SIEMENS

Application Example • 10/2016

TeleService of a S7-1200 station via mobile network

CP 1242-7 V2, CP 1243-7 LTE, TCSB V3

https://support.industry.siemens.com/cs/ww/en/view/56720905

Warranty and Liability

Note

The Application Examples are not binding and do not claim to be complete with regard to configuration, equipment or any contingencies. The Application Examples do not represent customer-specific solutions. They are only intended to provide support for typical applications. You are responsible for the correct operation of the described products. These Application Examples do not relieve you of the responsibility of safely and professionally using, installing, operating and servicing equipment. When using these Application Examples, you recognize that we cannot be made liable for any damage/claims beyond the liability clause described. We reserve the right to make changes to these Application Examples at any time and without prior notice. If there are any deviations between the recommendations provided in this Application Example and other Siemens publications – e. g. catalogs – the contents of the other documents shall have priority.

We do not accept any liability for the information contained in this document.
Any claims against us – based on whatever legal reason – resulting from the use of the examples, information, programs, engineering and performance data etc., described in this Application Example shall be excluded. Such an exclusion shall not apply in the case of mandatory liability, e.g. under the German Product Liability Act ("Produkthaftungsgesetz"), in case of intent, gross negligence, or injury of life, body or health, guarantee for the quality of a product, fraudulent concealment of a deficiency or breach of fundamental contractual obligations ("wesentliche Vertragspflichten"). The compensation for damages due to a breach of a fundamental contractual obligation is, however, limited to the foreseeable damage, typical for the type of contract, except in the event of intent or gross negligence or injury to life, body or health. The above provisions do not imply a change of the burden of proof to your detriment.
Any form of duplication or distribution of these Application Examples or excerpts hereof is prohibited without the expressed consent of Siemens AG.

© Siemens AG 2016 All rights reserved

Security information

Siemens provides products and solutions with Industrial Security functions that support the secure operation of plants, systems, machines and networks.

In order to secure plants, systems, machines and networks against cyber threats it is necessary to implement (and to maintain continuously) a holistic, state-of-the-art Industrial Security concept. With this in mind, Siemens' products and solutions are only part of such a concept.

It is the client's responsibility to prevent unauthorized access to his plants, systems, machines and networks. Systems, machines and components should only be connected with the company's network or the Internet, when and insofar as this is required and the appropriate protective measures (for example, use of firewalls and network segmentation) have been taken.

In addition, the recommendations by Siemens regarding the respective protective measures have to be observed. For more information on Industrial Security, visit http://www.siemens.com/industrialsecurity.

Siemens' products and solutions undergo continuous development to make them even more secure. Siemens explicitly recommends to carry out updates as soon as the respective updates are available and always only to use the current product versions. Use of product versions that are no longer supported, and failure to apply latest updates may increase customer's exposure to cyber threats.

In order to always be informed about product updates, subscribe to the Siemens Industrial Security RSS Feed at http://www.siemens.com/industrialsecurity.

Table of Contents

Warranty and Liability 2

1 Task 4

2 Solution 5

2.1 Overview 5
2.2 Hardware and software components 7
2.2.1 Validity 7
2.2.2 Components used 7

3 Function principle 9

3.1 Connection buildup between remote station and central station via TCSB V3 9
3.2 Teleservice connection between remote station and engineering station 11

4 Configuration and Settings 13

4.1 Configuring the remote station 13
4.2 Configuring the TCSB V3 17

5 Installation and Commissioning 20

5.1 Installing the hardware 20
5.1.1 Hardware setup of the remote station 20
5.1.2 Hardware setup of central station 21
5.1.3 Hardware setup of the engineering station 21
5.2 Installing the software 22
5.3 Installing the example project 23
5.4 Commissioning 23
5.4.1 Setting the IP addresses 23
5.4.2 Assigning the IP address to the engineering station 23
5.4.3 Configuring the DSL router 24
5.4.4 Inserting a backup copy of the “56720905_S7 1200_TeleService.bak” database into TCSB V3 25
5.4.5 Configuring the IP address and ports of TCSB V3 28
5.4.6 Loading the remote station 29

6 Operating the Application Example 31

6.1 Polling diagnostic data from the station 31
6.2 Downloading project and program data from the STEP 7 project into the remote station 35

7 Links & Literature 38

8 History 38

© Siemens AG 2016 All rights reserved

1 Task

Introduction

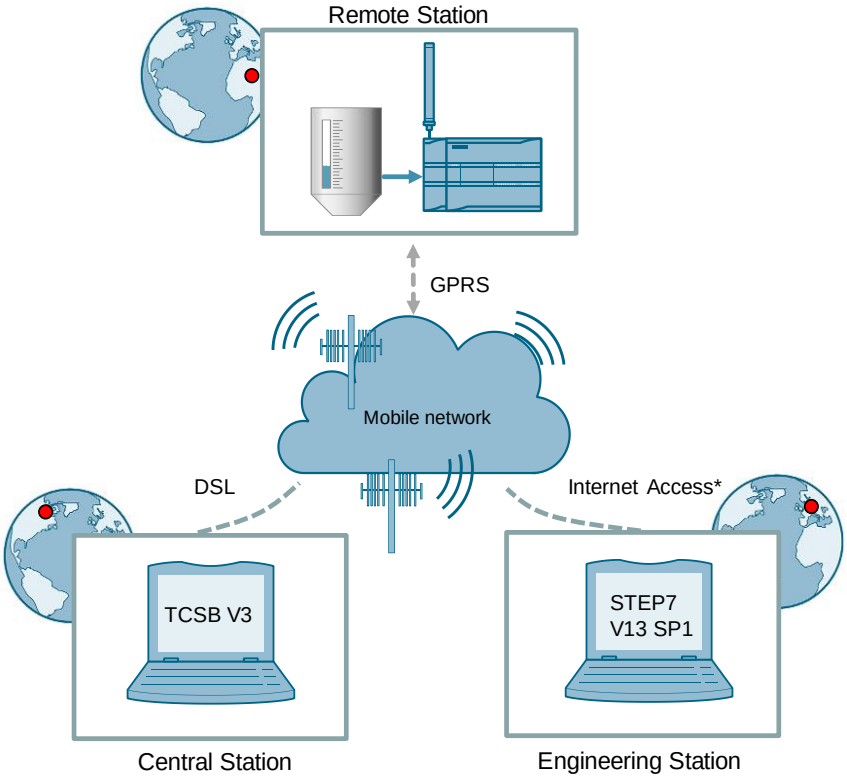
The infrastructure of a plant contains a SIMATIC S7-1200 sub-station. The sub-station communicates wirelessly with a central station via the internet. Additionally, a service operator monitors the sub-station and communicates with it via remote access.

The communication is realized via the TeleControl Server Basic V3 (TCSB V3) software installed in the central station.

Overview of the automation task

The following figure provides an overview of the automation task.

Figure 1-1



*Possible Access Methods:
• Access via UMTS (e.g. USB stick)
• Access via DSL (e.g. router with integrated DSL modem)

Requirements

This application example is intended to meet the following requirements:

- Via remote access, the service operator monitors the status of the connected remote stations.
- Via remote access, the service operator downloads updated program data and modifies any parameters.

The remote access is done via the internet and independent from the internet service provider.

© Siemens AG 2016 All rights reserved

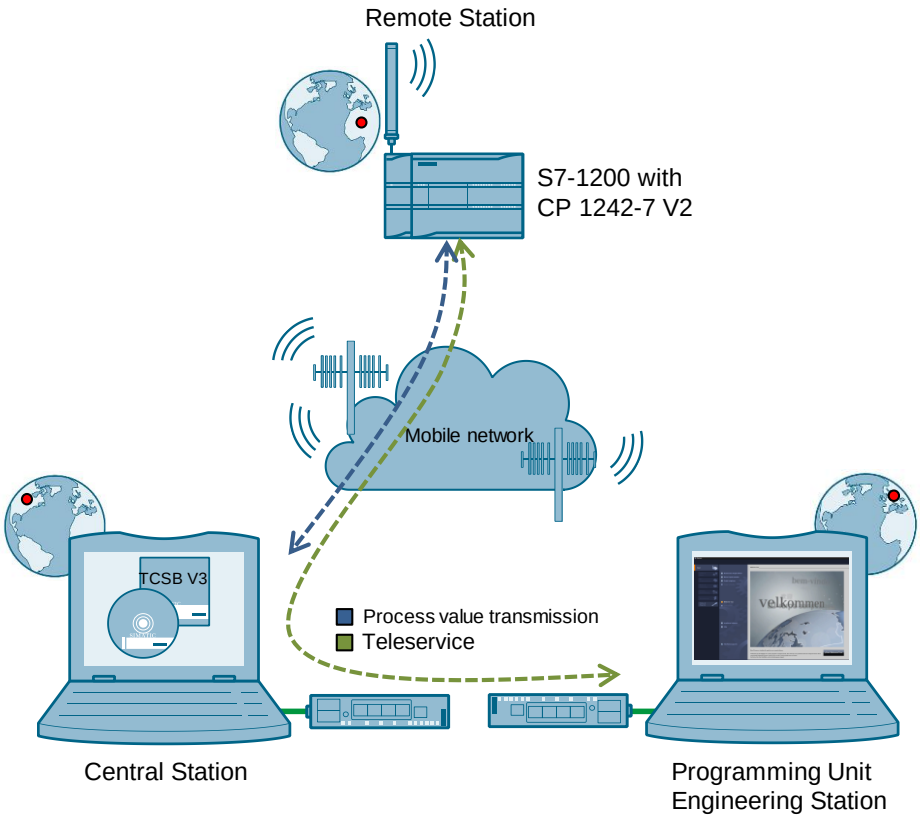
2 Solution

2.1 Overview

Schematic layout

The figure below shows a schematic overview of the most important components of the solution.

Figure 2-1



Setup

With TCSB V3, the central and the remote station can communicate with each other via the mobile network. The central station is connected with the internet via a DSL router.

The remote maintenance (TeleService) requires an uninterrupted data transfer between the remote station and the engineering station via the GPRS network. The connection between the engineering station and the GPRS network is established by TCSB V3.

The engineering station is connected to the internet with the following alternative technologies:

- UMTS (e. g. USB-Stick)
- Router (e. g with integrated DSL-modem)

© Siemens AG 2016 All rights reserved

Note The connection between the engineering station and the GPRS network can also be established via a TeleService gateway.

The TeleService gateway only serves the “TeleService” function via the mobile network. With the TeleService gateway, no connections to remote stations can be monitored and no process data can be transferred (see \5\).

The “TS Gateway” software is included in the scope of delivery of the CP 1242-7 GPRS V2.

Remote Station

“Remote Station” refers to a spatially removed remote station with a SIMATIC S7-1200 CPU and a CP 12427 GPRS V2.

Central station

“Central station” refers to a central control unit (PC, IPC or comparable device) with internet connection, onto which the TCSB V3 software is installed.

Engineering Station

Engineering Station (ES) refers to a programming device, notebook or a comparable device with software component STEP 7 V13 SP1 and an existing internet connection.

© Siemens AG 2016 All rights reserved

Note In this application example, central station and engineering station have been integrated into one device.

Advantages

The solution offers you the following advantages:

- TCSB V3 enables economic data communication between remote stations and the central station.
- World-wide access to the remote station is possible via the internet.
- The application example can also be used for the CP 1243-7 LTE.
- The core application areas are industrial applications where the objective is to send data in a cost-effective way on a wireless basis, for example in water treatment plants, for water purification or in pumping stations.

Topics not covered by this application

This application example does not contain a description of:

- SIMATIC NET TeleControl Server Basic (see also \3\)
- LAD/ FBD/ STL/ SCL programming languages

Basic knowledge of these topics is assumed.

2.2 Hardware and software components

2.2.1 Validity

This application example is valid for the following software versions:

- CP 1242-7 V2
- CP 1243-7 LTE
- STEP 7 V13 SP1
- S7-1200 CPU V4.1 or higher
- TCSB V3 SP1

2.2.2 Components used

This application example was created with the following components:

Hardware components of station 1

Table 2-1

Component	Qty	Article number	Note
S7-1200 PM1207	1	6EP1332-1SH71	Power supply
SIMATIC S7-1200 CPU 1217C DC/DC/DC	1	6ES7217-1AG40-0XB0	Any S7-1200 CPU as of V4.1 can be used.
COMMUNICATION PROCESSOR CP 1242-7 V2	1	6GK7242-7KX31-0XE0	Alternatively, a CP 1243-7 LTE can also be used: • CP 1243-7 LTE EU (6GK7243-7KX30-0XE0) • CP 1243-7 LTE US (6GK7243-7SX30-0XE0)
Antenna ANT794-4MR	1	6NH9860-1AA00	GSM quad-band and UMTS and LTE (Europe).
SIMATIC memory card	1	6ES7954-8LF01-0AA0	Memory card for the S7-1200 CPU (optional).

Accessories

Table 2-2

Component	Qty	Article number	Note
SIM card	1	Available from your mobile communications provider	Activated for data communication.
DSL router and modem	2	Specialist retailers	SCALANCE M816
Fixed IP address for DSL (broadband) connection or DynDNS	2	Available from your provider.	-

© Siemens AG 2016 All rights reserved

Software components

Table 2-3

Component	Qty	Article number	Note
STEP 7 Professional V13 SP1	1	6ES7822-1AA03-0YA5	STEP 7 Basic can also be used.
Software TCSB V3 SP1	1	6NH9910-0AA21-0AA0	A maximum of eight connectable stations. The product is available in further stages of development and licenses, (see document \3\).

Example files and projects

The following table contains all files and projects used in this example.

Table 2-4

Component	Note
56720905_S7_1200_TeleService_PROJ_V10.zip	This zip file includes: • The STEP 7 V13 project • TCSB project
56720905_S7_1200_TeleService_DOC_V10_de.pdf	This document.

© Siemens AG 2016 All rights reserved

3 Function principle

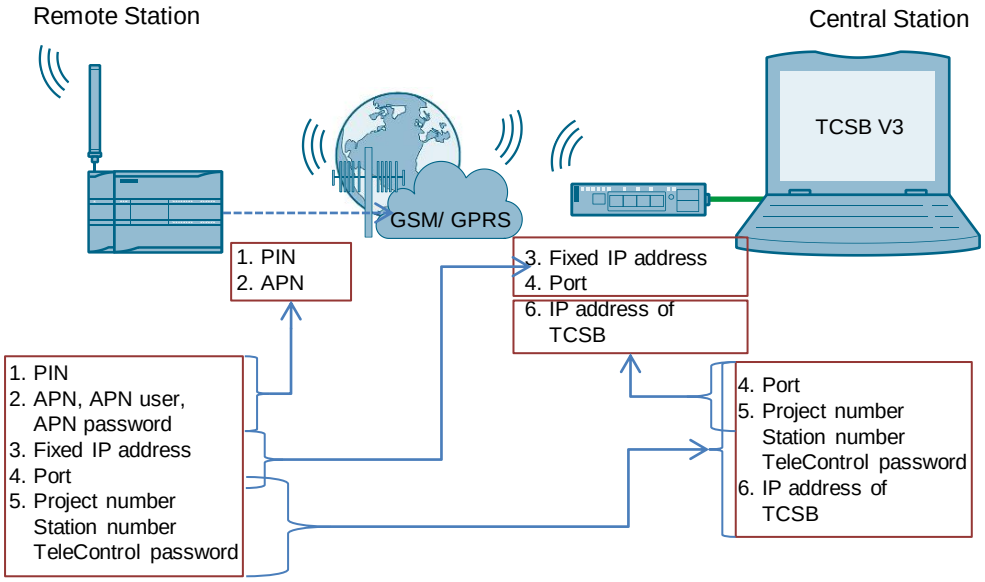
This application example shows the following core elements:

- Configuration of a S7-1200 station with CP 1242-7 V2 for communication with the central station via mobile communications network and the internet.
- Configuration of a S7-1200 station with CP 1242-7 V2 for remote maintenance (TeleService) of the remote station that is operated by a service operator.
- How the remote station can be maintained by a service operator.

3.1 Connection buildup between remote station and central station via TCSB V3

The following diagram shows the complete system with all parameters required for communication between the remote station and the central station. In this application example, the connection is established via TCSB V3.

Figure 3-1



1. PIN number of the SIM card that is installed into the CP 1242-7 V2.

   The CP 1242-7 V2 logs in automatically at the GSM network of the provider, given that the PIN number of the installed SIM card has been recognized as valid.

Note The SIM card's PIN number must be enabled.

2. APN

   The CP 1242-7 V2 logs in at the GPRS access point of the mobile service provider using the APN address, APN user name and APN user password. An IP address from the address area of the provider is assigned to the CP 1242-7 V2. It is now accessible via internet and can send IP-based requests to other participants on the internet.

© Siemens AG 2016 All rights reserved

Note The APN user name and the APN user password are provider-dependent

3. Fixed IP address

   The CP 1242-7 V2 sends a connection request to the central station. The static IP address of the internet connection for accessing the central station is required.

4. Port

   As soon as the connection request has been received by the router of the local IT network of the central station, it will be forwarded to the central station with the relevant port number.

5. Project number, station number and TeleControl password

   TCSB V3 checks the connections request of the CP 1242-7 V2, using the data (project number and station number) stored in the configuration.

   To authenticate the remote station, an additional password is requested.

   If the connection request is evaluated successfully the TCSB V3 updates the internal routing table entry related to this remote station and the corresponding current IP address of the CP 1242-7 V2. A connection for the transmission of TCP/IP packages is established between the CP 1242-7 V2 of the remote station and the central station.

6. IP address of TCSB V3

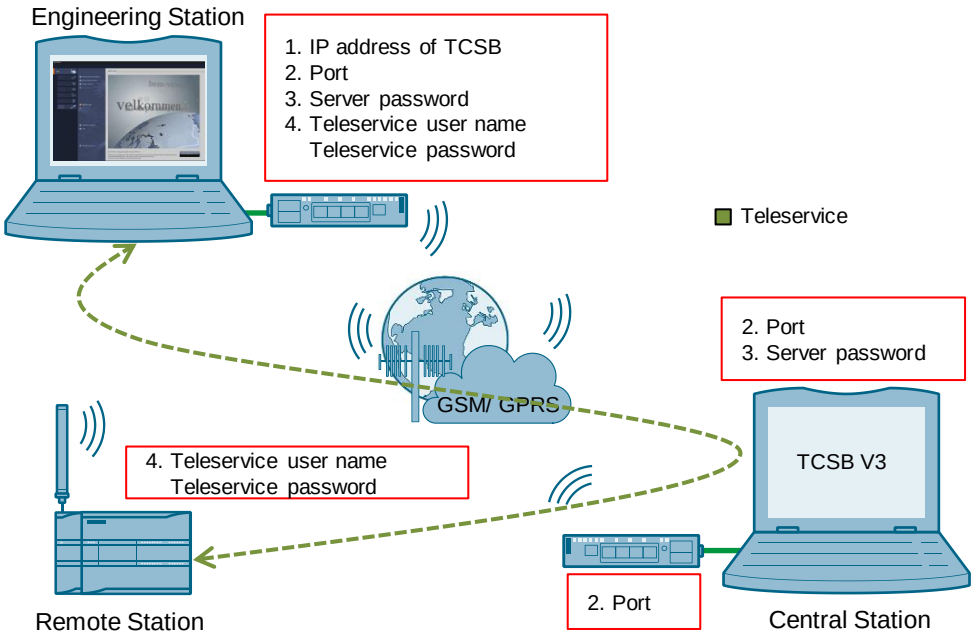
© Siemens AG 2016 All rights reserved

3.2 Teleservice connection between remote station and engineering station

As engineering station and remote station always communicate via the central station, the central and the remote station need to be connected via the TCSB V3 in this application example. The TeleService connection for loading project or program data or querying diagnostic data is directly integrated in the main connection.

The graphic below shows the complete system with all parameters required for a teleservice communication between remote station and engineering station in addition to the parameters from Figure 3-1.

Figure 3-2



1. IP address of TCSB V3

   The engineering station sends a connection request to the central station. For this, the IP address of the TCSB V3 is needed, via which the TeleService connection between engineering station and remote station is run.

2. Port

   As soon as the connection request has been received by the router of the local IT network of the central station, it will be forwarded to the central station with the relevant port number.

3. Server password

   The TCSB V3 checks the connection request of the engineering station. This password is used to authenticate the engineering station in the TCSB.

   If this remote station is entered in the TCSB V3 and online, the teleservice request from the engineering station to the remote station is forwarded on the basis of the existing TCP/IP connection.

© Siemens AG 2016 All rights reserved

4. TeleService user name and password

   For protection against an unauthorized access to the CP 1242-7 V2, the TeleService user name and password are requested during the start-up of the TeleService session.

   If the teleservice connection request is validated, diagnostic and program data can then be transferred between the remote station and the engineering station. The process value communication is not affected by this.

© Siemens AG 2016 All rights reserved

4 Configuration and Settings

Note The project included in this application example has already been configured for you. Chapter 4 explains the implemented work steps again.

The configuration is done with the following configuration tools:

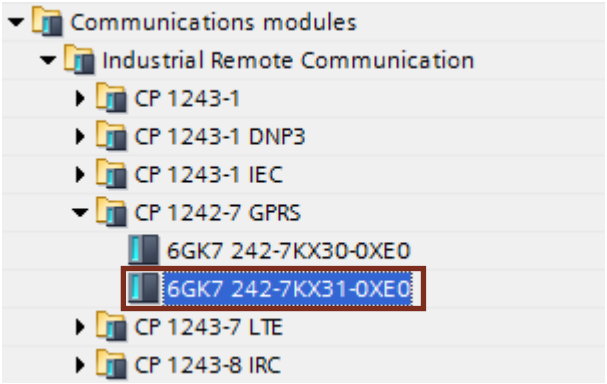
- STEP 7 V13 SP1:
  - Configuration of a remote station (S7-1200 CPU with CP 1242-7 GPRS V2) for data communication with the central station via mobile communications network and the Internet
  - Configuration of a remote station (S7-1200 CPU with CP 1242-7 GPRS V2) for remote maintenance (TeleService) by a service operator
- TCSB V3:
  - create and configure a project
  - create and configure connections
  - configure general parameters

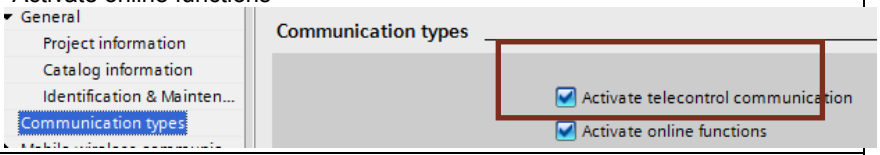
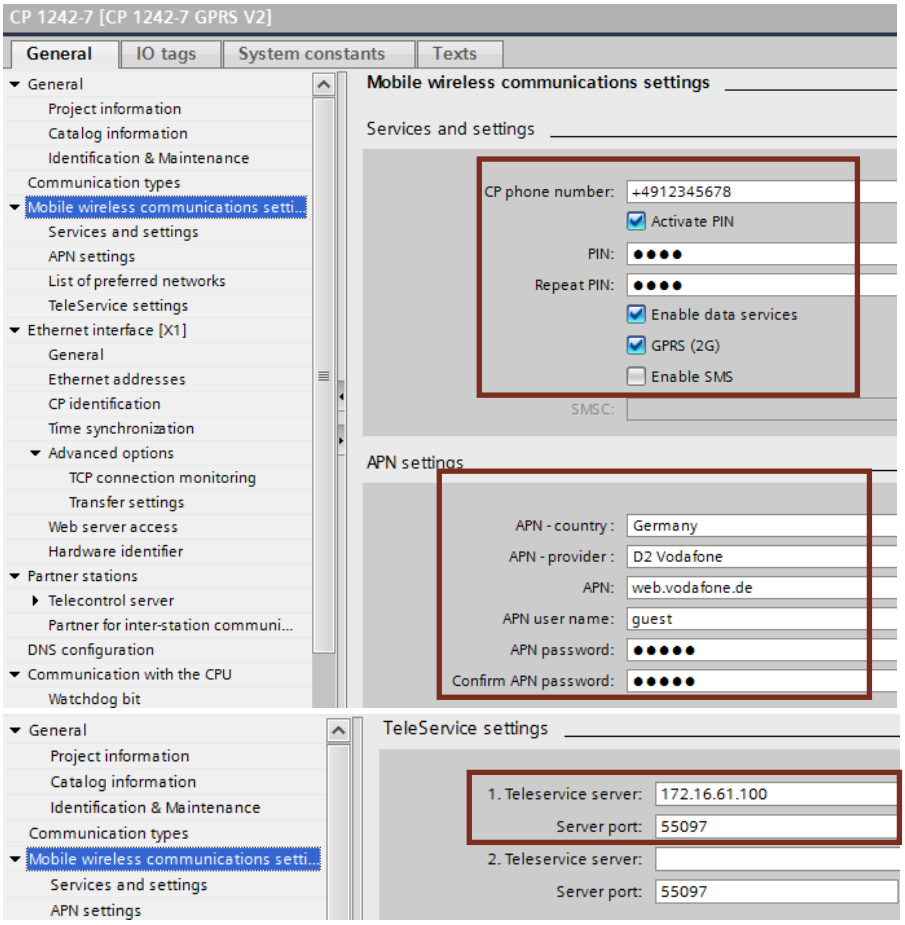
© Siemens AG 2016 All rights reserved

4.1 Configuring the remote station

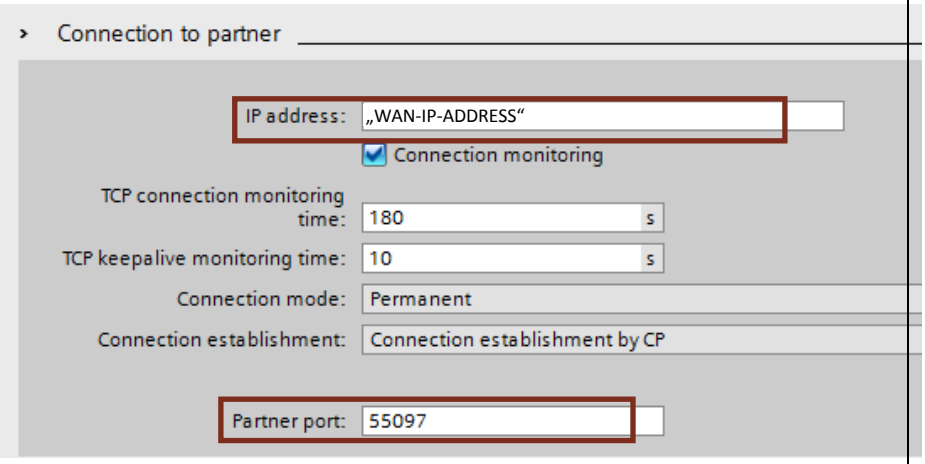
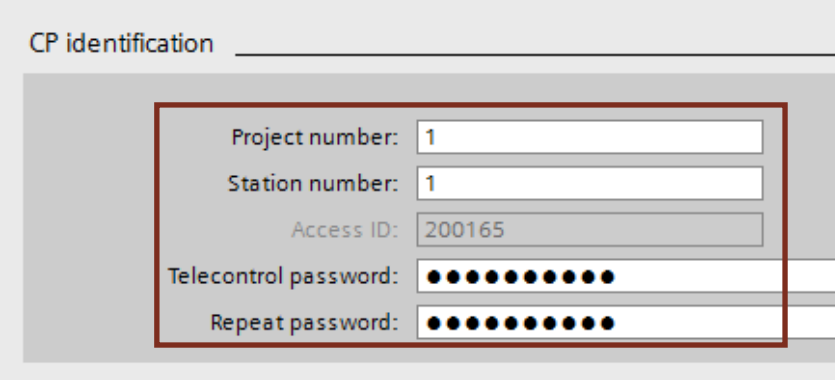
The table below shows how to configure a S7-1200 station with the
with the CP 1242-7 GPRS V2 for data communication with the central station via mobile communications network and the Internet and for remote maintenance (TeleService).

Table 4-1

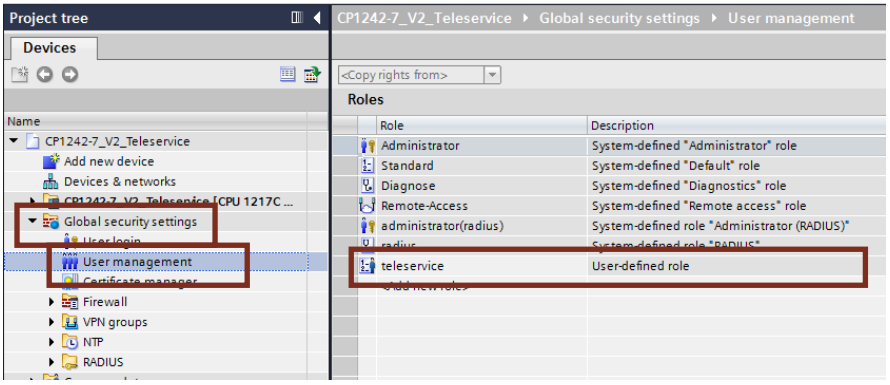
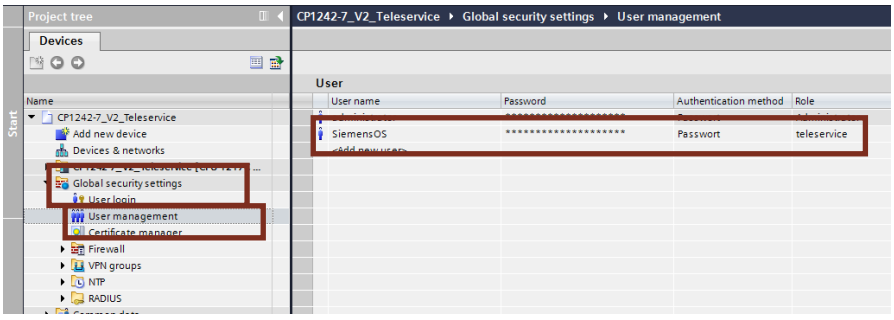
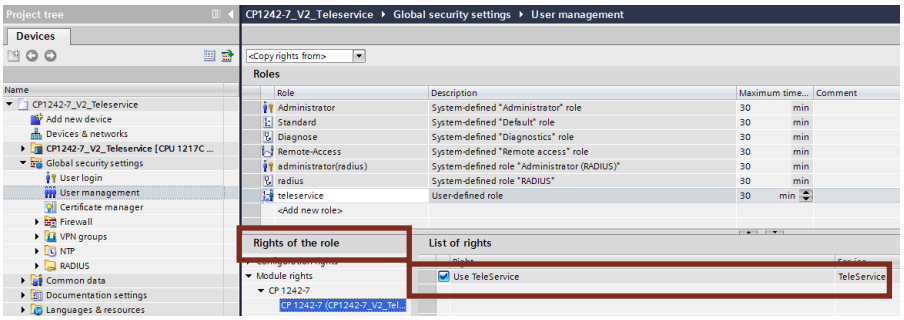
No.	Action
1.	Create a STEP 7 V13 project.
2.	Add the S7-1200 CPU (as of V4.1) for the SIMATIC station 1.
3.	Add the CP 1242-7 GPRS V2 to the station. 

No.	Action
4.	Activate the following control boxes under Properties of the CP 1242-7 GPRS V2 > General > Communication types: • “Activate telecontrol communication” • “Activate online functions” 
5.	Under “Properties of the CP 1242-7 GPRS V2 > Mobile wireless communications settings”, make the required mobile communication settings marked in the following figure. 
6.	Enable the security functions. Under “Properties of the CP 1242-7 GPRS V2 > Security > Security properties”, create a user profile for the security functions.

© Siemens AG 2016 All rights reserved

No.	Action
7.	Under “Properties of the CP 1242-7 GPRS V2 > Partner stations > Connection to partner”, configure the CP parameters required to configure the TCSB V3: • Partner IP address (static IP address / provider-dependent) • Partner port  “Properties > Security > CP identification” • Project number • Station number • Telecontrol password (here “Teleservice”).  The parameters assigned here must be identical to the parameters in TCSB.

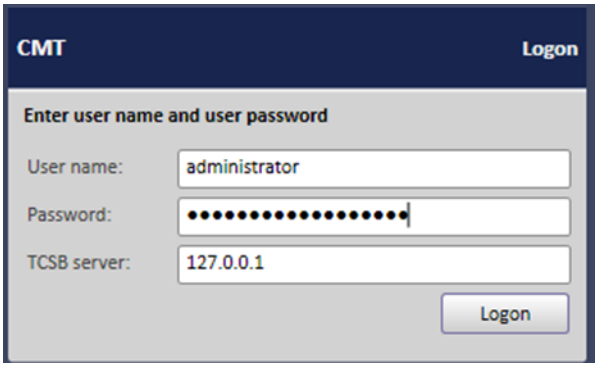
© Siemens AG 2016 All rights reserved

No.	Action
8.	Adopt the global security settings that are required or the TeleService access. • Under “Global security settings > User management > Roles”, create a new user-defined role.  • Under “Global security settings > User management > Roles”, create a user that is allowed to execute the TeleService functions for CP.  User name: “SiemensOS” Password: “Teleservice” Role: “teleservice” • Under “Global security settings > User management > Roles > Rights of the role”, activate the right “Use TeleService”: 
9.	Load the project data to the station via your PROFINET interface.

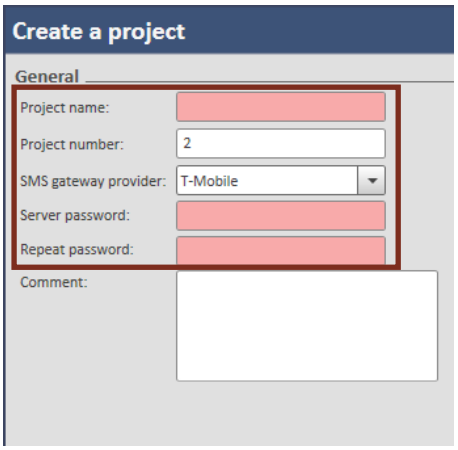
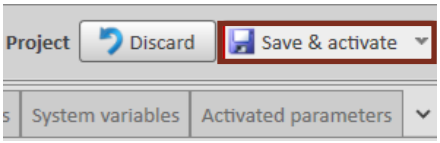
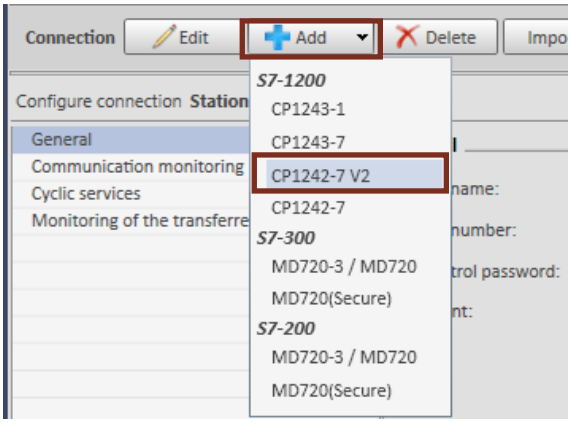
© Siemens AG 2016 All rights reserved

4.2 Configuring the TCSB V3

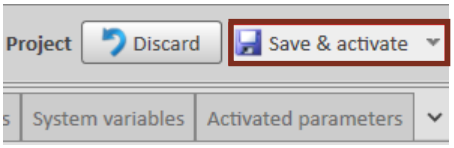
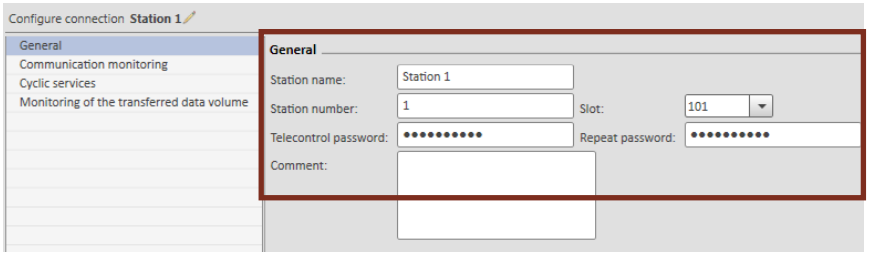
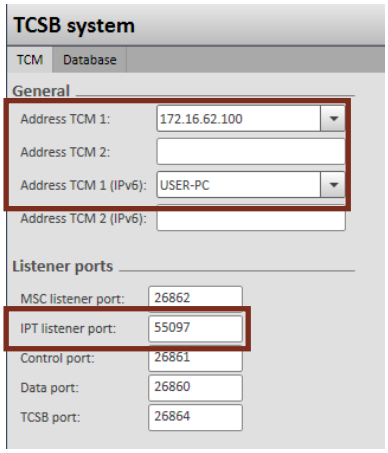
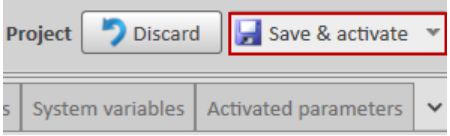
Table 4-2

No.	Action
1.	Under “Windows Start menu > All Programs > Siemens Automation > SIMATIC > TCS Basic > Config and Monitoring Tool”, start the configuration and monitoring interface of TCSB (CMT).
2.	After the program has started, the login dialog of the CMT appears.  • Enter a configured user name or keep the default user name. • Enter the respective password. • Enter the IP address or the TeleControl server name resolved by DNS: - Computer name or - IP address (default IP address: 127.0.0.1) Default logon data: User name: administrator Password: 0000
3.	Create a new project: • In the navigation pane, select the entry "Projects". • In the commands bar, click on the "Add" button. The new project appears in the navigation pane and in the object area.
4.	Configure the new project: Select the project in the navigation pane or object area and click on the "Settings" tab.

© Siemens AG 2016 All rights reserved

No.	Action
5.	Fill in the parameters “Project name”, “Project number” and “Server password” of the project. Click on “Create”.  **Note:** The server password is required for the TeleService access. In this example, the server password is “Teleservice”.
6.	“Save & activate” the configuration to activate the configuration data for connection establishment. 
7.	Create a new connection for station 1 by following the steps below: • In the navigation pane, select a project for which you want to create a new connection. • In the command bar, select the required connection type from the “Connection type” drop-down list. • In the object pane, select the “Add” button from the command bar. Select the CP 1242-7 V2.  The new connection appears in the object area.

© Siemens AG 2016 All rights reserved

No.	Action
8.	Save the changes and activate the project. 
9.	Select the connection and in the object pane, select the “Connections” tab. In the parameter area, various parameter groups are displayed for this connection.
10.	In the “General” parameter group, enter the parameters for the remote station: • Station name • Station number • Telecontrol password: Teleservice  **Note:** The parameters assigned here must be identical with the parameters in the STEP 7 V13 project.
11.	Under “TCSB system > "TCM" tab > General > Address TCM 1”, configure the IP address and the port of the Telecontrol server. („TCSB system > „TCM“ tab > General> Address TCM 1“). 
12.	Save the changes and activate the project. 

© Siemens AG 2016 All rights reserved

5 Installation and Commissioning

5.1 Installing the hardware

The necessary hardware components are listed in Chapter 2.2.

Note	The installation guidelines of all components have to be observed.

NOTICE	**Before you switch on the power supply, complete and check the installation!**

5.1.1 Hardware setup of the remote station

The figure below shows the hardware setup of the remote station with the central station and the engineering station.

Figure 5-1

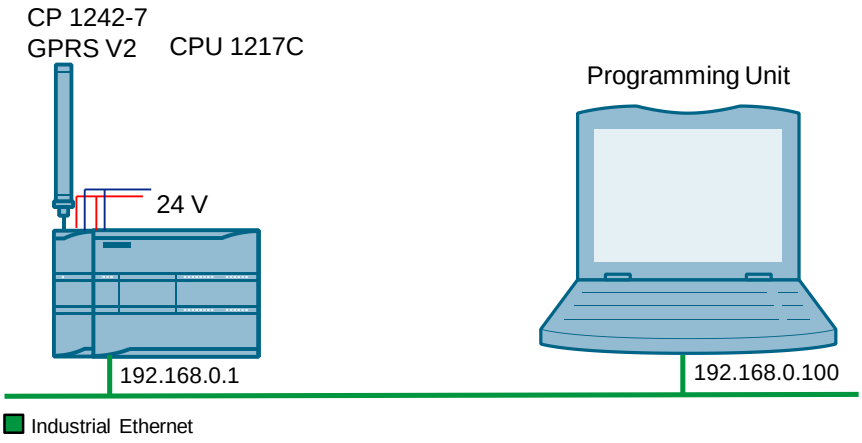


Table 5-1

No.	Action
1.	Insert your SIM card into the CP 1242-7 GPRS V2.
2.	Connect the individual modules to a suitable module rack.
3.	Connect the CPU with the CP 1242-7 GPRS V2.
4.	Connect the antenna to the CP 1242-7 GPRS V2.
5.	Connect the engineering PG to the PROFINET interface of the S7-CPU. **Note:** This connection is only required while the project data are loaded. Remote maintenance occurs via the Internet.
6.	Connect the CPU 1217C and the CP 1242-7 GPRS V2 to a 24 V DC power source.
7.	Connect the DC power source to the power grid (230 V AC).

© Siemens AG 2016 All rights reserved

5.1.2 Hardware setup of central station

Figure 5-2 below shows the hardware setup of the central station.

Figure 5-2

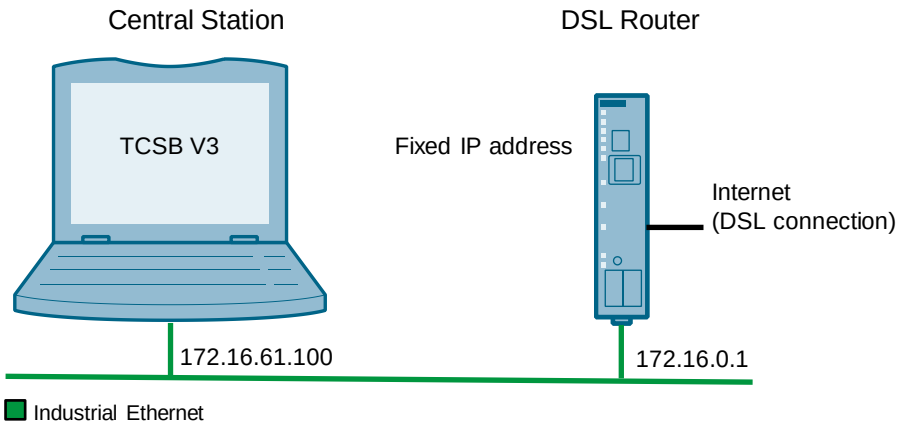


Table 5-2

No.	Action
1.	Connect your PC on which TeleControl Server Basic runs to the router via Ethernet.
2.	If the DSL (broadband) modem is not integrated in the router, connect the router to the DSL modem.

5.1.3 Hardware setup of the engineering station

The figure below shows the hardware setup of the engineering station.

Figure 5-3

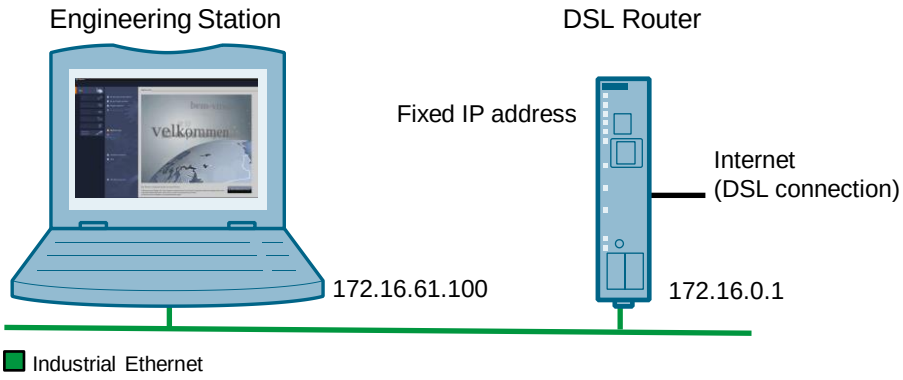


Table 5-3

No.	Action
1.	Establish an internet connection at your engineering station. Possible access methods: • Access via UMTS (e. g. USB-Stick) • Access via DSL (e. g router with integrated DSL-modem).

© Siemens AG 2016 All rights reserved

Note The engineering station and the central station are realized with a single device in this application example.

5.2 Installing the software

Engineering PC/PG

Table 5-4

No.	Action	Remark
1.	Install STEP 7 V3 SP1.	Follow the instructions of the installation program.

PC/PG as central station

Table 5-5

No.	Action	Remark
1.	Install TeleControl Server Basic V3 SP1	Follow the instructions of the installation program.

© Siemens AG 2016 All rights reserved

5.3 Installing the example project

Unzip the "*zip" file "56720905_S7_1200_TeleService_PROJ_V10". This folder contains the following files:

- The archived STEP 7 project "56720905_S7-1200_TeleService_CODE_V10.zip".
- The TCSB configuration file "56720905_S7-1200_TeleService.bak".

5.4 Commissioning

5.4.1 Setting the IP addresses

The following table shows the configured IP addresses.

Table 5-6

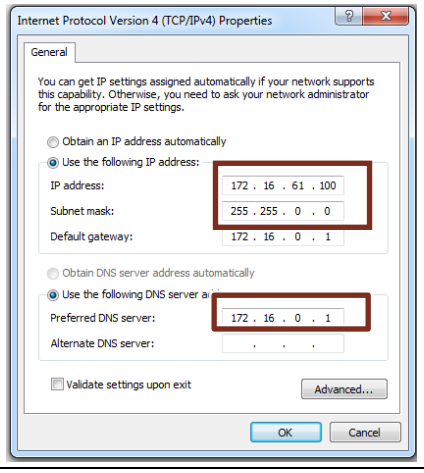
Module	IP address	Subnet mask
Station 1: CPU 1217C DC/DC/DC	192.168.0.1	255.255.255.0
Programming unit	192.168.0.100	255.255.255.0
PC/PG central station (TCSB)/ Engineering Station	172.16.61.100	255.255.0.0
LAN IP address of router	172.16.0.1	255.255.0.0

© Siemens AG 2016 All rights reserved

5.4.2 Assigning the IP address to the engineering station

Change the network settings of your engineering station as shown in the following table.

Table 5-7

No.	Action	
1.	Open the "Internet Protocol (TCP/IP) Properties" via Start > Settings > Network Connection > Local Connections. („Start > Settings > Network Connection >Local Connections").	
2.	In the open window, select the Internet Protocol (TCP/IP) and open Properties.	
3.	Fill in the boxes as shown in the figure. Close the dialog box with "OK".	

No.	Action
4.	If your PG has an IWLAN interface, disable it.

5.4.3 Configuring the DSL router

For the configuration, no specific router will be discussed as the screen forms will differ from router to router.

Note To configure the router, you have to assign an IP address to your PG/PC that is in the router's internal network.

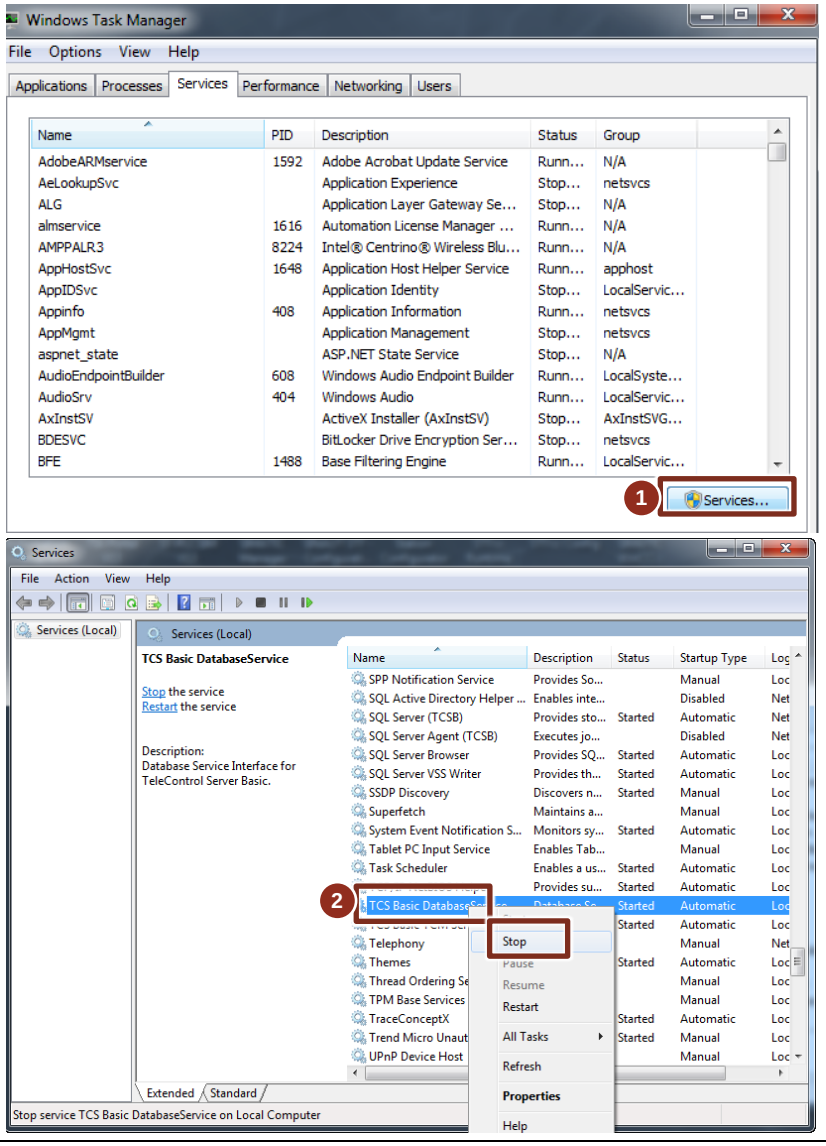
Table 5-8

No.	Action	
1.	Open the configuration user interface of the router.	This can be additional software, "Telnet" or a web page.
2.	Enter the connection data for your Internet connection.	Login, password, etc. you received from your provider.
3.	Enter your DNS server.	You will receive the address together with your access data.
4.	Specify a LAN IP address for the router.	In this example: "172.16.0.1"
5.	Forward the partner port.	TCP port 55097 to port 55097 of 172.16.61.100.

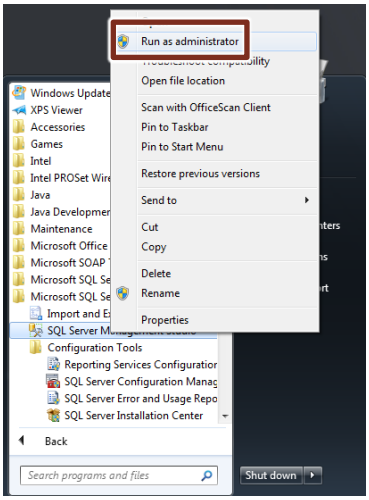
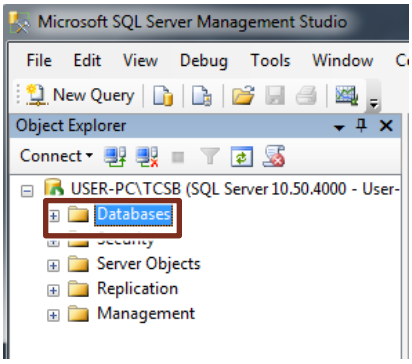
© Siemens AG 2016 All rights reserved

5.4.4 Inserting a backup copy of the “56720905_S7 1200_TeleService.bak” database into TCSB V3

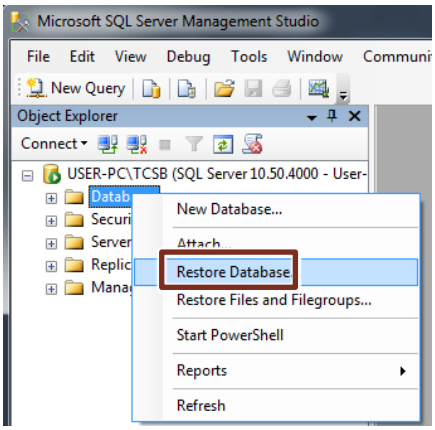
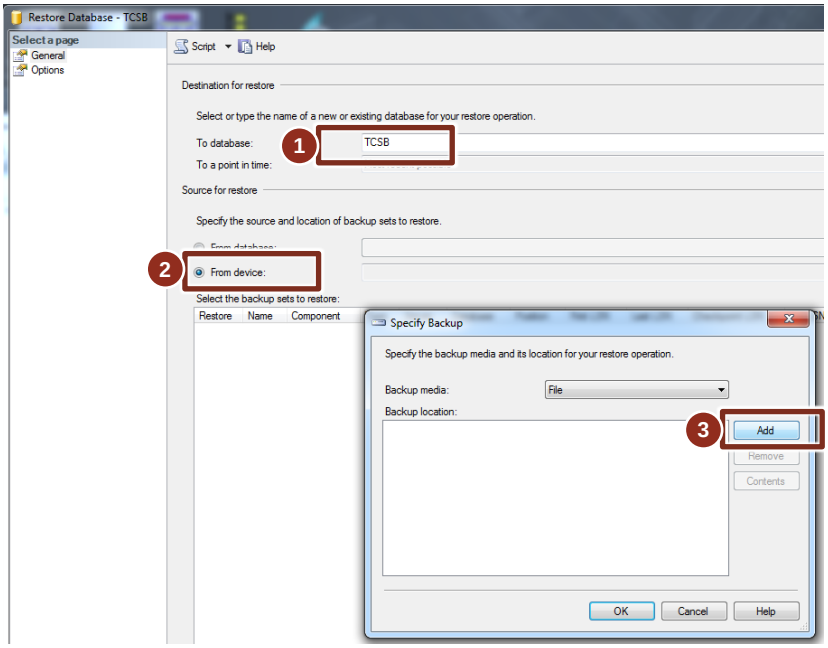
Table 5-9

No.	Action
1.	Stop the existing database by stopping the service "TSC Basic Database Service" by means of the Windows Task Manager in the “Services" tab (as administrator). 

© Siemens AG 2016 All rights reserved

No.	Action
2.	**As administrator**, start the SQL Server Management Studio under “Start > All Programs > Microsoft SQL Server 2008 R2 > SQL Server Management Studio”.  The "Connect to server" dialog opens with the following settings: • Server type: Database Engine • Server name: <PC name>\TCSB • Authentication: Windows Authentication
3.	Keep all settings and click on "Connect". SQL Server Management Studio opens with the database’s object navigation.
4.	Select the “Databases” item. 

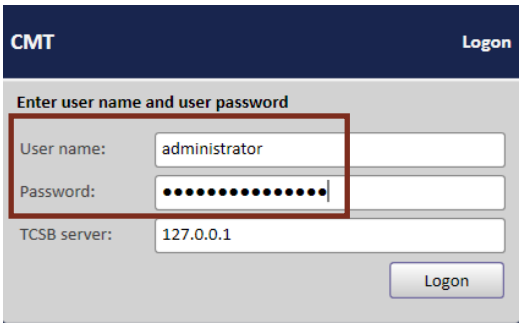
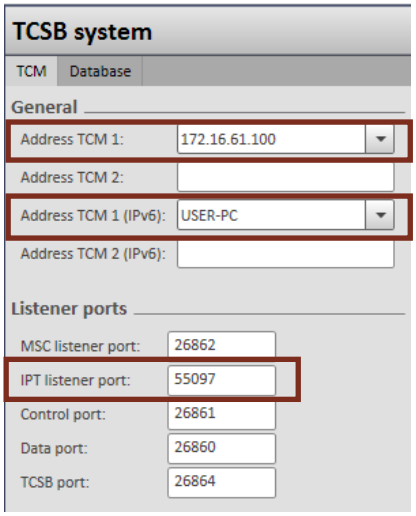
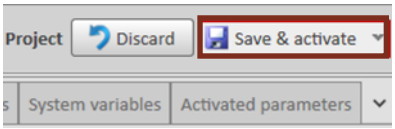
© Siemens AG 2016 All rights reserved

No.	Action
5.	Select the context menu (right mouse button) "Restore Database...".  The “Restore Database - TCSB” dialog opens.
6.	• In the "Destination for restore" field, select the database ("To database") "TCSB". • In the "Source for restore" field, activate the option ("From device") and open the "Specify Backup" dialog via the "..." button. • Select the “56720905_S7-1200_TeleService.bak” backup copy by first opening the file browser using the “Add” button. 
7.	In the "Restore Database - TCSB" dialog, select the selected “backup set” in the "Restore" column and click on "OK".
8.	Click “OK” to close Management Studio.
9.	Restart the computer.

© Siemens AG 2016 All rights reserved

5.4.5 Configuring the IP address and ports of TCSB V3

Table 5-10

No.	Action
1.	Start the configuration and monitoring interface of TCSB (CMT) under “Windows Start menu > All Programs > Siemens Automation > SIMATIC > TCS Basic > Config and Monitoring Tool”:
2.	After the program has started, the login dialog of the CMT appears.  • User name: “administrator” • Password: “administrator” • Enter the IP address or the TeleControl server name resolved by DNS: – Computer name or – IP address (default IP address: 127.0.0.1)
3.	Configure the IP address and the ports of the TeleControl server: “TCSB system > "TCM" tab > General > Address TCM 1” („TCSB system > "TCM" tab > General > Address TCM 1”). 
4.	Save the changes and activate the project. 
5.	Restart the computer.

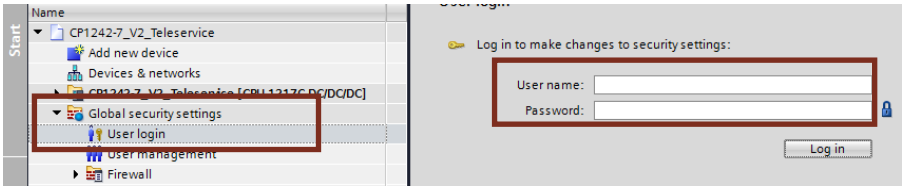
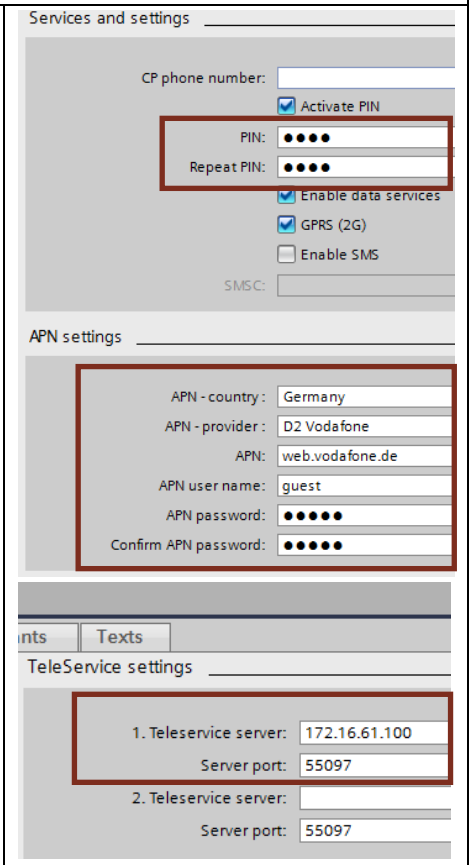
© Siemens AG 2016 All rights reserved

5.4.6 Loading the remote station

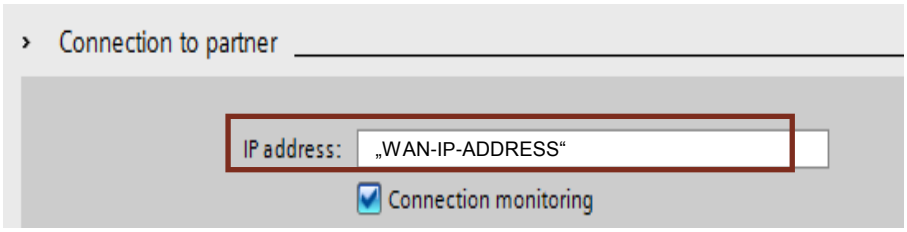
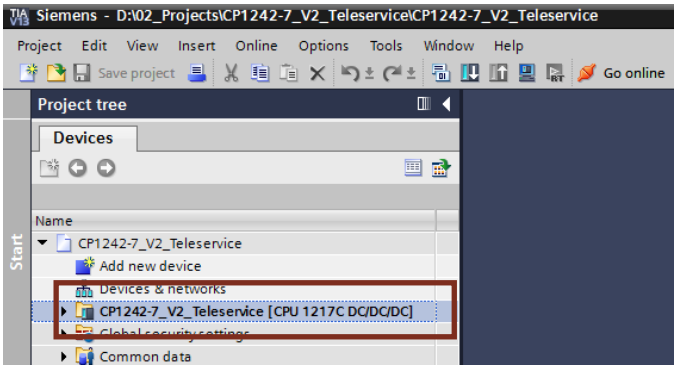
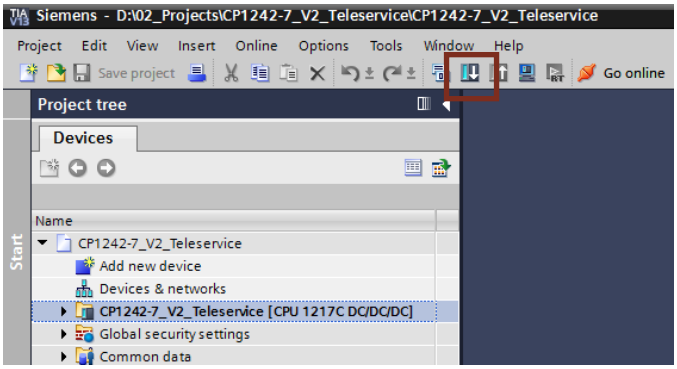
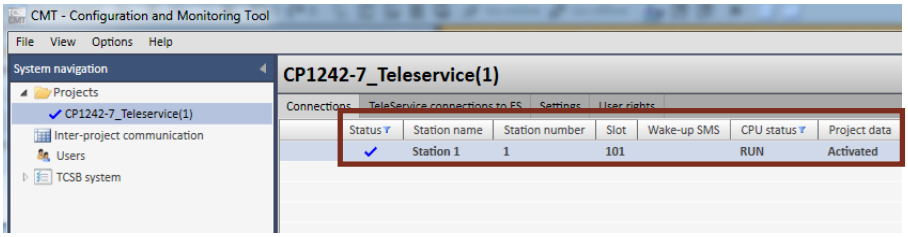
Prerequisites

- There is an existing connection between your engineering station and the CPU (e. g. via the PROFINET interface).
- The CPU must be in an operation mode that allows loading.
- Prior to loading the user program, a general reset of the CPU should be performed to ensure that none of the "old" blocks still exist on the CPU.

Table 5-11

No.	Action
1.	Unzip the project “39863979_S7-1200_TeleService_CODE_V10.zip”.
2.	Open the STEP 7 V13 project “CP1242-7_V2_Teleservice.ap13”.
3.	Activate the security functions of the CP under “CP1242-7_V2_Teleservice > Global security settings > User login”:  User name: “administrator” Password: “administrator”
4.	Under “Properties of the CP 1242-7 GPRS V2 > Mobile wireless communications settings”, adjust the mobile communication settings of the CP 1242-7 GPRS V2: • PIN • APN settings • Teleservice settings 

© Siemens AG 2016 All rights reserved

No.	Action
5.	Under “Properties of the CP 1242-7 GPRS V2 > Partner stations > Connection to partner”, adjust the partner IP address (fixed IP address of your DSL router) required for the connection to the TeleControl server in the central station. 
6.	Select the station “CP1242-7_Teleservice”. 
7.	Download the project into the remote station.  **Note:** The PN/IE interface is used for loading the project data. The loading occurs via the PROFINET interface of the station. After loading the project data, the PROFINET interface is no longer used. Remote maintenance occurs via the internet.
8.	After having loaded the configuration, a connection to the TCSB V3 is established. 

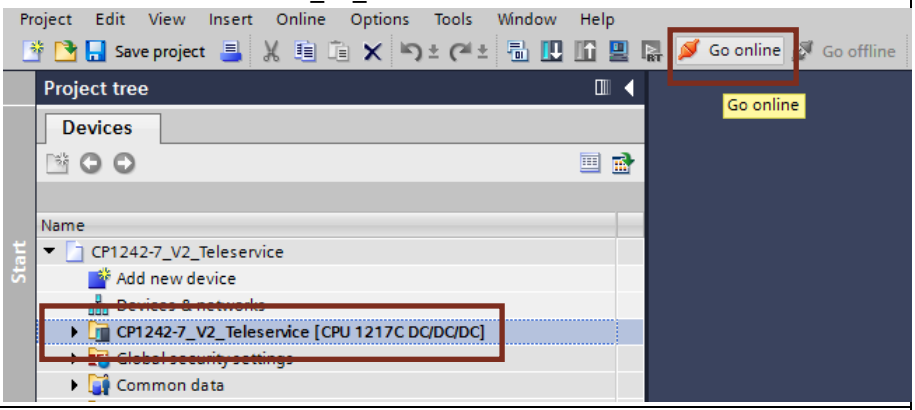
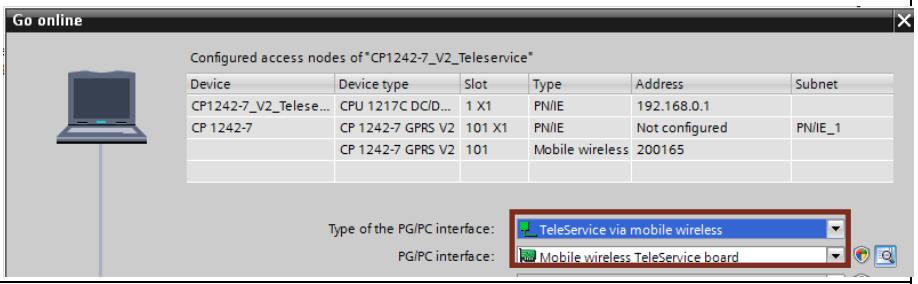
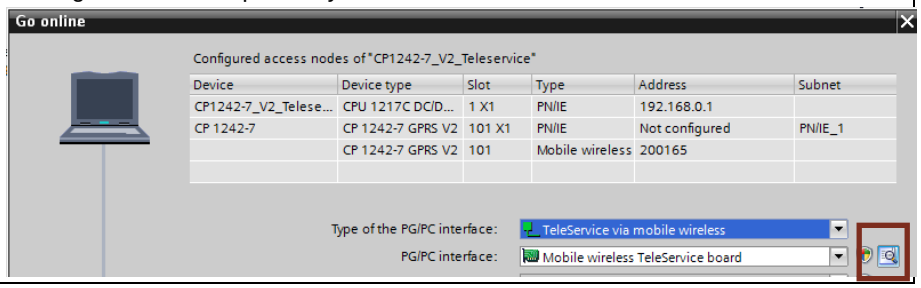
© Siemens AG 2016 All rights reserved

6 Operating the Application Example

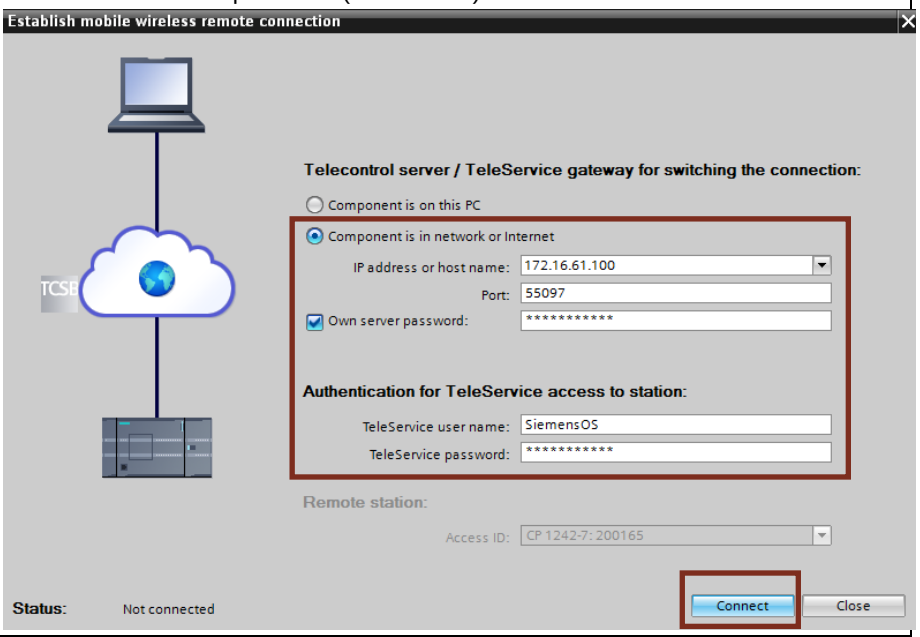
The following chapters show how to wirelessly monitor and control the remote station. An existing connection of the remote station to the central station is required for this (TCSB V3) (see Table 5-11, step no. 8).

6.1 Polling diagnostic data from the station

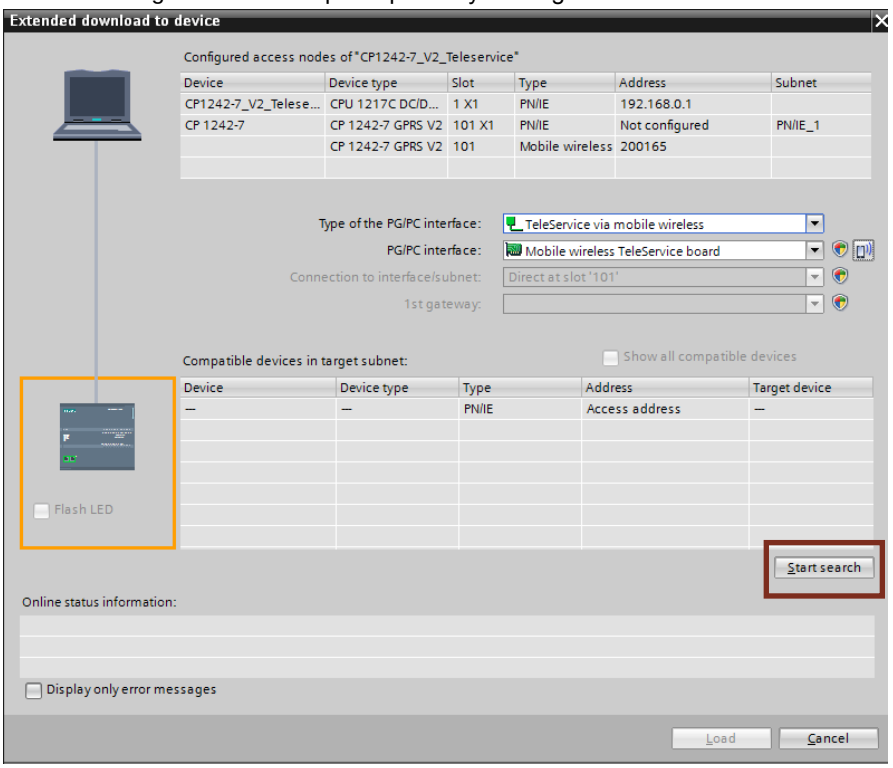
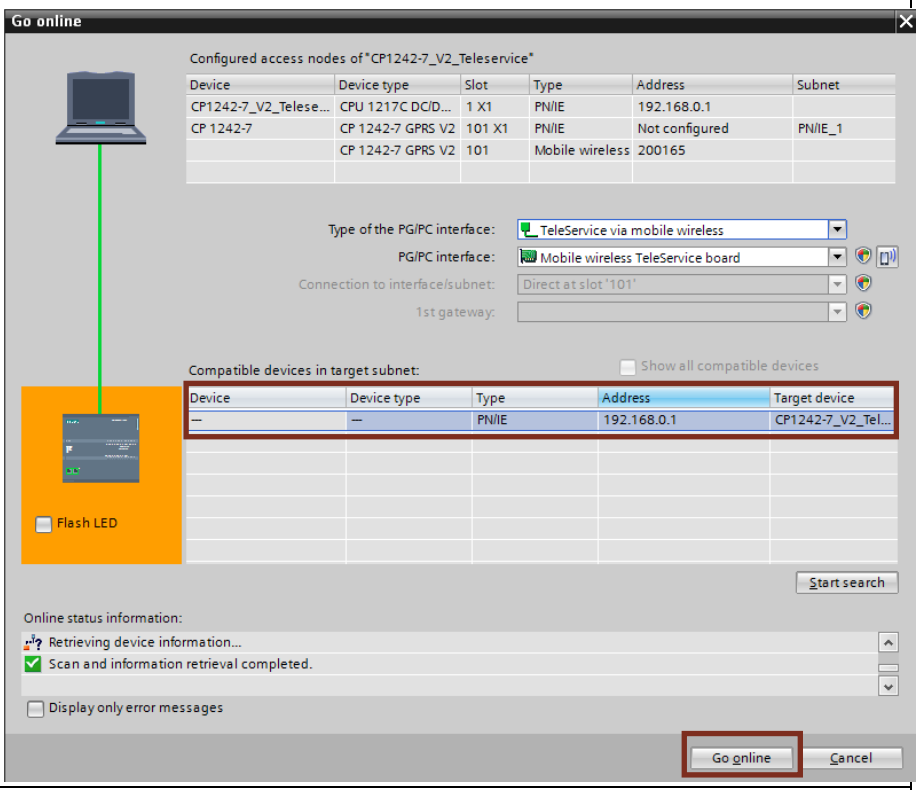
Table 6-1

No.	Action
1.	Make sure that the engineering station is connected to the internet. **Note** Check the internet connection at your engineering station with the help of the internet browser by calling up a random internet page.
2.	Select the station “CP1242-7_V2_Teleservice” and establish the online connection. 
3.	As PG/PC interface type, select “TeleService via mobile wireless” and as PG/PC interface “Mobile wireless TeleService board”. 
4.	Establish the TeleService connection between engineering and remote station by clicking on the mobile phone symbol. 

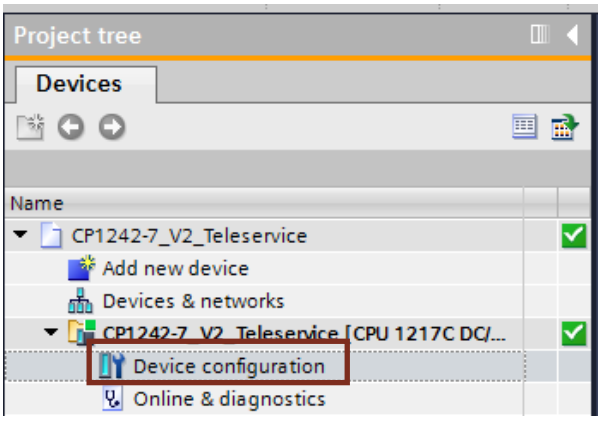
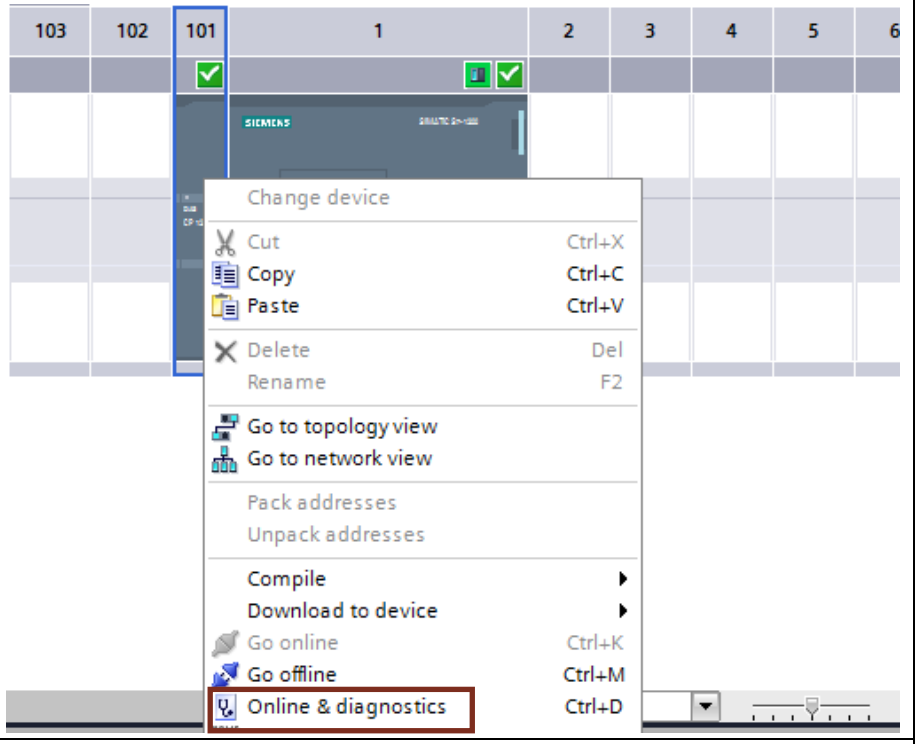
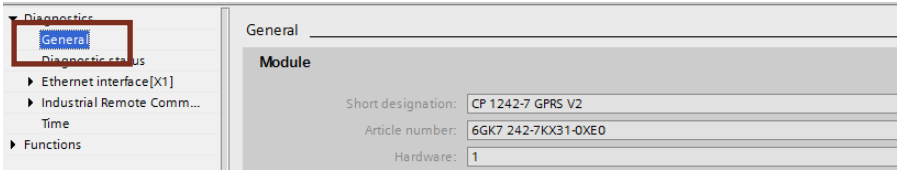
© Siemens AG 2016 All rights reserved

No.	Action
5.	Enter the following values and then click on “Connect”: • IP address of the server (172.16.61.100) • The server password (Teleservice) • The port (55097) • The TeleService user name (SiemensOS) • The TeleService password (Teleservice) 
6.	The TeleService connection has been established.

© Siemens AG 2016 All rights reserved

No.	Action
7.	Start searching for accessible participants by clicking on “Start search”. 
8.	Select the remote station and establish the online connection. 
9.	Remote maintenance of the station is now possible.

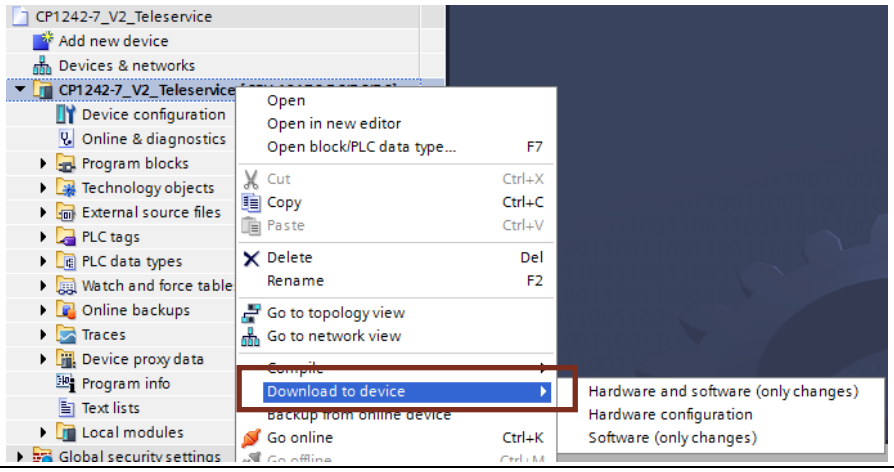
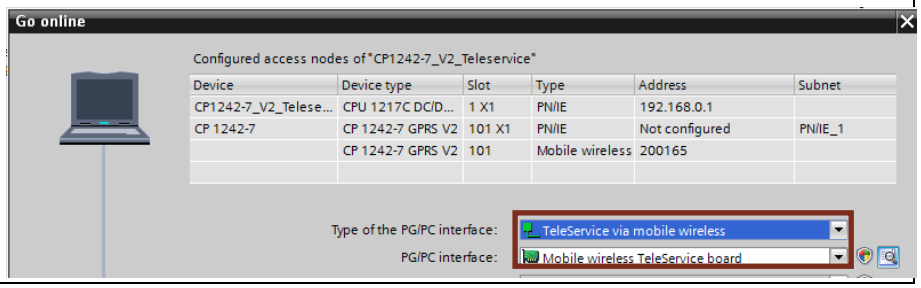
© Siemens AG 2016 All rights reserved

No.	Action
10.	Open the device configuration of the station “CP1242-7_V2_Teleservice”. 
11.	Select the CP 1242-7 V2 and open the online diagnostics (right mouse-click). 
12.	Now select the respective topic in “Diagnostics” to call up the information of the CP 1242-7. 

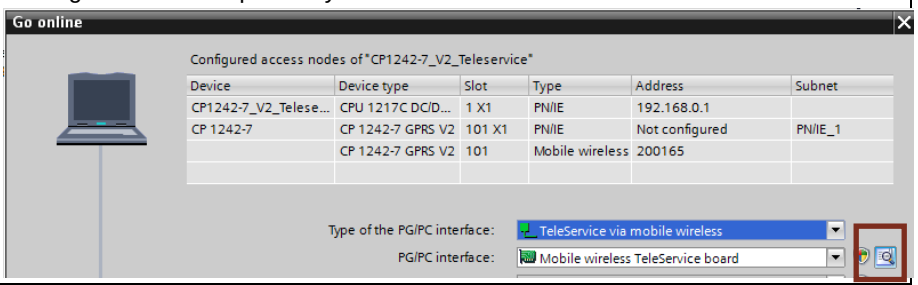
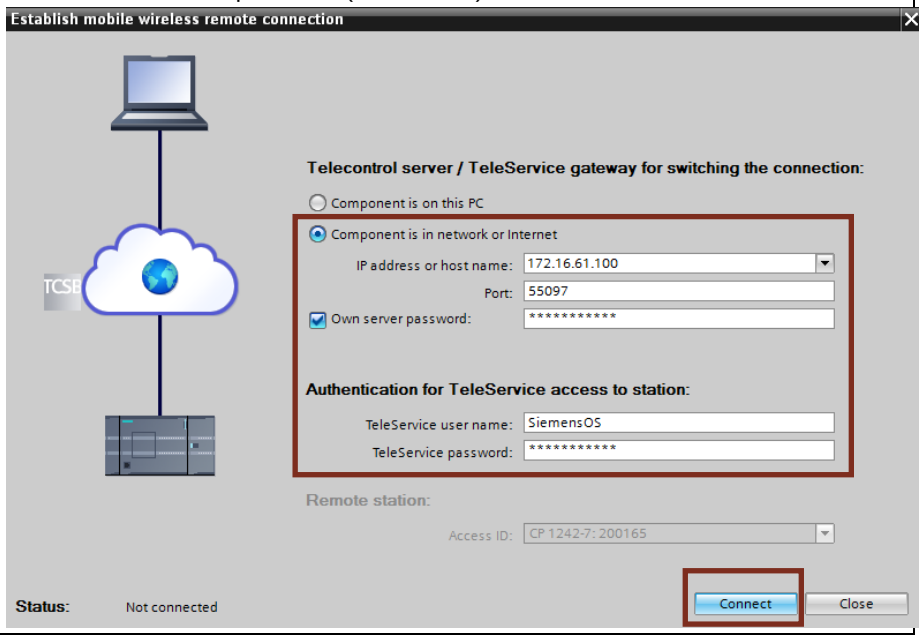
© Siemens AG 2016 All rights reserved

6.2 Downloading project and program data from the STEP 7 project into the remote station

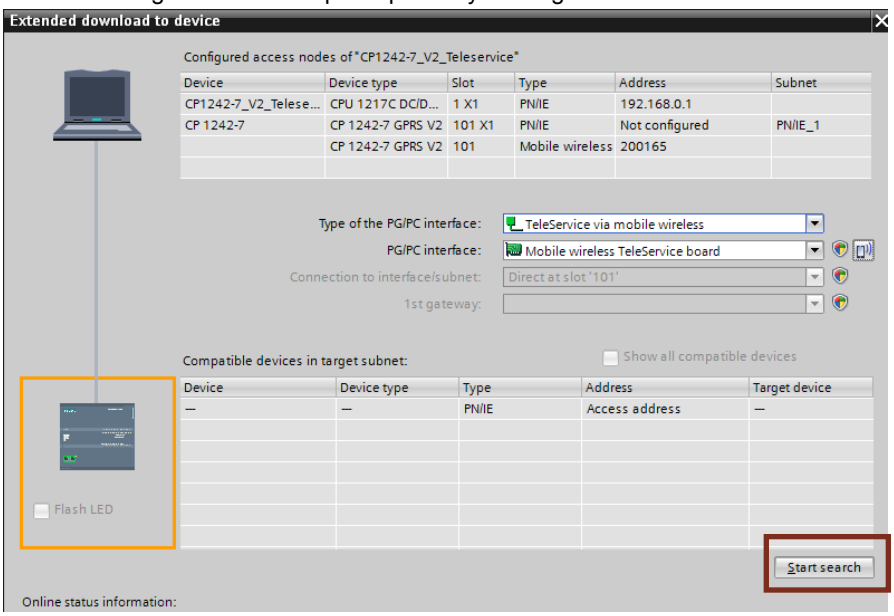
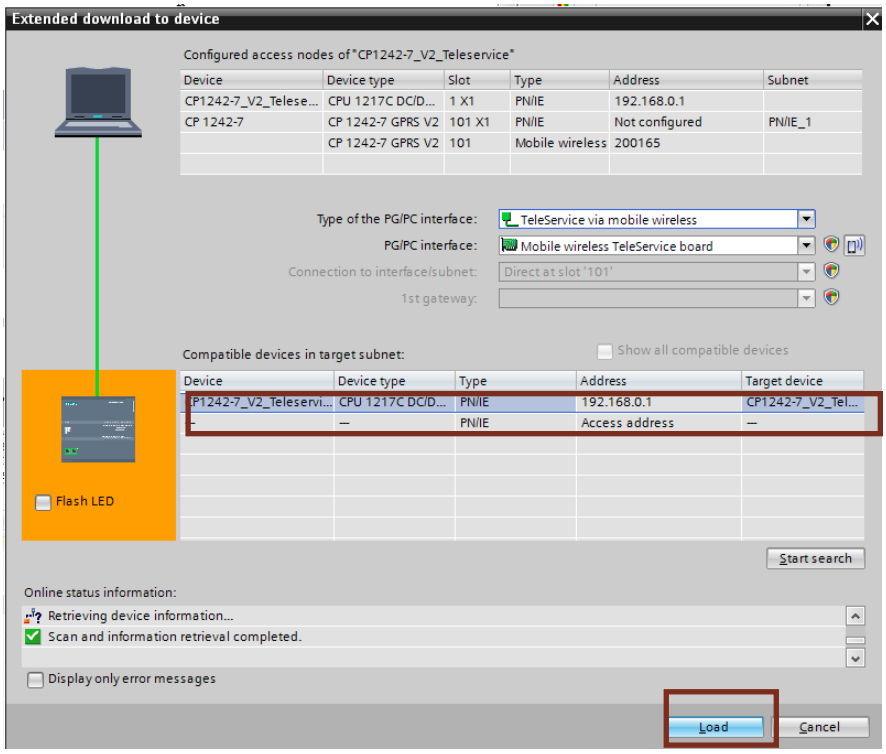
Table 6-2

No.	Action
1.	Ensure that the engineering station is connected to the internet. **Note:** Check the internet connection at your engineering station with the help of the internet browser by calling up a random internet page.
2.	Ensure that STEP 7 V13 on your engineering station is not in online mode.
3.	Select the project content to be transferred to the remote station: • Hardware and software (changes only) • Hardware configuration • Software (changes only) 
4.	As PG/PC interface type, select “TeleService via mobile wireless” and as PG/PC interface “Mobile wireless TeleService board”. 

© Siemens AG 2016 All rights reserved

No.	Action
5.	Establish the TeleService connection between engineering and remote station by clicking on the mobile phone symbol. 
6.	Enter the following values and then click on “Connect”: • The IP address of the server (172.16.61.100) • The server password (Teleservice) • The port (55097) • The TeleService user name (SiemensOS) • The TeleService password (Teleservice) 

© Siemens AG 2016 All rights reserved

No.	Action
7.	The TeleService connection has been established:
8.	Start searching for accessible participants by clicking on “Start search”. 
9.	Select the remote station and load the project or program data by clicking on “Load”. 

© Siemens AG 2016 All rights reserved

7 Links & Literature

Table 7-1

	Topic
\1\	Siemens Industry Online Support http://support.industry.siemens.com
\2\	Download page of the entry https://support.industry.siemens.com/cs/ww/en/view/56720905
\3\	SIMATIC NET Industrial Remote Communication -TeleControl TeleControl Server Basic V3 https://support.industry.siemens.com/cs/ww/en/view/107536367
\4\	SIMATIC NET S7-1200 – TeleControl CP 1242-7 GPRS V2 – Manual https://support.industry.siemens.com/cs/ww/en/view/109476700
\5\	SIMATIC NET Industrial Remote Communication TeleService TS Gateway Manual https://support.industry.siemens.com/cs/ww/en/view/107535103

8 History

Table 8-1

Version	Date	Modifications
V1.0	10/2016	First version

© Siemens AG 2016 All rights reserved