

2. Test installation <26> (20160301)

TERRY 20160208: this is internal info... tells how to set things up. Most important is 2.4 "TIA".

This chapter shows how to setup the test system.

2.x. **(from ReqSpec)**

2.0. overview of installation files

2.1a. TC (ESX VM)

2.1b. TC (local VM)

2.2. NX-AD

2.3. EPLAN

2.4. TIA (local VM) (local install?)

2.x. (from ReqSpec)

6.9.3.1 Deployment Scenarios

There are two relevant deployment scenarios for AD/ELD. They are related to the deployment of the target software tool TIA Portal. Teamcenter is always installed on a different machine.

Deployment Scenario A

TIA Portal is installed on the same physical computer as AD/ELD.

Deployment Scenario B

TIA Portal is installed on a virtual machine that is hosted on the same physical machine AD/ELD is installed on. TIA Portal₁₁ is installed on a virtual machine that is hosted on the same physical machine AD/ELD is installed on.

The performance requirements of both Deployment Scenarios shall be exactly the same. The minimum memory requirements for AD/ELD are 16GB and the allowance for AD/ELD shall always assume a TIA Portal VM is present. The resulting performance differences between the scenarios are not deemed big enough to merit separate tracking.

6.9.1 System Requirements

To enable cost efficient IT-infrastructure, fulfill changing market requirements towards modern IT-infrastructure and services and to keep own development efforts on a reasonable level, AD/ELD shall support selected software and hardware; those are being supported by NX and Tc (NX, Tc Software and Hardware Certifications) already at the time of each delivery of this software.

Requirement

Operation System [ELD-X12-2a]

AD/ELD shall support Microsoft Windows operating systems which are supported by NX 12.

Hardware systems [ELD-X12-2b]

AD/ELD shall support only hardware systems designed for Microsoft Windows operating systems which are certified for NX 12.

No specialized testing on systems is expected for AD.

6.9.2 Compatible Versions of external tools

System integrity requires a defined behaviour regarding the support of different versions of external tools.

Requirement

Supported EPLAN version

AD V2 will support the current official product release of EPLAN electrical P8 that is available at feature freeze time plus its predecessor version 2.5 of EPLAN P8 (which is supported by AD V1).

Supported TIA Portal version

AD V2 will support TIA Portal V14SP1+Upd. There is no need to migrate AD V1 TIAP data.

6.9.5 Licensing and installation

An installation routine shall ease the software installation. On sites of well managed software distribution environment, the software shall be installed via automated software distribution system.

Requirement

Manual client installation of the application [ELD-X12-5a]

There shall be a simple installation routine delivered out of the box to support easy client installation of the application AD/ELD

Server installation of AD/ELD [ELD-X12-5b]

There shall be an installation routine delivered to support server installation e.g. to add or install relevant Tc items for AD/ELD.

Support a licensing concept [ELD-X12-5c]

AD/ELD will be purchasable in several scalable modularizations.

Therefore the system shall support to enable and disable product functions depending on the licensing according to the licensing concept defined by the PRM

License based menu control [ELD-X12-5d]

Depending on the Product Definition (PD) decision, the system shall enable or disable (gray out or hide) licensed product functions.

6.9.7 Demo project

There must be demo projects supplied with the product for different purposes.

For e.g.:

- For sales reason: to do a standard product feature demos
- For training purposes (internal and external customers can retrace product functionalities)
- For testing new versions in a defined project environment

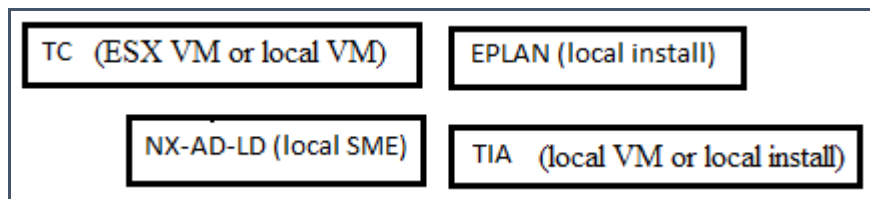
Requirement

Demo projects according to IEC Standard [ELD-X12-7a]

AD/ELD shall provide demo projects according to IEC Standard that

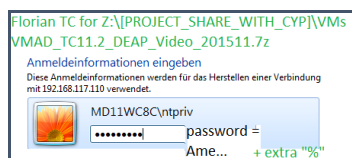
- Show all product features as example, those have been implemented so far
- Represents typical design of machine and line building

2.0. Overview of installation files (20151207)



2.0.1. TC =====

1. ESX VM (Florian) (recommended)



2. Local VM

\\debonk10c19\ADNX\VMs\TIAPortal
VMAD_TIAPortal_V13SP1Upd4_I.29_B.01.7z

2.0.2. SME =====

1. "installer"

https://asrdwiki.siemens.com/AD/index.php?title=SME_NX11_1537_S47
\\debonk10c19\ADNX\Repository\SME\SME_NX11_1537_S47_Patch1.7z

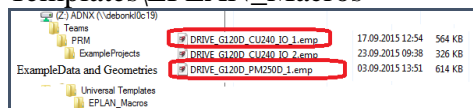
2.0.3. EPLAN =====

1. installer

\\debonk10c19\ADNX\Tools\EPLAN\ElectricP8_2.5\Electric_P8_2.5.4.9380

2. macros

\\debonk10c19\ADNX\Teams\PRM\ExampleData and Geometries\ExampleProjects\Universal
Templates\EPLAN_Macros



2.0.4. TIA =====

1. Local VM (recommended)

\\debonk10c19\ADNX\VMs\TIAPortal
VMAD_TIAPortal_V13SP1Upd4_I.29_B.01.7z

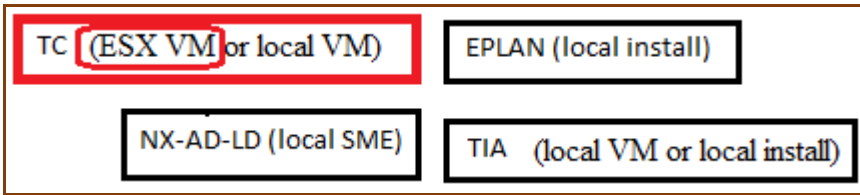
2. installer

\\debonk10c19\ADNX\Tools\TIA Portal\Setup\V13SP1Upd4_I.29_B.01 (V13SP1 Upd4 Release)
https://asrdwiki.siemens.com/AD/index.php?title=TIA_VM:_Versions_and_Compatibility

3. FD4 project

\\debonk10c19\ADNX\[PROJECT_SHARE_WITH_CYP]\TIA_Portal_XML
FD4_Project_without_startdrive.zip

2.1a. TC (ESX VM) (20151201)



This GS assumes that you have access to Team Center on an ESX Server.

Virtual Teamcenter Servers on the ESX Server Bonn

1 Introduction

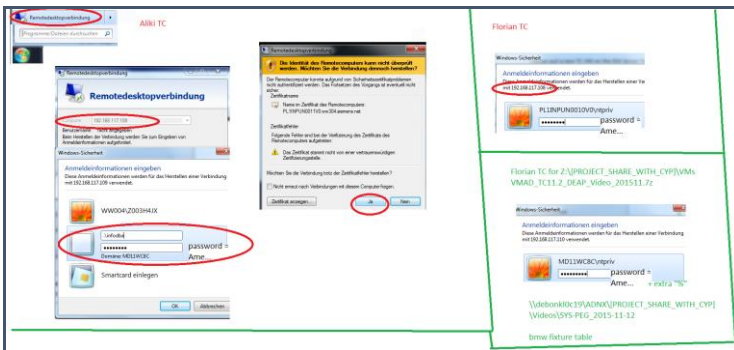
Information about the virtual Teamcenter servers available on the Bonn ESX Server. Only reachable from the Bonn Network.

2 Available Machines

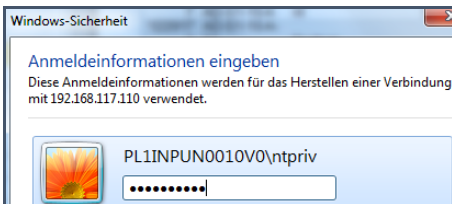
All the VM's can be used for general development!

IP Address	Special Purpose	TC Version	User	PW	License Expires On
192.168.117.106		11.2.1 P16 Deploy 13	PL1INPUN0011V0\infodba	Ame1234%	2016-02-15
192.168.117.107	Documentation	11.2.1 P16 Deploy 13 fix	PL1INPUN0011V0\infodba	Ame1234%	2016-02-15
192.168.117.108	Documentation	11.2 P56 Deploy 10	PL1INPUN0010V0\ntpriv	Ame1234%	2016-02-15
192.168.117.109		11.2.1 P16 Deploy 13 fix	PL1INPUN0011V0\infodba	Ame1234%	2016-02-15
192.168.117.110	Spanntisch Video Demo.	11.2 P56 Deploy 10	PL1INPUN0010V0\ntpriv	Ame1234%	2016-02-15

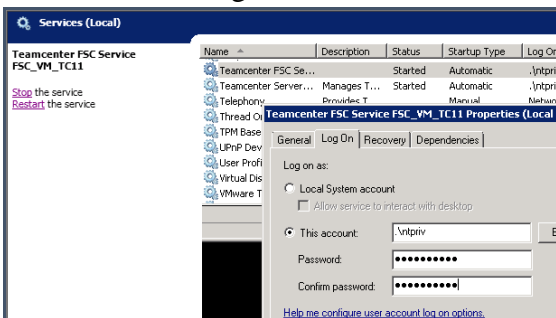
Connection info for 108,109,110.



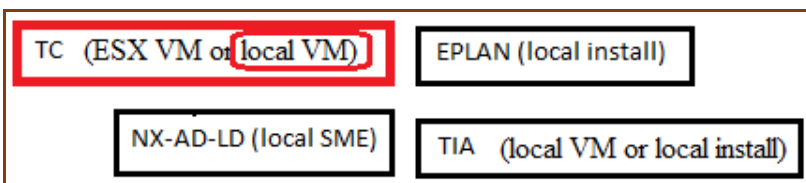
20151201 110. PW = Am...4%% (TERRY change it)



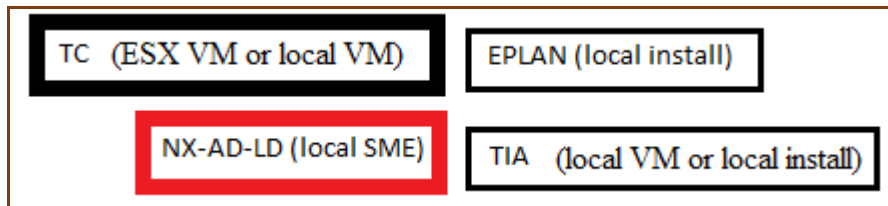
Need to also change PW for services.



2.1b. TC (local VM) (20151208) xxx



2.2. NX-AD (local SME) (20151210)



Florian recommended this version to avoid LD problem.

https://asrdwiki.siemens.com/AD/index.php?title=SME_NX11_1537_S47

Bonn: \\debonk10c19\ADNX\Repository\SME\SME_NX11_1537_S47_Patch1.7z

File Name	Size	Type	Version
UGII_A_1	102,000,000	Installation	1.0
UGII_A_2	102,000,000	Installation	1.0
UGII_A_3	102,000,000	Installation	1.0
UGII_A_4	102,000,000	Installation	1.0
UGII_A_5	102,000,000	Installation	1.0
UGII_A_6	102,000,000	Installation	1.0
UGII_A_7	102,000,000	Installation	1.0
UGII_A_8	102,000,000	Installation	1.0
UGII_A_9	102,000,000	Installation	1.0
UGII_A_10	102,000,000	Installation	1.0
UGII_A_11	102,000,000	Installation	1.0
UGII_A_12	102,000,000	Installation	1.0
UGII_A_13	102,000,000	Installation	1.0
UGII_A_14	102,000,000	Installation	1.0
UGII_A_15	102,000,000	Installation	1.0
UGII_A_16	102,000,000	Installation	1.0
UGII_A_17	102,000,000	Installation	1.0
UGII_A_18	102,000,000	Installation	1.0
UGII_A_19	102,000,000	Installation	1.0
UGII_A_20	102,000,000	Installation	1.0

1. hosts

192.168.117.110 PL1INPUN0010V0

192.168.117.109 PL1INPUN0011V0

2. vbs

```
Dim oExec
Set shell = Wscript.CreateObject("WScript.Shell")
Set fso = Wscript.CreateObject("Scripting.FileSystemObject")
Set wshNetwork = WScript.CreateObject("WScript.Network")
strComputerName = wshNetwork.ComputerName
Set env = shell.Environment("Process")
Set wshSystemEnv = shell.Environment("SYSTEM")
ugbase=shell.CurrentDirectory+"20150926_223825_Build"
libpath=ugbase+"\nxbin"
env("UGII_LIB_PATH")=libpath
env("SPLM_LICENSE_SERVER")="28000@DEBONKLOC19.WW004.SIEMENS.NET,28000@DEBONMH0C09.WW004.SIEMENS.NET,28000@debonk10c13.WW004.SIEMENS.NET,28000@VMADNxLicSrv"
env("UGII_DISPLAY_DEBUG")="1"
env("UGII_MANIFEST_DEF_DIR")=ugbase+"\automation_designer"
env("UGII_MANIFEST_FILE_NAME")="ame_ui.cmf;are_ui.cmf"
env("path")=libpath+";%path%"
env("UGII_BASE_DIR")=ugbase
env("IP_BUILD_DIR")=ugbase
env("UGII_KF_CLASS_DIR")=ugbase+"\ugii\dfa"
env("UGII_MANAGED_DLL_PATH")=ugbase+"\nxbin\managed"
env("UGII_PMAN_XML_DEF_DIR")=ugbase+"\ugii"
env("UGII_SPECIAL_SCHEMA_DIR")=ugbase+"\ugii\ugschema"
env("UGII_APPL_POPUP_MENU_FILE")=ugbase+"\ugii\menus\ug_application_popup.men"
env("UGII_ENV_FILE")=ugbase+"\ugii\ugii_env.dat"
env("UGII_DEFAULT_MENU_DIR")=ugbase+"\ugii\menus"
env("UGII_CUSTOM_FEATURE_DEF_DIR")=ugbase+"\ugopen"
env("UGII_NO_NLM")="1"
env("UGII_CHECKING_LEVEL")="0"
env("UDU_ROOTS")=ugbase+"\ugii"
env("JRE_HOME") = ugbase + "\jre"
env("FMS_HOME") = ugbase + "\tccs"
env("FCC_CONFIG")=ugbase+"\fcc_local_primeServer.xml"
env("UGII_UGMGR_COMMUNICATION")="HTTP"
REM env("UGII_UGMGR_HTTP_URL")="http://PL1INPUN0010V0:8080/tc/aiws/aiwebservice"
REM terry DEAP
REM env("UGII_UGMGR_HTTP_URL")="http://192.168.117.110:8080/tc/aiws/aiwebservice"
env("UGII_UGMGR_HTTP_URL")="http://PL1INPUN0010V0:8080/tc/aiws/aiwebservice"
MsgBox "PL1INPUN0010V0"
env("TC_ROOT")=""
env("IMAN_ROOT")=""
env("TC_DATA")=""
env("IMAN_DATA")=""
env("UGCHECKMATE_USER_DIR") = ugbase+"\automation_designer\checker"
env("EPLAN_DEFAULT_PROJ_TEMPLATE")=ugbase + "\automation_designer\adagent\IEC_bas001.zw9"
env("Siemens_ADAGENT_ExecutionPath")=ugbase + "\automation_designer\adagent\Siemens.AutomationDesigner.ADAgentUI.exe"
env("FCC_JAVA") = ugbase + "\jre"
env("TCCS_JAVA") = ugbase + "\jre"
env("FMS_FCCSTARTUPLUG") = "%temp%\fccstartup.log"
env("JRE64_HOME") = ugbase + "\jre"
env("JAVA_HOME") = ugbase + "\jre"
```

```

env("JAVA64_HOME") = ugbase + "\jre"
'Running fcc commands
fccCmds = Array( "%FMS_HOME%\bin\fccstat -restart", "%FMS_HOME%\bin\fccstat -clear" )
For Each strCmd In fccCmds
    Set oExec = shell.Exec(strCmd)
    Do While oExec.Status = 0
        WScript.Sleep 100
    Loop
    If ERRORLEVEL <> 0 Then
        WScript.Echo "FCC Failed to Start"
        WScript.Echo "- Check hosts file for correct PL1INPUN0010V0 IP address"
        WScript.Echo "- Check running service for valid server license or stop it if issue persist"
        WScript.Echo "- Kill java.exe process in Task-Manager if issue still persist"
    End If
Next
if fso.FileExists(ugbase+"\sme\ugraf.exe") Then
    shell.Run("***** + ugbase + "\sme\ugraf.exe" + "***** + " -pim=yes -u=eng_user1 -p=eng_user1 -AD")
    REM shell.Run("***** + ugbase + "\sme\ugraf.exe" + "***** + " -pim=yes -u=. \ntppriv -p=Ame1234%% -AD")
    REM shell.Run("***** + ugbase + "\sme\ugraf.exe" + "***** + " -pim=yes -u=infodba -p=infodba -AD")
    MsgBox "xxxxxxxxxxxxxxxxxxxx"
else
    MsgBox "Error: There is no image at that location", 16, "Critical Error"
end if

```

3. fcc_local_primeServer.xml

```

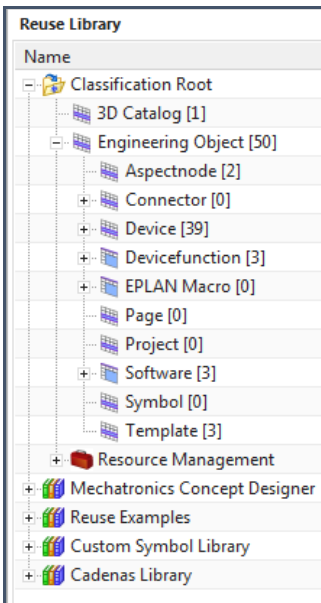
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE fccconfig SYSTEM "fccconfig.dtd">
<!--
bcprt
This software and related documentation are proprietary to UGS Corp.
COPYRIGHT 2007 UGS CORP. ALL RIGHTS RESERVED
ecprt
-->
<fccconfig version="1.3.2">
<fccdefaults>
<!-- general -->
<!-- <property name="FCC_LogFile" value="$HOME\fcc.log\tmp\$USER\fcc.log" overridable="true"/> -->
<!-- <property name="FCC_LogLevel" value="WARNING" overridable="true"/> -->
<!-- <property name="FCC_TraceLevel" value="" overridable="true"/> -->
<!-- <property name="FCC_WebRaidThreshold" value="32K" overridable="true"/> -->
<!-- <property name="FCC_MaxWANSources" value="8" overridable="true"/> -->
<!-- <property name="FCC_ProxyPipeName" value="\\.\pipe\FMSClientPipe\tmp\FMSClientPipe" overridable="true"/> -->
<!-- <property name="FCC_FSCConnectionRetryInterval" value="5000" overridable="true"/> -->
<!-- <property name="FCC_StatusFrequency" value="1000" overridable="true"/> -->
<!-- <property name="FCC_EnableDirectFSCRouting" value="true" overridable="true"/> -->
<!-- As of Teamcenter 9.0, FCC_IdleTimeoutMinutes is deprecated, and will be ignored. -->
<!-- Please use the TCCS container timeout for FCC idle shutdown functionality. -->
<!-- This parameter is for background task processing, not for idle timeout. -->
<!-- <property name="FCC_MinimumBackgroundIdleTimeSeconds" value="5" overridable="true"/> -->
<!-- <property name="FCC_MaxBackgroundRetries" value="3" overridable="true"/> -->
<!-- common cache -->
<!-- <property name="FCC_CacheLocation" value="$HOME\FCCCache\tmp\FCCCache" overridable="true"/> -->
<!-- whole file cache -->
<!-- <property name="FCC_CacheTableHashSize" value="1000" overridable="true"/> -->
<!-- <property name="FCC_MaxWriteCacheSize" value="1G" overridable="true"/> -->
<!-- <property name="FCC_MaxReadCacheSize" value="1G" overridable="true"/> -->
<!-- <property name="FCC_MinimumReadCacheAgeMinutes" value="240" overridable="true"/> -->
<!-- <property name="FCC_MinimumWriteCacheAgeMinutes" value="10" overridable="true"/> -->
<!-- <property name="FCC_MaximumReadCacheAge" value="180" overridable="true"/> -->
<!-- <property name="FCC_MaximumWriteCacheAge" value="180" overridable="true"/> -->
<!-- <property name="FCC_ReadCachePurgeSizePercentage" value="25" overridable="true"/> -->
<!-- <property name="FCC_WriteCachePurgeSizePercentage" value="25" overridable="true"/> -->
<!-- <property name="FCC_CachePurgeCycle" value="5000" overridable="true"/> -->
<!-- <property name="FCC_WholeFileCacheSubdirectories" value="30" overridable="true"/> -->
<!-- segment cache -->
<!-- <property name="FCC_MaximumNumberOfFilePages" value="40960" overridable="true"/> -->
<!-- <property name="FCC_MaximumNumberOfSegments" value="512" overridable="true"/> -->
<!-- <property name="FCC_HashBlockPages" value="2048" overridable="true"/> -->
<!-- <property name="FCC_MaxExtentFiles" value="32" overridable="true"/> -->
<!-- <property name="FCC_MaxExtentFileSizeMegabytes" value="16" overridable="true"/> -->
<!-- external site access definition -->
<!-- <site id="013B998A65427E" overridable="true"/> -->
<!-- <parentfsc address="localhost:4567" priority="0"/> -->
<!-- <parentfsc address="myserverhost:4444" priority="1"/> -->
<!-- <assignment mode="parentfsc" /> -->
<!-- </site> -->
</fccdefaults>
<!-- default parentfsc - this is a marker that will be overwritten by the installer -->
<parentfsc address="http://PL1INPUN0010V0:4544/" priority="0" />
</fccconfig>

```

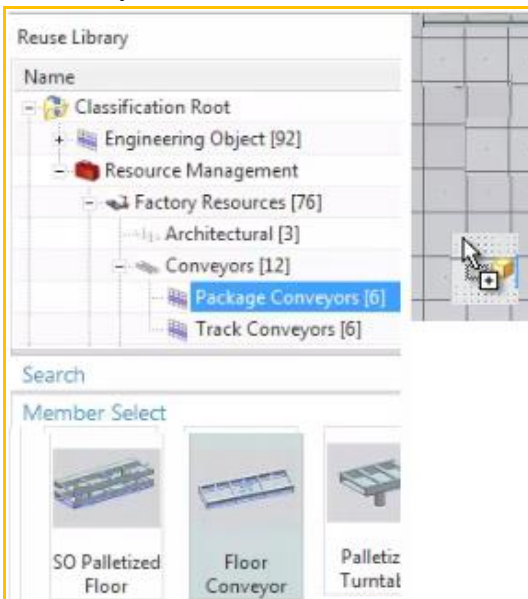
4. Reuse library

Reuse library must contain

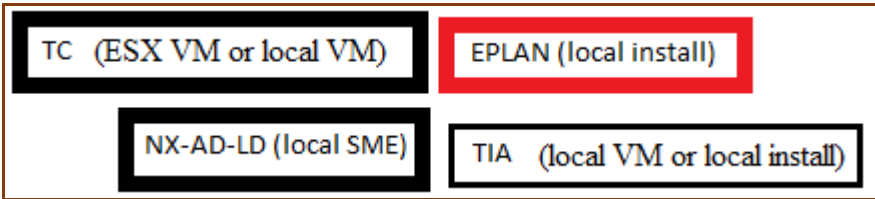
1. EOs for AD



2. Conveyors for LD.



2.3. EPLAN (local install) (20151216)



This GS assumes that EPLAN is installed with the required macros.

1. DRIVE_G120D_CU240_IO_1.emp
2. DRIVE_G120D_PM250D_1.emp

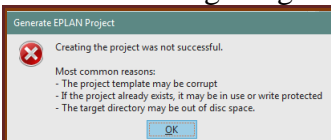
Name	Änderungsdatum	Typ	Größe
DRIVE_G120D_CU240_IO_1.emp	17.09.2015 12:54	EMP-Datei	564 KB
DRIVE_G120D_CU240_IO_1.pdf	03.09.2015 13:54	Adobe Acrobat D...	41 KB
DRIVE_G120D_CU240_IO_2.emp	23.09.2015 09:38	EMP-Datei	326 KB
DRIVE_G120D_CU240_IO_2.pdf	23.09.2015 09:43	Adobe Acrobat D...	37 KB
DRIVE_G120D_PM250D_1.emp	03.09.2015 13:51	EMP-Datei	614 KB
DRIVE_G120D_PM250D_1.pdf	03.09.2015 13:52	Adobe Acrobat D...	51 KB
EplanMacroVariables.xlsx	23.09.2015 12:28	Microsoft Excel-Ar...	16 KB
FromHere.txt	28.09.2015 09:27	Textdokument	1 KB

Name	Änderungsdatum	Typ	Größe
AD_EPLAN_Project_Template_V22.zw9	03.02.2015 12:57	EPLAN data backu...	14.720 KB
AD_EPLAN_Project_Template_V25.zw9	04.09.2015 11:07	EPLAN data backu...	12.029 KB



test (generate EPLAN)

20151201: was getting this error.



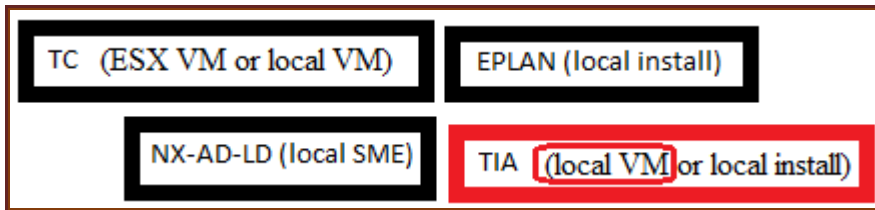
Florian suggested following to fix.



Sebastian did this on terry machine. Movie:

\\debonk10c19\ADNX\Teams\Documentation\10_Meetings
20151130_sebastian_fix_new_eplan_DB.mp4

2.4. TIA (local VM) (20160112)



Much of the info (especially 2.4.3) here is from
https://asrdwiki.siemens.com/AD/index.php?title=How_to_use_TIA_VM

This section describes how to

1. Start the VM
2. Create S300 project (from the FD4-without-startdrive S1500 project). AD requires S300.
3. import/export from/to TIA.
4. test basic call fixes, connect SW, etc.

Contents

- 2.4.1. VM startup
- 2.4.1b. S1500 overview
- 2.4.2. Create S300 project
 1. copy fd4 project to vm
 2. add s300 hw
 3. change OB to STL
 4. copy s1500 posdev, g120
 5. modify s1500 rbat and copy
 6. fix TAGS
 7. RESULT
- 2.4.3. Connect TIA + AD
 1. (2.3). Set IP address of VM
 2. (2.5). Copy ADAGENT from SME folder (ONLY SME)
 3. (2.7). Start ADAGENT (terry movie 1 - 11:52)
 4. Set in .vbs ADAGENT_REMOTE_ADDRESS_FOR_TIA
 5. map drive (20160112)
- 2.4.4. Test import HW/SW
 1. Receive HW
 2. Receive SW
- 2.4.5. Test export to TIA
 1. set network address (do this earlier?)
 2. send data (export)
 3. open result
- 2.4.6. Test SW config (NEW)
 1. add one EO
 2. put all SW under EO
 3. fix calls
 4. connect SW
 5. export to TIA (connect SW, new project)

Sebastian email

Start your SME:

- Path: D:\AutomationDesigner_Sprint49\SME_NX11_1543_S49
- Script: Start_NX_4tier_TC_VM.vbs

Start your TIA VM:

- Path: D:\AutomationDesigner_Sprint49\VMAD_TIAPortal_V13SP1Upd4_I.29_B.01
- File: AD_Win7_64_TIA_V12_33.vmx

Login data: User: PCAdmin / Password: comos

In your VM:

Start the task manager (Strg+Alt+Einf) and check if the process **Siemens.AutomationDesigner.ADAgentUI.exe** is running

If not, go to folder C:\ADAgent and run **Siemens.AutomationDesigner.ADAgentUI.exe**

On your local machine:

Try if you can access the VM:

- Open CMD and ping this IP address: 192.168.80.132 (VM has a fixed address)
- Try to enter this path in your windows explorer: \\192.168.80.132\TiaPortal_Projects\TIA_Project_Sebastian
- In case you need to login:
 - Username: **.\PCAdmin**
 - Password: **comos**

If this is working, you should be able to import data from the VM and export.

In Automation Designer

In your workset, start **Receive Data from TIA Portal**

- For “Type” select **Hardware**
- For “TIA Portal Project” > “Select ap13 File”, enter this path:
\\192.168.80.132\TiaPortal_Projects\TIA_Project_Sebastian\TIA_Project_Sebastian.ap13

2.4.1. VM startup

TEST_INSTALLATION_20151208_2.4.1-2.4.2.mp4 0:00

TIA VM requires 36GB of disc space.

https://asrdwiki.siemens.com/AD/index.php?title=TIA_VM:_Versions_and_Compatibility

Version	Filename	UN / PW	From SME	From AD Group
V13SP1Upd4_I.29_B.01	VMAD_TIAPortal_V13SP1Upd4_I.29_B.01	PCAdmin / comos	SME_NX11_1541_S48	NX11_IP.15_AD.170

\\debonk10c19\ADNX\VMs\TIAPortal\

Version	V13SP1Upd4_I.29_B.01
Filename	VMAD_TIAPortal_V13SP1Upd4_I.29_B.01
UN / PW	PCAdmin / comos
From SME	SME_NX11_1541_S48
From AD Group	NX11_IP.15_AD.170

1. Download and extract (this may take over an hour).
2. Click .vmx file.
3. Click "I copied it".
4. Click OK about the mouse.
5. Login. UN/PW = PCAdmin/comos.
6. Click "Restart later".

2.4.1b. S1500 overview (20151214)

1.HW

The following shows the HW configuration.

Module	Rack	Slot	Type	Article no.	Firmware
PLC_1	0	1	CPU 1518-4 PN/DP	6ES7 518-4AP00-0AB0	V1.6
PROFINET interface_1	0	1 X1	PROFINET interface		
Port_1	0	1 X1 P1	Port		
Port_2	0	1 X1 P2	Port		
PROFINET interface_2	0	1 X2	PROFINET interface		
Port_1	0	1 X2 P1	Port		
PROFINET interface_3	0	1 X3	PROFINET interface		
Port_1	0	1 X3 P1	Port		
DP interface_1	0	1 X4	DP interface		
	0	2			

2. SW and tags

Following shows SW blocks and tags that will be used.

Project tree:

- Project1_ohne_startdrive_V13_SPl -> PLC_1 [CPU 1518-4 PN/DP]
 - TL01
 - RB_AT [FB1012]
 - RB_HA [FB1011]
 - TL01_CALLS [FB1010]
 - G120x_DB [DB2]
 - Lifter_1S2D2P_DB [DB1]
 - PosDev_2D2S2P_DB [DB9]
 - RB_AT_01_IDB [DB1011]
 - RB_HA_01_IDB [DB3]
 - TL02
 - RB_AT_03 [FB3]
 - RB_HA_03 [FB1112]
 - RB_HA_04 [FB1113]
 - TL02_CALLS [FB1110]
 - RB_HA_03_IDB [DB1113]
 - RB_HA_04_IDB [DB1112]
 - System blocks
 - Technology objects
 - External source files
 - PLC tags
 - Show all tags
 - Add new tag table
 - Default tag table [48]
 - AD Library_V13 [36]
 - Import Eplan [55]
 - Safety [8]
 - Local modules
 - PLC_1 [CPU 1518-4 PN/DP]
 - Common data
 - Documentation settings
 - Languages & resources
 - Online access
 - Card Reader/USB memory

PLC tags:

Name	Tag table	Data type	Address	Visibl	Access
1	IBND	Standard-Variablen-tabelle	Bool	%M6.6	✓
2	IBN1	Standard-Variablen-tabelle	Bool	%M7.7	✓
3	auto_inching	Standard-Variablen-tabelle	Bool	%M11.1	✓
4	manual	Standard-Variablen-tabelle	Bool	%M11.0	✓
5	initial position	Standard-Variablen-tabelle	Bool	%M8.5	✓
6	end of cycle	Standard-Variablen-tabelle	Bool	%M0.6	✓
7	reset	Standard-Variablen-tabelle	Bool	%M11.2	✓
8	Tag_1	Standard-Variablen-tabelle	Counter	%C1	✓
9	Z0 reset	Standard-Variablen-tabelle	Bool	%M10.2	✓
10	Faultsum_global	Standard-Variablen-tabelle	Bool	%M90.0	✓
11	Faultsum_cabinet	Standard-Variablen-tabelle	Bool	%M90.1	✓
112	RL0_1	AD Library_V13	Bool	%M3.2	✓
113	RL0_0	AD Library_V13	Bool	%M3.3	✓
114	Newstart	AD Library_V13	Bool	%M3.1	✓
115	First_Cycle	AD Library_V13	Bool	%M2.0	✓
116	m_newstart	AD Library_V13	Bool	%M3.5	✓
117	TRUE	AD Library_V13	Bool	%M2.2	✓
118	PLC_On delayed	AD Library_V13	Bool	%M2.7	✓
19	FALSE	AD Library_V13	Bool	%M2.3	✓
20	WITH	AD Library_V13	Bool	%M4.4	✓
21	WITHOUT	AD Library_V13	Bool	%M3.5	✓
22	m_clock_0_1sec	AD Library_V13	Bool	%M1.0	✓
23	m_clock_0_2sec	AD Library_V13	Bool	%M1.1	✓
24	m_clock_0_3sec	AD Library_V13	Bool	%M1.2	✓
25	m_clock_0_4sec	AD Library_V13	Bool	%M1.3	✓
26	m_clock_1_1sec	AD Library_V13	Bool	%M1.4	✓
27	m_clock_1_2sec	AD Library_V13	Bool	%M1.5	✓
28	m_clock_1_3sec	AD Library_V13	Bool	%M1.6	✓
29	m_clock_2_1sec	AD Library_V13	Bool	%M1.7	✓
30	Chulse_0_1s	AD Library_V13	Bool	%M4.0	✓
31	Chulse_1s	AD Library_V13	Bool	%M4.1	✓
32	Spare M42	AD Library_V13	Bool	%M4.2	✓
33	Spare M43	AD Library_V13	Bool	%M4.3	✓
34	BI1	AD Library_V13	Bool	%M4.4	✓
35	BI5	AD Library_V13	Bool	%M4.5	✓
36	Clock flag asynchronous	AD Library_V13	Byte	%M8.1	✓
37	Reset_Pulse_CV_Off	AD Library_V13	Bool	%M4.4	✓
38	Reset_Pulse_CV_On	AD Library_V13	Bool	%M2.5	✓
39	Reset_Pulse_variable	AD Library_V13	Bool	%M2.6	✓
40	ResLSTOP	AD Library_V13	Bool	%M4.7	✓
41	Reset_E-Stop	AD Library_V13	Bool	%M5.0	✓
42	Reset_error	AD Library_V13	Bool	%M5.1	✓
43	Lampstest	AD Library_V13	Bool	%M3.2	✓
44	m_Control_voltage_on	AD Library_V13	Bool	%M76.0	✓
45	m_PB_Control_voltage_off	AD Library_V13	Bool	%M76.1	✓
46	Lampstest	AD Library_V13	Bool	%M76.2	✓
47	RB_HA_01_POSITL5_DN	AD Library_V13	Bool	%I0.0	✓
48	P00	G1200	DWord	%D2100	✓
49	P01	G1200	DWord	%D2104	✓
50	P00	G1200	DWord	%D2100	✓
51	P02	G1200	DWord	%D2108	✓
52	zT01+zT01-Q1:14	Import Eplan	Bool	%I0.0	✓
53	zT01+zT01-Q2:14	Import Eplan	Bool	%I0.1	✓
54	zT01+zT01-Q5:14	Import Eplan	Bool	%I0.4	✓
55	zT01+zT01-Q6:14	Import Eplan	Bool	%I0.5	✓
56	zT01+zT01-Q0:1	Import Eplan	Bool	%I00.0	✓
57	zT01+zT01-Q001:14	Import Eplan	Bool	%I00.2	✓
58	zT01+zT01-Q002:14	Import Eplan	Bool	%I00.3	✓
59	zT01+zT01-Q01:4	Import Eplan	Bool	%I01.8	✓
60	zT01+zT01-Q02:4	Import Eplan	Bool	%I01.6	✓
61	zT01+zT01-SH01:4	Import Eplan	Bool	%I01.7	✓
62	zT01+zT01-F01:5	Import Eplan	Bool	%I02.0	✓
63	zT01+zT01-F02:5	Import Eplan	Bool	%I02.1	✓
64	zT01+zT01-Q9:14	Import Eplan	Bool	%I11.0	✓
65	zT01+zT01-Q10:14	Import Eplan	Bool	%I11.1	✓
66	zT01+zT01-Q11:14	Import Eplan	Bool	%I11.2	✓
67	zT01+zT01-Q12:14	Import Eplan	Bool	%I11.3	✓
68	zT01+zT01-Q20:14	Import Eplan	Bool	%I11.4	✓
69	uV01+HUB_S2KA12:0:2	Import Eplan	Bool	%D01.8	✓
70	uV01+HUB_S2KA12:0:4	Import Eplan	Bool	%D01.9	✓
71	uV01+HUB_S1KA12:0:2	Import Eplan	Bool	%D01.9	✓
72	uV01+HUB_S1KA12:0:4	Import Eplan	Bool	%D01.9	✓
73	uV01+HUB_S1KA12:0:4	Import Eplan	Bool	%D01.9	✓
74	uV01+HUB_S1KA12:0:4	Import Eplan	Bool	%D01.9	✓
75	uV01+HUB_S1KA12:0:22	Import Eplan	Bool	%D01.9	✓
76	uV01+HUB_S1KA12:0:22	Import Eplan	Bool	%D01.9	✓
77	zT01+zT01-SN1:32	Import Eplan	Bool	%D2000.0	✓
78	zT01+zT01-SN1:32	Import Eplan	Bool	%D2000.4	✓
79	zT01+zT01-KN2:A2	Import Eplan	Bool	%D2000.1	✓
80	sG01+sG01-BG1	Import Eplan	Bool	%D2000.1	✓
81	sG01+sG01-SWE2_3:14	Import Eplan	Bool	%D2000.1	✓
82	sG02+sG02-BG1	Import Eplan	Bool	%D2000.1	✓
83	sG02+sG02-SWE2_3:14	Import Eplan	Bool	%D2000.1	✓
84	zT01+zT01-SH01:X1	Import Eplan	Bool	%D100.0	✓
85	PQX_ZT01_LAMP-GN	Import Eplan	Bool	%D100.5	✓
86	PQX_ZT01_LAMP-RT	Import Eplan	Bool	%D100.6	✓
87	PQX_ZT01_LAMP-GE	Import Eplan	Bool	%D100.7	✓
88	uV01+HUB_S1KA12:0	Import Eplan	Bool	%D12.0	✓
89	uV01+HUB_S1KA12:0	Import Eplan	Bool	%D12.1	✓
90	zT01+zT01-KN1:A1	Import Eplan	Bool	%D2000.2	✓
91	zT01+zT01-Q001:14	Import Eplan	Bool	%D100.4	✓
92	FC_On	Import Eplan	Bool	%D100.2	✓
93	FC_Right	Import Eplan	Bool	%D100.3	✓
94	EP_Up	Import Eplan	Bool	%D100.4	✓
95	EP_Down	Import Eplan	Bool	%D100.5	✓
96	slow_back	Import Eplan	Bool	%D100.0	✓
97	slow_forw	Import Eplan	Bool	%D100.1	✓
98	pos_back_left	Import Eplan	Bool	%D100.2	✓
99	pos_front_left	Import Eplan	Bool	%D100.3	✓
100	pos_up	Import Eplan	Bool	%D100.4	✓
101	pos_down	Import Eplan	Bool	%D100.5	✓
102	EM_On_Epl	Import Eplan	Bool	%D190.4	✓
103	EM_On_Epl	Import Eplan	Bool	%D190.5	✓
104	zT01+zT01-KN2:22	Import Eplan	Bool	%D2000.2	✓
105	zT01+zT01-S03:4	Import Eplan	Bool	%I01.2	✓
106	zT01+zT01-S03:5	Import Eplan	Bool	%I01.3	✓
107	SM_EStop_Enbl	Safety	Bool	%M4000.1	✓
108	SM_RS_Enbl	Safety	Bool	%M4001.1	✓
109	SM_EStop_Anlage	Safety	Bool	%M4000.0	✓
110	SM_RS_Enbl_Anlage	Safety	Bool	%M4001.0	✓
111	SM_EStop_local	Safety	Bool	%M4001.3	✓
112	FRG_RS	Safety	Bool	%M4002.1	✓
113	FRG_EStop	Safety	Bool	%M4003.1	✓
115	Alarm_24V	Safety	Bool	%I0.0	✓

The following describes the function of the SW blocks.

Conveyor Software Models

- RB_AT – Conveyor Controller**
 - Provides interlocks for interaction with other conveyors
 - Calls the underlying functional blocks for real operation (PosDev_2D2S2P)
 - G120x
- PosDev_2D2S2P – 2D2S2P Conveyor Functionality**
 - Controls the action of the conveyor
 - 2 Direction, 2 Speed, 2 Position
 - Generates conveyor specific error and fault messaging
- G120x**
 - Operates an attached G120 drive
 - Includes alarming and fault messages
 - Has speed control

Our conveyor is a 2-Position, 2-Speed, 2 Direction Conveyor that allows parts to move through the production line.

To do this, we require software that controls the conveyor. Our software is based off of a typical Siemens automotive standard.

2.4.2. Create S300 project

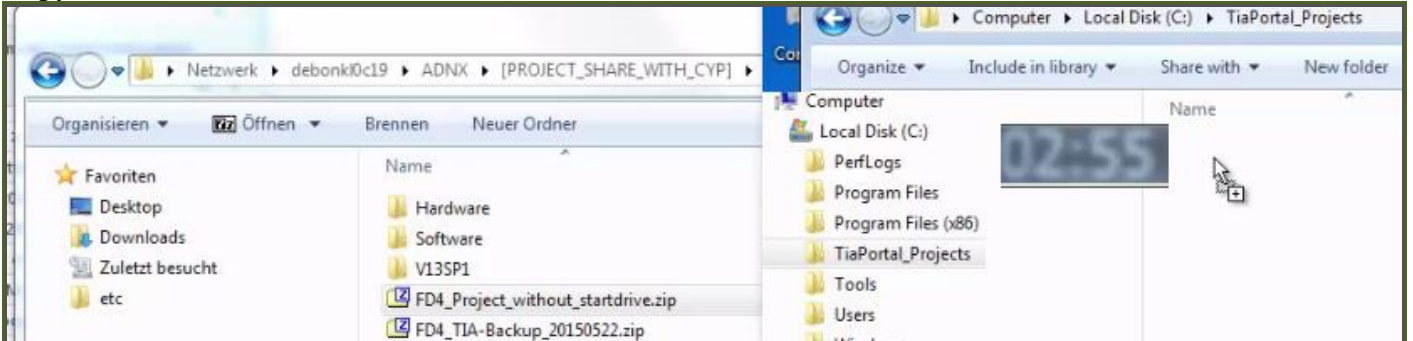
TEST_INSTALLATION_20151208_2.4.1-2.4.2.mp4 2:40

1. Copy FD4 project to VM, open, upgrade

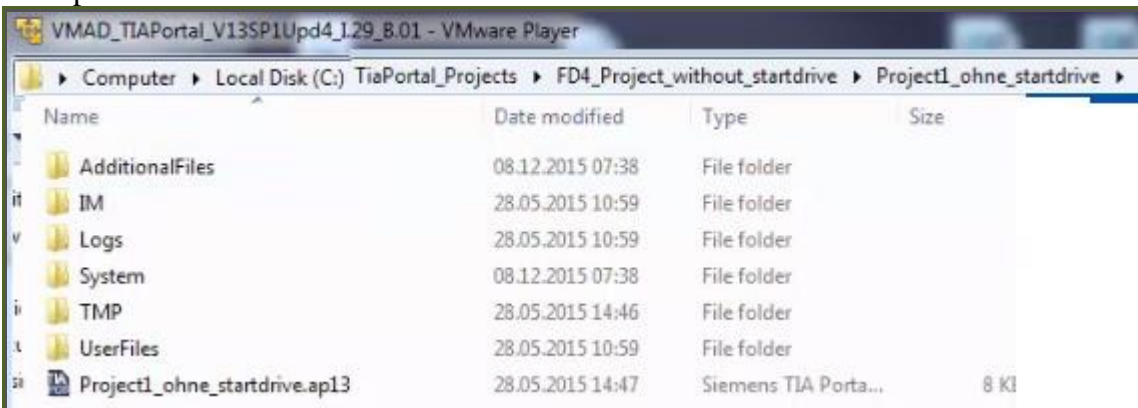
1. \\debonk10c19\ADNX\[PROJECT_SHARE_WITH_CYP]\TIA_Portal_XML

FD4_Project_without_startdrive.zip

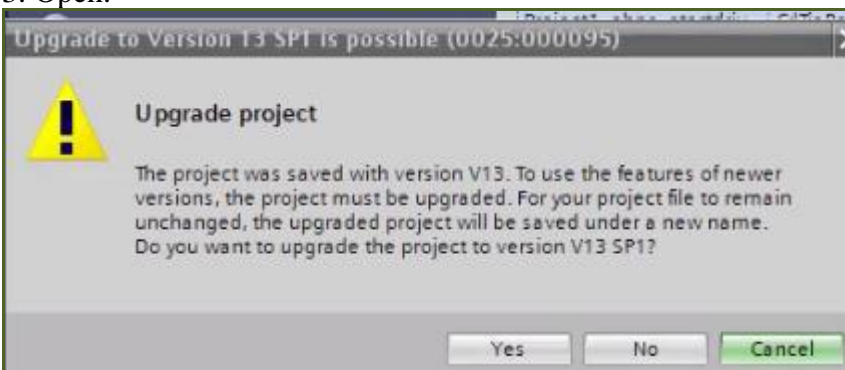
Copy to vm.



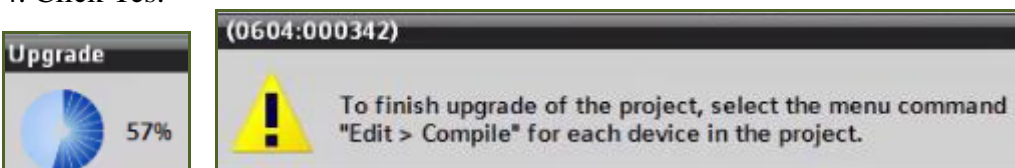
2. Unpack.



3. Open.



4. Click Yes.

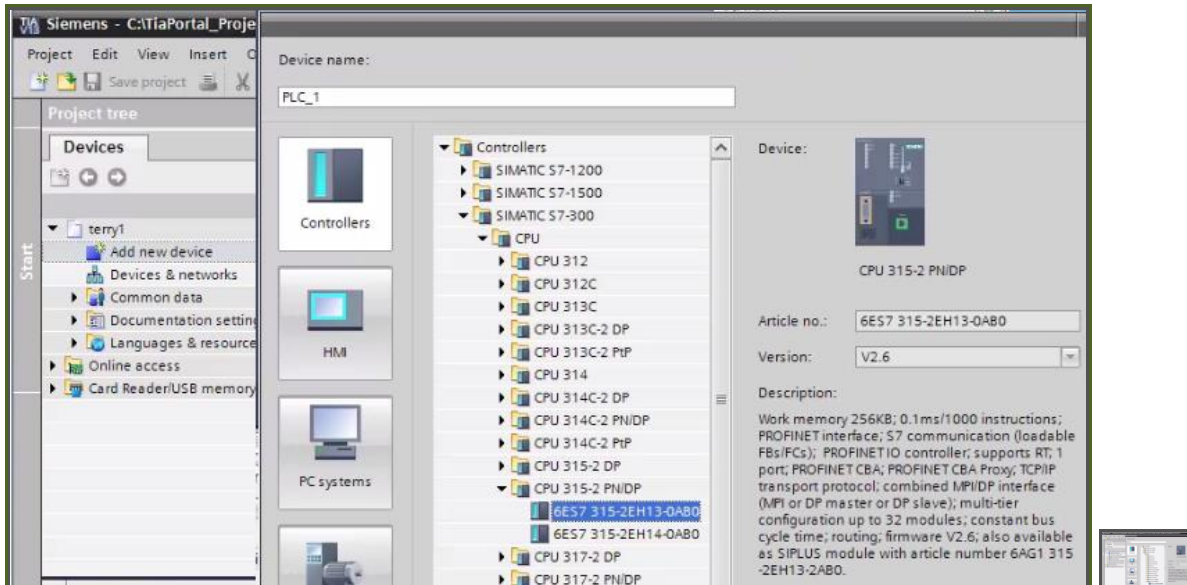


5. compile.

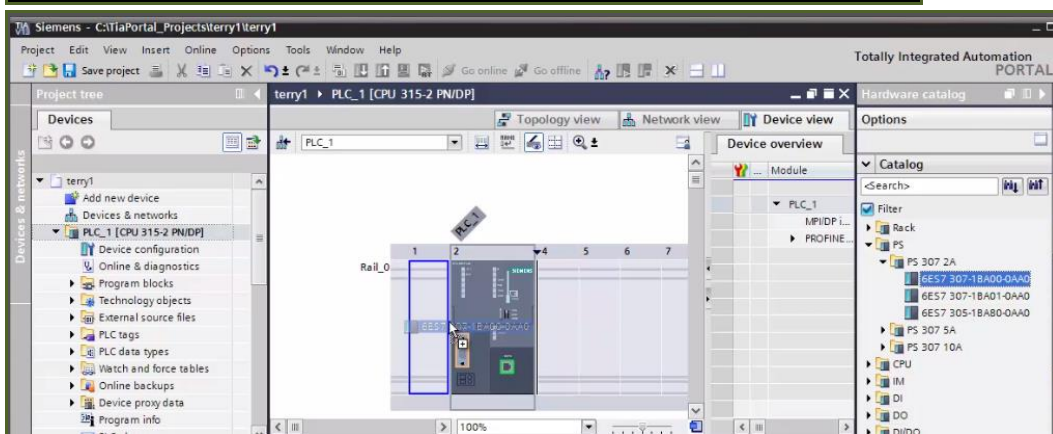
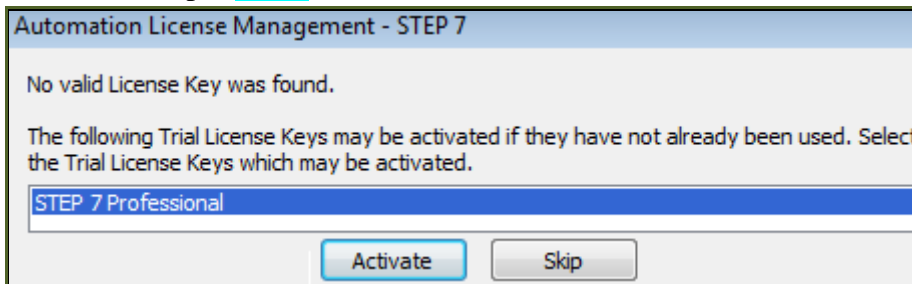


2. Add S300 CPU

1. Add new S300 HW.



2. Activate step7. 07:22



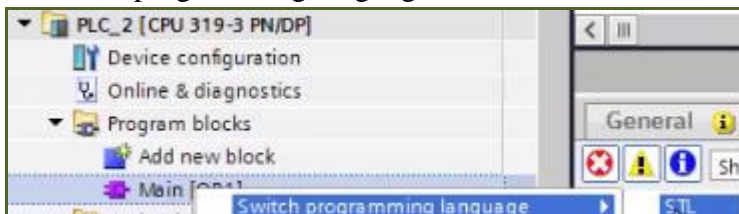
2b. Add I/O modules (20151221)

Add 1 DI and 1 DO.



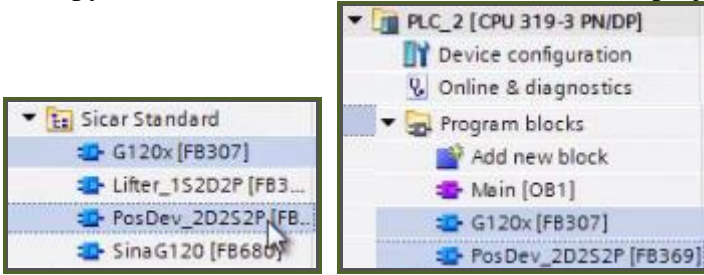
3. Change OB1 to STL 08:20

1. Switch programming language.



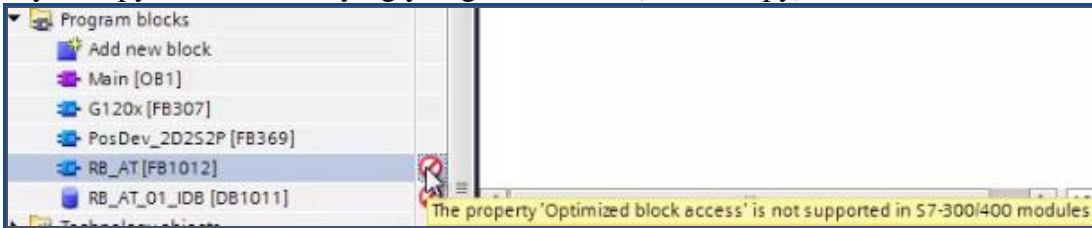
4. Copy S1500 PosDev, G120

1. Copy S1500 SW G120 and PosDev to the S300 project.

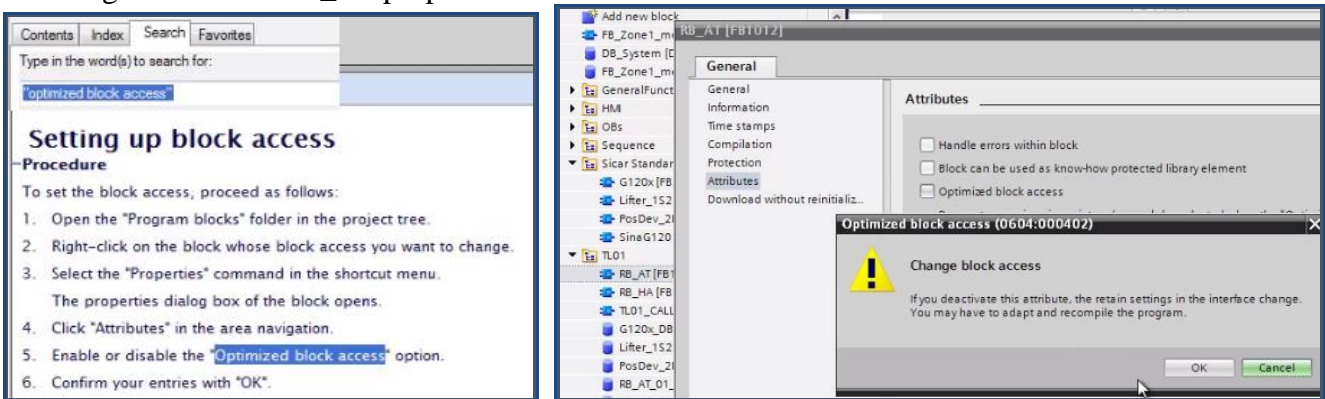


5. Modify S1500 RB_AT and copy 09:45

If you copy without modifying you get this error (do not copy).



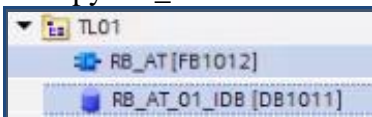
1. Change the S1500 RB_AT properties.



2. Compile.



3. Copy RB_AT to S300.

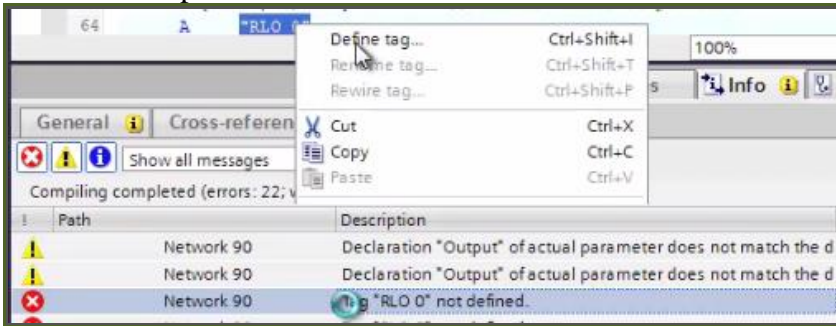


4. Compile.

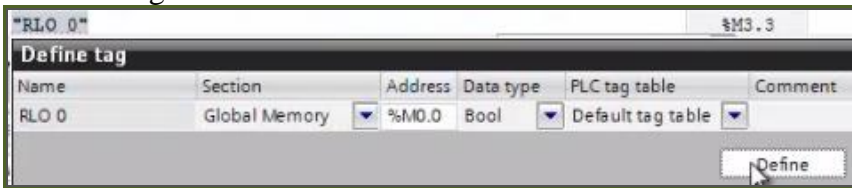


6. Fix tags 12:55

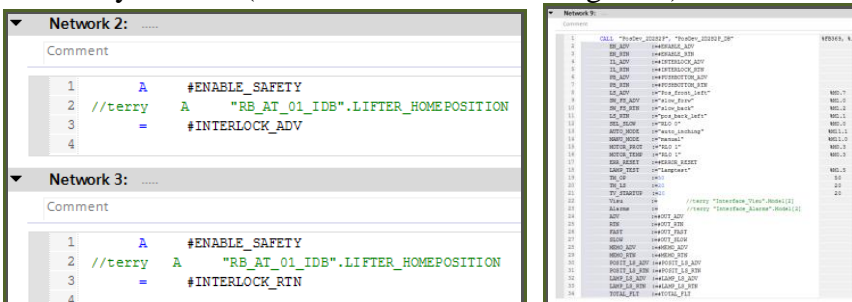
After the compile there are about 20 errors.



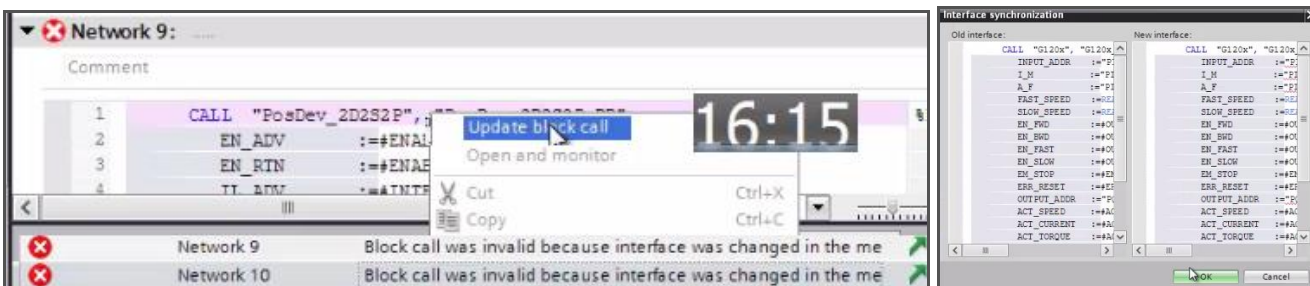
1. Fix all tags.



2. Modify RB_AT (comment out the following lines).



3. Fix the block call error.



4. Compile and save. You now have SW ready for S300.

7. RESULT (20151214)

The screenshot displays the SIMATIC Manager interface. On the left, the 'Project tree' shows the hierarchy for 'PLC_2 [CPU 319-3 PN/DP]', including 'Main [OB1]' which is currently selected. On the right, the 'CALL' editor shows the 'Block title: *Main Program Sweep (Cycle)*' and 'Network 1:'. The network contains two rungs, with the first rung highlighted in light blue.

	Name	Data type	Address
1	slow_back	Bool	%M0.0
2	Pos_front_left	Bool	%M0.1
3	slow_forw	Bool	%M0.2
4	pos_back_left	Bool	%M0.3
5	FRG_EStop	Bool	%M0.4
6	IBNO	Bool	%M0.5
7	RLO 0	Bool	%M0.6
8	FRG_BS	Bool	%M0.7
9	reset	Bool	%M1.0
10	Blif	Bool	%M1.1
11	TRUE	Bool	%M1.2
12	RLO 1	Bool	%M1.3
13	CPulse_0_1s	Bool	%M1.4
14	Newstart	Bool	%M1.5
15	PLC_On delayed	Bool	%M1.6
16	auto_inching	Bool	%M1.7
17	manual	Bool	%M2.0
18	Lampstest	Bool	%M2.1
19	PID0	DWord	%MD4
20	PID1	DWord	%MD8
21	PID2	DWord	%MD12
22	PQD0	DWord	%MD16

1. CLOSE PROJECT (must not be open so you can import to AD).

2.4.3. Connect TIA + AD

TEST_INSTALLATION_20151208_2.4.3-2.4.4.mp4

1 (2.3). Set IP address of VM

192.168.81.134

1. Find a free IP (on local machine).

```
C:\Users\Z003H4JK>ipconfig

Windows-IP-Konfiguration

Ethernet-Adapter Local Area Connection:

    Verbindungsspezifisches DNS-Suffix: khe.siemens.de
    IPv4-Adresse . . . . . : 149.246.228.129
    Subnetzmaske . . . . . : 255.255.255.0
    Standardgateway . . . . . : 149.246.228.1

Ethernet-Adapter VMware Network Adapter VMnet1:

    Verbindungsspezifisches DNS-Suffix:
    IPv4-Adresse . . . . . : 192.168.81.1
    Subnetzmaske . . . . . : 255.255.255.0
    Standardgateway . . . . . :
```

```
C:\Users\Z003H4JK>ping 192.168.85.134

Ping wird ausgeführt für 192.168.85.134 mit 32 Bytes Daten:
Antwort von 192.168.85.1: Zielhost nicht erreichbar.
Antwort von 149.246.255.193: Zielhost nicht erreichbar.
```

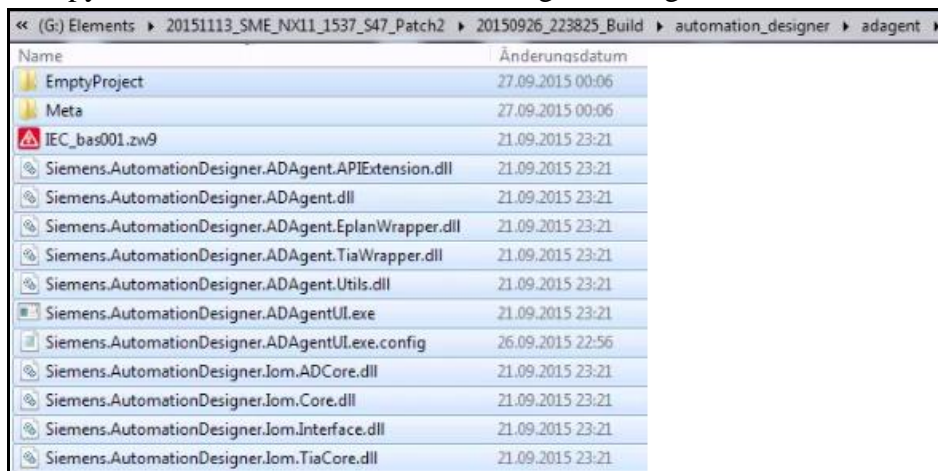
2. Change VM IP.

The image shows a sequence of Windows network configuration steps. At the top left, a VMware Player window displays the 'Properties' dialog for a VM named 'VMAD_TIAPortal_V13SP1Upd4_I.29_B.01'. To the right, the 'Network and Sharing Center' is visible. The main part of the image is a screenshot of the 'Network Connections' window, where the 'LAN-Verbindung Properties' dialog is open. The 'Internet Protocol Version 4 (TCP/IPv4) Properties' sub-dialog is active, showing the 'General' tab. The 'Use the following IP address' radio button is selected, with the IP address field containing '192.168.081.134' and the Subnet mask field containing '255.255.255.0'. A digital clock in the background shows '02:52'. At the bottom right, a small text box contains the note: 'Maybe need to wait till pc not so busy???'.

2 (2.5). Copy ADAgent from SME folder

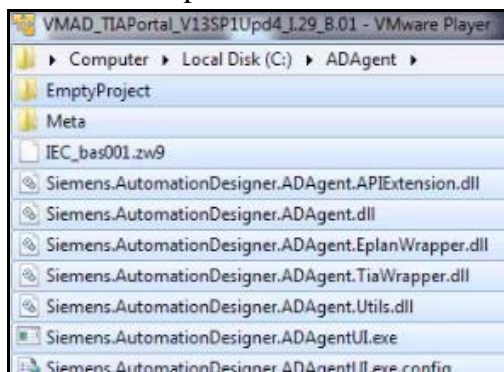
On the Host:

1. Open the SME folder (where the start scripts are located).
2. Navigate into the Build folder of the SME: <Date>_SME_Build.
3. Copy content of folder 'automation designer / adagent'.

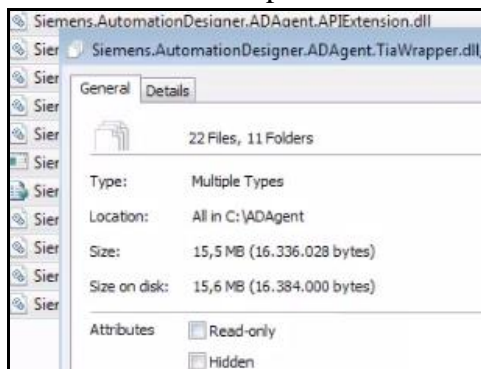


In the VM:

1. Create C:\ADAgent folder.
2. Paste the copied content into the folder (overwriting).



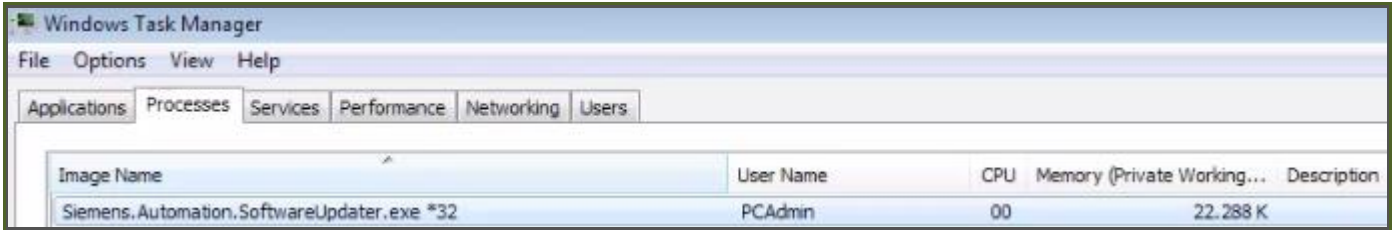
3. Remove the write protection of the files.



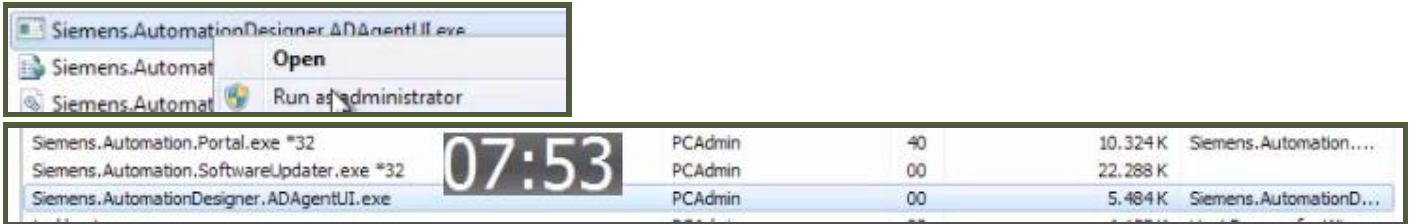
3 (2.7). Start ADAgent

In ADAGENT folder. For Agents build from a development unit by the deployer tool it will be:
C:\ADAGENT\ADAGENT_Gr<#number of AD group>.

1. Double-click on Siemens.AutomationDesigner.ADAgentUI.exe.



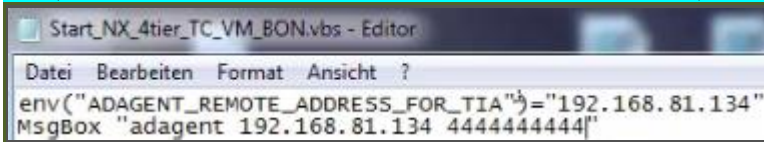
2. TERRY: I had to right-click and run as admin.



4. Set ADAGENT_REMOTE_ADDRESS_FOR_TIA in VBS file

1. On the host set the TIA VM address.

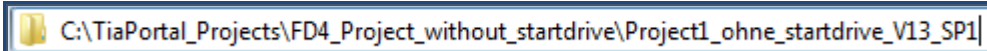
`env("ADAGENT_REMOTE_ADDRESS_FOR_TIA")="192.168.186.133"`



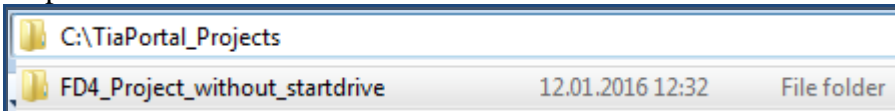
2. Save the file.

5. map drive (20160112)

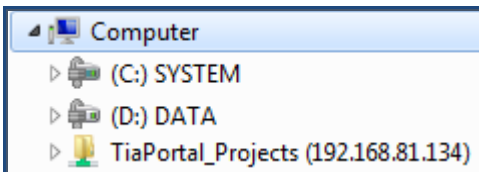
In TIA VM



Map this



Result.



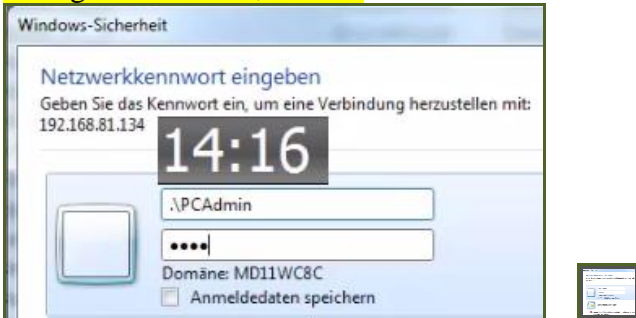
2.4.4. Test import HW/SW (20151221)

TEST_INSTALLATION_20151208_2.4.3-2.4.4.mp4

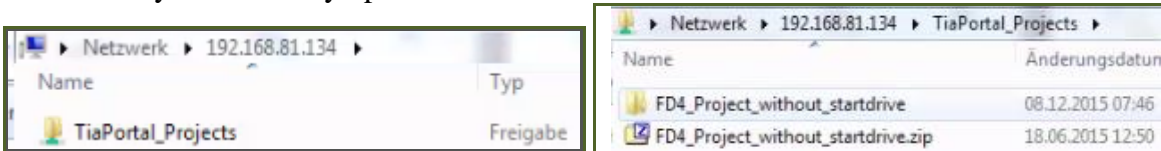
1. Receive HW

1. On host open VM address \\192.168.81.134. 13:10.

2. Login. PCAdmin, comos.

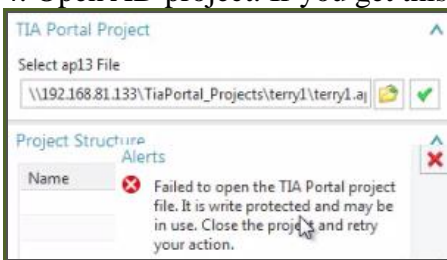


After a delay the directory opens.

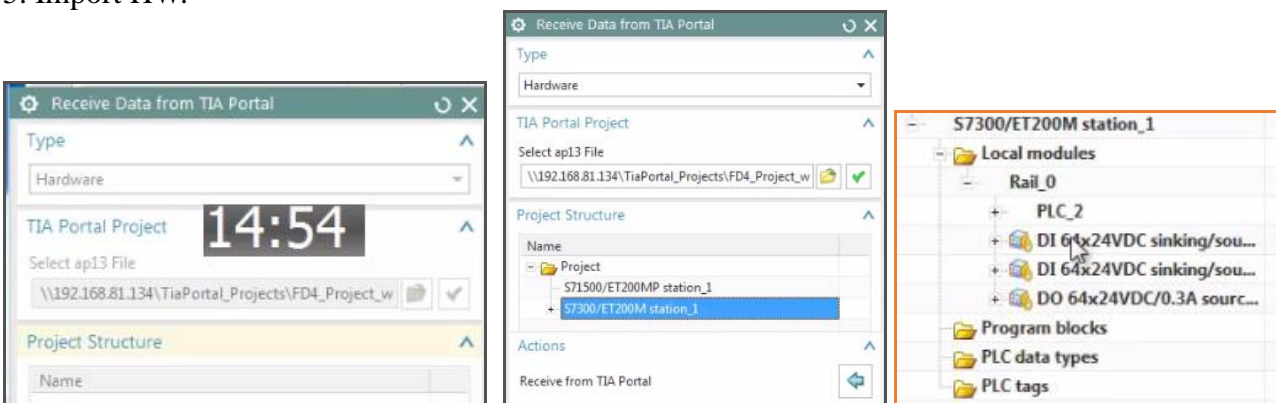


3. Start NX.

4. Open AD project. If you get this error, then close project in vm.



5. Import HW.



2. Receive SW

The image shows two screenshots from the Siemens TIA Portal software. The left screenshot is the 'Receive Data from TIA Portal' dialog box, and the right screenshot is the 'PLC HW' project tree.

Receive Data from TIA Portal Dialog:

- Type:** Software
- Target:** Select Object (1)
- TIA Portal Project:** Select ap13 File: \\192.168.81.134\TiaPortal_Projects\FD4_Project_w
- Project Structure:**

Name
S7300/ET200M station_1
+ Local modules
- Program blocks
Main [OB1]
G120x [FB307]
PosDev_2D2S2P [FB369]
RB_AT [FB1012]
G120x_DB [DB2]
PosDev_2D2S2P_DB [DB9]
PLC data types
- Actions:** Receive from TIA Portal

PLC HW Project Tree:

- PLC HW
 - + S7300/ET200M station...
 - S7300/ET200M station...
 - + Local modules
 - Program blocks
 - Main [OB1]
 - G120x [FB30...
 - PosDev_2D2...
 - RB_AT [FB10...
 - G120x_DB [...
 - PosDev_2D2...
 - PLC data types
 - PLC tags
 - Newstart
 - PLC_On delay...
 - TRUE
 - CPulse_0_1s
 - RLO 1
 - BiIF

2.4.5. Test export to TIA

TEST_INSTALLATION_20151208_2.4.5-2.4.6.mp4

1. Set network address (do this earlier?)

To export you need to set a network address.

1. Add address.



2. User defined.



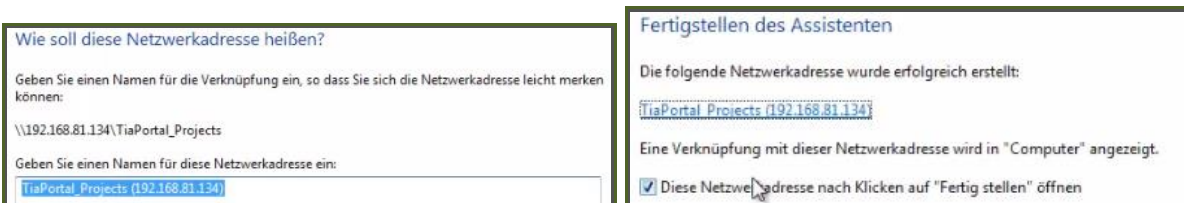
3. Enter address.



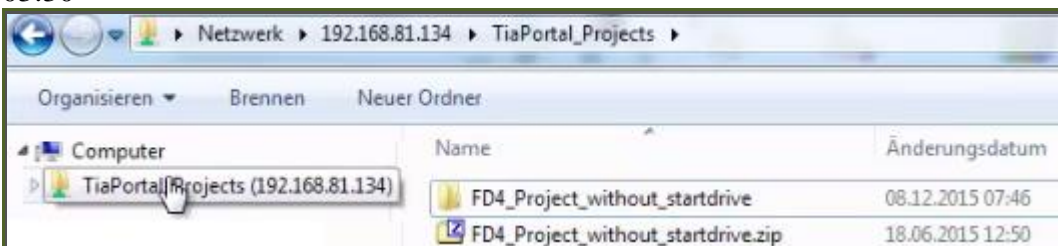
4. Enter directory.



5. Name.

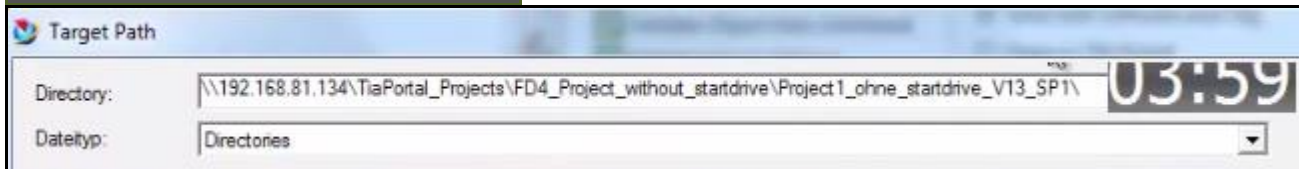
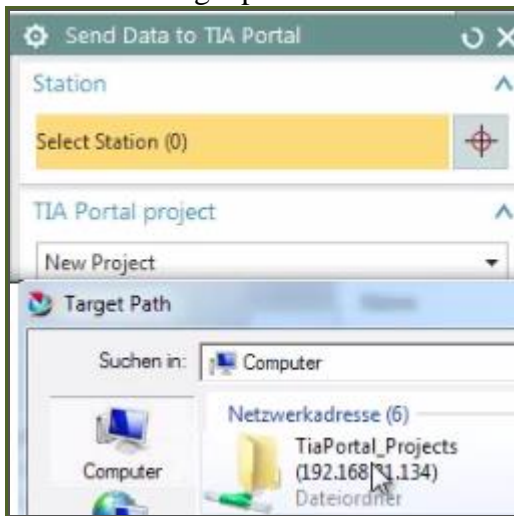


03:30

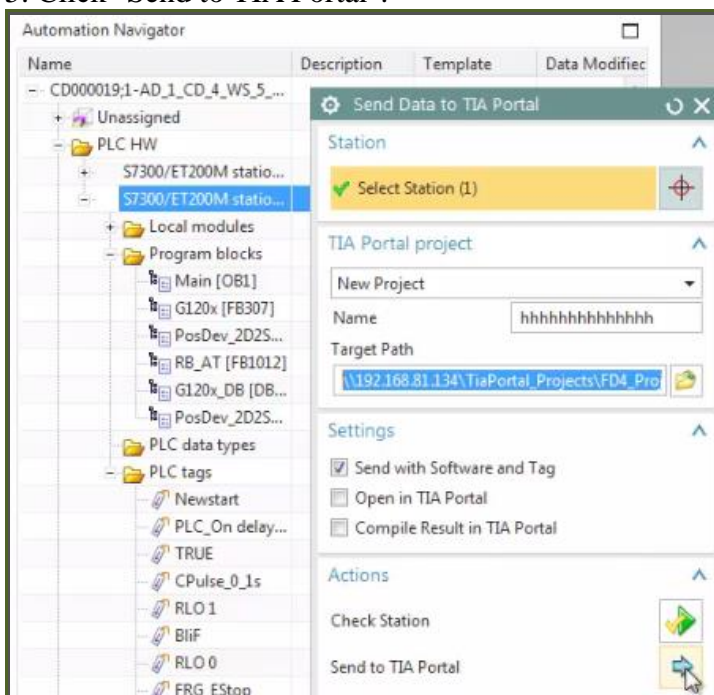


2. Send data (export)

1. Electrical Engineering / Send Data to TIA Portal. 03:44
2. Select "New project".
2. Enter the target path.



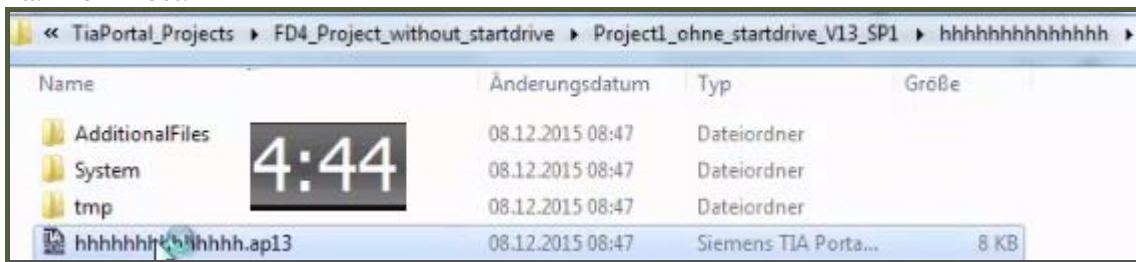
3. Enter Name.
3. Check "Send with Software and Tag".
3. Uncheck "Open in TIA Portal".
4. Select the station.
5. Click "Send to TIA Portal".



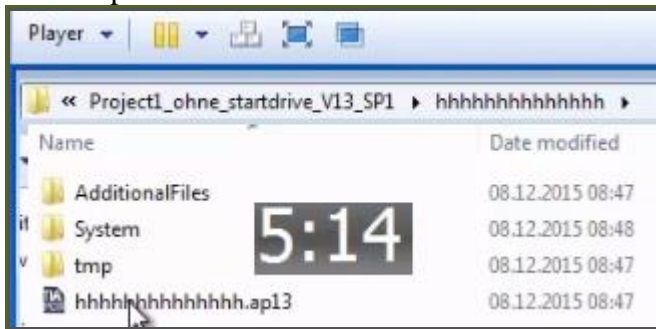
3. Open result

1. Open

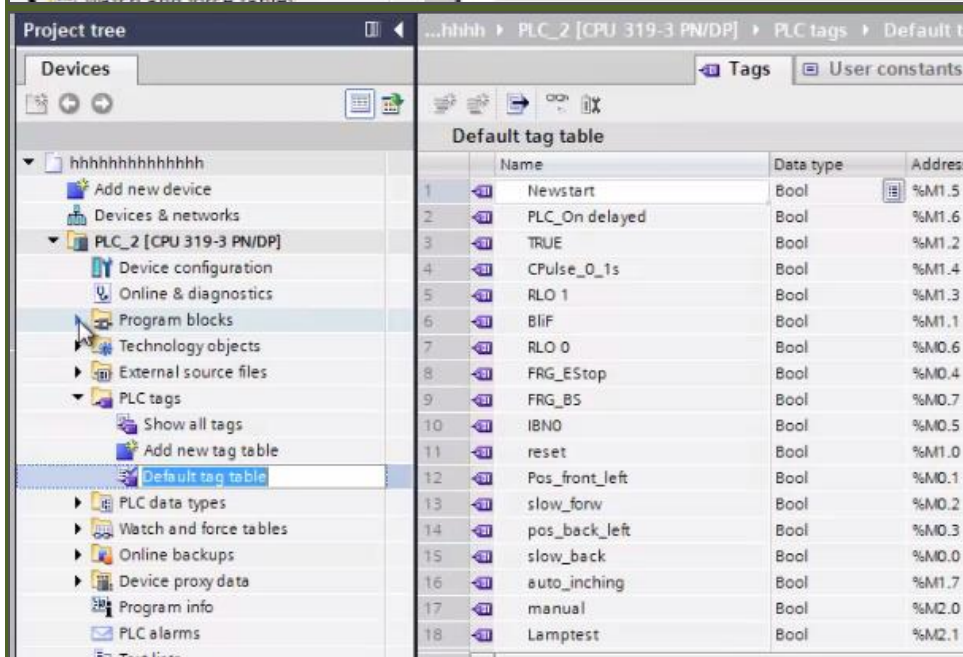
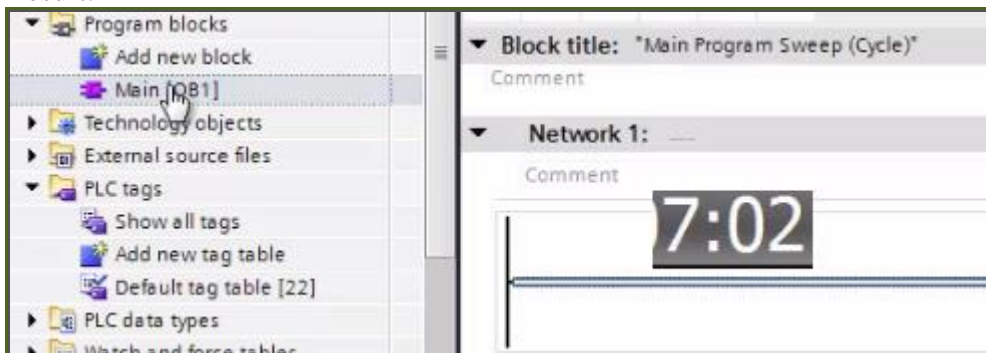
1a. From host.



1b. Or open in VM.



Result.

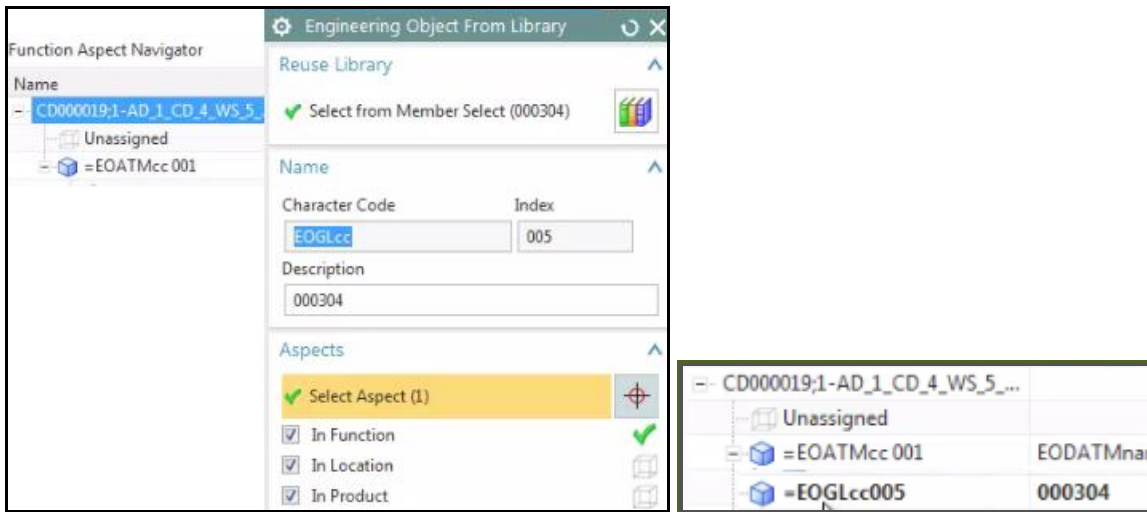


2.4.6. Test SW config

TEST_INSTALLATION_20151208_2.4.5-2.4.6.mp4

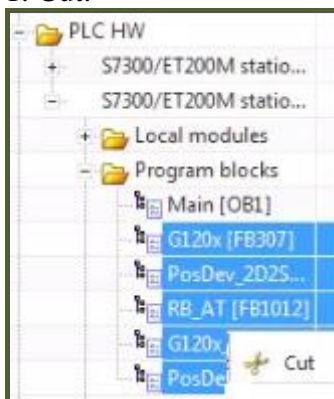
1. Add one EO 07:42

1. Add an EO.

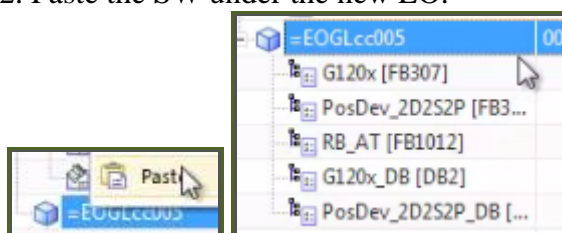


2. Put all SW under EO

1. Cut.



2. Paste the SW under the new EO.



3. Fix calls 08:45

RB_AT tag and calls are OK.

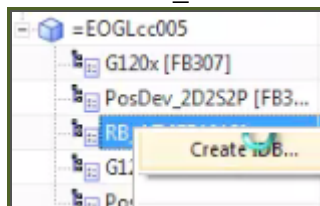
```
PLC Code
1 Network 1:--
2 A "FRG_EStop"
3 A "FRG_BS"
4 = #ENABLE_SAFETY
5
6
7 Network 2:--
8 A #ENABLE_SAFETY
9 //TERRY A "RB_AT_01_IDB".LIFTER
10 I
11 = #INTERLOCK_ADV
12
13 Network 3:--
14 A #ENABLE_SAFETY
15 //TERRY A "RB_AT_01_IDB".LIFTER
16 = #INTERLOCK_RTN
17
18
19 Network 4:--
20 A "IBNO"
21 = #ENABLE_ADV
```

```
Network 9:--
15 CALL "PosDev_2D2S2P", "PosDev_2D2S2P_DB"
16 EN_ADV := #ENABLE_ADV
17 EN_RTN := #ENABLE_RTN
18 IL_ADV := #INTERLOCK_ADV
Network 10:--
CALL "G120x", "G120x_DB"
INPUT_ADDR := "PID0"
```

8:47

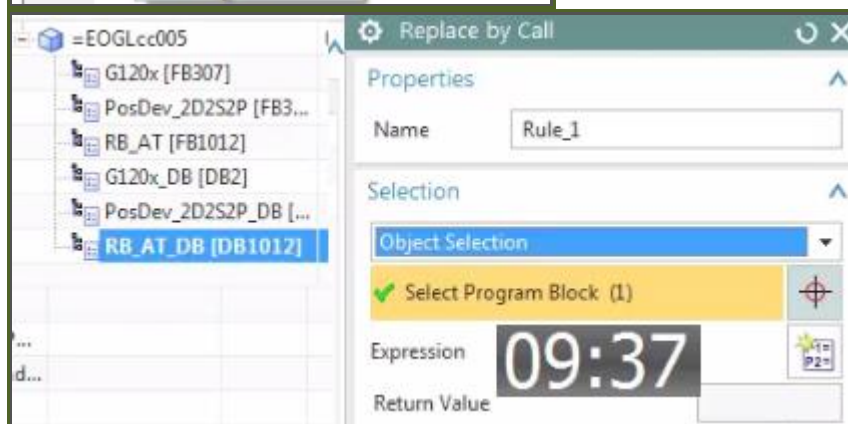
```
98 Network 11:--
99 A (
100 A "Pos_front_left"
101 A "slow_forw"
102 O
103 A "pos_back_left"
104 A "slow_back"
105 )
106 AN #OUT_ADV
107 AN #OUT_RTN
108 = #CONVEYOR_OCCUPIED
Network 12:--
AN "Pos_front_left"
AN "slow_forw"
AN "pos_back_left"
AN "slow_back"
AN #OUT_ADV
AN #OUT_RTN
= #CONVEYOR_OCCUPIED
```

1. Create RB_AT IDB.



2. Insert call to RB_AT for OB1.

```
PLC Code
1 Network 1:--
2 //
3 CALL "RB_AT", "RB_AT_DB"
```

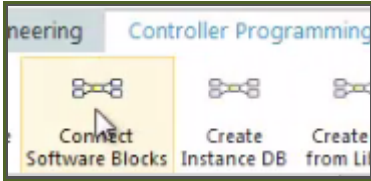


```
PLC Code
1 Network 1: RB_AT_DB
2 //
3 CALL "RB_AT", "RB_AT_DB"
```

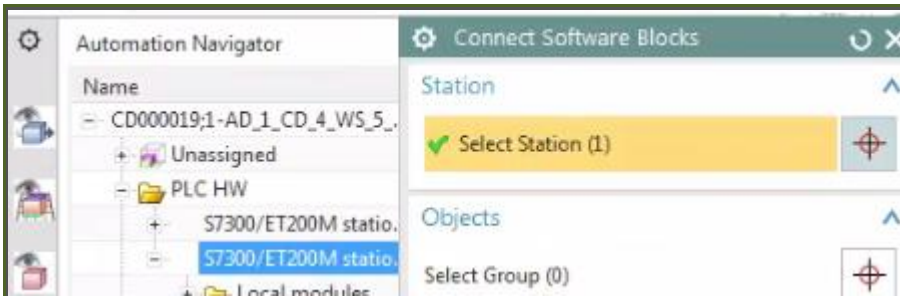
09:37

4. Connect SW 10:15

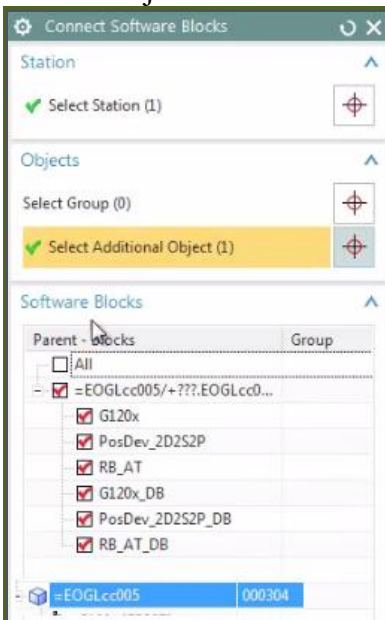
1. Click "connect SW blocks".



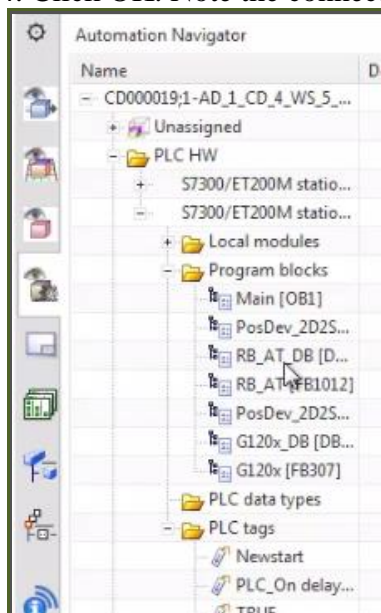
2. Select station.



3. Select objects. 10:44

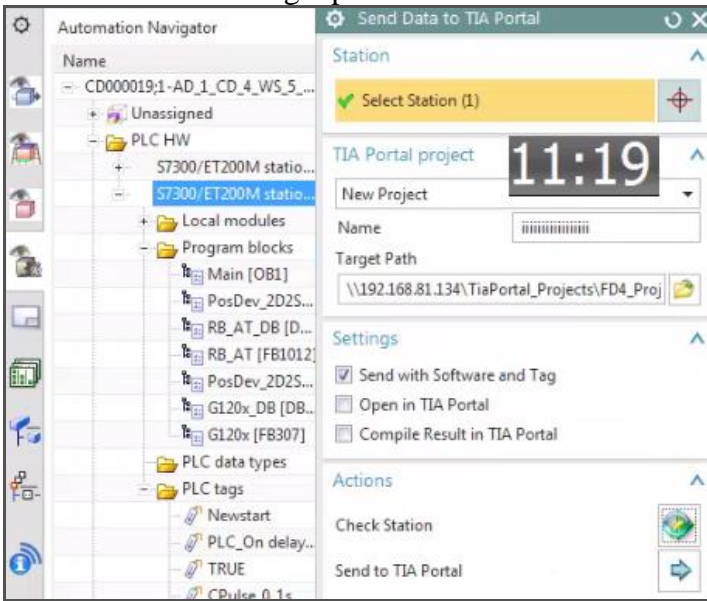


4. Click OK. Note the connected SW and tags.

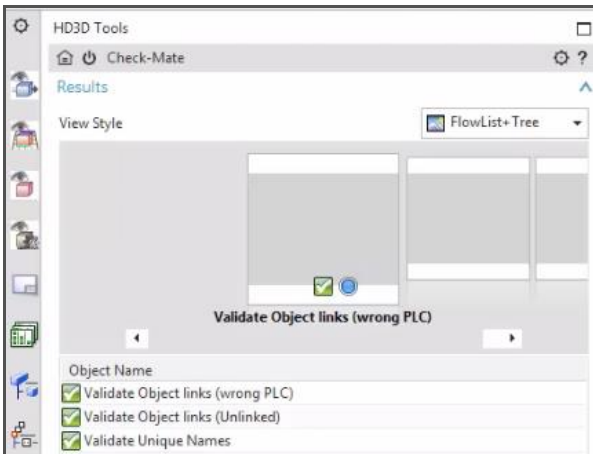


5. Export to TIA (new project)

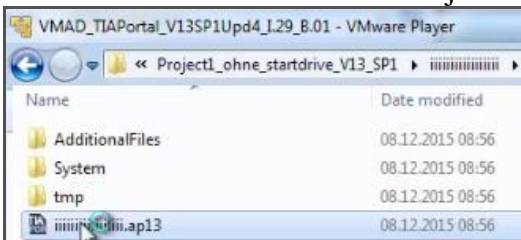
1. Click "Send data to TIA portal".
2. Select New Project.
3. Enter Name and target path.



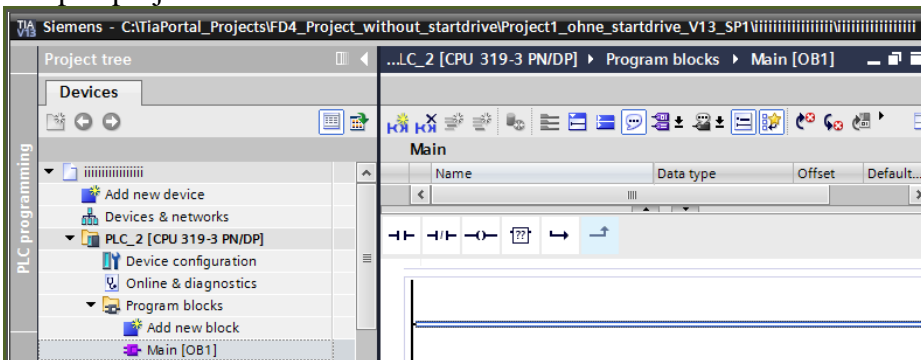
4. Check station.



5. Click "Send to TIA Portal". Project is created.



6. Open project.



Seems that the g120, posdev, rbat are always missing. Asked someone about this a long time ago, He said just an error will fix in future.