zenon manual

Project conversion

v.8.20
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1 Welcome to COPA-DATA help

ZENON VIDEO TUTORIALS

You can find practical examples for project configuration with zenon in our YouTube channel (https://www.copadata.com/tutorial_menu). The tutorials are grouped according to topics and give an initial insight into working with different zenon modules. All tutorials are available in English.

GENERAL HELP

If you cannot find any information you require in this help chapter or can think of anything that you would like added, please send an email to documentation@copadata.com.

PROJECT SUPPORT

You can receive support for any real project you may have from our customer service team, which you can contact via email at support@copadata.com.

LICENSES AND MODULES

If you find that you need other modules or licenses, our staff will be happy to help you. Email sales@copadata.com.

2 Project conversion

When using new version of zenon projects which were created with earlier versions must be converted to the new version. If certain properties or changes must be considered at converting, they are described in the hints for converting in this manual.

CONVERSION DURING UPDATE AND DOWNGRADE

If you want to update zenon to a higher version, projects are converted automatically to the higher version when opened in the new version. From this time you cannot edit the project with earlier versions of the Editor. However a project backup is created automatically of the converted project.
in the original version.

**Attention**: If there is already a project backup with the same name, this is deleted without requesting confirmation.

Converting a project to an earlier version which was created with a older version (downgrade) is not possible.

**BACKWARD COMPATIBILITY**

As of version 6.21 projects are downward compatible for Runtime. You can work in an Editor with a higher version number. This Runtime backwards compatibility is particularly suited for use of mixed versions such as: A project which was engineered with version 6.50 can be used in a Runtime with version 6.22.

**Attention**

If, in a project with a later Editor version, properties are engineered that are not available in the earlier version, it can lead to undesired results in Runtime.

### 3 Recommended procedure for converting Runtime files

When converting the project make sure that the Runtime changeable files are also converted correctly.

In order to convert the Runtime changeable files:

1. Import the files from the Runtime to the original version of the Editor.
2. Carry out the update to the new version.
3. Navigate to the General section in project properties.
4. Click on the Runtime changeable data property.
5. The dialog for the settings of the Runtime changeable files is opened.

6. Deactivate all check boxes in column **Do not generate and transfer**
7. Compile the project (Create all Runtime files)
8. Change the check box in the Runtime changeable data property back to the status before the conversion

4 Conversion for multi-user projects with different SQL database versions

If multi-user projects are converted to a zenon version with a more recent version of the SQL server, the following process must be noted.

**Attention:** Multi-user projects can only be converted if no elements are checked out. This means that all engineers have to check in their changes first. If for some reason this is not possible, a project backup of the project must first be made on the SQL Server project and this must be restored immediately. This resets all the Processing information.

⚠️ **Attention**

All changes in the local project versions are lost.

The conversion can only be done on the PC, on which the central project database resides. If this is on a computer in which no Editor is installed (standalone database server), the Editor of the older version must be installed on it first. Only after that can the conversion be done on this PC.

**INSTRUCTIONS ON THE UPDATE TO THE NEW VERSION WITH A NEW DATABASE**

With this procedure, we assume that the old database is no longer used. In doing so:

- Files that can be amended in Runtime are taken into account
- Multi-user clients are removed before the project is backed up

**TASKS IN PREVIOUS ZENON VERSION**

The following steps are carried out on all client computers for multi-user projects:

1. On all clients, for all objects with the status Check out, either Check in or Undo check out. No object can have the status Check out.
2. Delete the respective local projects in the Editor.

The following steps are carried out on the computer with the database for multi-user projects:
1. Optional: Import all changes that have been made in Runtime:
   a) For all modules: Set the status **Allow changes**
   a) Navigate to the project properties **General -> Runtime changeable data** and set all
      check boxes for **Do not decompile to inactive**.
   b) Read all files from Runtime back into the Editor via Remote Transport.
   c) Set the check boxes in **Runtime changeable data** back to the desired status.
   d) For all modules: Set the status **Accept changes**.
   e) Repeat these steps for all projects.
2. in the context menu of the workspace, select the **Add existing project** command.
3. Navigate to the project, expand the subnode **Connected local project copies**.
4. Carry out the following step for all listed computers, with the exception of the computer with
   the role of database server:
   ▶ Right click on the connected computer and select **Disconnect connection**.
5. Repeat steps 2 and 4 for all projects.
6. Create a backup of the workspace and a project backup for each project.

**TASKS IN NEW ZENON VERSION**

The following steps are carried out on the computer with the database for multi-user projects:
1. Install the new Editor
2. Restart the computer
   Note: From this moment, the old database is no longer used.
3. Read back the workspace backup:
   a) Select the same folder as that in which the workspace of the version was located.
   b) Select **Yes** to overwrite the existing workspace.
   c) Select **Yes** to convert all projects.
4. Ensure that port 1433 is not blocked by a firewall or add the SQL Browser to the exceptions
   for the firewall rules.
5. Ensure that the new SQL server allows remote connections.
   To do this, connect to SQL Server Management Studio and check the properties in the
   **Connections** section.

The following steps are carried out on all client computers for multi-user projects:
1. Install the new Editor
2. Restart the computer
3. Open the existing workspace.
   In the process, error messages are displayed in the output window.
4. In the context menu of the workspace, select the Add existing project command
5. Enter the name of the computer with the database for multi-user projects.
7. Select the project that is to be added.
   a) Start with the global project.
   b) Then add, if applicable, the integration project.
   c) Then add all other desired projects.

The projects should now be in the workspace and synchronized.

5 Converting from version 5.50 to 6.01

⚠️ Attention

Not translated keywords in the language table are deleted during the conversion process.

5.1 Things to be done in version 5.50

Before the converting can be carried out, the data must be read back to the engineering computer. After that the converting may be started.

In the properties window of the project under 'General' you can find the dialog 'Runtime changeable data'. Here you determine which data should be changed. For more information refer to chapter RT changeable data.

5.1.1 Function names

You have to care, that the functions names are unique. As no function names have to be defined in version 5.50, zenon does not check the uniqueness. This is not necessary for version 5.50. In version 6.x however the functions are identified by their names.
5.1.2 Projects

Before a 5.50 project can be opened in Editor version 6, it has to be converted. (File - Insert project 5.50...). The old project stays unaffected and a copy of it is created in the SQL server. Miscellaneous external files and directories are not automatically added to the new Editor and Runtime directory structure. These files/directories have to be adapted or inserted into the project manually (in the project tree in the folder Files)

This is true for e.g.: user-defined subdirectories in the project directory, extended list directories, databases, export folders, etc....

5.1.3 Runtime changeable project data (users, recipes, etc.)

Have to be read back to the Editor before the conversion, so that no changes done in the Runtime get lost.

5.1.4 Data

The files created by the Runtime such as AML files, CEL files, HD data, bin files etc. are compatible. These have to be copied to the corresponding Runtime directories of version 6 by hand. The data should be converted the first time Runtime is started. This may take some time for large amounts of data.

5.1.5 Profiles

In version 5.50 the profiles for alarming, Extended Trend, etc. are saved in the file with the name of the project and the extension zrt. Example: For the project Project1 this file is named Project1.zrt. This file has to be renamed to project.zrt after having converted the project. Then the file has to be moved to the same folder in the RT path, where also the project.ini is saved.

5.1.6 3S Arti driver (since SP2)

The name of the variable allocation file for the 3S Arti driver has changed. So the file has to be renamed, before new variables can be browsed from the PLC. You will find more information in the driver documentation.

5.2 Things to be done in version 6.01

zenon version 6.01 must be installed.
5.2.1 Licensing

The license numbers of version 6.x are not compatible with the license numbers of previous versions. For updates new license numbers have to be ordered and entered in the Editor. Licenses for all versions up to 5.x stay untouched, as the new serial numbers are stored in new entries in the `zenon6.ini` instead of the `zenon.ini`.

5.2.2 User administration / password system

In the user administration of version 6.x there is the new property Administrator. Now only administrators are allowed to edit user data in the Runtime. As this property did not exist in older versions, as a default it is inactive for the existing users. If users still should be able to edit user data in the Runtime, this has to be defined accordingly in version 6.x.

5.2.3 Configuration settings

Additionally all properties of the projects as well as all settings under Options/Settings have to be checked.

As the `zenon.ini` has been replaced by the `zenon6.ini`, probable manual changes (e.g. the entry `SPEICHER=` for archiving) have to be copied from the `zenon.ini` to the `zenon6.ini` manually.

5.2.4 the Simulator driver

As also the current settings for the simulation driver are stored in the `zenon.ini`, they now are taken from the `zenon6.ini`. After the new installation there are the default settings. So after the installation they have to be edited according to the old `zenon.ini`.

After creating the Runtime files the Runtime can be started.

5.2.5 Screen functions

In version 5.50 and lower, only scripts (but not functions) could be linked to screens. These scripts which were executed automatically when a screen was closed or opened.

In version 6.01 and above, only functions can be linked screens, so all links to scripts are lost. The screens have to be relinked with the desired functions.
6 Converting from version 5.50 to S7 dBase export

When converting a 5.50 project, a converting error may occur. Typical error message:

"Error driver 'SIMUL32 - SIMULATORDRIVER' variable 'Sub_VISU_E1_IGEF' type for primitive object '34' data type 8 not defined.'"

**REASON:**

The variables were
- created on a S7 driver
- exported as dBase
- and then imported on the simulator driver

**SOLUTION**

- Export variables with zenon 5.50 as dBase
- in the dBase file, check Driver object type and Data type and adapt the driver correspondingly

7 Conversion from version 6.01 to 6.20

Projects of the version 6.01 have to be converted when loaded in the current Editor for the first time. A backup of the project is automatically created in the directory \SQL\Backup.

⚠️ **Attention**

Not translated keywords in the language table are deleted during the conversion process.

7.1 Archive files

From version 6.20 SP0, archive files are stored in ARX format; before that, the ARV format was used. If a project is converted, a check is made when Runtime is started to see whether there are archive files in ARV format in the Runtime folder. After confirmation of the conversion, the files are converted into ARX format. This conversion is done for all projects, before the projects start. The ARV files are deleted during the conversion. For evacuation to SQL (on page 16), further columns must be added to the table.
7.2 Evacuating archives to SQL database

The database table `<Project name>_<shortcut>` gained two columns.

- **GUID**: char 36. Contains the project GUID of the variable from another project or is ZERO if in the own project.
- **STRVALUE**: varchar. Contains the archived string values. For numerical variables this field has the value ZERO.
  The length of the varchar datafield depends on the longest string variable to be archived.
  The length of the string variable is defined in the variable properties.

The database table `<project name>_VARIABLES` has one more column.

- **GUID**: char 36. Contains the project GUID of the variable from another project or is ZERO if in the own project.

These new columns either have to be added to the SQL database by hand, or they are added from the Editor. In the Editor you have to switch to the property page *Save* in all concerned archives. There you open the connection string to the database and confirm the dialog. On closing the dialog the changes in the database are done.

⚠️ **Attention**

If these changes are not done, no archive data will be evacuated to the SQL database.

8 Converting from version 5.50 to version > 6.22SP1

When converting a project from version 5.50 to a later version, note the following:

**GENERAL**

- **Writing the set value and combined element:**
  After conversion, the *Write set value* property is activated for all combined elements. Because this property does not exist in version 5.50, the conversion must be manually deactivated again for each combined element after conversion.

- **Copying projects:**
  When copying projects in version 5.50, the same GUID are in the *project.ini* file. The first project here would be overwritten in the conversion.
Converting from version x to 6.21

Solution: Delete the INI entry before conversion. This ensures that another GUID number is not issued during conversion.

- **Switch graphics files to invisible:**
  If a graphics file in a combined element is to be invisible in a certain status, no graphics file was selected in version 5.50. After conversion, a rectangle is displayed in the combined element, because the Transparent property was not activated.

  Solution: Activate the Transparent property for the graphics file. This enables you to have the same functionality.

- **Names for screens:**
  Allowed are: numbers, letters and the following special characters: $, -, @, _, , ~, !, (). Umlauts and all other special characters in screen names must be removed before conversion.

**RECIPE GROUPS AND WINDOWS CE**

When converting a project of version 5.50 with active property Windows CE project to a version higher than 6.22SP1, recipe groups are not converted to the higher version.

**Background:** With active property Windows CE project the saving type is set to binary before the RGM database is converted. Thus no new recipe groups can be created in the new version.

**Solution:** Deactivate property Windows CE project before the conversion.

For this you can either:

- open the project in the Editor of version 5.50 and deactivate the property
- change the respective entry in the INI file of the project. To do this:
  - open the projectname.ini of the project
  - go to area [RT]
  - set entry WIN_CE=0

9 Converting from version x to 6.21

9.1 zenon web client CAB files are no longer available

The automatic installation of the zenon web clients via CAB file is no longer possible due to security restrictions by Windows 7.
10 Converting from version x to 6.22

10.1 Function authorizations for Acknowledging Alarms

Since zenon version 6.22, the existing function authorizations for acknowledging alarms in the project properties are replaced by three new authorizations. The old function authorization 'Acknowledge alarms' no longer exists.

When converting from existing projects, the new function authorizations are configured according to the old single authorization. For example, if the authorization group 15 used to be necessary for the function authorization 'Acknowledge alarms', it is now also necessary for the three new functions.

For the Editor backward compatibility it may be necessary to transfer the authorization group from the three new function authorizations to the old function. The highest authorization group will be used for that. This means, if the function 'Acknowledge alarm via alarm status line' has authorization group 5, 'Acknowledge alarm via screens' has authorization group 2 and 'Acknowledge alarm via function' has authorization group 12, the function 'Acknowledge alarm' of older versions will receive the authorization group 12.

Information

Notice regarding online compatibility in the Runtime: If you start a project older than zenon version 6.22 with the current version, the system will offer you the three new functions for configuration. However, only the highest authorization group will be used for processing, according to the mechanism described above. The old project will not be able to use the new functionality.

10.2 Report Generator function fixed

The \texttt{fixed()} function also has the argument \texttt{fixed()} in versions up to 5.50. The argument is optional and controls the display of thousand separators.

This argument has no longer an effect on the display as thousands separators are no longer used in zenon.
10.3 VBA - Direct variable access via request is no longer possible

VBA gives our customers a powerful tool for project design. Practical experience has shown that access on variables via VBA often leads to mix-ups in the use of the methods “Advise” via an online container and “Request” with direct call. Too many requests can slow down communication significantly.

We have therefore decided to meet the demands of our customers by closing this error source. From now on, variables can only be addressed via “Advise” in VBA.

For existing projects, this leads to certain incompatibilities. You will be affected if you address variables via “Request” in VBA. In this case you will have to change these projects. After making these adjustments you will profit from an increased communication performance.

NEW:

Direct VBA read access on variables is only possible if the variable has been registered in the driver (advised) and if it has a value, i.e. if IsOnline() is true. Simple spontaneous queries (requests) are no longer possible.

The following functions of the “Variable” object return an error if this is not the case:

- Value
- StatusValue
- StatusExtValue
- StatusString
- LastUpdateTime
- LastUpdateTimeMilliseconds

This means that existing projects will no longer run in the Runtime after the conversion, as the functions mentioned above will fail.

Possible solutions:

- Define an online container for all affected variable accesses.
  Advantage: The variables will only be requested if you really need them.
  Disadvantage: Increased programming effort.

- Set the option “DDE active” in the group “Additional settings” of the variable properties for all affected variables.
  Advantage: Easy to perform.
  Disadvantage: The driver continuously requests all variables.
Attention

Limited compatibility!

After a project conversion to the current version, please check whether there is direct access on variables in any Runtime VBA macro. If this is the case, you must perform the measures mentioned above!

10.4 RGM - database changed

In 6.22 SP1 the format of the used databases for data storage was modified. This means that when converting a project in the Editor the database is modified automatically.

If you changed data of the RGM in the Runtime, you must carry out the following steps:

1. Start the Editor in the original version before you convert the project.
2. In the project properties Runtime changeable data make sure that the data of the RGM can be read back and decompiled.
3. If you use the Runtime on a remote system: Establish a connection to the remote system and read the Runtime files back. You can find this function in the Remote Transport toolbar.
4. Read the Runtime data back to the Editor. Use command Import Runtime Data in the toolbar Runtime files in order to do so.
5. Close the old Editor and open the new Editor. Now you can convert the project to the new version safely. All data are available in the new version.

Attention

Older RGM database from lower versions than 6.22 SP1 cannot be read in Runtime 6.22 SP1 or higher! If you do not convert the data as described using the Editor, you will lose all changes you made to recipes or recipe groups in the Runtime.

WINDOWS CE

If you convert a project with activated option Windows CE project, the data are saved automatically binary in zenon 6.22. This means that when opening the RGM it looks like all recipes are gone.
10.5 Template - maximum name length

Template names may have a maximum of 29 characters. In a previous version, it was possible to create names with 30 characters. Before converting a project, all template names with 30 characters must be reduced to 29 characters.

11 Converting from version X to version 6.50

Projects from older versions are automatically converted when loaded into the current editor. A backup of the project is automatically created in the directory `\SQL\Backup`.

⚠️ Attention

Before converting the editable data into Runtime editor, read it back into the old version. Otherwise it will be lost!

11.1 zenon Logic

When converting from zenon Logic projects, the following must be taken into account:

⚠️ Attention

The following applies for zenon Logic:

- All projects must be recompiled after conversion into Workbench, so that they work in zenon Logic Runtime.
- Projects from an older version which have not been converted to version 6.50 cannot be started with Runtime version 6.50.

11.2 Extended graphical settings for AML and CEL

As of version 6.50 property **Extended graphical settings** is available for control element alarm message list in screen Alarm Message List (AML) and control element event list for screen Chronological Event List (CEL).

It activates the use and the customization of the horizontal and vertical scroll bars, the header and the grid for the control element via the corresponding properties in group **Header and grid**.
If projects from earlier version are converted to version 6.5x, property **Extended graphical settings** is missing. To access the property, you must delete control element **Alarm Message List** or **Event List** from the screen and create it again.

### 11.3 Status bits - new short name

Short names for status bits differ since version 6.20 in the different languages. With zenon version 6.50, common short names were introduced. To ensure compatibility with earlier versions, the short names can be changed to the previous ones in project.ini. In this chapter, you will find:

1. List of new short names including comparison to previous short names
2. List of short names with long name
3. Instruction to reactivate the old short names in project.ini

#### 1. NEW SHORT NAME STATUS

<table>
<thead>
<tr>
<th>Bit no.</th>
<th>From 6.50 All</th>
<th>Up to 6.50 German</th>
<th>Up to 6.50 English</th>
<th>Up to 6.50 French</th>
<th>Up to 6.50 Italian</th>
<th>Up to 6.50 Spanish</th>
<th>Up to 6.50 Russian</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>M1</td>
<td>ST_M1</td>
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Converting from version X to version 6.50

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### 2. SHORT NAME - LONG NAME

The short names are the same in all languages from version 6.50. The long names remain language-dependent:

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<th>zenon Logic identifier</th>
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* Note: Status Nr. 10 was renamed to D_DIREC in version 6.50 and to PROGRESS as of version 6.51.
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<td>Negative confirmation of command by device (IEC 60870 [P/N])</td>
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<td>TEST</td>
<td>Test bit (IEC870 [T])</td>
<td>_VSB_T_BIT</td>
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<td>Writing acknowledged</td>
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<td>Writing successful</td>
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<td>IEC 60870 status: <em>blocked</em></td>
<td>_VSB_BL_BIT</td>
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<td>IEC 60870 status: <em>substituted</em></td>
<td>_VSB_SP_BIT</td>
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<td>IEC 60870 status: <em>not topical</em></td>
<td>_VSB_NT_BIT</td>
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<td>External time stamp invalid</td>
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<td>50</td>
<td>CB_TRIP</td>
<td>Breaker tripping detected</td>
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<td>Breaker tripping detection inactive</td>
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<td>52</td>
<td>OR_DRV</td>
<td>Value out of the valid range</td>
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Converting from version X to version 6.50

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<th>zenon Logic identifier</th>
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<tr>
<td></td>
<td></td>
<td>(IEC 61850)</td>
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<td>ClockNotSynchronized (IEC 61850)</td>
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<td>RES63</td>
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**Information**

In formulas all status bits are available. For other use the availability can be limited.

### 3. ACTIVATION OF OLD SHORT NAMES

If you wish to use the language-dependent short names as in versions before 6.50, you can enable this with an entry in `project.ini`. The first short names apply for:

- VBA
- Recipegroup Manager
- Combined element dialog
- Reaction matrix dialog
Converting from version X to version 6.50

**Note:** The short name must be entered in capital letters, must not contain any spaces and must contain a maximum of 7 characters.

**THIS IS HOW YOU OPEN PROJECT.INI**

1. Highlight the project in Project Manager
2. Press the **Ctrl**+**Alt**+**E** keyboard shortcut
   - The SQL folder of zenon opens in the Windows Explorer
     ```
     C:\ProgramData\COPA-DATA\[SQL folder]\[UID]\FILES
     ```
3. Go to `\zenon\system\`
4. Open the `project.ini` file with a text editor.

**ASSIGNMENT OF NEW LANGUAGE DEPENDENT SHORT NAMES**

Copy the entry of the desired language from `[STATUS]` up to and including `STATUS63=RES63` and paste this into `project.ini`.

<table>
<thead>
<tr>
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<th>French</th>
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<tbody>
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<td>[STATUS]</td>
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## Converting from version X to version 6.50

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Converting from version X to version 6.50

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## Converting from version X to version 6.50

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<tr>
<td>STATUS46=NT_BIT</td>
<td>STATUS46=NT_BIT</td>
<td>STATUS46=NT_BIT</td>
</tr>
<tr>
<td>STATUS47=OV_BIT</td>
<td>STATUS47=OV_BIT</td>
<td>STATUS47=OV_BIT</td>
</tr>
<tr>
<td>STATUS48=SE_BIT</td>
<td>STATUS48=SE_BIT</td>
<td>STATUS48=SE_BIT</td>
</tr>
<tr>
<td>STATUS49=TIME_INVVAL</td>
<td>STATUS49=TIME_INVAL</td>
<td>STATUS49=TIME_INVAL</td>
</tr>
<tr>
<td>STATUS50=RESS0</td>
<td>STATUS50=RESS0</td>
<td>STATUS50=RESS0</td>
</tr>
</tbody>
</table>
Converting from version X to version 6.50

As of version 6.50 in zenon the zenon Logic UDFB data types are no longer available. To preserve the compatibility with version 6.22, you can create them in zenon with a project prefix: "PROJEKTNAMEN/UDFBName". For this to work you must add an entry in file $K5DBXS.ini$:

1. open file $K5DBXS.ini$
2. go to area [XS]
3. create entry $UseUDFBPrefix=1$

Contact support@copadata.com or the hotline in your support agreement if you have any questions in relation to the amendment of invisible UDFBs.

### 11.4 Structures for UDFBs in zenon Logic

<table>
<thead>
<tr>
<th>Italian</th>
<th>Spanish</th>
<th>Russian</th>
</tr>
</thead>
<tbody>
<tr>
<td>STATUS50=RES50</td>
<td>STATUS51=RES51</td>
<td>STATUS51=RES51</td>
</tr>
<tr>
<td>STATUS51=RES51</td>
<td>STATUS52=RES52</td>
<td>STATUS52=RES52</td>
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<tr>
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<td>STATUS62=RES62</td>
<td>STATUS62=RES62</td>
</tr>
<tr>
<td>STATUS62=RES62</td>
<td>STATUS63=RES63</td>
<td>STATUS63=RES63</td>
</tr>
</tbody>
</table>

11.4.1 Structures for UDFBs in zenon Logic
11.5 VSTA and VBA - naming of objects

Some changes to the object model have been made due to limitations in naming VSTA objects. These changes have an effect on VBA code because this continues to access the old name and therefore no longer work.

The following changes have been implemented:

- **IDriver**
  - Name -> Identification:
    The Name property does not receive the name returned, but the driver identification. It was renamed in Identification.
  - Driver -> Name:
    Driver is incompatible with VSTA, because this property returns the name of the driver. It was renamed in Name.

- **IApplication**
  - Close -> Method: Close / Event: OnClose:
    IApplication has both a method as well as event with the name Close. This is not compatible with VSTA. The event was renamed in OnClose.

- **IZenWorkspace**
  - Startup -> OnWorkspaceStartup
  - Exit -> OnWorkspaceExit

  Because both these names are used for VSTA internal events, they were changed to OnWorkspaceStartup and OnWorkspaceExit.

⚠️ Attention

Check the VBA code for changed names and adapt it to the new model accordingly.

12 Converting from version X to version 6.51

Projects from older versions are automatically converted when loaded into the current editor. A backup of the project is automatically created in the directory \SQL\Backup.
Converting from version X to version 6.51

Attention

Measures to carry out before conversion:

Before converting the editable data into Runtime editor, read it back into the old version. Otherwise it will be lost!

12.1 Calculation column width

As of version 6.51 the average character width of the selected font is used to calculate the column width (e.g. Alarm Message List or CEL). Before that a default value was used. This may cause columns to be displayed in other widths than expected after the conversion.

12.2 Settings SQL database

As of version 6.51 the SQL instance can be defined and the password is saved in an encrypted form in the Startup Tool.

For this the Dialog for setting database properties was changed. New entries have a higher priority than existing entries. The display of the dialog is automatically adopted to the selected version (previous 6.51, as of 6.51).

NEW ENTRIES

zenondb.ini contains new entries as of version 6.51:

[CONNECTION_SQL2005]

USER=zenOnSrv
PW=0x9C 0x94 0xC6 0x50 0x80 0x79 0x06 0x32 0xED 0xE1 0xDD 0x7C 0x90 (hash of the encrypted password)
SQLINSTANCE=RECHNERNAME\ZENON_DEV

These entries replace entry:

[CONFIG]

PROVIDER_SQL2005

If the new entries are not available or empty, this entry is still used.
COMPATIBILITY

As long as no property is changed, the existing entries remain valid. If you change an entry for version 6.51 or higher, the new entries are valid. Older versions must be maintained separately. You can find the settings for version previous to 6.51 in chapter Database previous version 6.51.

Attention: As the encrypting of the user password is now taking place in the new dialog in the Startup Tool, as of version 6.51 all settings must be made via the Startup Tool.

12.3 Extended Trend XY axis

Due to performance reasons archive data for the X axis are no longer loaded automatically in the Extended Trend diagram as of version 6.51. To display the X-axis in the diagram anyway:

- Add the variable selected for the variable for X-axis as well as the curve in the diagram
- Deactivate the display for this curve

12.4 GUID for project conversion for version 5.50

At the conversion of projects of version 5.50 take care that when converting several projects an individual GUID is created for each project.

REASON

In the project.ini of version 5.50 there is the entry guID which contains a project GUID. If you convert a project to version 6.x, this GUID is used.

In zenon 5.50 it was possible to copy folders on file level, then open the project in the Editor and rename it. This project copy still contained the original GUID in the INI file which was no problem for 5.50.

If you convert two such projects in version 6.x, the conversion for the second project is canceled with the note that the GUID already exists.

SOLUTION

For converting several copied projects from 5.50 there are three possibilities:

1. Save as
   - Convert project A
   - execute "Save project as" in version 6.x
   - a new GUID is created
Converting from version X to version 6.51

- delete original project
- convert project B

**Attention:** This method is not suitable for global projects.

2. **Project backup**
   - Convert project A
   - create project backup in version 6.x
   - delete original project
   - Restore backup via "Restore project backup" and at that activate property "Create new project".

**Note:** This method is also suitable for global projects.

3. **editing project.ini**
   - open project.ini of version 5.50 In this version "project.ini" is called projectname.ini
   - delete the entry with the GUID
   - convert
   - a new GUID is created

**Note:** If this project is opened again with version 5.50, a new GUID is also created and entered in the INI file.

12.5 **Clickable buttons combined element**

As of version 6.51 you can create clickable buttons in the combined element for option Symbol from library in any from.

For projects for earlier versions, the property Symbol form defines the click area (node: Display) is treated as inactive.

12.6 **Context menus command processing**

Previous to version 6.51 text at automatic menu items was ignored. At converting projects which were created with earlier versions than 6.51 Macros $ALL$ and $NOTE$ are automatically inserted before the engineered text. Therefore the menu items behave as before.

12.7 **Record shift times in the PFS**

At recording shift times in the Production & Facility Scheduler the table name for the recording was fixed to PFSSHIFTHISTORY in version 6.50.
Converting from version X to version 6.51

As of version 6.51 it is created after the following pattern: ProjectGUID SHIFT GUID of the equipment group
For example:
292af0ac-d33d-4123-8484-e359c0a6ae3 SHIFT 989ef705-d6a6-4b81-9eb5-f76483ecaac1.

12.8 Convert symbol colors of the general symbol library from color palette to absolute color

When using palettes, only the palette index is saved. The actual color is assigned in Runtime.

PROBLEM

If you define colors for symbols of the General symbol library via palettes (similar to color palettes function as of 6.51) in versions earlier than zenon 6.51 and the colors of a symbol are changed in version 6.51, all user-defined colors of the symbols are adapted to the change when the Editor is restarted. This action is correct from compatibility’s point of view. However absolute colors can be necessary.

SOLUTION

If the symbol library is saved again in zenon 6.51, the palette indices are replaced by absolute colors.

Procedure:

1. Activate and open the project with the correct palette color in zenon 6.51.
2. Add a new symbol to the general symbol library.
3. Save the general symbol library. It is saved in the new format.
4. Close the Editor and restart it.
5. Rename the newly created symbol and save it.
6. In the global symbol library the palette colors are replaced by the absolute colors.

12.9 Wizards - remove VBA/VSTA properties

At filtering for screen switch functions to a screen of type Extended Trend, the following dynamic properties were removed as they no longer have a function:

- PictFilter[0].Curve("0 ").VarInfo.Channel
- and ArvName, Titel, Group, and Amplitude of the same object

If you use these properties in a wizard, you must remove them.
12.10 Character # not valid in the object name

As of version 6.51 character # is no longer valid for object names such as variables or functions. The character cannot be entered when giving the name via the user interface.

**Background:** A # in the name may for example cause problems during the import.

---

13 Converting from version X to version 7.00

Attention projects from older versions are automatically converted when loaded into the current Editor. A backup of the project is automatically created in the directory `\SQL\Backup`. As of version 7.00, the automatically generated backups have the SQL server used in the file name, for example: before converted to 7.00 SP0 (sql server 2008 r2).zip

**Attention**

**Measures to carry out before conversion:**

Before converting the editable data into Runtime editor, read it back into the old version. Otherwise it will be lost!

**Note:** Special characters such as ß-/\ are not permitted in zenon project names. Allowed are: Numbers, letters and the special underscore character (_). You can find more information about this in the *Project administration and workspace* manual, Create new project chapter.

---

13.1 User administration with Active Directory

From version 7.00 SP0 on Active Directory is only available for the user administration in the zenon Runtime. This means for the zenon Editor:

- AD users are not used for the Editor.
- AD users are no longer validated in the Editor.
- Via AD log in to the Editor is not possible.

**Attention:** If you implemented the log in to the zenon Editor via Active Directory in a project, you must create a zenon user with all necessary rights before you convert the project.

---

13.2 Installation of version 7.x and version 6.51 on the same computer

If a version 7.x is installed on a system that already has zenon 6.51 installed, the Multiple Network Protocol Driver must be reinstalled after a reboot.

For that
Converting from version X to version 7.00

1. Restart the system
2. On the installation medium, open the following path: \AdditionalSoftware\COPA-DATA\Multiple Network Protocol Driver x64
3. Execute the file setup64.exe (setup32.exe on 32-bit systems from the path \AdditionalSoftware\COPA-DATA\Multiple Network Protocol Driver x86)

This means that the driver is reinstalled and properly linked to the network card.

13.3 Diagnosis Server with new service

With zenon 7.00 SP0 the diagnosis system is adapted. From this version on all logging tasks are carried out by service zenLogSrv. The service zenSysServ is now only responsible for Remote Transport activities. The maximum number of modules per Diagnosis Client was increased from 32 to 64.

That means:
- Diagnosis systems up to version 6.51 and from version 7.00 onwards are compatible with each other.
- The diagnosis mechanisms of zenon 6.51 SP0 and zenon 7.00 SP0 are not compatible.

<table>
<thead>
<tr>
<th>Compatibility</th>
<th>Diagnosis Server 6.51 SP0 and earlier</th>
<th>Diagnosis Server 7.00 SP0 and higher</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis Client 6.51 SP0 and earlier</td>
<td>compatible</td>
<td>incompatible</td>
</tr>
<tr>
<td>Diagnosis Viewer 6.51 SP0 and earlier</td>
<td>compatible</td>
<td>incompatible</td>
</tr>
<tr>
<td>Diagnosis Client 7.00 SP0 and higher</td>
<td>incompatible</td>
<td>compatible</td>
</tr>
<tr>
<td>Diagnosis Viewer 7.00 SP0 and higher</td>
<td>incompatible</td>
<td>compatible</td>
</tr>
</tbody>
</table>

With the Diagnosis Viewer version 7.00 SP0 and higher you can open log files which were created by Diagnosis Server version 6.51 SP0 (or earlier). It does not work the other way round.

13.4 Dynamic Combo/List Box

As of version 7, combo-/listboxes can also be created dynamically. Via property Entries from string variable you define whether the entries in the box are created in the Editor or via a linked string variable.

At converting projects from a version older than zenon 7, the new properties are assigned with valid values:
- static combo/listbox (property Entries from string variable inactive)
- no visibility variable (property Variable empty)
If files for an older version are created or saved, the properties for the dynamic comb/listbox are not loaded in order to ensure backward compatibility.

### 13.5 IPv6

As of zenon version 7.00 you can use IPv6 in the network.

#### Information

With IPv6, more users and devices can communicate via the Internet in that they use greater numbers to create IP addresses. With IPv4, each IP address is 32-bit long, as a result of which 4.3 billion unique addresses can be formed. Example for an IPv4 address:

172.16.254.1

For comparison: IPv6 addresses are 128-bit long, which allows formation of approximately 340 sextillion ($3.4 \times 10^{38}$) unique IP addresses. Example of an IPv6 address:

2001:db8:ffff:1:201:02ff:fe03:0405

However IPv6 offers other advantages for network traffic. In most cases, computers and programs recognize IPv6-compatible networks and use the corresponding advantages without the user having to do anything more. IPv6 also frees other network problems that can occur due to the limited addressing area of IPv4. Example: IPv6 reduces the necessity of network address translations (NAT), a service that allows several clients to use a joint IP address, but which does not always work reliably.

The zenon network allows the choice of using IPv6 or IPv4. Dual operation is not possible. The setting is made via:

- **Network configuration** in the Startup Tool
- or
- in zenon6.ini

**Attention**: IPv6 only works with version 7 onwards.

No versions prior to version 7 can be started if this is active. This concerns **zenAdminSrv**, **zenSysSrv**, **zenLogSrv** und **zenDBSrv** in particular.

The following components are not affected by the setting; they always use IPv4:

- Driver communication with the PLCs
- Protocol communication in the Process Gateway plug-ins
- Workbench and Runtime communication in zenon Logic
DIAGNOSIS VIEWER

The Diagnosis Server also works with Diagnosis Clients which addresses via IPv6 addresses. For this the format of the log file has been adapted. The Diagnosis Viewer only reads the new format of the log files. If files from older zenon versions are opened (or vice versa), the IP address of the Diagnosis Client is not displayed correctly.

13.6 Licensing

With version 7.00 licensing is adapted. To adapt existing zenon version to version 7.00, you must purchase a license for version 7.00 and enter the new activation number. The serial number remains the same.

The entries in zenon6.ini are now:

```
[DEFAULT]
SERIAL7=
ACTIVATIONKEY7=
```

13.7 Message Control

As of version zenon 7.00 SP0 module Message Control differs basically from earlier versions in terms of technology and configuration.

Important technical changes:

- COM Server is no longer used
- the additional component of company DerDack is no longer used
- the ZenMsgQueue is replaced by an own screen of type Message Control
- the configuration is carried out in property Message Control of the workspace (sending) and properties Project-specific settings for module Message Control in the project (project-specific)
- there is no detail view anymore
- the shift model and the calendar functionality has been removed
- there are no Runtime changeable files anymore
- Sending e-mails is possible via Outlook or a SMTP Server whereas SMTP allows the sending of attachments
- the configuration of the sending type is no longer saved in file messag32.ini but in file zenon6.ini
Evaluating the limit value texts: Up to now the evaluation of compound texts in module Message Control differed from the evaluation of standard limit value texts. From version 7.00 on both are evaluated in the same way. @StringTabelle+%var1

You can find details about the configuration in chapter Configure Message Control.

⚠️ Attention

Only projects from version 5.50 SP7 on can be converted to version 7.

CONVERSION

Due to the profound changes a 100% compatibility cannot be guaranteed for the conversion. This is also true for compiling Runtime files for older versions. At converting especially take care for:

- **User:**
  - Users with the same name (first name, last name) existing: User is used and information is added.
  - No according user available: A new user is created. The link to the replacement and to the user group is resolved. The user is added to the existing or at the conversion to the created group.

- **User groups:**
  - User group with same name exists: User group is used and information is added.
  - No according user group available: A new user group is created.

- **Functions:**
  
  Show recipient-database function was removed. This function can no longer be created with the Editor. At the conversion it is not deleted however. Its call up in the Runtime has no effect and creates a log entry.

- **Paging:**
  
  Paging is no longer available as sending type. Existing functions with sending type Paging are changed to sending type GSM at the conversion. A message in the output window indicates this. After the conversion you must check the settings of the function.

- **Runtime changeable files:**
  
  Because the user administration was changed, Runtime changeable files are no longer required for Message Control. There is no possibility in version 7 to read back old Runtime data. If the Runtime files of a project prior to version 7 are needed, you must read them back in an Editor prior to zenon 7 and then converted (on page 9).

- **Shifts and calendars:**
  
  The functionality for shifts and calendars was removed. Existing functions with target type Shift are changed to target type Group at the conversion. However no group is linked. A
message in the output window indicates this. After the conversion you must check the settings of the function.

- **SMS-Gateway:**
  As the simple interface does not offer a technical possibility to assign messages distinctly, from version 7 on only the enhanced interface is supported. At conversion you must make sure that the SMS Server from company Dialogs is configured correspondingly. Otherwise the sending fails.

### 13.8 RGM - error behavior at screen switch

If for the screen switch of the RGM a recipe is selected faulty by:

- recipe not available in the Runtime
- no selection made
- recipe not included in the filter

then the behavior of the drop-down list *Recipe* changes in the Runtime:

- up to version 6.51 SP0 the first recipe in the list is offered
- as of version 7.00 SP0 the selection remains empty.

### 13.9 Read RGM recipe - new operation

As of version 7.00 SP0 at reading in variable values to recipes (teaching) it is checked:

- whether the values of the properties *min. value* and *max. value* have been adhered to.
- which status the variable has.

If the values are gone below or exceeded, or the variable has the status INVALID, the values are no longer written to the recipe and no longer saved.

Additional system variables are analyzed. As of version 7.00 possible variable values:

- 0: Set before the reading and only changes when the reading process is done.
- 1: Finished reading successfully.
- 2: During reading an error not defined in greater detail has occurred.
- 3: During reading at least one variable has status INVALID.
- 4: At least one value is not within the min-max limits.
- 5: During reading a timeout (30000 + 100*VarCount in [ms]) occurred.
13.10 Allan Bradley RS-Linx Driver

As of version 7.00 SP0 the driver supports **Unsolicited Messages**. With this the configuration of the driver changes. It is now done on the tab.

- **General**: Unchanged
  
  Note: If you use Unsolicited Messages, you should deactivate **Update time global**

- **Configuration**: The previous KT number is replaced by the label of the RS-LINX driver.

- **Unsolicited Messages configuration**: New. Setting for Unsolicited Messages.

⚠️ **Attention**

In existing projects the driver configuration must be adapted.

13.11 SQL Server change

With zenon 7.00 SP0, the **Microsoft SQL Server 2008 R2 Express** is installed and used for zenon projects. The zenon Editor only connects to **SQL Server 2008 R2** by default from version 7.00 onwards. Projects that have their databases in a different SQL server instance (such as ZENON_DEV with SQL Server 2005), cannot be opened.

The SQL Server instance that zenDBSrv connects to can be changed using the startup tool. The startup tool sets, in `zenDB.ini`, the corresponding entries for the respective zenon Version:

- Before 6.00: no database
- 6.00 to 6.20: Entries for SQL Server 2000 (MSDE)
- 6.21 to 6.51: Entries for SQL Server 2005 Express Edition
  
  The password is stored in encrypted form with 6.51
- Version 7.00 and later: Entries for the SQL Server 2008 R2 Express Edition with encrypted password

Dual operation of SQL Server 2005 instance "ZENON_DEV" and SQL Server 2008 R2 instance "ZENON_2008R2" is not possible.
Attention

Projects from previous versions of zenon must be imported in the original version and then restored in zenon 7.00.

Hint: If no export has been made and the applicable version is no longer available, the transfer can be made manually:

- Copy the complete folder, including the GUID, to a new location
- Establish the database connection manually

PROJECT CONVERSION

The following procedure is recommended for the conversion of projects from versions prior to version 7.00:

1. Create project backups in the version from which they are to be converted.
2. Export project backups to the hard drive.
3. zenon Editor 7.00 Editor.
4. Create new workspace.
5. Read the project backups into the new workspace.

The project backups can also be read back into the same workspace in the 7.00 Editor. Because the GUID remains the same when a project backup is read back, the workspace in zenon 7.00 and in versions between 6.21 and 6.51 can be opened.

Information

Although the projects have the same name and the same GUID, projects from zenon 7.00 are independent from projects from zenon 6.21 to 6.51 due to the different SQL server instance. Backups in zenon 7.00 do not appear in versions 6.21 to 6.51 of the Editor. It is therefore recommended that these are stored in a new workspace.

14 Converting from version X to version 7.10

Note: Special characters such as ß-\ are not permitted in zenon project names. Allowed are: Numbers, letters and the special underscore character (_). You can find more information about this in the Project administration and workspace manual, Create new project chapter.
14.1 32-bit and 64-bit version

zenon is now available for Editor and Runtime as a 32-bit and 64-bit version. A 32-bit and a 64-bit zenon Editor or a 32-bit and a 64-bit zenon Runtime are installed on 64-bit operating systems. The file names of the executable files are identical for 32-bit and 64-bit.

On 64bit systems, all services present in 64-bit are registered and used in the 64-bit version. Editor and Runtime can be started alternately. Projects can be executed in both Editors and in both Runtimes.

Components such as, for example, zenon Logic Runtime, zenon Logic Workbench, drivers, Process Gateway and other tools are always only used in the 32-bit version.

GENERAL LIMITATIONS

The basic limitation of only 64-bit DLLs being able to be loaded in 64-bit processes also means that there are certain limitations when operating zenon. This mostly affects external components that are loaded in the Editor or Runtime. DLLs that are loaded using VBA/VSTA code and ActiveX controls are directly affected. These DLLs must be present as a 64-bit version for use in the 64-bit Editor or Runtime. ActiveX controls supplied by COPA-DATA are always available in 32-bit and 64-bit versions.

CONVERSION OF ZENON 5.50 PROJECTS

zenon 5.50 projects cannot be converted with the 64-bit Editor. These must be converted beforehand with the 32-bit Editor.

RGM LIMITATION

The Access database is no longer supported in the RGM. In order to be able to use MS Access data from previous versions under 64-bit, the project must first be converted in the 32-bit Editor. The DataSource property is no longer available as of version 7.10. For details, see the Converting Recipegroup Manager database (on page 50) chapter.

VBA

VBA was converted to VBA version 7.1. Therefore VBA is also available in zenon 64-bit. If, in the VBA code, Windows API or other imported DLL functions are accessed, these calls must be adapted to 64-bit. In general, the following applies: A VBA file created for a 32-bit version cannot be used without changes in a 64--bit version.

There are some defines/functions available in VBA in order to write 32-bit and 64-bit compatible code. For example:

```vba
#if Win64 then
Declare PtrSafe Function MyMathFunc Lib "User32" (ByVal N As LongLong) As LongLong
```
#else
Declare Function MyMathFunc Lib "User32" (ByVal N As Long) As Long
#end if

#if VBA7 then
Declare PtrSafe Sub MessageBeep Lib "User32" (ByVal N AS Long)
#else
Declare Sub MessageBeep Lib "User32" (ByVal N AS Long)
#endif

You can also obtain some useful notes on the porting of VBA 32-bit code to VBA 64-bit from Microsoft:

- Microsoft Office 2010, notes on porting:

**COMPONENTS IN 32-BIT ONLY**

The following components are also only available as 32-bit versions on 64-bit computers:

- Some programs, such as SIC.exe and DiagViewer.exe
- Licensing
- Process Gateway
- Startup Tool
- Windows CE
- Drivers
- zenon Logic Runtime and Workbench

### 14.2 Installation

zenon 7.10 cannot be installed on systems on which the Microsoft SQL Server Data Engine (MSDE) is already installed. This affects all systems on which zenon 6.20 or an earlier version has been installed.

### 14.3 Batch Control

Before converting a project to the new zenon version, all recipes must be ended. Recipes that are running continue to be executed after a restart. The restart only functions within the same zenon version.

### 14.4 Conversion from version 6.01 to 6.20

zenon projects in version 6.01 or 6.20 can no longer be directly read back in zenon 7.10 or higher.
**Background:** Versions that are based on the MSDE (SQL Server 2000) are not compatible with the SQL Server 2012 used in zenon.

**Solution:** First convert in zenon 7.0 and then in 7.10 or higher.

### 14.5 Converting Recipegroup Manager database

From version 7.10, the MS Access database is no longer supported in the Recipegroup Manager. When opening an existing project, the data storage is automatically converted to binary data. A project backup is created in the process. This makes it possible for you to open the project with the version in which it was created.

#### CONVERSION WITH 64-BIT EDITOR

The 64-bit Editor cannot access the MS Access database. To convert this, open the project in the 32-bit Editor first. There is a mechanism available that with the RGM setting `DataSource: MS AccessDB` automatically transfers the data to binary files. The property `DataSource` is no longer available from version 7.10. If the data storage has already been set to binary files, the database data is rejected. For this, the following applies:

- Copying the data from the Access database to binary data storage only occurs with conversion in the 32-bit Editor. The data from the Access database is always rejected with 64-bit.
- When converting under 64-bit, a check is made to see if the data storage of the RGM is set to MS Access. In this case, corresponding information with notification of conversion is displayed in the 32-bit Editor.
- If, when copying over in the 32-bit Editor, it is established that at the target (binary files) data has already been configured, the user is asked which data is to be kept (MS Access or binary). MS Access and binary data cannot be combined.

After conversion, you can also open and edit the project with the 64-bit Editor.

If you want to convert the project again, use automatically-created backup during the conversion.

#### AMENDMENT OF RECIPE GROUP NAMES AND RECIPE NAMES FOR 32-BIT ZENON

Recipe group names and recipe names that contain invalid characters for "binary data" are automatically renamed when converting a project to the 32-bit version of zenon 7.1x. The renamed elements are shown in the output window. Check the output window for corresponding messages after conversion.

**Attention:** If recipe groups or recipes are renamed, the following elements must be checked and amended manually in the project:
Converting from version X to version 7.10

- All RGM functions
- Variables that could contain recipe group names or recipe names
- VBA code that could contain recipe group names or recipe names

14.6 SQL Server 2012

The SQL Server is switched to 2012 Express Edition version with zenon 7.10 SP0. The settings are defined with the Startup Tool.

The correct entry for the zenDB.ini can be found in the zenDB.ini chapter.

⚠️Attention

Projects from other versions cannot be opened directly in zenon 7.10. Projects which should be edited in zenon 8.10, must first be saved in the version in which they were created. The project backup can then be converted in zenon 7.10.

If numerous versions are installed in parallel, various SQL servers must have different paths.

14.7 Report Viewer

TIME DOMAINS

The Report Viewer can use several time domains from version 7.10 and up. For upwards compatibility the first two configured time filters on the list are used.

DATA SETS

The datasets for AM, CEL, ARCHIVE and ONLINE were supplemented with the `RESOURCESLABEL` entry.

14.8 DirectDraw removed from VBA

All classes, methods and events that are used for direct drawing in zenon screens using the zenon API (VBA/VSTA) were removed for performance reasons. This concerns:

- `Draw` class
- `DrawAPI` method
- `Draw` event
14.9 WPF

The WPF element *CircularGauge* was expanded from 3 to 6 display areas. Backward compatibility is not guaranteed here.

**Note:** If two versions of a group file are available in a project, the user is asked which version is to be used. No further actions are needed for the maintenance of the versions used up until now. If a newer version is chosen, all corresponding CDWPF files in all symbols and images in all projects must be adapted.

14.10 Time filter

The configuration and display of the time filter and the filter results have been revised, optimized and harmonized.

The combination of the new **Modify time range** option and the new filter behavior can lead to the filter results being different in versions 7.10 from previous versions.

15 Converting from version x to 7.11

**Note:** Special characters such as ß–\ are not permitted in zenon project names. Allowed are: Numbers, letters and the special underscore character (_). You can find more information about this in the **Project administration and workspace** manual, **Create new project** chapter.

15.1 API - change to data type

In the `CreateArrayVarEx` method for the `Variables` object, the data type for `LAdrMode` has been changed from `int` to `zenOn,tpAdrMode`

Existing code must be amended accordingly.

**UP TO ZENON 7.10:**

```csharp
public virtual zenOn.Variables CreateArrayVarEx(string strName, object lpDriver, zenOn.tpKanaltypes kTypes, object lpVarType, int lLBound, int lDimension1, int lDimension2, int Dimension3, int lAdrMode, bool bStartAtNewOffset)
```

**FROM ZENON 7.11**

```csharp
public virtual zenOn.Variables CreateArrayVarEx(string strName, object lpDriver, zenOn.tpKanaltypes kTypes, object lpVarType, int ILBound, int IDimension1, int IDimension2, int IDimension3, zenOn. tpAdrMode lAdrMode, bool bStartAtNewOffset)
```
15.2 Batch Control

DISPLAY COMMAND TAGS

With version 7.11, in the Parameter list settings tab in screen switching, the options for Display command parameters have been enhanced and switched to radio buttons with as many combinable check boxes as desired.

In terms of backwards-compatibility, this means that backward-compatible writing is only possible if:

- Only one checkbox is set for the changeable parameters
- or the combination of all checkboxes lets all parameters through

If the combination of the checkboxes results in a setting that was not previously configurable with zenon 7.10 or earlier, no parameters are displayed in the list.

RESTARTING RUNTIME

When restarting after Runtime has been restarted, the respective status is stored with the information in the recipes. The execution status is also displayed in the unit information. The execution status (numerical and text) in the unit information contains a number and text that corresponds to that of the variables in the screen. Including information on whether triggered by a restart, information on objects with a different status and objects that delay a status change.

Caution: The content of these variables is not compatible between zenon 7.10 and 7.11.

RDL FILES

The default.rdl from zenon 7.10 can have configuration errors. If RDL files are used based on default.rdl for Batch Control in zenon 7.11, it can lead to errors on output. If you want to use the correspondent RDL files with zenon 7.11, make the following changes before use:

- Data set for BatchOperationInstances
  - The field OpertionType must be renamed as OperationType.
- BatchMasterRecipes and BatchControlRecipes:
  - The field OpertionType must be renamed as OperationType.
  - Add the data field MrVersion with the data type Integer
- BatchPhases1
  Add the following data fields:
  - CondPlcError (data type: String)
  - CSName (data type: String)
### 15.3 Command Processing

When creating the Runtime files - via **Create all Runtime files** - all *auto/remote* and *forced* command processing actions are filtered out.

These actions are only available in zenon from version 7.11. The Editor compilation validation checks whether, for a variable (or variables when using wildcards) the same command or the same switching direction has been configured twice. If this is the case, a corresponding error message appears in the output window.

![Command Processing](image)

**Information**

The *auto/remote command processing action* and *mandatory command processing actions* are not available in Runtime versions before version 7.11.

### 15.4 IMM table names

Tables names are now fixed and issued as follows:

- **Table for devices**: *Devices*
- **Table for maint. works**: *MaintenanceWorks*
- **Table for history**: *MaintenanceHistory*
- **Table for files**: *Documents*

These tables have fixed table names as standard.

Different table names are retained when projects are converted. New projects use the fixed, prescribed table names.
15.5 Modify variables via API

In the zenon object model, the variable object has been supplemented with the ModifyVariable and ModifyArrayVariable functions. Properties of simple variables, structure variables and arrays can therefore be edited via the API. All dynamic properties that cannot be changed via the API have been set to "read only".

- **ModifyVariable function:**
  For simple variables. Allows the modification of:
  - Drivers
  - Channel type
  - Data type
  - Addressing mode
  - Each data type starts with new offset setting

- **ModifyArrayVariable function:**
  For array variables. Allows the modification of:
  - Drivers
  - Channel type
  - Data type
  - Addressing mode
  - Calculation of offset
  - Lower bound (0 or 1) and dimensions of the array

**Attention:** In addition, the following properties have been set to READ-ONLY for the API:

- LBound
- Dim1
- Dim2
- Dim3
- OfsAccordingType
- IsOffsetManuell
- IsStartAtNewOffset
- Driver
- ID_DataTyp
- ID_DriverTyp
15.6 Lot filter
Filtering for lots has been enhanced and the configuration has been harmonized.

COMPATIBILITY
- The Lots setting in the Time tab is now in the Lots tab and is called Display lot selection dialog.
  Difference: Up to version 7.11, the dialog could be configured in the time filter with the Charge selection and the filter could be turned on in the Lot tab.
  As of version 7.11, only one of the two is possible. When converting a project, the Display lot selection dialog option is selected and the time filter is set to its fixed default value of Relative time filter with one hour.
- Note on XML import: When converting a project from version 7.10 to version 7.11 via an XML export and XML import, there is a visual error. The conversion is carried out for the XML import with absolute time filter with one hour instead of with relative time filter with one hour. This has no effect in Runtime because the setting is not evaluated when the dialog is called up. However when the filter is opened in Runtime or in the Editor, an error message is displayed, because the start time is higher than the end time.
- The possibilities for last lots have been expanded. Completed and ongoing lots can be displayed and both can be combined. If the current lots or the combination of current and completed lots are selected and the project is compiled for a version before 7.11, the completed lots are shown in Runtime.
- The following options are available when filtering for archives and lot names:
  - **No filter**: corresponds to the earlier setting * as a filter
  - **Static**
  - **From variable**: new setting
    When converting from projects created in version 7.10 or earlier, the * or empty string setting is converted up as No filter.
    If Runtime files are created for versions before 7.11, only the options no filter and static can be converted correctly. With static, the string is written as it is; with no filter "*" is saved as a filter. The From variable option is ignored; no filter is set.

15.7 Network

VALIDATION DURING COMPILATION
The following validation for a rated network is undertaken during project compilation:
- Used variables still exist
Converting from version x to 7.11

- Used variable is not a string variable and not a structure variable
- Hysteresis is within the sum of all weightings
- Used variable is not read by standby server.
- Variables are only checked if the redundancy mode is evaluated.

**Information**

A configuration entry is only checked if it is also active.

**BACKWARD COMPATIBILITY**

- The COPA-DATA Client Runtime can connect to a server with a version lower/same as 7.11.
- The COPA-DATA Editor can create a project for a COPA-DATA Runtime version < 7.11.

**15.8 OPC UA server multi-project compatible**

The OPC UA server is multi-project compatible from zenon 7.11 onwards. Variables from the Runtime project and all its subprojects can be selected. In doing so, the object name from the variable name and the project name are combined. Configurations for OPC UA clients that were created before zenon 7.11 are thus not compatible. These must be amended when using zenon 7.11 or higher.

**15.9 VBA functions for frame list changed**

The functions to query the number of frames has been changed. Up to and including version 7.10, all frames of the local project and the global project have been counted together. As of version 7.11, only the frames of the local project or the global project are counted.

The following VBA functions have been changed:

- `CSchabliste::vba_Count()`: As of version 7.11, only provides the number of local or global frames.
- `CSchabliste::vba_Item(const VARIANT FAR& vID)`: As of version 7.11, only iterates the local or global frame list.

These changes can lead to incompatibilities with existing projects. If frames are queried in a project using said VBA functions, these must be adapted.

**EXAMPLE**

There are frames in local project 5 and global project 10. Then:

- Previously 15 frames were counted and iterated
As of version 7.11, either 5 or 10 frames are counted and iterated

If the iteration goes beyond the respective size, for example 11, this leads to an error

Separate queries must be created for the local project and the global project

16 Converting from version x to 7.20

**Note:** Special characters such as ß-/\ are not permitted in zenon project names. Allowed are:
Numbers, letters and the special underscore character (\_). You can find more information about this in the *Project administration and workspace* manual, *Create new project* chapter.

16.1 Version 7.20 - latest build

For compatibility with version 7.20, there is an additional possible selection - "Most recent version" - available. This can be selected with the *7.20 SP0 + [most recent build no.]* in the drop-down list.

Selecting this option makes the Runtime files available for the current build of version 7.20. Functionality that has since been incorporated into version 7.20 after the official release of 7.20 is thus supported. This is applicable most of all for enhancements to drivers that are now supported with this option. In order to use it, you must have the most recent build of zenon 7.20 installed on your computer.

**Note:** The *7.20 SP0* selection compiles the Runtime files - as before - to the default settings of 7.20 SP0. Ensure that you use the most recent respective build for both zenon 7.50 and 7.20.

16.2 BACnetNG

The driver was amended for version 7.20.

**SEPARATOR**

For the *Property separator* option, the use of the @ or # as a separator is now not permitted. The characters are left in converted projects, but cannot be reentered.

**Attention:** If one of the two characters is used, no communication takes place.
ADDRESSING

SELECTION OF ADDRESS

The Use identification to define object name and property check box in the Settings configuration dialog has been replaced with the Property used for addressing drop-down list. Addressing using the following methods can be selected:

- Variable name
- Identification
- Symbolic address

The corresponding entry from the drop-down list is set during project conversion.

NEW CHECK BOX FOR STATUS EXTRACTION

The new Do not read property/event state from address string check box makes it possible to not extract the Property-ID and Event State from the selected address. If this option is activated:

- The Property-ID or Event State must be set using the driver-specific properties envisaged for this. This configuration is carried out automatically with online import.
- Individual elements of BACnet Arrays/lists can no longer be addressed.
- The variable name cannot be used for addressing, because this must be unique. Addressing must be either by means of identification or symbolic address.
- The Property separator is not always searched for in the address field. The address thus now only consists of: <Device name>.<object name>.

The following is applicable in the process:

- The device name must not include a period (.)
- No restrictions for object names.

16.3 Batch Control: No more grouped CEL entries with a value change in the control recipe

There is no longer a grouped CEL message any more when values change in a control recipe. Instead, each message has all information that concerns the recipe. The header entries have been removed and all changes of parameter values now use the same entries as for editing via the parameter list. The entries for changes were also adapted to the minimum execution time. New entries were added for this.

The following entries were removed:
Converting from version x to 7.20

The following entries were added:

- **16.4 Screen type specific functions**

  If screen-type specific functions are invalid, for example as a result of copying a button to a screen of a different type, then the invalid linking is pointed out and this can be replaced. Invalid functions are removed during compiling.

  When converting projects, these can contain screen-type specific functions that are still invalid in Runtime.

- **16.5 Display sequence of the elements**

  The display sequence of the individual element components was made the same.

- **16.6 DirectX 11.1**

  The following applies when using DirectX 11.1:

  - DirectX 11.1 is available natively under Windows 8 and later versions of the operating system.
  - DirectX 11.1 cannot be used under Windows 7 and Server 200R2 without a Service Pack and versions earlier than this.
  - For Windows 7 SP1 and Server 2008 R2 SP1, a Windows Service Pack must be installed

  To install the Service Pack:

  1. Download the platform update KB2670838 from the Microsoft support website.
  2. Select the version that corresponds to your operating system:

      - 32 bit
Converting from version x to 7.20

- 64 bit


**Note:** This only concerns Windows 7 SP1 and Server 2008 R2 SP1. DirectX 11.1 is already present on more recent versions. The update cannot be installed on older versions.

### 16.7 DirectX in the Editor

The native DirectX display is available in the Editor through the settings of the **Graphics quality** property.

There is no dotted line for the grid. It is replaced by a solid line during project conversion.

When a new project is created, the **Graphics quality** is **DirectX hardware** by default. This can be changed manually to **Windows basic** or **DirectX software**. During project conversion, the previous value **Windows Enhanced** is changed to **DirectX hardware**. If a project that was configured with **Windows Enhanced** is started in Runtime, it is loaded with **DirectX hardware**.

**Note:** The graphic display of **DirectX** is different from **Windows Enhanced**. You can read details in the Differences between the graphics qualities of "Windows Enhanced" and "DirectX" (on page 67).

If, as of version 7.00 a different graphics quality than **Windows Basic** is set for a project (including the corresponding setting for the option **Create RT files for**), Runtime up to zenon version 6.51 loads the **Windows extended** graphics quality. If the **Windows basic** graphics quality is set, this is retained.

### 16.8 DirectX: Graphic display when screen switching

When switching, closing or calling up a screen, the behavior in Runtime when using DirectX has changed. As of now, only the background color of a screen is shown up to the point where it is shown in full or after it is closed.

### 16.9 DNP3_TG driver replaces DNP3_NG

With version 7.20, the DNP3_TG driver replaces the DNP3_NG driver. The DNP3_NG driver is no longer automatically offered for driver selection. However it can be added manually. (for details, see the driver manual)

When converting projects that use the DNP3_NG driver, this driver is added to the driver list again.

### 16.10 Dynamic text: "Text from variable" property replaced

For the configuration of the Dynamic Text screen element, the **Text from variable** check box has been replaced by the new **Display text** drop-down selection.
This allows the selection of the content to be displayed in Runtime from a drop-down list:

- **Resources label**: The content of the **Resources label** variable property is displayed.
- **Limit value text**: As long as no limit value has been violated, the content of the **Text screen** property is displayed. If a limit value is violated, the content of the **Limit value text** variable property is displayed.
- **Measuring unit**: The content of the **Measuring unit** variable property is displayed.
- **Variable identification**: The content of the **Identification** variable property is displayed.
- **Variable name**: The content of the **Name** variable property is displayed.
- **Variable value**: The value of the variable is displayed.

When converting projects to version 7.20, the property is set according to the status of the checkbox:

<table>
<thead>
<tr>
<th>Checkbox in project prior to 7.20</th>
<th>Selection in drop-down list in 7.20</th>
</tr>
</thead>
<tbody>
<tr>
<td>inactive</td>
<td>Limit value text</td>
</tr>
<tr>
<td>active (variable is numerical)</td>
<td>Variable value</td>
</tr>
<tr>
<td>active (variable is not numerical)</td>
<td>Limit value text</td>
</tr>
</tbody>
</table>

When compiling Runtime files in version 7.20 for version 7.11 or lower, the value for the check box is set in the compiled version:

- **active**: Selection for drop-down selection is **variable value**
- **Inactive**: for all other setups

### 16.11 Antialiasing property removed

The **Use antialiasing** property was removed from the project properties. **Antialiasing** is now always used if the set graphics quality supports it.

### 16.12 Text angle and letter slant properties removed

The **text angle** and **letter slant** properties have been removed. These were used with the **static text** element if the script was embedded. **Text angle** can be implemented by rotating the complete element. There is no replacement for **letter slant**.

### 16.13 Entries in zenon6.ini amended for [AlarmFilterDialog]

In **zenon6.ini**, an entry in the [AlarmFilterDialog] section can be used to predefined filter screens for **variable name** and **identification** in the filter dialogs for AML, CEL and filter screens. These entries were amended with version 7.20. Entries that have already been defined thus no longer work.
Because all entered filters are automatically saved on the local computer using this entry in `zenon6.ini`, configuration via the INI file is not necessary. You can find details on the entries that are currently valid in the documentation for `zenon6.ini`.

### 16.14 Extended Trend: Cross-hair, XY-view

The cross-hair in Runtime for the XY-view is configured in screen switching from zenon 7.20. To do this, activate the **Show cross-hair in XY diagram** option.

Configuration was previously carried out by means of the `SHOW_XY_CROSS=` entry in `project.ini`. When converting a project from a version before zenon 7.20, the setting is read from `project.ini` and entered. From now on, the entry in `project.ini` is ignored.

### 16.15 Format database table Aggregated archive

As of zenon 7.20, the **GUID** is contained in the index when evacuating archives into an SQL database. The following applies for these: It must be NOT zero. As of zenon version 7.20, an empty string is entered instead of ZERO for the evacuation of variables of your own project for the **GUID**.

If Runtime files for version 7.11 or earlier are compiled, there is a compatibility problem as a result: Because in this case ZERO is written in the **GUID** column, the evacuation does not work.

**Solution:** The table in the SQL Server must be created manually without **GUID** in the primary key or completely without a primary key.

For example, with the following syntax:

```sql
CREATE TABLE [$projectname$_$archivename$]
(
    [VARIABLE] int,
    [CALCULATION] int,
    [TIMESTAMP_S] int,
    [TIMESTAMP_MS] int,
    [VALUE] float,
    [STATUS] int,
    [GUID] varchar(36),
    [STRVALUE] varchar(?),
    CONSTRAINT [PK_$projectname$_$archivename$] PRIMARY KEY CLUSTERED
    (
        [TIMESTAMP_S] ASC,
        [TIMESTAMP_MS] ASC,
        [VARIABLE] ASC,
        [CALCULATION] ASC
    )
)```
16.16 "Windows Enhanced" removed

The *Windows Enhanced* graphics quality option was removed from zenon. When a new project is created, the **Graphics quality** is *DirectX hardware* by default. This can be changed manually to *Windows basic* or *DirectX software*. During project conversion, the previous value *Windows Enhanced* is changed to *DirectX hardware*. If a project that was configured with *Windows Enhanced* is started in Runtime, it is loaded with *DirectX hardware*.

**Note:** The graphic display of *DirectX* is different from *Windows Enhanced*. You can read details in the Differences between the graphics qualities of "Windows Enhanced" and "DirectX" (on page 67).

If, as of version 7.00 a different graphics quality than *Windows Basic* is set for a project (including the corresponding setting for the option **Create RT files for**), Runtime up to zenon version 6.51 loads the *Windows extended* graphics quality. If the *Windows basic* graphics quality is set, this is retained.

16.17 Limit value text

The limit value text and the status text of a reaction matrix can now be up to 1024 characters long. In the table format for the SQL export of alarms, the **TEXT** column has been extended to 1024 characters.

The buffer for the dynamic parts of the dynamic limit value texts when using long dynamic limit value texts (*D*.AML and *D*.CEL) can now vary, with a maximum size of 1024 bytes. The save format of *D*.AML and *D*.CEL files has been changed for this.

Existing files remain unchanged as a fixed-length record format with 264 bytes and are not converted. Newly-created files are created with a variable record length in the new format version.

16.18 IMM table names

Tables names are now fixed and issued as follows:

- **Table for devices**: *Devices*
- **Table for maint. works**: *MaintenanceWorks*
- **Table for history**: *MaintenanceHistory*
- **Table for files**: *Documents*

These tables have fixed table names as standard. These correspond to the naming in the metering point administration.
Different table names are retained when projects are converted. New projects use the fixed,
prescribed table names. If tables are used together in IMM and metering point administration, they
must correspond to this convention. Different names in IMM can be amended using a dialog.

16.19 Navigation with Multi-Touch in the worldview
When converting to zenon 7.20 from an earlier versions, the following values are set for the Move
horizontally and Move vertically properties:
  ▶ Screen is bigger than the frame: Move
  ▶ Screen is the same size or smaller than the frame: No reaction

16.20 Process Control Engine (PCE) removed
Starting from version 7.20, PCE will not be supported anymore and it will not be shown in the module
tree of zenon anymore. PCE will not further be developed and documented.

While converting projects from versions lower than 7.20, which contain PCE tasks, the node PCE will
be shown for these projects again. PCE can continue to be used for converted projects.

Recommendation: Please use zenon Logic instead of PCE

16.21 Remote Transport: Save password in encrypted form
The password for the Remote Transport connection can be stored in encrypted form in
zenon6.ini from version 7.20.

Note the following for project conversion:
  ▶ In the Editor (source system), when converting the project from version X to 7.20, the KEY=
    entry is replaced by KEYCRYPT= and the password is saved in encrypted form here.
  ▶ On the target system, there is a query to see whether KEY= in the zenon6.ini has an entry.
    Yes: This entry has priority. For conversion, the entry on the target system must be deleted
    manually.

For details, see the Remote Transport manual, Encryption chapter.

Remote Transport communication can also be encrypted. To do this, the encryption of the zenon
network need only be activated in the Startup Tool.

16.22 Frame properties
The frames have new properties. The new properties make it possible to configure the size of a
screen when it is called up, as well as the movement of screens on the monitor. In addition, two
existing properties have been renamed.
NEW PROPERTIES

<table>
<thead>
<tr>
<th>Property</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Opening size:</strong></td>
<td>Defines the size with which a screen based on this frame is called up in the Runtime.</td>
</tr>
<tr>
<td><strong>Value (Opening size)</strong></td>
<td>Value for the selected type of size setting.</td>
</tr>
<tr>
<td><strong>Limitation Minimum:</strong></td>
<td>Defines limits for minimum.</td>
</tr>
<tr>
<td><strong>Value (minimum):</strong></td>
<td>Value for the selected type of limit.</td>
</tr>
<tr>
<td><strong>Move:</strong></td>
<td>Defines possible settings when moving the object.</td>
</tr>
<tr>
<td><strong>Limitation:</strong></td>
<td>Defines the type of limit when moving.</td>
</tr>
<tr>
<td><strong>Minimum frame margin:</strong></td>
<td>Defines the area that must remain on the monitor if an object is moved beyond the border of the monitor.</td>
</tr>
</tbody>
</table>

When converting a project, the values for the new properties are set to the default values.

RENAMED PROPERTIES

<table>
<thead>
<tr>
<th>zenon 7.11</th>
<th>zenon 7.20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Width [pixels]:</strong></td>
<td><strong>Width (maximum) [pixels]:</strong></td>
</tr>
<tr>
<td></td>
<td>Defines the maximum width.</td>
</tr>
<tr>
<td><strong>Height [pixels]:</strong></td>
<td><strong>Height (maximum) [pixels]:</strong></td>
</tr>
<tr>
<td></td>
<td>Defines the maximum height.</td>
</tr>
</tbody>
</table>

The values are applied during project conversion.

**16.23 Frames: "Border type" property changed**

The possible settings for the **Border type** were changed for frames:

<table>
<thead>
<tr>
<th>Up to and including version 7.11</th>
<th>As of version 7.20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bold border</strong></td>
<td><strong>Size adjustable</strong></td>
</tr>
<tr>
<td><strong>Thin border:</strong></td>
<td><strong>Size fixed</strong></td>
</tr>
<tr>
<td><strong>No border</strong></td>
<td><strong>No border</strong></td>
</tr>
</tbody>
</table>
Converting from version x to 7.20

This changes the display in Editor and Runtime. In the Editor, the border of the frame is now shown as it would look in Runtime on the same PC with the same settings in the operating system. The appearance of the frame in converted projects can thus change.

16.24 Frame background color

The background of the frames is now shown in Runtime by the color of the screen that is called up.

16.25 Shading in a combined element

In a combined element, the shading effects act in the same way as for other elements or symbols. Rotations have effects on the actual angle of the shade.

16.26 Differences between the graphics qualities "Windows Enhanced" and "DirectX"

The Windows Enhanced graphics quality was removed from zenon, see the "Windows Enhanced" graphics quality removed (on page 64). There is the possibility of pixel differences, and things being displayed differently in the graphics output, as a result of the project conversion.

If the project needs to be amended after project version, note the following differences between the graphics qualities Windows Enhanced and DirectX:

Differences can occur in the following areas:

- ClearType of fonts
- Antialiasing
- Positioning of displays within elements
  
  In doing so, note:
  - The dynamic elements and
  - all areas in which text occurs.

- Dynamics/symbols:
  - Rotate
  - Scaling
  - Move
Also possible differences in:

- Color gradient
- Rounding
- Effects, such as shading
- Rounded corners
- End of line
- Line type
- Graphics file
- Zoom in zenon Editor
- Worldview in zenon Runtime

Note: Differences that are not listed here can also occur in other areas.

16.27 Unlinked elements

**COMBINED ELEMENT:**

If the main variable is linked, the **combined element** is no longer displayed in Runtime.

**TREND ELEMENT:**

If no curves have been defined in the Editor, the **trend element** is not shown in Runtime.

**CLOCK ELEMENT:**

If the **clock element** is configured with the time difference setting, but no variable is linked, it is no longer shown in Runtime.

**WPF ELEMENT:**

A **WPF element** for which no valid XAML file has been linked is not available in Runtime.

16.28 Variable properties for zenon Analyzer

For use in the COPA-DATA product zenon Analyzer, a new group was added to the variable properties:

The following properties in the zenon **Analyzer** variable properties group provide information for reports in the zenon Analyzer:
**Visual name**: Entry of a display name of the variable in zenon Analyzer. This must be unique in the project. The check is not carried out when issued in zenon, but when imported into zenon Analyzer. If this property is changed after the first export to a zenon Analyzer, these changes are not applied in the zenon Analyzer.

**Meaning**: Entry of the (Meaning) of a variable in the zenon Analyzer. Entry is manual or by means of the Meaning and Waterfall Chart Wizard. Several meanings are separated by a comma.

Syntax: `[Meaning1],[Meaning2],...,[MeaningN]`

**Parameters for waterfall diagram**: Parameters of a variable for a waterfall diagram in zenon Analyzer. Entry is manual or by means of the Meaning and Waterfall Chart Wizard. The individual parameters are separated by a comma. Several waterfalls are divided by a semicolon.

Syntax: `[model name],[row index],[index in row],[color code];`

Up to version 7.11, the entries of the new Meaning and Parameters for waterfall diagram properties were entered into the Resources label property.

When converting a project to version 7.20, the entries are kept in the Resources label property. When exporting to zenon Analyzer, both the previous property and the new one are checked. If both are assigned, the entries of the new properties are taken on. Entries that are created using the Meaning and Waterfall Chart Wizard are always entered into the new properties.

16.29 Create zenon Logic projects

In the zenon Editor, no zenon Logic projects with the name `__Global` can be created.

**Attention**: If there are already projects with the name `__Global`, these are no longer shown.

17 Converting from version x to version 7.50

17.1 API: Data type for ReaAlarm amended (Def 34779)

The data type for ReaAlarm has been changed:

- previously: `LONG`
- from version 7.50 on: `DOUBLE`

This change can lead to errors when compiling existing code.

17.2 API: Changed behavior of AlarmListSelectionChanged

The behavior of the event has been changed with zenon version 7.50:
Converting from version x to version 7.50

- **Up to and including zenon 7.20:** If all alarms in the alarm message list are deleted, the AlarmListSelectionChanged occurs again. There is no entry in obItem.

- **From zenon 7.50:** The event no longer occurs with a completely empty list. If it is used in order to save properties of the selected entry, this information is also still present if there is no longer an alarm.

### 17.3 Screen elements removed

The following screen elements are no longer available as of version 7.50.

- **Message element**
- **Multibin**
- **Status element**

The following is applicable for elements that are no longer supported:

- After conversion into a current project that no longer supports an element:
  - Existing elements are displayed in the Editor and in Runtime.
  - Existing elements can be configured in the Editor.
  - New elements cannot be created in the Editor.
- When compiling the Runtime files for a version that supports these elements:
  - The elements can be displayed, configured and created. You can then find these elements at the bottom of the elements drop-down list.

**Note:** The functionality of the Multibin element and the Status element can also be configured using the Combi element.

### 17.4 Transparency property amended for static text

The Transparency property was amended for the Static text screen element. Previously it was only possible to select between transparent and opaque. With the Transparency of the fill color [%] property, it is now possible to select the transparency in percentage points between 0% (opaque) and 100% (transparent).

When converting the project, the value 100% is set if transparent was selected in the initial project. In all other cases, the value is set to 0%.
17.5 Element Static text Embedding of fonts was removed

No fonts can be embedded in the static text element. Like other elements, fonts can only be linked using the Font property.

PROJECT CONVERSION

When converting projects, all screens are checked for static text with embedded font. If embedded fonts are discovered, these are replaced:

1. The embedded font is replaced by the Arial font (10).
2. A notice is displayed.
   Double clicking on the notice opens the screen with the element and the static text whose font has been amended is highlighted.

STATIC TEXT FONT CONVERSION WIZARD

In order to continue to be able to use project configurations that use this property in earlier versions, the Static Text Font Conversion Wizard carries out the necessary amendments in the zenon 7.20 project.

The Static Text Font Conversion Wizard:

- Searches all screens and symbols of a project.
  Can be optionally configured:
  - Searches all symbols of a global project
  - Searches all symbols of the general symbol library.
- Converts the project configurations of embedded fonts into linked fonts:
  - Creation of a new font.
    Font name: Conversion_[existing font name]
  - Link this new font to the element.
  Can be optionally configured:
  - Creation and linking are created in the global project

⚠️Attention

Prepare your existing zenon projects in version 7.20 with the Static Text Font Conversion Wizard first before you convert your project to a higher zenon version.

The wizard is only included in current builds of version 7.20.
XML: IMPORT AND EXPORT

When importing an XML file for a project before version 7.50, embedded text is replaced by the standard font.

No **Font** property is included any more when exporting the converted screens. This is replaced by **LinkedFont**.

API

Two properties are available in the API:

- **Font**: was used previously
- **LinkedFont**: from version 7.50

For reasons of compatibility, **Get/Set** is possible for the font using both properties.

**Previous behavior:**

- It was possible to use the external name **Font** to set a **Get** or **Set** for a **LOGFONT** object.
- If all attributes of the **LOGFONT** structure have been set to 0, with the exception of font thickness (2nd argument), the font type is treated as linked. The value of the font thickness corresponded to the font in the font list module.
- If the first argument was also set for the **LOGFONT** structure and further values were also set (not zero), the font is treated as embedded.

**Behavior from version 7.50 on:**

- **Get**: Works as before.
- **Set**: Depends on values.
  - If the font type is set to linked (all values 0 except 2nd argument), the process works as before.
  - If the font is set to embedded, it is also replaced by the standard font.

17.6 SE driver from projects from 6.20 SP4 or lower

When converting a project of version \( \leq 6.20 \) SP4 with SE driver.

In order for the configuration to be accepted correctly, the driver dialog must be opened and confirmed with **OK**.

17.7 SNMP32 and SNMPNG32 - save location MIBS

The save location for individually-installed MIBS has been changed.
Converting from version X to version 7.60

- Previously %ProgramFiles(x86)%\COPA-DATA\zenon8.20\SNMP-MIBS
- From version 7.50 on:
  %ProgramData%\COPA-DATA\zenon8.20\CommunicationProfiles\SNMP-MIBS

MIBS can thus also be installed without administrator rights.

17.8 Gas grid in the Load Management module removed

The Load Management module only supports electricity grids from zenon 7.50.

The gas grid functionality has been removed. When importing, converting and compiling zenon projects from earlier versions, a corresponding message is shown in the output window of the zenon Editor if there is still some project configuration content for gas grids.

A corresponding CEL entry is created when starting it in zenon Runtime.

NOTICE TEXT

For project configurations with gas grid content, the following message is shown in the output window of the zenon Editor:

*The functionality gas grid of the module Load Management is no longer supported and will not be imported.*

18 Converting from version X to version 7.60

18.1 Properties for configurable lists

The behavior of headers in the Runtime is now defined in the Editor by means of the properties of the Header group:

- **Show header:**
  Controls whether the header is displayed in the Runtime.

- **Show filter row:**
  Controls whether the filter line is displayed in the Runtime.

- **Disable sorting:**
  Controls the possibility of sorting table columns in the Runtime with a click on the header.

- **Freeze column location:**
  Controls the possibility to amend or move the width of table columns in the Runtime with mouse actions.
Deactivate context menu:
Activates or deactivates the context menu for the header.

**ACTION IN THE EVENT OF PROJECT CONVERSION**

The following is applicable for project conversion:

- If a project is compiled for a version before zenon 7.60, the **Header static** property is activated if the **Disable sorting** property is not activated in the current project.
- If a project is converted from a version before zenon 7.60 into the current version, then the **Freeze column location** and **Disable sorting** properties are activated if **Header static** is inactive in the original project.

### 18.2 Length of string variables

The **String length** of a variable can no longer have the value 0.

The following is applicable for project conversion:

If a project is converted from a version before zenon 7.60 into the current version, the value of the **String length** property is set to 5 (default value) if this property was configured with the value 0 in the original project.

### 18.3 Fill pattern for buttons

The properties of the **Fill** group of buttons have been enhanced with the **Fill pattern** property.

If, before conversion, **single-color** was configured under **Color gradient**, the fill pattern is now set to **single-color**. If, under **Color gradient**, one of the other options was configured, the fill pattern is now set to **gradient** and the type of gradient is set according to the original configuration under **Color gradient**. This is also applicable to XML import from older versions.

When Runtime files are created for older versions, those are converted up in Runtime. Access via the API is effected by means of the previous **Filling** property.

### 18.4 Default value for "Invalid recipes writeable via function"

In the Recipegroup Manager, the default value for the **Invalid recipes writeable via function** property in the **Recipe Group Manager** property group has been amended to **inactive**.

- After a project conversion, the default value is thus also: **Inactive**

Invalid recipes are thus no longer set using the function.
If invalid recipes are written, activate the checkbox for the property.
19 Converting from version X to version 8.00

19.1 ALC - Links

When converting a project, configurations of the obsolete link number property (numerical) are transferred into the current Link name property as text.

19.2 Equipment Modeling: New option for screen switching

When switching to an image of the Equipment model type, the new option Display complete structure determines whether the complete path for the selected plant group or only the name of the selected plant group is written to the linked variable:

- **Active**: Complete path of the object is used.
- **Inactive**: Only the name of the selected object is used.

Default:
- New configuration: active
- Project conversion: inactive

Compatibility is thus ensured.

19.3 Adapt Report Viewer screen

From zenon version 8.00, it is possible to hide the report viewer toolbar for display in Runtime with the Show integrated Report Viewer tool bar property.

In order to be able to use this property, the following step must be carried out manually with screen types Report Viewer that have been configured in a version earlier than zenon version 8.00:

- Delete the report window control element and replace it with the current control element.

19.4 Edit user screen

As of version 8.00, the user administration has the new user type **power user**. This user type is positioned between administrator and user. They can create and administer users. If configured, they can also create and administrate other power users.

To do this, the Administrator (checkbox) control element has been removed from the edit user screen and replaced with a drop-down list to select the user type. In addition, there is also a checkbox which makes it possible to supplement the rights of a power user.

The previously-used control elements are retained during project conversion. The screen must be reconfigured accordingly in order to be able to use the new screen.
19.5 Reports with current .RDL format

As of version 8.00, the current .RDL data standard from Microsoft (schemas.microsoft.com/sqlserver/reporting/2010/01/reportdefinition) is also supported for the display of reports in Report Builder screens.

RDL data that has been created with version 2.0 of the Report Builder is also supported. As of zenon 8.00, these reports can be edited with both version 3.0 as well as with version 2.0 of the Report Builder. An amendment to the scheme used is not necessary.

⚠️ Attention

If reports are edited with version 3.0, you can no longer display these correctly in older versions of zenon. This is visualized in a warning dialog when compiling the data for older versions of zenon Runtime.

19.6 Server 2 as data server

The Server 2 as data server functionality (project property in the properties group Network) has been removed from the zenon Editor for version 8.00.

With projects from earlier versions of zenon that have the Server 2 as data server property activated, this functionality is automatically deactivated during project conversion.

For converted projects, the INI entry is always DATENSERVER=1. The value of the entry is generally ignored.

This entry is no longer present in new projects from version 8.00.

19.7 Internal driver variables

The licensing for the variables of the internal driver has been amended:

- Does not require a license:
  - No display of the external time stamp and limited visualization of the status (spontaneous and time internal only) in Runtime
  - Internal driver variables are not calculated as TAG for licensing

- Requires a license:
  - Complete visualization of all time stamps (internal and external) and all statuses in Runtime
  - Each internal driver variable is counted as a TAG for licensing
When configuring, the display type and licensing are determined with the new **State/Timestamp for Intern Driver variables** property in the **Runtime settings** properties group.

⚠️ **Attention**

When converting projects, the new **State/Timestamp for Intern Driver variables** property is not activated. To visualize the time stamp and status in Runtime, this property must be activated in the zenon Editor.

## 20 Converting from version X to version 8.10

### 20.1 SQL Server 2017

With zenon 8.10 the SQL Server is switched to version 2017 Express Edition. The settings are defined with the **Startup Tool**.

The correct entry for the zenDB.ini can be found in the zenDB.ini chapter.

⚠️ **Attention**

Projects from older versions cannot be opened directly in zenon 8.10. Projects which should be edited in zenon 8.10 must first be saved in the version in which they were created. The project backup can then be read back in zenon 8.10. Conversion is done automatically.

### 20.2 Process Recorder

As of version 8.10, different project versions are supported in the Process Recorder module.

Projects from version 8.00 can still be played.

- All Runtime files that can be changed are taken from the simulation image.
- The user information, RGM and standard recipes, fpm, command sequencer and batch control, and shift management are removed from the project backup.
- If there is no project backup, the data from the simulation image is used.
20.3 BACnet driver