Link>
  <Link Type="material">
    <ProcessElementID>42:3791519971</ProcessElementID>
    <Info>2.0</Info>
    <Info2>Stück</Info2>
  </Link>
  <Link Type="material">
    <ProcessElementID>43:3791519971</ProcessElementID>
    <Info>1.0</Info>
    <Info2>Stück</Info2>
  </Link>
</Children>
</ProcessElement>

```

ProcessElement Type="workstation"

```

<ProcessElement Type="workstation">
  <ProcessElementID>40:3791519971</ProcessElementID>
  <Coding>
    <Code Identifier="true">ws-2</Code>
  </Coding>
  <Description>
    <HeaderDescription>
      <DescriptionText>Arbeitsplatz</DescriptionText>
      <Language>de-DE</Language>
    </HeaderDescription>
    <LongText>
      <ContentLink>Workstation 2</ContentLink>
      <LinkType>PlainText</LinkType>
      <Language>de-DE</Language>
    </LongText>
  </Description>
  <Userfields>

```

```

    <Userfield Identifier="true">
      <Name>Werk</Name>
      <Value>Erfurt</Value>
    </Userfield>
  </Userfields>
  <CostRates>
    <CostRate Type="current" Active="true">
      <Value>2500000.0</Value>
      <Currency>EUR</Currency>
      <Unit>Std</Unit>
    </CostRate>
    <CostRate Type="standard">
      <Value>2200000.0</Value>
      <Currency>EUR</Currency>
      <Unit>Std</Unit>
    </CostRate>
    <CostRate Type="budget">
      <Value>2400000.0</Value>
      <Currency>EUR</Currency>
      <Unit>Std</Unit>
    </CostRate>
  </CostRates>
</ProcessElement>

```

ProcessElement Type="material"

```

<ProcessElement Type="material">
  <ProcessElementID>42:3791519971</ProcessElementID>
  <Coding>
    <Code Identifier="true">m-1</Code>
  </Coding>
  <Description>
    <HeaderDescription>
      <DescriptionText>Material</DescriptionText>
      <Language>de-DE</Language>
    </HeaderDescription>
  </Description>

```

```

<Userfields>
  <Userfield Identifier="true">
    <Name>Werk</Name>
    <Value>kiel</Value>
  </Userfield>
</Userfields>
<Costs>
  <Cost Type="manual">
    <Value>1.0</Value>
    <Currency>EUR</Currency>
    <Amount>3.0</Amount>
    <Unit>Stück</Unit>
  </Cost>
  <Cost Type="standard" Active="true">
    <Value>2.0</Value>
    <Currency>EUR</Currency>
    <Amount>2.0</Amount>
    <Unit>Stück</Unit>
  </Cost>
  <Cost Type="floating">
    <Value>3.0</Value>
    <Currency>EUR</Currency>
    <Amount>1.0</Amount>
    <Unit>Stück</Unit>
  </Cost>
</Costs>
</ProcessElement>

```

8.5 TimeUnitFactors

```

<TimeUnitFactors>
  <time_unit Name="HHM" Factor="1"/>
  <time_unit Name="Sek" Factor="166.666667"/>
  <time_unit Name="Min" Factor="10000.0"/>
  <time_unit Name="Std" Factor="600000.0"/>
  <time_unit Name="HM" Factor="100.0"/>

```

```

<time_unit Name="TM" Factor="10.0"/>
<time_unit Name="HH" Factor="6000.0"/>
<time_unit Name="TH" Factor="600.0"/>
<time_unit Name="ZTH" Factor="60.0"/>
<time_unit Name="TMU" Factor="6.0"/>
<time_unit Name="IM" Factor="6000.0"/>
<time_unit Name="H" Factor="600000.0"/>
<time_unit Name="D" Factor="14400000.0"/>
</TimeUnitFactors>

```

The conversion factors for time units are listed in the TimeUnitFactors. Usually time data is exported in the internal time unit HHM, so that the highest accuracy is available for calculations.

You can use the conversion table to see which factor is used to convert from the internal time unit HHM to e.g. minutes.

8.6 DocumentsFolder

```

<DocumentsFolder>
  <Location>\\srv-file\documents</Location>
</DocumentsFolder>

```

The folder in which documents linked to processes are transferred is listed here.

8.7 Application

```

<Application>
  <ProductName>ORTIMplan</ProductName>
  <Version>8.6.4</Version>
  <DateOfExport>2021-04-10T12:14:04</DateOfExport>
</Application>

```

Information about the application is provided here.

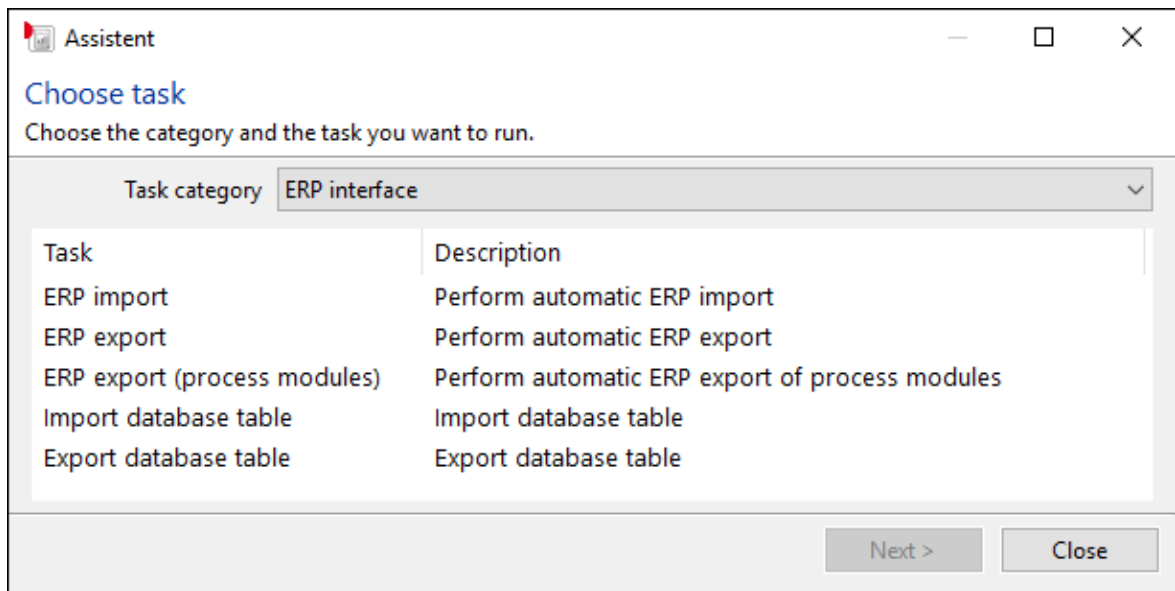
8.8 Version

```
<Version>  
  <Scheme>2.0</Scheme>  
  <File>1.0.8</File>  
  <Extensions>1.0</Extensions>  
</Version>
```

The versions of the XML file and XML schema are listed here.

9.1 Task Scheduler

Select the task category *ERP interface* to open the ERP interface tasks.



ERP Import

Edit properties

Task properties

You can modified the task properties here. A task is excuted on the PC with the indicated name.

Task

erp-import_no-record-flag

Execute on PC

ortim-server

Execute by user

...

Execute as user

...

Execution time

manual

...

E-mail notification

...

Import file (empty=auto.)

*_no-record-flag.import

...

Control file

D:\ProgramData\ORTIMplan 8.7.1\pps.ini

...

Data format

☒ CSV ☐ XML

Text format

UTF-8 ☐ Use record flag

...

OK

Cancel

Import file

When the fields is empty al files from the ERP import directory (system settings, ERP interface, directories) are imported. Enter a file name or pattern to import only specified files (e.g. *.CSV).

ERP Export

Edit properties

Task properties

You can modified the task properties here. A task is excuted on the PC with the indicated name.

Task

ERP export

Execute on PC

Execute by user

Abel

...

Execute as user

...

Execution time

Monday to friday, 21:00

...

E-mail notification

...

Export file (empty=auto.)

...

Control file

D:\ProgramData\ORTIMplan 8.3\pps.ini

...

Priority

Standard

Number of records per export

Status

Time period

22.01.2019

00:00:01

to

22.01.2019

16:05:03

Text format

Windows Ansi

☐ Use record flag

OK

Cancel

Export file

When the field is empty, the name of the export file is generated. The xport file is copied to the export directory. Enter a fiel name for a specific output file. Wildcards are supported (e.g. *.CSV).

Priority

Enter the export priority here. Higher priorities are first exported.

Number of record per export

Limit the number of records exported in one step. A limit is useful, if the receiving system cannot handle large files.

Time range

Enter the search range here.

Use record flag

Decide whether to use the record flag or not.

ERP Export (process modules)

The export works equal to the task ERP export, but process modules from the process hierarchy are exported instead of working processes from the product hierarchy.

Import database table

Edit properties

Task properties

You can modified the task properties here. A task is excuted on the PC with the indicated name.

Task: Import database table

Execute on PC:

Execute by user: admintl ...

Execution time: manual ...

E-mail notification: ...

Database table: D:\ProgramData\ORTIMplan 7.0\English\Database\Databasetable. ...

Import file (empty=auto.):

Options: CSV ID column=2, CSV column 1=Table column 3 ...

☐ Overwrite protocol on next execution

☐ Execute task as user "SYSTEM"

OK Cancel

Database table

Selecting the button ... opens the file selection dialog in the set database directory.

Import file

If the field is blank, all the files will be imported from the set ERP import directory (System settings, ERP interface, Directories). You can enter a file name in the field; wildcards are allowed (e.g. *.CSV).

Options

Selecting the button ... on the right of the Options field opens the Import options window.

Import options

CSV import options

Define the meaning of the CSV columns and determine the import behavior.

Import behavior

☒ Merge existing record:

☐ Clear record before merging

CSV ID column

CSV ID column

Column map

CSV column

Table column

CSV column		Database table column
1	assign to	3

OK

Cancel

Import behavior

Merge existing record

If this option is checked, a data record identified via the ID column (*Name*) of the database table will be matched / filled with the import data. If not, the data record will be ignored and documented as invalid in the log.

Clear record before merging

If this option is checked, an existing data record will be emptied before being matched / filled.

CSV ID column

The column of the CSV file is entered here. Values of this column are transferred into the ID / *Name* field of the database table.



The values of the ID column must be unique.

Column map

This function allows you to map the columns of the CSV file to columns of the database table. Use the + and - buttons to enter a new transformation into the list. If you select a transformation in the list, you can edit its values via the entry fields located above.

CSV column	The column of the CSV file is entered here.
Database table column	The column of the database table is entered here. Column 0 means that the CSV column is not assigned / ignored.

Export database table

Edit properties

Task properties

You can modified the task properties here. A task is excuted on the PC with the indicated name.

Task

Export database table

Execute on PC

Execute by user

admintl

...

Execution time

manual

...

E-mail notification

...

Database table

D:\ProgramData\ORTIMplan 7.0\English\Database\Databasetable.

...

Export file (empty= auto.)

☐ Overwrite protocol on next execution

☐ Execute task as user "SYSTEM"

OK

Cancel

Database table

Select button ... right of field *Database table* to open a database table as destination.

Export file

When the field is empty, the name of the export file is generated. The xport file is copied to the export directory. Enter a field name for a specific output file. Wildcards are supported (e.g. *.CSV).

9.2 Control file for interface

The **PPS.INI** control file is used for configuring the ERP Interface. The contents of the file are filled primarily using settings pages of ORTIMplan.

A second control file **PPS-LOG.INI** comprises time events, e.g. date and time of the last export. A number of program sections utilize these events, e.g. data export - all changes since the last export. The time events are generated for each database and for each import file.



Frequently changing names for the database or import file can greatly increase the size of this file. You can delete the file at any time without impairing the functionality of the ERP interface.

Special entries

Section	Key	Value
Export	IgnoredExportObjects	List of object IDs separated by blanks. The records with the matching IDs will not be exported.
	DumpExportObjects	0 or 1. Activates (1) or deactivates (0) the printing of the current record directly on the Windows desktop.

Example

The following example shows the control file for an import with a separate format and record identification code. The control file is edited using ORTIMplan tools and should not be edited with other tools (e.g. text editors). You can, however, simply transfer the file to other PCs and continue editing them there with ORTIMplan.

Contents of the INI file

```
[Header]
TimeStamp=0
RemoveHeader=2
Columns=1
```

```
[Separator]
Field=;
Decimal=.
```

```

Text="

[Units]
Min=1

[Status Fields]
Release=F

[Export]
Extension=.CSV

[Log]
User field=0
Mode=2

[Decision table]
RunOnImport=0

[Directories]
Log=D:\Documents\Logs\
Export=D:\Documents\Export\
Import=D:\Documents\Import\
Archive=D:\Documents\Archive\
Import file=*.csv

[Format]
Same=0
Flag=1
RecentFlag=C

[Import Field Descriptions A]
3377494894="Category" " " " " " " " " " " "SelName" "x" " " " " "

[Import Field Descriptions S]
3377260493="Item number" " " " " " " " " " " "SelCode" "x" "" "x"
3377325221="Designation" " " " " " " " " " " "SelName" "x" "" "x"

[Import Field Descriptions C]
3377407978="Position" " " " " " " " " " " "CalcPos" "x" " " "x"
3377407997="Process" " " " " " " " " " " "CalcName" "x" " " "x"
3377408028="tg" " " " " " " " " " " "CalcTg" "x" " " " "
3377408042="Unit" " " " " " " " " " " "CalcUnit" "x" " " " "

[Import Field Descriptions T]
3377326632="Bill of materials number" " " " " " " " " " " "TableCode" "x" "" " "
3377326828="Designation" " " " " " " " " " " "TableName" "x" "" ""
3377422663="Line" " " " " " " " " " " "TableRow" "x" "" ""
3377326862="Column 1" " " " " " " " " " " "TableColumn" "x" "" ""
3377326901="Column 2" " " " " " " " " " " "TableColumn" "x" "" ""

[Import Field Descriptions M]
3377424911="Material number" " " " " " " " " " " "MaterialCode" "x" "" " "
3377424924="Designation" " " " " " " " " " " "MaterialName" "x" "" " "
3377424939="Unit" " " " " " " " " " " "MaterialUnit" "x" "" " "
3377425109="Currency" " " " " " " " " " " "MaterialCurrency" "x" "" " "
3377425000="Amount1" " " " " " " " " " " "MaterialAmount1" "x" "" " "
3377424945="Manual amount" " " " " " " " " " " "MaterialCosts1" "x" "" " "
3377427579="Amount2" " " " " " " " " " " "MaterialAmount2" "x" " " " "
3377427598="Standard price" " " " " " " " " " " "MaterialCosts2" "x" " " " "
3377427609="Amount3" " " " " " " " " " " "MaterialAmount3" "x" " " " "
3377427615="Sliding-scale price" " " " " " " " " " " "MaterialCosts3" "x" " " " "

[Import Field Descriptions D]
3377408675="Description" " " " " " " " " " " "ObjectText" "x" "" " "

```

9.3 Control file for database table

Every database table has a control file that has the same name as the database table. The file extension is .INI.

It is possible to use the control file to influence how database tables are imported and exported.

Import

Import

The general properties of the import file are described here.

FieldSeparator	Character that separates the individual fields from each other. The default is ;.
DecimalSeparator	Decimal separator. The default is ,.
TextSeparator	Character used to enclose text fields. The default is ".
Headline	Number of headlines read during import. The default is 0.

Export

The following parts of the INI file are read.

FieldSeparator	Character that separates the individual fields from each other. The default is ;.
DecimalSeparator	Decimal separator. The default is ,.
TextSeparator	Character used to enclose text fields. The default is ".
Headline	0 or 1. The default is 1.

ExportColumns	The names of the columns are listed here. <pre> 1 Name .. N n-th entry </pre>
ExportMap	Allows you to define column names for the file that deviate from those of the database table.
ExportDefaults	Allows you to define default values for columns. The default values are then always used when we are dealing with an additional column, or a value is not entered.
ExportLimits	Allows you to specify maximum values for the field length. If the field has the data type " numeric ", it is possible to specify two lengths, otherwise only one. The field values are adapted to the specified lengths.
ExportTypes	It is possible to define the data type of a field here. If no data type is specified, all the fields will be regarded as text fields. Text fields are written with text separators into the export file. Currently only the type "numeric" is available.

Example

Database: Example.btd

INI file: Example.ini

Contents of the INI file

```

[Export]
FieldSeparator=;
DecimalSeparator=,
TextSeparator="
HeadLine=1

[ExportColumns]
1=Name
2=Status
3=Additional field
4=Time

[ExportMap]
Name=SAP designation
Time=te

[ExportDefaults]
Additional field=xxx

[ExportLimits]
Time=3 3

[ExportTypes]
Time=Numeric

```

9.4 Program functions

ERP Interface

☒		ERP interface
☒		Change configuration
☒		Change file format
☒		Change settings
☒		Create user fields
☒		ERP import
☒		Manually
☒		Automatically
☒		Change settings
☒		ERP export
☒		Manually
☒		Automatically
☒		Change settings

These authorizations govern the options you have when working with the ERP Interface.



The authorizations for changing the file format of the ERP Interface are not assigned by default. This is designed to ensure that the extremely important configuration of the interface cannot be modified inadvertently.

We strongly advise you to remove the authorizations after commissioning the ERP Interface to prevent any modifications being made to the configuration.

ERP interface

Change file format

This program function allows you to define whether the file format of the transfer file is to be changed or not. This program function is disabled by default for all users. An ORTIMplan administrator should only enable this function for the administrators of the ERP interface.

Generally speaking, the file format of the transfer file is not changed or is only changed on rare occasions, since this also requires that changes be made on the ERP system side.

ERP import

Manual

Governs whether the manual import of ERP data is allowed to be executed or not.

Automatic

Governs whether the manual import of ERP data is allowed to be executed via the Task Scheduler or not.

Change settings

Governs whether the settings for the ERP import are allowed to be changed or not. The settings include the definitions for the import, archive and log directory.

ERP export

Manual

Governs whether the manual export of ERP data is allowed to be executed or not.

Automatic

Governs whether the manual export of ERP data is allowed to be performed via the Task Scheduler or not.

Change settings

Governs whether the settings of the task for the ERP export are allowed to be changed in the Task Scheduler or not. These settings include the definitions for the export and log directory, the time settings and the other properties of the task within the Task Scheduler.

9.5 XML example file

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- Generated by ORTIMplan 8.6.4 -->
<!-- Copyright (C) 2021 dmc-ortim GmbH (https://www.dmc-group.com/dmc-ortim/produkte/arbeitsplanung/ortimplan) -->
<Contents xmlns:xsi="https://www.w3.org/2001/XMLSchema-instance"
xsi:noNamespaceSchemaLocation="https://www.dmc-group.com/SoftwareUpdate/ORTIMplan/XMLSchema/2.0/process-elements.xsd">
  <AllProcessElements>
    <ProcessElement Type="work plan">
      <ProcessElementID>20:3791519971</ProcessElementID>
      <Coding>
        <Code Identifier="true">wp-1</Code>
```

```

</Coding>
<Description>
  <HeaderDescription>
    <DescriptionText>Arbeitsplan</DescriptionText>
    <Language>de-DE</Language>
  </HeaderDescription>
</Description>
<Userfields>
  <Userfield Identifier="true">
    <Name>Plantyp</Name>
    <Value>E</Value>
  </Userfield>
  <Userfield Identifier="true">
    <Name>Werk</Name>
    <Value>Kiel</Value>
  </Userfield>
  <Userfield>
    <Name>Revision</Name>
    <Value>7</Value>
  </Userfield>
</Userfields>
<Children>
  <Link Type="working process">
    <ProcessElementID>25:3791519971</ProcessElementID>
    <Info Identifier="true">10</Info>
  </Link>
  <Link Type="working process">
    <ProcessElementID>29:3791519971</ProcessElementID>
    <Info Identifier="true">20</Info>
  </Link>
  <Link Type="working process">
    <ProcessElementID>51:3791519971</ProcessElementID>
    <Info Identifier="true">30</Info>
  </Link>
  <Link Type="workstation">
    <ProcessElementID>39:3791519971</ProcessElementID>

```

```

    </Link>
    <Link Type="material">
      <ProcessElementID>42:3791519971</ProcessElementID>
      <Info>1</Info>
      <Info2>Stück</Info2>
    </Link>
  </Children>
</ProcessElement>
<ProcessElement Type="work plan">
  <ProcessElementID>21:3791519971</ProcessElementID>
  <Coding>
    <Code Identifier="true">wp-2</Code>
  </Coding>
  <Description>
    <HeaderDescription>
      <DescriptionText>Arbeitsplan</DescriptionText>
      <Language>de-DE</Language>
    </HeaderDescription>
  </Description>
  <Userfields>
    <Userfield Identifier="true">
      <Name>Plantyp</Name>
      <Value>D</Value>
    </Userfield>
    <Userfield Identifier="true">
      <Name>Werk</Name>
      <Value>Erfurt</Value>
    </Userfield>
    <Userfield>
      <Name>Revision</Name>
      <Value>2</Value>
    </Userfield>
  </Userfields>
  <Children>
    <Link Type="working process">
      <ProcessElementID>25:3791519971</ProcessElementID>

```

```

        <Info Identifier="true">100</Info>
    </Link>
    <Link Type="workstation">
        <ProcessElementID>40:3791519971</ProcessElementID>
    </Link>
    <Link Type="material">
        <ProcessElementID>42:3791519971</ProcessElementID>
        <Info>3.0</Info>
        <Info2>Stück</Info2>
    </Link>
</Children>
</ProcessElement>
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    <ProcessElementID>25:3791519971</ProcessElementID>
    <Coding>
        <Code Identifier="true">wps-1</Code>
    </Coding>
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        <HeaderDescription>
            <DescriptionText>Arbeitsvorgang</DescriptionText>
            <Language>de-DE</Language>
        </HeaderDescription>
        <LongText>
            <ContentLink>tltltl</ContentLink>
            <LinkType>PlainText</LinkType>
            <Language>de-DE</Language>
        </LongText>
    </Description>
    <Userfields>
        <Userfield Identifier="true">
            <Name>Werk</Name>
            <Value>Kiel</Value>
        </Userfield>
        <Userfield>
            <Name>Revision</Name>
            <Value>7</Value>
        </Userfield>
    </Userfields>
</ProcessElement>

```

```

</Userfield>
<Userfield>
  <Name>Personaleinsatz</Name>
  <Value>1</Value>
</Userfield>
</Userfields>
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<Times>
  <Human>
    <RootTimes>
      <thb>
        <time_ins>10000.0</time_ins>
        <time_unit>HHM</time_unit>
      </thb>
      <th>
        <time_ins>10000.0</time_ins>
        <time_unit>HHM</time_unit>
      </th>
      <tth>
        <time_ins>10000.0</time_ins>
        <time_unit>HHM</time_unit>
      </tth>
    </RootTimes>
    <BasicTimes>
      <tg>
        <time_cal>10000.0</time_cal>
        <time_unit>HHM</time_unit>
      </tg>
      <trg>
        <time_cal>20000.0</time_cal>
        <time_unit>HHM</time_unit>
      </trg>
    </BasicTimes>
    <ResultTimes>
      <te>
        <time_cal>10000.0</time_cal>

```

```

        <time_unit>HHM</time_unit>
    </te>
    <tr>
        <time_cal>20000.0</time_cal>
        <time_unit>HHM</time_unit>
    </tr>
</ResultTimes>
</Human>
<Equipment>
    <RootTimes/>
    <BasicTimes>
        <tgB>
            <time_cal>30000.0</time_cal>
            <time_unit>HHM</time_unit>
        </tgB>
    </BasicTimes>
    <ResultTimes>
        <teB>
            <time_cal>30000.0</time_cal>
            <time_unit>HHM</time_unit>
        </teB>
    </ResultTimes>
</Equipment>
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</Times>
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    </Link>
    <Link Type="material">
        <ProcessElementID>42:3791519971</ProcessElementID>
        <Info>2.0</Info>
        <Info2>Stück</Info2>
    </Link>
    <Link Type="material">
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```

```

        <Info>1.0</Info>
        <Info2>Stück</Info2>
    </Link>
</Children>
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    <Coding>
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    </Coding>
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            <Language>de-DE</Language>
        </HeaderDescription>
        <LongText>
            <ContentLink>tltltl</ContentLink>
            <LinkType>PlainText</LinkType>
            <Language>de-DE</Language>
        </LongText>
    </Description>
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            <Name>Werk</Name>
            <Value>Erfurt</Value>
        </Userfield>
        <Userfield>
            <Name>Revision</Name>
            <Value>3</Value>
        </Userfield>
        <Userfield>
            <Name>Personaleinsatz</Name>
            <Value>2</Value>
        </Userfield>
    </Userfields>
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```

```

<Times>
  <Human>
    <RootTimes>
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      </thu>
      <th>
        <time_ins>40000.0</time_ins>
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      </th>
      <ttu>
        <time_ins>40000.0</time_ins>
        <time_unit>HHM</time_unit>
      </ttu>
    </RootTimes>
    <BasicTimes>
      <tg>
        <time_cal>40000.0</time_cal>
        <time_unit>HHM</time_unit>
      </tg>
      <trg>
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        <time_unit>HHM</time_unit>
      </trg>
    </BasicTimes>
    <ResultTimes>
      <te>
        <time_cal>40000.0</time_cal>
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      </te>
      <tr>
        <time_cal>50000.0</time_cal>
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      </tr>
    </ResultTimes>

```

```

    </Human>
    <Equipment>
      <RootTimes/>
      <BasicTimes>
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          <time_unit>HHM</time_unit>
        </tgB>
      </BasicTimes>
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          <time_cal>60000.0</time_cal>
          <time_unit>HHM</time_unit>
        </teB>
      </ResultTimes>
    </Equipment>
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  </Times>
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      <ProcessElementID>40:3791519971</ProcessElementID>
    </Link>
    <Link Type="material">
      <ProcessElementID>43:3791519971</ProcessElementID>
      <Info>4.0</Info>
      <Info2>Stück</Info2>
    </Link>
    <Link Type="material">
      <ProcessElementID>42:3791519971</ProcessElementID>
      <Info>1</Info>
      <Info2>Stück</Info2>
    </Link>
  </Children>
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</Coding>
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  </HeaderDescription>
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    <LinkType>PlainText</LinkType>
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  </LongText>
</Description>
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  </Userfield>
  <Userfield>
    <Name>Revision</Name>
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  </Userfield>
  <Userfield>
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  </Userfield>
</Userfields>
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<Times>
  <Human>
    <RootTimes/>
    <BasicTimes/>
    <ResultTimes/>
  </Human>
  <Equipment>

```

```

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        <BasicTimes/>
        <ResultTimes/>
    </Equipment>
    <Quantity>1.0</Quantity>
</Times>
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    <ProcessElementID>39:3791519971</ProcessElementID>
    <Coding>
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    </Coding>
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            <Language>de-DE</Language>
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        </LongText>
    </Description>
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            <Name>Werk</Name>
            <Value>Kiel</Value>
        </Userfield>
    </Userfields>
    <CostRates>
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            <Value>1300000.0</Value>
            <Currency>EUR</Currency>
            <Unit>Std</Unit>
        </CostRate>
        <CostRate Type="standard">

```

```

        <Value>1200000.0</Value>
        <Currency>EUR</Currency>
        <Unit>Std</Unit>
    </CostRate>
    <CostRate Type="budget">
        <Value>1300000.0</Value>
        <Currency>EUR</Currency>
        <Unit>Std</Unit>
    </CostRate>
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            <LinkType>PlainText</LinkType>
            <Language>de-DE</Language>
        </LongText>
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            <Name>Werk</Name>
            <Value>Erfurt</Value>
        </Userfield>
    </Userfields>
    <CostRates>
        <CostRate Type="current" Active="true">
            <Value>2500000.0</Value>

```

```

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        <Unit>Std</Unit>
    </CostRate>
    <CostRate Type="standard">
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        <Currency>EUR</Currency>
        <Unit>Std</Unit>
    </CostRate>
    <CostRate Type="budget">
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        <Unit>Std</Unit>
    </CostRate>
</CostRates>
</ProcessElement>
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    <ProcessElementID>42:3791519971</ProcessElementID>
    <Coding>
        <Code Identifier="true">m-1</Code>
    </Coding>
    <Description>
        <HeaderDescription>
            <DescriptionText>Material</DescriptionText>
            <Language>de-DE</Language>
        </HeaderDescription>
    </Description>
    <Userfields>
        <Userfield Identifier="true">
            <Name>Werk</Name>
            <Value>kiel</Value>
        </Userfield>
    </Userfields>
    <Costs>
        <Cost Type="manual">
            <Value>1.0</Value>
            <Currency>EUR</Currency>

```

```

        <Amount>3.0</Amount>
        <Unit>Stück</Unit>
    </Cost>
    <Cost Type="standard" Active="true">
        <Value>2.0</Value>
        <Currency>EUR</Currency>
        <Amount>2.0</Amount>
        <Unit>Stück</Unit>
    </Cost>
    <Cost Type="floating">
        <Value>3.0</Value>
        <Currency>EUR</Currency>
        <Amount>1.0</Amount>
        <Unit>Stück</Unit>
    </Cost>
</Costs>
</ProcessElement>
<ProcessElement Type="material">
    <ProcessElementID>43:3791519971</ProcessElementID>
    <Coding>
        <Code Identifier="true">m-2</Code>
    </Coding>
    <Description>
        <HeaderDescription>
            <DescriptionText>Material</DescriptionText>
            <Language>de-DE</Language>
        </HeaderDescription>
    </Description>
    <Userfields>
        <Userfield Identifier="true">
            <Name>Werk</Name>
            <Value>erfurt</Value>
        </Userfield>
    </Userfields>
    <Costs>
        <Cost Type="manual">

```

```

        <Value>11.0</Value>
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        <Amount>5.0</Amount>
        <Unit>Stück</Unit>
    </Cost>
    <Cost Type="standard" Active="true">
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        <Currency>EUR</Currency>
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        <Unit>Stück</Unit>
    </Cost>
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        <Currency>EUR</Currency>
        <Amount>5.0</Amount>
        <Unit>Stück</Unit>
    </Cost>
</Costs>
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    <time_unit Name="Sek" Factor="166.666667"/>
    <time_unit Name="Min" Factor="10000.0"/>
    <time_unit Name="Std" Factor="600000.0"/>
    <time_unit Name="HM" Factor="100.0"/>
    <time_unit Name="TM" Factor="10.0"/>
    <time_unit Name="HH" Factor="6000.0"/>
    <time_unit Name="TH" Factor="600.0"/>
    <time_unit Name="ZTH" Factor="60.0"/>
    <time_unit Name="TMU" Factor="6.0"/>
    <time_unit Name="IM" Factor="6000.0"/>
    <time_unit Name="H" Factor="600000.0"/>
    <time_unit Name="D" Factor="14400000.0"/>
</TimeUnitFactors>
<DocumentsFolder>

```

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</DocumentsFolder>
<Application>
    <ProductName>ORTIMplan</ProductName>
    <Version>8.6.4</Version>
    <DateOfExport>2021-04-10T12:14:04</DateOfExport>
</Application>
<Version>
    <Scheme>2.0</Scheme>
    <File>1.0.8</File>
    <Extensions>1.0</Extensions>
</Version>
</Contents>
```

Annex

E

Export 20

I

Identification 9, 36

Import 9, 36

X

XML

Example file 79

Identification 56