Export Archive Data for SIMATIC WinCC

User manual

Version 1.4.0

Swappcon ApS

Software Application Consulting

Table of Contents

Abbreviations

The following abbreviations are used in this document:

CSV	Comma Separated Values
EAD	Export Archive Data
MS	Microsoft
PC	Personal Computer
SW	Software
TIA	Totally Integrated Automation
UI	User Interface
UTC	Coordinated Universal Time
UTF-8	Unicode Transformation Format - 8-bit
WinCC RT	WinCC Runtime

Prerequisites

It is assumed that the readers of this manual have knowledge and experience of operating MS Windows at user level. Some topics, such as standard menu items and features, will therefore not be described in detail, but will instead refer to other relevant MS Windows literature.

1. Introduction

This document is an operating manual intended for users of the Export Archive Data SW package.

1.1 Export Archive Data description

EAD is a specially developed software package that provides fast and easy access to logged archive data for tag values and alarms. The software can basically handle the following scenarios:

- Extract historical tagvalues to screen.
- Save historical tagvalues to file in CSV- or MS Excel format.
- Automatically perform scheduled extraction of tagvalues directly to file in CSV format.
- Extract logged alarms to screen.
- Save historical alarms to file in CSV- or MS Excel format.

The EAD package consists of the following modules:

1. **EAD application:**
   This module allows the user to set all desired parameters before the actual extraction of archive data. The user can also parameterize all settings regarding automatic time-scheduled data extraction.
   The EAD main application is the only module with a program UI. It's the only application the user needs to intreract with. The module is designed as an executable application that runs on a WinCC Runtime PC.
   For the program to work properly, a WinCC Runtime project must be started on the same PC.

2. **EAD service**:
   This module handles the automatic part regarding time-scheduled data extraction. The module is designed as a Windows service that automatically starts up with the MS Windows operating system.

3. **EAD Auto application**:
   This module is used for automatic time-scheduled data extraction. The module is only activated by the "EAD service" module.

For all modules, the language of the user interface is English.

The following chapters describe the installation and operation of the SW package.

2. Installing the EAD package

2.1 Installation requirements

The EAD package has been tested with and supports the following:

Operating systems:

- MS Windows 10 Professional 64-bit
- MS Windows Server 2019 Standard 64-bit

Simatic WinCC:

- Simatic WinCC Runtime V.7 or higher
- Simatic WinCC Professional V16 , V17

All the necessary files are installed in the following directory:

- Program Files \ Swappcon \ ExportArchiveData

It's not possible to use the EAD SW package on a PC without WinCC Runtime installed !

2.2 Installation on a WinCC Runtime PC

On the WinCC Runtime PC, the "setup.exe" file is activated on the installation medium:

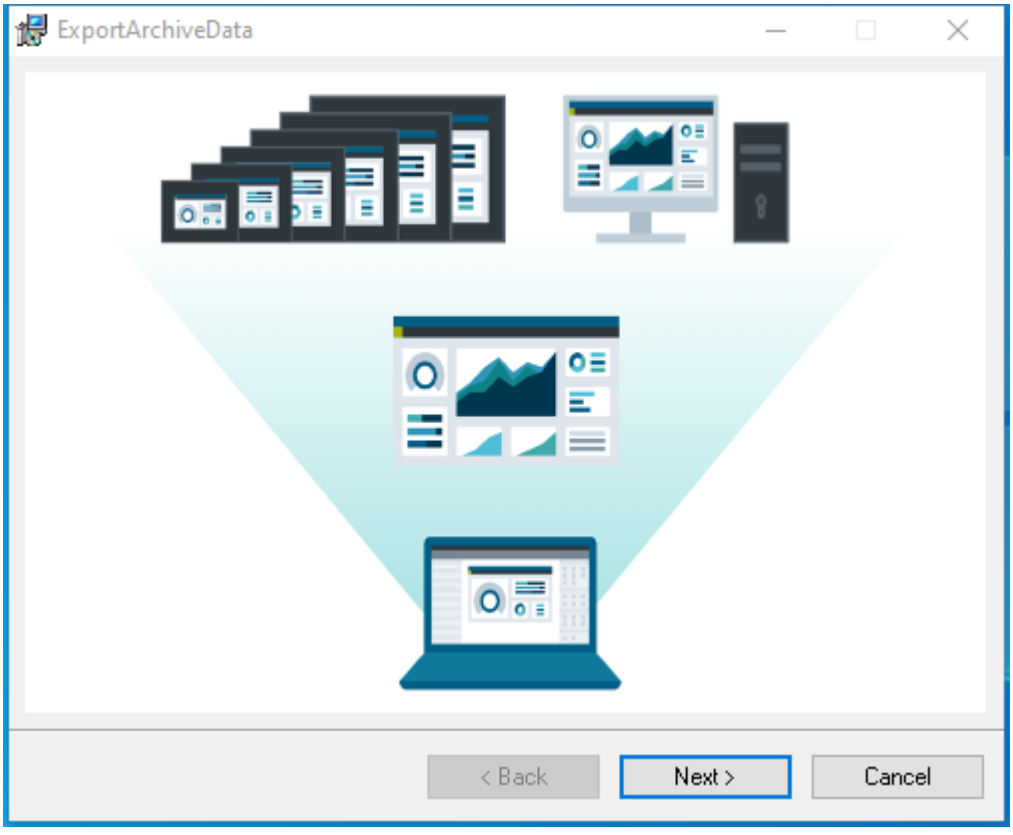


Figure 2.2.1: Installation program startup dialog.

Please press the "Next>" button.

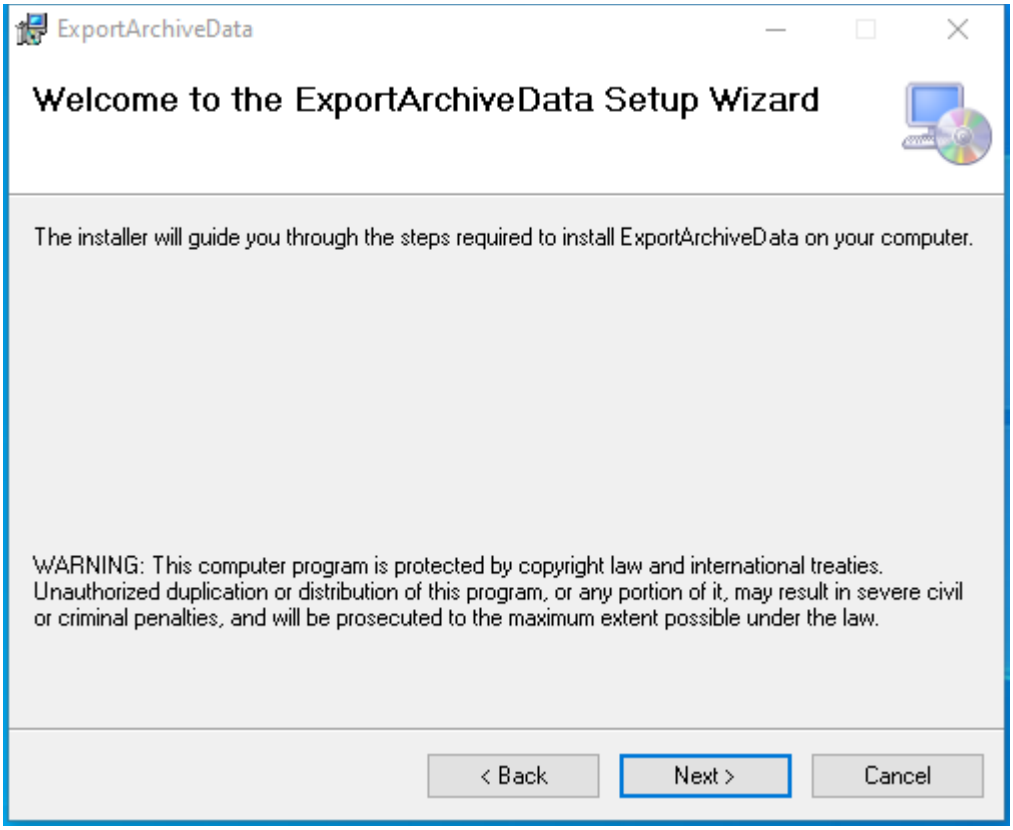


Figure 2.2.2: Installation welcome dialog.

Please press the "Next>" button.

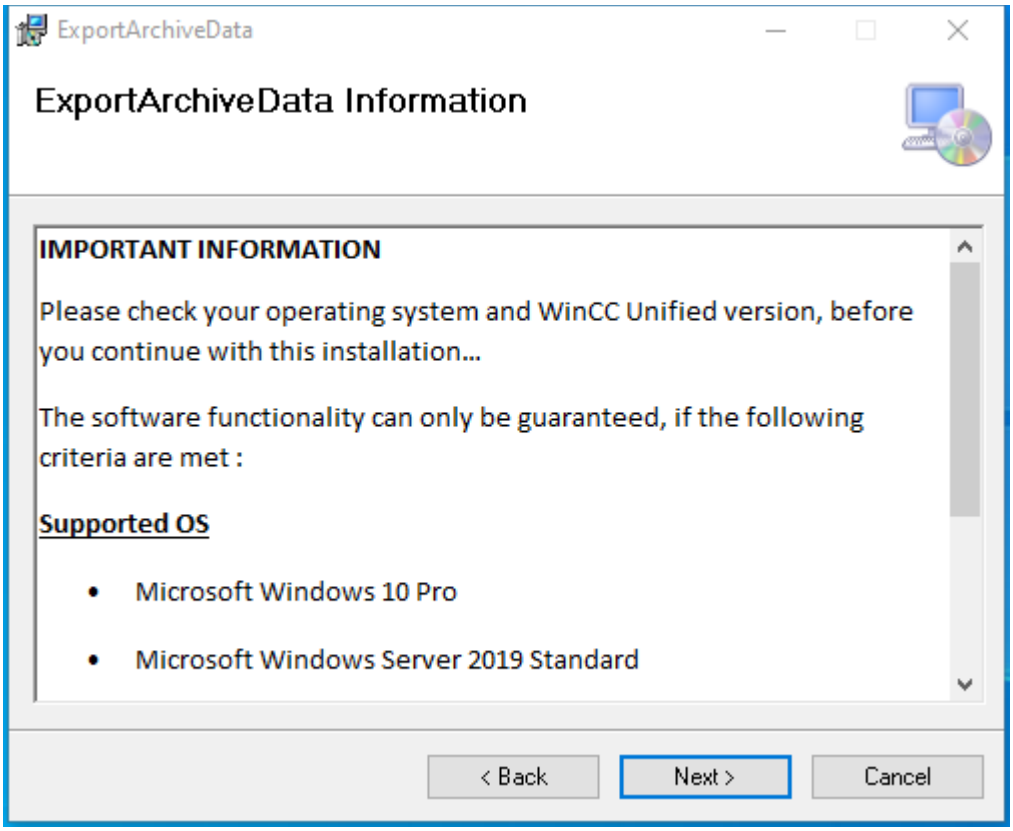


Figure 2.2.3: Information regarding supported software.

Please press the "Next>" button.

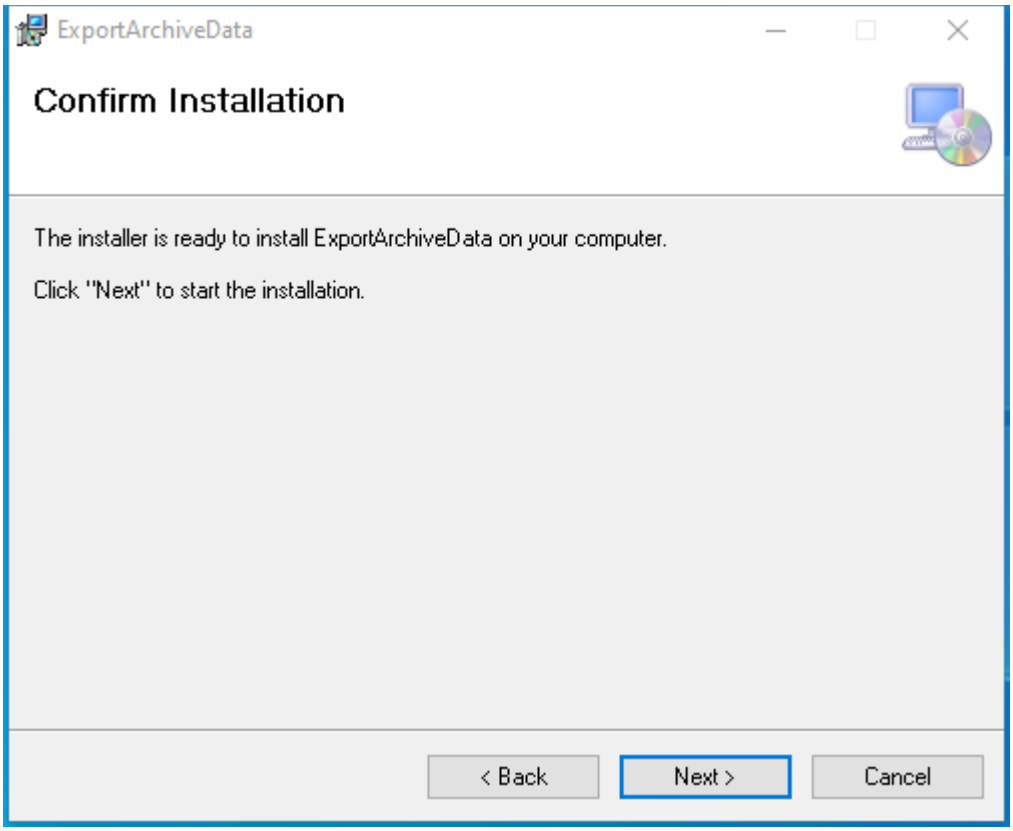


Figure 2.2.4: The installation program is ready for the installation itself.

Please press the "Next>" button.

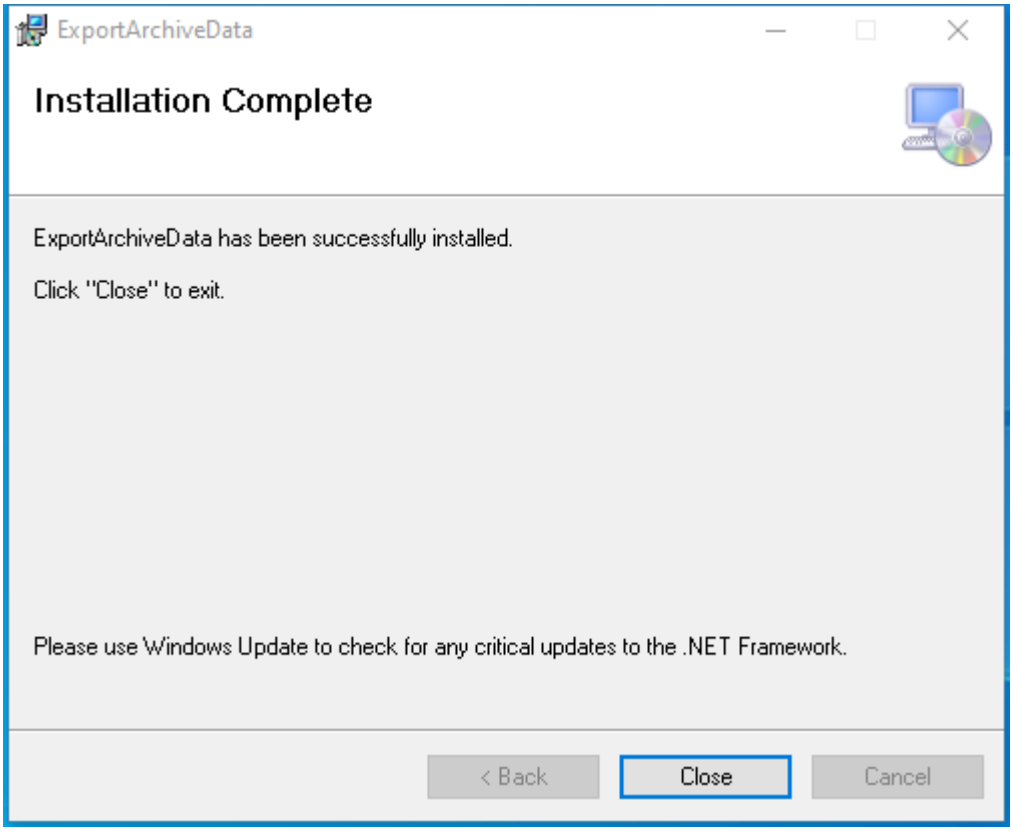


Figure 2.2.5: Installation program exit dialog.

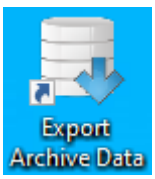
All the required files are installed in the following directory:

- \ Program Files \ Swappcon \ ExportArchiveData

2.3 Program start icon

After installing the EAD package, the following application launch icon will be created:

- On Windows desktop:
  - ”Export Archive Data”



- • In Windows program menu in "Swappcon" folder:
  - ”Export Archive Data”
  - ”User manual”

3. User manual : Export Archive Data

3.1 Using the EAD module

The EAD module is started using the "Export Archive Data" icon located on the Windows desktop:

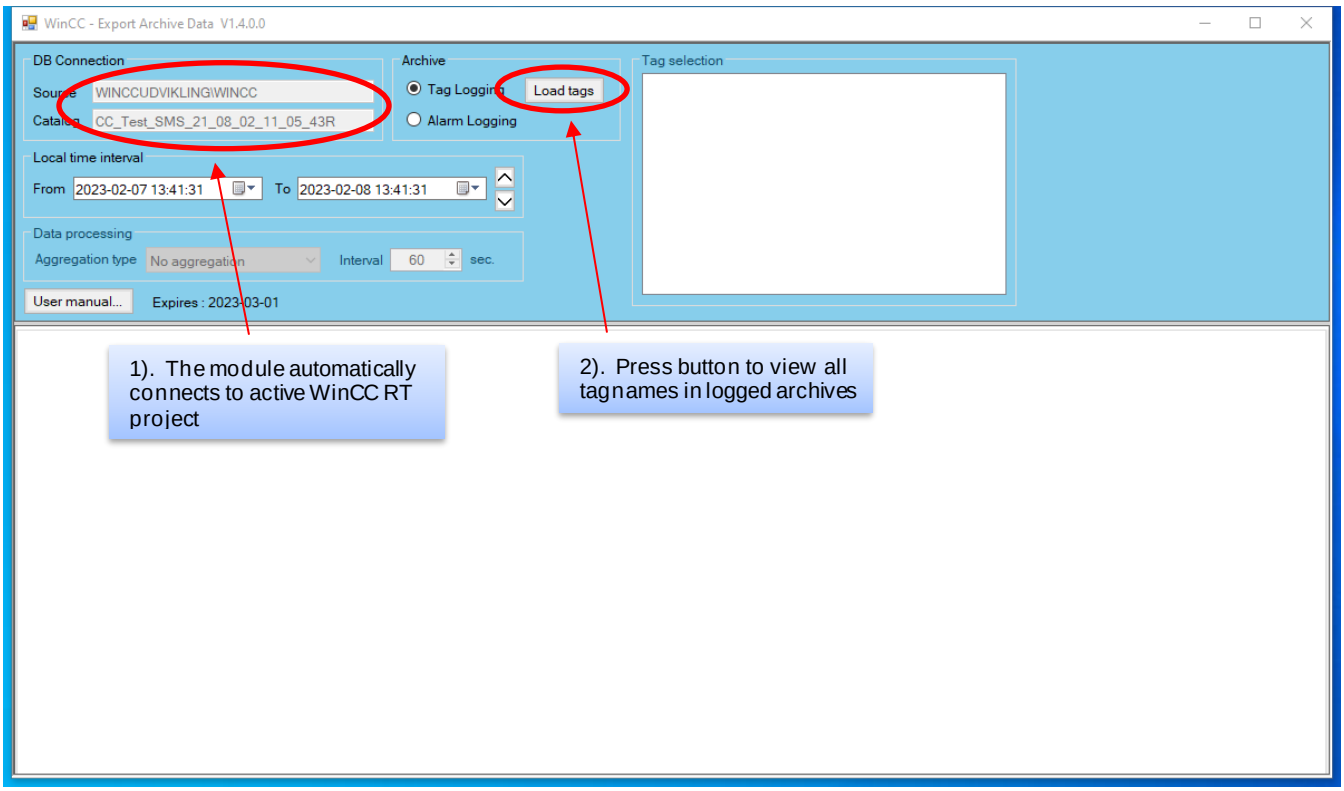


Figure 3.1.1: Example - Appearance of the EAD module at start-up.

During start-up the module automatically connect to the project loaded in WinCC runtime.

Pressing the "Load tags" button, shown in figure 3.1.1, will display all tagnames defined in all taglogging archives in the WinCC project. The tagnames are listed in the “Tag selection” listview:

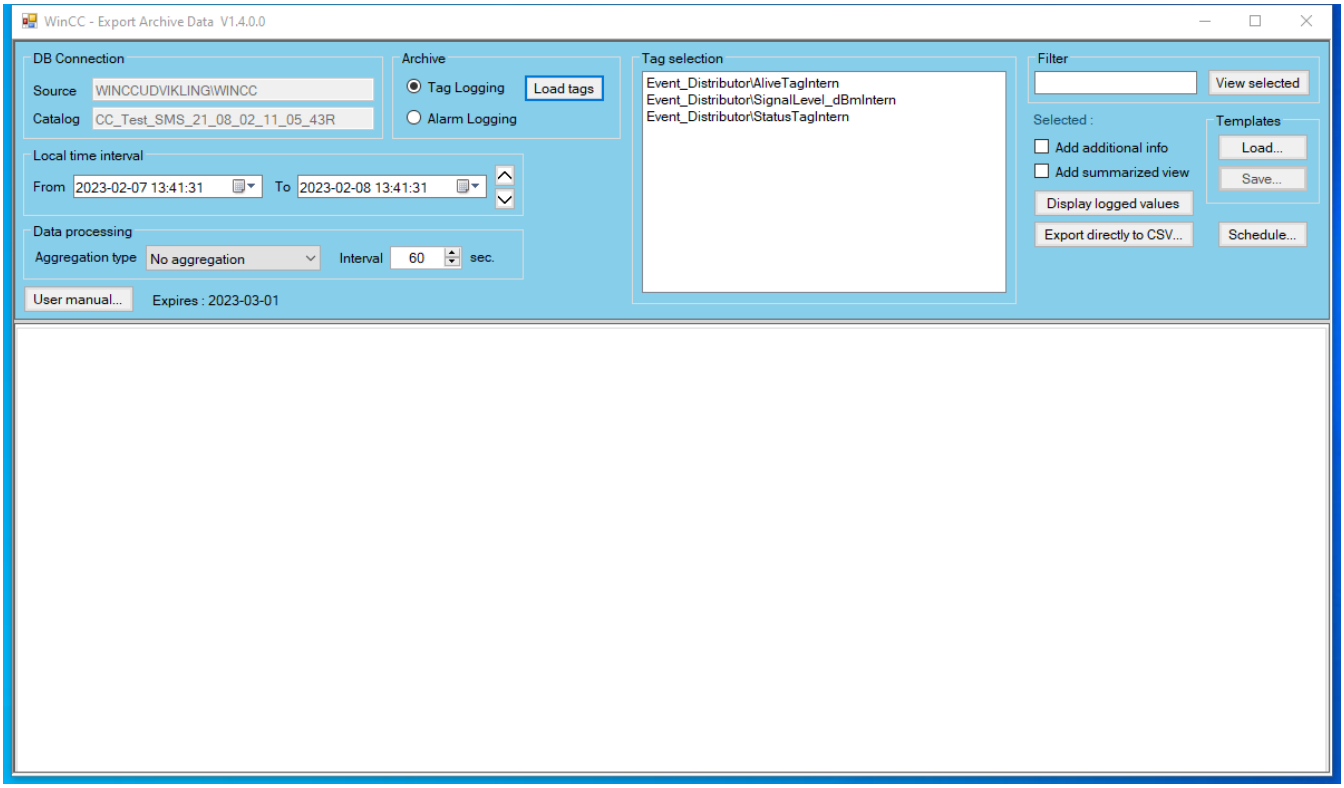
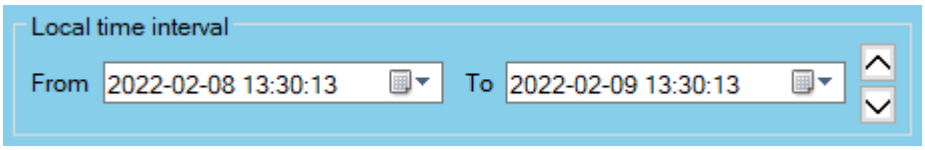


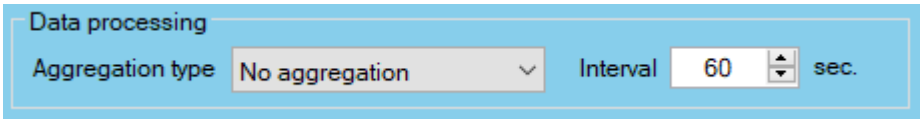
Figure 3.1.2: Example - EAD module after established connection and listing of archived tagnames.

The selction of tags can be done by using standard Windows selection methods, such as <CTRL><mouseclick> and <SHIFT><mouseclick>.

- The “Filter” textbox can be used to dynamically filter the tag names in the listview. It allows the user to select tag names in an fast and easy way.
- The “View selected” button removes all unselected tag names from the "Tag selection" listview, which gives the user a quick overview of the tags selected. If you want to select additional tags, just press the button “Load tags” again and continue your selection.



- In the “Local time interval” box the timespan of the export can be specified. This is done by clicking the timepicker-icons for each textbox.
- The covered timespan (From-To) can be switched back and forth, using the down- or up-arrows located on the right side of the “Local time interval” box.



- Instead of just showing raw values stored in the archives, it is also possible to view calculated/processed values. From the “Aggregation type” dropdownlist the user can choose from the following options:
    - No aggregation
        - show raw values
    - FIRST
        - show the first value within the chosen “Interval”
    - LAST
        - show the last value within the chosen “Interval”
    - MIN
        - show the minimum value within the chosen “Interval”
    - MAX
        - show the maxiimum value within the chosen “Interval”
    - AVG
        - calculate and show the average of all values within the “Interval”
    - SUM
        - calculate and show the sum of all values within the “Interval”
    - COUNT
        - calculate and show the number of all values within the “Interval”
    - FIRST_INTERPOLATED
        - show the first value within the chosen “Interval” using interpolation
    - LAST_INTERPOLATED
        - show the last value within the chosen “Interval” using interpolation
    - MIN_INTERPOLATED
        - show the minimum value within the chosen “Interval” using interpolation
    - MAX_INTERPOLATED
        - show the maxiimum value within the chosen “Interval” using interpolation
    - AVG_INTERPOLATED
        - calculate and show the average of all values within the “Interval” using interpolation
    - SUM_INTERPOLATED
        - calculate and show the sum of all values within the “Interval” using interpolation
    - COUNT_INTERPOLATED
        - calculate and show the number of all values within the “Interval” using interpolation

- Displaying logged values presents the user with the following information:
    - Local timestamp
    - Logged value
    - ValueName (name of the value in the archive)
- Choosing “Add additional info”, before displaying logged values, presents the user with the following additional information:
    - Quality code of the process value (Hex value):
        - Please refer to the official Simatic WinCC documentation.
    - Flags:
        - Please refer to the official Simatic WinCC documentation.
    - ValueID:
        - The ID of the tag in the archive (not the TagID).

- Choosing “Add summarized view”, before displaying logged values, presents all the extracted archive values in a separate view. In this view all selected tags are presented in a time chronological way, with a resolution of 1 second. The view is created as the last tabview. For more information about the different views, please see the chapter 4 called “The different views”.

- Pressing “Display logged values” button, will display all stored archive values for the chosen tags within the specified “Local time interval”. Each tags values will be displayed in a separate tab listview with columns depending on the user choice of the “Add additional info” option. If no additional info is chosen, each value is presented with 3 columns:
    - “localTimestamp”: The date/time the value is stored in the archive.
    - “RealValue”: The value itself.
    - “ValueName”: The name identifying the value in the archive.

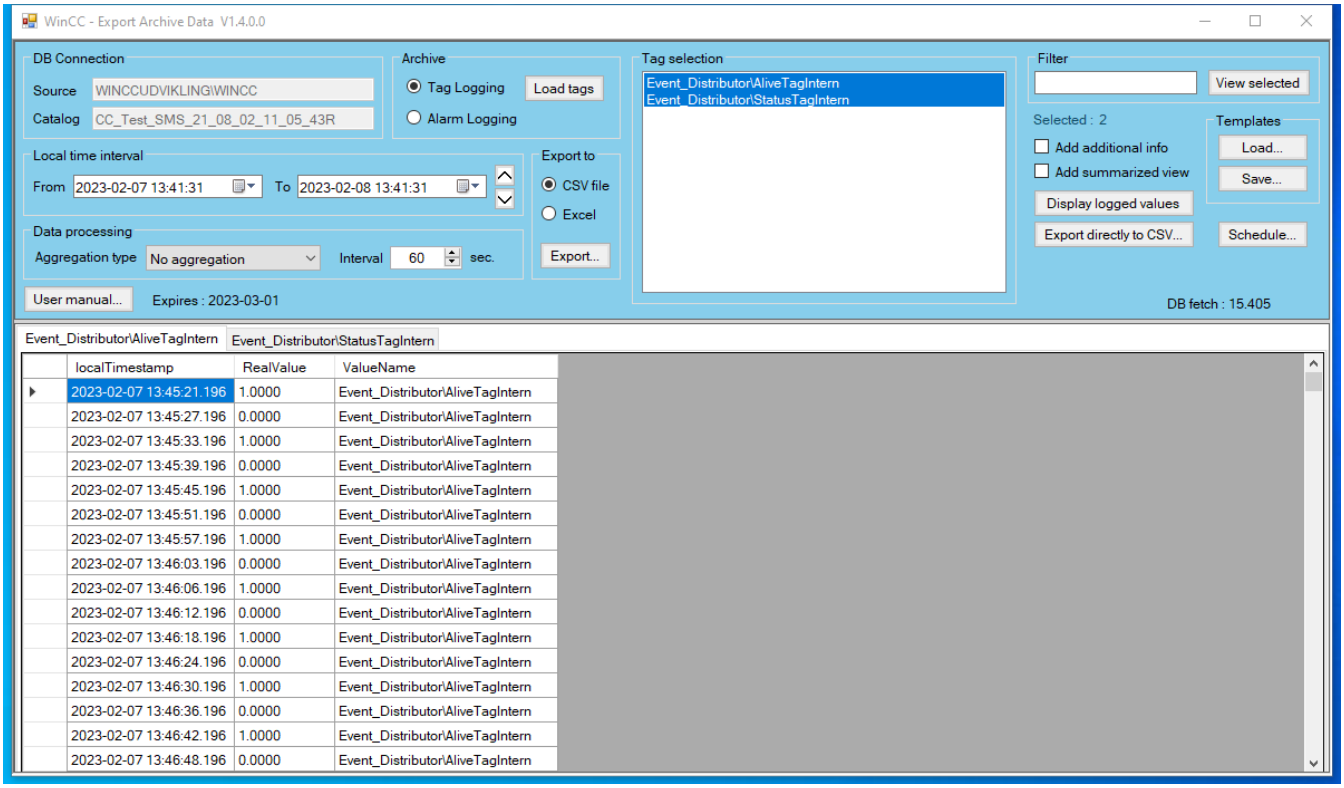


Figure 3.1.3: Example of EAD module after extracting archive values to screen.

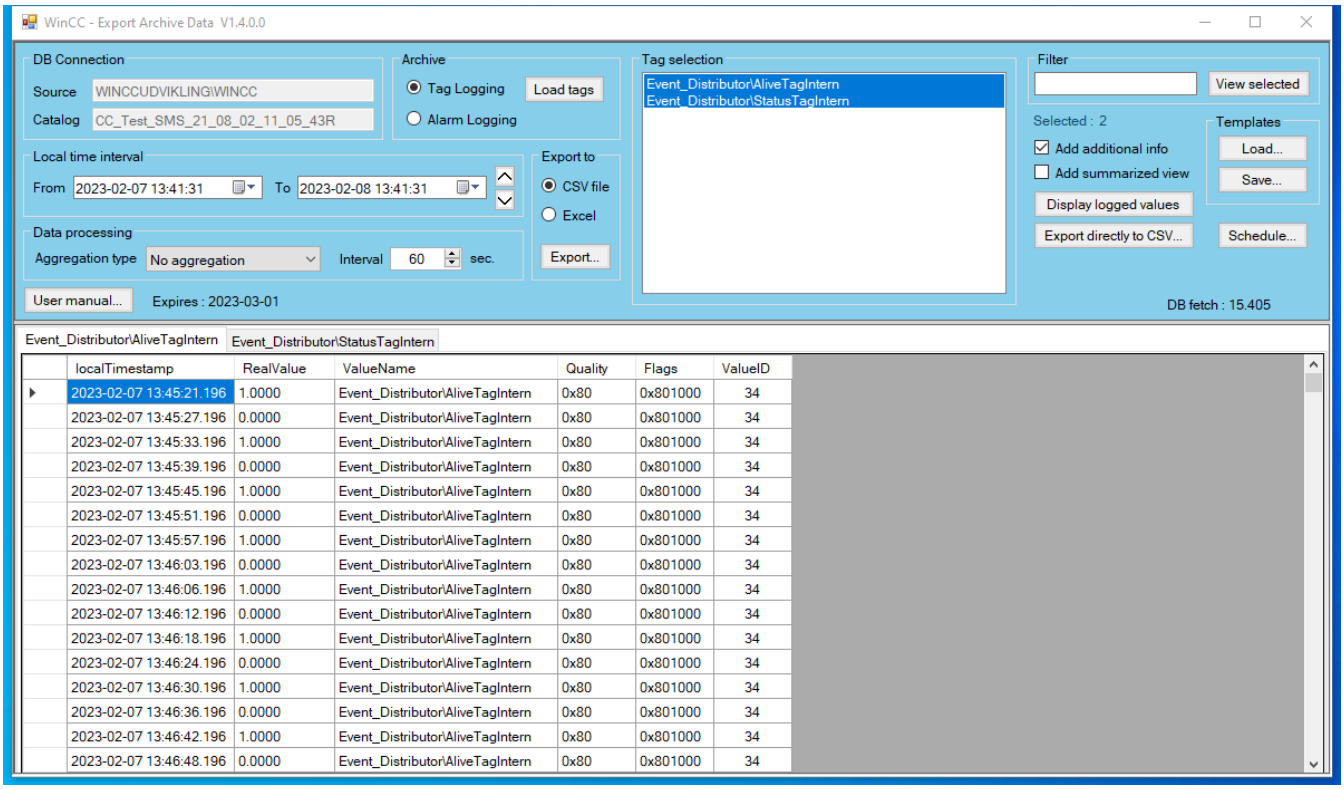


Figure 3.1.4: Example of EAD module after extracting archive values to screen, using “Add additional info”.

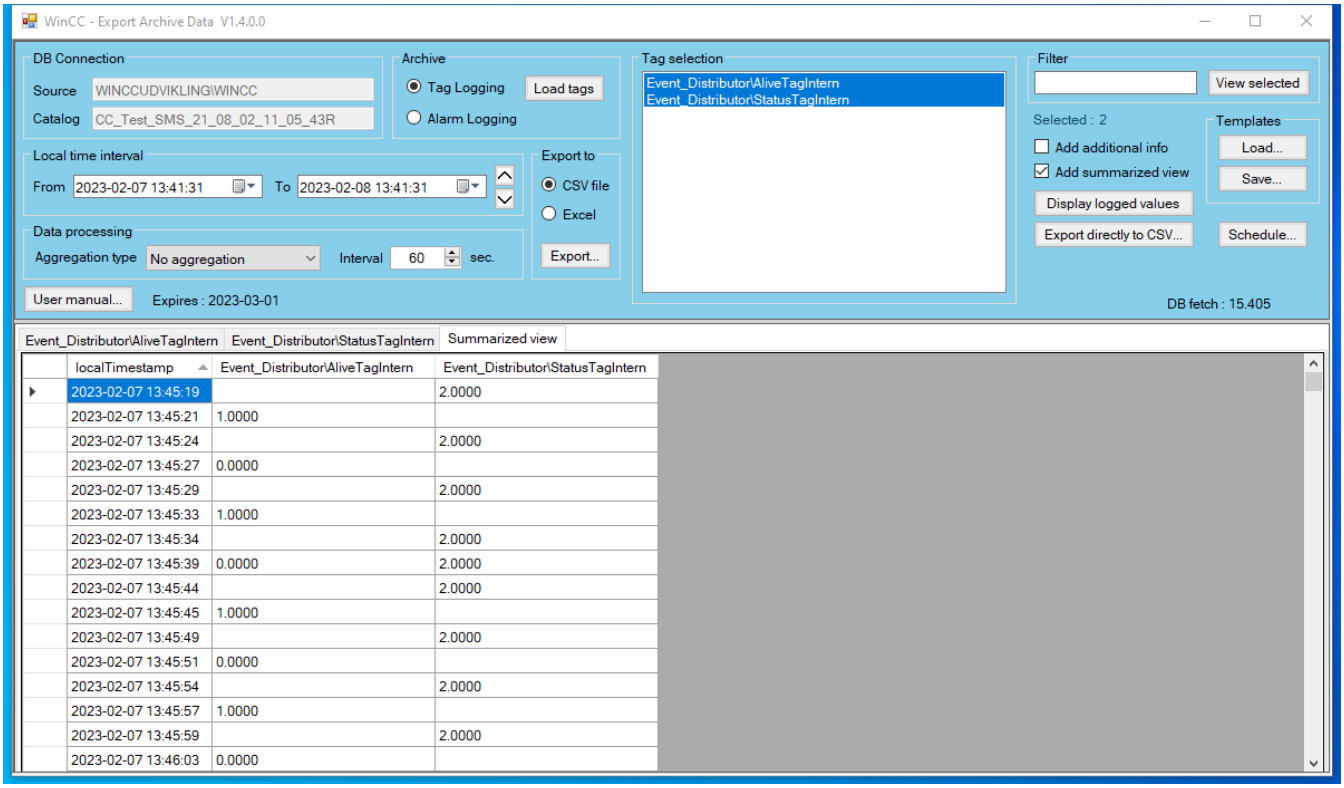


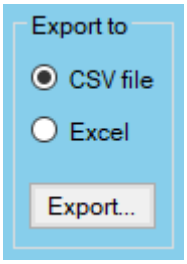
Figure 3.1.5: Example of EAD module after extracting archive values to screen, using “Add summarized view”.

When extracting data, using the “Display logged values” button, there are some restrictions regarding the number of chosen tags and the chosen time period (timespan):

- When EAD is started as a normal Windows application:
  - Max. selected tags: 1000 tags
  - Max. timespan: 30 days
  - Max. values displayed in each tab: 100.000 values

- When EAD is run under WinCC RT implemented in a graphics picture (Pdl-file):
  - Max. selected tags: 10 tags
  - Max. timespan: 5 days
  - Max. values displayed in each tab: 10.000 values

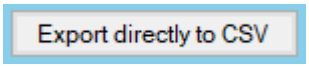
If the user exceeds these limits, a warning is displayed before the actual extraction. The user can then choose to continue, or reevaluate the settings before displaying data. The limitations are implemented in order to avoid memory overrun, especially when implemented in a WinCC RT graphics picture.



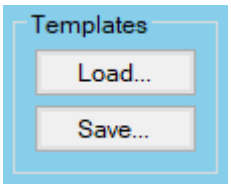
After the extraction of data to screen the user can export the displayed values to a CSV- or to a MS Excel file. When pressing the “Export” button, the user is presented with a standard MS Windows save dialog box, and can now save the file to a preferred destination.

```
localTimestamp,RealValue,ValueName,
2022-02-07 10:26:16.312,2.0000,StatusTag:Tag_4,
2022-02-07 10:26:56.594,10.0000,StatusTag:Tag_4,
2022-02-07 10:28:36.799,5.0000,StatusTag:Tag_4,
2022-02-07 10:28:56.827,2.0000,StatusTag:Tag_4,
2022-02-07 10:25:58.085,True,AliveTag:Tag_1,
2022-02-07 10:26:00.097,False,AliveTag:Tag_1,
2022-02-07 10:26:02.099,True,AliveTag:Tag_1,
2022-02-07 10:26:04.101,False,AliveTag:Tag_1,
2022-02-07 10:26:06.104,True,AliveTag:Tag_1,
2022-02-07 10:26:08.121,False,AliveTag:Tag_1,
2022-02-07 10:26:10.139,True,AliveTag:Tag_1,
2022-02-07 10:26:12.142,False,AliveTag:Tag_1,
2022-02-07 10:26:14.158,True,AliveTag:Tag_1,
2022-02-07 10:26:16.162,False,AliveTag:Tag_1,
2022-02-07 10:26:18.498,True,AliveTag:Tag_1,
2022-02-07 10:26:20.501,False,AliveTag:Tag_1,
2022-02-07 10:26:22.506,True,AliveTag:Tag_1,
2022-02-07 10:26:24.509,False,AliveTag:Tag_1,
```

Figure 3.1.6: Example - A CSV-file export. Please note that this example contains data for 2 archive tags (ValueName changes after the first 4 lines of data).

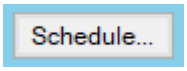


The “Export directly to CSV” button is used, if the user does not need to see the data on screen, before exporting to a CSV-file. This option also gives the user the ability to export a larger amount of data, because it does not need to be displayed on screen, which is a very memory consuming process. When pressing the “Export directly to CSV” button, the user is presented with a standard MS Windows save dialog box, and can save the file to a preferred destination.



Once the user has performed the necessary export setup, it is possible to save the selected setup as a standard template, for later reuse:

- ”Load” button:
  - Load a previously saved template. The user is presented with a standard MS Windows load dialog box, and can load the template from a preferred destination.
- ”Save” button:
  - Save the displayed setup to a template. The user is presented with a standard MS Windows save dialog box, and can save the template to a preferred destination.



Open a new dialog, where the user can setup an automatic export schedule, based on the already selected options. Please refer to chapter “3.2 Automatic time scheduled export function” for a detailed description.

3.2 Automatic time scheduled export function

The EAD SW package includes the option of creating automated time scheduled exports. The exported data values are saved in CSV-files without any user intervention. The files are saved in UTF-8 format. This chapter describes the setup procedure for the automatic time scheduled export.

3.2.1 The “Setup auto export schedule” configuration dialog

The configuration dialog is opened by clicking the button “Schedule” on the EAD main page:

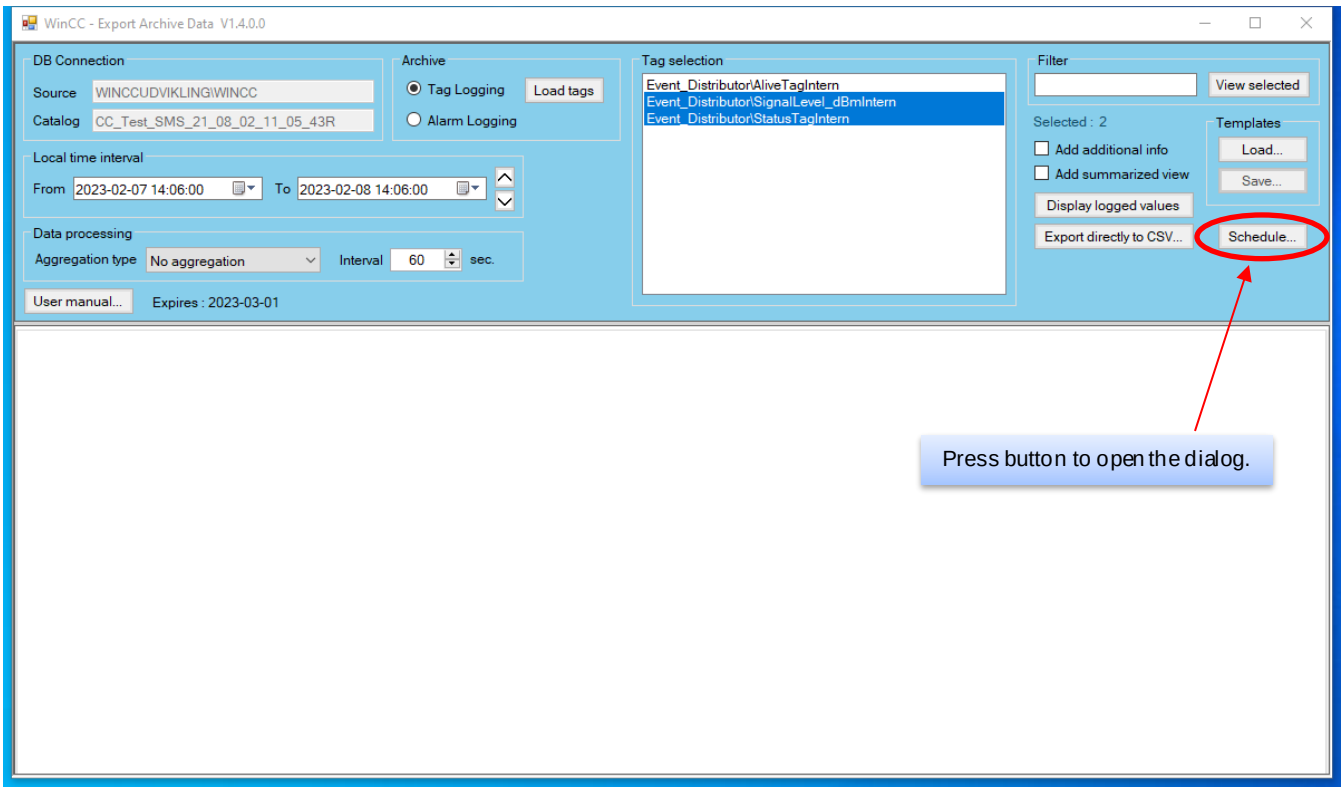


Figure 3.2.1: How to open the “Setup auto export schedule” configuration dialog.

The configuration dialog opens like this:

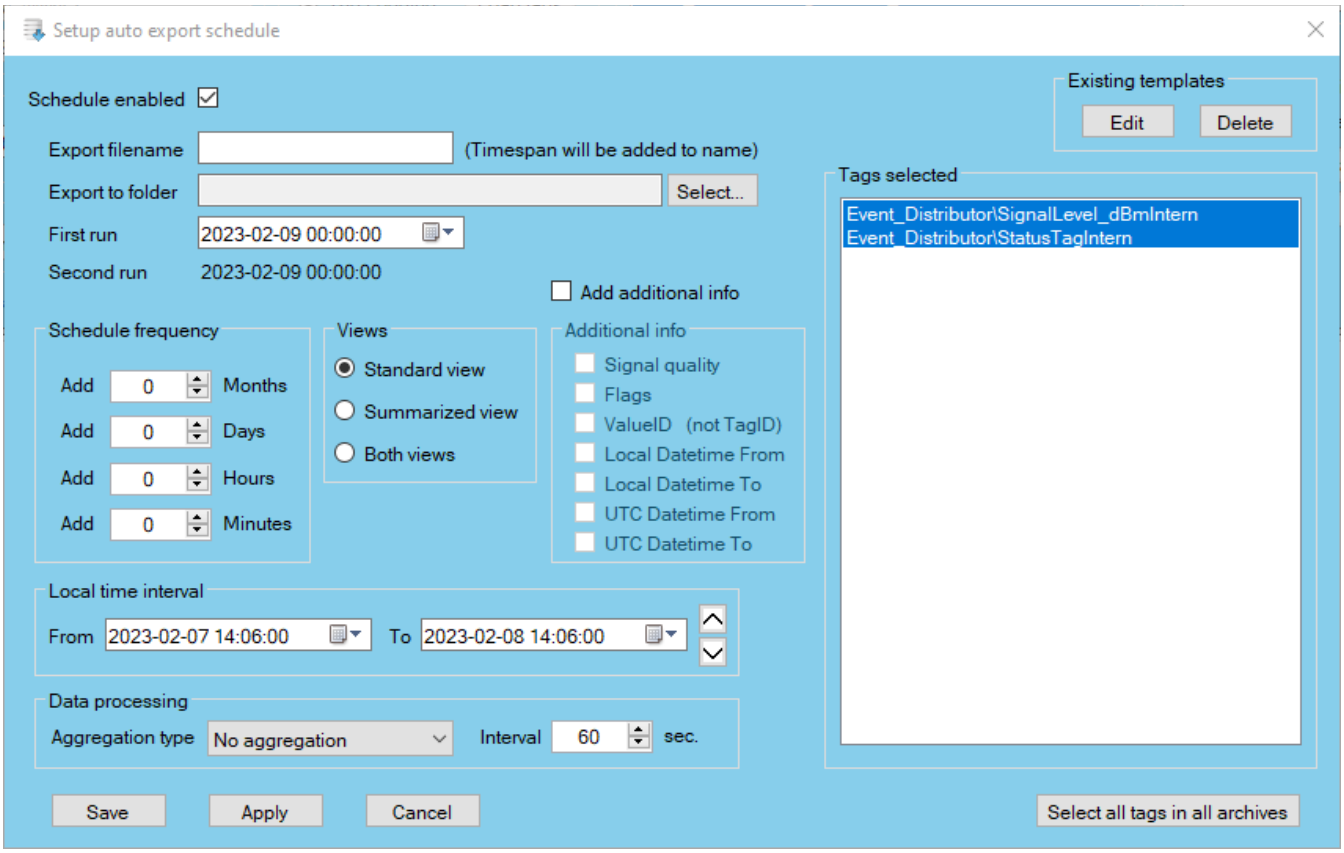


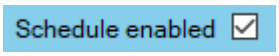
Figure 3.2.2: Example of the "Setup auto export schedule" configuration dialog.

Configuration regarding "Tags selected", "Local time interval", "Views" and "Additional info" are automatically transferred from the main page to the "Setup auto export schedule" dialog.

The field "First run" is automatically set to the following day according to the "To" field datetime value.

3.2.2 Configuring an automatic time scheduled export

In order to activate an automatic export, the following dialog fields must be configured:



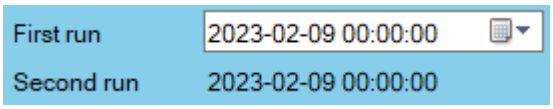
- Indicates whether the schedule is activated or not. In this case activated means that it will produce exported data in CSV-files.
  Changing the value must be followed by activating "Save" or "Apply" button

- Specifies the naming of the exported CSV-files. This name is a prefix, and it will be combined with an indication of the timespan for the exported data.

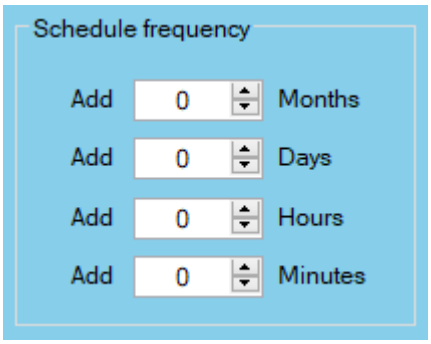
  Example (Timespan: 2023-02-07 14:06:00 - 2023-02-08 14:06:00):

  Export filename: "ScalanceSignal"
  CSV-filename: "ScalanceSignal 2023-02-07 14.06.00 - 2023-02-08 14.06.00.csv"

- The "Select" button opens a standard MS Windows dialog box where the user can select an output folder. The CSV files for the exported data will be stored in this directory folder.



- In the field “First run” the user must specify the start date/time for the first export run. It is crucial that this date/time is timewise located later than the “To” date/time in the “Local time interval”, otherwise the export will not be run, because of lack of data.
- The “Second run” field is just an information field, indicating the computed date/time for the second run. This field will automatically be updated, when the user changes the “First run” field or makes changes in any of the ”Schedule frequency” fields.



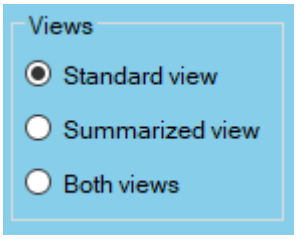
- In the “Schedule frequency” area, the user can specify the time between each export run. The combination of the 4 field values gives the user the ability to specify all possible export run frequencies. The time between each export run should be chosen carefully, especially taking into account the chosen “Local time interval”. Always make shure that each export run after the date/time specified in the “To” field of “Local time interval”.
  Please note, that after each export run, the date/time values are automatically adjusted to fit the next export run.

  Example:
  - “First run”: 2023-02-08 00:30:05
  - “From”: 2023-02-08 00:00:00
  - “To”: 2023-02-08 00:30:00

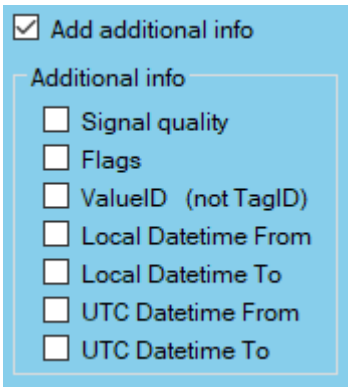
  …after 1.run shifts to…

  - “First run”: 2023-02-08 01:00:05 (date/time for 2.run)
  - “From”: 2023-02-08 00:30:00
  - “To”: 2023-02-08 01:00:00

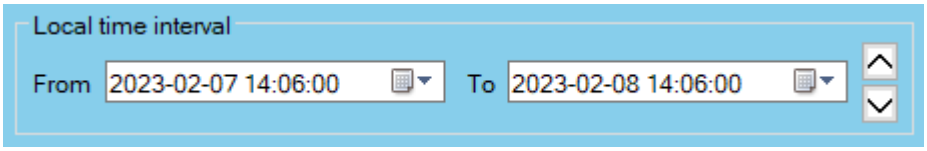
  …and so on…



- The options in the “Views” box determines the format of the exported Csv-file. The user can choose between a standard view, a summarized view or both views in the same file
  For more information about the different views, please see the chapter 4 called “The different views”.



- Selecting the “Add additional info” option allows the user to select extra information about each stored archive tag value. This extra information is saved in the export CSV-file:
  - Quality code of the process value (Hex value):
    - Please refer to the official Simatic WinCC documentation.
  - Flags:
    - Please refer to the official Simatic WinCC documentation.
  - ValueID:
    - The ID of the tag in the archive (not the TagID).
  - LocalDateTimeFrom:
    - Indicate the “From” datetime specified in the “Local time interval”.
  - LocalDateTimeTo:
    - Indicate the “To” datetime specified in the “Local time interval”.
  - UnivDateTimeFrom:
    - Indicate the “From” datetime specified in the “Local time interval” converted to UTC time.
  - UnivDateTimeTo:
    - Indicate the “To” datetime specified in the “Local time interval” converted to UTC time.

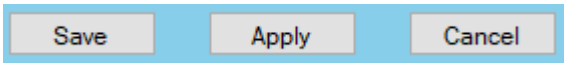


- In the “Local time interval” box the timespan of the export can be specified. This is done by clicking the timepicker-icons for each textbox. Always make shure that the “Local time interval” (timespan) is timewise located before the “Firt run” date/time specification.

- The covered timespan (From-To) can be switched back and forth, using the down- or up-arrows located on the right side of the “Local time interval” box.

- Instead of just exporting raw values stored in the archives, it is also possible to export calculated/processed values.
  Please refer to chapter 3.1 for a further description of the aggregation types and interval.

- If the user wants to include all tags in all archives in the export, this can be done by pressing the button “Select all tags in all archives”. **Use this option carefully, because the export can lead to significant memory consumption if your WinCC configuration contains a lot of archives and tags.**



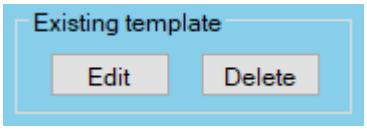
- “Save”
  - Pressing the “Save” button will store the schedule-template in the following directory:
    - **C:\Users\Public\Documents\Swappcon\ExportArchiveData\Schedules**

    The user cannot change this save-destination !

    If the data is insufficient the user will be prompted for more information, before the schedule-template can be saved. After a successful save operation the “Setup auto export schedule” dialog is closed.
    If the “Schedule enabled” box is ticked, the system will start to export archive values to CSV-files.

- “Apply”
  - Pressing the “Apply” button works exactly like the “Save” button, except that the “Setup auto export schedule” dialog is not closed.
    If the “Schedule enabled” box is ticked, the system will start to export archive values to CSV-files.

- “Cancel”
  - Pressing the “Cancel” button discards any changes, and closes the “Setup auto export schedule” dialog.



- “Edit”
  - Pressing the “Edit” button opens a MS Windows selection box displaying the files located in the schedule-templates default directory. The user can now open and edit a previously saved schedule-template.
    It is also possible to open a standard template file, previously saved on the mainpage. This is a usefull feature if the user has manually viewed some data and saved the configuration. All previously saved standard template can be used as a basis for defining a scheduled export.

- “Delete”
  - Pressing the “Delete” button opens a MS Windows selection box displaying the files located in the schedule-templates default directory. The user can now select and delete a previously saved schedule-template or any other standard-template.
    Before the actual deletion the user is presented with a confirmation dialog box:

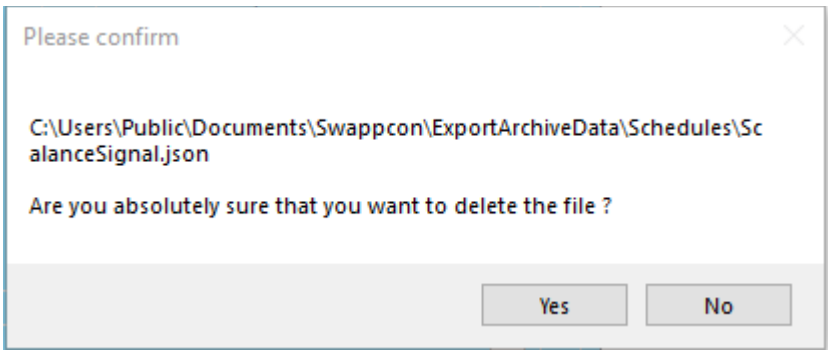


Figure 3.2.3: Example of a delete confirmation dialog box.

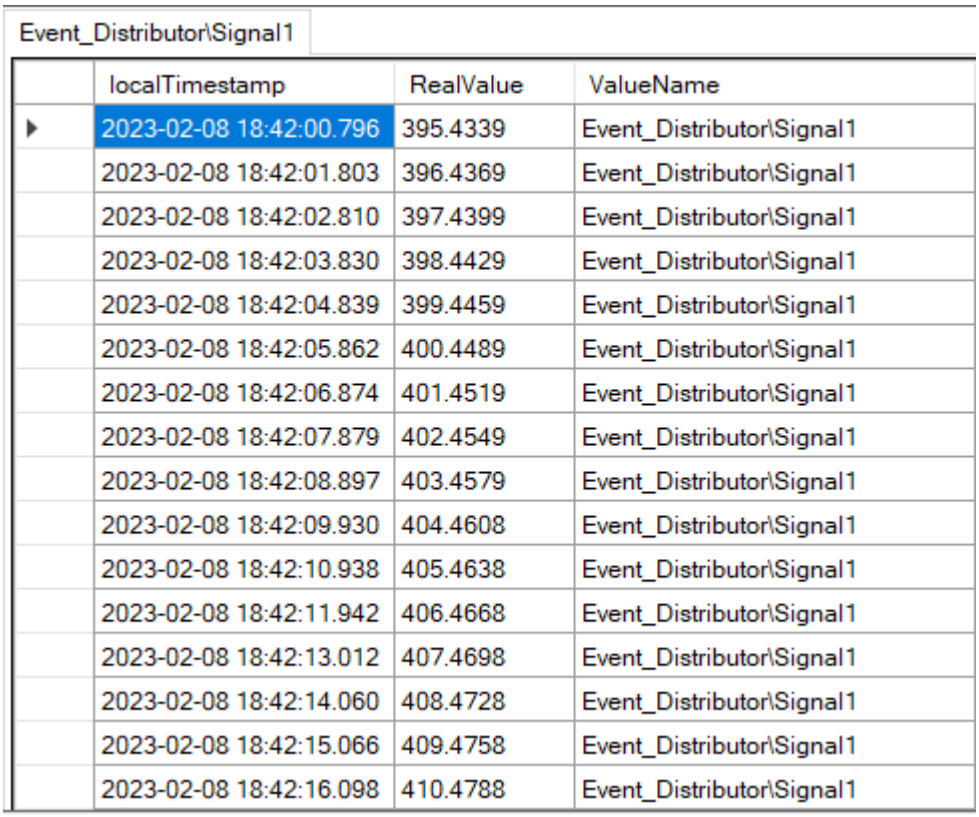
4. The different views

The extracted historical data values can be viewed and stored in 2 different view formats. Before extraction of data the user can choose between the following views:

- Standard view
- Summarized view

4.1 Standard view

Standard view is characterized by showing the values of each chosen tag in a separate tab view on the screen. The view looks similar to the following example:



Event_Distributor\Signal1

localTimestamp	RealValue	ValueName
2023-02-08 18:42:00.796	395.4339	Event_Distributor\Signal1
2023-02-08 18:42:01.803	396.4369	Event_Distributor\Signal1
2023-02-08 18:42:02.810	397.4399	Event_Distributor\Signal1
2023-02-08 18:42:03.830	398.4429	Event_Distributor\Signal1
2023-02-08 18:42:04.839	399.4459	Event_Distributor\Signal1
2023-02-08 18:42:05.862	400.4489	Event_Distributor\Signal1
2023-02-08 18:42:06.874	401.4519	Event_Distributor\Signal1
2023-02-08 18:42:07.879	402.4549	Event_Distributor\Signal1
2023-02-08 18:42:08.897	403.4579	Event_Distributor\Signal1
2023-02-08 18:42:09.930	404.4608	Event_Distributor\Signal1
2023-02-08 18:42:10.938	405.4638	Event_Distributor\Signal1
2023-02-08 18:42:11.942	406.4668	Event_Distributor\Signal1
2023-02-08 18:42:13.012	407.4698	Event_Distributor\Signal1
2023-02-08 18:42:14.060	408.4728	Event_Distributor\Signal1
2023-02-08 18:42:15.066	409.4758	Event_Distributor\Signal1
2023-02-08 18:42:16.098	410.4788	Event_Distributor\Signal1

Figure 4.1: Example of a Standard view representing values for 1 tag on the screen.

Each line in the view consists of the following columns:

- localTimeStamp : Local Date/Time for the logged value
- RealValue : Logged value with 4 decimals
- ValueName : Name of the taglogging archive and tagname

If the user has chosen data for several tags, then each tag is represented as in figure 4.1 in its own tab view.

4.1.1 Standard view exported to Csv file

When data in a standard view is exported to Csv file it is saved in UTF-8 format and is formatted like:

```
localTimestamp,RealValue,ValueName
2023-02-08 18:42:00.796,395.4339,Event_Distributor\Signal1
2023-02-08 18:42:01.803,396.4369,Event_Distributor\Signal1
2023-02-08 18:42:02.810,397.4399,Event_Distributor\Signal1
2023-02-08 18:42:03.830,398.4429,Event_Distributor\Signal1
2023-02-08 18:42:04.839,399.4459,Event_Distributor\Signal1
2023-02-08 18:42:05.862,400.4489,Event_Distributor\Signal1
2023-02-08 18:42:06.874,401.4519,Event_Distributor\Signal1
2023-02-08 18:42:07.879,402.4549,Event_Distributor\Signal1
2023-02-08 18:42:08.897,403.4579,Event_Distributor\Signal1
2023-02-08 18:42:09.930,404.4608,Event_Distributor\Signal1
2023-02-08 18:42:10.938,405.4638,Event_Distributor\Signal1
2023-02-08 18:42:11.942,406.4668,Event_Distributor\Signal1
2023-02-08 18:42:13.012,407.4698,Event_Distributor\Signal1
2023-02-08 18:42:14.060,408.4728,Event_Distributor\Signal1
2023-02-08 18:42:15.066,409.4758,Event_Distributor\Signal1
2023-02-08 18:42:16.098,410.4788,Event_Distributor\Signal1
```

Figure 4.2: Example of a Standard view representing values for 1 tag exported to Csv file.

The 1.line in figure 4.2 is the overall header information.

If the user has chosen data for several tags, then each tag is represented in the same Csv-fil as in the following figure:

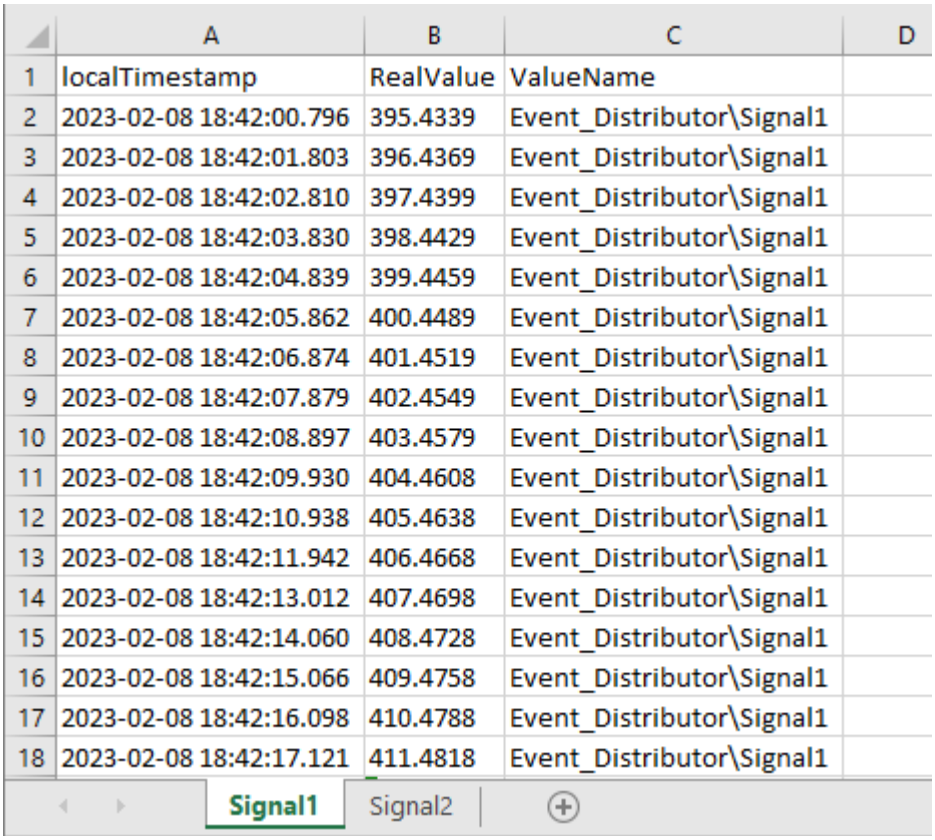
```
localTimestamp,RealValue,ValueName
2023-02-08 18:42:00.796,395.4339,Event_Distributor\Signal1
2023-02-08 18:42:01.803,396.4369,Event_Distributor\Signal1
2023-02-08 18:42:02.810,397.4399,Event_Distributor\Signal1
2023-02-08 18:42:03.830,398.4429,Event_Distributor\Signal1
2023-02-08 18:42:04.839,399.4459,Event_Distributor\Signal1
2023-02-08 18:42:05.862,400.4489,Event_Distributor\Signal1
2023-02-08 18:42:06.874,401.4519,Event_Distributor\Signal1
2023-02-08 18:42:07.879,402.4549,Event_Distributor\Signal1
2023-02-08 18:42:08.897,403.4579,Event_Distributor\Signal1
2023-02-08 18:42:09.930,404.4608,Event_Distributor\Signal1
2023-02-08 18:42:10.938,405.4638,Event_Distributor\Signal1
2023-02-08 18:42:11.942,406.4668,Event_Distributor\Signal1
2023-02-08 18:42:13.012,407.4698,Event_Distributor\Signal1
2023-02-08 18:42:14.060,408.4728,Event_Distributor\Signal1
2023-02-08 18:42:15.066,409.4758,Event_Distributor\Signal1
2023-02-08 18:42:16.098,410.4788,Event_Distributor\Signal1
2023-02-08 18:42:01.550,35.9532,Event_Distributor\Signal2
2023-02-08 18:42:03.577,38.0537,Event_Distributor\Signal2
2023-02-08 18:42:05.607,40.1542,Event_Distributor\Signal2
2023-02-08 18:42:07.626,42.2547,Event_Distributor\Signal2
2023-02-08 18:42:09.664,44.3552,Event_Distributor\Signal2
2023-02-08 18:42:11.691,46.4557,Event_Distributor\Signal2
2023-02-08 18:42:13.796,48.5562,Event_Distributor\Signal2
2023-02-08 18:42:15.834,50.6567,Event_Distributor\Signal2
```

Figure 4.3: Example of a Standard view representing values for 2 tags exported to Csv file.

Tag 2 (Signal2) is stored immediately after tag 1 (Signal1) without its own overall header.

4.1.2 Standard view exported to Excel file

When data in a standard view is exported to Excel file it is formatted like:



	A	B	C	D
1	localTimestamp	RealValue	ValueName	
2	2023-02-08 18:42:00.796	395.4339	Event_Distributor\Signal1	
3	2023-02-08 18:42:01.803	396.4369	Event_Distributor\Signal1	
4	2023-02-08 18:42:02.810	397.4399	Event_Distributor\Signal1	
5	2023-02-08 18:42:03.830	398.4429	Event_Distributor\Signal1	
6	2023-02-08 18:42:04.839	399.4459	Event_Distributor\Signal1	
7	2023-02-08 18:42:05.862	400.4489	Event_Distributor\Signal1	
8	2023-02-08 18:42:06.874	401.4519	Event_Distributor\Signal1	
9	2023-02-08 18:42:07.879	402.4549	Event_Distributor\Signal1	
10	2023-02-08 18:42:08.897	403.4579	Event_Distributor\Signal1	
11	2023-02-08 18:42:09.930	404.4608	Event_Distributor\Signal1	
12	2023-02-08 18:42:10.938	405.4638	Event_Distributor\Signal1	
13	2023-02-08 18:42:11.942	406.4668	Event_Distributor\Signal1	
14	2023-02-08 18:42:13.012	407.4698	Event_Distributor\Signal1	
15	2023-02-08 18:42:14.060	408.4728	Event_Distributor\Signal1	
16	2023-02-08 18:42:15.066	409.4758	Event_Distributor\Signal1	
17	2023-02-08 18:42:16.098	410.4788	Event_Distributor\Signal1	
18	2023-02-08 18:42:17.121	411.4818	Event_Distributor\Signal1	

Signal1 Signal2

Figure 4.4: Example of a Standard view representing values for 2 tags exported to Excel file.

The data of each view is represented in a separate Excel sheet with its own overall header information line (row 1).

4.2 Summarized view

Summarized view is characterized by showing the values of each chosen tag in one tab view on the screen. When presented on screen the view is always in the last tab and it looks similar to the following example:

Event_Distributor\Signal1 | Event_Distributor\Signal2 | Summarized view

localTimestamp	Event_Distributor\Signal1	Event_Distributor\Signal2
2023-02-08 18:42:00	395.4339	
2023-02-08 18:42:01	396.4369	35.9532
2023-02-08 18:42:02	397.4399	
2023-02-08 18:42:03	398.4429	38.0537
2023-02-08 18:42:04	399.4459	
2023-02-08 18:42:05	400.4489	40.1542
2023-02-08 18:42:06	401.4519	
2023-02-08 18:42:07	402.4549	42.2547
2023-02-08 18:42:08	403.4579	
2023-02-08 18:42:09	404.4608	44.3552
2023-02-08 18:42:10	405.4638	
2023-02-08 18:42:11	406.4668	46.4557
2023-02-08 18:42:13	407.4698	48.5562
2023-02-08 18:42:14	408.4728	
2023-02-08 18:42:15	409.4758	50.6567
2023-02-08 18:42:16	410.4788	

Figure 4.5: Example of a Summarized view representing values for 2 tags on the screen.

Each line in the view consists of the following columns:

- localTimeStamp : Local Date/Time for the logged value
- RealValue for tag 1 : Logged value with 4 decimals
- RealValue for tag 2 : Logged value with 4 decimals

The standard time resolution for the view is 1 second. It is possible to use another time resolution if requested, by using one of the aggregation types with the right interval settings.

4.2.1 Summarized view exported to Csv file

When data in a summarized view is exported to Csv file it is saved in UTF-8 format and is formatted like:

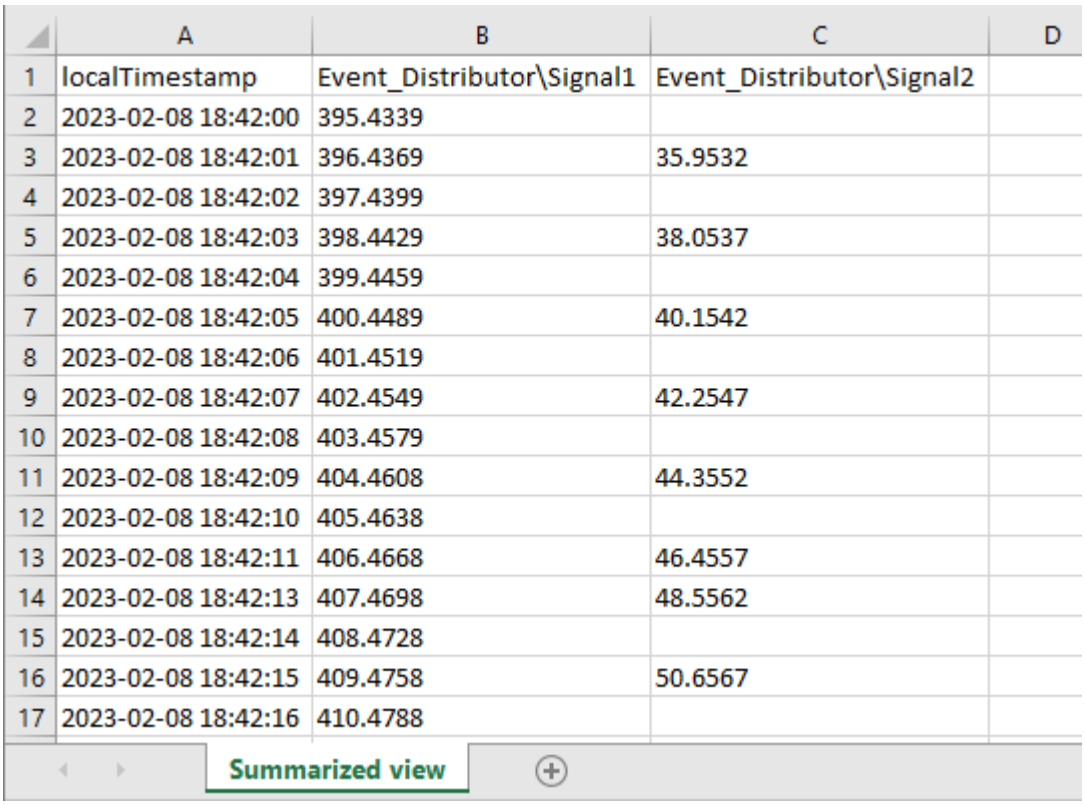
```
localTimestamp,Event_Distributor\Signal1,Event_Distributor\Signal2
2023-02-08 18:42:00,395.4339,
2023-02-08 18:42:01,396.4369,35.9532
2023-02-08 18:42:02,397.4399,
2023-02-08 18:42:03,398.4429,38.0537
2023-02-08 18:42:04,399.4459,
2023-02-08 18:42:05,400.4489,40.1542
2023-02-08 18:42:06,401.4519,
2023-02-08 18:42:07,402.4549,42.2547
2023-02-08 18:42:08,403.4579,
2023-02-08 18:42:09,404.4608,44.3552
2023-02-08 18:42:10,405.4638,
2023-02-08 18:42:11,406.4668,46.4557
2023-02-08 18:42:13,407.4698,48.5562
2023-02-08 18:42:14,408.4728,
2023-02-08 18:42:15,409.4758,50.6567
2023-02-08 18:42:16,410.4788,
```

Figure 4.6: Example of a Summarized view representing values for 2 tags exported to Csv file.

The 1.line in figure 4.6 is the overall header information.

4.2.2 Summarized view exported to Excel file

When data in a summarized view is exported to Excel file it is formatted like:



	A	B	C	D
1	localTimestamp	Event_Distributor\Signal1	Event_Distributor\Signal2	
2	2023-02-08 18:42:00	395.4339		
3	2023-02-08 18:42:01	396.4369	35.9532	
4	2023-02-08 18:42:02	397.4399		
5	2023-02-08 18:42:03	398.4429	38.0537	
6	2023-02-08 18:42:04	399.4459		
7	2023-02-08 18:42:05	400.4489	40.1542	
8	2023-02-08 18:42:06	401.4519		
9	2023-02-08 18:42:07	402.4549	42.2547	
10	2023-02-08 18:42:08	403.4579		
11	2023-02-08 18:42:09	404.4608	44.3552	
12	2023-02-08 18:42:10	405.4638		
13	2023-02-08 18:42:11	406.4668	46.4557	
14	2023-02-08 18:42:13	407.4698	48.5562	
15	2023-02-08 18:42:14	408.4728		
16	2023-02-08 18:42:15	409.4758	50.6567	
17	2023-02-08 18:42:16	410.4788		

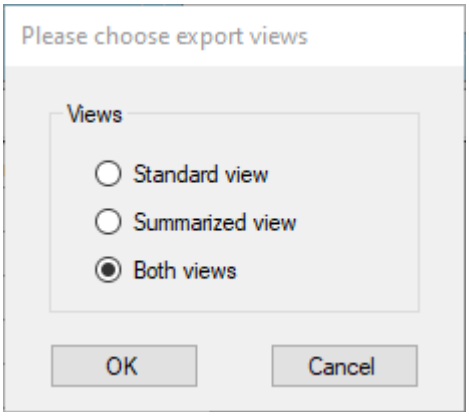
Summarized view

Figure 4.7: Example of a Summarized view representing values for 2 tags exported to Excel file.

Row 1 in figure 4.7 is the overall header information.

4.2.3 Standard view + Summarized view exported to file

When the user is presented with the following dialog during export of views to file:



…it is possible to export both views to the same file.

If export to Csv file is chosen the following is saved to file:

1. All the standard views are exported as described in chapter 4.1.1
2. An empty textline is inserted in the Csv file
3. The summarized view is exported as described in chapter 4.2.1

If export to Excel file is chosen the following is saved to file:

1. All the standard views are exported as described in chapter 4.1.2
2. The summarized view is added as the last Excel sheet and exported as described in chapter 4.2.2

5. Log files : Information, Warnings and Errors

The automatic export module of the EAD SW-package is running as a service in the MS Windows operating system. The service has no GUI and operates silently in the background without any user intervention.

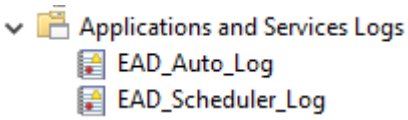
The service writes information to the standard “Event Viewer” application in MS Windows. If the automatic export module does not work as expected, the user can seek information in the “Event Viewer” application to help solving the problem.

5.1. Using the “Event Viewer” application

5.1.1. Starting the “Event Viewer”

The application can be started in the following way:

1. Open a “Run” dialog in MS Windows.
2. Type “eventvwr.msc” and press the “OK” button.
3. Wait a moment while the application is initializing.
4. Expand the left treeview called “Applications and Services Logs”



5.1.2. EAD_Scheduler_Log:

- This log contains information from the scheduling service.
  Information is written everytime the service is started or stopped.
  Any errors will also be written to the log.

5.1.3. EAD_Auto_Log:

- This log contains information from the automatic export application.
  Information is written everytime a scheduled export is performed and the content always include timestamped information about:
  - Name of the schedule template that is started.
  - Number of archive values exported when scheduled template is finished.
  - Any errors will also be written to the log.

6. EAD integration in WinCC graphics picture

It is possible to integrate the EAD module in a WinCC graphic image, so that the operation can be performed directly in WinCC RT.

How to integrate a .NET Control into a graphical image is described in WinCC's help files, and is considered outside the scope of this manual.

The following WinCC help file section can be a good help in integrating .NET Controls:

- Index: “Control”
- Section: “Configuring control selection”

The .NET Control file name is:

- “ \ Program Files \ Swappcon \ ExportArchiveData \ ArchiveDataControlLibrary.dll”

The .NET Control is registered in the WinCC Graphics editor as:

- ”SwappconLib.ArchiveDataCtrl”