SIEMENS

SINUMERIK

SINUMERIK Integrate
Analyze MyCondition (AMC),
Access MyMachine/Ethernet (AMM/E)

Operating Manual

Valid for controller:
SINUMERIK 840D, SINUMERIK 840D sl/ 840DE sl
SINUMERIK 828D
Software
SINUMERIK Integrate, version 4.1 SP7
AMC,   version 4.13 SP7
AMM/E, version 4.1 SP7

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Legal information

Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

⚠ **DANGER**

indicates that death or severe personal injury **will** result if proper precautions are not taken.

⚠ **WARNING**

indicates that death or severe personal injury **may** result if proper precautions are not taken.

⚠ **CAUTION**

indicates that minor personal injury can result if proper precautions are not taken.

NOTICE

indicates that property damage can result if proper precautions are not taken.

If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

Proper use of Siemens products

Note the following:

⚠ **WARNING**

Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

Foreword

SINUMERIK documentation

The SINUMERIK documentation is organized into the following categories:

- General documentation/catalogs
- User documentation
- Manufacturer/service documentation

Additional information

You can find information on the following topics at the following address (https://support.industry.siemens.com/cs/de/en/view/108464614):

- Ordering documentation/overview of documentation
- Additional links to download documents
- Using documentation online (find and search in manuals/information)

If you have any questions regarding the technical documentation (e.g. suggestions, corrections), please send an e-mail to the following address (mailto:docu.motioncontrol@siemens.com).

mySupport/Documentation

At the following address (https://support.industry.siemens.com/My/ww/en/documentation), you can find information on how to create your own individual documentation based on Siemens' content, and adapt it for your own machine documentation.

Training

At the following address (http://www.siemens.com/sitrain), you can find information about SITRAIN (Siemens training on products, systems and solutions for automation and drives).

FAQs

You can find Frequently Asked Questions in the Service&Support pages under Product Support (https://support.industry.siemens.com/cs/de/en/ps/faq).

SINUMERIK

You can find information about SINUMERIK at the following address (http://www.siemens.com/sinumerik).

Security information on the product

Note

SINUMERIK Integrate

The SINUMERIK Integrate product is available as standalone (intranet) version or in cloud operation (ASP).

- Standalone (intranet):
  Read and write access to the file system and resources of the operating system of the SINUMERIK Integrate server is enabled only for users with administrator rights.
- Cloud mode (ASP):
  Siemens AG as operator ensures the security of the SINUMERIK Integrate server. Customers must only ensure the security of the infrastructure on the machine side.

Further information about server operation can be found at Industrial Security Configuration Manual (https://support.industry.siemens.com/cs/us/en/view/108862708).

NOTICE
Misuse of data
It is essential to use secure data storage when saving your data - particularly your confidential data. It is best to store this data encrypted locally or encrypted on the network. Make sure that this data cannot be accessed by unauthorized personnel.
This applies to the following data:
• Archive files
• Image files
• Project files
• Trace files
• Safety-relevant files
Further information on secure data storage can be found at Industrial Security Configuration Manual (https://support.industry.siemens.com/cs/us/en/view/108862708).

NOTICE
Danger due to insecure Internet connection
Before establishing a network connection, ensure your PC is connected to the Internet via a secure connection. Pay attention to the security-relevant notes. Further information about communications security can be found at Industrial Security Configuration Manual (https://support.industry.siemens.com/cs/us/en/view/108862708).

> **NOTICE**
>
> **Security risk through administrator rights**
>
> If you operate a PC with permanent administrator rights, there is an increased security risk. Therefore, ensure that there is a secure operating environment, and assign administrator rights only temporarily and selectively.
>
> Further information on the secure administration of user accounts and the assignment of rights can be found at Industrial Security Configuration Manual (https://support.industry.siemens.com/cs/us/en/view/108862708).

Target group

The operating manual is aimed at all machine tool users. The document provides information that users require to understand the SINUMERIK Integrate software.

Benefits

The operating manual allows the target group to get familiar with the software user interface. Based on the manual, the target group is capable of responding to problems and to take corrective action.

Standard scope

This documentation describes the functionality of the standard scope. Additions or revisions made by the machine manufacturer are documented by the machine manufacturer.

Other functions not described in this documentation might be executable in the control system. This does not, however, represent an obligation to supply such functions with a new control or when servicing.

Furthermore, for the sake of clarity, this documentation does not contain all detailed information about all product types and cannot cover every conceivable case of installation, operation or maintenance.

Table of contents

Fundamental safety instructions $\qquad$ 1

1.1 General safety instructions

⚠ WARNING
Danger to life if the safety instructions and residual risks are not observed
If the safety instructions and residual risks in the associated hardware documentation are not observed, accidents involving severe injuries or death can occur. ● Observe the safety instructions given in the hardware documentation. ● Consider the residual risks for the risk evaluation.

⚠ WARNING
Malfunctions of the machine as a result of incorrect or changed parameter settings
As a result of incorrect or changed parameterization, machines can malfunction, which in turn can lead to injuries or death. ● Protect the parameterization (parameter assignments) against unauthorized access. ● Handle possible malfunctions by taking suitable measures, e.g. emergency stop or emergency off.

1.2 Warranty and liability for application examples

The application examples are not binding and do not claim to be complete regarding configuration, equipment or any eventuality which may arise. The application examples do not represent specific customer solutions, but are only intended to provide support for typical tasks. You are responsible for the proper operation of the described products. These application examples do not relieve you of your responsibility for safe handling when using, installing, operating and maintaining the equipment.

1.3 Industrial security

Note

Industrial security

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

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens products and solutions only represent one component of such a concept.

The customer is responsible for preventing unauthorized access to its plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.

Additionally, Siemens' guidance on appropriate security measures should be taken into account. For more information about industrial security, please visit:

Industrial security (http://www.siemens.com/industrialsecurity).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends to apply product updates as soon as available and to always use the latest 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.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed at:

Industrial security (http://www.siemens.com/industrialsecurity).

⚠ **WARNING**

Unsafe operating states resulting from software manipulation

Software manipulations (e.g. viruses, trojans, malware or worms) can cause unsafe operating states in your system that may lead to death, serious injury, and property damage.

- Keep the software up to date.
- Incorporate the automation and drive components into a holistic, state-of-the-art industrial security concept for the installation or machine.
- Make sure that you include all installed products into the holistic industrial security concept.
- Protect files stored on exchangeable storage media from malicious software by with suitable protection measures, e.g. virus scanners.

Overview

2

2.1 Introduction

What is SINUMERIK Integrate?

SINUMERIK Integrate supports the maintenance, service, production planning and production of machine tool manufacturers and manufacturing companies. This is done using software services that are available both on the CNC and on the PC.

This requires both Internet access and a control system on the CNC that complies with the specifications. Further, a factory-wide network must be set up for the applications and Internet access must be provided for the AMC and AMM/E applications.

The following services, for example, are part of SINUMERIK Integrate:

SINUMERIK Integrate Analyze MyCondition

Analyze MyCondition (AMC) provides test cycles for equability, circularity and universal axis tests. The test parameters can be defined centrally and configured with appropriate warning limits. Further, using a series of measurements, trends can be identified and these can be utilized as basis to optimize maintenance and service activities.

In addition, Analyze MyCondition offers a continuous acquisition of data in the manufacturing process. It also supports the reporting of parameters about wear and tear of mechatronic components.

The current machine status is documented using the following events and data:

- Alarms, PLC events, time intervals, combinations of machine signals
- Violation of the limit value and exceeding the interval value
- Measuring/test series and utilization monitors
- Manual help request by the machine operator in the event of faults
- HMI action log, machine data, NC status data
- PLC trace, PLC data blocks
- Certain files (e.g. log files) of the control system

Notifications via e-mail or through service cases initiate service and maintenance procedures. Maintenance activities are planned, monitored and documented directly on the machine. The notifications can respond to all event sources.

Note

SMS notification not possible

SMS notification is not possible in local operation!

SINUMERIK Integrate Access MyMachine/Ethernet

In the event of a fault, SINUMERIK Integrate Access MyMachine/Ethernet (AMM/E) gives the machine manufacturer's service organization fast access to important machine control data and diagnostic functions. In that way, the machine manufacturer or maintenance department of the end user can immediately analyze the current condition of the machine in which a fault occurred.

Remote access to the control system is via a secure Internet infrastructure and allows the exchange of information and remote control of the CNC.

- Remote access
- File transfer
- Conference call
- Recording of a remote access
- Remote STEP 7

2.2 Product overview

Overview of the applications

As a whole, applications are available that completely cover all aspects of integrating machines into your communication, engineering and production processes.

Harmonized to address your particular requirements, you can access the following applications of SINUMERIK Integrate:
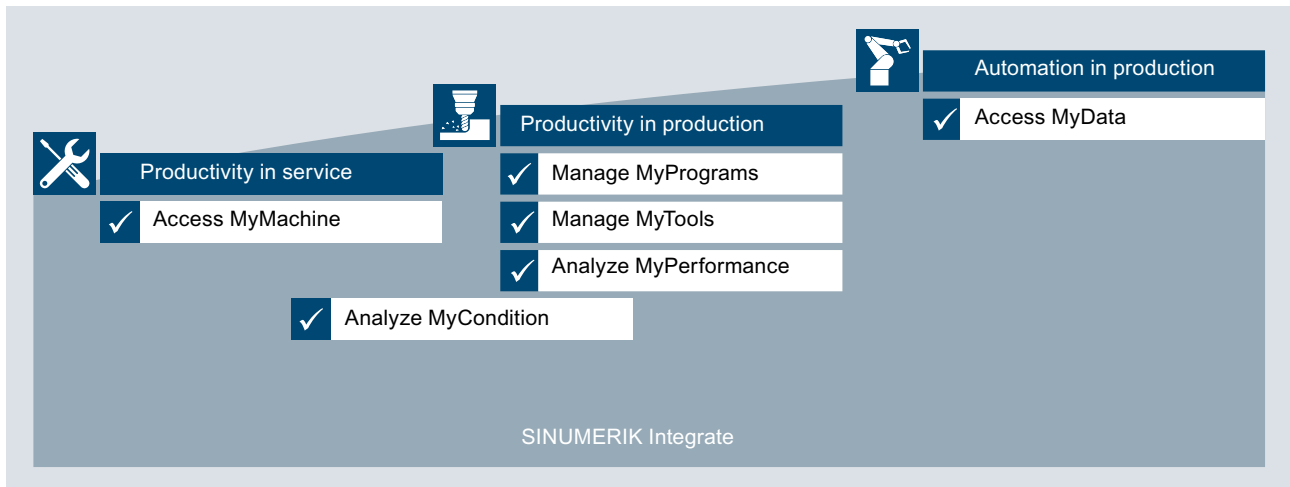
Figure 2-1   Overview

Delivery format

The latest packages and further information on the applications are stored on PridaNet and can be downloaded directly from there.

Client setup directory

The client setups can be found in the following directories:

AMC

Sinumerik_Integrate_Clients > SinInt > Operate > Version > Linux/Windows

or

Sinumerik_Integrate_Clients > SinInt > HMI_Advanced

AMM/E

The AMM/E Service Client Setup is located in the following directory:

Sinumerik_Integrate_Clients > AMM > AMM-ServiceClient-MO

Regular software updates

The security patches regularly supplied by Microsoft are checked by the Cloud mode (ASP) operator for compatibility with the current version of SINUMERIK Integrate by way of an internal system test and are then released. An overview of the patch compatibility is generally given shortly after the release of the security patch on the Service & Support Portal of Siemens Industry Automation and Drive Technologies.

Additional software

SINUMERIK Integrate additionally uses the following software:

Software that was developed for "OpenSSL" to use the "OpenSSL Toolkit" (http://www.openssl.org/).

Software that was developed for "Openevidence" to use the "OpenEvidence Toolkit" (http://www.open-evidence.com/about/).

Cryptographic software written by Eric Young (eay@cryptsoft.com).

Software written by Tim Hudson (tjh@cryptsoft.com).

Software developed by Bodo Moeller.

Example: Remote access Access MyMachine (AMM/E)
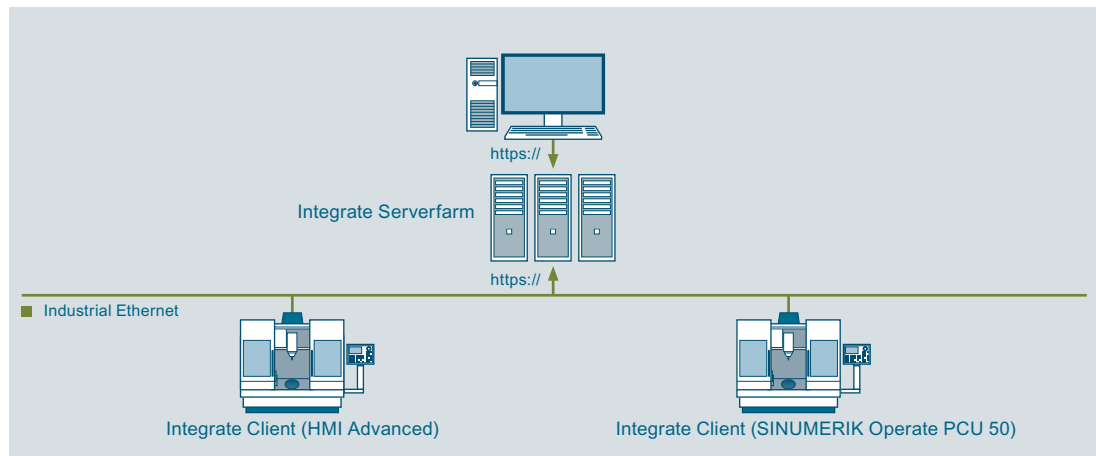
Figure 2-2   Overview AMM/E

Analyze MyCondition (AMC) 3

Analyze MyCondition (AMC) provides test cycles for testing synchronous axes and universal axes and for performing circularity tests, and also offers functionality for individual acquisition of CNC data.

The current machine status is acquired and documented on the basis of predefined, standardized tests and continuous recording of status parameters (traverse path, traverse time and traverse operations for one axis). The test parameters can be defined centrally and configured with appropriate warning limits.

Delivery stages

Stage 1: Control system monitors

You can configure triggers that will initiate a specific action. For example, they can be configured to send an e-mail to the machine manufacturer's service organization in response to a specific event.

Stage 2: Diagnostics data

In addition to the triggers from stage 1, diagnostics data can be gathered and sent to the machine manufacturer's service organization.

Stage 3: Maintenance functions

In addition to the functions from stages 1 and 2, the functions supplied with stage 3 can be used to set up and evaluate event-driven maintenance functions.

References

A description of the individual AMC functions is provided in the "SINUMERIK Integrate AMC" Function Manual.

Access MyMachine/Ethernet (AMM/E)

<div style="text-align:right;font-size:2em;font-weight:bold">4</div>

4.1 Introduction

Overview

In the "Machine information" > "Remote access" > "Execute remote access" tab you can perform efficient and low-cost support for machine tools and production equipment via the Internet.

In the event of a fault, the service organization of the machine manufacturer has fast access to important control data and diagnostic functions. In that way, the machine manufacturer or maintenance department of the end user can immediately analyze the current condition of the machine in which a fault occurred.

Remote access avoids time-consuming on-site service assignments or helps prepare them better. Machine manufacturers can reduce their warranty costs while providing more efficient service support for their end users.

Options

- Control with SINUMERIK Operate, see Chapter: Participating in a session with SINUMERIK Operate (Page 26)
- PCU 50 control with HMI-Advanced, see Chapter: Participating in a session with HMI-Advanced (Page 29)
- Machine PC, see Chapter: Participating in a session with machine PC (Page 32)

Note

For PC

If there is no current client installed on the controller, you must install or update the client via the "Update Teleservice" softkey before participating in a session.

After the installation or the update, the control must be restarted.

4.2 Setting up a session

Requirement

- The necessary client software has already been installed on the PCU or the PC.

- The connection to the machine has been established.

References

For information about the installation of the current software, refer to the "Analyze MyCondition (AMC), Access MyMachine/Ethernet (AMM/E)" Installation Manual.

User roles

You can participate in a session with the following roles:

1. Conference owner (SE, service engineer)

2. Machine operator (MO, SINUMERIK Operate, HMI-Advanced)

3. Observing service engineer in the conference (SE, service engineer)

These user roles can have different states and are defined on the user interface with different icons:

Icon	No.	Role	Status
	1	Owner	The conference owner participates actively in the session.
	2	Owner	The conference owner is active and leads the session (desktop sharing).
	3	Machine operator	The machine operator participates actively in the conference.
	4	Machine operator	The machine operator leads the conference. The owner does not control the remote desktop.
	5	Machine operator	The machine operator was at the conference, but is currently not present.
	6	Observing service engineer	The observing service engineer participates actively in the session.
	7	Observing service engineer	The observing service engineer was at the conference, but is currently not present.

Overview

Table 4-1   Execute remote access

|	Description
Conference data	
Session number	Shows the session number of the conference.
	The service engineer transfers the number to all participants in the conference.
	Notification of the session number is via phone, SMS, e-mail, etc.

		Description
Machine ID		Shows the name of the machine.
Status		Displays current information for the session.
Organization		Shows the organization of the connected machine.
Participants		
Name		Shows names and configuration of the participants.
		The icon shows the role of the participant.
Status		Shows the current role of the participant.
Organization		Shows the organization of the current user.
Remote access	⊡	Shows a remote access.
		Is only displayed for the machine operator.
	🖳	Shows a terminated participant access.
	🖳	Shows that the function to end remote access is not available because desktop sharing has not been started. In this state, no function can be performed via the button.
File transfer	⬆	Shows the data transfer.
		Is only displayed for the machine operator.
Remote STEP 7	RS7	Shows the connection via Remote STEP 7.
		Is only displayed for the machine operator.
Transfer of leadership	👥	Shows the transfer of leadership.
		Is only displayed for the observing service engineer.

Table 4-2   Status bar

Icon	Description
MO	Operating mode of the application - currently only the machine operator (MO).
👁	Shows an active remote access.
🖫	Shows an active file transfer.
🔴	Shows a recording of a session.
👥	Shows no participation in the conference.
👥	Participation in a conference has been performed.
👥	The conference has been interrupted because of a network error.

Starting remote access as session leader

1. Select the "Execute remote access" function in the "Machine information" → "Remote access" tab.
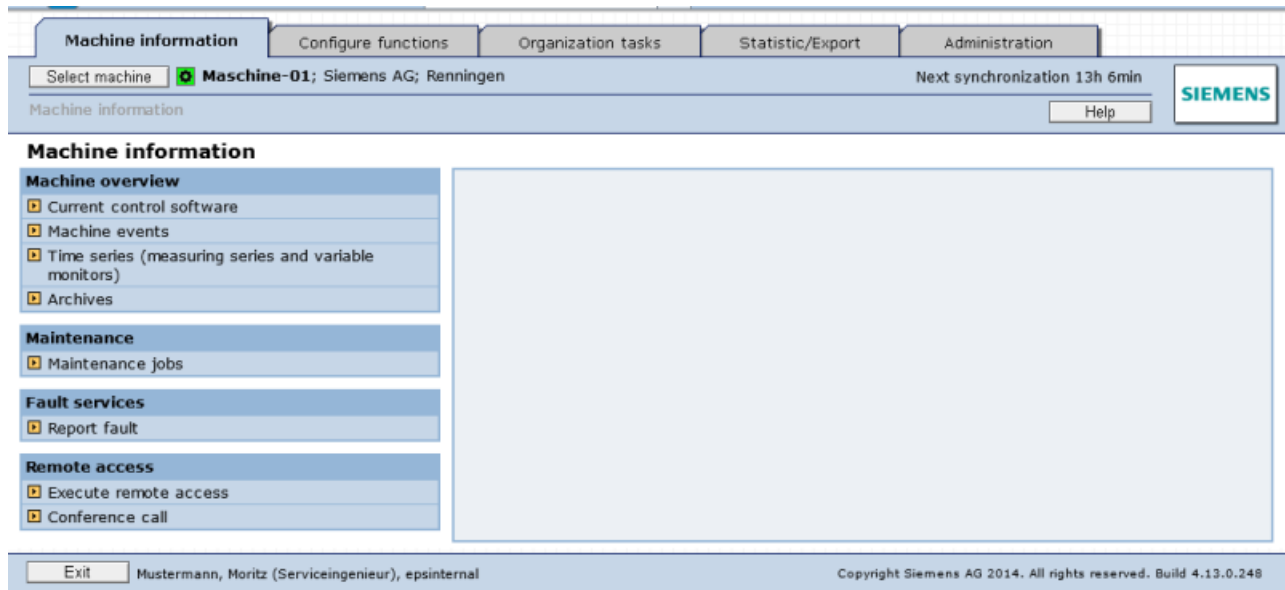

Figure 4-1   Execute remote access

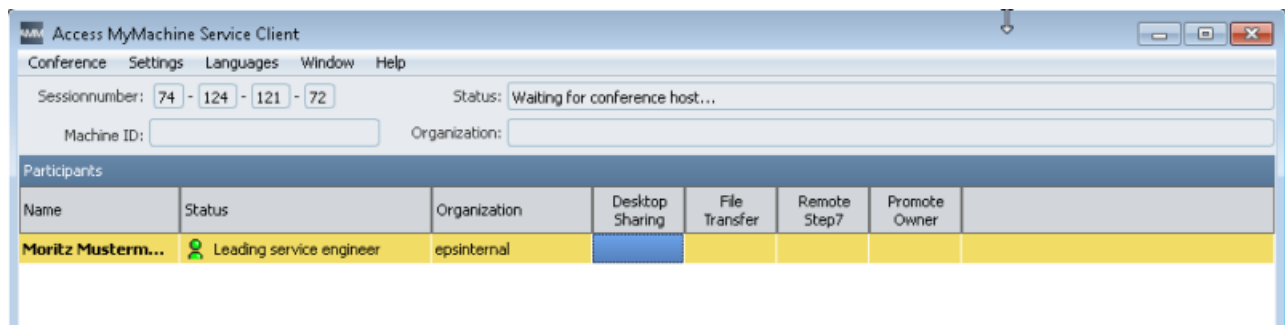2. The "Access MyMachine Service Client" window opens and a session number is assigned.

Figure 4-2   Session number

3. The machine operator is then requested to grant permission.

4. After the session has been successfully established, inform the other participants (machine operators, service engineers) about the session number so that they can participate in the conference.
When the session establishment is completed and further participants have joined the session, the session data and information on the participants is displayed.
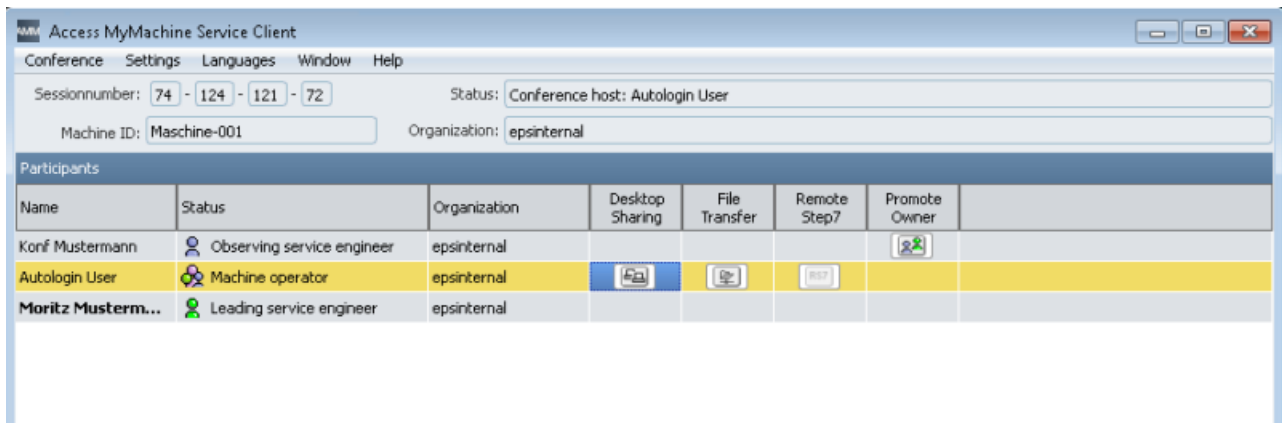
Figure 4-3   Session started

Observing participation

As an observing participant, you can only log in when a service engineer is already leading the session on a PC and the machine operator is participating on the control.

1. Under "Remote access", select the "Conference call" function.
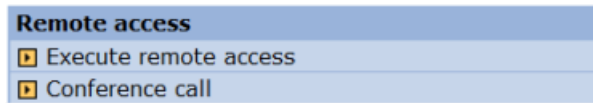
Figure 4-4   Conference call

2. Enter the session number that you have received from the service engineer leading the conference.
Click "OK" to confirm the entry.
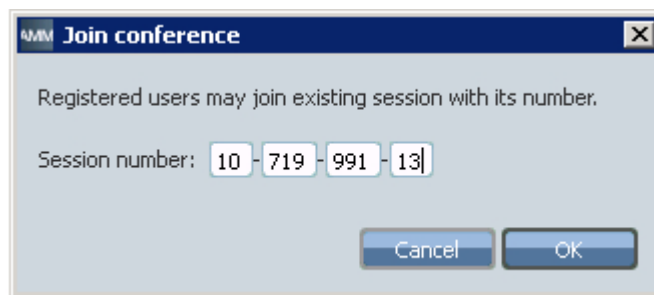
Figure 4-5   Enter session number

3. The "Access MyMachine Service Client" window opens and the session is established.
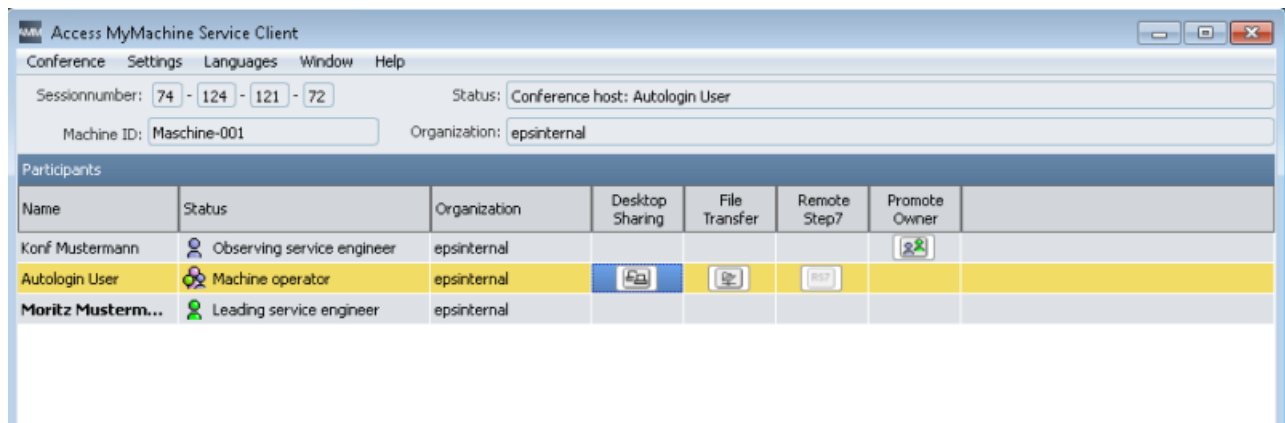
Figure 4-6   Observing participant of a session

Contrary to the conference leader, as observing participant you cannot call individual functions or end the session. For this reason, the relevant buttons and icons are not active in the window.

Failed login attempt

If a machine operator has not logged in to the control, you receive the following error message:

"The service engineer or the machine operator is currently not present! Please try again later!"

- OR -

"The session number is invalid - please check the correct notation."

1. Inform the service engineer leading the conference about the error message.

2. Try to log in again later.

Leaving the session

Call the "Conference > Leave" menu to leave a session in progress.

As long as the session is still in progress, you can log in and participate at any time with the same session number.

4.3 Participating in a session with SINUMERIK Operate

Procedure

1. Start "SINUMERIK Integrate" on the control.

2. In the "Fault services" section, press the "Select" softkey.
   The "Fault Services" window opens.

3. In the "Remote access" section, press the "Select" softkey.
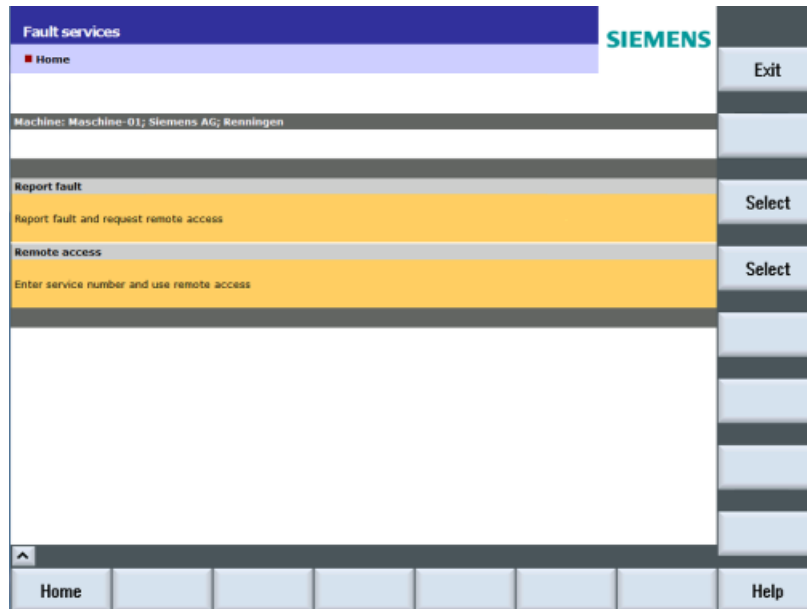
Figure 4-7   Setting-up remote access with SINUMERIK Operate

4. The "SINUMERIK Integrate - Access MyMachine" window opens.
   In the "Session number" field, enter the number provided by the service engineer on the PC, e.g. per phone.
   Press the "OK" softkey to confirm your entry.
   The session is established.
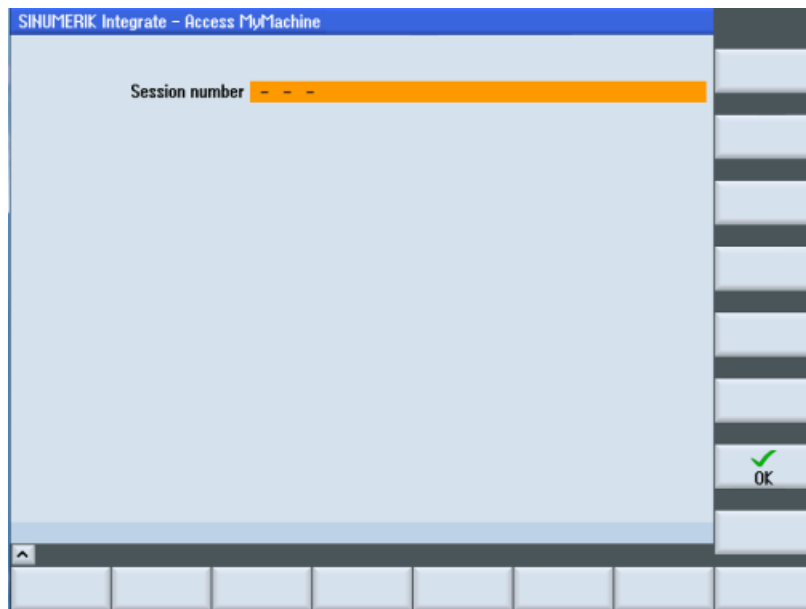
Figure 4-8   Entering the session number

5. Once the session between the PC and SINUMERIK Operate has been successfully set up, the participants are shown.
   Press the "Leave session" softkey to end access to the control.
   As long as the session is not closed from the PC, you can participate in a session as often as required using the same session number.
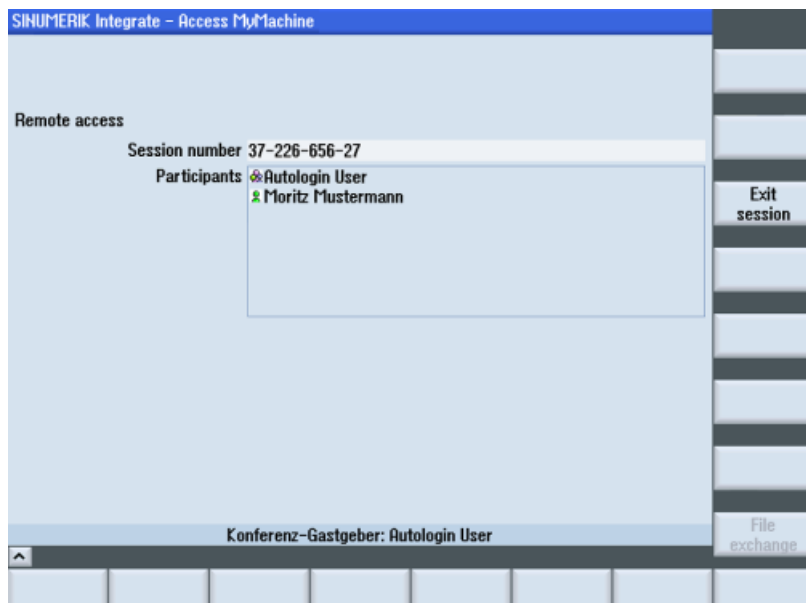
Figure 4-9   Remote access active
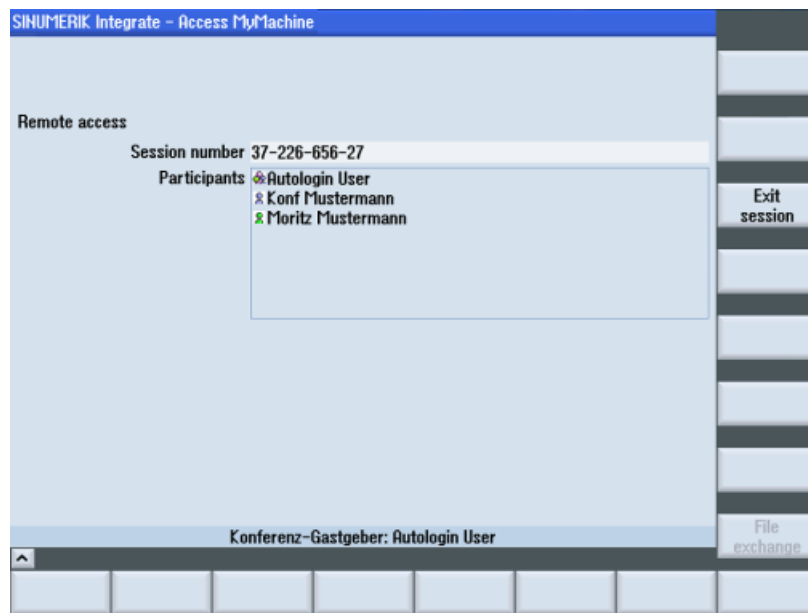
Figure 4-10   Remote access active - further participant

Result

After the participants have registered at the control, they are also displayed on the PC.

You can also use the "File transfer" and "Desktop sharing" functions on the PC.

Remote STEP 7 (RS7) is only available with SINUMERIK Operate (Linux).

Further information on the required versions of SINUMERIK Operate and SIMATIC Manager can be found in the "Supplementary Conditions" document.
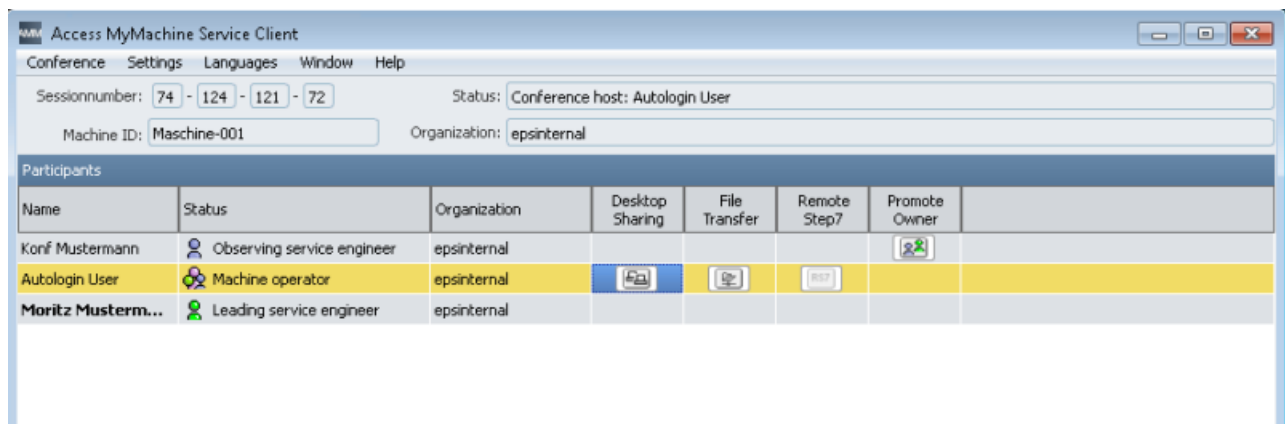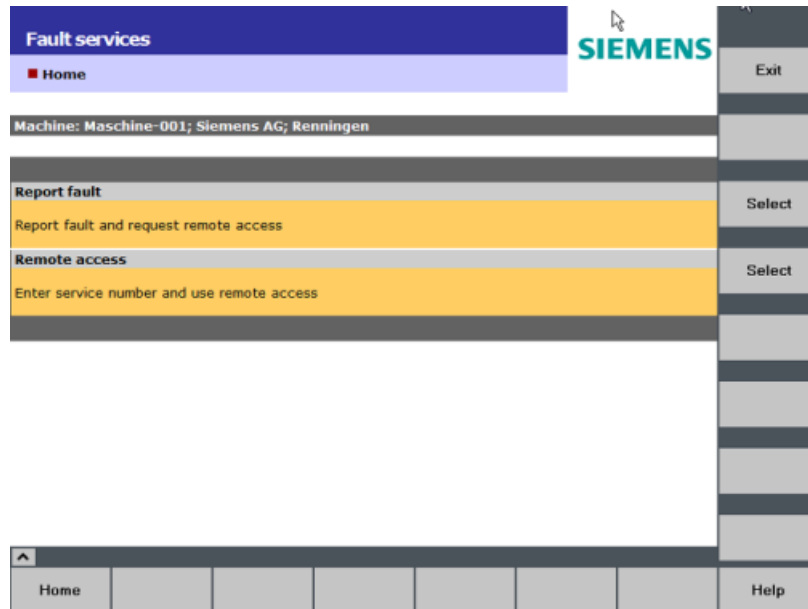

Figure 4-11   Remote access conference call

4.4 Participating in a session with HMI-Advanced

Procedure

1. Start "SINUMERIK Integrate" on the control.

2. In the "Fault services" section, press the "Select" softkey.
   The "Fault Services" window opens.

3. In the "Remote access" section, press the "Select" softkey.

Figure 4-12   HMI-Advanced remote access

4. The "SINUMERIK Integrate - Access MyMachine" window opens.
   In the "Session number" field, enter the number provided by the service engineer on the PC, e.g. per phone.
   Press the "OK" softkey to confirm your entry.
   The session is established.
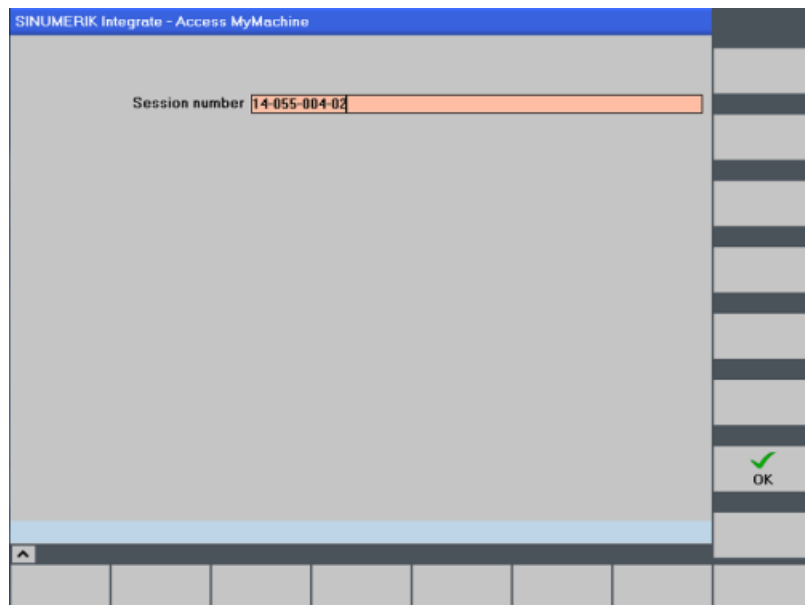
Figure 4-13   Entering the session number

5. Once the session between the PC and the control has been successfully established, the participants are displayed.
   Press the "Exit session" softkey to end access to the control.
   As long as the session is not closed from the PC, you can participate in a session as often as required using the same session number.
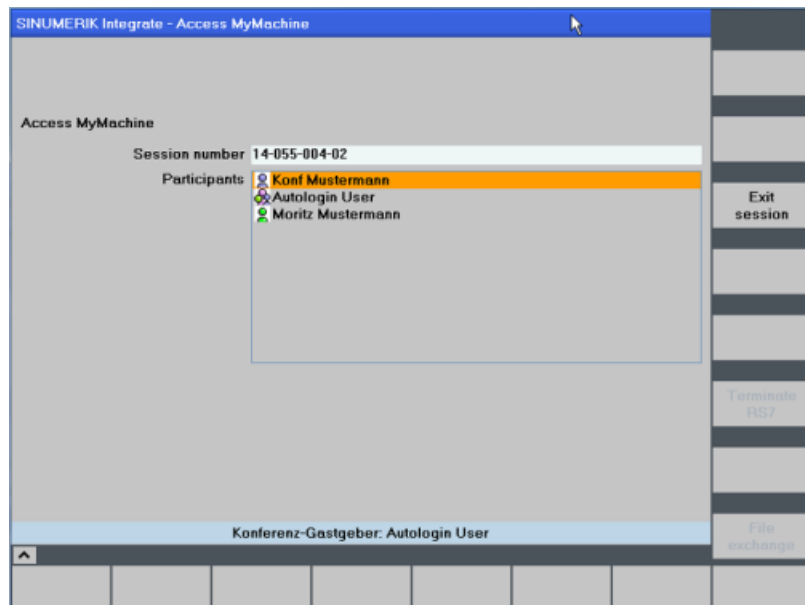
Figure 4-14   Remote access active

Result

After the participants have registered at the control, they are also displayed on the PC.

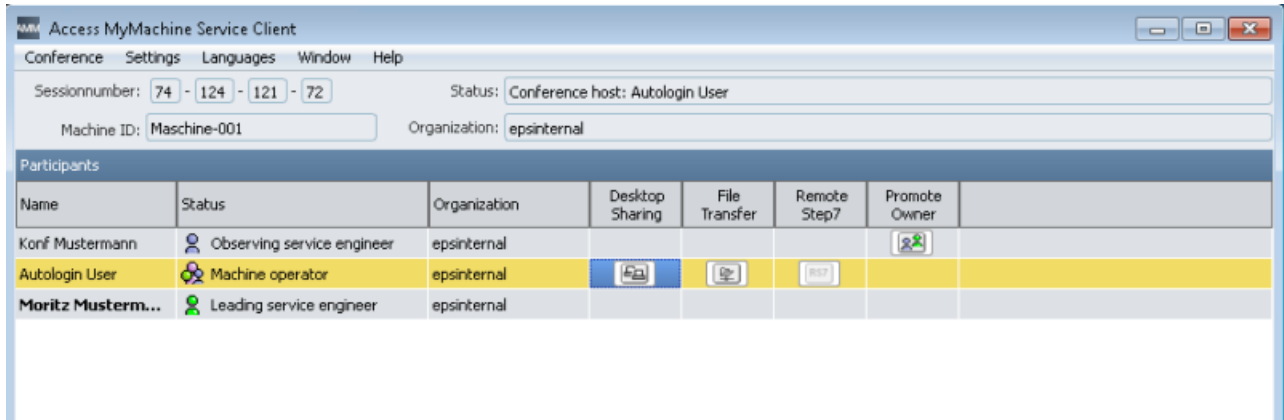You can also use the "File transfer" and "Desktop sharing" functions on the PC.

Figure 4-15   Remote access conference call

4.5 Participating in a session with machine PC

Procedure

1. Start AMM SC in service mode via the Windows Start menu: "Start" > "Programs" > "Siemens" > "SINUMERIK Integrate" > "Access MyMachine Service Client (AMM SC)".
   - OR -

2. Start AMM SC via the desktop link by double-clicking the following icon.

3. The Welcome window is displayed.
Enter the "User name", "Password" and "Organization" to log in to the conference.
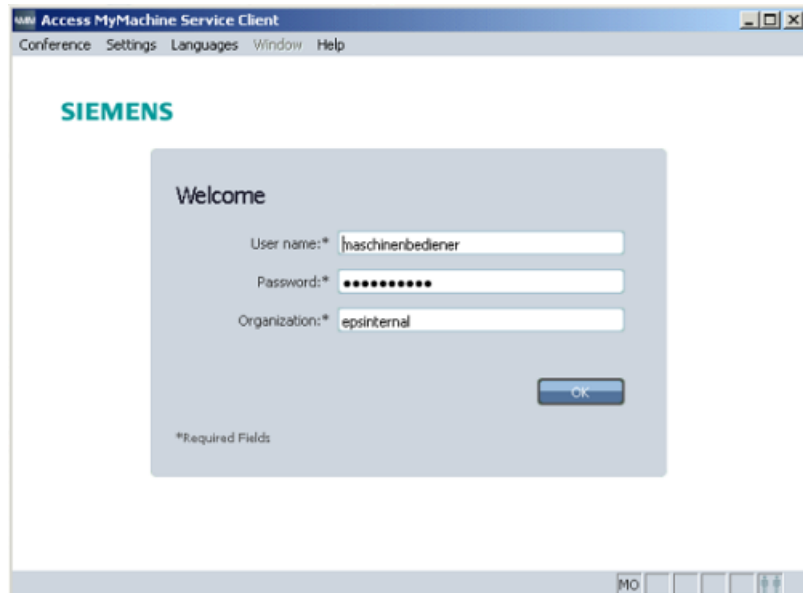Click "OK" to start the session set-up.

Figure 4-16   Welcome window

4. The "Access MyMachine Service Client" window then opens.
In the "Session number" field, enter the number provided by the service engineer on the PC, e.g. by phone.
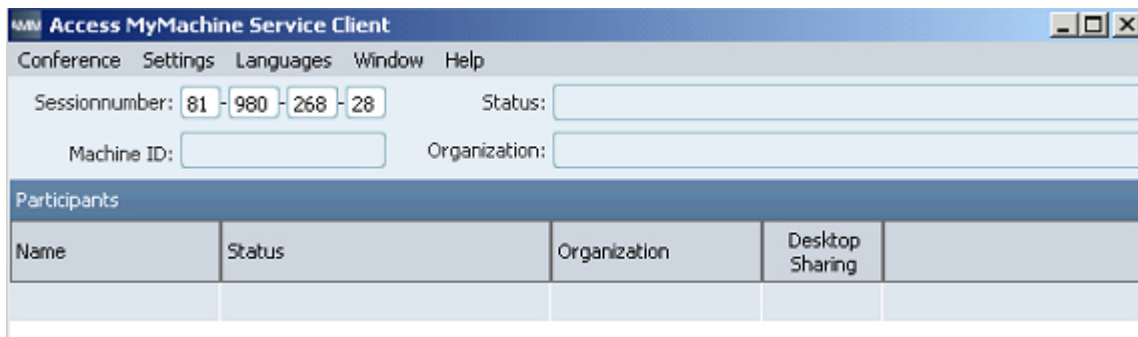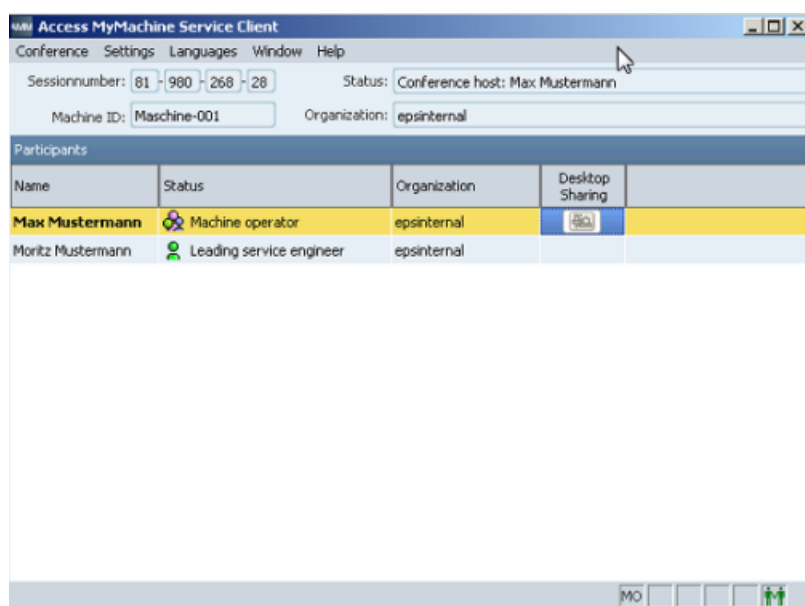All participants in the conference are displayed under "Participants".

Figure 4-17   Log in for the conference

Figure 4-18   Conference participants

4.6 Remote operation using the keyboard

Available function keys

Special function keys on the operator keyboard can also be operated using the keyboard of the service PC via remote access. The following table shows the keys on the PC to which the horizontal and vertical softkeys and the special keys of the SINUMERIK keyboard are mapped.

Figure 4-19   Special keys

Key	Description
MENU SELECT	Area switchover key
	You can call the main menu from any operating area by pressing this key. Pressing the key twice in succession changes from the current operating area to the previous one and back again.
>	Menu forward key
	Expansion of the horizontal softkey bar in the same menu.
∧	Menu back key
	Return to the higher-level menu; a dialog is closed with this key.
M MACHINE	"Machine" operating area
	Direct branch to the "Machine" operating area.

Softkeys and function keys

You can operate AMM SC via softkeys or function keys, see Chapter Calling the help function (Page 62)

4.7 Using functions

4.7.1 Overview of the functions

The following functions enable diagnostics to be performed and faults to be corrected via the control. It is up to the service engineer to execute the functions for all problems via remote access on a PC with a mouse and keyboard.

So that you can use the actions, you must activate the functions in AMM/E.

Further information can be found in the Commissioning Manual SINUMERIK Integrate AMC, AMM/E, Chapter: Configuring Access MyMachine/Ethernet (AMM/E), activating functions

Functions

Function	Description
Screen enable	Permits the display and remote operation of a control. For safety reasons, however, it is not possible to initiate machine movements or to start NC programs. See Chapter: Screen enable (Page 36)
File transfer	Enables the transfer of one or more files or directories. Transfer can be from the workplace PC to the control or vice versa. This allows, for example, patches to be imported for the error correction. The control can also be updated quickly. Even complex NC programs are transferred to the service engineer for offline testing or for modification via file transfer. See Chapter: Performing the file transfer (Page 41)
Remote STEP 7	With STEP 7, the control tasks can be implemented based on the SIMATIC S7 automation systems. See Chapter: Remote STEP 7 via the Internet (Page 50)
Conference call	Allows several service engineers to participate in a conference. You either participate with an observing role or as leader of the conference. See Chapter: Transferring the conference leadership (Page 54)
Automatic recording of the meeting	Enables the session to be recorded and stored on the server as an event entry. See Chapter: Downloading/deleting the session recording (Page 56)

4.7.2 Screen enable

As conference owner, you can use the screen enable (desktop sharing) to control the display and remote control of a control from the PC.

Observing participants cannot participate actively in the actions.

Requirements

- The connection between the PC and the control has been established.

- The machine operator participates actively in the session.

- The "Screen enable" function is active
  Further information can be found in the Commissioning Manual SINUMERIK Integrate AMC, AMM/E, Chapter: Configuring Access MyMachine/Ethernet (AMM/E), activating functions

Procedure

1. Click the "Desktop sharing" icon to access the controller via remote access.

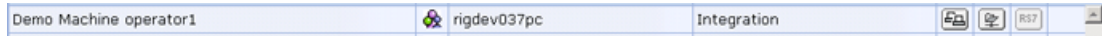| Demo Machine operator1 | ⚙ rigdev037pc | Integration | [icons] |

Figure 4-20   Starting desktop sharing

Via the option settings you specify for the control that remote access to the control is only permitted with confirmation by the machine operator. If remote access is restricted in this way, the machine operator receives the following message:
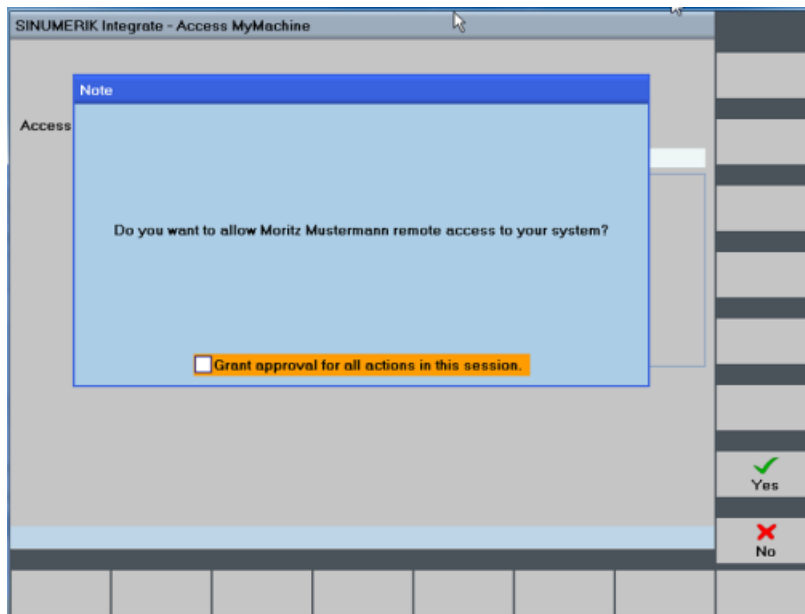

Figure 4-21   Granting permission

2. The machine operator clicks "No" to deny access.
    The remote user cannot control until the machine operator allows access.
    As long as there is no access permission, the remote user is shown the following symbol:

Figure 4-22   Waiting for confirmation

3. Once permission has been granted, the user interface of SINUMERIK Operate or HMI-Advanced is displayed on the PC.
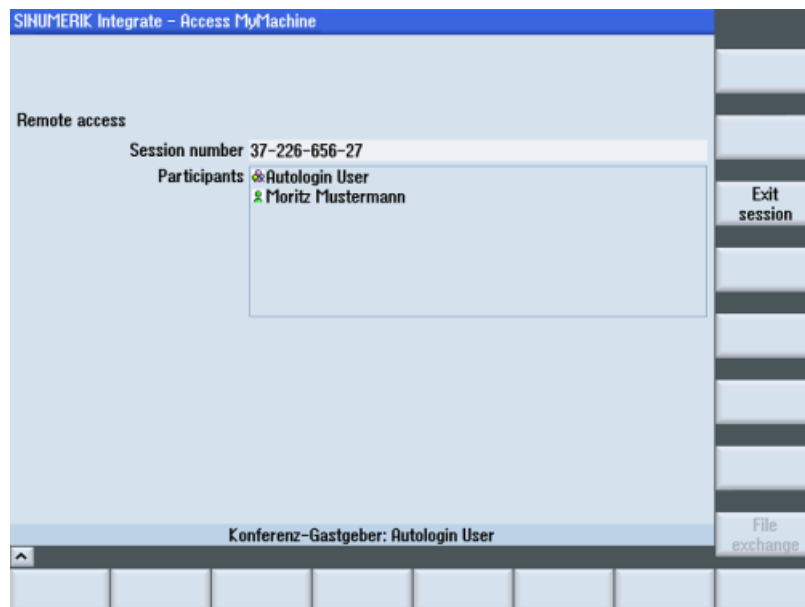   It is now possible to work on the control via remote access.

Figure 4-23   Remote access active

Note

If remote control is already active, a second screen enable cannot be started on the same machine within the existing session.

Scaling the screen window

If you change the window size, the remote screen window is also scaled.

When the remote access is ended, the position and size of the window is saved. If the function is opened again in the same session, the window is restored with the same dimensions.

Ending the session

The session can be ended by the various participants in different ways:

● If the session leader ends the session, all participants on the control receive the following message: "Conference ended".
The other participants receive the following message: "The session has been ended by the owner", see also Chapter: Ending the session (Page 65)

● If an observing participant ends the session, the session remains active and only the observer's window closes. The participant can join the active session again at any time.

● If the machine operator on the control leaves the session, the session remains active for all other participants. Only the remote control functions are deactivated.

Ending the session from the PC

As remote user, click the [x] icon to end the session.
- OR -

Select the "End session" function in the "Actions" selection box.

A confirmation prompt is displayed.

- Click the "No" button if you do not want to leave the conference.
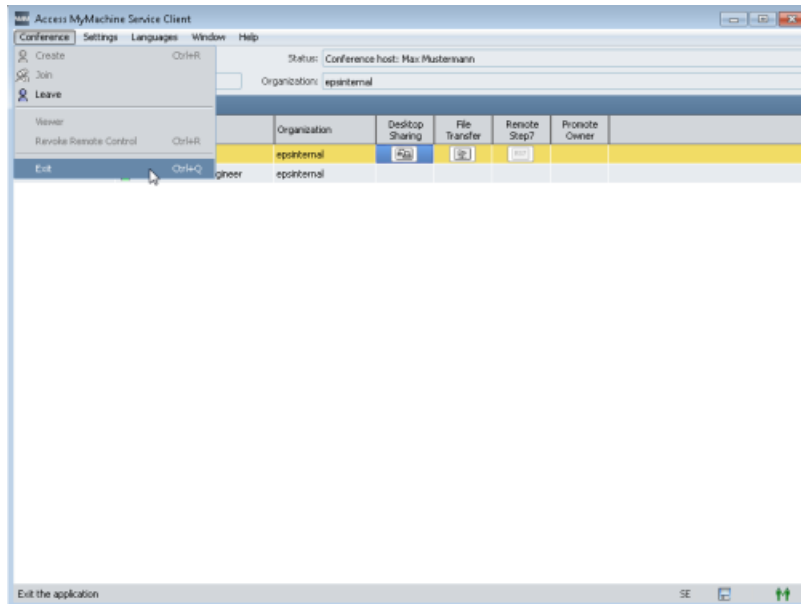- Click the "Yes" button if you want to leave the conference.

Figure 4-24   Ending the session

Leaving the session from the control

Press the "Leave session" softkey to end access to the control.
As long as the session has not been closed from the PC, you can participate in the session as often as required using the same session number.

___

Note

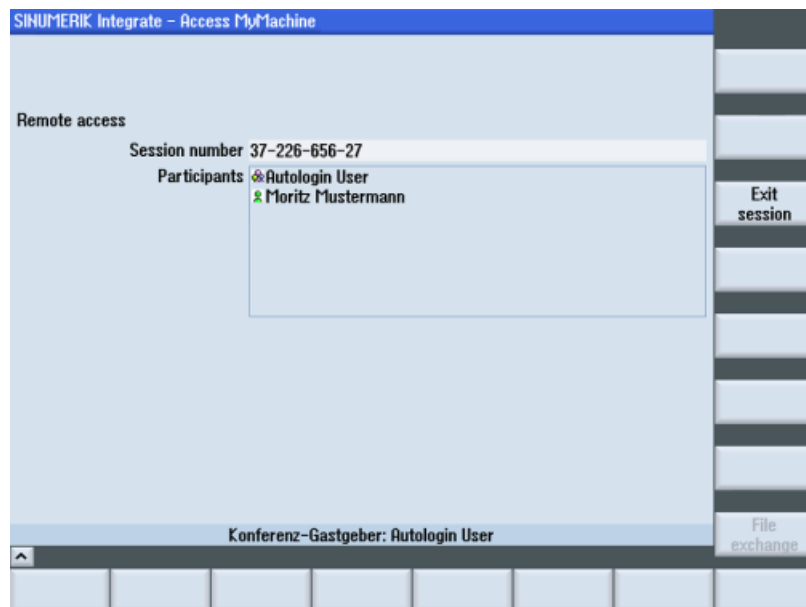Only the service engineer at the PC can close the session.

Figure 4-25   Remote access active

4.7.3   Performing the file transfer

You can use the "File transfer" function to transfer files or file directories between the PC and the control.

Prerequisite

- The connection between the PC and the control has been established.
- The machine operator participates actively in a session.
- The "File transfer" function is updated.

Important icons

Icon	Description
	Opens the higher level in the directory tree.
	Updates the view of the directory tree.
	The directory list is only updated when other actions, such as navigation, copying, renaming or deleting, have been performed.
	If the machine operator makes changes to the directory tree outside of the remote access, the session leader must update the view.
	Creates a new subdirectory in the selected directory level.

Display of file details

In the"File Transfer" window, the following file properties are displayed in the column view in both the Windows and the Linux file systems:

- File size

- Date of the last change

- Attributes

The position and size of the window are saved when the window is closed. If the function is opened again, the window is restored with the same dimensions.

You can set the column width and position, but this is not saved.

Starting file transfer

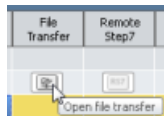1. Click the "Open file transfer" icon to start the file exchange.

Figure 4-26   Opening the file transfer

2. The "File Transfer" window is displayed once the function has been established.
   You can now transfer files from your PC (local file system) to another PC (remote file system) or vice versa.

3. Use the cursor to navigate to the required files.

4. Some directories and files are protected. If you do not have sufficient access rights, the message "Access denied" is displayed.

5. Select the required files or directories, e.g. locally on your PC or on the file system of another, remote PC.
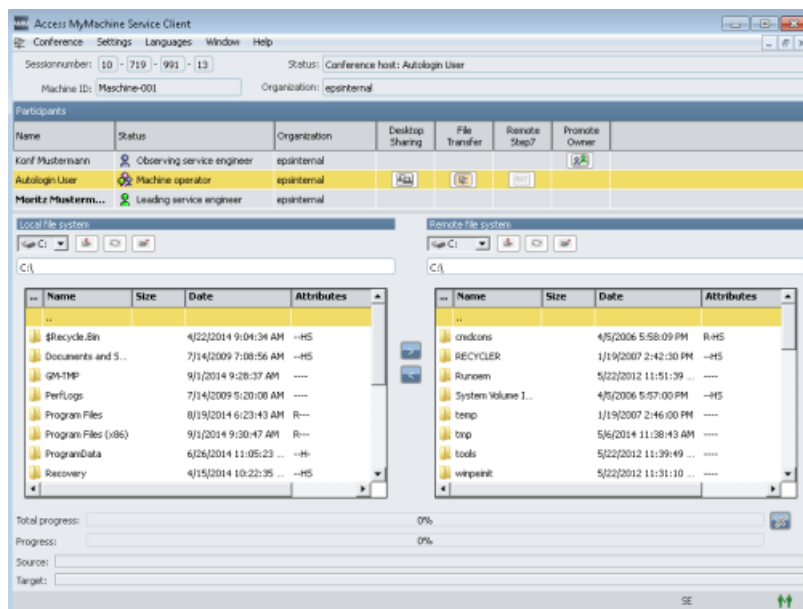

Figure 4-27   Selecting files

6. Copy the selection via the icons ⇨ / ⇦ icons to the appropriate directory.
   No other actions can be performed during the copying procedure.

> **Note**
>
> The data transfer can be aborted by the machine operator. In this case, the message "File transfer aborted!" is displayed.

> **Note**
>
> If a directory or a file already exists in the target system, the following prompt is displayed: "Remote path already exists! Do you want to overwrite it?"
>
> The source and target directories are also displayed.
>
> Confirm this message with "OK".
>
> If you no longer want to receive such messages, activate the "Use on all in the operation!" checkbox before confirming.

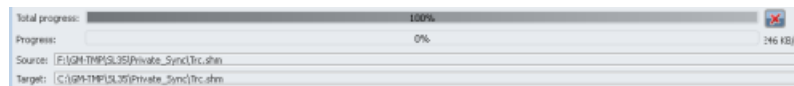The operation is displayed on a progress indicator.

Figure 4-28   Progress bar

7. The machine operator at the control must now grant permission for the file exchange.

   – The transfer is started by pressing the "Yes" softkey.

   – The transfer is rejected by pressing the "No" softkey.

   The machine operator at the control can also grant permission for all other actions during the current session.
   The "Grant permission for all actions during this session" checkbox must be activated.
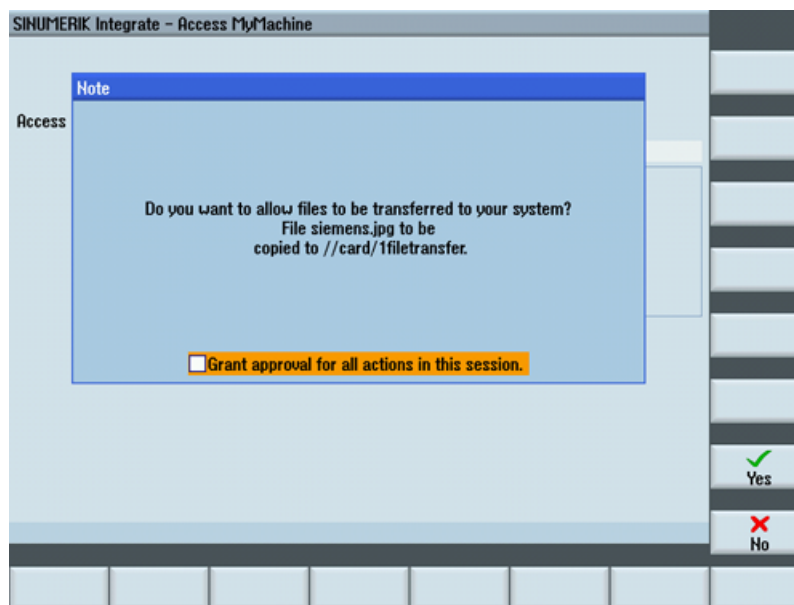

Figure 4-29   Accept file transfer

Note

Granting permission for all actions

The machine operator can grant permission for all actions of the current session for each confirmation prompt at the machine. If the checkbox is activated and the operation confirmed with "Yes", the machine operator's permission is generally no longer required. This confirmation is valid for all prompts for the functions:

● Screen enable

● File transfer

● STEP 7 via Internet

● Automatic recording of the meeting

The machine operator's permission is no longer required.

Confirming the file transfer on the machine PC

The machine operator is then requested to grant permission. A message window is displayed.

If the remote access with file transfer is to apply for the whole session, the machine operator activates the "Use this decision for the entire session" checkbox before permitting remote access with "Yes".

Note

No permission for the entire session

If the machine operator does not grant general permission for all of the actions for the entire session, the service engineer has no remote access during the time when the confirmation prompts are displayed on the machine. The service engineer can see the screen of the machine operator during this time, but can no longer perform any operations.

Only after confirmation by the machine operator can the service engineer see and remotely control the screen of the machine.

If, for example, the service engineer copies a file from the system of the machine operator to his system, the following window is displayed:
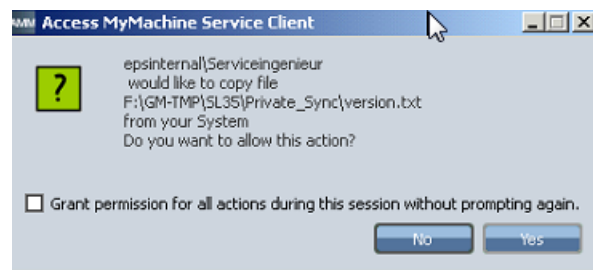

Figure 4-30   Copying files

Resuming the file transfer

If a data transfer is interrupted by a temporary network fault, the copying procedure is resumed automatically when the connection is established again. During the network failure, the "File Transfer" window is deactivated and the service technician informed accordingly. As soon as the network fault has been corrected, the file transfer is automatically resumed as of the last byte transferred successfully.
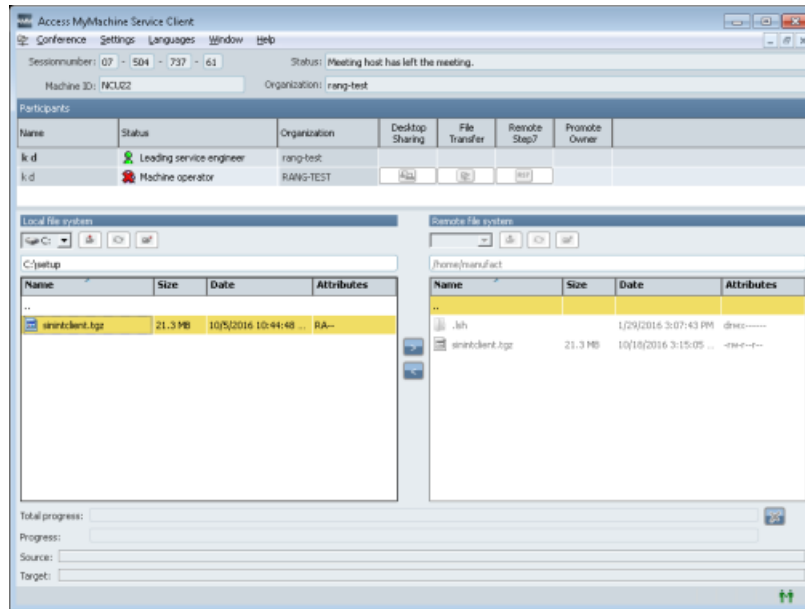

Figure 4-31   File transfer interrupted

The transfer can also be continued manually in a later, separate session if the connection cannot be re-established during the current session.

The service engineer must start the copying procedure to the same target directory again. If the system finds the incomplete file from the previous unsuccessful transfer in this directory, the operation is continued from precisely this position.
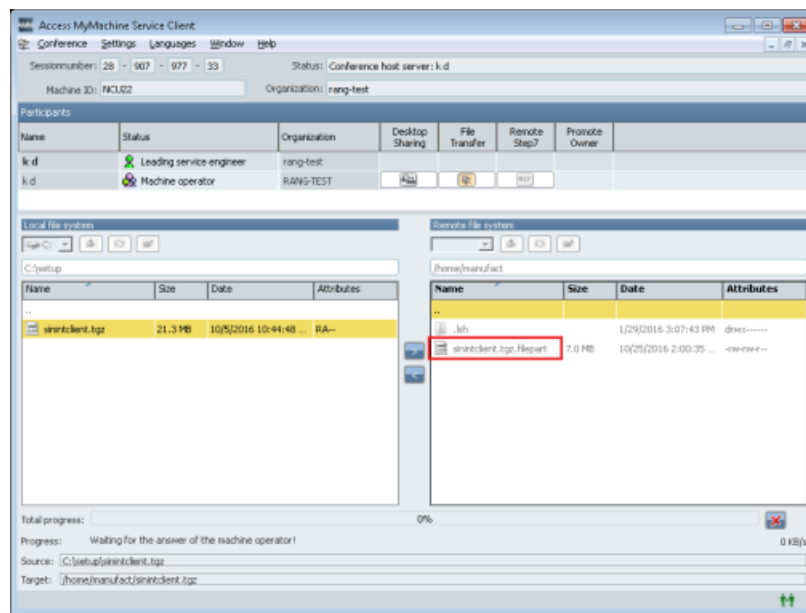
Figure 4-32   Restarting the file transfer

Note

Check the source and target files

To ensure that the source and target files are identical, the checksums are compared first. This calculation can take several minutes for large files (above approx. 100 MB). During this interval, the message "Waiting for confirmation!" is displayed in the status bar.

Creating a new directory

You can create new directories on your PC or on a remote system in the same way.

1. Navigate to the required directory level.

2. Click the [icon] icon to create a new directory.

3. Assign a name to the new directory.

Performance optimization of the data transfer

The data transfer rate has been increased significantly. The "speed" still depends mainly on the specific network configuration and the network load. The data transfer rate can also fluctuate substantially during the transfer.

In addition to the progress bar, the current percentage and transfer rate (KB/s) can be observed.
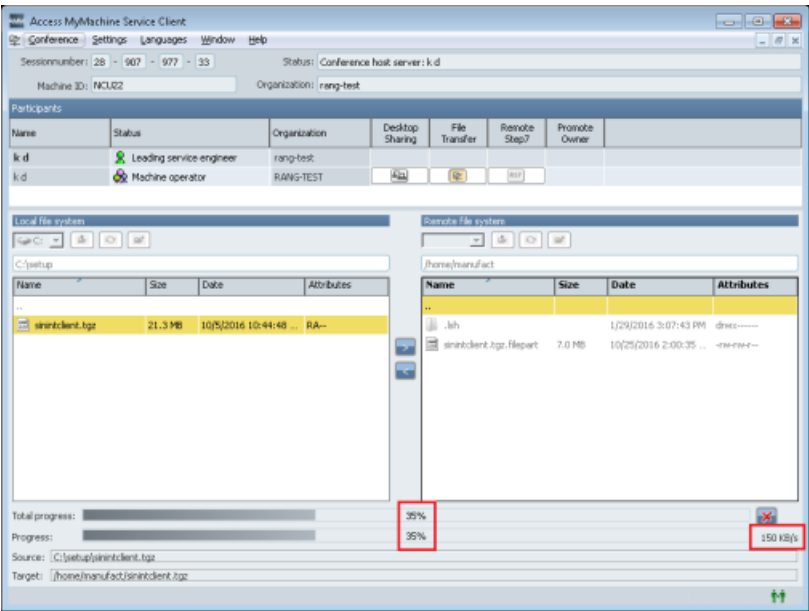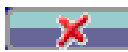
Figure 4-33   Data transfer performance

Display of the file transfer in the log

The actions performed by the service engineer are shown in the dialog below the list of participants in the log.

Log window of the file transfer	
File	The log window of the file transfer opens automatically when the service engineer performs an action.
	The window can also be shown or hidden via the "Conference > File Transfer Log" window.
	The directory and the name of the file to which the actions performed by the service engineer refer, are displayed in the window.
	The log settings can be specified.
	Further information can be found in the Commissioning Manual SINUMERIK Integrate AMC, AMM/E, Chapter: Configuring Access MyMachine/Ethernet (AMM/E), activating functions
Action	Shows the type of action.
Status	Shows the current status of the action.
Sequence	Shows the progress as a percentage and as a progress bar. A progress bar and percentage is also shown in the lower part of the window.
Cancel	The machine operator can cancel the action via the icon.

The log is shown automatically when the service engineer starts the file transfer. Irrespective of this, the machine operator can open and close the log manually:

1. Call the "Conference" > "File transfer log" menu.
   The log is displayed in the lower window and shows the current status.

2. During the file transfer, in addition to the name of the current file, the performed actions, the status, a progress bar and an icon to cancel the file transfer are also displayed in the log window.

Note

In the "Settings" menu, you can specify whether the file functions performed during a session are also to be written to a log file.

Further information can be found in the Commissioning Manual SINUMERIK Integrate AMC, AMM/E, Chapter: Configuring Access MyMachine/Ethernet (AMM/E), activating functions

Cancel file transfer

1. Click the icon to cancel a running file transfer.
   A confirmation prompt is displayed.

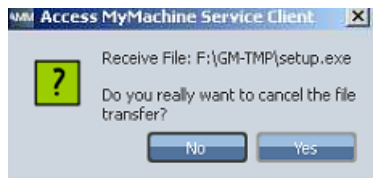2. Click "Yes" to irrevocably abort the file transfer.

Figure 4-34   Cancel file transfer

Deleting files

1. Select the directories or files to be deleted.

2. Right-click to call the "Delete file" menu command.

   #### Note

   If a directory or a file with write protection is to be deleted, the following prompt is displayed: "File is write-protected, do you still want to delete it?"
   ● Click "OK" to delete the message.
   ● If you no longer want to receive such messages, activate the "Use on all in the operation!" checkbox before confirming.

No other actions can be performed during the deleting procedure.

Assigning attributes

As a remote user, you can change the attributes of transferred files or directories:

1. Select the appropriate file or directory.

2. Right-click to call the "Set attributes" menu command.
   The setting dialog then opens for the attributes of the selected element (file or directory).

3. Set the required attributes via the checkboxes.
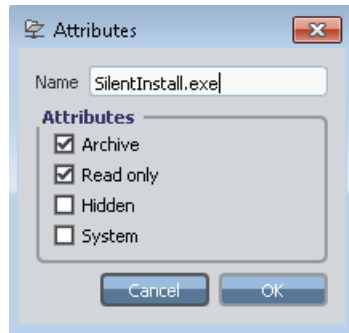
4. Click "OK" to confirm the settings.

Figure 4-35   Setting attributes for Windows

Ending the file transfer

The file transfer can be ended in several ways:

● The conference owner closes the file transfer via the ⬚ icon.

● The owner closes the file transfer and ends the conference.
  The file transfer and the running operations are terminated.

● The machine operator leaves the conference.
  The "File Transfer" window is closed.

4.7.4   Remote STEP 7 via the Internet

With the aid of the Remote STEP 7 function, as a remote user, you can execute all of the functions in the SIMATIC Manager.

Remote STEP 7 is available on SINUMERIK Operate under Linux.

Requirements

● The SIMATIC Manager (supported versions 5.4 and 5.5) must be installed on the local PC.

● The Service Engineer Client must then be installed.

● The "Commissioning engineer" or "Service engineer" must be assigned.

● The client on the machine operator side must support Remote STEP 7.

● The network interface of the SIMATIC Manager on the PC must be adapted.

● The "STEP 7 via the Internet" function is updated,
further information can be found in the Commissioning Manual SINUMERIK Integrate AMC,
AMM/E, Chapter: Configuring Access MyMachine/Ethernet (AMM/E), activating functions

Changing the network interface of the SIMATIC Manager

The network interface of the SIMATIC Manager must be changed before the "Remote STEP 7" function can be used.

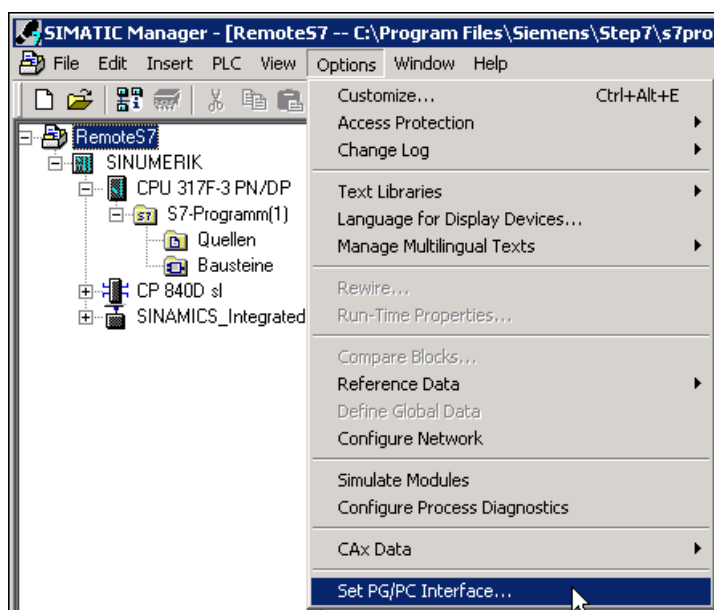1. Call the menu "Tools > Set PG/PC interface ..." in the SIMATIC Manager.

Figure 4-36   Set PG/PC interface

2. The "Set PG/PC Interface" dialog opens.

3. Click the "Access Path" tab.
In the "Interface Parameter Assignment Used" list, navigate to the "RemoteS7" interface parameter assignment and select the appropriate entry.

4. Click "Diagnostics..." if you want to test the interface parameterization.
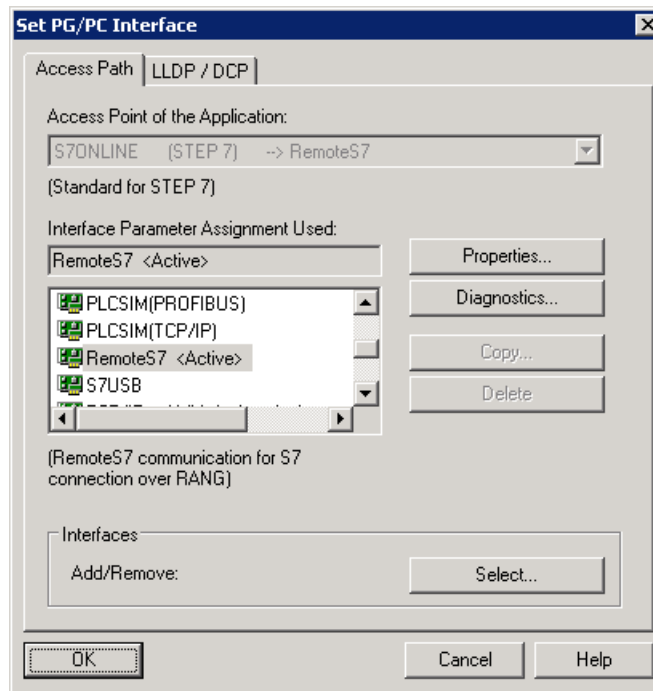

Figure 4-37   RS7 access path

5. The Diagnostics dialog then opens.
   Click "Test". The result is displayed in the Diagnostics dialog.
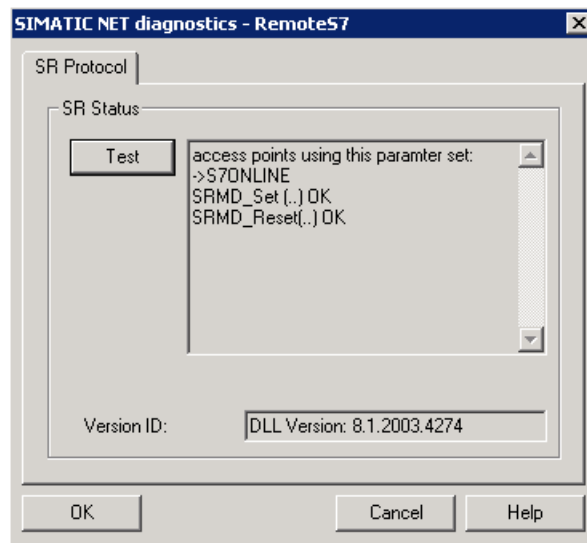   Click "OK" in both dialogs.

Figure 4-38   Diagnostics result

Starting remote STEP 7

1. Click the "RS7" icon to remotely access the control.
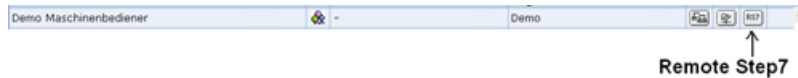

Figure 4-39   Remote STEP 7

2. The function start depends on the default setting:

   – Remote STEP 7 is active after a short time when the "Always request permission" function is selected.

   – If the "Always request permission" function is not selected, the machine operator must permit access.
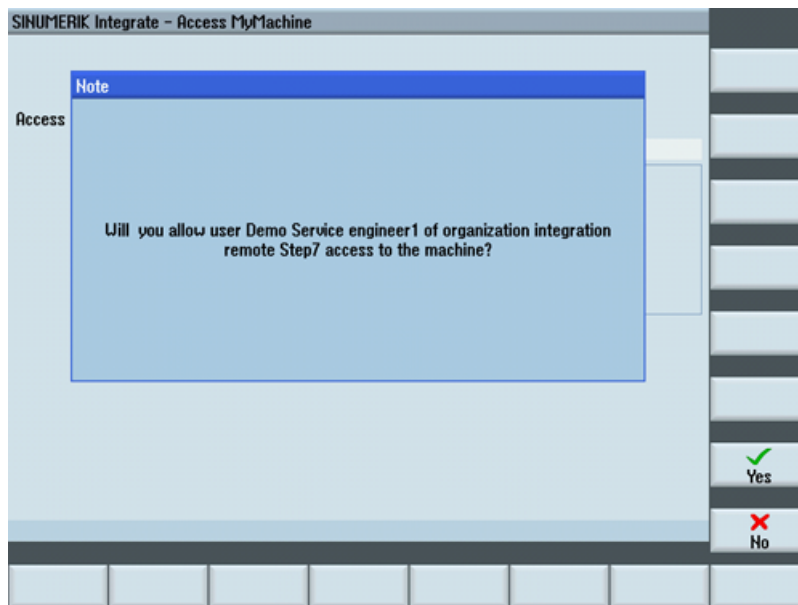   If the machine operator presses the "Yes" softkey, access is permitted.

Figure 4-40   Granting permission

3. If the machine operator presses the "No" softkey, access is denied for the remote user. The remote user receives the following message:
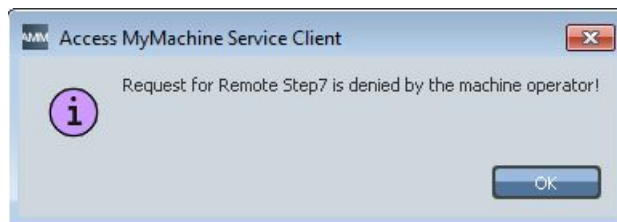

Figure 4-41   Remote STEP 7 rejected

Closing remote STEP 7

1. Check that no operations are in progress in the SIMATIC Manager.

2. Click the "RS7" icon again to end the remote access.

3. Confirm the prompt with "Yes" if you really want to terminate the function.

4.7.5 Transferring the conference leadership

As conference owner, you can transfer the conference leadership to another, observing service engineer. The owner role therefore switches to another operator.

Procedure

1. As conference owner, click the icon 🖼 "Leadership transfer" the line of the service engineer to whom you want to transfer the leadership.
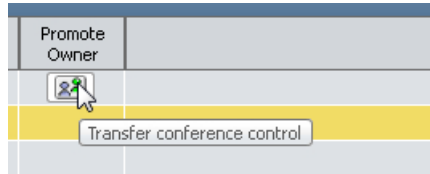

Figure 4-42   Transfer of leadership

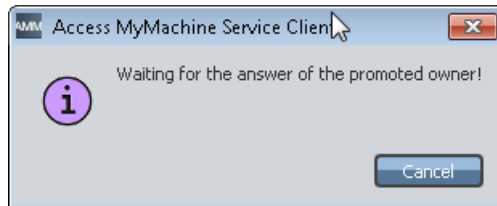After calling the function, the following message appears on your PC:

Figure 4-43   Waiting for confirmation

The following query appears on the PC of the selected service engineer:
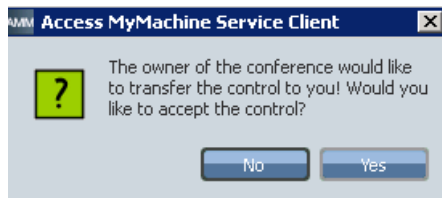

Figure 4-44   Confirmation

2. The observing service engineer must click the "Yes" button to take over the conference leadership.

Note

If the observing service engineer rejects the transfer of leadership with the "No" button, an appropriate message appears on the PC.

3. As former conference leader, you must then confirm the transfer.
   If the "Always request permission" function is not active, the machine operator must also confirm the transfer of leadership. The message "Waiting for confirmation from the machine operator!" appears on your PC and on the PC of the next conference leader.

4. The machine operator agrees to the transfer of leadership.
   The conference leadership is then transferred to the desired observing service engineer. The changed user roles are updated accordingly in the list of participants.

   Note

   Rejecting the transfer

   If the machine operator rejects the transfer, you and the observing service engineer receive the following message: "The transfer of leadership has been rejected by the machine operator!"

4.7.6 Downloading/deleting the session recording

You can record a remote access. The recording is then stored on the server as an event entry. In this way, you can download and view the recorded session at a later point in time.

Prerequisite

The "Automatic recording of the meeting" function is updated,
further information can be found in the Commissioning Manual SINUMERIK Integrate AMC, AMM/E, Chapter: Configuring Access MyMachine/Ethernet (AMM/E), activating functions

Downloading the session recording

1. Select the "Machine events" entry on the "Machine information" tab.
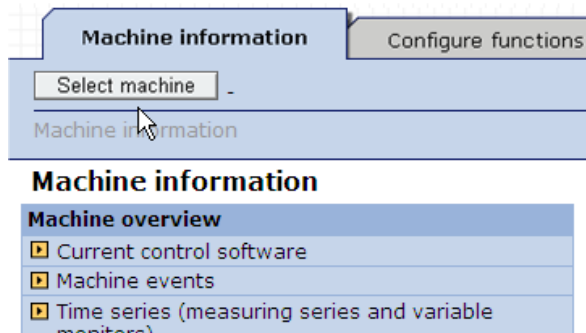

Figure 4-45   Machine events

2. The filter area of the machine events is displayed.
   Make the required filter settings and click "Filter".
   Detailed information on the filter settings can be found in the Function Manual "SINUMERIK Integrate AMC, AMM/E", Chapter: Filter and display machine events.
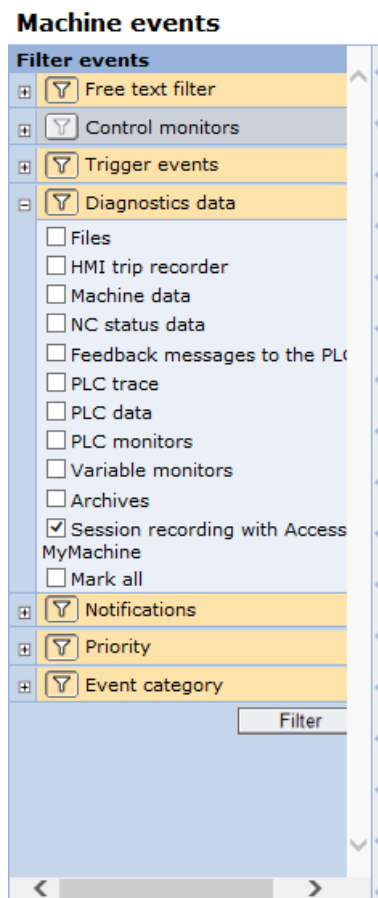

Figure 4-46   Machine events filter

3. After filtering, all machine events are listed that match the filter settings.
   Search for events of the "Session recording" type.

Figure 4-47   Machine events list

4. Click the 📂 icon in the line of the required session recording.
   The session recording data is displayed.
   The following formats are supported:

   – MPEG

   – AVI

   – WMV (Windows Media Video)

   – FLV

   – Original (RFB)

5. Click on "Download" if you want to download this session recording locally.

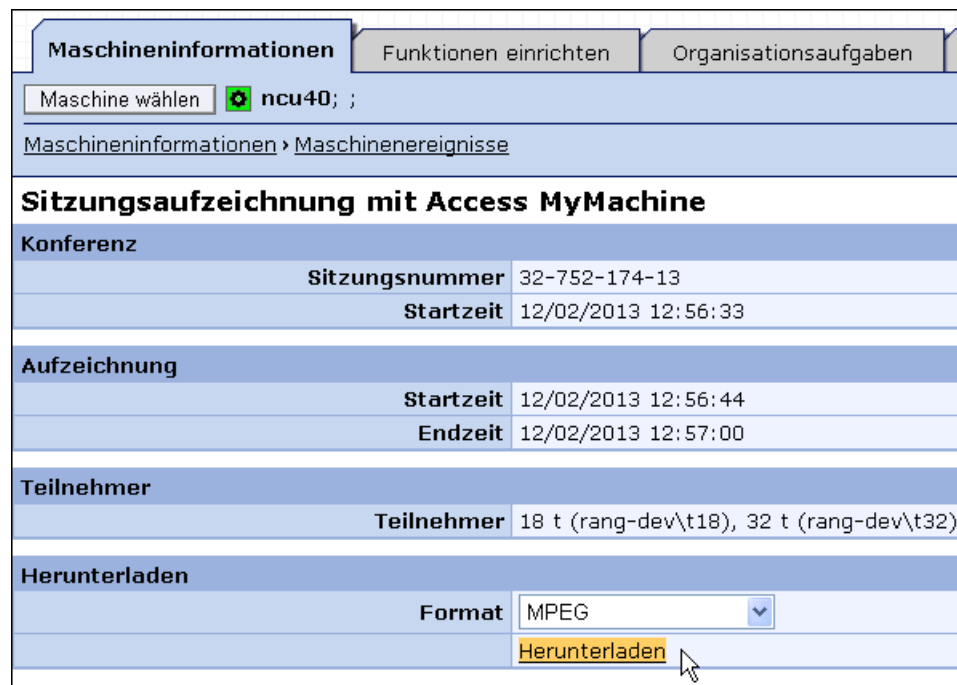6. Set the local directory in which you store the session recording.

Figure 4-48   Session recording, data display

Note

Playing the session recording on the PC

The recorded sessions must be opened on the PC with a program that supports the converted formats. The Windows Media Player is active on the Windows system per default. Select the Windows Media Video (WMV) format to ensure error-free playing.

- OR -

Use the free VLC Media Player.

Deleting the session recording

1. Select the "Machine events" entry on the "Machine information" tab.
   All the machine events are then displayed in a list.
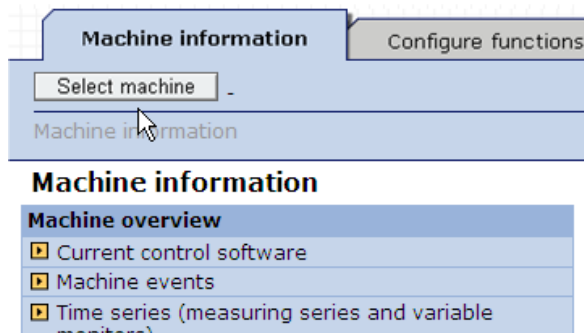

Figure 4-49   Machine events

2. Search for machine events of the "Session recording" type.

3. Click the ⊠ icon in the line of the required session recording.
   The recording is deleted.

Figure 4-50   Deleting the session recording

4.8 Selecting the window display

After logging in, the "Window" menu is activated and provides the following options.

Overview

Table 4-3   Editing the window

Action	Description
Close	Closes the window that has just been selected.
Close all windows	Closes all open windows.
Split	Adjusts the size of the opened windows so that they share the available space.
Cascade	Displays the opened windows one behind the other.
Next	Changes to the next open window.
Previous	Changes to the previous open window.
n <window name>	Changes to the open window with <window name>.

Figure 4-51   Editing the window

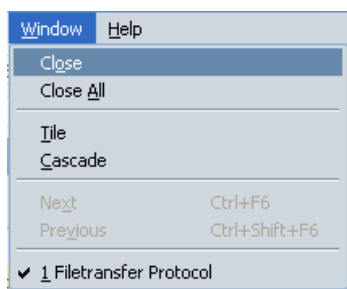## 4.9 Network interruption

If a network interruption occurs during an active conference, this is indicated by a status text in the status line.

All the active functions are terminated internally and AMM/E makes cyclic attempts to participate in the conference again.

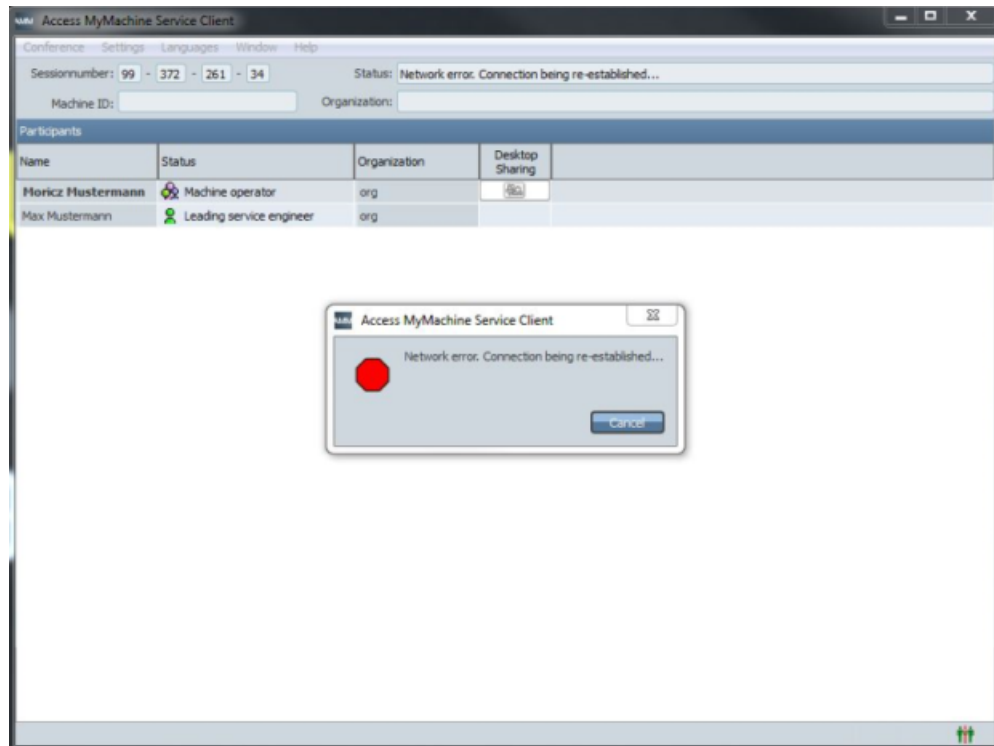Click the "Cancel" button to terminate the connection process.

Figure 4-52   Display of the interrupted network connection

4.10 Calling the help function

AMM SC provides two help functions:

- About AMM Service Client: You obtain information about the AMM SC application.

- Softkeys, function keys: Shows the assignment of the horizontal/vertical softkeys (HSK/ VSK) and function keys (F).

Assignment of the softkeys and function keys

Softkey	Softkey	Description
F1	HSK1	Call the softkeys and function keys help function
F2	HSK2	Participate in a conference
F3	HSK3	Leave conference
F4	HSK4	Exit AMM SC
F5	HSK5	Open login settings
F6	HSK6	Open file transfer settings
F7	HSK7	Open proxy settings
F8	HSK8	Open logging settings
SHIFT+F1	VSK1	End remote access
SHIFT+F2	VSK2	Cancel file transfer
SHIFT+F3	VSK3	Switch language
SHIFT+F4	VSK4	Show/hide file transfer log
SHIFT+F5	VSK5	
SHIFT+F6	VSK6	Switch checkbox states in confirmation prompts
SHIFT+F7	VSK7	Actuate "Cancel"/"No". Only applies to dialogs with one or two buttons.
SHIFT+F8	VSK8	Actuate "OK"/"Yes". Only applies to dialogs with one or two buttons.

Display information via AMM Service Client

1. Call the "Help" > "About AMM Service Client" menu.
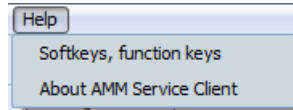
Figure 4-53   Calling the help function

The following window opens and displays information about AMM SC.

Figure 4-54   AMM SC help window

Displaying the assignment of the softkeys and function keys

Note

Use of the softkeys and function keys

In order that AMM SC can be operated via softkeys and function keys, HMI-Advanced must not be started in parallel in the service mode on a PCU 50. Otherwise, when a button is pressed, this is processed by the currently active area application of HMI-Advanced.

---

1. Call the "Help > Softkeys, function keys" menu.

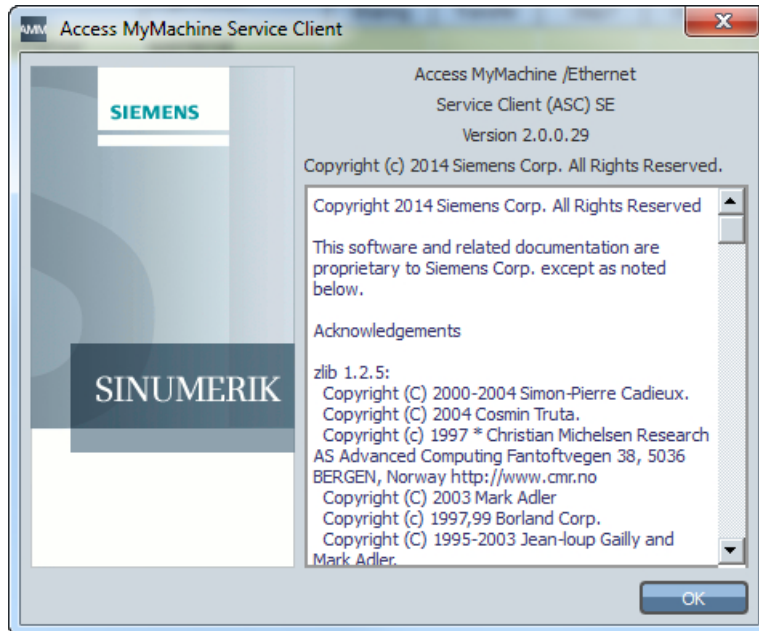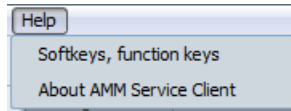Figure 4-55   Calling the help function

2. The "Help softkeys & function keys" window opens and displays the information available via the softkeys and function keys.
   Click "OK" to close the window.
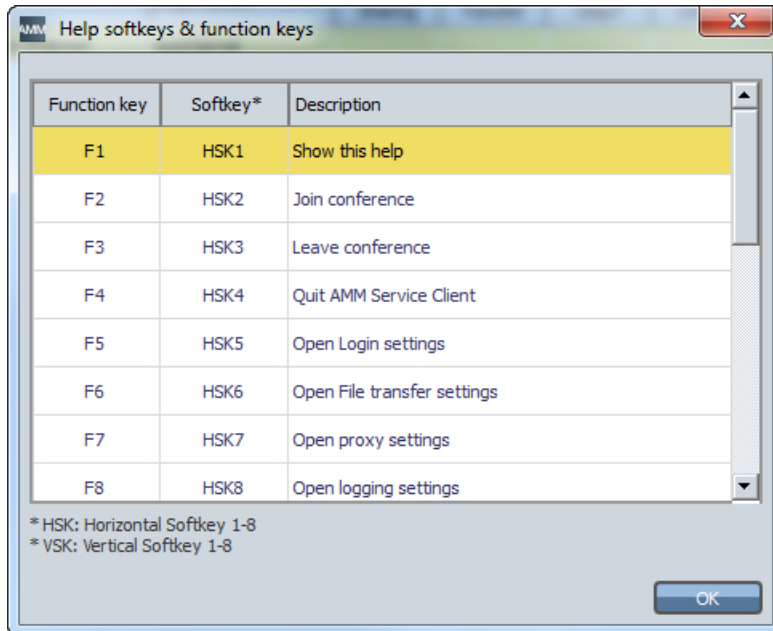
Figure 4-56   Assignment of the function keys

4.11 Ending the session

Procedure

1. Call the "Conference" > "Exit" menu to close a session.
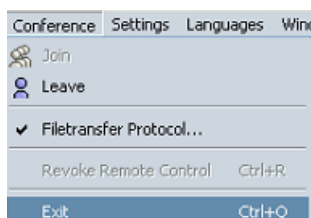
Figure 4-57   Ending the conference

2. If actions of the service engineer are still active when leaving the session, corresponding messages are displayed.

3. Click "Yes" if you want to end the remote access.
   The functions or applications in progress are aborted.
   - OR -
   Click "No" if you do not want to end the remote access.

Figure 4-58   Warning

4.12   Ending remote access

Procedure

1. Remote access can be terminated by the service engineer and by the machine operator via the ![icon] icon in the "Remote access" column.

Figure 4-59   Ending remote access

2. Remote access is terminated if the machine operator clicks the icon ![icon] .

Attachment

<div align="right">

A

</div>

A.1   List of abbreviations

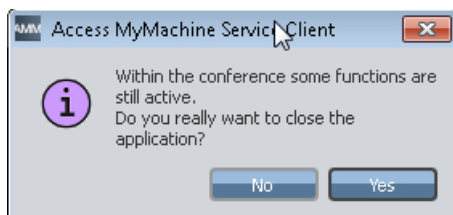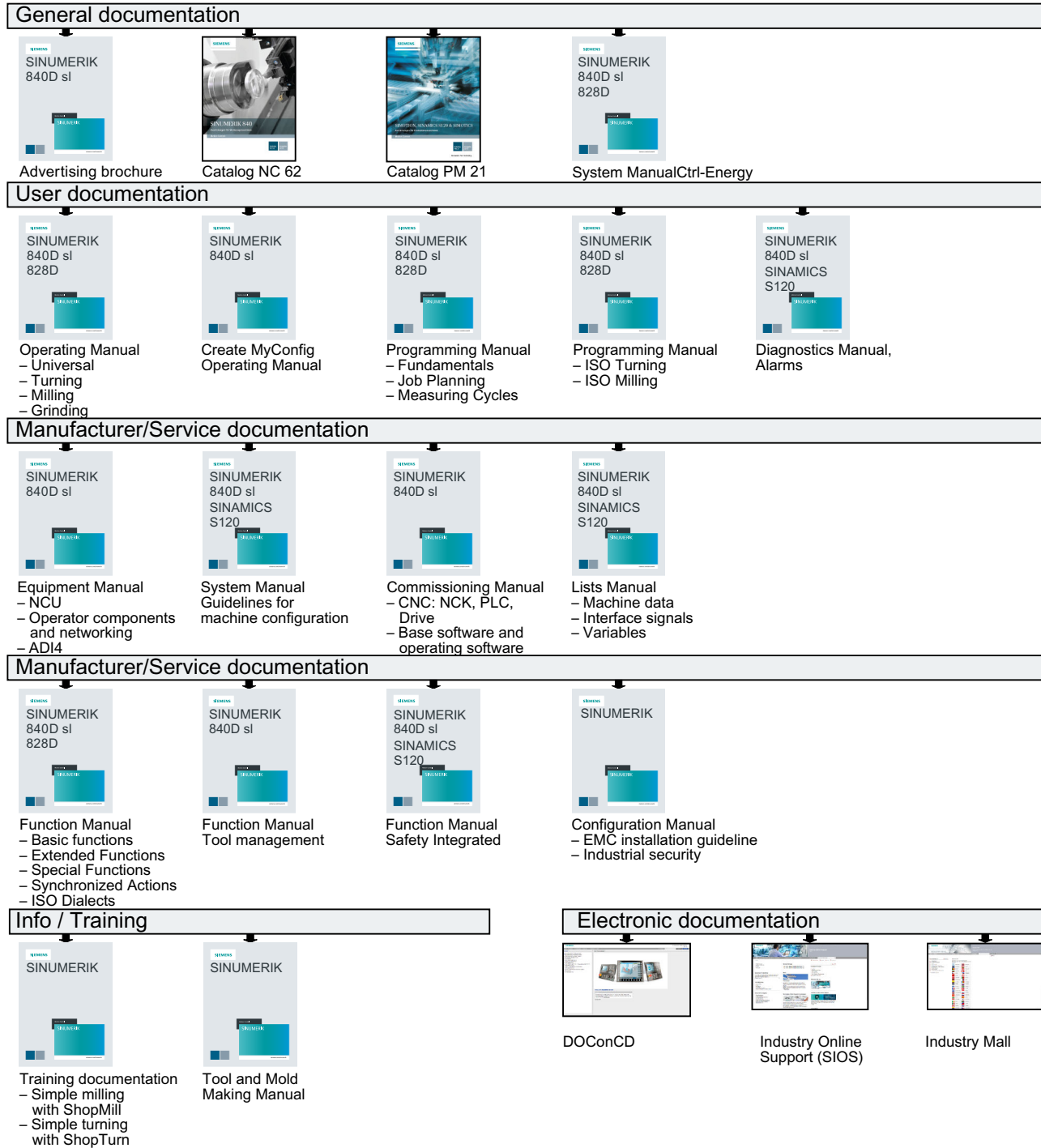|	
Admin	Administrator (user role)
AMC	Analyze MyCondition
AMD	Access MyData
AMM/E	Access MyMachine/Ethernet
AMP	Analyze MyPerformance
AMT	Access MyTool ID
ASC	Access MyMachine/Ethernet Service Client
ASCII	American Standard Code for Information Interchange
ASP	Application Service Provider-Variante
BA	Operating instructions
CAM	Computer-Aided Manufacturing
CF card	CompactFlash Card: Memory card
CNC	Computerized Numerical Control:
CoL	Certificate of License
COM	Communication
COM	Component Object Protocol (programming model of Microsoft®)
CU	Control Unit
CP	Communication Processor
CPU	Central Processing Unit:
DB	Data Block (PLC)
DBB	Data Block Byte (PLC)
DBW	Data Block Word (PLC)
DCOM	Distributed Component Object Model
Dbxy	Data Block (e.g. B 59)
DHCP	Dynamic Host Configuration Protocol: Dynamic assignment of an IP address and other configuration parameters on a computer in a network
DNC	Direct Numeric Control
DIR	Directory:
DW	Data Word
FCC	File Client Cache
ET	Equability axis test
h	Hour
HMI	Human Machine Interface: SINUMERIK user interface
HD	Hard Disk: Hard disk
HTTP	Hypertext Transfer Protocol
HTTPS	HyperText Transfer Protocol Secure,
HW	Hardware

IAC	InterActive Client
IB	Commissioning engineer (user role)
IE	Internet Explorer
IFC	Interface Client
IH	Maintenance
IIS	Microsoft Internet Information Service
CT	Circularity Test
MB	Megabyte
MCIS	Motion Control Information System
MCIS MDA	MCIS Machine Data Aquisition: Machine data management
MCP	Machine Control Panel:
MD	Machine Data
MHComm	Machine Handler Communication
MCS	Machine Coordinate System
MLFB	Machine-Readable Product Code
MMP	Manage MyPrograms
MMP IFC	Manage MyPrograms InterFace Client
MMT	Manage MyTools
MO	Machine Operator: Machine operator (user role)
MPI	Multi Port Interface: Multiport Interface
MRL	Manufacturing Resource Library
MS	Microsoft
MSDE	Microsoft Data Engine or Microsoft Desktop Engine database software
MSI	Microsoft Software Installation
MSTT	Machine control panel
NC	Numerical Control: Numerical control
NCK	Numerical Control Kernel: Numeric kernel with block preparation
NCU	Numerical Control Unit: NCK hardware unit
NFS	Network File System
NTLM	NT LAN Manager: Authentication procedure for computer networks
OB	Organization block in the PLC
ODBC	Open Database Connectivity
OEM	Original Equipment Manufacturer
OLE	Object Linking & Embedding
OP	Operation Panel: Operating equipment
OPI	Operation Panel Interface: Interface for connection to the operator panel
OPC	OLE for Process Control
PC	Personal Computer
PCMCIA	Personal Computer Memory Card International Association (memory card standardization)
PCU	PC Unit: Computer unit
PG	Programming device
PDA	Production Data Acquisition: Production data acquisition
PLC	Programmable Logic Control: PLC

PMT	Parts Monitoring & Tracking: Parts tracking
PO	POWER ON
ProToolPro	Configuration tool
PWS	Personal Web Server
RFC	Requests for Comments
ROM	Read Only Memory
SC	Service Client
SE	Service Engineer
SEC	Service Engineer Client
SEG	Tool presetter
SFI or SFI RM	Shop Floor Integrate or Shop Floor Integrate Resource Management
SI	SINUMERIK Integrate
SK	Softkey
SSL	Secure Socket Layer
SW	Software
TDI	Tool Data Information
TC	Teamcenter
TCP	Transmission Control Protocol
TLCA	Tool Library CA: Tool catalog data
TLCU	Tool Library Customer: Customer tool catalog data
TLCUA	Tool Library Customer Assemblies: Complete tools
UAT	Universal Axis Test
UNC	Uniform naming convention
VB	Visual Basic
VC	Visual C
VNCK	Virtual numerical control core
WCS	Workpiece Coordinate System
T	Tool
TLC	Tool Length Compensation
WOP	Workshop-Oriented Programming
WPD	Work Piece Directory: Workpiece directory
TRC	Tool Radius Compensation
WSDL	Web Services Description Language
T	Tool
TO	Tool Offset
MT	Machine Tool
TM	Tool Management
TC	Tool Change
XML	Extensible Markup Language

A.2 Documentation overview SINUMERIK 840D sl

General documentation

Advertising brochure

Catalog NC 62

Catalog PM 21

System ManualCtrl-Energy

User documentation

Operating Manual
– Universal
– Turning
– Milling
– Grinding

Create MyConfig
Operating Manual

Programming Manual
– Fundamentals
– Job Planning
– Measuring Cycles

Programming Manual
– ISO Turning
– ISO Milling

Diagnostics Manual,
Alarms

Manufacturer/Service documentation

Equipment Manual
– NCU
– Operator components
  and networking
– ADI4

System Manual
Guidelines for
machine configuration

Commissioning Manual
– CNC: NCK, PLC,
  Drive
– Base software and
  operating software

Lists Manual
– Machine data
– Interface signals
– Variables

Manufacturer/Service documentation

Function Manual
– Basic functions
– Extended Functions
– Special Functions
– Synchronized Actions
– ISO Dialects

Function Manual
Tool management

Function Manual
Safety Integrated

Configuration Manual
– EMC installation guideline
– Industrial security

Info / Training

Training documentation
– Simple milling
  with ShopMill
– Simple turning
  with ShopTurn

Tool and Mold
Making Manual

Electronic documentation

DOConCD

Industry Online
Support (SIOS)

Industry Mall

Analyze MyCondition (AMC), Access MyMachine/Ethernet (AMM/E)
Operating Manual, 06/2017, A5E33520373B-AE

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Operating Manual, 06/2017, A5E33520373B-AE