

estos ECSTA for HiPath 2000/3000/5000

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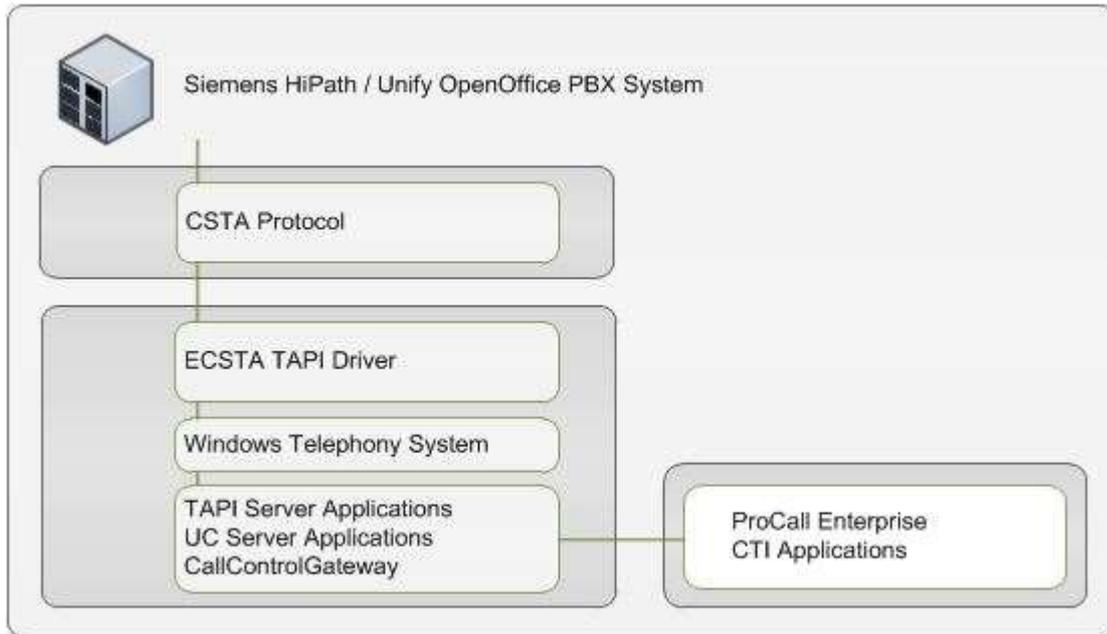
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1 Introduction

estos ECSTA for HiPath 2000/3000/5000 makes available several Telephony Service Providers for Microsoft TAPI 2.1 (also 2.2 and 3.0). These TAPI drivers produce a central communication between a PC (CTI Server) and the telephone system. On this CTI server all devices on the telephone system are available as TAPI lines.

All estos ECSTA for HiPath 2000/3000/5000 drivers use the efficient interface CSTA in order to communicate with the telephone system.

For the installation and management of the driver see Driver Management.



Supported Telephone Systems

Driver	PBX	Telecom identification
ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath 3000 (V4.0 - V9.0)	Telekom Octopus F200 / F400 / F600 / F650 (V4.0 - V9.0)
ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath 2000 / 2020	
ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath 2030	Telekom Comfort Open / Octopus F270 IT
ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath 5000	Telekom Octopus F IP-Netpackage
ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath OpenOffice EE	Telekom Octopus F270 IT

ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath OpenOffice ME	Telekom Octopus F450 UC
Driver	PBX	Telecom identification
ECSTA for Siemens Hicom 150	Siemens Hicom 150E (ab V2.2)	Telekom Octopus E10 / E20 / E30 (ab V2.2)
ECSTA for Siemens Hicom 150	Siemens Hicom 150H	Telekom Octopus E730 / E930
ECSTA for Siemens Hicom 150	Siemens Hipath 3000 (V1.0 - V6.0)	Telekom Octopus F200 / F400 / F600 (V1.0 - V6.0)
Driver	PBX	Telecom identification
ECSTA for Octopus E300/E800	Telekom Octopus E300 / E800	Telekom Octopus E300 / E800

Using the driver in the network

After installing the driver, you may use all configured line devices on the server as TAPI-lines. If you are using a server based CTI Software, you may install it now. To have the TAPI-devices available on all workstations, the TAPI-driver must be distributed in the network. There are the following options:

1. estos UCServer
The estos UCServer is a CTI/UCC server software which distributes the telephony information across the network using a graphical client or a multi-line TAPI driver. Workgroups, domains, Active Directory and Terminal Server are supported.
2. estos CallControlGateway
The estos CallControlGateway for Lync/OCS is a gateway that connects the TAPI-lines with the Lync/OCS server. This enables the Lync/OCS client to use traditional telephone devices via Remote Call Control (RCC).
3. Windows Telephony Server
The Windows Telephony Server is a component of Windows server operating systems since Windows NT. You will need a domain. The service is limited to domain users.

2 Siemens Hicom 150

When setting up the driver, follow these steps:

1. Check whether the version of the telephone system is supported
See also Support telephone system
2. Setup the telephone system for CSTA use
See also Telephone system configuration.
3. Connect cable
If connecting with a serial cable, connect it.
4. Install ISDN controller
If connecting with SO, install a compatible ISDN controller.
5. Check network connection
If the connection is established using TCP/IP, check if you can reach the PBX system (ping hostname)
6. Driver installation
See also Settings

2.1 General Settings

The connection between the Hicom system and the PC may be established using a serial cable, an ISDN controller or via TCP/IP to a XPress@LAN (HG1500).

Connection using a network (TCP/IP)

Input here the host name or the IP address of your telephone system. The standard TCP Port for the CSTA connection is 7001.

Please note:

In order to connect the estos ECSTA for HiPath 2000/3000/5000 to the Hipath using TCP/IP, you need a Hicom 150H/ Hipath 3000, an Xpress@LAN or HG1500 or a LIM Module.

Please note, the IP address of the phone system has to be given, not the Xpress@LAN (HG1500). See also configure telephone system .

Connection using an ISDN controller:

Should an ISDN card be used, it has to provide a Capi2032.dll (this file should be found in the Windows System index). The ISDN card must support User-User Signaling (USBS). Note: for example, use Dialogic Diva Server.

Attention: AVM and Teles ISDN cards at present do not support this function (as of July 2009).

The default ISDN-number is 891.

See also Telephone system configuration.

Connection using a serial cable:

Baudrate:

Ensure that the baud rate of your telephone system corresponds to the driver settings. See also Configure telephone system .

Com Port

Please select the Com Port at which the serial cable to your telephone plant is inserted.

2.2 Advanced Settings

Fees

The fees multiplier enables you to adapt the registered fee information from the telephone system at the driver.

Node numbers

If your PBX system is using node numbers you can enter these numbers semicolon separated. These node numbers are removed from numbers presented by the pbx.

Emulate blind transfer

If the PBX system does not offer blind transfer the driver can emulate this feature. The driver will setup a consultation transfer which is merged as soon as the called destination is rings.

Blind transfer timeout

Timeout for the blind transfer emulation. The consultation call must be answered within this timeout. Otherwise the consultation call is canceled and the initial call is retrieved.

CSTA Login

With CSTA Login you may configure the user name, password and PIN for access to the PBX.

- PIN-Code
If the access to the PBX is secured with a PIN-Code, enter it here (e.g. 000000)
- Login using System Password
The default CSTA-Password is 110797.
- Login using Username and Password
Enter a user and a password. That may be 31994 (31994) or AMHOST (77777).

Snapshot for active calls

The driver can validate existing calls. This prevents that calls are displayed on the PC that do no more exist in the PBX system.

Enter a time interval in seconds.

The higher this value the longer it takes for the driver to detect a hanging call. The lower this value the higher is the load on the PBX.

Retry MonitorStart

In the event that the driver cannot start monitoring an extension because, for example, the extension has not been connected to the PBX, the driver will attempt to start monitoring at periodic intervals.

Enter a time interval in seconds.

Trunk Access Codes

Here you may specify the ports for the trunk interfaces. These ports should equal the settings in your Hicom system.

2.3 TAPI Lines

Enter the lines that the driver should make available through TAPI. The numbers are the internal phone numbers for your devices. The names will be used to display the TAPI lines.

Phone Number Format

The lines can optionally be indicated as an internal phone number, for example 123 or canonical, for example

You should use canonical phone numbers if you use several instances of Tapi driver and thus switch on several telephone systems at the same time. A canonical phone number consists as follows:

+Country code (prefix) Local prefix-extension

In the dialogue Location You can configure the country code, area code and local dialing prefix.

Load Lines

The available lines are determined automatically from the telephone system. Thereby all phone numbers are requested that are configured under Location in the extension area.

Manual addition of a line

Give the internal phone number of the phone. Optionally, a name can also be given.

MULAP subscriber

Group participants can be used as lines. Note that here the phone number of that

Import text

You can import a list of lines from a text file. The file must begin every line with the phone number. Optionally, the name can also be split with a comma.

Export text

You may export the actual line configuration to a text file.

Attention

After the installation of the driver it may be necessary to restart the computer.

2.4 Supported Telephone Systems

PBX	Firmware	Supported
Hicom 150 E OfficeStart	1.0	No
Hicom 150 E OfficeOne	1.0	No
Hicom 150 E OfficePoint	1.0	No
Hicom 150 E OfficeCom	1.0	Yes*
Hicom 150 E OfficePro	1.0	Yes*
Hicom 150 E OfficeStart	2.2/3.0	No
Hicom 150 E OfficeOne	2.2/3.0	No
Hicom 150 E OfficePoint	2.2/3.0	No
Hicom 150 E OfficeCom	2.2/3.0	Yes
Hicom 150 E OfficePro	2.2/3.0	Yes
Hicom 150 H OfficeStart	1.0	No
Hicom 150 H OfficeOne	1.0	No

Hicom 150 H OfficePoint	1.0	No
Hicom 150 H OfficeCom	1.0	Yes
Hicom 150 H OfficePro	1.0	Yes
Hicom 150 H OfficeStart	1.2	No
Hicom 150 H OfficeOne	1.2	No
Hicom 150 H OfficePoint	1.2	Yes
Hicom 150 H OfficeCom	1.2	Yes
Hicom 150 H OfficePro	1.2	Yes
Hipath 3100/3150 (OfficeStart)	1.2	No
Hipath 3200/3250 (OfficeOne)	1.2	No
Hipath 3300/3350 (OfficePoint)	1.2	Yes
Hipath 3500/3550 (OfficeCom)	1.2	Yes
Hipath 3700/3750 (OfficePro)	1.2	Yes
Hipath 3100/3150 (OfficeStart)	3.0	No
Hipath 3200/3250 (OfficeOne)	3.0	No
Hipath 3300/3350 (OfficePoint)	3.0	Yes
Hipath 3500/3550 (OfficeCom)	3.0	Yes
Hipath 3700/3750 (OfficePro)	3.0	Yes

Hipath 3100/3150 (OfficeStart)	4.0 / 5.0 / 6.0	No
Hipath 3200/3250 (OfficeOne)	4.0 / 5.0 / 6.0	No
Hipath 3300/3350 (OfficePoint)	4.0 / 5.0 / 6.0	Yes
Hipath 3500/3550 (OfficeCom)	4.0 / 5.0 / 6.0	Yes
Hipath 3700/3750 (OfficePro)	4.0 / 5.0 / 6.0	Yes

*required firmware version HE300C.68.862.02 (Binder 862.000) or higher

2.5 Configure telephone system

Normally you do not have to make settings in the PBX system. Here are some hints for special settings.

CSTA Parameters:

If the phone number is reported with an external access code, switch on Hicom 150 Assistant Office (configuration program for your Hipath) under system parameter / Plus product-Flags "give direction prefix over CSTA". If this option is not chosen, the phone numbers without an external access code are reported (0 to get an outside line).

Connection using an ISDN controller:

The phone number for the D-Channel access is normally 891. To guarantee a proper data transfer, you should increase the USBS values in the Hipath to the following values:

In Hipath Assistant Office in Settings - Lines/networking - Clock parameters - USBS:

- Hicom 150 - V2.2
x-Parameter: 128
y-Parameter: 64
- Hipath 3000
x-Parameter: 200
y-Parameter: 200

Connection using a serial cable:

Make sure that the driver settings match the Hipath settings. The baudrate of the Hipath may be changed using a Optiset system telephone:

*95 = Login / Password

22 = System settings

13 = V.24 Settings

1 = baudrate,MB

*3 = 19200 Baud

Connection using a network (TCP/IP)

The default TCP port for the CSTA connection is 7001.

In order to connect the estos ECSTA for HiPath 2000/3000/5000 to the Hipath using TCP/IP, you need a Hicom 150H/ Hipath 3000, an Xpress@LAN or HG1500 or a LIM Module.

Please make sure to enter the IP adress of the Hipath itself, not the one from the Xpress@LAN (HG1500). In the Hipath configuration you will need to configure the following values:

- In network - IP parameter: HIS forwarding, IP Address of the Hipath must be entered.

- In network - communication partners: IP-Applications: check CSTA.

2.6 Supported TAPI operations

The driver offers the following TAPI call control operations.

Action:	Corresponding TAPI function:
Dial	TSPI_lineMakecall
Hang up	TSPI_lineDrop
Answer call	TSPI_lineAnswer
Hold call	TSPI_lineHold
Retrieve call	TSPI_lineUnhold
Redirect call	TSPI_lineRedirect
Blind transfer ²	TSPI_lineBlindTransfer
Setup transfer	TSPI_lineSetupTransfer
Swap hold	TSPI_lineSwapHold
Complete transfer	TSPI_lineCompleteTransfer (LINETRANSFERMODE_TRANSFER)
Create conference	TSPI_lineCompleteTransfer (LINETRANSFERMODE_CONFERENCE)
Add to conference	TSPI_lineAddToConference
Remove from conference	TSPI_lineRemoveFromConference
Callback busy	TSPI_lineCompleteCall (LINECALLFEATURE2_COMPLCALLBACK)
Pickup	TSPI_linePickup
DTMF dialing	TSPI_lineGenerateDigits
Dial in dial tone mode	TSPI_lineDial
Forwarding	TSPI_lineForward TSPI_lineGetAddressStatus
Do not disturb	TSPI_lineForward TSPI_lineGetAddressStatus

Message waiting

TSPI_lineSetLineDevStatus TSPI_lineGetLineDevStatus

² Emulation im Treiber (Anlage unterstützt dieses Leistungsmerkmal nicht nativ)

Folgende weitere TAPI Funktionen sind bedingt durch Anforderungen des TAPI Subsystem implementiert.

Weitere vom Treiber exportierte Funktionen:

TSPI_lineSendUserUserInfo

TSPI_lineClose

TSPI_lineCloseCall

TSPI_lineConditionalMediaDetection

TSPI_lineDevSpecific

TSPI_lineDevSpecificFeature

TSPI_lineGetDevConfig

TSPI_lineSetDevConfig

TSPI_lineGetAddressCaps

TSPI_lineGetAddressStatus

TSPI_lineGetAddressID

TSPI_lineGetCallAddressID

TSPI_lineGetCallInfo

TSPI_lineGetCallStatus

TSPI_lineGetDevCaps

TSPI_lineGetExtensionID

TSPI_lineGetIcon

TSPI_lineGetID

TSPI_lineGetNumAddressIDs

TSPI_lineNegotiateExtVersion

TSPI_lineNegotiateTSPIVersion

TSPI_lineOpen

TSPI_lineSelectExtVersion

TSPI_lineSetDefaultMediaDetection

TSPI_lineSetStatusMessages

TSPI_lineSetAppSpecific

TSPI_lineSetCallData

TSPI_providerCreateLineDevice

TSPI_providerEnumDevices

TSPI_providerFreeDialogInstance

TSPI_providerGenericDialogData

TSPI_providerInit

TSPI_providerShutdown

TSPI_providerUIIdentify

TSPI_lineGetCallIDs

TUISPI_lineConfigDialog

TUISPI_lineConfigDialogEdit

TUISPI_providerConfig

TUISPI_providerInstall

TUISPI_providerRemove

TUISPI_providerGenericDialog

TUISPI_providerGenericDialogData

3 Settings

- General Settings
- Location Settings
- TAPI Lines
- Advanced Settings
- Settings Licenses
- Phone Number Format
- Configure telephone system
- Supported Telephone Systems
- FAQ

4 Siemens Hipath 2000/3000/5000

When setting up the driver, follow these steps:

1. Check whether the version of the telephone system is supported
See also Support telephone system
2. Setup the telephone system for CSTA use
See also Telephone system configuration.
3. Check network connection
If the connection is established using TCP/IP, check if you can reach the PBX system (ping hostname)
4. Driver installation
See also Settings

4.1 General Settings

The connection between PBX and Server can be established using a TCP/IP connection to the LAN interface of the PBX.

The connection between the Hicom system and the PC may be established using a serial cable, an ISDN controller or via TCP/IP to a XPress@LAN (HG1500).

Connection using a network (TCP/IP)

Enter the host name or IP address of your PBX system.

The default TCP port for the CSTA connection is 7001.

The TCP port for the CSTA connection to the OpenOffice ME is 8800.

Please note:

Enter the IP address of the PBX itself, not the one of the LAN module.

Connection using an ISDN controller:

Should an ISDN card be used, it has to provide a Capi2032.dll (this file should be found in the Windows System index). The ISDN card must support User-User Signaling (USBS). Note: for example, use Dialogic Diva Server.

Attention: AVM and Teles ISDN cards at present do not support this function (as of July 2009).

The default ISDN-number is 891.

See also Telephone system configuration.

Connection using a serial cable:

Baudrate:

Make sure that the Baud rate of your Hipath corresponds to the settings of the driver. See also configure telephone system .

Com Port

Please choose the serial port where the Hipath is connected to.

4.2 Advanced Settings

Feature Code FlexCall

Here the Feature Code configured in the telephone system is registered for the FlexCall function. This is used for the CLIP No Screening function. CLIP No Screening only enables you to set a different extension within your company. You cannot provide any number to the trunk.

Readout trunk lines

If this option is active, the external lines available in the telephone system are requested. Activate this option only if you need the external lines as TAPI lines.

MULAP Group Mode

This option is used to tell how MULAP groups are handled. Details can be found in MULAP Monitoring.

MULAP Numbers always automatic

This option is only relevant for the ECSTA MULAP Mode. If this option is off, already configured lines are not updated with the MULAP number that has been automatically determined. Manually corrected MULAP numbers are not overwritten. Details can be found in MULAP Monitoring.

Readout line names

If this option is active, the names of the telephones from the telephone system are requested.

Report incoming calls on busy extension

If an extension is busy any incoming call is notified.

Offer CLIP no screening

If this option is active, the driver can transfer an individual phone number with outgoing calls. See also Feature Code FlexCall.

Recognition of existing calls

If enabled, the phone system can recognize existing call while opening the line. Please note that not all call parameters are discovered!

Fees

The fees multiplier enables you to adapt the registered fee information from the telephone system at the driver.

Node number

If open numbering is used a node phone number can be configured here. See open numbering .

CSTA Login

With CSTA Login you may configure the user name, password and PIN for access to the PBX.

Enter a user and a password. That may be 31994 (31994) or AMHOST (77777).

See Open numbering.

Snapshot for active calls

The driver can validate existing calls. This prevents that calls are displayed on the PC that do no more exist in the PBX system.

Enter a time interval in seconds.

The higher this value the longer it takes for the driver to detect a hanging call. The lower this value the higher is the load on the PBX.

Retry MonitorStart

In the event that the driver cannot start monitoring an extension because, for example, the extension has not been connected to the PBX, the driver will attempt to start monitoring at periodic intervals.

Enter a time interval in seconds.

Trunk Access Codes

Here you may specify the ports for the trunk interfaces. These ports should equal the settings in your Hicom system.

4.3 TAPI Lines

Enter the lines that the driver should make available through TAPI. The numbers are the internal phone numbers for your devices. The names will be used to display the TAPI lines.

Phone Number Format

The lines can optionally be indicated as an internal phone number, for example 123 or canonical, for example

You should use canonical phone numbers if you use several instances of Tapi driver and thus switch on several telephone systems at the same time. A canonical phone number consists as follows:

+Country code (prefix) Local prefix-extension

In the dialogue Location You can configure the country code, area code and local dialing prefix.

Load Lines

The available lines are determined automatically from the telephone system. Thereby all phone numbers are requested that are configured under Location in the extension area.

Manual addition of a line

Give the internal phone number of the phone. Optionally, a name can also be given.

MULAP subscriber

Group participants can be used as lines. Note: here you give the phone numbers of the devices and not the group phone number. The devices phone number can be, for example, also ** 100. If MULAP Monitoring is used, the participants are not allowed to be setup as lines.

MULAP Group phone number

With restrictions, a MULAP group can be created as a line. See MULAP Monitoring.

Import text

You can import a list of lines from a text file. The file must begin every line with the phone number.

Optionally, the name can also be split with a comma.

Export text

You may export the actual line configuration to a text file.

Attention

After the installation of the driver it may be necessary to restart the computer.

4.4 MULAP monitoring

Recommended configuration for estos ProCall 3

Each line device that is member of a MULAP group should be configured using the line device number and the MULAP number. These lines are now visible in the CtiServer configuration using their MULAP number, not the line device number. In case the ECSTA knows all existing line devices from the Hipath (read out all lines), the caller ids will always show the correct MULAP phone numbers instead of the line device numbers. The ECSTA will only be able to map the line device numbers to MULAP numbers for line devices that are configured in the ECSTA.

Use the following configuration:

- MULAP Monitoring in the Hipath is disabled
- ECSTA MULAP Monitoring is enabled
- Read out all lines from the Hipath
- In the CtiServer line group properties: Automatically take lines in service (do not automatically create)
- Configure the users with the MULAP phone numbers (not with the individual line device numbers)

The monitoring and control of MULAP groups is called MULAP monitoring. On the Advanced Settings page you will find the configuration of the MULAP Mode for this driver. The following modes are available:

- No MULAP Mode
The member devices of the MULAP groups are used. The management of the devices in the group is handled by the CTI application. This setting is recommended for estos ProCall 2.2 and can be used with ProCall 3.
- ECSTA MULAP Mode
The member devices of the MULAP groups are used. The driver offers the logical assignment which devices belong to MULAP groups. This setting is recommended for ProCall 3 and higher. Please note, that MULAP numbers can only be determined automatically for Team groups. In case of Top groups (Chef/Sec), only the MULAP number of Chef 1 can be determined correctly. In this case you must manually configure / correct the MULAP numbers of the other Top members. In order to prevent the manual configuration to be overwritten by the next 'Load Lines from PBX' operation, the advanced option 'MULAP numbers always automatic' can be switched off.
- Hipath MULAP Monitoring
The MULAP groups are used. The member devices cannot be used.

From the Hipath version 8.0, the service feature MULAP Monitoring is supported. In order to use this it must be configured (Hipath manager - system parameter - PlusProduct-Flags). At the same time the following is to be noted:

Restricted functionality for MULAP group participants

- It is not recommended to use Hipath MULAP monitoring.
- Only the MULAP master can be controlled from the PC.
- The control of the other MULAP participants is limited.
- If the MULAP group is used then the participants of the group are not permitted to be used as lines

4.5 Open numbering scheme

In a network of several telephone systems, the service feature open numbering can be activated and a node phone number configured (Hipath manager - system parameter - flags). In this case, note the following:

All extension phone numbers get placed before the node phone number of the telephone system. With a node phone number '6' becomes the 6130 out of extension 130.

It is recommended to create the lines with a node phone number. Setup under Advanced Settings with the participant's identification code the extensions within a field with the node phone number. For example, therefore 100 - 350 becomes 6100 to 6350.

Extensions can also be created without a node phone number. In this case, it can be designated that the ECSTA registered phone numbers appear without a node phone number. This setting is found under Advanced Settings. The node phone number is registered there, so this is cut off from all internally registered phone numbers on the telephone system.

4.6 Supported Telephone Systems

PBX	Telecom identification	Firmware	Supported
Hipath 3100/3150 (OfficeStart)	n/a	V1.0 - V9.0	No
Hipath 3200/3250 (OfficeOne)	n/a	V1.0 - V9.0	No

Hipath 3300/3350 (OfficePoint)	Octopus F200	V6.0 - V9.0	Yes
Hipath 3300/3350 (OfficePoint)	Octopus F200	V1.0 - V5.0	Yes
Hipath 3500/3550 (OfficeCom)	Octopus F400	V6.0 - V9.0	Yes
Hipath 3500/3550 (OfficeCom)	Octopus F400	V1.0 - V5.0	Yes
Hipath 3700/3750 (OfficePro)	Octopus F600	V6.0 - V9.0	Yes
Hipath 3700/3750 (OfficePro)	Octopus F600	V1.0 - V5.0	Yes
Hipath 3800	Octopus F650	V7.0 - V9.0	Yes
Hipath OpenOffice EE	Octopus F270 IT	V1.0	Yes
Hipath OpenOffice ME	Octopus F450 UC	V1.0	Yes

4.7 Configure telephone system

Normally you do not have to make settings in the PBX system. Here are some hints for special settings.

CSTA performance feature

In the Hipath manager under settings - system parameter - PlusProducts-Flags:

CSTA application active	For information only, no functional effect
Direction prefix send via CSTA	If enabled (recommended) the outside line access codes are sent with the phone numbers reported by the PBX to the PC.
enhanced CSTA-CAUSE handling activated	If enabled (recommended), additional information is transmitted using CSTA.
CSTA with CSP	If enabled (recommended), additional information is transmitted using CSTA.
Blind Transfer	No effect on ECSTA.
MULAP monitoring	If activated, MULAP group phone numbers can be used with ECSTA. Additionally, see also MULAP Monitoring

Open numbering scheme

Operation with the performance feature is supported. Details are found on page open numbering .

Operation using an ISDN card

The phone number for the D-Channel access is normally 891. To guarantee a proper data transfer, you should increase the USBS values in the Hipath to the following values:

In the Hipath manager under settings - lines / integration - ISDN parameter - USBS:

- Hicom 150 - V2.2
x-Parameter: 128
y-Parameter: 64
- Hipath 3000
x-Parameter: 200
y-Parameter: 200

Connection using a serial cable:

Make sure that the driver settings match the Hipath settings. The baudrate of the Hipath may be changed using a Optiset system telephone:

*95 = Login / Password

22 = System settings

13 = V.24 Settings

1 = baudrate,MB

*3 = 19200 Baud

Connection using a network (TCP/IP)

The default TCP port for the CSTA connection is 7001.

In order to connect the estos ECSTA for HiPath 2000/3000/5000 to the Hipath using TCP/IP, you need a Hicom 150H/ Hipath 3000, an Xpress@LAN or HG1500 or a LIM Module.

Please make sure to enter the IP adress of the Hipath itself, not the one from the Xpress@LAN (HG1500). In the Hipath configuration you will need to configure the following values:

- In network - IP parameter: HIS forwarding, IP Address of the Hipath must be entered.
- In network - communication partners: IP-Applications: check CSTA.

4.8 Supported TAPI operations

The driver offers the following TAPI call control operations.

Action:	Corresponding TAPI function:
Dial	TSPI_lineMakecall
Hang up	TSPI_lineDrop
Answer call	TSPI_lineAnswer
Hold call	TSPI_lineHold
Retrieve call	TSPI_lineUnhold
Redirect call	TSPI_lineRedirect
Blind transfer	TSPI_lineBlindTransfer

Setup transfer	TSPI_lineSetupTransfer
Swap hold	TSPI_lineSwapHold
Complete transfer	TSPI_lineCompleteTransfer (LINETRANSFERMODE_TRANSFER)
Create conference	TSPI_lineCompleteTransfer (LINETRANSFERMODE_CONFERENCE)
Add to conference	TSPI_lineAddToConference
Remove from conference	TSPI_lineRemoveFromConference
Pickup	TSPI_linePickup
DTMF dialing	TSPI_lineGenerateDigits
Dial in dial tone mode	TSPI_lineDial
Forwarding	TSPI_lineForward TSPI_lineGetAddressStatus <ul style="list-style-type: none"> • LINEFORWARDMODE_UNCOND • LINEFORWARDMODE_UNCONDEXTTERNAL • LINEFORWARDMODE_UNCONDINTERNAL
Do not disturb	TSPI_lineForward TSPI_lineGetAddressStatus
Message waiting	TSPI_lineSetLineDevStatus TSPI_lineGetLineDevStatus

The following TAPI functions are implemented due to requirements of the TAPI subsystem.

Other functions exported by the driver:

TSPI_lineSendUserUserInfo

TSPI_lineClose

TSPI_lineCloseCall

TSPI_lineConditionalMediaDetection

TSPI_lineDevSpecific

TSPI_lineDevSpecificFeature

TSPI_lineGetDevConfig

TSPI_lineSetDevConfig

TSPI_lineGetAddressCaps

TSPI_lineGetAddressStatus

TSPI_lineGetAddressID

TSPI_lineGetCallAddressID

TSPI_lineGetCallInfo

TSPI_lineGetCallStatus

TSPI_lineGetDevCaps

TSPI_lineGetExtensionID

TSPI_lineGetIcon

TSPI_lineGetID

TSPI_lineGetNumAddressIDs

TSPI_lineNegotiateExtVersion

TSPI_lineNegotiateTSPIVersion

TSPI_lineOpen

TSPI_lineSelectExtVersion

TSPI_lineSetDefaultMediaDetection

TSPI_lineSetStatusMessages

TSPI_lineSetAppSpecific

TSPI_lineSetCallData

TSPI_providerCreateLineDevice

TSPI_providerEnumDevices

TSPI_providerFreeDialogInstance

TSPI_providerGenericDialogData

TSPI_providerInit

TSPI_providerShutdown

TSPI_providerUIIdentify

TSPI_lineGetCallIDs

TUISPI_lineConfigDialog

TUISPI_lineConfigDialogEdit

TUISPI_providerConfig

TUISPI_providerInstall

TUISPI_providerRemove

TUISPI_providerGenericDialog

TUISPI_providerGenericDialogData

5 Settings

- General Settings
- Location Settings
- TAPI Lines
- Advanced Settings
- Settings Licenses
- Phone Number Format
- MULAP monitoring
- Open numbering scheme
- Configure telephone system
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6 Telecom Octopus E300/E800

When setting up the driver, follow these steps:

1. Check whether the version of the telephone system is supported
See also Support telephone system
2. Setup the telephone system for CSTA use
See also Telephone system configuration.
3. Install ISDN controller
When using a S0 connection, install a ISDN controller with capi20 (32 bit) driver.
4. Driver installation
See also Settings

6.1 General Settings

The connection between the PBX system and the Server may be established using an ISDN B-Channel connection.

Connection using an ISDN controller:

If an ISDN controller should be used, it must offer a capi2032.dll (the file should be normally located in the Windows System directory). You may use every conventional ISDN controller (e.g. AVM Fritz, Eicon Diehl Diva Pro). The default ISDN-Number is 333. The number is individually configured in each PBX system. Using the advanced settings, you may choose the capi2032.dll and the controller to use if you have multiple ISDN controllers installed.

6.2 Advanced Settings

Node numbers

If your PBX system is using node numbers you can enter these numbers semicolon separated. These node numbers are removed from numbers presented by the pbx.

Emulate blind transfer

If the PBX system does not offer blind transfer the driver can emulate this feature. The driver will setup a consultation transfer which is merged as soon as the called destination is rings.

Blind transfer timeout

Timeout for the blind transfer emulation. The consultation call must be answered within this timeout. Otherwise the consultation call is canceled and the initial call is retrieved.

Snapshot for active calls

The driver can validate existing calls. This prevents that calls are displayed on the PC that do no more exist in the PBX system.

Enter a time interval in seconds.

The higher this value the longer it takes for the driver to detect a hanging call. The lower this value the higher is the load on the PBX.

Retry MonitorStart

In the event that the driver cannot start monitoring an extension because, for example, the extension has not been connected to the PBX, the driver will attempt to start monitoring at periodic intervals.

Enter a time interval in seconds.

6.3 TAPI Lines

Enter the lines that the driver should make available through TAPI. The numbers are the internal phone numbers for your devices. The names will be used to display the TAPI lines.

Phone Number Format

The lines can optionally be indicated as an internal phone number, for example 123 or canonical, for example

You should use canonical phone numbers if you use several instances of Tapi driver and thus switch on several telephone systems at the same time. A canonical phone number consists as follows:

+Country code (prefix) Local prefix-extension

In the dialogue Location You can configure the country code, area code and local dialing prefix.

Load Lines

The available lines are determined automatically from the telephone system. Thereby all phone numbers are requested that are configured under Location in the extension area.

Manual addition of a line

Give the internal phone number of the phone. Optionally, a name can also be given.

Import text

You can import a list of lines from a text file. The file must begin every line with the phone number.

Optionally, the name can also be split with a comma.

Export text

You may export the actual line configuration to a text file.

Attention

After the installation of the driver it may be necessary to restart the computer.

6.4 Configure telephone system

The PBX must be configured to use the CSTA interface.

Connection using an ISDN controller:

The use of the CSTA interface requires a license in the PBX system. The configuration of the interface requires to use the software LIZENZ to enter a license number for the CSTA interface. The license number is system specific and not part of a release. It must be ordered separate. The amount of available CSTA interfaces is controlled with the license number.

Maximum amount - Choose 2

maximum amount of monitor points - depends on the licenses

maximum amount of CSTA interfaces - depends on the licenses

where applicable amount data access points, SAT,

virtual extensions, increase IVU.

Device data - Choose 16

Setup the B-Channel Access

Setup the B-Channel Access

On a ISDN module you must configure a private ISDN interface with the required ISDN protocol (DSS1) for the physical connection (ISDN Controller) of the CTI Server. For the B-Channel access you must configure an extension number in the appropriate extension group and configure the B-Channel access number.

6.5 Supported Telephone Systems

PBX	Firmware	Supported	S0 (B Channel)	System-devices	Analog	S0-Devices
Octopus E300/E800	6.4	Yes	Yes	Yes	Monitoring only	Monitoring only
Octopus E300/E800	6.5	Yes	Yes	Yes	Monitoring only	Monitoring only

6.6 Supported TAPI operations

The driver offers the following TAPI call control operations.

Action:	Corresponding TAPI function:
Dial	TSPI_lineMakecall
Hang up	TSPI_lineDrop
Answer call	TSPI_lineAnswer
Hold call	TSPI_lineHold
Retrieve call	TSPI_lineUnhold
Redirect call	TSPI_lineRedirect
Blind transfer ²	TSPI_lineBlindTransfer
Setup transfer	TSPI_lineSetupTransfer
Swap hold	TSPI_lineSwapHold
Complete transfer	TSPI_lineCompleteTransfer (LINETRANSFERMODE_TRANSFER)
Create conference	TSPI_lineCompleteTransfer (LINETRANSFERMODE_CONFERENCE)
Add to conference	TSPI_lineAddToConference
Remove from conference	TSPI_lineRemoveFromConference
Pickup	TSPI_linePickup

DTMF dialing	TSPI_lineGenerateDigits
Dial in dial tone mode	TSPI_lineDial
Forwarding	TSPI_lineForward TSPI_lineGetAddressStatus <ul style="list-style-type: none"> • LINEFORWARDMODE_UNCOND • LINEFORWARDMODE_BUSY • LINEFORWARDMODE_NOANSW
Message waiting	TSPI_lineSetLineDevStatus TSPI_lineGetLineDevStatus

² Emulated by the driver (System does not natively support this feature)

The following TAPI functions are implemented due to requirements of the TAPI subsystem.

Other functions exported by the driver:

TSPI_lineSendUserUserInfo

TSPI_lineClose

TSPI_lineCloseCall

TSPI_lineConditionalMediaDetection

TSPI_lineDevSpecific

TSPI_lineDevSpecificFeature

TSPI_lineGetDevConfig

TSPI_lineSetDevConfig

TSPI_lineGetAddressCaps

TSPI_lineGetAddressStatus

TSPI_lineGetAddressID

TSPI_lineGetCallAddressID

TSPI_lineGetCallInfo

TSPI_lineGetCallStatus

TSPI_lineGetDevCaps

TSPI_lineGetExtensionID

TSPI_lineGetIcon

TSPI_lineGetID

TSPI_lineGetNumAddressIDs

TSPI_lineNegotiateExtVersion

TSPI_lineNegotiateTSPIVersion

TSPI_lineOpen

TSPI_lineSelectExtVersion

TSPI_lineSetDefaultMediaDetection

TSPI_lineSetStatusMessages

TSPI_lineSetAppSpecific

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TUISPI_providerGenericDialog

TUISPI_providerGenericDialogData

7 Settings

- General Settings
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7.1 Licenses

You can test the driver for 45 days with 25 lines without a license and without other limitations. Once the trial period has expired, the lines will automatically be removed. You can purchase licenses codes and activate the driver permanently with them. To purchase licenses, please contact your dealer.

As many lines as desired may be configured in the driver. Opening a line requires a license. Once the existing licenses have been assigned to lines, opening more lines will not be allowed.

If you have added multiple driver instances, all instances will share the license specified. You can distribute the lines to any instance as you desire.

8 Location Settings

The phone numbers of the telephone system are defined in the Location Settings

Extension Range

Indicate here which internal phone numbers exist in the phone system. This information is used to determine the available lines from the phone system.

Location

Indicate here which international phone numbers precede the internal extension numbers.

The input of this location information should only be carried out if you use several driver instances and have connected several telephone systems. This location information can only be configured when the option Use Location is switched on. If you enter a location here, all extension phone numbers are entered fully international.

Example: With location information '49(89)1234' the extension '100' is formatted as '49(89)1234-100'.

Phone Number Format

The phone number registered from the driver at the application can be changed with rules. Moreover, you can also change phone numbers sent by the PC to the telephone system. See Phone number formatting.

9 Phone Number Format

You may enter rules for formatting the phone numbers.

The phone numbers that are reported from the PBX system to the PC and the numbers that are send from the PC to the PBX system may be modified with a Search and Replace function.

The phone numbers that are sent from the Tapi Application to the PBX (make call) may be modified as well.

Each line in the list contains an option if direct text compare or a regular expression is used.

The Search and Replace function uses regular expressions. If a search pattern matches, the result from replace with will be used as output. If the search pattern does not match, the original number will be reported unchanged. The entries in the list are processed one after each other. If one match is found the remaining enties will be ignored.

There are three categories:

- Incoming
This section is for phone number from incoming calls that are reported from the PBX system to the PC.
- Outgoing
This section is for phone number from outgoing calls that are reported from the PBX system to the PC.
- PC Dialing
This section is for phone numbers that are dialed on the PC and send to the PBX system

Search for:

Enter the regular expression that will be used to find a phone number.

Hint: The caret (^) can be found on the upper left key of a keyboard with German layout.

An overview of allowed expressions:

Character	Description
^	The beginning of the phone number. The expression "^0" matches '0' only at the beginning of a phone number.
^	The caret (^) immediately following the left-bracket ([]) has a different meaning. It is used to exclude the remaining characters within brackets from matching the target string. The expression "[^0-8]" indicates that the target character should not be 0
\$	The dollar sign (\$) will match the end of the string. The expression "152\$" will match the substring "152" only if it is at the end of the string.
	The alternation character () allows either expression on its side to match the target string. The expression "8 9" will match '8' as well as '9'.
.	The dot (.) allows any character (or any number).

*	The asterisk (*) indicates that the character to the left of the asterisk in the expression should match 0 or more times.
+	The plus (+) is similar to asterisk but there should be at least one match of the character to the left of the + sign in the expression.
?	The question mark (?) matches the character to its left 0 or 1 times.
()	The parenthesis affects the order of pattern evaluation and also serves as a tagged expression that can be used when replacing the matched sub-string with another expression.
[]	The corner brackets ([and]) indicates the amount of signs that are permitted at this point.

Replace with:

Enter the expression that defines how the number is to be formatted.

\1 represents the first matched expression enclosed by parentheses '(')' from the *search pattern* field.

\2 the second ...

Check:

You may check your expressions right here by entering a phone number in the indicate field. The resulting output will be displayed. If the expression from the search pattern is not found, the phone number will be send to the output without modification.

Examples:

Result	Search for	Replace with
Remove a leading 0 from the phone number	^0(.*)	\1
Replace a leading 80 at the beginning of the phone number by a 0	^80(.*)	0\1
Remove a private pin number that may be identified by a 50 followed by a 3 digit pin.	^50[0-9][0-9][0-9](.*)	\1
Suppress all internal numbers having a 3-digit extension.	^[0-9][0-9][0-9]\$	
Add an access code (leading 0) to all numbers with more than 3 digits (e.g. all external numbers).	^([0-9][0-9][0-9].+)	0\1
Add the PBX system root number (03012345) to all internal numbers (with 1 to 3 digits)	^([0-9][0-9]?[0-9]?)\$	03012345\1
Adding an area code to all numbers not beginning with 0 and containing at least 4 digits (thus not internal).	^[^0][0-9][0-9][0-9].*	08151\1

See also location.

10 Driver Management

Installation

The driver is installed on the system with the Windows Installer (msi) package. If the set-up package contains several drivers, you can select which drivers should be installed during the set-up.

Driver instance

The driver can be used to connect one or several phone systems. For this purpose one or several driver instances are registered in Windows Tapi System.

Register at Tapi System

During the installation, an instance from the selected driver is already registered at the Tapi system. Thereby, you select the necessary data in a Wizard in order to connect the driver with the telephone system.

Configuration of Driver instance

The configuration of the driver instances takes place either over *Telephone and Modem option* in the Control Panel or over the standard program *Advanced Telephone Driver option* that can be found in the Control Panel or in the Start Menu.

Add further driver instances

If you want to connect the computer with a further telephone system, you must add a further instance of the driver to the Tapi system. This takes place with Help in the standard program *Advanced Telephone Driver options* that can be found in the Control Panel or in the Start Menu.

Updates

To install an Update start the Windows Installer Package (msi).

If a driver instance is configured, this is deleted during the Update and is automatically added again after the Update is completed. If several driver instances are configured, the computer must be restarted after the Update.

De-installation

The Deinstallation takes place via the Windows Software Administration. In the Deinstallation, all instances of the driver are removed from the Tapi system and the software uninstalled.

11 PBX systems

Driver	PBX	Telecom identification
ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath 5x0	
ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath 20x0	Telekom Comfort Open / Octopus F270 IT
ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath 3000	Telekom Octopus F200 / F400 / F600 / F650
ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath 5000	Telekom Octopus F IP-Netpackage
i ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath OpenOffice EE	Telekom Octopus F270 IT
ECSTA for Siemens Hipath 2000/3000/5000	Siemens Hipath OpenOffice ME	Telekom Octopus F450 UC
ECSTA for Siemens Hipath 2000/3000/5000	Unify Hipath OpenScape Office MX	Telekom Octopus F470 UC
ECSTA for Siemens Hipath 2000/3000/5000	Unify Hipath OpenScape Office LX	Telekom Octopus F670 UC
ECSTA for Siemens Hipath 2000/3000/5000	Unify Hipath OpenScape Office HX	
Driver	PBX	Telecom identification
ECSTA for Siemens Hicom 150	Siemens Hicom 150E (V2.2 or higher)	Telekom Octopus E10 / E20 / E30 (ab V2.2)
ECSTA for Siemens Hicom 150	Siemens Hicom 150H	Telekom Octopus E730 / E930
ECSTA for Siemens Hicom 150	Siemens Hipath 3000 (V1.0 - V6.0)	Telekom Octopus F200 / F400 / F600 (V1.0 - V6.0)
Driver	PBX	Telecom identification
ECSTA for Octopus E300/E800	Telekom Octopus E300 /	Telekom Octopus E300 / E800

	E800	
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12 Software requirements

The estos ECSTA for HiPath 2000/3000/5000 can be installed on all Windows systems that support Microsoft TAPI 2.0 or higher. The following systems are supported in 32- as well as in 64-bit versions.

- Windows 7
- Windows 8
- Windows 8.1
- Windows Server 2008
- Windows Server 2008 R2
- Windows Server 2012
- Windows Server 2012 R2

13 FAQ

Q0069: I just installed a Tapi driver, but the connections are not yet available. I cannot select the new lines using the windows phone dialer. What can I do?

If connections are not available after a tapi driver being installed, you have to restart your PC. The reason for that is another software using the Windows Tapi system (probably the Internet Auto Connection Manager).

Q0108: I have an eicon Diva Pro and can get no connection to the phone system with S0. What is the cause?

Eicon advised that from May to August, 2002 faulty drivers for the Diva Pro (hardware check 2.0 and 3.0) were delivered. A new driver is necessary from <http://www.eicon.de>. Please follow the advice for the correct driver Update.

Q0083: When connecting with ISDN (CAPI) there are problems with the data transfer to the Hipath. Some Tapi Lines may not be opened (lineOpen failed) or commands to the Hipath fail. What is the problem?

The USBS Parameters in the Hipath (in Assistant E - Leitungen/Vernetzung - ISDN Parameter) should be set to the following values:

- x-Parameter: 128
 - y-Parameter: 64
-

Q0084: During installation I get an error after successful connection: The login to the Hipath system failed. Please enable CSTA or check the password.. What may be the reason?

To connect to the Hipath the access must be allowed.

- Serial connection: In System configuration - Remote access(30) - Other interfaces(3) - Allow Access Logon no code(1).
 - Using S0: In System - Remote access(30) - USBS D-Channel access(9) - internal Phone number (1) enter the internal phone number
-

Q0086: When connecting to the Hipath system with TCP/IP I get no connection. What can I do?

In order to connect the estos ECSTA for HiPath 2000/3000/5000 to the Hipath using TCP/IP, you need a Hicom 150H/Hipath 3000 with an Xpress@LAN or a Hipath 3300/3500/3700 with a HG1500 or a LIM Module.

You will have to use the IP Address of the Hipath itself not the IP of the Xpress@LAN
In the Hipath configuration the following values should be configured::

- In network - IP parameter: HIS forwarding, IP Address of the Hipath must be entered.
 - In network - communication partners: IP-Applications: check CSTA.
-

Q0106: I have the Hipath connected to the PC using a serial cable. I get the following message: The Hipath is not responding. Please check the connection and the settings of the Hipath system.

Possible problems:

1. The serial port is not working
2. The cable is not plugged or not working.
3. The baud rate setting is not correct.
4. The cable is plugged into the wrong com port.

Solution:

1. If you are sure that the com port exists, make sure it is detected by Windows. Using Windows 95 / 98 please check in Control panel/ / System / Device Manager. Make sure, the com port is enabled in your computers bios.
 2. The cable for the connection from the Hicom system to the PC must be a Nullmodem cable (Pin-assignment!).
 3. Make sure the baud rate settings of the Hipath system match with the driver settings. The baud rate in the Hipath system may be changed as follows:
*95 = Login / Password
22 = System settings
13 = V.24 Settings
1 = baudrate,MB
*3 = 19200 Baud
 4. Please check if the serial cable is plugged into the correct socket.
-

Q0107: I get the message: You do not have permission to change the settings. Please contact your Administrator.

Reason: The user does not have the required rights to run the setup. Solution: Install the driver as Administrator.

14 Info about estos ECSTA for HiPath 2000/3000/5000

estos ECSTA for HiPath 2000/3000/5000 is a product of estos GmbH.

Product updates can be found under <http://www.estos.com>.

Frequently asked questions and answers, as well as support, can be found under <http://www.estos.com/help/support>.