zenon manual
Project simulation

v.8.20

COPADATA

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2 Project simulation

With the help of the project simulation, you have the possibility of switching between simulation mode and hardware mode. You can simulate processes for test purposes in simulation mode. In this mode, switching actions are executed, recipes are sent, set values are defined etc. without these operations actually being sent to the process (such as to a PLC for example).

In addition, project configuration is carried out in the Runtime in the project simulation for the **Command Sequencer** and **Process Recorder** modules. Productive processes are therefore not affected.

You can execute the simulation on a client in the zenon network. The client is separated from the network by the simulation.

SIMULATION OPERATION

The following is applicable in simulation mode:

▸ All drivers are started in **driver simulation programmed** mode.
  Note: Each driver needs a simulation project.

▸ No data is saved externally:

  ▸ SQL evacuation is not executed.

  ▸ Entries for the IPA database are not created.

  ▸ Existing IPA entries cannot be deleted, edited or commented on.

▸ PFS shift data is not written to the database.
  The saving is obtained in hardware mode after the Runtime is started.

> 💡 **Information**
>
> Project simulation is not available for clients at the terminal server.

3 General

You can only switch to the project simulation if all projects in Runtime are either single user or client projects. The simulation mode "separates" the computer or the Runtime from the network. Furthermore all drivers are started in mode **Driver simulation programmed**. After this, no more drivers are connected to a process.

After switching to simulation mode, Runtime is restarted and acts as though all projects were configured as a single user project.

3.1 Switching to simulation mode

The following steps are carried out if you switch to simulation mode:

1. Call up the function to switch to simulation mode.

2. A check is made to ensure that all projects in simulation mode may be switched or are already in simulation mode.

3. The steps from create simulation mode (on page 6) are carried out.

4. For each project, an entry in the respective chronological event list is created, which notes the switch to simulation mode.

5. Runtime ends and starts the **zenProcess** with additional parametering.

6. **zenProcess** waits until Runtime has ended and then starts in simulation mode.

7. Runtime recognizes the command line parameter and starts all projects as single user projects.

8. The directory for Runtime data is now the simulation directory. The directory of Runtime data for hardware mode is not changed.

9. The projects are started. The drivers start in **driver simulation programmed** mode and are loaded with the variable image from the simulation directory. Local variables obtain their value from the local image. The variable image is applied on the programmed simulation. If, in the programmed driver simulation, the variable is changed immediately in the first cycle of a program, in the zenon Runtime, the variable does not have the original value as in the Runtime with hardware connection, but the value that was changed in the simulation.

10. The image for the internal drivers is loaded.

11. For each project, an entry in the respective chronological event list is created, which notes the switch to simulation mode.

12. The system driver variable obtains the value for the simulation mode.

These points are executed for all projects in Runtime unless you have explicitly stated otherwise.

3.2   Switching in hardware mode

The hardware mode is available each time Runtime is started, even if hardware mode was not switched into in simulation mode. The following steps are carried out:

1. Call up the function to switch to hardware mode.

2. The driver image (process driver and internal driver) and the image of zenon Logic simulation are saved.

3. Runtime ends and starts the **zenProcess** with additional parametering.

4. **zenProcess** waits until Runtime has ended and then starts with the start parameters for process connection.

5. Runtime starts and load the projects and Runtime data - from the server if necessary.

6. The drivers are initialized with the data from the local variables before simulation.

7. If necessary, the simulation image is transferred to the server. You can activate this with appropriate command line parametering.

3.3   Create simulation image

All files and variables that can be changed by Runtime are combined in the simulation image. If you wish to create a simulation image, the following steps are carried out:

1. All data points from all projects are requested in order to supply them with current data.

2. Data that is not required is deleted in the simulation image, according to the mode selected (**Exception: Initialize with existing simulation image**):

   a) **Initialize with process image and Runtime data (without archive data)**: The local simulation project is completely deleted.

   b) **Initialize with process image and Runtime data (with archive data)**: All archive files (*.ARX und *.ARS) are deleted in the local simulation directory.

3. Depending on the settings you have made for the **Switch on/off simulation** function, the corresponding project data, Runtime data and variable data is obtained from all projects. For AML, CEL and HDD, the current status is saved locally for a single user project and on the server for a server project (**Exception: Initialize with existing simulation image**).

4. The project files that can be changed in Runtime (for example, data for PFS, users etc.) will be copied to the corresponding file in the project directory (**exception: Initialize with existing simulation image**).

5. It waits until all data points have received a value. The progress bar displays the names of the data points. The display is limited to 60 characters and displays the attendant value. The waiting time is not limited.
   Hint: If, in the Activate/deactivate project simulation (on page 11) function, the option **Wait for all variables** is deactivated, only the time that is configured in the **Maximum waiting time** property is waited. With a **maximum waiting time** of *0*, the progress bar is not displayed.
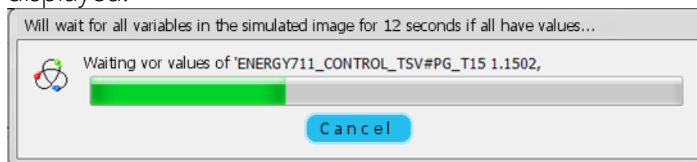
6. A variable image of all drivers is created and the internal drivers save their data. These images are copied in the computer directory. If you create the image in the simulation, it also contains the image of the **driver simulation programmed**.

7. New transfer of files changed as in point 3 to point 6.

8. The variable image is compared to the local simulation directory.

9. The variable image for local variables is saved.
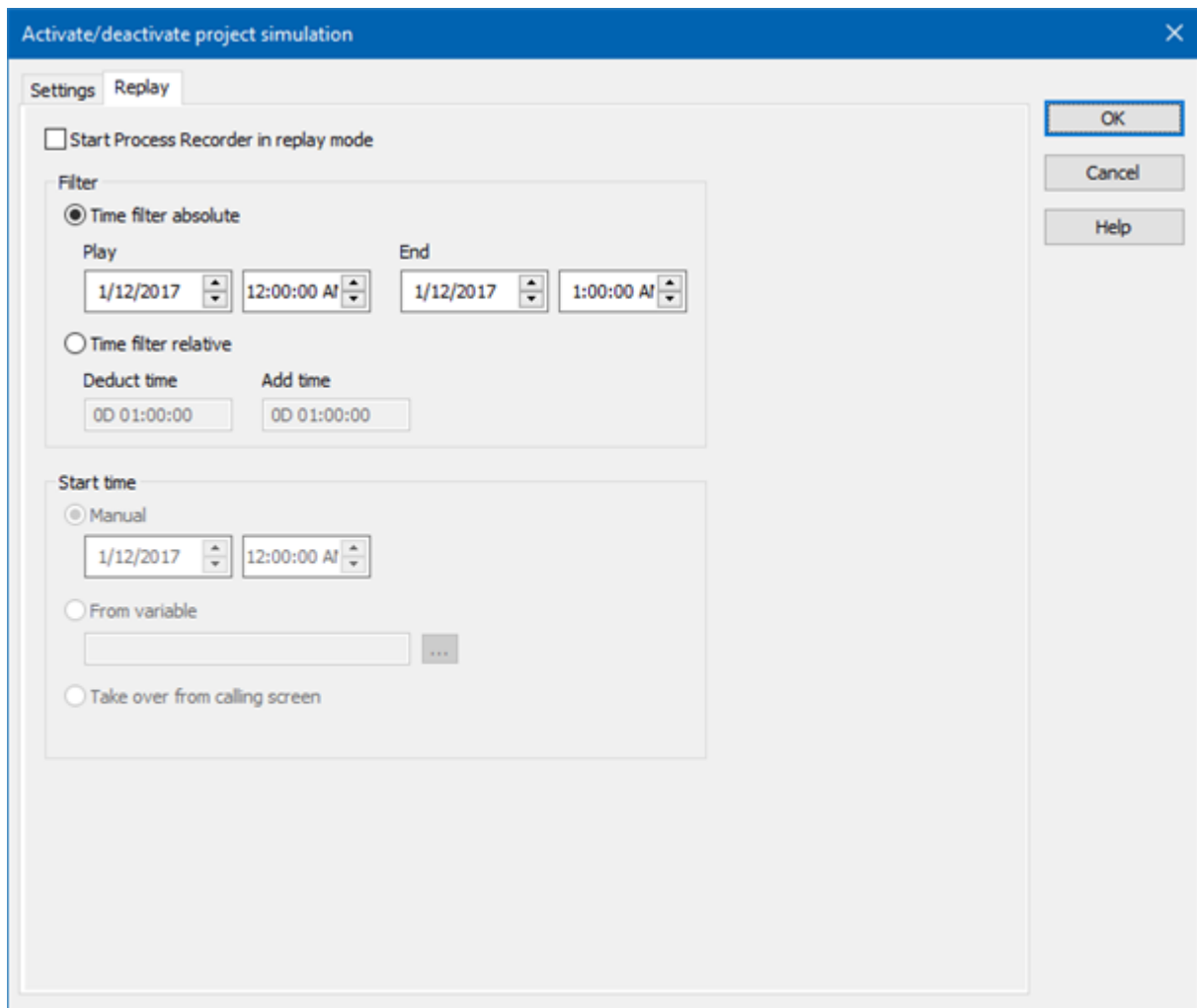   **Exception:** When creating a simulation image.

These points are executed for all projects in Runtime unless you have explicitly stated otherwise.

3.4 Replay

In the **Playback** tab, you configure parameters for the playback mode of the **Process Recorder** module. If this dialog is shown in Runtime, only the time requirements can be amended.

The settings of this tab are optional.

They only make sense if a switch from live mode direct to playback is to be made.

Parameter	Description
Start Process Recorder in replay mode	Checkbox to select the Runtime behavior after the function has been executed.
	‣ *Active*: Runtime starts in playback mode.
	‣ *Inactive*: Runtime is started in simulation mode.
	Default: *inactive*

FILTER

In this area you can configure the start time of playback in Runtime.

Parameter	Description
Time filter absolute	Start and end of the playback area are given manually.
	Entry of the start time of playback in input fields, separated according to start and end. Format:
	▸ Date: *DD.MM.YYYY* Default: *Current date*
	▸ Time: *hh:mm:ss* Default: *00:00:00*
	Default: *active*
	Note: not active if the filter type is **Time filter relative**.
Time filter relative	Start of playback range, relative to the start time. The start time is configured in the **Start time** area.
	Entry of the difference in input fields.
	▸ Deduct time: *d hh:mm:ss*.
	▸ Add time: *d hh:mm:ss*.
	Default: *inactive*
	Note: not active if the filter type is **Time filter absolute**.

START TIME

The options are then only available if **relative time filter** is activated as a filter. Otherwise the options are grayed out. Selection of the start time from an option field.

Parameter	Description
Manually	The start time of playback for the **Process Recorder** module is entered manually.
	Configuration of the start time with entry into both
	Default: *Date of day / 00:00:00*
From variable	The start time of playback for the **Process Recorder**

| Parameter	Description
	module is then taken from the value of the configured variable.
	Click on button **...** in order to open the dialog for selecting variables.
	The DINT data type is recommended for the linked variable.
	If the variable does not have a valid value or has the value 0, the function is not executed! A corresponding LOG entry is created in the process.
Take over from calling screen	The playback start time in Runtime in the **Process Recorder** module is taken from the calling screen.
	Note:
	▸ The **Activate/deactivate project simulation** function can be successfully called up from a zenon *Alarm Message List* or *Chronological Event List* screen.
	▸ For calling up, only one entry (alarm or event) from the list can be selected. The incoming time can be used as a start time for playback in the Process Recorder module.
	If the function cannot be successfully started using **Take over from calling screen** a corresponding LOG entry is written.

CLOSE DIALOG

Option	Description
OK	Applies all changes in all tabs and closes the dialog.
Cancel	Discards all changes in all tabs and closes the dialog.
Help	Opens online help.

3.5   Activate/deactivate project simulation function

You switch between simulation mode and hardware mode using the **Switch on/off simulation** function.

In addition, the zenon Runtime for the **Process recorder** module can also be started in playback mode.
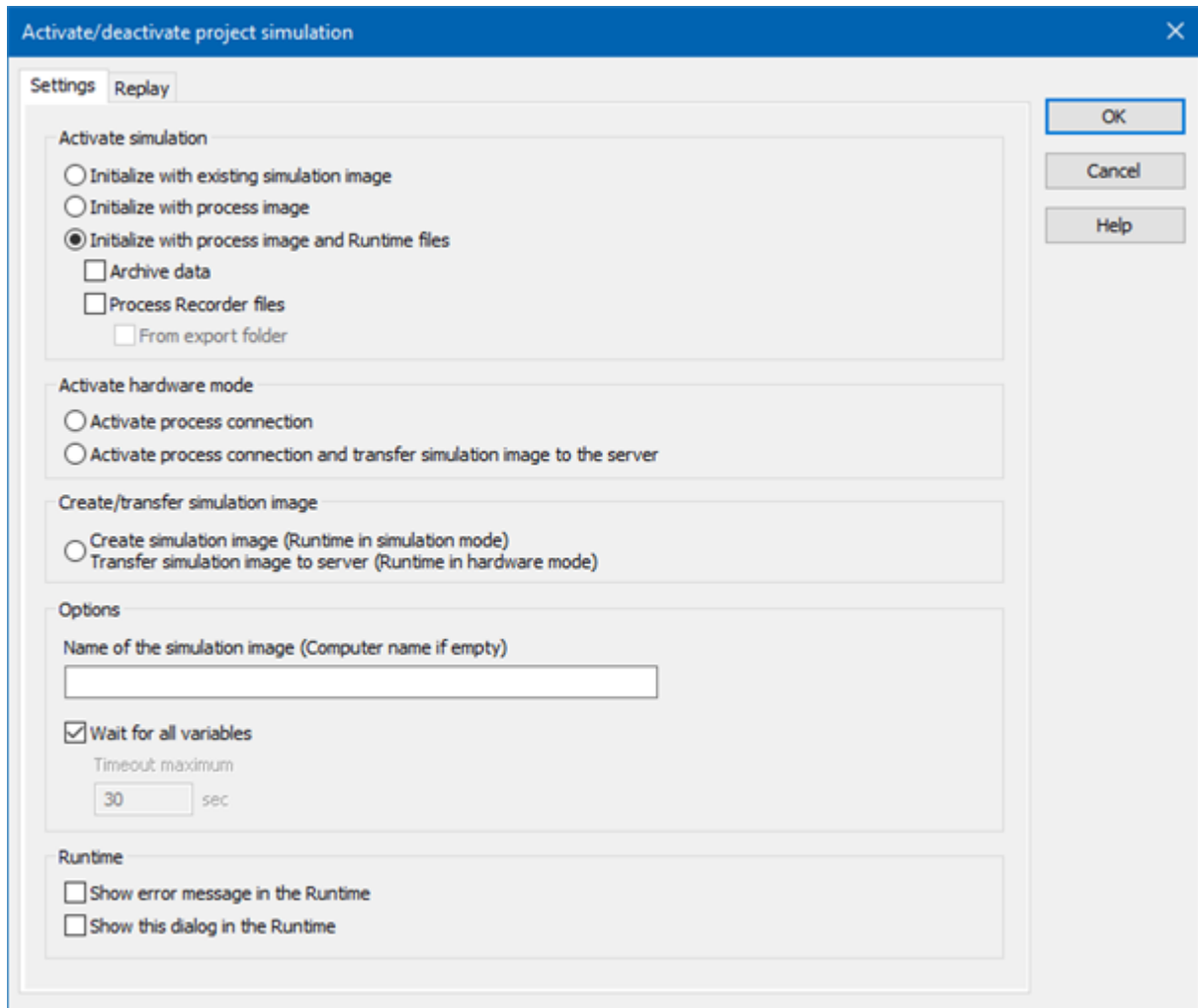
The two simulation modes can be started under different prerequisites.

💡   **Information**

If a project in Runtime is, currently in the process of reloading or is to be reloaded or a dialog is opened in VBA for example, the **Switch on/off simulation** function is not executed immediately. The function is carried out immediately as soon as there is no further reason for delay.

If the mode is not **Activate process connection** and the checkbox "**Wait for all variables**" has not been activated, the parameter text is supplemented with

{wait time xxx seconds}.

DIAGNOSIS VIEWER

If there are still variable(s) without value(s) after the timeout, a LOG entry for each connection is created for the Diagnosis Viewer. "*simulation image has variables with missing values!*" is written in the general text, followed by a list of all variables without a valid value.

3.5.1 Create an Activate/deactivate project simulation function

The **Activate/deactivate project simulation** function is for switching Runtime between simulation mode and hardware mode.

ENGINEERING

Steps to create the function:

1. Create a new function:

    In the toolbar or in the context menu of the Functions node, select **New function**.
    The dialog to select a function is opened.

2. Navigate to the node **Application**.

3. Select the **Activate/deactivate project simulation** function.
    The dialog to configure the project simulation is opened.

4. Configure the desired behavior of the project simulation.
    If you want to switch Runtime from simulation mode back to hardware mode, configure the **Activate hardware mode** area to do this.

5. Name the function in the **Name** property.

6. To call up this function in the Runtime, link this function to an existing button in a zenon screen.

3.5.2 Settings

You configure the start behavior of the project simulation in the **Settings** tab.
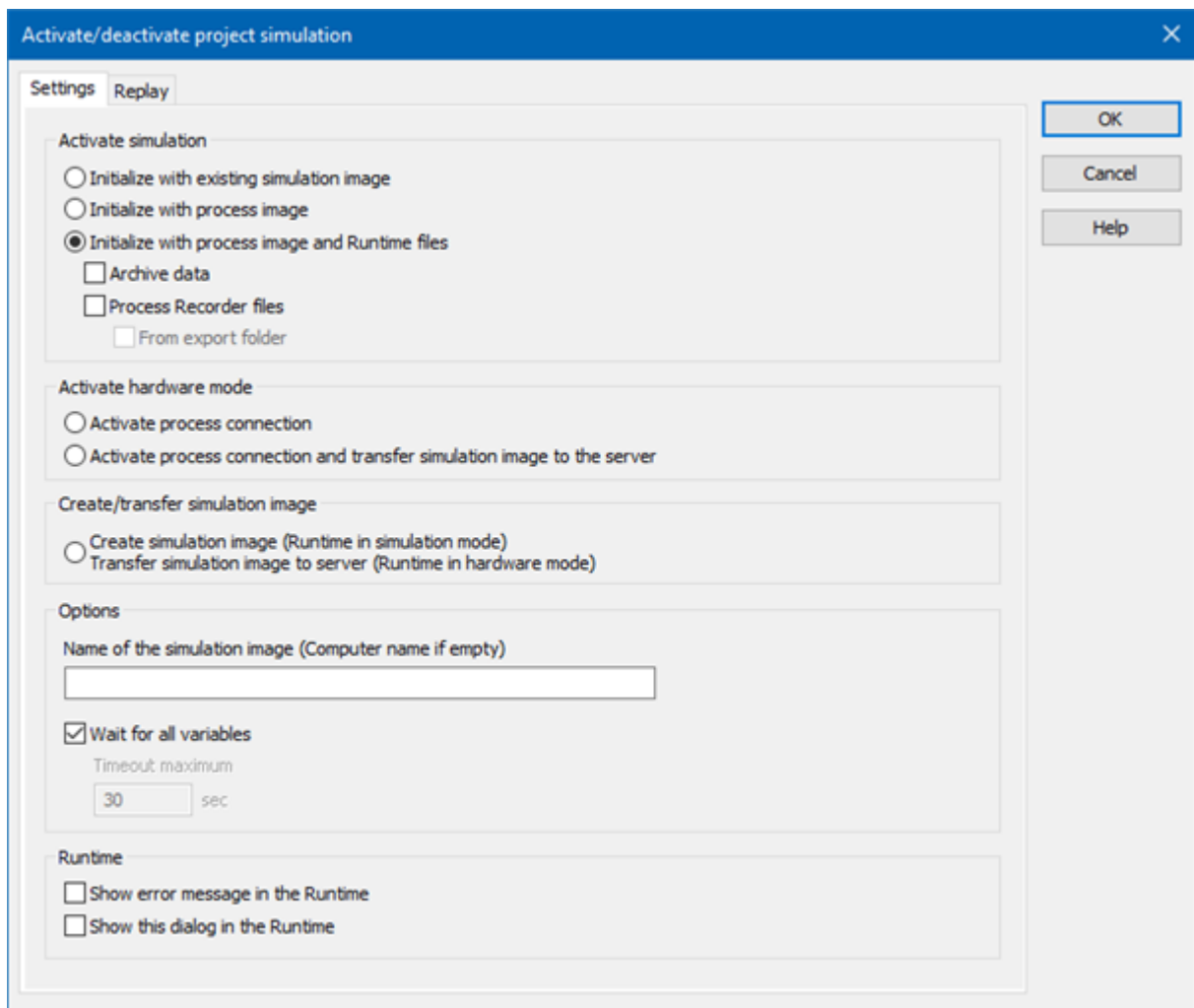
The two modes   (**simulation** or **hardware**) can be started under different prerequisites.

ACTIVATE THE SIMULATION:

- ▶ Initialize with existing simulation image (on page 16)
- ▶ Initialize with process image (on page 16)
- ▶ Initialize with process image and Runtime files (on page 16)
    - ▶ Archive files (on page 17)
    - ▶ Process Recorder files (on page 17)

HARDWARE MODE ACTIVE:

▶ Activate process connection (on page 18)

▶ Activate process connection and transfer simulation image to the server (on page 18)

CREATE/TRANSFER SIMULATION IMAGE

▶ Create simulation image (RT in simulation mode) Transfer simulation image to server (RT in hardware mode) (on page 19)

OPTIONS

Parameter	Description
Name of simulation image (computer name if empty)	Name of the file in which the simulation image is saved. Enter the desired name for the simulation image. **Note:** Only the name of the directory is saved. If you do not enter a name, the name of the computer is used.
Wait for all variables	Checkbox to select whether a (valid) value must be present for all variables before switching to Runtime. ▶ *Active*: Runtime is only switched to simulation mode if all variables have a valid value. Switching can be delayed as a result. ▶ *Inactive*: Runtime switches to simulation mode immediately. A switch also takes place if not all variables have a value or have an invalid value. This option is not recommended! Not active if **Activate process connection** is *active* (activate hardware mode) Default: *active*
Maximum waiting time	Maximum waiting time in seconds that is waited before switching to valid values of the variables. As a result of this, switching to simulation mode is then also possible if not all variables have a value or are invalid. If this timeout is activated, the waiting time is displayed in

Parameter	Description
	Runtime in the title of the status dialog. The status display shows the progress of time. Missing variables are always shown. If the time has expired, the simulation is switched to despite missing variables.
	If a maximum **maximum waiting time** of 0 seconds is set, the progress dialog is not displayed.
	Default: *30 seconds* Input range: *0 - 3600*
	Note: only active if **Wait for all variables** is not active.
Show error message in the Runtime	Checkbox to issue an error message in the event of a function being executed incorrectly: ▶ *active*: A corresponding error message is shown in the Runtime if a function is executed incorrectly. ▶ *Inactive*: No error message in the Runtime if a function is executed incorrectly. Default: *inactive*
Show dialog in the Runtime	Checkbox to select whether this dialog is shown in Runtime: ▶ *active*: This dialog is called up during operation in the Runtime on the current computer. In the network, this dialog is called up on the computer that executes the function. As a result, changes to existing parameter settings of an zenon Editor configuration are possible during execution in zenon Runtime. ▶ *Inactive*: This dialog is not shown in the Runtime during operation. The function or the command is immediately executed with the project configuration created in the Editor. Default: *inactive* **Note:** settings for mode selection are locked in Runtime. If you have selected **Activate process connection**, entering a name for the process screen is also locked.

3.5.2.1 Initialize with existing simulation image

An existing simulation screen is transferred from the server to the client here. There is no transfer with a standalone project. The respective status of the local variables is saved and Runtime is restarted on the basis of the simulation image. Runtime is also restarted if it is already in simulation mode. However if this was the case, no driver image of the local variables is saved for the start in hardware mode.

> ### 🔆 Information
>
> Due to the possibility to create a simulation image (create with the help of a simulation image), you can always start a simulation from precisely the right place and under the same conditions. Not only are the variable values saved in the image, the respective status of the **driver simulation programmed** is also saved. Because the image from the server (if available) is transferred, you also have the possibility of working on several clients with the same image. The image is copied from the server when Runtime is started. Only the changes are transferred in the process.

3.5.2.2 Initialize with process image

In doing so, an image of all local variables is created and the project data that can be modified in Runtime is saved. After this, Runtime is restarted in simulation mode.

Is only executed if the project is not already in simulation mode.

> ### 🔆 Information
>
> All existing data in the image is deleted. Only the current variable values are obtained for initialization.

3.5.2.3 Initialize with process image and Runtime files

Here, an image of all local variables and all files from the computer folder (**Exception:** archive data) is created and the project data modified in Runtime is saved. After this, Runtime is restarted in simulation mode.

Note:

  ▶ All existing data in the image is deleted.
    Only the current variable values are obtained for initialization.

▶ All historical alarms and CEL files are copied over.
This procedure can take some time depending on the extent of the files involved.

3.5.2.4 Archive files - Initialize with process image and Runtime file

In doing so, an image of all local variables and all files from the computer directory is created and the project data that can be modified in Runtime is saved. Any archive data that is present locally in the image is not deleted.

After this, Runtime is restarted in simulation mode.

Note:

▶ All existing data in the image is deleted.
Only the current variable values are obtained for initialization.

▶ All historical alarms and CEL files are copied over.
This procedure can take some time depending on the extent of the files involved.

▶ The old archives remain.
Archiving starts filling the missing archives when Runtime is first started if you have configured it to do so. This procedure can take some time depending on the size of the files involved.
Note: You undertake the project configuration of this archive filling in the **Create alternate archives** property.

3.5.2.5 Process Recorder data - initialize with process image and Runtime files

Starts the project simulation and switches to playback mode of the **Process Recorder** module.

FROM EXPORT FOLDER

With the additional option **From export folder** you can determine from where the process recorder will load its playback data.

▶ *active:*
When shifting to playback mode, the recorded data is loaded directly from the configured export path and not requested from the server.
If this is not possible an attempt will be made to receive the data from the server. This is the same behavior like when the checkbox is deactivated.

▶ *inactive:*
When shifting to playback mode, the recorded data is taken over by the server.
If the evacuation is active on the server, the evacuated data is read from the server and forwarded to the client.

> 💡 **Information**
>
> You can find further information in the Process Recorder manual in the Activate/deactivate project simulation chapter.

3.5.2.6 Activate process connection

Here you switch from simulation mode to hardware mode. The image of the local variables are used for this.

When ending simulation mode, the simulation image is saved so that the last status of the simulation mode can be restored if required. If there is a server connection, the simulation image is transfered to the server and saved there.

> ⚠️**Attention**
>
> If there is a transfer from several clients for the same simulation image at the same time, it is not guaranteed that the saved simulation image will work.

3.5.2.7 Activate process connection and transfer simulation image to the server

With the help of the project simulation, you have the possibility of switching between simulation mode and hardware mode. You can simulate processes for test purposes in simulation mode. In this mode, switching actions are executed, recipes are sent, set values are defined etc. without these operations actually being sent to the process (such as to a PLC for example).

In addition, project configuration is carried out in the Runtime in the project simulation for the **Command Sequencer** and **Process Recorder** modules. Productive processes are therefore not affected.

You can execute the simulation on a client in the zenon network. The client is separated from the network by the simulation.

SIMULATION OPERATION

The following is applicable in simulation mode:

▸ All drivers are started in **driver simulation programmed** mode.
   Note: Each driver needs a simulation project.

▸ No data is saved externally:

> ▶ SQL evacuation is not executed.
>
> ▶ Entries for the IPA database are not created.
>
> ▶ Existing IPA entries cannot be deleted, edited or commented on.

▶ PFS shift data is not written to the database.
The saving is obtained in hardware mode after the Runtime is started.

> 💡 **Information**
>
> Project simulation is not available for clients at the terminal server.

In addition, the simulation image is transferred to the server and is therefore also available to other clients.

3.5.2.8 Create simulation image (RT in simulation mode) Transfer simulation image to server (RT in hardware mode)

Here you create a simulation image and save it locally under the given name if you are in simulation mode.

The simulation image is transferred to the server in hardware mode if present and saved there under the given name.

> 💡 **Information**
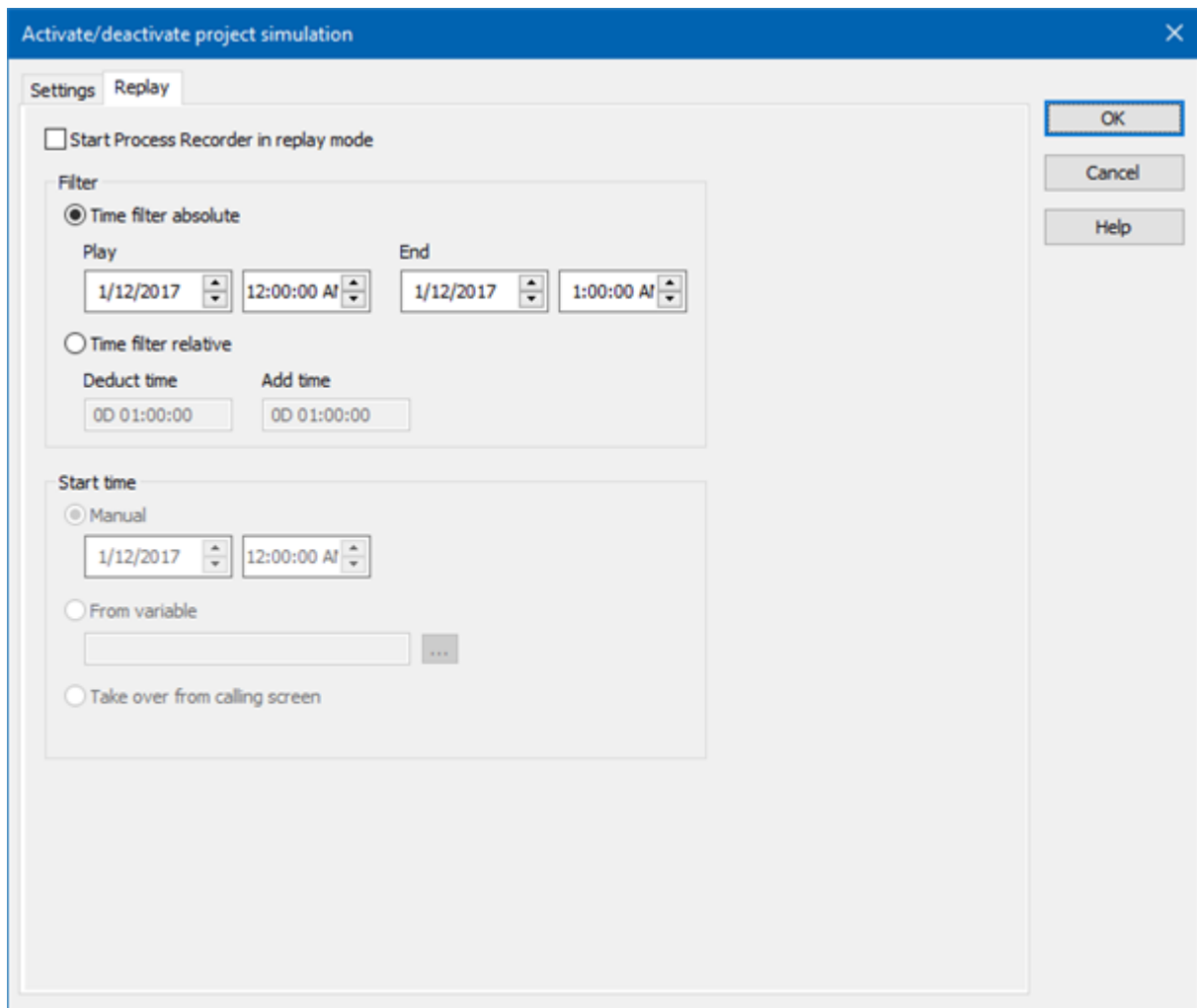>
> Here you can create an image of the current statuses and save these. You can then continue at this point with exactly the same requirements.

3.5.3 Replay

In the **Playback** tab, you configure parameters for the playback mode of the **Process Recorder** module. If this dialog is shown in Runtime, only the time requirements can be amended.

The settings of this tab are optional.

They only make sense if a switch from live mode direct to playback is to be made.

Parameter	Description
Start Process Recorder in replay mode	Checkbox to select the Runtime behavior after the function has been executed.
	▶ *Active*: Runtime starts in playback mode.
	▶ *Inactive*: Runtime is started in simulation mode.
	Default: *inactive*

FILTER

In this area you can configure the start time of playback in Runtime.

Parameter	Description
Time filter absolute	Start and end of the playback area are given manually.
	Entry of the start time of playback in input fields, separated according to start and end. Format:
	▸ Date: *DD.MM.YYYY* Default: *Current date*
	▸ Time: *hh:mm:ss* Default: *00:00:00*
	Default: *active*
	Note: not active if the filter type is **Time filter relative**.
Time filter relative	Start of playback range, relative to the start time. The start time is configured in the **Start time** area.
	Entry of the difference in input fields.
	▸ Deduct time: *d hh:mm:ss*.
	▸ Add time: *d hh:mm:ss*.
	Default: *inactive*
	Note: not active if the filter type is **Time filter absolute**.

START TIME

The options are then only available if **relative time filter** is activated as a filter. Otherwise the options are grayed out. Selection of the start time from an option field.

Parameter	Description
Manually	The start time of playback for the **Process Recorder** module is entered manually.
	Configuration of the start time with entry into both
	Default: *Date of day / 00:00:00*
From variable	The start time of playback for the **Process Recorder**

Parameter	Description
	module is then taken from the value of the configured variable.

Click on button **...** in order to open the dialog for selecting variables.

The DINT data type is recommended for the linked variable.

If the variable does not have a valid value or has the value 0, the function is not executed! A corresponding LOG entry is created in the process. |
| **Take over from calling screen** | The playback start time in Runtime in the **Process Recorder** module is taken from the calling screen.

Note:

▸ The **Activate/deactivate project simulation** function can be successfully called up from a zenon *Alarm Message List* or *Chronological Event List* screen.

▸ For calling up, only one entry (alarm or event) from the list can be selected. The incoming time can be used as a start time for playback in the Process Recorder module.

If the function cannot be successfully started using **Take over from calling screen** a corresponding LOG entry is written. |

CLOSE DIALOG

Option	Description
OK	Applies all changes in all tabs and closes the dialog.
Cancel	Discards all changes in all tabs and closes the dialog.
Help	Opens online help.

4 System driver variable - Runtime status (simulation)

The system driver variable *[System information] Runtime status (simulation)* denotes the current status of Runtime. You can find the variable under the **system information** theme.
The following statuses are present:

Status	Description
0	Process connection - Runtime is currently in hardware mode.
1	Switch to process connection in simulation.
2	Change to simulation with process connection.
3	In simulation - Runtime is currently in simulation mode.
4	In simulation: Changes the simulation image.
5	In playback mode of the **Process Recorder** module.

5 Scripts

The following scripts are available for simulation mode; they are executed automatically:

Script	Description
AUTOSTART_SIMUL	If Runtime is started in simulation mode, the script with the name **AUTOSTART_SIMUL** is executed automatically if it is available. **Note:** Also applies for playback mode of the **Process Recorder** module.
AUTOEND_SIMUL	If Runtime is ended in simulation mode, the script with the name **AUTOEND_SIMUL** is executed automatically if it is available. **Note:** Also applies for playback mode of the **Process Recorder** module.

6 Features specific to simulation mode

The differences between hardware mode and simulation mode are as follows:

▸ The backup directory is not used

▸ Archives are not evacuated

▸ Archives are only stored in zenon format

▸ The **Export archive function** cannot be executed

▸ SQL data evacuation is deactivated for various modules

▸ Message Control is deactivated

▸ zenon Logic Runtimes are not started

▸ No data is exchanged with zenon Logic Runtime by means of zenon drivers

▸ No simulation at the zenon web client and under Windows CE.

▸ Variables from the standby server remain without value

▸ The driver is not switched between hardware and simulation

▸ A script may not be executed fully if a function that requires the Runtime to be restarted is executed in the script.

▸ The simulation program that is contained in the **driver simulation programmed** is also used for the project simulation.

▸ In the simulation mode the function **Save remanent data** does not save values for the following drivers:

  ▸ Internal driver

  ▸ Mathematics driver

  ▸ System driver

7 Online language translation

Define the texts for language translation for all projects in the start project. You define the function in the start project in the same way. This ensures that you have online text in the correct project. Any possible error messages are also entered into the corresponding project.

8 Simulation image

to ensure that these are recreated, the values of the driver variables must be saved in the following files:

File name	Description
Drv'Treiber-ID'.sim	In these files, all values of all data points are saved in the respective driver. The files are necessary to recreate all current values in the simulation after Runtime is restarted. If the files were created during simulation mode, an image of the programmable simulation is also contained.
Drv'Treiber-ID'.sim	In this file, the values of the local variables are saved for the respective drivers. If Runtime starts with process coupling and these files were found, the local variables obtain the values from the files. The files are deleted after this. This also happens if Runtime is started manually.
Drv'Treiber-ID'.lssim	saves an image of the local variables that is incorporated into the simulation image.

9 Files in the simulation image

If an process image is created for the simulation, files and directories are transferred to the image from various sources. During active simulation, this data is then accessed and no longer on the originals, such as those that are on the computer directory for instance.

The following files are copied to the process image's system directory from the project's system directory:

- ▶ project.mdb
- ▶ rezepturen.cmp
- ▶ rezepturenrt.cmp
- ▶ fpm.cmp
- ▶ password.cmp
- ▶ passwordrt.cmp

and the following directories:

- ▶ system\rgm_fb
- ▶ system\rt_profiles
- ▶ system\reports

All files up to those with the ending *.lsim are taken from the computer directory. For the **simulation without image** mode, the files *.sim, internvar.bin, sy_ma32.bin and uservar.bin are transferred. For

the simulation without archive mode, all files up to those with the ending *.arx and *.ars are transferred.

10 Runtime Command Line parameters

Runtime recognizes whether it should be started in simulation mode or in hardware mode. If no parameter has been given, Runtime starts in hardware mode. These parameters can also be given for a manual start.

COMMAND LINE PARAMETERS

ZENPROCESS

The **zenProcess.exe** application is used to restart zenon Runtime when switching between the two modes - *simulation mode* and *hardware mode*.

SYNTAX

zenProcess.exe is called up with the following syntax:

zenprocess.exe parameter1 parameter2 parameter3

▶ Parameter 1: **SIM** or empty:

▶ Parameter 2: **RESTART=**

▶ Parameter 3: **RTPAR=**

PARAMETER

Parameter	Description
SIM	Display in dialog title. If this parameter is: ▶ set: Dialog title shows "**Switch in simulation mode**". ▶ not set: Dialog title shows "**Switch in online mode**".
RESTART=	Runtime restart. The path to **zenrt32.exe** must be provided. **Procedure:** The parameter only has an effect after restarting once Runtime has ended. Runtime itself is not ended by this parameter; to do this, a function must be called up in Runtime. There is a wait until all processes

Parameter	Description
	have been ended normally. The number and the names of a maximum of 5 ongoing processes, the end of which is being waited for, are displayed this long. Runtime is restarted after this. **Example:** **RESTART=**"*d:\zversionen\720_inst\zenrt32.exe*"
RTPAR=	Restart in simulation mode or in hardware mode. ▶ *SIMUL*: Runtime is started in simulation mode with the given image name. The computer name is used if no image name is given. Syntax: **SIMUL=**"*name of the simulation image*" ▶ *REALMODE*: Runtime is started in hardware mode with the given image name. There is no transfer in no image name is given. Syntax: **REALMODE=**"*Abbildname*" **Example:** **RTPAR=**"*SIMUL=TEST.SIM*"
CANCEL	You cancel the switching process with this parameter. Runtime is ended but not restarted.

EXAMPLE

Start Runtime in simulation modus with an existing image:

zenprocess.exe SIM RESTART="*d:\zversionen\720_inst\zenrt32.exe*" **RTPAR=**"*SIMUL=TEST.SIM*"

11 Limitations

The following restrictions are known:

▶ Module Batch Control is not supported in the simulation.