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SINAMICS G/S: Integrating Warning and Error Messages into a WinCC TIA Portal Project

SINAMICS G/S

<https://support.industry.siemens.com/cs/ww/en/view/77467239>

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1 Task

Application example description

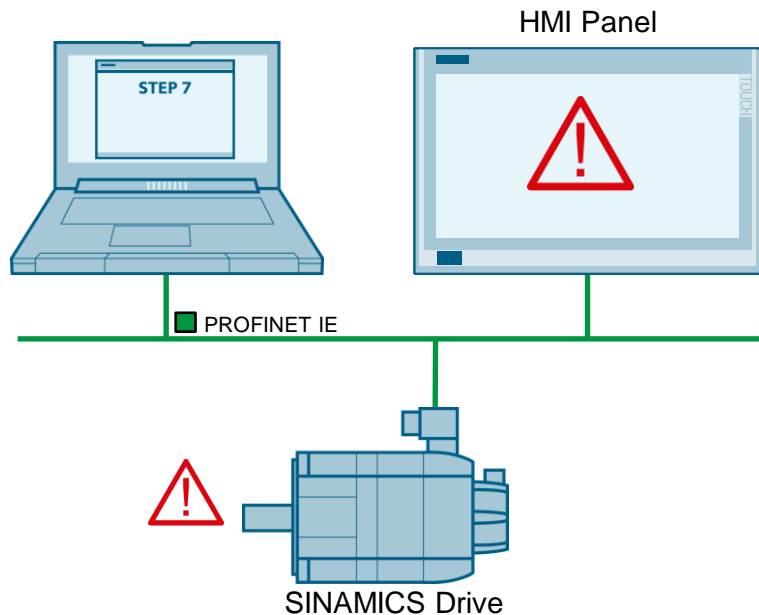
Warning and error messages are usually displayed on the drive as hexadecimal error codes or passed on to the higher-level controller. However, this format makes it difficult for the user to interpret warning and error messages.

The objective of the application example is to import / integrate the warning and error messages of a drive of the SINAMICS family into the higher-level controller or the operator panel (HMI) as text and display them on the operator panel in plain text.

Application example overview

The following figure provides an overview of the application example.

Figure 1-1

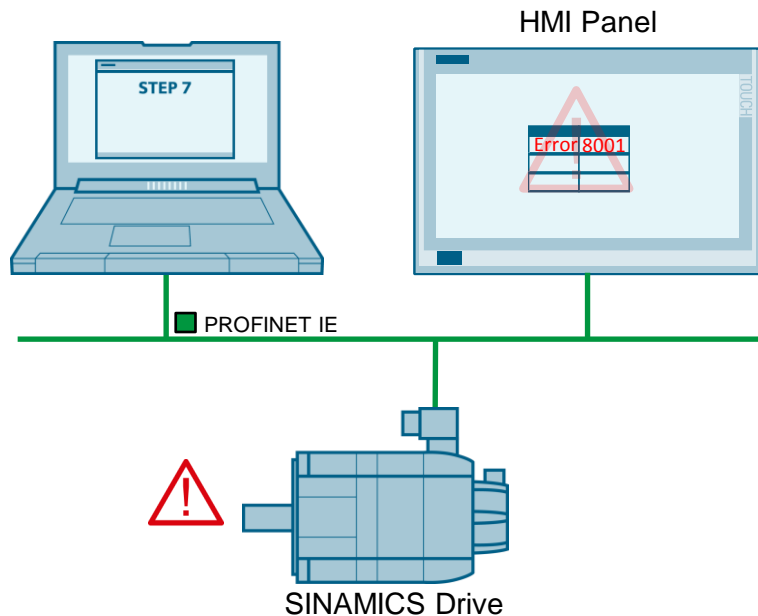


2 Solution

2.1 Overview

The diagrammatic representation below shows the components involved in developing the solution.

Figure 2-1



2.2 Hardware and software components

The following components were used for the application example:

Table 2-1 Hardware and software components

Component	No.	Order no.	Note
STEP 7 Professional V12	1	6ES7822-1AA02-0YA5	
SIMATIC WinCC Advanced Version V12	1	6AV2102-0AA02-0AA5	Example: Integrating the warning and error texts into a WinCC TIA Portal text list.
Microsoft Excel 2010	1	--	Example: Editing the texts in the CSV file.

Note

To run the "SINAMICS XML Parser", .NET Framework V3.5 SP1 or higher must be installed on your PG/PC.
If you have SIMATIC STEP 7 installed on your PG/PC, the required .NET Framework is already included in this installation.

3 Mode of Operation

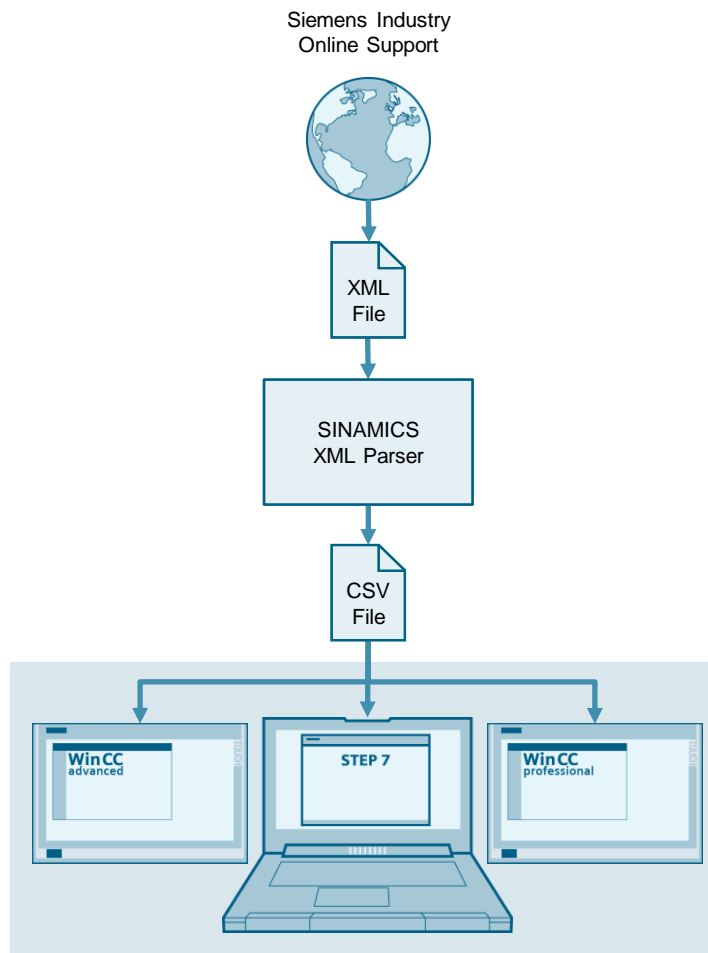
3.1 Providing warning and error messages

The warning and error messages for your drive component and firmware are available as an XML file in Siemens Industry Online Support.
<https://support.industry.siemens.com>.

Download the XML file from Siemens Industry Online Support and start the "SINAMICS XML Parser" software. With the aid of the "SINAMICS XML Parser" software, the XML file can be converted to CSV format.
For more information about the SINAMICS XML Parser, please refer to the same application example in the "SINAMICS XML Parser" documentation.

Then you can import / integrate the warning and error messages into your STEP 7 text library or the HMI project as text.

Figure 3-1

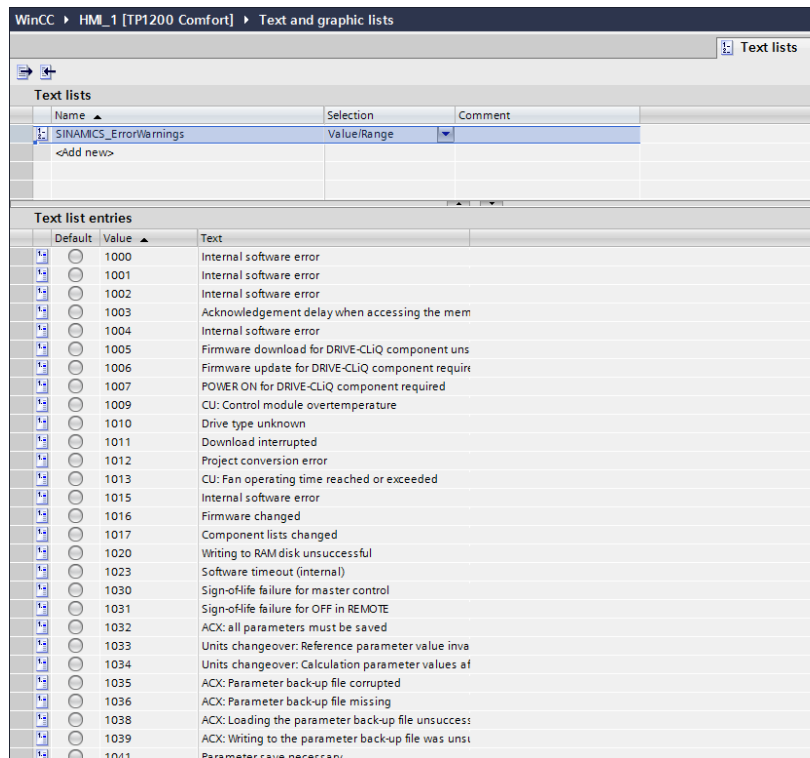


4 Integrating the Texts into the WinCC TIA Portal HMI Project

4.1 Requirements for integrating the texts into the HMI

The texts are integrated into the HMI project as a text list. The error number in the text list is the reference for the error text. Based on the error number, the error texts can then also be used in the HMI.

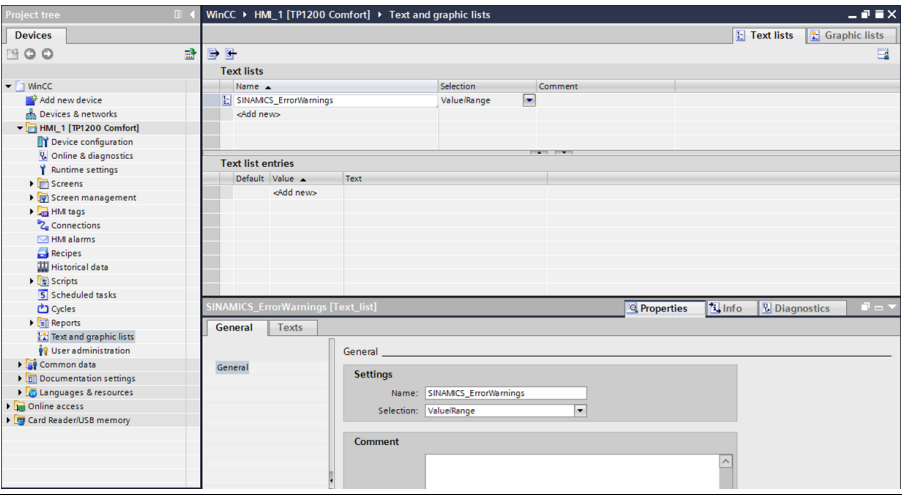
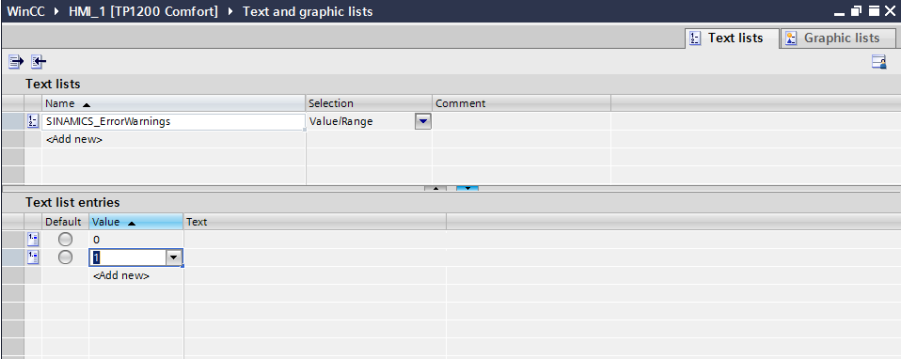
Figure 4-1 Integrating the warning and error messages into a text list

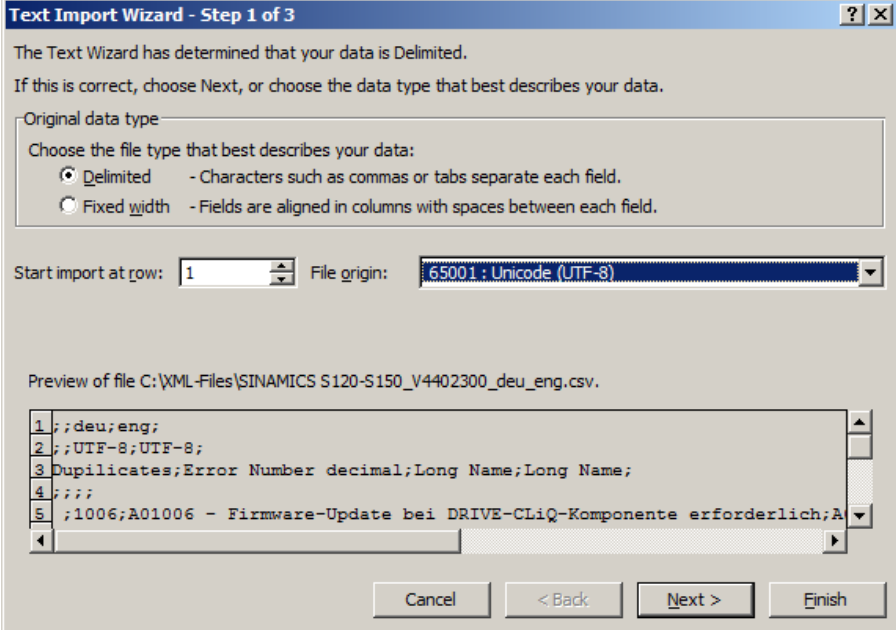
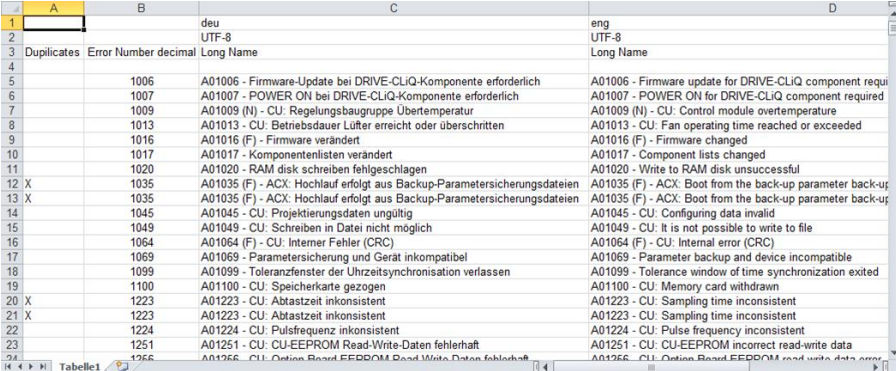


4.2 Integrating the texts into an HMI project

To integrate the texts into an HMI project, create a text list in WinCC TIA Portal by following the below description and copy the warning and error messages to this text list.

Table 4-1

No.	Action
1.	<p>Below the HMI device in the "Texts and Graphic lists" menu item, select the "Text lists" tab and insert a new text list.</p> 
2.	<p>In the newly created text list, create two new entries with a freely selectable "value", e.g. "1" and "2", and freely selectable text, e.g. a blank entry.</p> 

No.	Action																																																																																																																													
3.	<p>In Microsoft Excel, open the CSV file with the warning and error messages by opening a blank Excel spreadsheet and importing the data of the CSV file into the blank spreadsheet using the wizard.</p> 																																																																																																																													
4.	<p>Check the CSV file entries for duplicate error numbers. To import the warning and error messages into the HMI project, each error number must exist only once in the list. In the "Duplicates" column of the CSV file, duplicates are marked by an "X". Merge any duplicate entries into one row or delete duplicate error numbers or entries.</p>  <table border="1" data-bbox="470 1216 1369 1585"> <thead> <tr> <th></th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> </tr> </thead> <tbody> <tr> <td>1</td> <td></td> <td>deu</td> <td></td> <td>eng</td> </tr> <tr> <td>2</td> <td></td> <td>UTF-8</td> <td></td> <td>UTF-8</td> </tr> <tr> <td>3</td> <td>Duplicates</td> <td>Error Number decimal</td> <td>Long Name</td> <td>Long Name</td> </tr> <tr> <td>4</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td></td> <td>1006</td> <td>A01006 - Firmware-Update bei DRIVE-CLiQ-Komponente erforderlich</td> <td>A01006 - Firmware update for DRIVE-CLiQ component required</td> </tr> <tr> <td>6</td> <td></td> <td>1007</td> <td>A01007 - POWER ON bei DRIVE-CLiQ-Komponente erforderlich</td> <td>A01007 - POWER ON for DRIVE-CLiQ component required</td> </tr> <tr> <td>7</td> <td></td> <td>1009</td> <td>A01009 (N) - CU: Regelungsbaugruppe Übertemperatur</td> <td>A01009 (N) - CU: Control module overtemperature</td> </tr> <tr> <td>8</td> <td></td> <td>1013</td> <td>A01013 - CU: Betriebsdauer Lüfter erreicht oder überschritten</td> <td>A01013 - CU: Fan operating time reached or exceeded</td> </tr> <tr> <td>9</td> <td></td> <td>1016</td> <td>A01016 (F) - Firmware verändert</td> <td>A01016 (F) - Firmware changed</td> </tr> <tr> <td>10</td> <td></td> <td>1017</td> <td>A01017 - Komponentenlisten verändert</td> <td>A01017 - Component lists changed</td> </tr> <tr> <td>11</td> <td></td> <td>1020</td> <td>A01020 - RAM disk schreiben fehlgeschlagen</td> <td>A01020 - Write to RAM disk unsuccessful</td> </tr> <tr> <td>12</td> <td>X</td> <td>1035</td> <td>A01035 (F) - ACX: Hochlauf erfolgt aus Backup-Parametersicherungsdateien</td> <td>A01035 (F) - ACX: Boot from the back-up parameter back-up</td> </tr> <tr> <td>13</td> <td>X</td> <td>1035</td> <td>A01035 (F) - ACX: Hochlauf erfolgt aus Backup-Parametersicherungsdateien</td> <td>A01035 (F) - ACX: Boot from the back-up parameter back-up</td> </tr> <tr> <td>14</td> <td></td> <td>1045</td> <td>A01045 - 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CU: Abtastzeit inkonsistent</td> <td>A01223 - CU: Sampling time inconsistent</td> </tr> <tr> <td>22</td> <td></td> <td>1224</td> <td>A01224 - CU: Pulsfrequenz inkonsistent</td> <td>A01224 - CU: Pulse frequency inconsistent</td> </tr> <tr> <td>23</td> <td></td> <td>1251</td> <td>A01251 - CU: CU-EEPROM Read-Write-Daten fehlerhaft</td> <td>A01251 - CU: CU-EEPROM incorrect read-write data</td> </tr> <tr> <td>24</td> <td></td> <td>1266</td> <td>A01266 - CU: Option Board EEPROM Read-Write-Daten fehlerhaft</td> <td>A01266 - CU: Option Board EEPROM read-write data error</td> </tr> </tbody> </table>		A	B	C	D	1		deu		eng	2		UTF-8		UTF-8	3	Duplicates	Error Number decimal	Long Name	Long Name	4					5		1006	A01006 - Firmware-Update bei DRIVE-CLiQ-Komponente erforderlich	A01006 - Firmware update for DRIVE-CLiQ component required	6		1007	A01007 - POWER ON bei DRIVE-CLiQ-Komponente erforderlich	A01007 - POWER ON for DRIVE-CLiQ component required	7		1009	A01009 (N) - CU: Regelungsbaugruppe Übertemperatur	A01009 (N) - CU: Control module overtemperature	8		1013	A01013 - CU: Betriebsdauer Lüfter erreicht oder überschritten	A01013 - CU: Fan operating time reached or exceeded	9		1016	A01016 (F) - Firmware verändert	A01016 (F) - Firmware changed	10		1017	A01017 - Komponentenlisten verändert	A01017 - Component lists changed	11		1020	A01020 - RAM disk schreiben fehlgeschlagen	A01020 - Write to RAM disk unsuccessful	12	X	1035	A01035 (F) - ACX: Hochlauf erfolgt aus Backup-Parametersicherungsdateien	A01035 (F) - ACX: Boot from the back-up parameter back-up	13	X	1035	A01035 (F) - ACX: Hochlauf erfolgt aus Backup-Parametersicherungsdateien	A01035 (F) - ACX: Boot from the back-up parameter back-up	14		1045	A01045 - CU: Projektierungsdaten ungültig	A01045 - CU: Configuring data invalid	15		1049	A01049 - CU: Schreiben in Datei nicht möglich	A01049 - CU: It is not possible to write to file	16		1064	A01064 (F) - CU: Interner Fehler (CRC)	A01064 (F) - CU: Internal error (CRC)	17		1069	A01069 - Parametersicherung und Gerät inkompatibel	A01069 - Parameter backup and device incompatible	18		1099	A01099 - Toleranzfenster der Uhrzeitsynchronisation verlassen	A01099 - Tolerance window of time synchronization exited	19		1100	A01100 - CU: Speicherkarte gezogen	A01100 - CU: Memory card withdrawn	20	X	1223	A01223 - CU: Abtastzeit inkonsistent	A01223 - CU: Sampling time inconsistent	21	X	1223	A01223 - CU: Abtastzeit inkonsistent	A01223 - CU: Sampling time inconsistent	22		1224	A01224 - CU: Pulsfrequenz inkonsistent	A01224 - CU: Pulse frequency inconsistent	23		1251	A01251 - CU: CU-EEPROM Read-Write-Daten fehlerhaft	A01251 - CU: CU-EEPROM incorrect read-write data	24		1266	A01266 - CU: Option Board EEPROM Read-Write-Daten fehlerhaft	A01266 - CU: Option Board EEPROM read-write data error
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No. **Action**

5. Select and copy the error number column in decimal format and the error texts to the Excel spreadsheet in the desired language.

	A	B	C	D
1			deu	eng
2			UTF-8	UTF-8
3	Duplicates	Error Number decimal	Long Name	Long Name
4				
5		1000	F01000 - Softwarefehler intern	F01000 - Internal software error
6		1001	F01001 - FloatingPoint Ausnahme	F01001 - FloatingPoint exception
7		1002	F01002 - Softwarefehler intern	F01002 - Internal software error
8		1003	F01003 - Quittungsverzug bei Speicherzugriff	F01003 - Acknowledgement delay when accessing the mem
9		1004	N01004 (F, A) - Softwarefehler intern	N01004 (F, A) - Internal software error
10		1005	F01005 - Firmware-Download bei DRIVE-CLIQ-Komponente fehlgeschlagen	F01005 - Firmware download for DRIVE-CLIQ component un
11		1006	A01006 - Firmware-Update bei DRIVE-CLIQ-Komponente erforderlich	A01006 - Firmware update for DRIVE-CLIQ component requi
12		1007	A01007 - POWER ON bei DRIVE-CLIQ-Komponente erforderlich	A01007 - POWER ON for DRIVE-CLIQ component required
13		1009	A01009 (N) - CU - Regelungsbaugruppe Übertemperatur	A01009 (N) - CU - Control module overtemperature
14		1010	F01010 - Antriebstyp unbekannt	F01010 - Drive type unknown
15		1011	F01011 (N) - Download abgebrochen	F01011 (N) - Download interrupted
16		1012	F01012 (N) - Projekt Konvertierungsfehler	F01012 (N) - Project conversion error
17		1013	A01013 - CU - Betriebsdauer Lüfter erreicht oder überschritten	A01013 - CU - Fan operating time reached or exceeded
18		1015	F01015 - Softwarefehler intern	F01015 - Internal software error
19		1016	A01016 (F) - Firmware verändert	A01016 (F) - Firmware changed
20		1017	A01017 - Komponentenlisten verändert	A01017 - Component lists changed
21		1020	A01020 - RAM disk schreiben fehlgeschlagen	A01020 - Write to RAM disk unsuccessful
22		1023	F01023 - Software Timeout intern	F01023 - Software timeout (internal)
23		1030	F01030 - Lebenszeichenausfall bei Steuerungshoheit	F01030 - Sign-of-life failure for master control
24		4034	F01034 - Lebenszeichenausfall bei AHS in DEMATE	F01034 - Sign-of-life failure for AHS in DEMATE

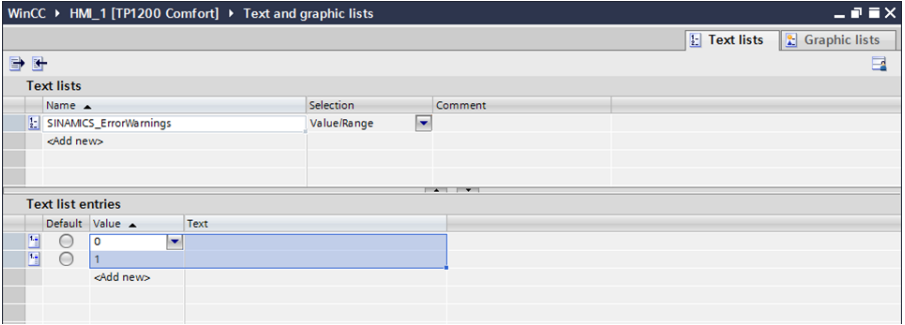
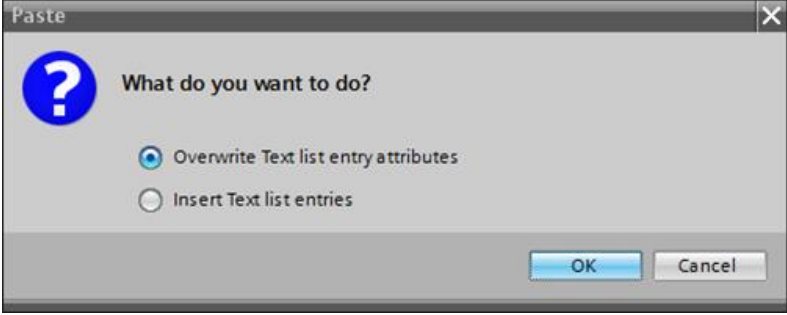
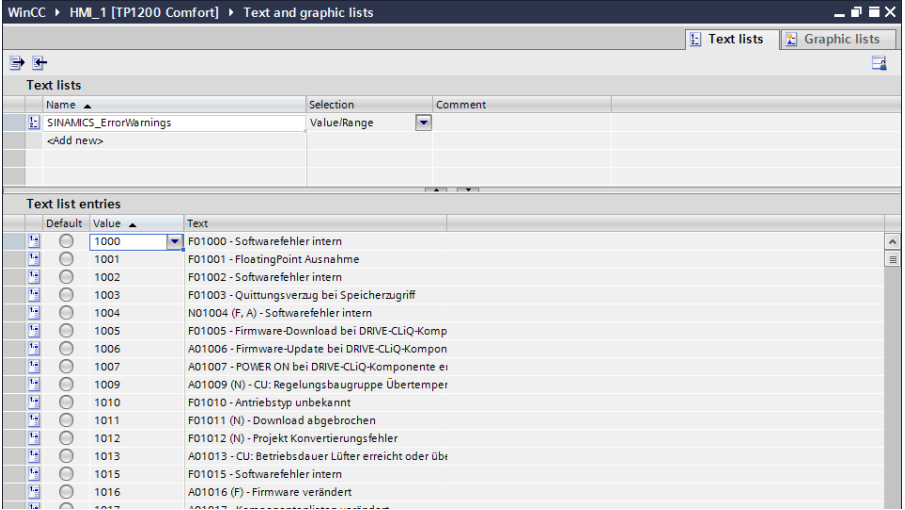
6. If necessary, select additional languages in the HMI project. The warning and error messages can then be displayed at HMI runtime by changing the language.

Note:
Only warning and error messages in languages that have already been created as project languages in the HMI project can be integrated into the HMI project.

7. In WinCC TIA Portal, go to "Tasks", "Languages & resources" and set the selected error text language as the "editing language".

Editing language: German (Germany) [dropdown arrow]

- English (United States)
- French (France)
- German (Germany)
- Italian (Italy)
- Spanish (Spain)

No.	Action
8.	<p>Select the "Value" and "Text" columns of the two entries newly created in the text list (2 rows) and paste the copied error numbers and error texts from the clipboard.</p> 
9.	<p>Confirm the dialog for inserting the texts into the text list by selecting the "Overwrite Text list entry attributes" option.</p>  <p>The warning and error messages of the SINAMICS drive have now been imported into a text list of the HMI project.</p> 

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Note

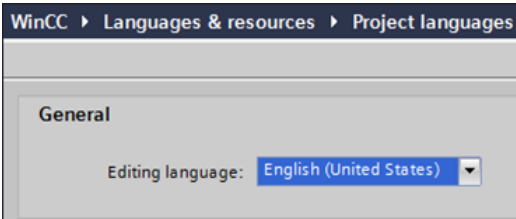
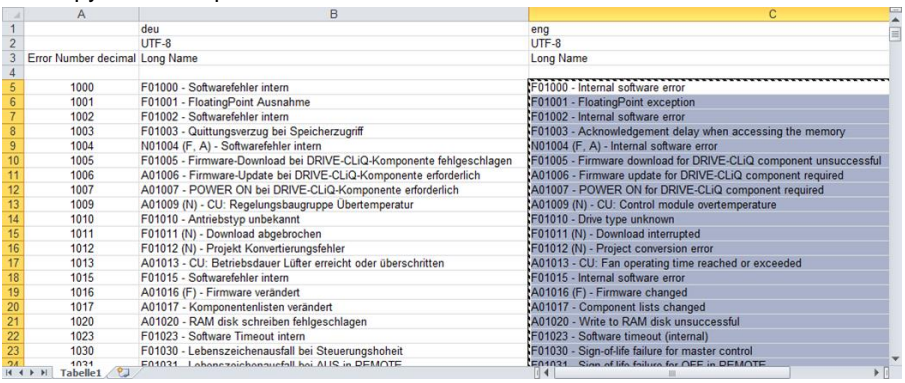
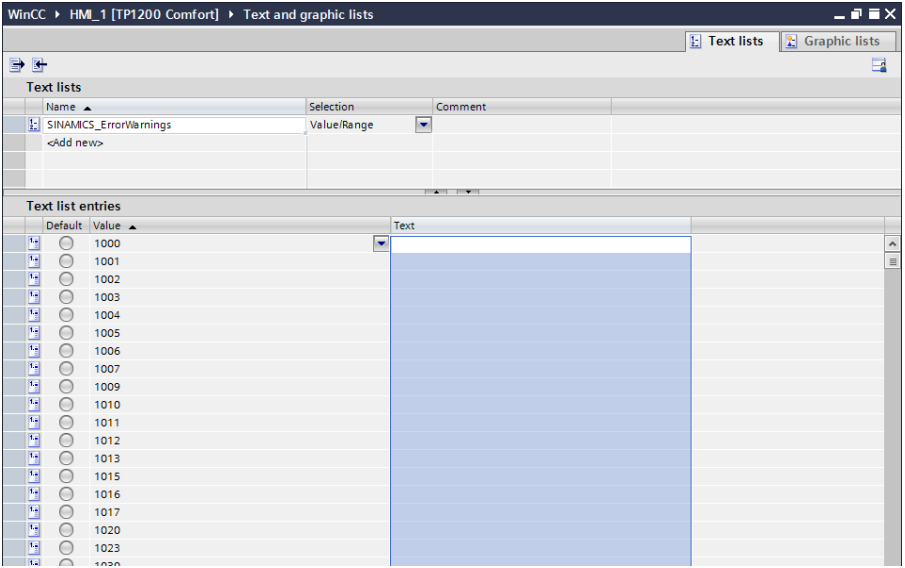
In WinCC TIA Portal, only texts with a maximum of 320 characters can be imported into a text list or displayed in an I/O field. Therefore, make sure that the length of the texts to be imported is less than this maximum length.

Texts that exceed 320 characters are marked in red when importing or inserting into the text list and need to be edited manually.

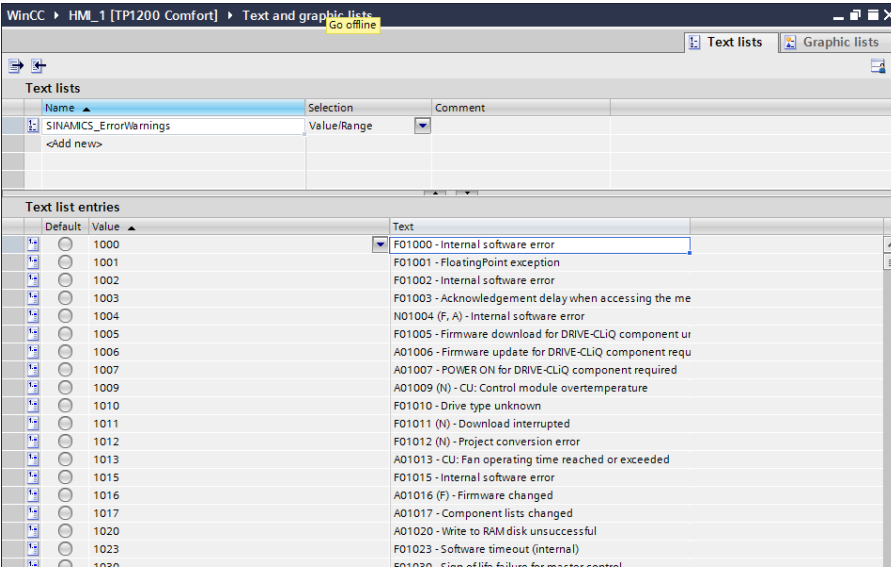
4.3 Adding additional language versions

If you want to import additional languages for warning and error messages that exist in the CSV file into the HMI project, repeat the import process described above for the other project languages.

Table 4-2

No.	Action
1.	<p>In WinCC TIA Portal, go to "Tasks", "Languages & resources" and set the language to be newly inserted as the "editing language".</p> 
2.	<p>In the CSV file, select only the column with the error texts in the selected language and copy it to the clipboard.</p> 
3.	<p>In WinCC TIA Portal, in the text list, select all rows in the "Text" column for which an error number is specified in the "Value" column.</p> 

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No.	Action
4.	<p>Paste the copied error texts from the clipboard to the text list.</p>  <p>This makes the warning and error messages of this language version available also in the HMI project.</p>
5.	<p>Repeat the process described here for all other languages that are available in the CSV file or the ones you want to use in the HMI project and that have been created as project languages.</p>

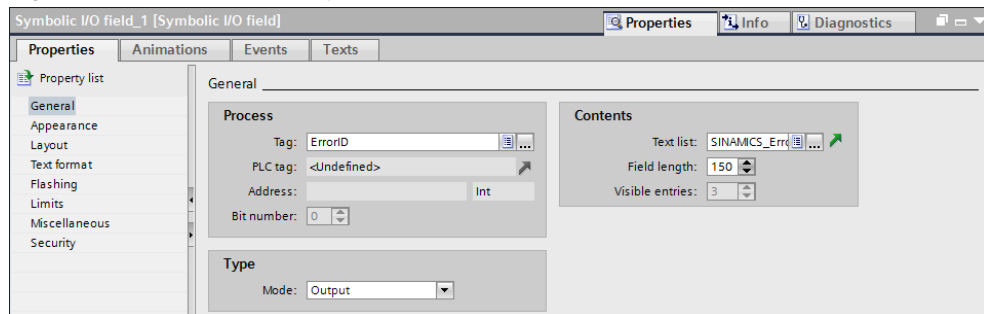
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4.4 Calling the texts in the HMI

At runtime of the HMI project, the warning and error messages can, for example, be output using a symbolic I/O field. In this field, the entries of the text list can be made depending on a tag that represents the error number.

In the below figure, the "Process" section transfers the error number to the symbolic I/O field of the runtime using the HMI-internal tag "ErrorID". The text list is connected in "Contents"; the field length was customized to the output of warning and error messages. In the "Type" section, the "Output" setting should usually be preferred for outputting warning and error messages.

Figure 4-2 Properties of the symbolic I/O field



5 Links & Literature

Table 5-1

	Topic
\1\	Siemens Industry Online Support https://support.industry.siemens.com
\2\	Download page of the entry https://support.industry.siemens.com/cs/ww/en/view/77467239
\3\	Technology CPUs: "Error Messages" Technology Template https://support.industry.siemens.com/cs/ww/en/view/21402122

6 History

Table 6-1

Version	Date	Modifications
V1.1	07/2019	First version