

# Kofax Communication Server

## Voice xSP Integration Technical Manual

Version: 10.2.0



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# 1. About

This document describes the structure, possible use cases, installation and configuration of the Kofax Communication Server Voice Integration for Service Providers.

**Important! The Kofax Communication Server and its components formerly used the name TOPCALL. Some screen shots and texts in this manual may still use the former name.**

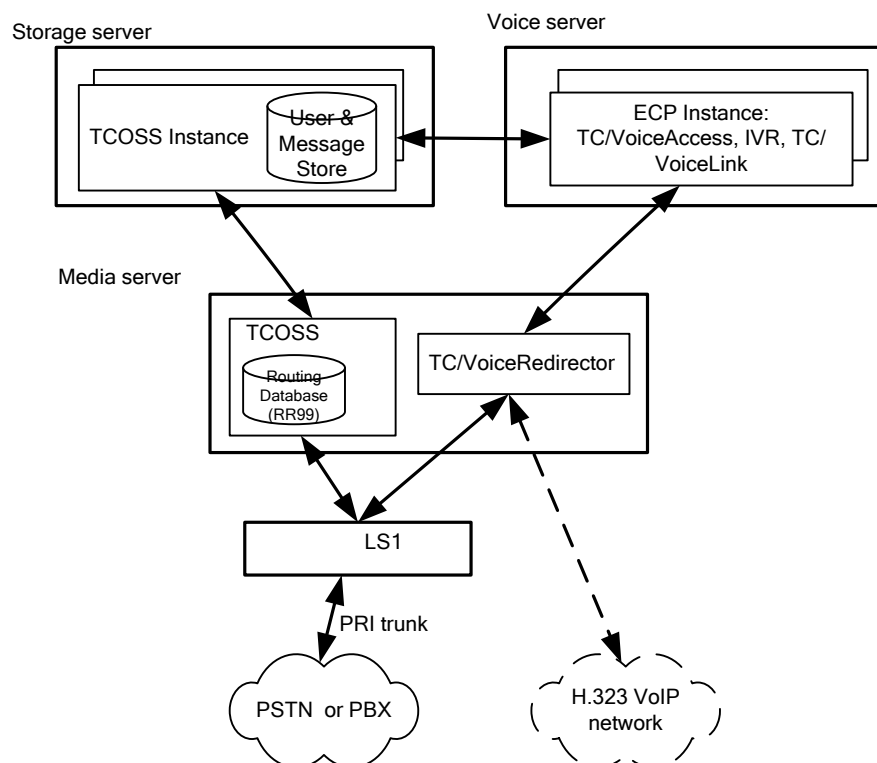
## 2. Positioning, Advantages, Strengths

Kofax has been providing xSP Unified Messaging solutions for a long time. So far, fax and telex services are being integrated with standard e-mail applications like Microsoft Exchange, Lotus Notes, Novell GroupWise, and with business applications like SAP, Siebel, and CRM.

The next logical step is to extend KCS xSP product line by integrating KCS well-known voice solutions like TC/VoiceAccess, and IVR applications.

### 3. Structure of the Product

The Voice xSP solution follows the concept of KCS Storage/Media Server:



- Customer specific data are stored on the Storage server, where multiple TCOSS instances are running, one per customer
- On the Voice server multiple ECP instances are running, one per customer. It has an advantage that different customers may have different settings like prompts, languages, TTS engines etc.
- There are one or more Media and Line servers being shared by all TCOSS and ECP instances on the Storage server.  
On each Media server one routing ECP instance is running (TC/VoiceRedirector), one per connected LS1 server, and it is connected with the LS1 server through the LS1 engine. The role of the TC/VoiceRedirector is to route incoming call towards multiple ECP instances based on routing information (RR99) provided by TCOSS
- Alternatively H.323 telephony system can be used instead of LS1
- Voice messages are being stored in the corresponding TCOSS storage instance and forwarded through KCS links to the customer's collaboration system (mail server)

## 4. Functionality

Standard KCS Voice functionality is supported:

- TC/VoiceAccess
- IVR
- TC/VoiceLink

### 4.1 Routing of Voice Calls

This chapter describes the principles how the routing of outgoing and incoming calls works.

#### 4.1.1 The Role of the CustomerID

The CustomerID string that is used as the unique customer identifier for each TCOSS instance has a central role within routing of incoming and outgoing fax and voice calls.

The CustomerID string is being handled in the following way:

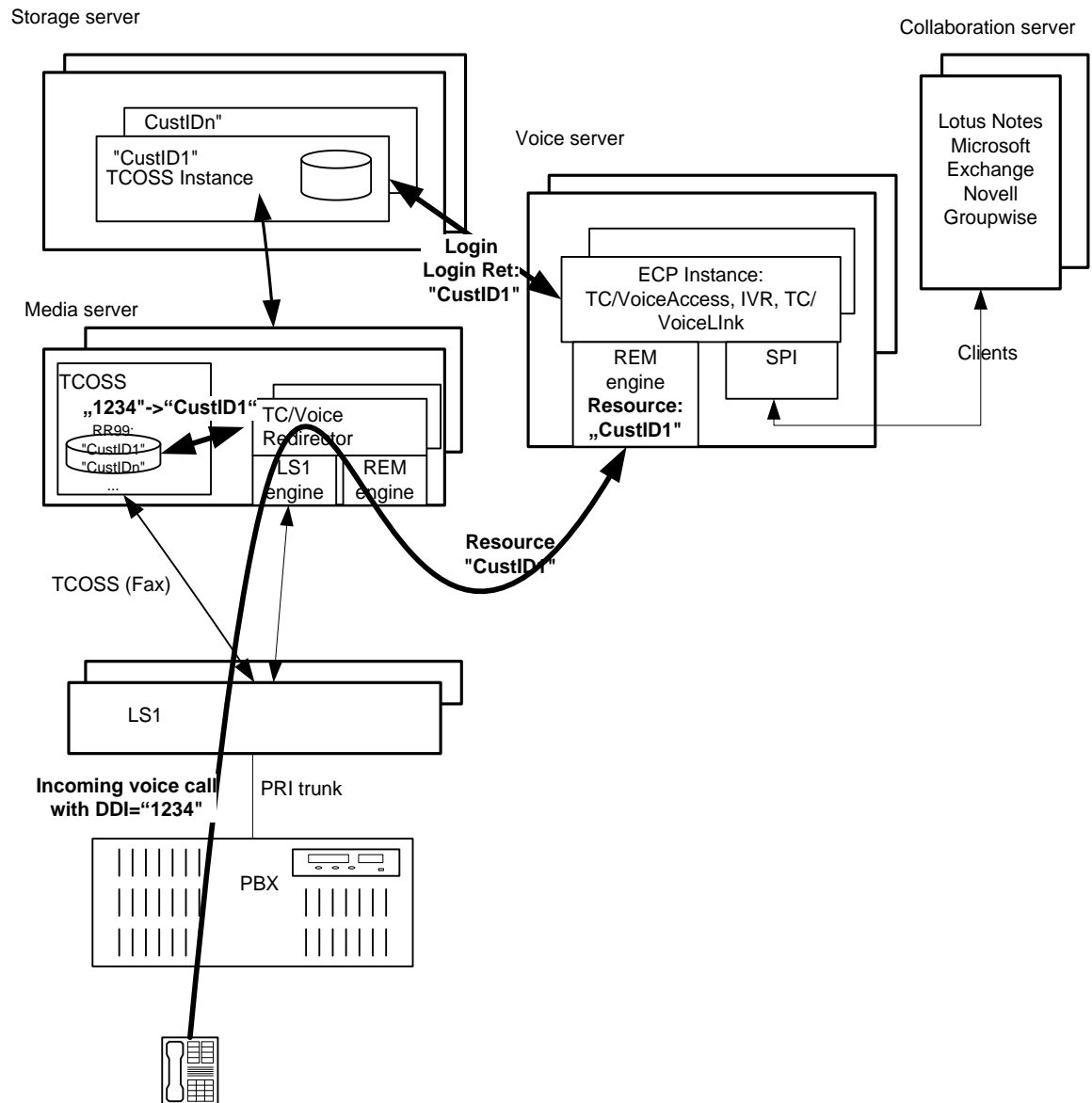
- It is configured as usually with each TCOSS instance running on the Storage server
- It is entered into the RR99 routing database as usually on the Media server(s) in order to route incoming calls to the proper customer (TCOSS instance) according to the dialed number
- On startup each ECP instance retrieves the customerID string from its TCOSS instance during the system login procedure and stores it locally in the remote engine's registry configuration area. The remote engine uses the customerID as the "resource" and propagates it through remote engine internal communication to all other rem engine nodes in the network.  
In other words, there is no need to configure the customerID on the Voice server side
- Each routing ECP instance running on the Media server has an access to the local RR99 routing database and thus is able to retrieve the customerID according to the dialed number

The Voice xSP solution extracts the customerID automatically without any additional need to setup it manually anywhere!

#### 4.1.2 Inbound Voice Call routing

- Receiving Fax/Voice channel running on the LS1 determines whether an incoming call is voice or fax call according to the DDI number ranges configured in the UIF number conversion facility (configuration lines 254-283, see ISDN Technical manual). In the case of the incoming voice call this is being routed to the TC/Voice Redirector running on the Media server.
- The TC/Voice Redirector makes the RR99 lookup (gets proper "CustomerID" string for the dialled DDI number) and forwards the incoming call through the remote engine to the corresponding customer's ECP instance (running on the voice server) with the resource engine resource = "customerID".  
If there are more than 1 ECP instances connected for this customer (primary and secondary voice server), the remote engine performs a simple load balancing to distribute the load over all available Voice servers
- The customer's ECP instance handles an incoming voice call as usually

- Overview of the inbound voice call routing:

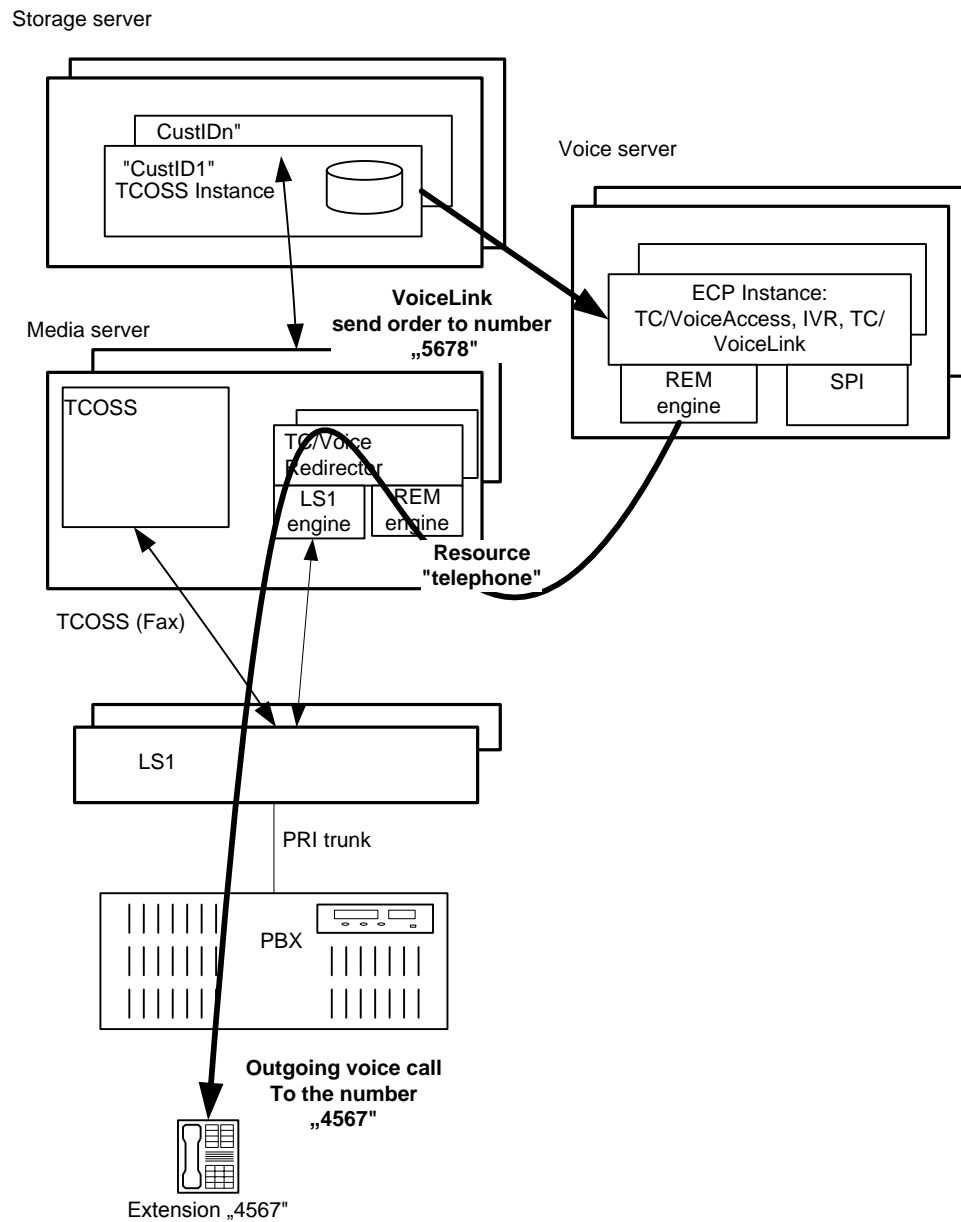


#### Outbound Voice Call routing

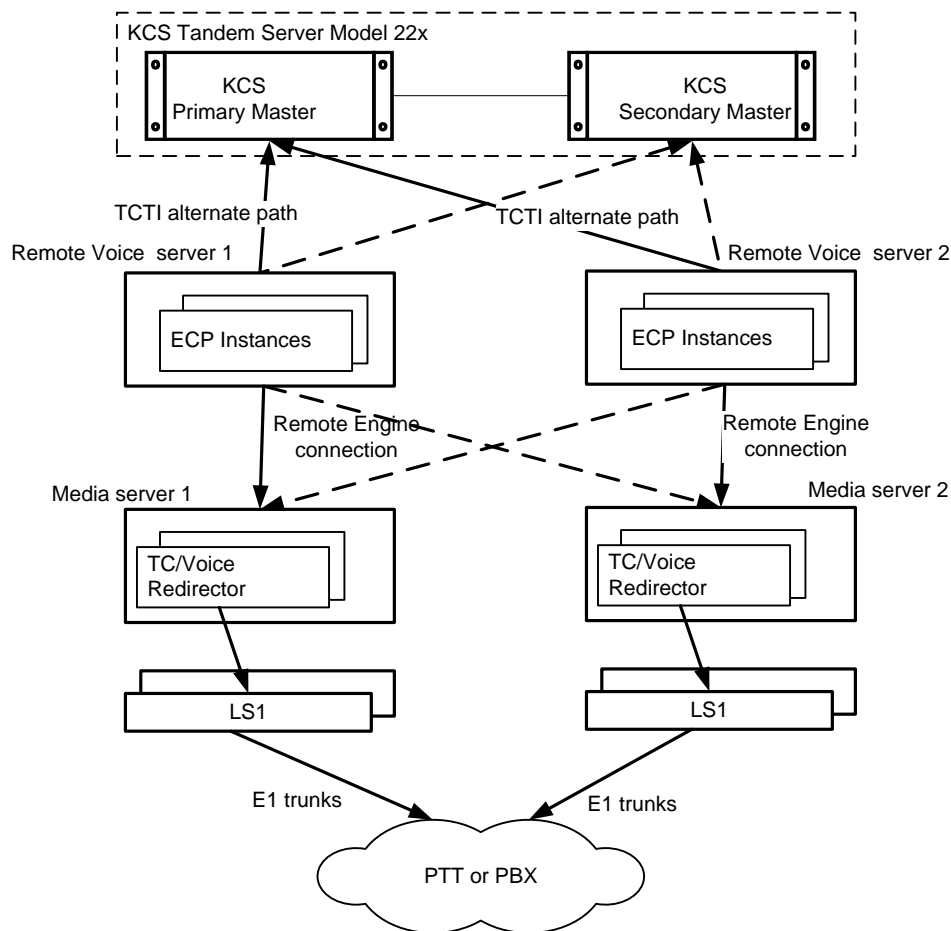
- If the customer's ECP instance gets an outgoing call request (TC/VoiceLink) its remote engine routes the call to the routing TC/VoiceRedirector on one of the Media servers using the resource="telephone".
- The TC/VoiceRedirector forwards the call further to its connected LS1 server (through LS1 engine).  
If there are more than 1 Media servers (each equipped eventually with several LS1 servers), the remote engine performs a simple load balancing to distribute the load over all available LS1 servers.



- Overview of the outbound voice call routing:



## 4.2 Fault-Tolerant Operation and Load Balancing



Fault-tolerant operation of the Voice integration for Service Providers can be achieved by the means of:

- **KCS Tandem Server Model 22x:** The KCS Tandem Server fault-tolerant operation is well known and is described in the TCOSS System Manual.
- **Two or more independent remote KCS Voice servers**  
All involved remote Voice servers (at least primary and secondary one) access the KCS Tandem Server using the TCTI alternate path functionality.  
During the normal operation, all Voice servers are connected to the Primary Master, while the Secondary Master is running in the standby mode.  
If the Primary Master fails, the Secondary Master restarts in the standalone mode and all Voice servers are reconnected to the Secondary Master by the TCTI.
- **Fault-tolerant Media Servers**  
All involved remote Voice servers are connected with two or more Media servers through remote engine (RPC based communication).  
Remote engine's automatic resource-locator provides for automatic fail-over operation in the case any of the Media servers and/or any of the LS1 servers would fail.

The regular load distribution (load-balancing) among Media Servers and remote Voice Servers is based on the remote engine's load-balancing facility that makes the distribution of the load through available resources in the network possible (refer to the Remote Engine manual for details).

## 5. Prerequisites

Standard as defined for TCOSS plus the following:

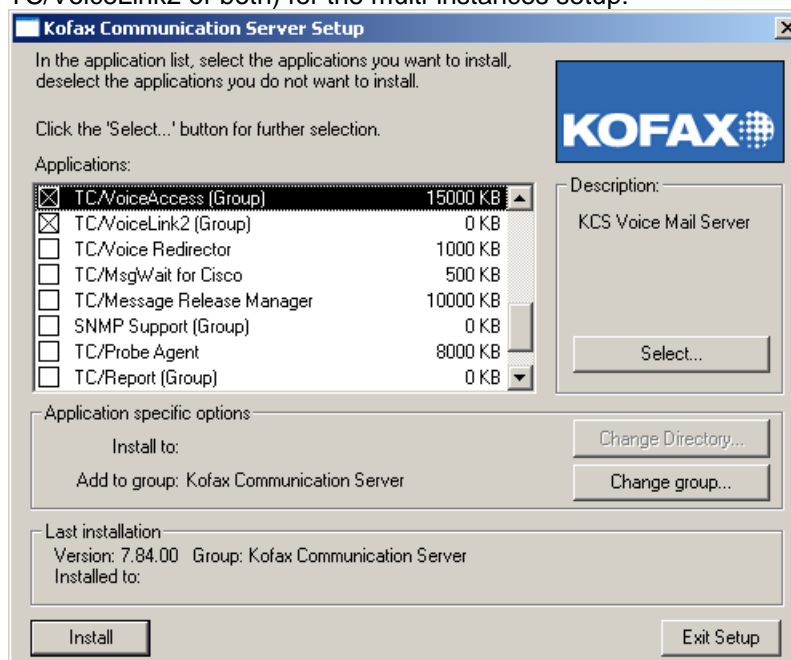
- Kofax Communication Server 7.63.23 or higher
- KCS License keys for the configured number of voice (or fax&voice) channels
- KCS TFC license one per TCOSS server regardless of the number of Voice Servers.  
(TC/VRRedirector does not need any license keys)
- Standard KCS Model 300 hardware  
(2 GByte RAM and dual processor main board 2.8 GHz)

## 6. Installation

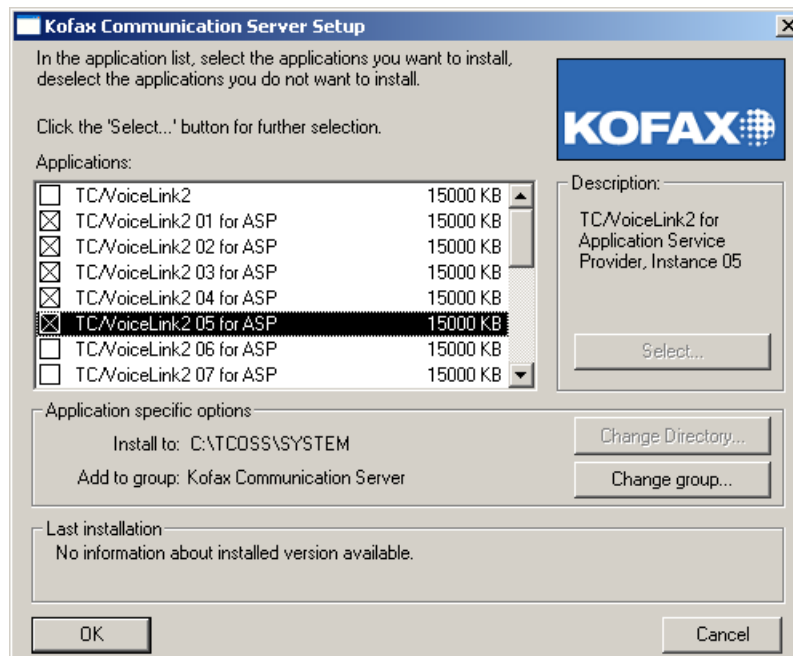
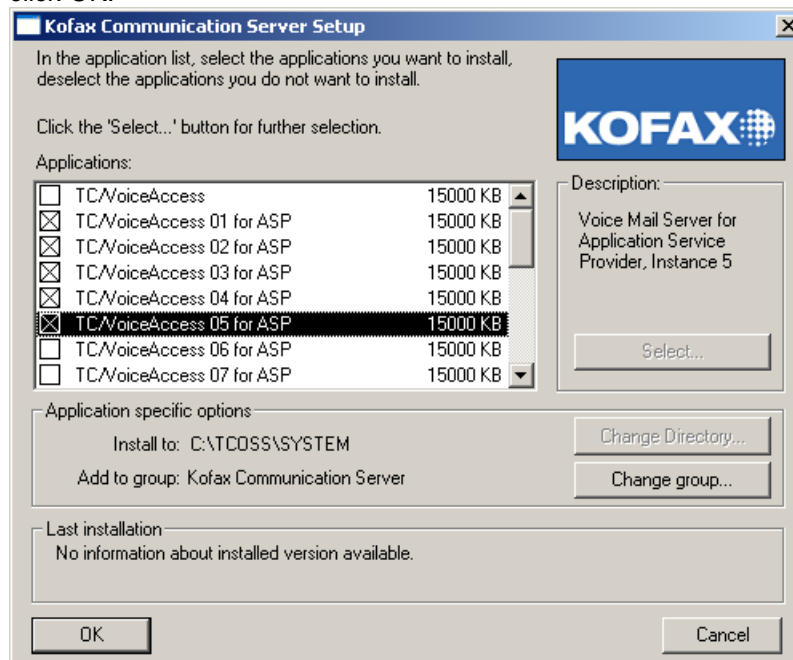
### 6.1 Remote Multi-Instance Voice Server

This chapter describes the KCS installation and configuration steps of the Voice Integration for Service Providers. For details on setup of Voice applications please refer to the corresponding application manual (TC/VoiceAccess and/or TC/VoiceLink2). This section describes only steps necessary to perform setup for the Service Provider environment.

- 1) Run the KCS setup. Select one of the voice application groups (TC/VoiceAccess, TC/VoiceLink2 or both) for the multi-instances setup:



- 2) Click Select button for each application, choose desired number of instances for ASP and click OK:

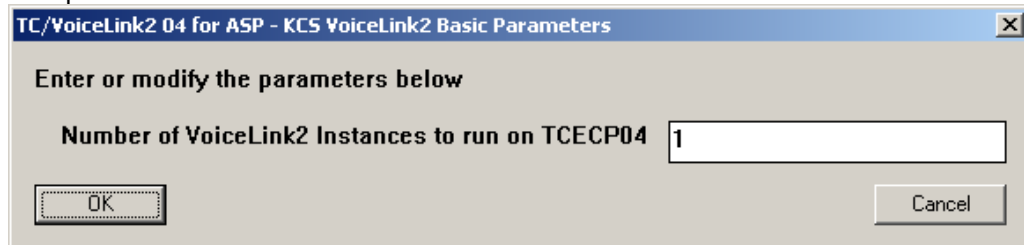


Click Install to continue.

(Following description assumes both TC/VoiceAccess and TC/VoiceLink2 were chosen).

- 3) Enter KCS Server Path of the corresponding TCOSS instance where this VoiceLink instance should be connected to:

Note that with the current setup version Voice application instances do come up almost randomly, e.g. 2<sup>nd</sup> instance at first, then the 4<sup>th</sup> etc. so take care which one is currently being set up!

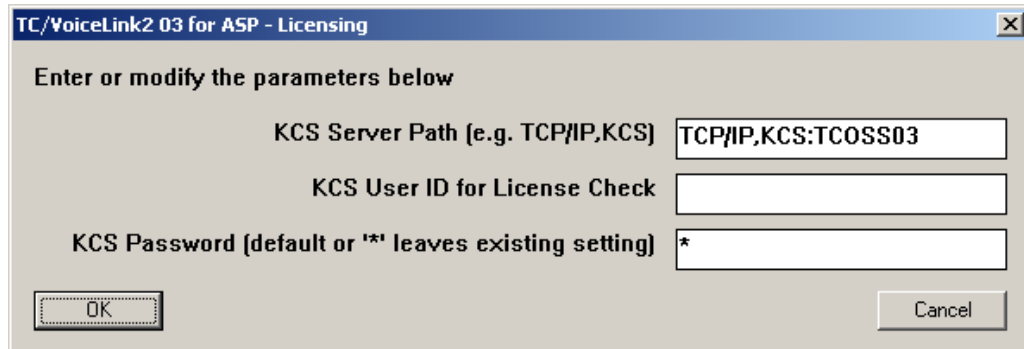


TC/VoiceLink2 04 for ASP - KCS VoiceLink2 Basic Parameters

Enter or modify the parameters below

Number of VoiceLink2 Instances to run on TCECP04

OK Cancel



TC/VoiceLink2 03 for ASP - Licensing

Enter or modify the parameters below

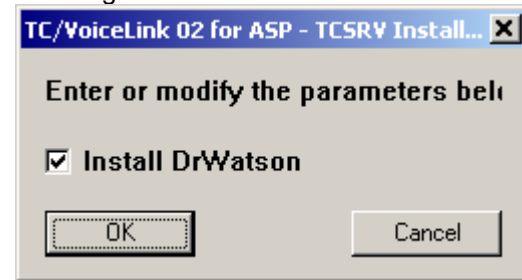
KCS Server Path [e.g. TCP/IP,KCS]

KCS User ID for License Check

KCS Password (default or '\*' leaves existing setting)

OK Cancel

- 4) Don't forget to install also the DrWatson debugger:



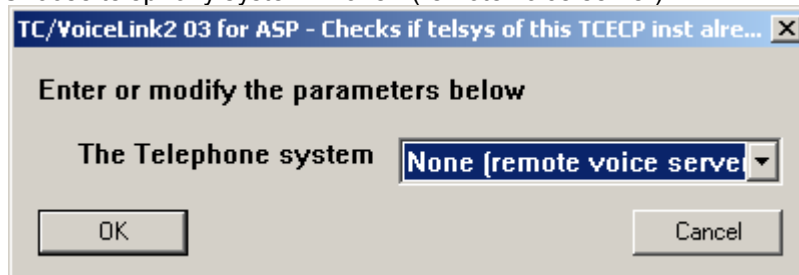
TC/VoiceLink 02 for ASP - TCSR V Install...

Enter or modify the parameters below

☒ Install DrWatson

OK Cancel

- 5) Choose telephony system "None" (remote voice server):



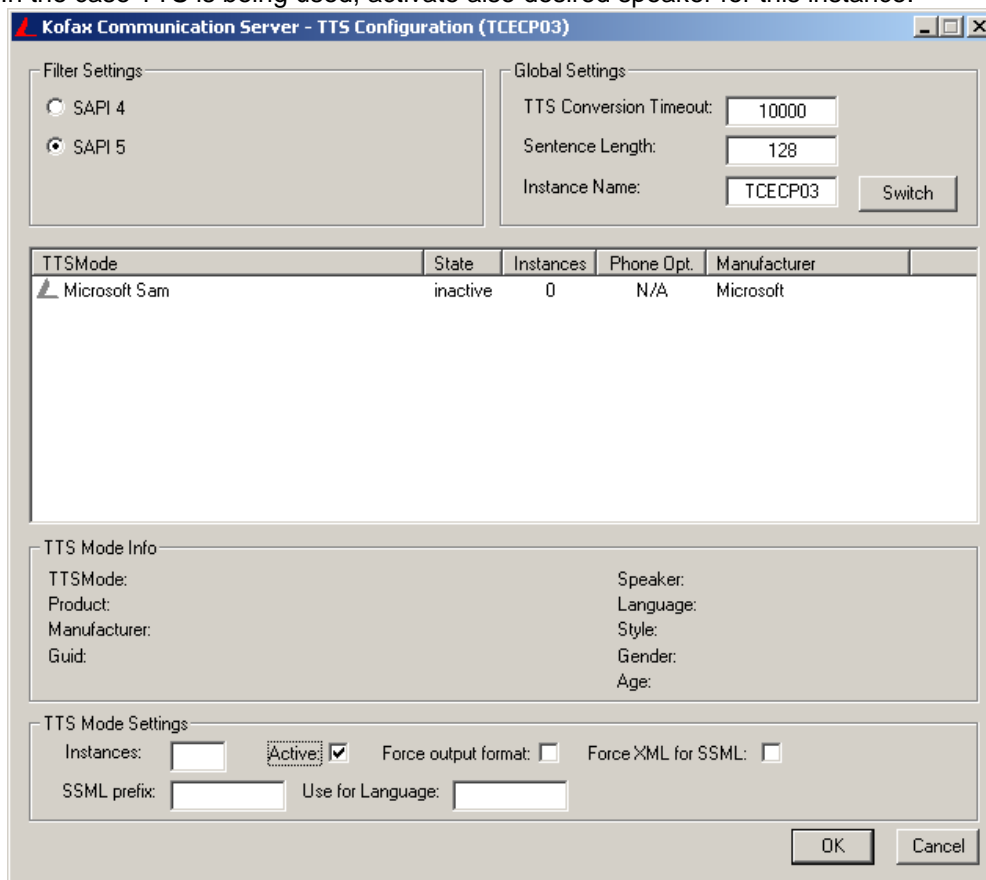
TC/VoiceLink2 03 for ASP - Checks if telsys of this TCECP inst already...

Enter or modify the parameters below

The Telephone system

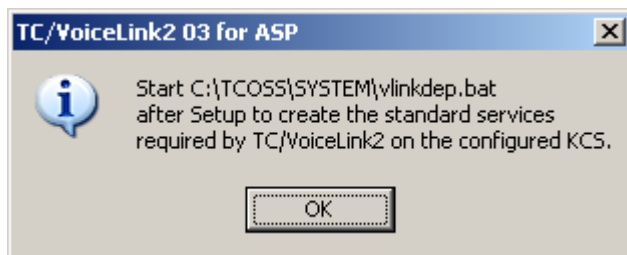
OK Cancel

- 6) In the case TTS is being used, activate also desired speaker for this instance:



- 7) Setup reminds you to start vlinkdep.bat afterwards. But note, that with the ASP system, you will have to start this batch file from the command line with the following syntax:

C:\TCOSS\SYSTEM\VLINKDEP <path\_to\_the\_tcoss\_instance>



- 8) Now setup other VoiceLink instances just in the same way as described above. In the case that you have chosen also TC/VoiceAccess, you will proceed to the TC/VoiceAccess setup screens afterwards.

Note that with the current setup version Voice application instances do come up almost randomly, e.g. 2<sup>nd</sup> instance at first, then the 4<sup>th</sup> etc. so take care which one is currently being set up!

- 9) Enter the host name and instance number of the corresponding TCOSS instance to the "KCS Server Path" where this instance of TC/VoiceAccess should be connected to (alternatively you can write also the full KCS path in the form "TCP/IP, host\_name:TCOSSNr":

Don't forget to enter also the Access Number(s):

**TC/VoiceAccess 03 for ASP - KCS Voice Mail Basic Parameters**

Enter or modify the parameters below

KCS Server Path [e.g. TCP/IP,KCS]

KCS User ID of TC/VoiceAccess System User

KCS Password [default or '\*' leaves existing setting]

TC/VoiceAccess Access Numbers [or Line IDs] e.g. "97,98,99"

Language

☐ Configure Advanced Voice Mail Features

☐ Configure SPI for Microsoft Exchange

☐ Configure SPI for Lotus Notes

☐ Configure SPI for Novell Groupwise

☒ Enable the e-mail reader [use TTSCnf to customize TTS]

- 10) Choose the recording format and optionally you can activate attendant/dial by name features if required:

**TC/VoiceAccess 03 for ASP - KCS Voice Mail Basic Parameters 2**

Enter or modify the parameters below

The telephone number of the operator

Prefix for external calls

Prefix for internal calls

Recording audio format

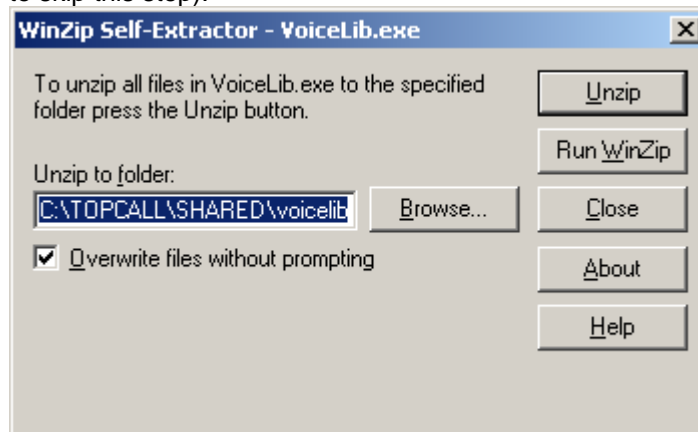
☐ Activate the attendant

☐ Activate dial by name

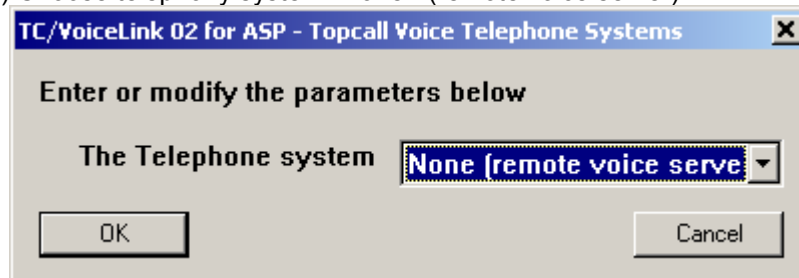
☐ Activate the preprocessor



- 11) You will be prompted to unzip the voice prompts library, press Unzip:  
(Note that during setup of following TC/VoiceAccess instances, you can simply press Close to skip this step):

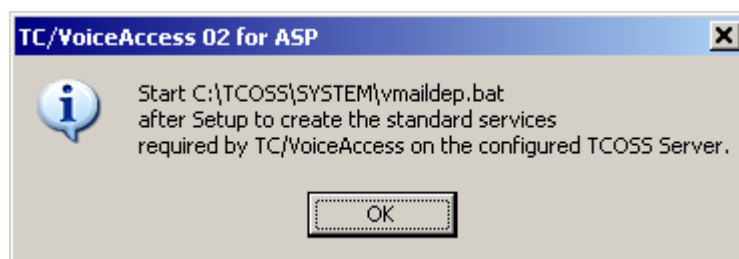


- 12) Choose telephony system "None" (remote voice server):

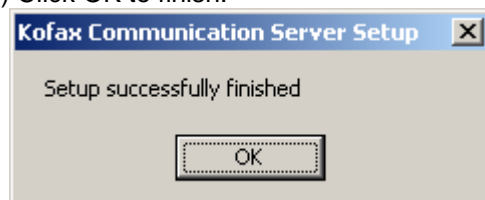


- 13) Setup reminds you to start vmaildep.bat afterwards. But note, that with the ASP system, you will have to start this batch file from the command line with the following syntax:

C:\TCOSS\SYSTEM\VMAILDEP <path\_to\_the\_tcoss\_instance>



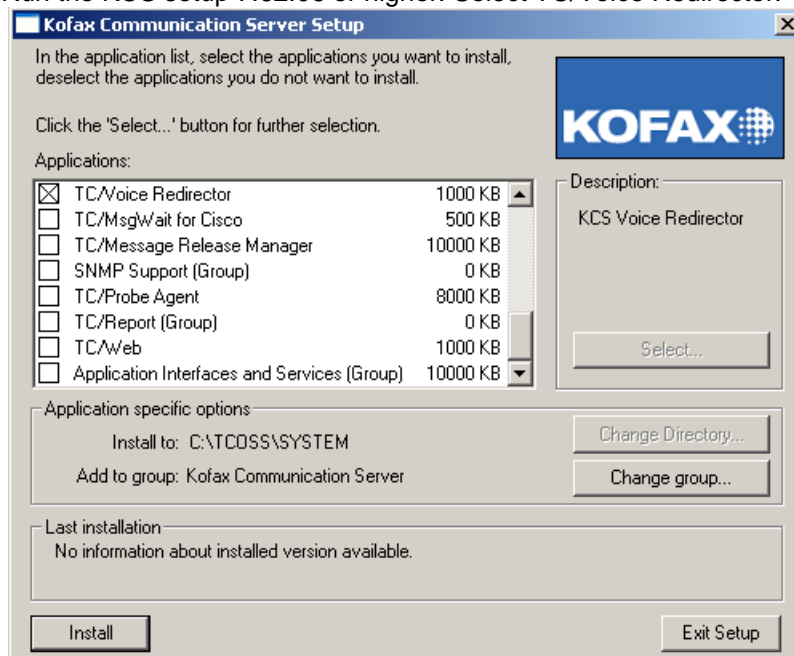
- 14) Click OK to finish:



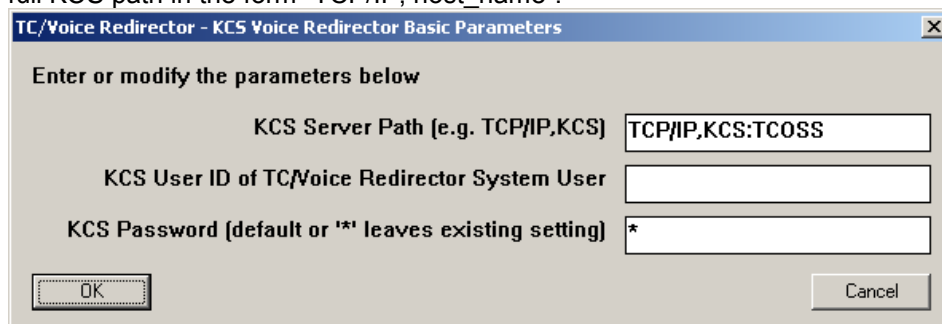
## 6.2 TC/VoiceRedirector

This chapter describes the installation and configuration steps of the TC/VoiceRedirector for Voice Integration for Service Providers. The TC/VoiceRedirector must be installed on the Media Server.

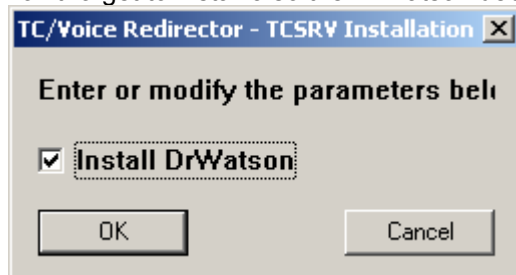
- 1) Run the KCS setup 7.62.06 or higher. Select TC/Voice Redirector:



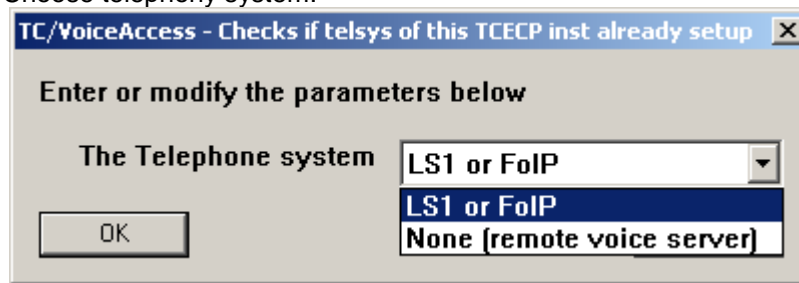
- 2) Enter the host name of the corresponding Media server TCOSS to the "KCS Server Path" where the TC/VoiceRedirector should be connected to (alternatively you can write also the full KCS path in the form "TCP/IP, host\_name":



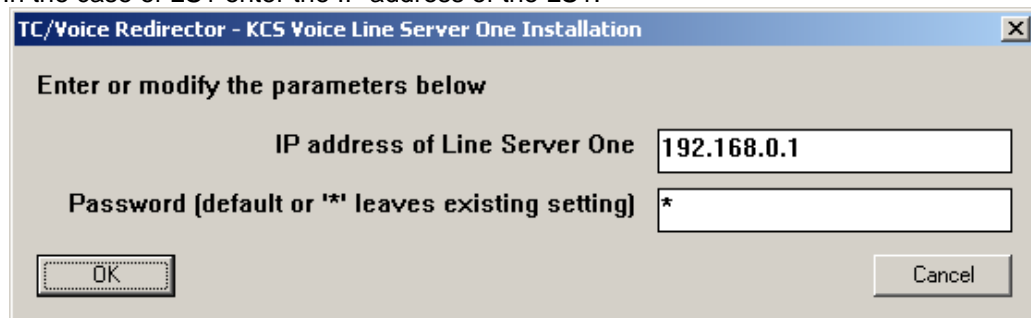
- 3) Don't forget to install also the DrWatson debugger:



- 4) Choose telephony system:



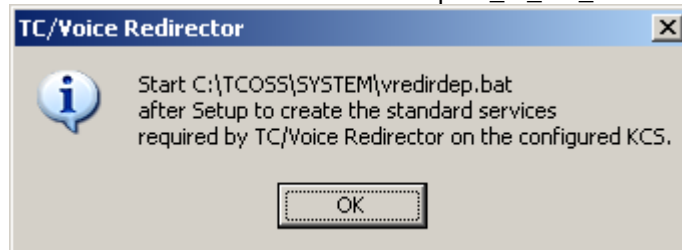
- 5) In the case of LS1 enter the IP address of the LS1:



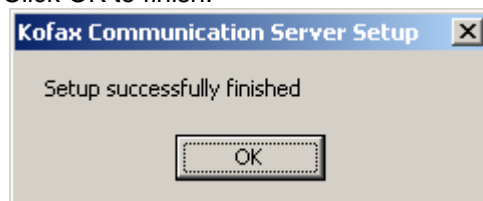
Note: If there are more than 1 LS1 servers involved you will have to configure them using the voice failover setup utility in the step 8

- 6) Setup reminds you to start vredirdep.bat afterwards. But note, that with the ASP system, you will have to start this batch file from the command line with the following syntax:

C:\TCOSS\SYSTEM\VREDIRDEP <path\_to\_the\_mediaserver\_tcoss\_instance>



- 7) Click OK to finish:



- 8) In the case the TC/VoiceRedirector should be connected to more than 1 LS1 servers, you have to configure them using the voice “fail\_over” setup utility (press Start->Programs->Kofax Communication Server->Fault Tolerant Voice Configuration Tool):

Enter number of (TC/VoiceRedirector) instances to be used, and then corresponding LS1 IP address/password pairs:

**fail\_over\_setup**

1. Step  
How many instances would you like to install ?

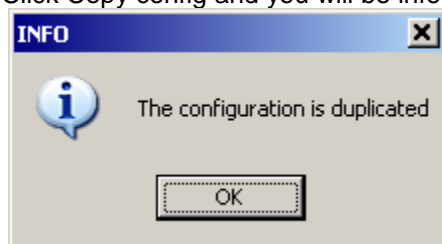
Note: this IP Address is set by the TC/SP setup  
IP of first Line Server

2. Step

LineServer	IP Address	password
second LineServer	<input type="text" value="10 . 11 . 0 . 63"/>	<input type="password" value="XXXXXX"/>
third LineServer	<input type="text" value=" . . ."/>	<input type="password"/>
fourth LineServer	<input type="text" value=" . . ."/>	<input type="password"/>
fifth LineServer	<input type="text" value=" . . ."/>	<input type="password"/>
sixth LineServer	<input type="text" value=" . . ."/>	<input type="password"/>

3. Step

- 9) Click Copy config and you will be informed that the configuration has been duplicated:



- 10) Click OK and Close

## 6.3 Post-Setup Configuration Steps

### 6.3.1 Creating Necessary Dependencies for Voice Applications

Don't forget that it is necessary to create required dependencies (KCS services, queues and users) for voice applications on each connected customer-TCOSS by executing of special batch files (VLINKDEP.BAT, VMAILDEP.BAT) . However, the difference in comparison with single-customer voice environment that you have to execute them from the command line with single parameter which is the path to the desired TCOSS instance:

For example, having TCOSS ASP Server "SOPRIM1" running 20 TCOSS instances TCOSS01, TCOSS02, ..., TCOSS20 you have to call both provided batch files 20 times like this:

```
vlinkdep soprim1:tcoss01 <Enter>
vlinkdep soprim1:tcoss02 <Enter>
...
vlinkdep soprim1:tcoss20 <Enter>

vmaildep soprim1:tcoss01 <Enter>
vmaildep soprim1:tcoss02 <Enter>
...
vmaildep soprim1:tcoss20 <Enter>
```

Note that for the TC/VoiceRedirector you have to call the vredirector.bat batch file only once, for example (assuming the TCOSS Media server "somedial1"):

```
vredirector somedial1 <Enter>
```

### 6.3.2 Remote Engine Configuration

The communication among TC/VoiceRedirector(s) and remote voice server(s) is based on the automatic resource-locator implemented in the remote engine. In order to enable this functionality, following manual configuration steps are necessary:

- 1) Choose the same GroupMembership string for all remote voice server(s) and TC/Voice Redirector(s) and enter it into the registry into:

HKLM\Software\TOPCALL\RemoteEngine\GroupMembership, REQ\_SZ  
default value: "KCS".

- 2) If all involved servers are located in the same sub-net (they don't communicate with each other through routers) that's all.

**On the other hand, if involved servers are located in different sub-nets (that are interconnected through routers), you have to choose any of the servers to be the "Wellknown Server" and enter its host name or IP address into the registry of ALL involved remote Voice servers and Media servers (with TC/VoiceRedirector):**

HKLM\Software\TOPCALL\RemoteEngine\WellknownServers, REQ\_SZ  
default value: none

Note that setting of the single server as WellknownServer does not introduce a single-point of failure. The only pre-requisite is that the server that was chosen to be the "WellknownServer" must work at least once at the beginning and thus enable the communication among all involved servers even if it goes down or even crashes afterwards.

Please refer to the Remote engine manual for details.

### 6.3.3 LS1 Configuration

For the LS1 installation refer to the LS1 Manual. However, note that at least following steps are necessary to enable voice calls to work through LS1's that had been already installed for fax operation before:

- 1) Enable outgoing voice calls by setting UIF module's config line 295, pos. 01 to from 00 to 01
- 2) Enable incoming voice calls by entering appropriate voice number range(s) into the UIF module's number conversion facility  
(config lines 254-283), refer to the ISDN technical manual for details

### 6.3.4 RR99 Configuration on the TCOSS Media Server

In order to enable incoming voice calls it is necessary to enter required voice number ranges into the rr99 routing database on the Media Server in order to assign voice numbers with desired customers.

#### Example of the RR99 Configuration:

```
**SENDMODES
**NORMALIZE
**ROUTE
FXI:4801~,FXI:CUSTOMER 01 , fax numbers with prefix 4801->CUSTOMER 01
FXI:4802~,FXI:CUSTOMER 01 , fax numbers with prefix 4802->CUSTOMER 02
FXI:4803~,FXI:CUSTOMER 01 , fax numbers with prefix 4803->CUSTOMER 03
FXI:4804~,FXI:CUSTOMER 01 , fax numbers with prefix 4804->CUSTOMER 04
FXI:4805~,FXI:CUSTOMER 01 , fax numbers with prefix 4805->CUSTOMER 05

V:4901~,V:CUSTOMER 01 , voice numbers with prefix 4901->CUSTOMER 01
V:4902~,V:CUSTOMER 02 , voice numbers with prefix 4902->CUSTOMER 02
V:4903~,V:CUSTOMER 03 , voice numbers with prefix 4903->CUSTOMER 03
V:4904~,V:CUSTOMER 04 , voice numbers with prefix 4904->CUSTOMER 04
V:4905~,V:CUSTOMER 05 , voice numbers with prefix 4905->CUSTOMER 05
...
```

### 6.3.5 Customizing the ECP Customer Instance

Each ECP customer instance is running as a separate process on the Voice Server and it can have own customized configuration (including voice prompts and language files) that is different from all other ECP instances.

Concerning voice prompts, standard TCSP setup includes only standard VoiceLib (voice prompts) that is the same for all installed ECP instances.

However, for any ECPXY instance customized voice prompts can be installed manually in this way:

- Choose and create new VOICELIB directory, for example  
C:\TOPCALL\SHARED\VOICELIBXY
- Enter this directory into the following registry key:  
HKLM\Software\TOPCALL\TCECPXY\TCRT\ResDefaultPath, REQ\_SZ  
default value:  
C:\TOPCALL\SHARED\VOICELIB\SYS;C:\TOPCALL\SHARED\VOICELIB\TCVMail;C:\TOPCALL\SHARED\VOICELIB\TCVLink  
change to:  
C:\TOPCALL\SHARED\VOICELIBXY\SYS;C:\TOPCALL\SHARED\VOICELIBXY\TCVMail;  
C:\TOPCALL\SHARED\VOICELIBXY\TCVLink
- Copy your customized prompts and language files into the directory VOICELIBXY
- Restart ECP instance XY

### 6.3.6 Customizing TTS for each Customer Instance

Each ECP customer instance can use different Text-to-Speech (TTS) speakers.

Following steps are necessary to setup and customize TTS for desired ECP instances:

#### 6.3.6.1 Install and Activate TTS Speakers

- 1) Enable TTS during standard TCSP setup and eventually install and configure default Microsoft TTS speakers that are included in the standard setup (refer to the Resource engine documentation for details).  
However, TTS speakers delivered with the standard TCSP setup do not have acceptable quality (they are dedicated more or less for test purposes only).  
Therefore typically a 3<sup>rd</sup> party TTS product will have to be installed on customer site as described in the following steps
- 2) Install desired TTS speakers according to TTS-product installation manual

- 3) Start the TTS Configuration Tool (Start->Programs->Kofax Communication Server->TTS Configuration Tool).

Type the Instance Name in the form TCECPXY (e.g. TCECP02) and click Switch.

TTSMode	State	Instances	Phone Opt.	Manufacturer
Microsoft Sam	active	1	N/A	Microsoft

**TTS Mode Info**

TTSMode: Microsoft Sam	Speaker: Microsoft Sam
Product:	Language: 409;9
Manufacturer: Microsoft	Style:
Guid: MSSam	Gender: Male
	Age: Adult

**TTS Mode Settings**

Instances:  Active: ☒ Force output format: ☒ Force XML for SSML: ☐

SSML prefix:  Use for Language:

OK Cancel

- 4) The TTSConf tool asks you whether you want to save TTS configuration changes for the previous Instance Name, click Yes if you want to save changes, otherwise No.

Save changes?

Yes No Cancel

- 5) Now choose desired speaker from the speaker-list, and select Active.  
If you want to finish, click OK, if you want to proceed with next ECP instance, type its name to the field Instance Name, click Switch and proceed with the step 4:

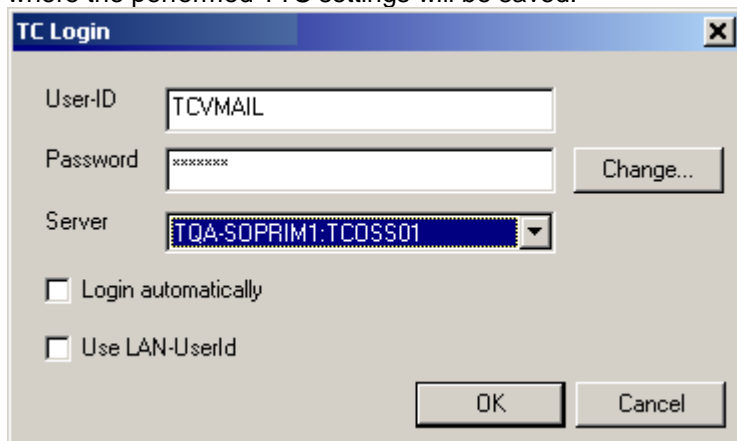
### 6.3.6.2 Configure Speaker Parameters with the TCMC

The TC Management Console (TCMC) can be used to customize TTS speakers. These settings are stored within KCS User Profile of the user the voice application uses to login into the TCOSS (for example the "TCVMAIL" user for TC/VoiceLink application).



**Note that prior to starting to manage speech profiles with the TCMC, both components of the Voice xSP solution – the remote Voice Server and the TC/VoiceRedirector – must be up and running!**

- 1) Start TCMC (Start->Programs->Kofax Communication Server->TC Management Console) and login into the corresponding TCOS customer instance using the KCS User (profile) where the performed TTS settings will be saved:



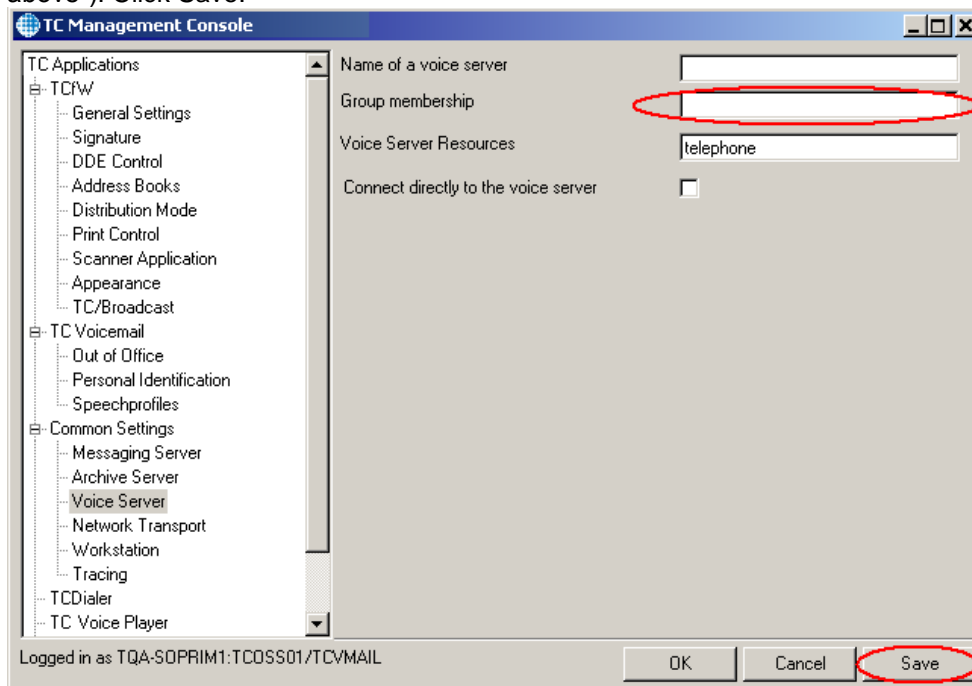
The TC Login dialog box contains the following fields and controls:

- User-ID: Text box containing "TCVMAIL"
- Password: Text box containing "XXXXXXXX" with a "Change..." button to its right.
- Server: Dropdown menu showing "TQA-SOPRIM1:TCOSS01".
- ☐ Login automatically
- ☐ Use LAN-UserId
- OK and Cancel buttons at the bottom right.

- 2) Enter the Group Membership of your remote Multi-Instances Voice server.

**(DON'T check the box "connect directly to the server").**

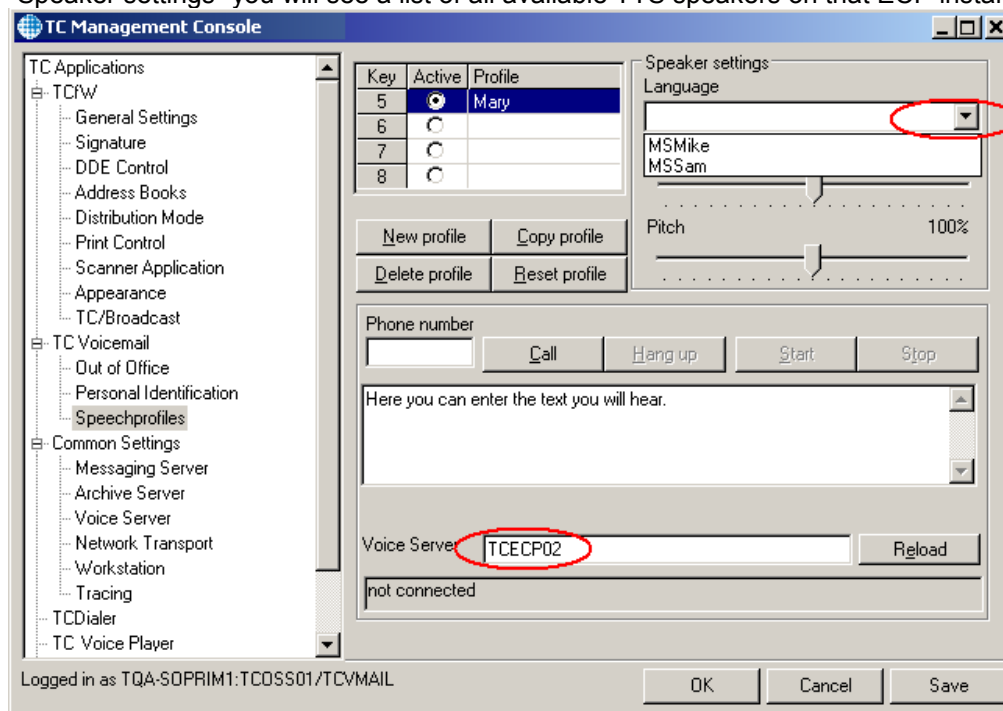
If involved Voice Server(s) and TC/VoiceRedirector(s) are located in different subnets, you will have to enter **additionally** the host name of the chosen "wellknown" server into the field "name of the Voice Server". For details, see chapter "Remote Engine Configuration above"). Click Save:



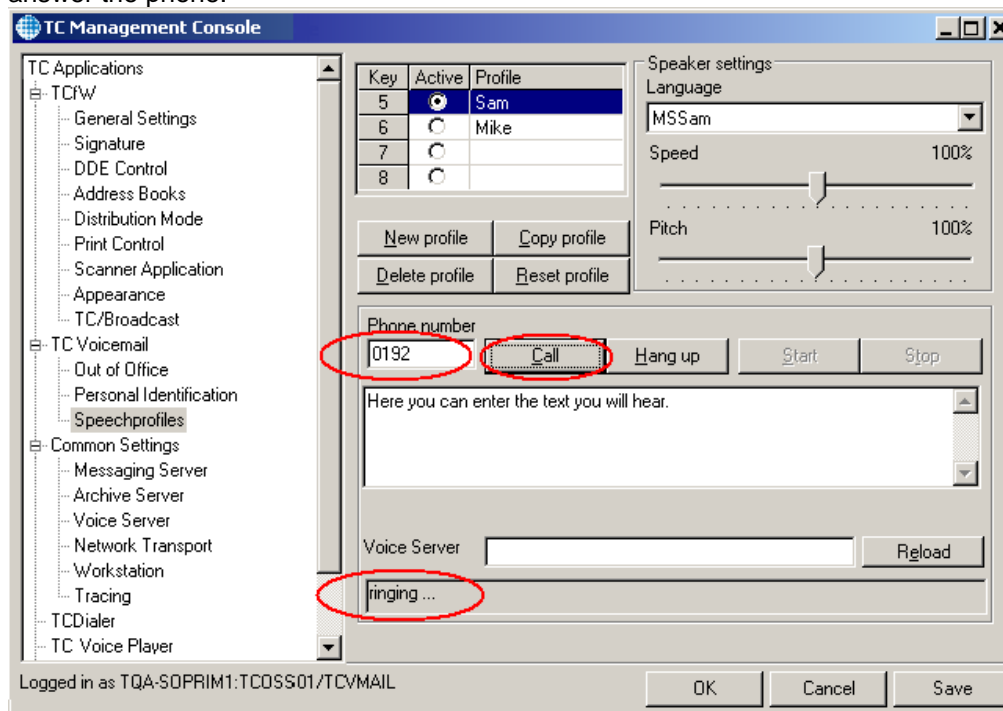
The TC Management Console dialog box shows the following configuration:

- Left pane: Tree view with "Voice Server" selected under "Common Settings".
- Right pane: Configuration fields for the selected "Voice Server".
  - Name of a voice server: Empty text box.
  - Group membership: Text box containing "telephone", circled in red.
  - Voice Server Resources: Text box containing "telephone".
  - Connect directly to the voice server: Unchecked checkbox.
- Bottom status bar: "Logged in as TQA-SOPRIM1:TCOSS01/TCVMAIL".
- Buttons: OK, Cancel, and Save (circled in red).

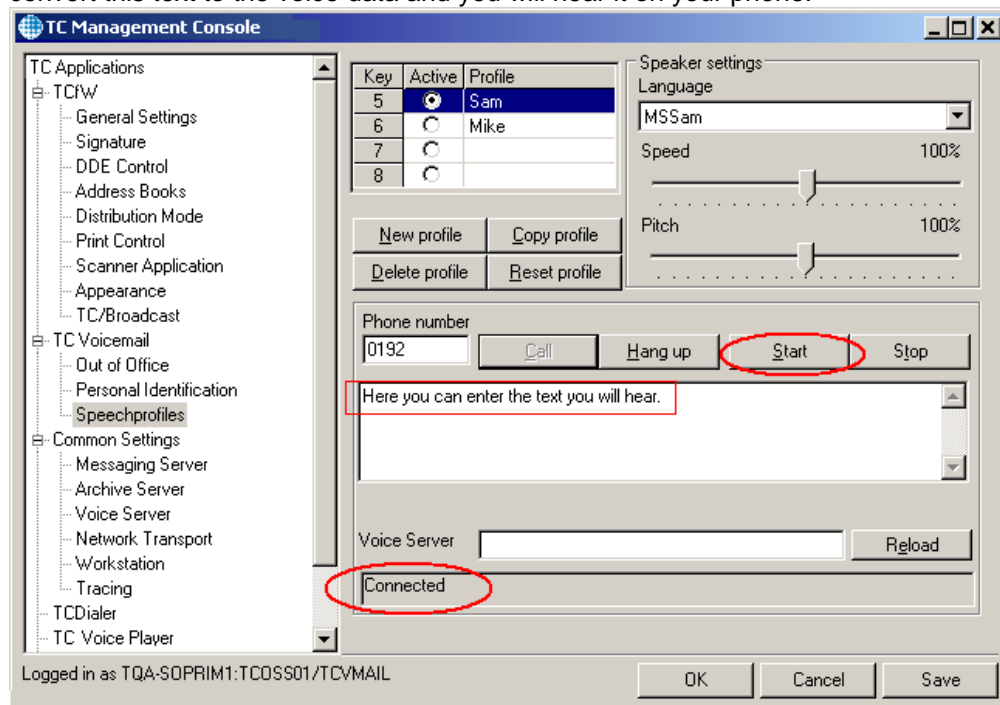
- 3) Enter the Instance Name of the configured ECP-instance (in the form TCECPXY, e.g. TCECP02) and press Reload button. Now if you press the drop-down arrow in the field "Speaker settings" you will see a list of all available TTS speakers on that ECP instance:



- 4) Configure speech profiles for this KCS User as usually
- 5) Test the prepared speech profile on your telephone. Enter your extension number and press Call button. Your phone starts ringing and you will see the call progress status (ringing...), answer the phone:



- 6) Enter the text you want to hear on your phone and click Start: The TTS speaker will start to convert this text to the voice data and you will hear it on your phone:



## 6.4 Installing Redirector and Voice xSP on the Same Computer

A TC/Voice Redirector ECP instance connects to the KCS Media server telephony hardware and therefore it requires the module TCE\_LS1.DLL to be loaded.

On the other hand, a voice xSP instance connects to the KCS Storage server and does not need telephony hardware.

In general, during startup of the TCECP process all modules of the directory specified under ....\TCECPxx\TCRT\EnginePath ( default value "C:\TCOSS\System\Engines") are loaded.

So the module "TCE\_LS1.DLL" is required for the TC/Voice Redirector ECP instance but it causes problems for the voice xSP instances.

### Workaround 1:

Make sure that the module TCE\_LS1.DLL does exist in the directory "C:\TCOSS\System\Engines".

For all voice xSP instances, create a registry value name (REG\_SZ) "NoLoadEngine" under ... \TCECPxx\TCRT\.

Type in as value data "TCE\_LS1.DLL".

Restart TCSR service.

### Workaround 2:

Create a directory e.g. "C:\TCOSS\System\Engines\_2", copy all modules except the TCE\_LS1.DLL from "C:\TCOSS\System\Engines" to this directory.

For all voice xSP instances, create a registry value name (REG\_SZ) "EnginePath" ( under .....\\TCECPxx\\TCRT\\).

Type in as value data "C:\\TCOSS\\System\\Engines\_2".

Restart TCSRv service.

## 7. Configuration

### 7.1 Registry Values Used

Please refer to the technical manuals of related products for detailed description (TC/VoiceAccess, TC/VoiceLink etc.).

## 8. Troubleshooting

### 8.1 Typical Problems and Possible Solutions

No	Problem description	Possible reason/solution
1	TC/VoiceAccess (Incoming calls) does not work, caller gets immediate busy tone	1 Voice calls were not enabled on the LS1, see chapter Post-Setup Configuration Steps, LS1 configuration 2 TC/Redirector does not fetch proper "customerID" string from the RR99: - check the RR99 file whether customerIDs properly entered for voice calls - check whether vredirector.bat has been executed before
2	TC/VoiceAccess (Incoming calls) does not work, caller gets shortly connected by after a few seconds the call is disconnected	1 TC/Redirector does not fetch proper "customerID" string from the RR99: - check the RR99 file whether customerIDs properly entered for voice calls - check whether vredirector.bat has been executed before 2 The remote engine cannot find the remote voice server - check whether all involved voice servers are in the same Group Membership - check whether registry HKLM\SW\TOPCALL\TCECPXY\TCRT\FakeResources contain the customerID strings - for details on rem. engine configuration see chapter Post-Setup Configuration Steps, Remote engine configuration
3	TC/VoiceAccess (Incoming calls) does not work, caller gets prompt "your command could not be proc."	The call reached the remote voice server, but there is no user with the voice number that has been dialed
4	TC/VoiceLink (Outgoing calls) does not work:	1 Outgoing voice calls were not enabled on the LS1, see chapter Post-Setup Configuration Steps, LS1 configuration 2 Remote voice server (hosting the TC/VoiceLink) ca not establish remote engine connection with the routing media server, for details on rem. engine configuration see chapter Post-Setup Configuration Steps, Remote engine configuration

### 8.2 Example Error Log Files

Here are Log examples (TCECPXY.TRC) of some typical error situations on the routing Media server (TC/VoiceRedirector) that may occur in the field.

All Log files were captured with following trace levels:

```
HKLM\Software\TOPCALL\TCECP\TCRT\EngineTraceLevel = 3 (REG_DWORD)
HKLM\Software\TOPCALL\TCECP\TCRT\RemTraceLevel = 0x81 (REG_DWORD)
```

#### 8.2.1 No customerID in the RR99 File

The caller dialed number "59771", but no customerID was entered in the rr99 directory for this extension, therefore an attempt is done to find the remote voice server with the resource "597711", but it does not exist:

```

EngTel[1]a ==>Hos[1]a REQ_INIT[21] STR_LineId="",STR_SrcAddr="3003",
                        STR_DestAddr="59771",STR_Name="telephone"
EngHos[2]a ==>Hos[2]a REQ_INIT[21] STR_LineId="", STR_SrcAddr="3003",
                        STR_DestAddr="59771", STR_Name="telephone"

05/15:58:18.742 (c80) TRS: --> route
05/15:58:18.757 (c80) TRS: Original Called Engine =
05/15:58:18.757 (c80) TRS: Called Engine =
05/15:58:18.757 (c80) TRS: <-- route to Destination Redirect

EngHos[1]b ==>Rem[1]a REQ_INIT[21] STR_LineId="", STR_SrcAddr="3003",
                        STR_DestAddr="59771", STR_Name="telephone",
                        STR_Resource="59771"
ConnMsgHandler          error , connecting to no Srv,
                        Group:sonera, Res: 59771
EngRem[1]a ==>Hos[1]b Response[21] 15 STR_Name="Connecting failed"
EngHos[1]a ==>Tel[1]a Response[21] 15 STR_Name="Connecting failed"

```

## 8.2.2 Remote Engine Connection Problem

The caller dialed number “59011”, corresponding resource “sonera 01” was found in the rr99 directory, but the remote engine could not establish the connection with the corresponding ECP instance on the remote voice server:

```

EngTel[1]a ==>Hos[1]a REQ_INIT[11] STR_LineId="", STR_SrcAddr="3003",
                        STR_DestAddr="59011", STR_Name="telephone"
EngHos[2]a ==>Hos[2]a REQ_INIT[11] STR_LineId="", STR_SrcAddr="3003",
                        STR_DestAddr="59011", STR_Name="telephone",

TRS: --> route
TRS: Original Called Engine =
TRS: Called Engine =
TRS: <-- route to Destination Redirect

EngHos[1]b==>Rem[1]a REQ_INIT[11] TR_LineId="",STR_SrcAddr="3003",
STR_DestAddr="59011", STR_Name="telephone", STR_Resource="sonera 01"
ConnMsgHandler          error , connecting to no Srv,
                        Group:sonera, Res:sonera 01
EngRem[1]a ==>Hos[1]b Response[11] 15 STR_Name="Connecting failed"
EngHos[1]a ==>Tel[1]a Response[11] 15 STR_Name="Connecting failed"

```

A solution could be to set temporary the ...\\RemoteEngine\\WellknownServers – even though it should not be required for servers located in the same sub-net.

To do so, enter the hostname (or IP address) of the Voice xSP system to the ...\\RemoteEngine\\WellknownServers of the VoiceRedirector system and restart TCECP.

See also *Remote Engine Configuration*.

## 9. Compatibility

<b>Voice Xsp Test Compatibility List</b>			
<b>feature/functionality</b>	<b>tested</b>	<b>not tested</b>	<b>supported</b>
Media server / Storage server shared lines association	Yes	-	Yes
Media server / Storage server dedicated lines association	-	-	No, known restriction
TC/VoiceAccess and TC/VoiceRedirector on one Server	-	-	No, known restriction
Voice call duration for VoiceAccess and VoiceLink	No	-	Yes
Voice call duration for TC/Player, TC/Dialer and Web based player	No	-	No, known restriction
Multiple TTS engines on one PC with several TCECP instances	No	-	Yes
TC/Preprocessor (registry access, file access)	No		No
MetaMail support (tcat2URL)	No		No
TCPVMail (Voice menu panel for TC/MC management console)	No		Yes
Unique single number	No		No
Attachment List	No		Yes
Call Sender	No		Yes
User dependent operator	No		Yes
Dial by name	No		Yes
Support of distribution lists	No		Yes
External transfer call	No		Yes
Call transfer loop detection	No		Yes
TC/SPI-LN	No		No
TC/SPI-MX	No		No
TTS configuration tool	Yes		Yes
Immediate response	No		No
TC/Player multi instance selection	No		No, known restriction
TC/Usertool multi instance selection	No		No, known restriction
Voice Attendant	No		Yes
Greeting Scheduler (TC/Web or TC/Usertool)	No		Yes
Installation of multi TCECP	Yes	-	Yes
Networking requirements	No		
Fault tolerance	No		Yes
Configurability	No		Yes
Usability	No		Yes
Stability/reliability	Yes		Yes
Stress test	No		Yes *)
Volume/mass test	Yes		Yes
Timezone support	No		No

\*) See chapter Performance



## 10. Performance

### 10.1 Limits

- Up to 120 voice channels per stand-alone remote Voice server (Model 300, dual processor 2.8 GHz, 2 Gbyte RAM)
- Up to 120 voice channels per one routing Media Server with TC/VoiceRedirector (Model 300, dual processor 2.8 GHz, 2 Gbyte RAM)
- Up to 60 voice channels per one routing Media Server with TC/VoiceRedirector using the H.323 telephony system (Model 300, dual processor 2.8 GHz, 2 Gbyte RAM)

## 11. Restrictions

- Only shared lines model is supported for Voice xSP services (no customer-dedicated lines)  
Therefore no multi-instance selection for TC/Player application is possible
- Voice call duration is supported only for TC/VoiceAccess, TC/VoiceLink, NOT supported for TC/Player, TC/Dialer and TC/WebPlayer
- The multi-instances TCECP operation is tested only with default (Microsoft) TTS engine
- SPI (LN, MX) connections are not supported on the multi-ECP instances Voice server
- TC/VoiceRedirector must be installed on a separate (Media) server, it cannot run on the (multi-ECP) remote voice server
- For a particular Voice xSP installation, only a single telephony system is supported, either LS1 or H.323, but not both at the same time