NEC

UNIVERGE Soft Client SP350
Softphone Plug-In mode

Operations and Maintenance Manual
(Software Version 6)

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@(#)random.c　　8.1 (Berkeley) 6/10/93
$Id: RANDOM.C 3790 2004-08-13 09:54:10Z obata $

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Preface

Thank you for choosing our PC-based telephony application "UNIVERGE Soft Client SP350" (hereinafter called "SP350").

SP350 is an application that realizes phone functions on your PC.   All phone operations can be performed just by clicking buttons on PC screens with the mouse, so you can make timely responses to incoming calls received while you are using other applications.

This manual describes configuration procedures required for using, Microsoft Office Communicator cooperation, or IBM Sametime cooperation. If you use SP350 Regular mode or VPCC mode, refer to the Operational Management Manual for Regular/VPCC mode.

This manual describes configuration procedures required for using SP350.   Please read through this manual before use for your understanding and proper use of SP350.

Manual Organization

Chapter 1   SP350 Setup Procedure
This section describes the SP350 setup procedure.

Chapter 2   SP350 Maintenance Settings
This section describes the SP350 maintenance configuration and PC configuration.

Chapter 3   Starting or Ending SP350
This section describes how to start or end SP350.

Chapter 4   Procedure of Integration into Microsoft Office Communicator
This section describes the procedure of integration into Microsoft Office Communicator.

Chapter 5   Setting of directory service in information search
This section describes the Setting of directory service in information search

Appendix   Procedure for hiding the NEC Logos on the Panels

Restrictions/Use Conditions on SP350 (common to all servers)

■ **Restrictions/Use Conditions According to Operating Environment (such as, PC or OS)**

(1) When using Windows XP service pack 1

- About Firewall in Windows XP Service Pack1 or earlier
  In Windows XP Service Pack1, Softphone cannot normally be used when the Windows firewall function is enabled. In this case, refer to "3.5 About the firewall in Windows XP Service Pack 1 or earlier".

- When Windows XP Service Pack2 is applied
  When Windows Service Pack2 is applied, Softphone may not normally be used. In this case, refer to "3.4 Windows XP Service Pack2".

(2) When using Windows Vista/Windows 7/Windows 8

- About Restrictions on ToS
  Only four levels of ToS of SP350 are supported in Windows Vista, Windows 7 and Windows 8. Because of this, the relationships between the ToS settings of the Communication server and ToS of SP350 are as shown below.

[ToS Value Correspondence Table in Windows Vista, Windows 7 and Windows 8]

ToS Settings of Communication server		ToS of SP350
IP PRECEDENCE *1	DIFFSERV	
No registration	No registration	0xA0 / 0xE0 *2
0 to 1	0 to 15	0x00
2 to 3	16 to 31	0x20
4 to 5	32 to 47	0xA0
6 to 7	48 to 63	0xE0

*1: Each bit of low delay, wide band, high reliability and low cast cannot be used during IP PRECEDENCE selection.
*2: These are the default values of voice/control.

(3) About Network

- About address acquisition from DHCP server
  The IP Telephony Server address cannot be acquired from the DHCP server.

- When using SP350 in a VPN (Virtual Private Network)
  Basically the proper NIC (Network Interface) and IP address are selected for SP350, but this selection may not normally be done depending on the PC environment.

  To address this problem, select the following information in "Devices" through "User Settings":

  NIC (Network Interface): Name of an NIC installed as hardware
      IP address: IP address through which data can be exchanged with the server

- When using SP350 Thin Client in VPN (Virtual Private Network)
  When using SP350 in a VPN (Virtual Private Network), basically, appropriate NIC (Network Interface Card)/IP address are selected for SP350. However, they may not be selected normally depending on the combination of the thin client terminal type and the VPN type. For more information, please refer to the restrictions on each terminal.
  Depending on the types of VPN and thin client terminal, the processing load of VPN encryption performed on the terminal may be high, causing voice quality to deteriorate. Especially, when screen refresh is performed, apparent voice gap may occur. For more information, please refer to the restrictions on each terminal.

- When use SP350 is Thin Client
  A network using NAT that does not supported.
  Wireless LAN does not support.
  Multiple NIC feature does not supported.

(4) About display of characters

When the font size for display is set to other than "Normal", characters for Softphone may not be displayed normally. Windows DPI is required to be set to normal size (96DPI).
To confirm or change DPI setting, right-click on an empty area on your Windows desktop, and go to [Properties]→ [Display Properties] or [Personalize]. The procedures for each Windows version are described below.

- For Windows 8
  Click [Personalize] → [Display]. Select [Smaller - 100%].

- For Windows 7
  Click [Personalize]→ [Display]. Select [Smaller - 100%].

- For Windows Vista
  Click [Personalization]→[Adjust font size (DPI)]. Select [Default scale (96DPI)].

- For Windows XP
  Go to [Display Properties]→[Settings]→[Advanced]→[General]. In DPI setting, select [Normal size (96DPI)].

- For Windows 2000
  Go to [Display Properties]→[Settings]→[Advanced]→[General]. In font size setting, select [Smaller font]. DPI

(5) Restrictions applied during a virus scan or downloading

When a virus scan or downloading is executed on a PC in which SP350 is installed, the ringtone or voice in a call may break up due to a decrease in OS processing time.

(6) About collaboration with external applications

SP350 cannot be used for collaboration with 64-bit applications, such as 64-bit Outlook2010.
Because the COM interface of SP350 does not support 64-bit applications.

■ Restrictions/Use Conditions on Communication server

(1) General Conditions

- The MAC authentication is not supported.

- "Speaker" needs to be registered to a function key when changes are made to the default function key assignment.

(2) About line data registration

Except when another handset for collaboration is used and when SP350 is registered as the ACD terminal, the prime line needs to be the same as "My Line".

When another handset for collaboration is used, the line of that handset needs to be set as the prime line, and when SP350 is registered as the ACD terminal, the ACD line needs to be set as the prime line.

(3) About registration as ACD terminal

- Another handset for collaboration cannot be used.

- "Release" needs to be assigned to a function key.

(4) When using RCC (Remote Call Control) by UNIVERGE OW5000

- When RCC (Remote Call Control) by UNIVERGE OW5000 is used, another handset for collaboration cannot be used.

■ Restrictions/Use Conditions on SP350

(1) Differences in functions provided for the MOC mode compared with the Regular mode

- The Standard Panel cannot be used.

- The following functions are not available since they overlap with the MOC functions.
  - Presence
  - IM

- The Contacts functions are restricted.
  - Presence information cannot be displayed.
  - IM numbers cannot be registered. IM cannot be transmitted.
  - Caller information for an incoming call is not searched.

- The call history functions are changed.
  - IM addresses (SIP addresses), not IM numbers, are saved.
  - For an IM transmission, the IM of MOC is started. An IM cannot be transmitted to two or more parties simultaneously.
  - Registration in the phone book and Contacts cannot be performed.

(2) Note on migration (upgrade) from DtermSP30

- It is necessary to uninstall SP30, and to install SP350 newly.

(3) Notes on version migration (upgrade)

- The switchover of the SP350 Regular mode and the SP350 Softphone Plug-In mode requires uninstallation of SP350 application and setting environment. Then SP350 application and environment settings are reinstalling.

- The switchover of the SP350 Regular mode and the SP350 Thin Client requires uninstallation of SP350 application and setting environment. Then SP350 application and environment settings are reinstalling.

- To use the Softphone Plug-In cooperation function, settings are also required at the MOC side. Since the MOC settings are not performed at the SP350 installation, some system integration operations are required.

(4) Restrictions on use of 1-/2-digit extension numbers in the system

- The following two services cannot be used:
  - Incoming/Outgoing Log
  - Caller Information Panel

(5) When using the Hold service

- A call on hold may be disconnected during the hold cancellation operation depending on the timing.
- To place a call on exclusive hold, right-click the [Hold] button on the [Action] screen and select [Exclusive Hold] while you are on the phone.

(6) When using the IM function

- To send an IM to an ACD terminal, specify the My Line as the destination. For other than ACD terminal, specify the prime line.

(7) About "Online" status display (Presence display)

- When referencing "Online" status, the Presence server is accessed with the prime line number. Do not set the same prime line number in two or more SP350 implementations.

(8) About incoming/outgoing log

- In a transfer operation, the call history screen of the terminal to which a call is transferred does not display the number of the terminal from which a call is transferred.

- Incorrect number or status may be displayed in call history. In this case, SP350 may fail to redial recently dialed numbers.

(9) About call recording in PCs

- Depending on the other party, call recording may be unavailable with the "Recording" button disabled.

- Depending on the other party, the hold tone output when the other party has placed the call on hold may be recorded.

(10) About mail collaboration function

- The MS-Outlook mail collaboration function does not work on Microsoft Outlook 2000.

(11) When using a USB handset

- When off-hook and on-hook operations are repeated on the handset consecutively, the handset may go on-hook and SP350 may go off-hook. In this case, take the handset off-hook slowly again, and then put it on-hook.

(12) When using Thin Client

- The voice mail function cannot be used.

- To use PC recording, a thin client terminal that supports PC recording is required. For availability of PC recording, please refer to the specification/restrictions of each terminal.

- The codec type that can be used for PC recording differs according to the thin client terminal. For available codec types, please refer to the specification/restrictions of each terminal.

- In PC recording, there is a slight delay until recording is actually started because a recording start instruction is issued from Softphone to the thin client terminal via network. Therefore, the beginning of a talk may be cut off when recording is started. The delay generated is generally "{network delay between terminal and virtual PC} x 2 + several tens of ms."

- The RTP of PC recording is sending to Virtual PC then it does not recording if the communication broken by firewall between Thin Client and Virtual PC.

- RTP from the think client terminal to the virtual PC used for PC recording is excluded from SIP encryption. Even if SIP encryption is enabled, voice recorded on the PC will be transmitted from the terminal to the virtual PC without encryption.

- Whether or not a USB handset can be used on the thin client terminal differs according to the terminal type. For availability of USB handsets, please refer to the specification/restrictions of each terminal.

- The hot swap of a USB handset may not be supported depending on the operating system installed on the thin client terminal. For availability of the hot swap of USB handsets, please refer to the specification/restrictions of each terminal.

- If Thin Client terminal is power off (excluding use phone collaboration) the conversation is cut off. And no report recorded RTP Information Output for dropped call.

- When it operating Talking, Incoming or Listening Tone (excluded use Phone co-operation function) using Thin Client Terminal US100 or US110, in this case it does not playing other Application voice or playing tone (such as Music or Alarm Tone) on OS.

(13) About voice codec

- The voice quality of G.722 and AMR-WB is effective when a wideband-compliant audio device is used. UTR-1W-1 (BK), and HW251N+DA45 are recommended.

(14) When using a terminal for collaboration with Softphone

- This service cannot be used.

(15) When using a Data Conference

When using Data Conference between multiple offices, set the numbering plan correctly (Local office code/The maximum number of digits for extension number (within local office)) in SP350 maintenance setting. For a local office code, register the data with an access code included.

Operating Environment for Communication Server

The following constraints are applied when implementing SP350 on UNIVERGE SV8500 or UNIVERGE SV7000.
The MOC mode cannot be used in UNIVERGE SV8300.

■ **Restrictions/Use Conditions According to Operating Environment (such as PC, or OS)**

(1) Coexistence with other application

- SP350 cannot be used with Windows MAT.

■ **Restrictions/Use Conditions and Office Data Registration on Communication server**

(1) Required version of IP telephony server

- UNIVERGE SV8500, UNIVERGE SV7000 (R24 or later) or UNIVERGE NEAX2400 IPX with SIP BOX (R24 or later) is required to use SP350.

(2) Mandatory configuration

- Set the following office data:

    ADKS LKP=3 ("32 Line/Function keys")
    AKYD FKY 142: Logout

(3) About interface language change

- To display characters in English except for data and time, the multi-language display function of the IP telephony server needs to select English for SP350.

(4) When using the caller number ringtone identification function

- To use the caller number ringtone identification function by setting "Incoming Sound Patterns" on SP350 contact, configure the office data so that the ringtone sounds upon incoming call to the prime line.

    AKYD RG (Ringing information on each of multiple lines)

(5) Use of the Call Forwarding Panel

- To use Call Forwarding Panel, the following function keys need to be registered:

    AKYD FKY 1: Call Forwarding-Busy
             2: Call Forwarding-All Calls
            22: Call Forwarding-Don't answer
           148: Call Forwarding –Logout

(6) When using "Collaboration when unavailable" during use of Presence display

- To set "Collaboration when unavailable (DND (Do Not Disturb)/ Call Forwarding-All Calls)" through "User Settings" on SP350, the following function keys need to be registered:

    AKYD FKY 50: DND (Do Not Disturb)
             2: Call Forwarding-All Calls

(7) When using Answer Preset

- To use Answer Preset, the following function key needs to be registered: (when changes are made to the default function key assignment)

     AKYD FKY 28: Answer

(8) When using data conferences

- Set the following office data:
  Set bit 2 of ASYDL SYS1 INDEX: 863 to "1" (to enable the other-party information read function).

- Data conference service is not available when SP350 is operated under SR-MGC.

(9) When using Voice Mail system (UMS)

- Set the following office data:
  Set bit 5 of ASYD SYS1 INDEX: 435 to "1" (not to display the line lamp for message waiting).
   * Since the default setting is "0", be sure to change this setting when using UMS.

- To enable the "Recording" button on an extension, the following three function keys need to be registered:

     AKYD FKY 66: Recording
               69: End
               73: Listening

- To enable the functions displayed by right-clicking the "Recording" key on SP350, the following function keys need to be registered:

     AKYD FKY 67: After Recording
               71: Cancel

(10) When using Name Display

- Set the following office data:
  Set the bit 1 of ASYD SYS1 INDEX: 241 to "1" (16-digit display).
  * Since the default setting is "0", be sure to change this setting.

(11) Use in a Fusion environment

- Use of SP350 is supported in a Fusion environment. However, if extensions have logical numbers of nine (9) or more digits, the incoming/outgoing log from/to those extensions may not be displayed correctly.

- Display of nine (9) or more digits is enabled by setting bit 0 of ASYDL SYS1 INDEX: 672 to "1" (middle display position of logical number); however, 8-digit display is applied to extensions for which Name Display is set.

- In an environment where ping message reception is disabled, the "Visitor Display" button will not blink even when the home node of the FCCS cluster is restored.

(12) About ringtone

Even if the ringtone pattern is changed from the standard pattern by the office data, the change is not effective for SP350. (Only standard ringtone pattern is provided to SP350).

(13) About SP350 registration as ACD terminal

- It is required to set ACD line to a prime line.

- "Release" is required to be assigned to a function key.

- In order to acquire calling party information of incoming call to ACD (for accurate incoming logs), it is required to set the received ANI number to be displayed first as ACD incoming call identification that is displayed on the agent terminal when receiving or answering an incoming call to ACD.

(14) About Call Forward Line Lamp Indication

- If Call Forward Line Lamp Indication enabled, SP350 cannot performing Outgoing call. Please refer to Communication Server manual to setting enable/disable based on System configuration.

■ **Restrictions/Use Conditions on SP350**

(1) Operation upon change of key data on Communication Server

- When a change is made to key data settings on the side of Communication Server during SP350 operation, a reset operation is applied to the SP350.

(2) When using hold service

- When the group holding call is picked up by using the USB hand set, it is necessary to press the corresponding group hold button after taking the handset off-hook.

(3) Multi Party Conference

- A conference system (VS-32 or 8-party Conference Trunk) is required to support SP350 data conference (up to 8-party).

- Without a VS-32 or 8-party Conference Trunk, the number of participants supported in a data conference will depend on the PBX:-
    - Up to 2-party data conference can be supported in a pure IP system.
    - Up to 3-party data conference can be supported in a Hybrid (IP and TDM) system.

(4) Automatic Idle Return

- SP350 cannot automatically be placed in on-hook state upon origination or forwarding if the other party is restricted or the busy tone is heard.

(5) When using HandsetConfig

- For the keys set by HandsetConfig, the corresponding function keys also need to be registered on the side of IP Telephony Server except Mute, Volume adjustment (large), and Volume adjustment (small).

(6) About speech coding system

- This version supports the following payload types.

  G.711μ-law, G.711A-law, G.729a, G.722, AMR-NB (*1), AMR-WB (*1),
  G.711μ-law redundant, G.711A-law redundant, G.729a redundant, G.722 redundant, AMR-NB redundant (*1), AMR-WB redundant (*1)

  (*1) This version does not support both automatic and manual bit rate change to

AMR-NB/AMR-WB codec.

- This version supports payload sizes of 20 msec and 40 msec.

(7) About speech coding system (Thin Client)

- This version supports the following payload types

   G.711µ-law, G.711A-law, G.729a

- When it is use "SP350 SV LICENSE for VPCC" or "SP350 SV LICENSE for THINCL" that is support to G.722.

- This version supports payload sizes of 20 msec and 40 msec.

(8) Using SP350 as ACD terminal

- To use the silent monitoring function, UNIVERGE SV8500 (S5 or later) is required.

- Call origination using the following functions is possible after capturing a line for ordinal call. Outgoing/Incoming call history, redial, list of Input histories, phone book presence display panel, drag and drop from other applications, selecting phone number to call on other applications, right-click menu of text on I.E, and search results.

- The function key "selecting handset" and "selecting headset" icons cannot be used.

- To perform the automatic answer function, "Speaker" key is required to be enabled (lit in red). On SP350, the "Speaker key" automatically becomes enabled when "Automatic/Manual" key is lit.

- In order to acquire calling party information of incoming call to ACD (for accurate incoming logs), it is required to set the received ANI number to be displayed first as ACD incoming call identification that is displayed on the agent terminal when receiving or answering an incoming call to ACD.

- When a PC recording is performed, the beep sound is normally provided in accordance with SP350 setting, but, when it is performed during ACD monitoring, the beep sound is not provided. However, when a PC monitoring is performed while monitoring against the call in the legacy Fusion system, the beep sound is provided only to the SP350 of the supervisor. (The agent and the customer don't hear the beep sound). And the voice of the supervisor is recorded in PC recording on the supervisor's terminal but the agent and the customer don't hear the voice.

- Popup Dial keypad is provided when pressing the OAI keys. It is displayed regardless of the lamp status. It is displayed by clicking the OAI keys on the SP350 screen only, and not displayed by other operations, such as using handset.

- When the SP350 of the supervisor operates hold/release hold during ACD monitoring, a new outgoing log may be created in the Call History of the supervisor.

(9) Using Data Conference

- When using Data Conference in Thin Client, Video sending is not supported.

(10) About Camp-On

- When setting Camp-on via DTI Netfusing-CCIS over IP from SP350, the indication lamp for incoming call blinks but ringtone is not provided on Camp-On call.

UNIVERGE Soft Client SP350
Softphone Plug-In mode

Contents

Chapter 1 SP350 Setup Procedure

This chapter describes the SP350 setup procedure.

● PC operating environment

● Peripheral equipment (voice communication devices)

● Peripheral equipment (video camera)

● Network environment

● SP350 installation method

1.1 PC operating environment

1.1.1 Regular Mode

To install SP350 regular mode, the following operating environments are required.
On the PC other than normal one, OS (such as Linux, MAC or OS), or special edition (Embedded) that does not fulfill the conditions described in the table below, SP350 cannot be used.

Item	Operating environment
PC	NEC PC98-NX series or IBM-PC/AT compatible
OS	Windows 8 (64bit) (32bit) Enterprise, Pro (Note 1) (Note 2) Windows 7 SP1 (64bit)(32bit) Ultimate, Enterprise, Professional　(Note 2) Windows Vista SP2 (32bit) (Note 2) Windows XP SP3 (Note 3) / 2000 SP4 (Note 2) (Note 7) * DirectX version 8.1 or later is required.
Memory (Note 4)	Windows 8 　Installation space: 1 GB or more (32bit), 2 GB or more (64bit) 　Free space: 128 MB or more (Note 5) Windows 7 　Installation space: 1 GB or more (32bit), 2 GB or more (64bit) 　Free space: 128 MB or more (Note 5) Windows Vista 　Installation space: 512 MB or more　(Recommended: 1GB or more) 　Free space: 128 MB or more (Note 5) Windows XP/2000 　Installation space: 256 MB or more (Recommended: 512 MB or more) 　Free space: 128 MB or more (Note 5)
	When using in a data conference: 　Installation space: 512 MB or more (Recommended: 1 GB or more) 　Free space (without video conference): 256 MB or more (Note 5) 　Free space (with video conference): 384 MB or more (Note 5)
CPU	Windows 7/ Windows 8 　Pentium III 1 GHz or more Windows XP/2000/Vista 　Pentium III 800 MHz or more 　(Recommended: Pentium III 1 GHz or more)
	When using in a data conference: 　　Desktop PC: Pentium4 2 GHz or more 　　Laptop PC: PentiumM 1 GHz or more
HDD	Free space: 150 MB or more (Note 6)

Notes:

(1) Windows 8 unmarked edition is not supported on SP350.

(2) The Administrator authority is required when installing or upgrading the software.

The operation on the native mode (Windows XP Mode/ Windows Virtual PC) or compatible mode is not guaranteed.

When Windows7 64 bit is used, SP350 runs on WOW64.

(3) Windows XP Professional x64 Edition cannot be used.

(4) Save memory space recommended by Microsoft per OS.

(5) Memory free space is the difference between "total commit charge" and "total physical memory" in the task manager.

(6) Spaces for phone recording/voicemail are not included in the spaces shown above.
When using the phone recording or voice mail function, the recorded voice is saved as a sound file (.wav format). The file size for phone recording would be approximately 960 KB per minute for a PCM format (sound quality: PCM16 bit/8 kHz monaural), or approximately 95 KB per minute for a GSM6.1 format (sound quality: GSM6.1 8 kHz monaural).   Prepare your hard disk considering spaces to save those voice recording files.

(7) Windows 2000 is already finished Microsoft support service by 07/30/2010.

The following software is required to be installed to PC.

Software name	Version	Remarks
DirectX	Ver9.0c or later	In the case of unapplied PC: Installation is required (included in the SP350 main program)
Microsoft XML	Ver4.0 or later	(This software is installed at the same time of SP350 main program installation.)
Microsoft.Net Framework	Ver2.0 or 3.0 or 3.5 or 4.0 (Note 1)	(This software is installed at the same time of SP350 main program installation.) (Note 2)
VC Runtime	VC7.0/8.0/9.0/10.0	(This software is installed at the same time of SP350 main program installation.)
SkyPDF for SoftPhone	Ver1.0 or later	(This software is installed at the same time of SP350 main program installation.)
Adobe Flash Player	Ver9.0 or later	Please obtain a copy of Adobe Flash Player for Microsoft Internet Explorer from Adobe Systems web site or other download location which posts Adobe Flash Player. Installation of the application should be done after the SP350 has been completed.

Note 1: Ver 4.0 is only for Windows 7.
Note 2: Windows 8 has to enable ".Net Framework 3.5 (Include .Net 2.0 and 3.0)" for [Control Panel] -> [Program and Feature] -> [Windows Feature Enable or Disable].

Note: To share or save documents in a data conference, Microsoft Office (2000/XP/2003/2007 /2010/2013) is required to be installed to your PC.
The following Microsoft Office software is required depending on the file format of documents to be shared.

●Text   : Word
●PowerPoint   : PowerPoint
●Excel   : Excel
●Word   : Word

Software related to Microsoft Office Communicator

SP350 Version 4 (MOC mode) provides functions to collaborate with Microsoft Office Communicator (hereafter abbreviated as MOC).   It supports the following MOC version.

• Microsoft Office Communicator 2007
  * The older versions (MOC 2005 and before) are not supported.

For the software conditions of MOC 2007, refer to manuals of Microsoft Corporation.

1.1.2 **Thin Client**

The Thin Client cannot be used in UNIVERGE SV8300.

To install SP350 Thin Client, the following operating environments are required.

On the PC other than normal one, OS (such as Linux, MAC or OS), or special edition (Embedded) which does not fulfill the conditions described in the table below, SP350 cannot be used.

[VPCC mode]

Operating environment	
Thin client terminal	US100, US110 or US60 (Note 1)
	Remote Desktop Connection (64bit) (32bit) terminal (hereinafter written as RDC terminal) (Note 2)
Virtual PC server	Express 5800/VPCC Virtual PC server (My virtual PC type)
OS (Virtual PC server)	Windows 8 (64bit) (32bit) Enterprise, Pro (Note 3) (Note 5)
	Windows 7 SP1 (64bit) (32bit) Ultimate, Enterprise, Professional (Note 3)
	Windows Vista SP2 (32bit)　(Note 3)
	Windows XP Professional SP3　(Note 3) (Note 4)
	*　DirectX version 8.1 or later is required.
Memory (Note 6) (Virtual PC server)	When US100, US110 or US60 is used
	Windows 7/ Windows 8 　　Installation space: 1 GB or more (32bit), 2 GB or more (64bit) 　　Free space: 128 MB or more (Note 7) Windows Vista 　　Installation space: 512 MB or more 　　　　　　　　　　　　(Recommended: 1 GB or more) 　　Free space: 128 MB or more (Note 7) Windows XP 　　Installation space: 256 MB or more 　　　　　　　　　　　　(Recommended: 512 MB or more) 　　Free space: 128 MB or more (Note 7)
	When using in a data conference: 　　Installation space: 1 GB or more (Recommended: 1 GB or more) 　　Free space (without video conference): 256 MB or more (Note 7) 　　Free space (with video conference): 384 MB or more (Note 7)
HDD (Virtual PC server)	Free space: 150MB or more (Note 8)

Note:

(1) In US100/US110, the firmware corresponding to the telephone call is necessary.

　　US60 cannot support the voice call in the hand set.

(2) On Remote Desktop Connection terminal, the dedicated license software SP350 SV LICENSE for VPCC is required to be installed.

(3) The Administrator authority is required when installing or upgrading the software.

　　The operation on the native mode (Windows XP Mode/ Windows Virtual PC) or compatible mode is not guaranteed. When Windows 7/Windows 8 64 bit is used, SP350 runs on WOW64.

(4) Windows XP Professional x64 Edition cannot be used

(5) Save memory space recommended by Microsoft per OS.

(6) Windows 8 unmarked edition is not support by SP350.

(7) Memory free space is the difference between "total commit charge" and "total physical memory" in the task manager.

(8) Spaces for phone recording/voicemail are not included in the spaces shown above.

When using the phone recording or voice mail function, the recorded voice is saved as a sound file (.wav format). The file size for phone recording would be approximately 480 KB per minute for a PCM format (G.711/8 kHz monaural), or approximately 95 KB per minute for a GSM6.1 format (sound quality: GSM6.1 8 kHz monaural).

Prepare your hard disk considering spaces to save those voice recording files.

[Citrix]

Operating environment	
Thin client terminal	US40c, US110c or US300c (Note 1) (Note 2) Remote Desktop Connection (64bit) (32bit) terminal (hereinafter written as RDC terminal) (Note 2)
Virtual PC server	XenDesktop 5.5
OS (Virtual PC server)	Windows 7 (64bit) (32bit) (Note 3) Windows Vista SP2 (64bit) (32bit) (Note 3) Windows XP SP2 (64bit) Windows XP SP3 (32bit)
Memory (Note 6) (Virtual PC server)	When US40c, US110c or US300c is used

	Windows 7
	  Installation space: 1 GB or more
	  Free space: 128 MB or more (Note 7)
	Windows Vista
	Installation space: 512 MB or more
	                          (Recommended: 1 GB or more)
	Free space: 128 MB or more (Note 7)
	Windows XP
	Installation space: 256 MB or more
	                          (Recommended: 512 MB or more)
	Free space: 128 MB or more (Note 7)

	When using in a data conference:
	  Installation space: 1 GB or more (Recommended: 1 GB or more)
	  Free space (without video conference): 256 MB or more (Note 7)
	  Free space (with video conference): 384 MB or more (Note 7)

HDD (Virtual PC server)	Free space: 150MB or more (Note 8)

Note:

(1) In US110c cannot support the voice call in the handset either headset.

Only it can be use voice call for phone collaboration feature is available.

(2) On the except US110c terminals, the dedicated license SP350 SV LICENSE for THINCL is required.

(3) The Administrator privilege is required when installing or upgrading the software.

The operation on the native mode (Windows XP Mode/ Windows Virtual PC) or compatible mode is not guaranteed. When Windows 7/Windows 8 64 bit is used, SP350 runs on WOW64.

(6) Save memory space recommended by Microsoft per OS.

(7) Memory free space is the difference between "total commit charge" and "total physical memory" in the task manager.

(8) Spaces for phone recording/voicemail are not included in the spaces shown above.

When using the phone recording or voice mail function, the recorded voice is saved as a sound file (.wav format). The file size for phone recording would be approximately 480 KB per minute for a PCM format (G.711/8 kHz monaural), or approximately 95 KB per minute for a GSM6.1 format (sound quality: GSM6.1 8 kHz monaural).

Prepare your hard disk considering spaces to save those voice recording files.

The following software is required to be installed to PC(Virtual PC).

Software name	Version	Remarks
DirectX	Ver9.0c or later	When this software is not installed: Installation is required (included in the SP350 main program) About install method, refer to "2.6 About Direx version".
Microsoft XML	Ver4.0 or later	(This software is installed at the same time of SP350 main program installation.)
Microsoft .Net Framework	Ver2.0 or 3.0 or 3.5or 4.0 (Note 1)	(This software is installed at the same time of SP350 main program installation. (Note 2))
VC Runtime	VC7.0/8.0/ 9.0/10.0	(This software is installed at the same time of SP350 main program installation.)
SkyPDF for SoftPhone	Ver1.0 or later	(This software is installed at the same time of SP350 main program installation.)
Adobe Flash Player	Ver9.0 or later	Please obtain a copy of Adobe Flash Player for Microsoft Internet Explorer from Adobe Systems web site or other download location which posts Adobe Flash Player. Installation of the application should be done after the SP350 has been completed.

* 1: Ver 4.0 is only for Windows 7.

Note 2: Windows 8 has to enable ".Net Framework 3.5 (Include .Net 2.0 and 3.0)" for [Control Panel] -> [Program and Feature] -> [Windows Feature Enable or Disable].

1.2　Peripheral equipment (voice communication devices)

1.2.1　Regular mode

Any of the USB handset, USB headset, or terminal which can be collaborated with Softphone (when using the collaboration function with another phone) is required as the voice communication device.

Note that one unused USB port is required on the PC to use the USB handset or USB headset. Connect the USB handset or USB headset directly to this port to use.　Do not connect it via USB-HUB etc.

Note:　When using the USB handset or USB headset in combination with a USB camera,
　　　　connecting the USB port close to that of USB camera may impact the voice sounds.
　　　　In such a case, connect those devices with a distance as far as possible between USB ports.

Equipment	Item Name	Off-hook detection	Support OS			
			Windows 8 (Note 6)	Windows 7 (Note 6)	Windows Vista	Windows XP
USB Handset	UTR-1W-1(BK) UTR-1W-1(BK) FW version 5.0 or later (Note 1) (Note 2)	Available	x	x	x	x
	UTR-1W-1(BK)　(Note 2) Before FW version 5.0		x (Note 4)	x (Note 4)	x	x
	UTR-1-1RS(BK) (Note 1) (Note 2)		-	-	x	x
	UTR-1-1(BK) (Note 1) (Note 2)		-	-	x	x
USB Headset	Voyager510-USB	N/A (Note 5)	x	x	x	x
	VoyagerPro-UC		x	x	x	x
	SAVI-GO		x	x	x	x
	HW251N+DA45R	-	x	x	x	x
	HW251N+DA45		x	x	x	x
	HW251N+DA40R		x	x	x	x
	H251N+DA40		-	-	x	x

Note:
- (1) The device that can be connected to the headset connector is HW251N-U10P.
- (2) Upgrade from SP30 is supported.
- (3) A firmware upgrade is required.
- (4) The call control button of the headset cannot be used.
- (5) This is common to 32bit and 64bit.

You can get the latest information at the following Web site.
http://www.nec.co.jp/apex/sp350/
Described in "Specification/Operating conditions" in "About SP350"

1.2.2   VPCC mode (When using US110/US100/US60)

Either the handset or the headset is necessary as the equipment for the call.
They don't depend on the OS on virtual PC.

Equipment	Item Name	Off-hook detection	Thin Client Terminals		
			US110	US100	US60
Handset	USHST A-A	N/A	x	x	-
Headset	P251N-U10P HW251N-A10	N/A	x	x	-
USB Handset	UTR-1W-1(BK)	Available	x	-	-
Mobile Phone	-	-	x	x	x
Fixed Phone	-	-	x	x	x

You can get the latest information at the following Web site.
http://www.nec.co.jp/apex/sp350/
Described in "Specification/Operating conditions" in "About SP350"

1.2.3 VPCC mode (When using RDC Terminal/US40c/US300c)

Either the handset or the headset is necessary as the equipment for the call.
They don't depend on the OS on virtual PC.

Equipment	Item Name	Off-hook detection	Thin Client Terminals			
			Windows 8 (Note 1)	Windows 7 (Note 1)	Windows Vista	Windows XP
USB Handset	UTR-1W-1(BK)	Available	x	x	x	x
USB Headset	Voyager510-USB	N/A (Note 2)	x	x	x	x
	VoyagerPro-UC		x	x	x	x
	SAVI-GO		x	x	x	x
	HW251N+DA45R	-	x	x	x	x
	HW251N+DA45		x	x	x	x
	H251N+DA40		–	–	x	x
Mobile Phone	-	-	x	x	x	x
Fixed Phone	-	-	x	x	x	x

Note:
    (1) This is common to 32bit and 64bit.
    (2) The call control button of the headset cannot be used.

You can get the latest information at the following Web site.
http://www.nec.co.jp/apex/sp350/
Described in "Specification/Operating conditions" in "About SP350"

1.3　Peripheral equipment (video camera)

Information of USB camera that is recommended as equipment for Video Conference is described on the following URL.

　　http://www.nec.co.jp/apex/sp350/

Described in "Specification/Operating conditions" in "About SP350".

1.4　Network environment

1.4.1　Regular mode

The IP telephony server UNIVERGE SV8500, UNIVERGE SV7000 (R24 or later), or UNIVERGE NEAX 2400 IPX with SIP BOX (R24 or later) is required for using SP350.

If you use a firewall on currently using network, set IP address and unblock the port in advance to enable voice communication and applications in accordance with the following table.

[Ports to be unblocked for use through firewall]

SP350		Unblock direction	The other equipment
Port item	Protocol		
Port number for call control	UDP	Bidirectional	SV8500/SV7000 (VoIP server) Presence server
Port number for voice data (RTP)	UDP	Bidirectional	IP-PAD
		Bidirectional	IP terminal
Port number for voice data +1 (RTCP)	UDP	Bidirectional	IP-PAD
		Bidirectional	IP terminal
Application Port number for collaboration control Video port number	UDP	Bidirectional	SP350
Port number for control (for data conference)	TCP	Bidirectional	SP350

Notes:

(1)　For IP address of UNIVERGE SV8500 or UNIVERGE SV7000, contact the installation technician.

(2)　VoIP server is the Communication server.

1.4.2 Thin Client

If a firewall is used on the network you are using, set up the IP address and port release in advance according to the table below so that voice communication and applications can be used.

[Firewall Port Number Release Table]

SP350			Direction of Release	Counterpart Device
Device	Port Item	Protocol		
VPC side	Port number for call control	UDP	Bidirectional ⟷	SV8500/SV7000/IPX (VoIP server) presence server
	Port number for call control	UDP	Bidirectional ⟷	US100, US110, US60
	Port for PC recording (*)	UDP	Receiving direction ⟵	US110
	Port number for application collaboration control Video port number	UDP	Bidirectional ⟷	SP350
	Port number for control (Data conference)	TCP	Bidirectional ⟷	SP350
US100/ US110/ US60/ US40c/ US300c/ RDC terminal side	Port number for call control	UDP	Bidirectional ⟷	VPC
	Port number for voice data (RTP)	UDP	Bidirectional ⟷	IP-PAD
			Bidirectional ⟷	Each IP terminal
	Port number for voice data+1 (RTCP)	UDP	Bidirectional ⟷	IP-PAD
			Bidirectional ⟷	Each IP terminal
	Port for PC recording (RTP) (*)	UDP	Sending direction ⟶	VPC that is running SP350

* The same port number for call control may be selected on the VPC side and the US100/S110/US60/US40c/US300c/RDC terminal side.
* Regarding the IP addresses of UNIVERGE SV8500, UNIVERGE SV7000 or IP-PAD, please inquire the person in charge of construction.
* The VoIP server denotes the Communication server.
* The port for PC recording is acquired within the range of port numbers for voice data on both the VPC side and US110 side.

1.5   Methods of SP350 installation

There are three ways to set the SP350 environment as shown below.

The following part describes the operations for maintenance person and the operations for user in each method.

- When a maintenance person performs the environment settings (issued Setup.exe is used without change)
Refer to "1.5.1 Environment settings performed by a maintenance person" in Chapter 1.

- To perform the environment settings using configuration file (issued Setup.exe is used without change)
Refer to "1.5.2 Environment settings using configuration file" in Chapter 1.

- To perform environment settings automatically using installation file (the installation file is created by a maintenance person)
Refer to "1.5.3 Automatic environment settings using installation file" in Chapter 1.

[Environment setting method and workload]

Environment setting method	Workload of maintenance person	Workload of user
Environment settings by user	Light	Heavy
Environment settings by configuration file		
Automatic environment settings at installation	Heavy	Light

1.5.1 Environment settings performed by a maintenance person

1.5.1.1 Work flow before use

Work flow before using SP350 is shown below.

Operations by maintenance person	Operations by user

[1] Prepare the installation file

↓   Distribution

[2] Distribute the installation file to users ⟶ [1] Obtain the installation file

↓

[2] Execute the installation file

↓

[3] Perform the environment settings

↓

[4] Start SP350
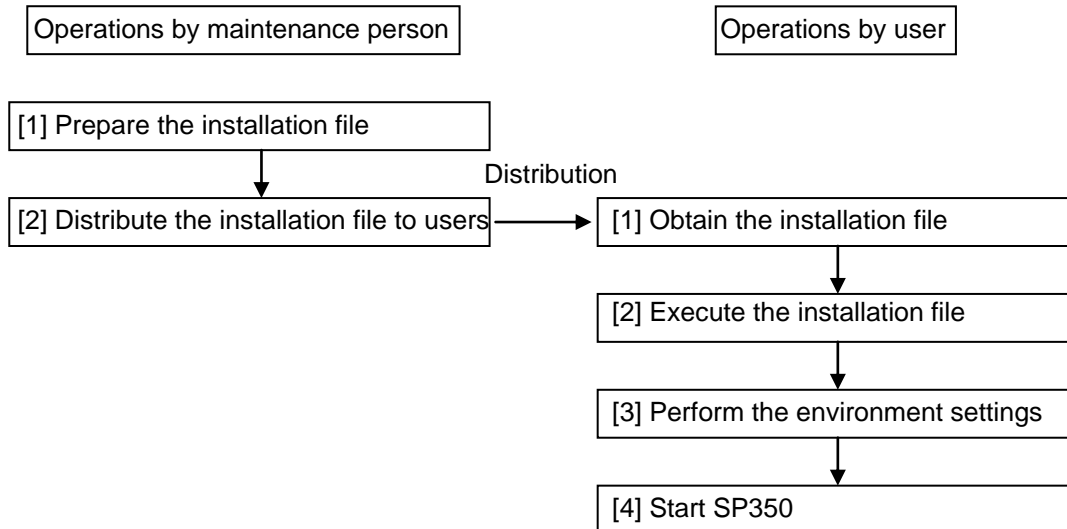
1.5.1.2 Operations by maintenance person

The procedure to the point of an installation file distribution to user by maintenance person is described below.

    Step1.   Prepare the installation file (Setup.exe) under the CD's root directory.

    Step2.   Distribute the installation file obtained in Step1 (Setup.exe) to user.

1.5.1.3 Operations by user

The following describes user's work operations required to start SP350.

    Step1.   Obtain the installation file (Setup.exe) from the maintenance person.

    Step2.   Execute the installation file.
            For the installation procedure, refer to "1.7 New installation" in Chapter 1.

    Step3.   Activate the SP350 maintenance setting function to perform the environment settings.
            For the use of the maintenance setting function, refer to "Chapter 2 SP350 Maintenance Settings".

    Step4.   Start SP350.
            For the starting procedure and use of SP350, refer to the User Guide.

1.5.2   Environment settings using configuration file

1.5.2.1 Work flow before use

The following describes the work flow before use.
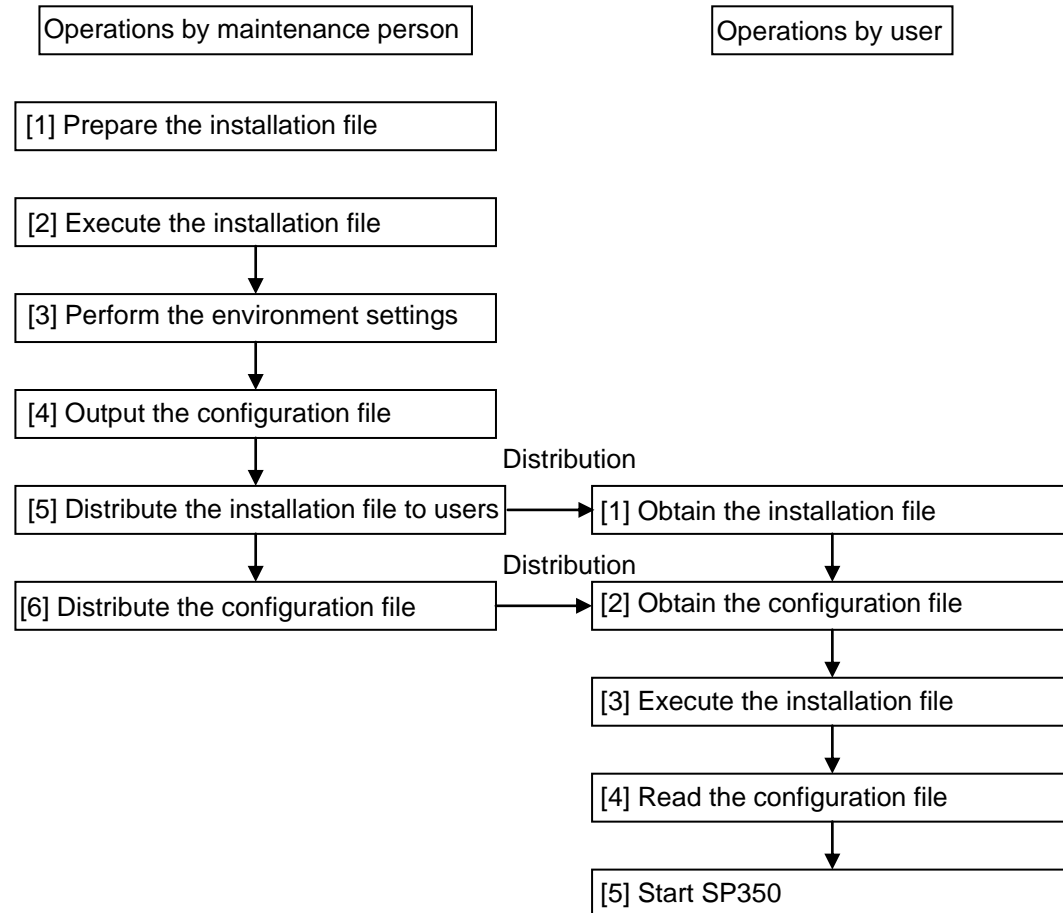
1.5.2.2 Operations by maintenance person

The following describes the work flow before distributing an installation file to user.

Step1. Prepare the installation file (Setup.exe) under the CD's root directory.

Step2. Execute the installation file to install SP350 to the maintenance person's PC.
For the installation procedure, refer to "1.7 New installation" in Chapter 1.

Step3. Activate the SP350 maintenance setting function to perform the environment settings.
For the use of the maintenance setting function, refer to "Chapter 2 SP350 Maintenance Settings".

Step4. Output the configuration file (the setting information, which has been set in Step3 using the maintenance setting function, to a file).
For the file output procedure of the setting information, refer to "Chapter 2 SP350 Maintenance Settings".

Step5. Distribute the installation file obtained in Step1 (Setup.exe) to user.

Step6. Distribute the configuration file which has been output in Step4 to user.

1.5.2.3 Operations by user

The following describes user's work operations required to start SP350.

Step1. Obtain an installation file (Setup.exe) from the maintenance person.

Step2. Obtain the configuration file from the maintenance person.

Step3. Execute the installation file to perform the installation.
For the installation procedure, refer to "1.7 New Installation" in Chapter 1.

Step4. Using the maintenance setting function, read the configuration file obtained from the maintenance person.
For the use of the maintenance setting function and how to read the file, refer to "Chapter 2 SP350 Maintenance Settings".

Step5. Start SP350.
For the starting procedure and use of SP350, refer to the User Guide.

1.5.3　Automatic environment and data conference settings using installation file

1.5.3.1　Work flow before use

The following three patterns are available for automatic environment and data conference settings using installation file.

I　　: Both "environment settings" and "data conference settings" are automated using installation file.

II　　: Only "environment settings" are automated using installation file.

III　　: Only "data conference settings" are automated using installation file.

The work flow before use varies depending on the work for I to III by maintenance person.

Work flow before using SP350 is shown below.

Operations by maintenance person		Operations by user

[1] Prepare the installation file (I, II, and III)

[2] Execute the installation file (I, II, and III)

[3] Perform the environment settings (I and II)

[4] Output the configuration file (I and II)

[5] Perform the data conference settings (I and III)　(Note)

[6] Output the configuration file (I and III)　(Note)

[7] Compress the installation file (I, II, and III)

[8] Distribute the installation file to users (I, II, and III)

Distribution →

[1] Obtain the installation file

[2] Execute the installation file

[3] Start SP350

Note: This work is required when data conference settings are customized.　It can be omitted if they are not customized.

1.5.3.2 Data to be distributed for automation

When environment settings and data conference settings are automated using installation file, data that can be distributed are as follows.

Automation Target	Data to be Distributed		

Environment settings	• Data to be set by the maintenance setting
	  • Network setting
	  • System setting
	  • Security setting
	  • Audio setting		

Data conference settings	• Data to be set by the "Tool" menu (Note 1) • Data to be set by the "View" menu (Note 1) • Data conference screen data		
	Screen	• Coordinate on the upper left corner (Note 2) • Width (Note 2) • Height (Note 2) • Status	
	Proportion of the pane	• Horizontal direction • Vertical direction	
	Chat screen	• Position (Note 2) • Width (Note 2) • Height (Note 2) • Status	

(Note 1) The following functions are not distributed.
- Automatic save destination path for the communication board.
- Automatic save destination path for the chat.

(Note 2) These items may not be reflected depending on the resolution.

1.5.3.3 Operations by maintenance person

The procedure to the point of an installation file distribution to user by maintenance person is described below.
Perform the work according to the installation patterns I to III.

Step1. Prepare the installation file.   (I, II, and III)
Prepare the following 10 files for installation under the "install" directory in the CD.

- data1.cab
- data1.hdr
- data2.cab
- ISSetup.dll
- layout.bin
- setup.exe
- setup.ini
- setup.inx
- Ver.dat
- _Setup.dll

Step2. Execute the installation file.   (I, II, and III)
Execute "Setup.exe", which is one of the obtained 10 files for installation, to install SP350 to the maintenance person's PC.

Step3. Activate the SP350 maintenance setting function (environment setting tool) to perform the environment settings.   (I and II)
For the use of the maintenance setting function, refer to "Chapter 2 SP350 Maintenance Settings".   Also, after SP350 starts, set information regarding the SP350 operation on the user setting screen.

Step4. Output the configuration file for environment settings.   (I and II)
Output the information, which has been set using the maintenance setting function in Step3, to a file.   Save this information with the file name of "SP350AutoConf.ini".   Otherwise, the environment setting cannot be performed automatically.   For the procedure of outputting the setting information, refer to "2.3.5.2 Export" in Chapter 2.

Step5. Activate the data conference to perform the data conference settings by following "How to Use a Data Conference" - "Starting a Data Conference" in the UNIVERGE Soft Client SP350 User Guide.   (I and III)
For how to set the data conference settings, refer to "How to Use a Data Conference" - "How to Use Various Settings" in the UNIVERGE Soft Client SP350 User Guide.

Step6. Output the configuration file for data conference settings.　(I and III)
After setting various types of information for the data conference, output the information, which has been set in Step5 to a file using the import/export function.　Save this information with the file name of "SP350DataMeetingAutoConf.xml".　Otherwise, the data conference setting cannot be performed automatically.　For the procedure of outputting the setting information, refer to "Import/Export" - "Using Import" in the UNIVERGE Soft Client SP350 User Guide.

Step7. Create the installation file with the environment or data conference settings.　(I, II, and III)
Create an installation file to distribute to user (Setup.exe).

The following sub-steps describe how to compress the file using IExpress which is included in Windows.

Sub-Step7-1　Click [Start Search] in the [Start] menu. (Note)
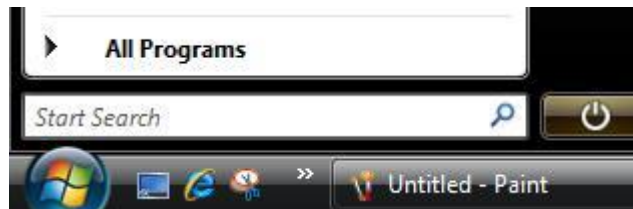
> Note: For Windows 8, right-click on Start screen and select [All apps] -> [Windows System Tool] -> [Run…].

Sub-Step7-2　Enter "IExpress" in the [Start Search] field and press the Enter key to start IExpress Wizard.
The following screen appears.

① Click [Next] until the screen in step 3 appears.

Sub-Step7-3   Click [Next] in the "Welcome to IExpress 2.0" screen until the "Package title" screen appears.

① Enter "SP350".

② Click [Next] until the screen in step 4 appears.
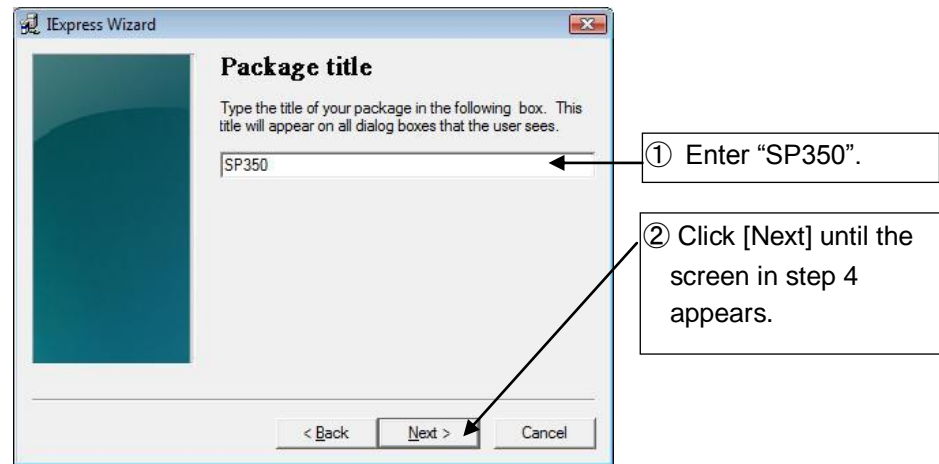
Sub-Step7-4   Enter "SP350" and click [Next] until the following screen appears.
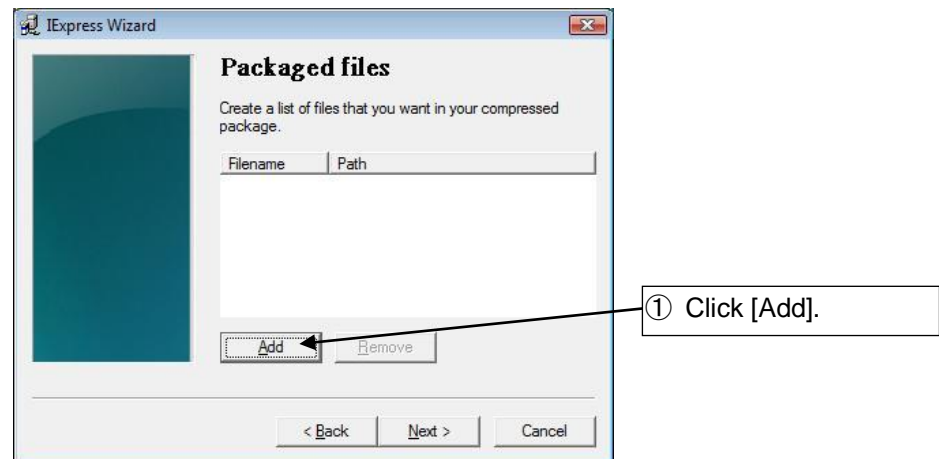
① Click [Add].

Sub-Step7-5   Click [Add] on the "Package files" screen.
               The following screen appears.

①Select all the installation files. (You can use "Ctrl+Alt" to select all.)

②After selecting all the files, click [Open].
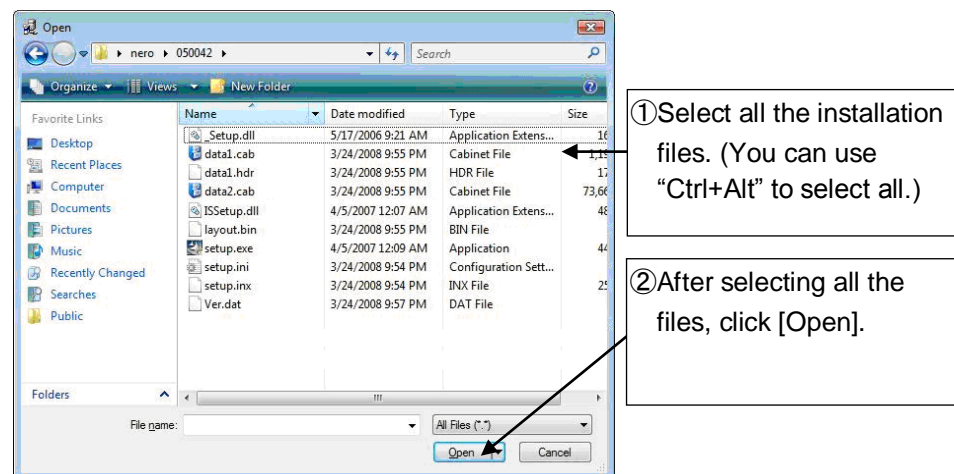
Sub-Step7-6   Select all the installation files (10 files) prepared in Step1 and click [Open].
                The following screen appears.

①Confirm that all the files selected in Step 6 are listed.
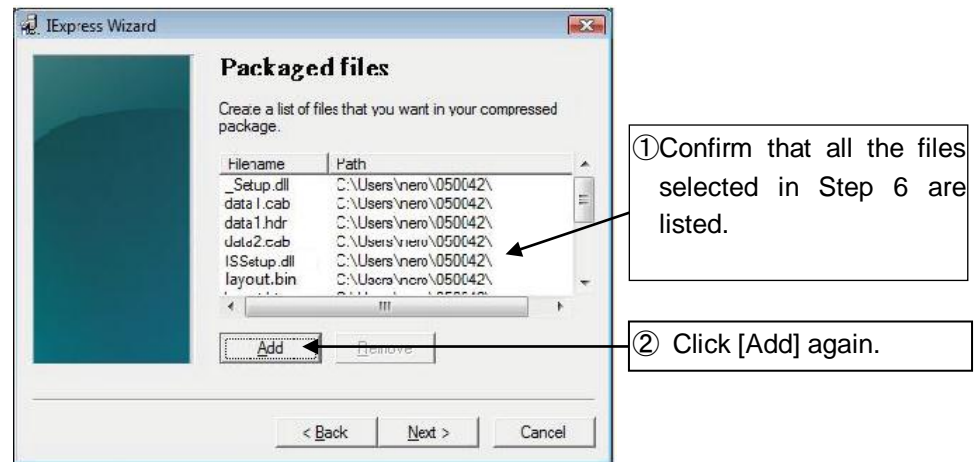
② Click [Add] again.

Sub-Step7-7   Confirm that all 10 files are listed, and click [Add] again.
                The following screen appears.

① Select the configuration file for environment settings output in step4.
Note) A file available for the simple installation is only the ini file applying "Export" on "Maintenance Setting".

② Select the configuration file for environment settings and click [Open].
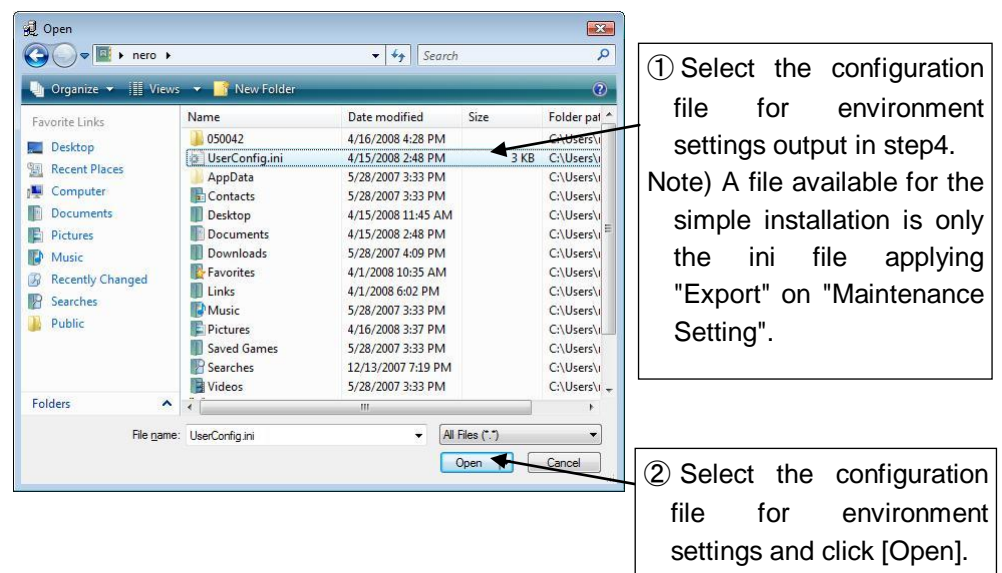
Sub-Step7-8   Select the configuration file for environment settings or for data conference settings output in Step4 or Step6 and click [Open].

Notes:

(1) The configuration file for environment settings (ini format) exported with the maintenance setting function or the configuration file for data conference settings (xml format) exported with the import/export function can be used for the simple installation.

(2) The relationship between the files to be added in this step and the installation patterns are as follows.

    I   :   Configuration file for environment settings and configuration file for data conference settings

    II   :   Only configuration file for environment settings

    III :   Only configuration file for data conference settings

The following screen appears.
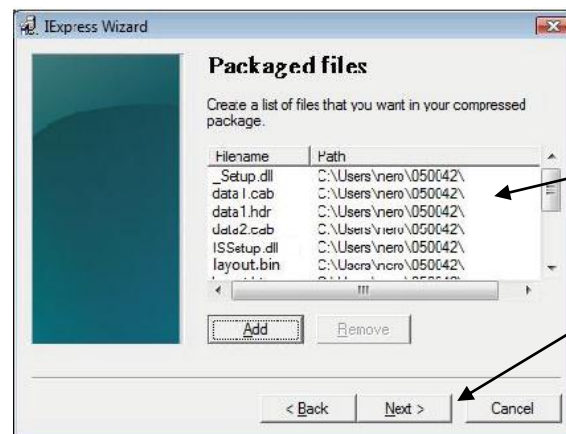
①Confirm that all the files selected in step 6 and 8 are listed.

②Click here until the screen in step 10 appears.

Sub-Step7-9   Confirm that all the file names selected in Sub-Step7-6 and Sub-Step7-8 are listed.   Click [Next] until the "Installation Program to Launch" screen appears.

Note: File names to be displayed in the list box are as follows.
- data1.cab
- data1.hdr
- data2.cab
- ISSetup.dll
- layout.bin   ⟹ Installation files
- setup.exe
- setup.ini
- setup.inx
- Ver.dat
- _Setup.dll
- SP350AutoConf.ini   ⟹ Configuration file configuration
  (added in the case of I and II)   file for environment settings

Sub-Step7-10   Select "Setup.exe" in [Install Program].   ([Post Install Command] should be "None" (default).)   Then click [Next] until the "Package Name and Options" screen appears.

① Select [Setup.exe].

② Click [Next].
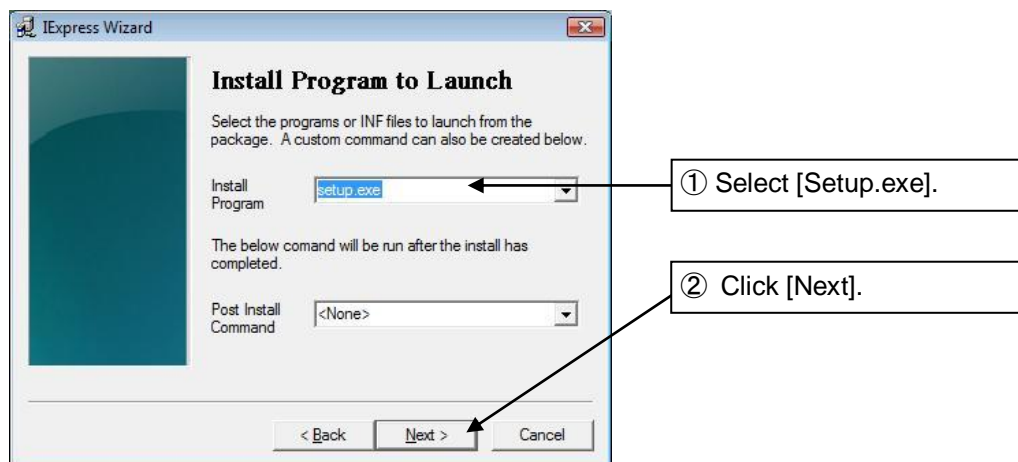
Sub-Step7-11 Enter "Setup.exe" and check the "Store files using Long File Name inside Package".
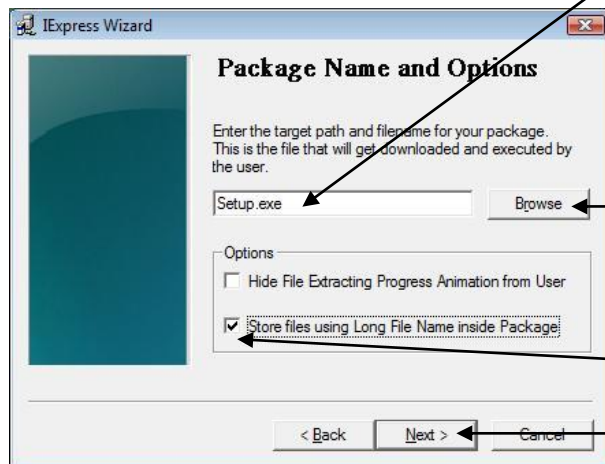
① Select [Setup.exe].

Note) To change the output destination of the file, click [Browse] to specify another destination. And enter [Setup.exe] in the file name input field on the "Choose Destination Location" screen.

② Check here.

③Click [Next] until the screen in Step12 appears.

Note: The destination of the compressed installation program to output varies depending on the specification in the input field.

- When entering only "Setup.exe":
  c:\Users\<login name for windows> (Windows Vista/7/8)
  c:\Documents and Setting\<login name for windows> (other)

- When clicking [Browse] to specify a destination folder, or entering a file name with full-qualified path:
  Under the specified folder (folder under the input path)

The following screen appears.
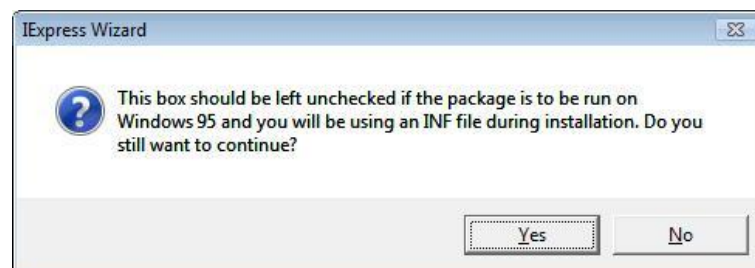
Sub-Step7-12 Click [Yes] on the confirmation dialog. Then, click [Next] until the "Save Self Extraction Directive" screen appears.

① Select [Don't save].

②Click [Next] until the screen in Step13 appears.
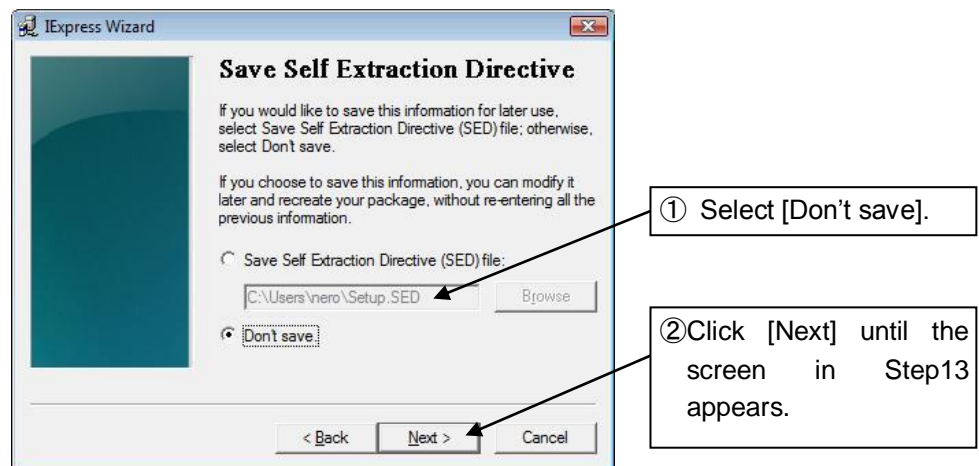
Sub-Step7-13 Select "Don't save". Then click [Next] until the "Create package" screen appears.
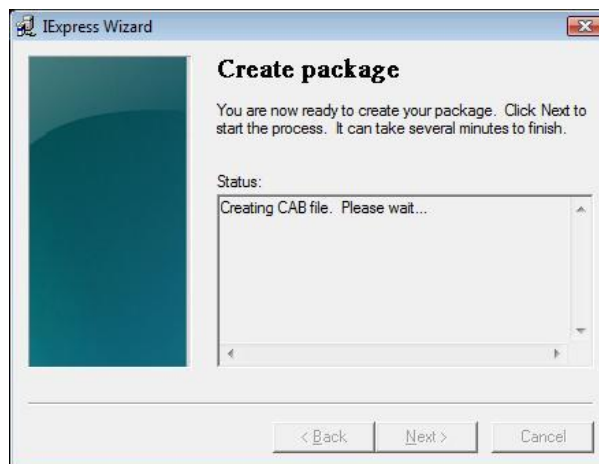
Indicating the command prompt screen starts compressing the installation program.

Sub-Step7-14   Wait until the following screen appears.
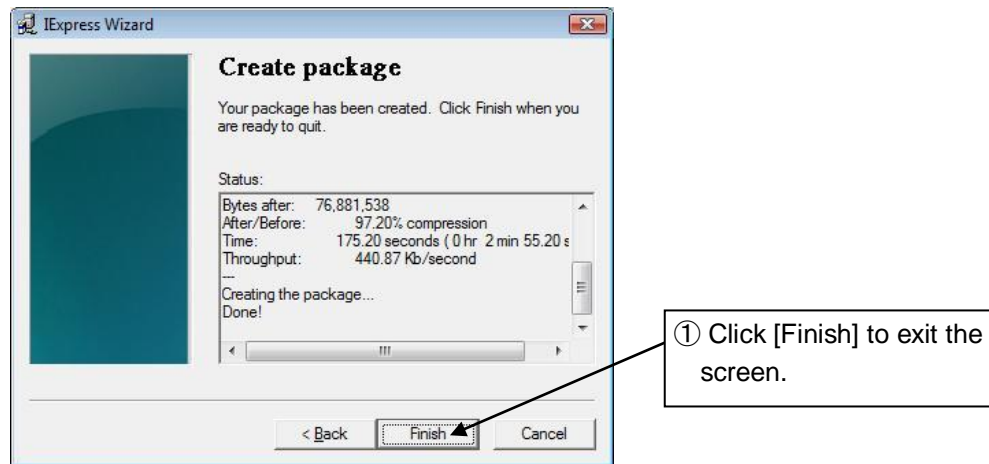
Sub-Step7-15   Click [Finish].

Note: The destination of the compressed installation program to output varies depending on the specification in the input field on Sub-Step7-11.

- When entering only "Setup.exe":
  c:\Users\<login name for windows> (Windows Vista/7/8)
  c:\Documents and Setting\<login name for windows> (other)

- When clicking [Browse] to specify a destination folder, or entering a file name with full-qualified path;
  Under the specified folder (folder under the input path)

Step8.   Distribution of the installation file (Setup.exe) to user.   (I, II, and III)
Distribute the file created in Step7 to user.

Step9.   Output the configuration file for environment settings.   (III and when the environment settings are performed by the configuration file for environment settings)
Activate the maintenance setting function to output the configuration file for environment settings.
For the procedure of outputting the setting information, refer to "Chapter 2 SP350 Maintenance Settings".

Step10. Distribution of the configuration file for environment settings to user.   (III and when the environment settings are performed by the configuration file for environment settings)
Distribute the configuration file for environment settings output in Step9 to user.

1.5.3.4 Operations by user

The operations to be performed by user to start SP350 are described below.

For the installation pattern I or II

Step1. Obtain the installation file (Setup.exe) from the maintenance person.

Step2. Execute the installation file
Perform the installation using the obtained installation file (Setup.exe). For the installation procedure, refer to "1.7 New installation" in Chapter 1.

Step3. Start SP350.
For the starting procedure and usage of SP350, refer to the User Guide.

For the installation pattern III

When the environment settings are performed by a user
Refer to "1.5.1.3 Operations by User".

When the environment settings are performed using the configuration file for environment settings
Refer to "1.5.2.3 Operations by User".

1.6 Installation

To install SP350, perform the following procedure.

Perform the installation with the Administrator authority.

Note that the Domain Administrator authority is required in a domain environment.

- Installation from installation file.

Note: If the screen operation stops during the installation, another screen may be hidden behind the screen. In such a case, press the Windows key to check the taskbar.

1.7 New installation

To install SP350, perform the following procedure. For the new installation, you can download an installation file for SP350 in your hard disk first and then install the program.

Step1. Download the SP350 installation file (Setup.exe) to your hard disk, or prepare the CD-ROM containing the installation file for SP350.

Step2. Start the installation file for SP350 (Setup.exe).
A dialog appears to indicate the wizard is been prepared.
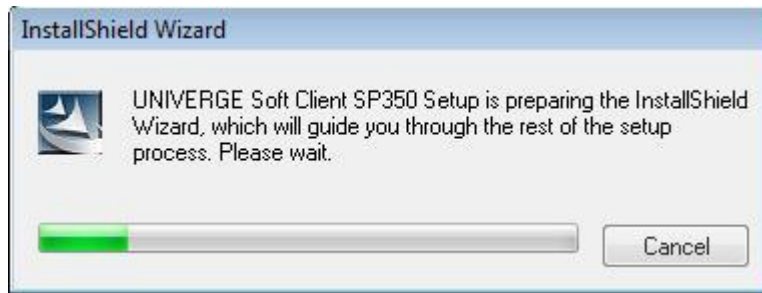
Note: If you use Windows Vista or Windows 7, the user account controlling screen appears after SP350 installation file (Setup.exe) starts. Clicking [Continue] shows a dialog indicating that the wizard is been prepared.

Step3. When the wizard preparation is completed, a screen to select an interface language for Softphone operations appears.

Step4. Select "English" and click [OK].
The wizard startup dialog appears.
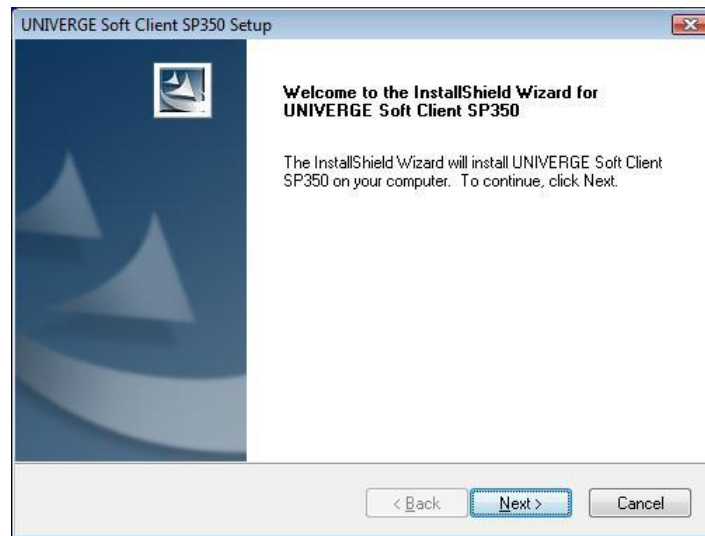
Step5. Click [Next].
The "License Agreement" screen appears.
Please read the Software License Agreement.
If you accept all items, select "I accept the terms of the license agreement" and Click
[Next].

Step6.   The "VoIP server type selection" screen appears.
Select UNIVERGE SV8500/SV7000 and click [Next].

Step7.   The "System requirements selection" screen appears.
Select match System requirements and click [Next].
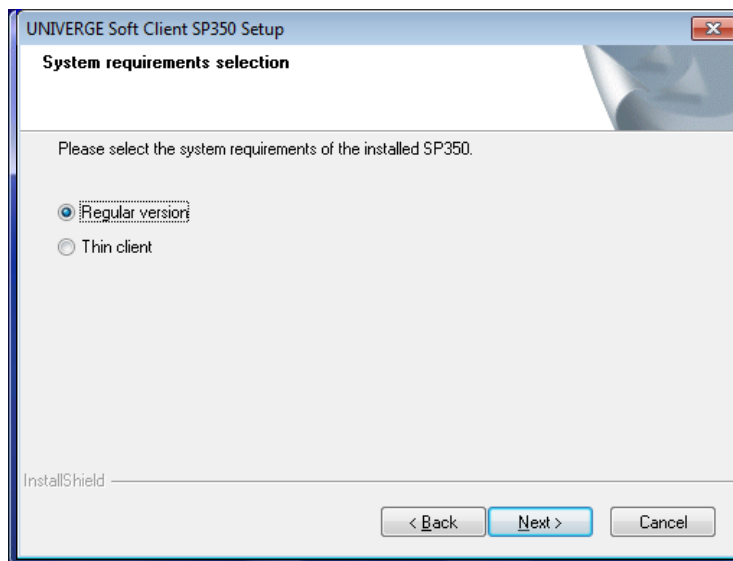
Step8.   Click [Next].
The "Choose Destination Location" screen appears.
To change the folder which has been already selected, click [Browse] to specify another directory.
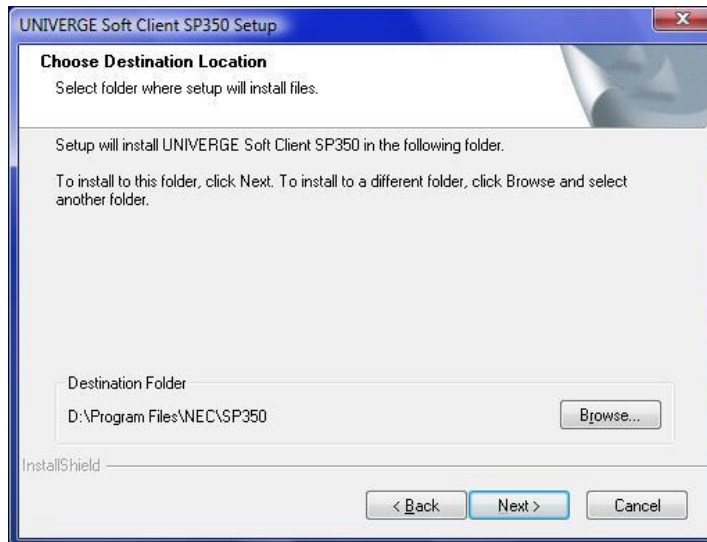
Step9.   Click [Next] on the "Choose Destination Location" screen. The Select Softphone Plug-In Function screen appears. Click to select [Enable Softphone Plug-in] checkbox.
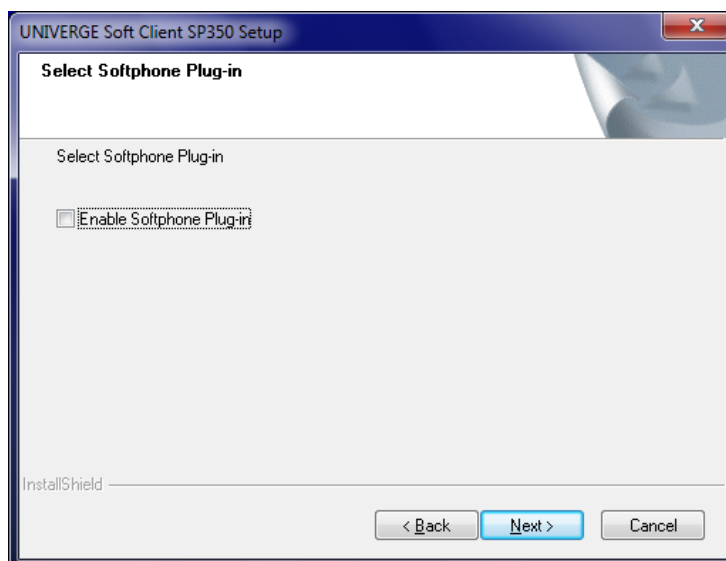
Step10. Check the [Enable Softphone Plug-in] checkbox on Select Softphone Plug-In Function screen and click [Next].
The "Select Shortcut" screen appears.
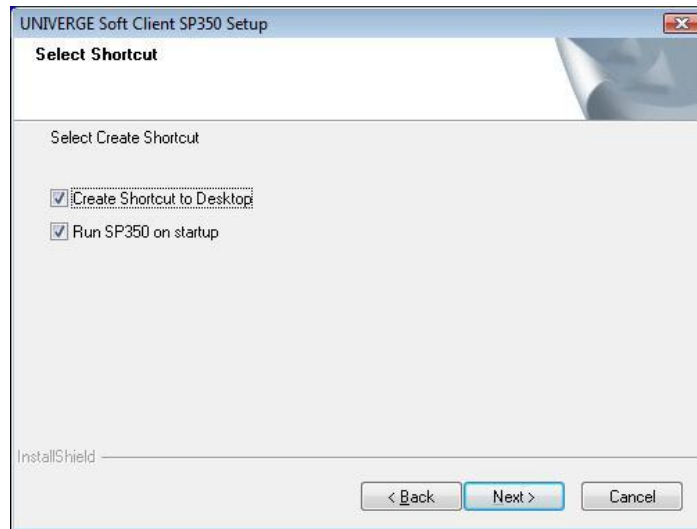
Step11. Check any desired option and click [Next] to start setup.
A status screen appears to show the setup progress during the setup.
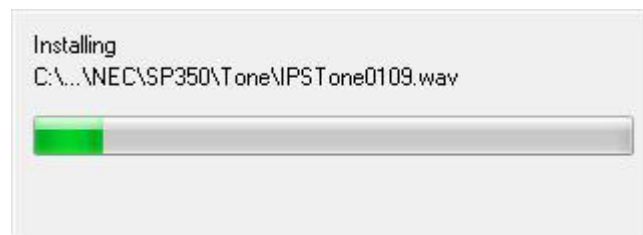
Notes:
(1) The progress may not be updated with the progress bar remaining at 0%, or the following dialog indicating that the installation is in progress may appear instead of the status screen. Both cases are normal and installation functions well. Please wait for a while.
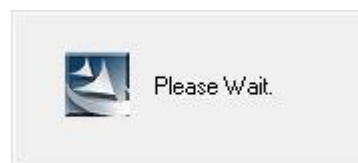

(2) The following error message may appear after the status screen.
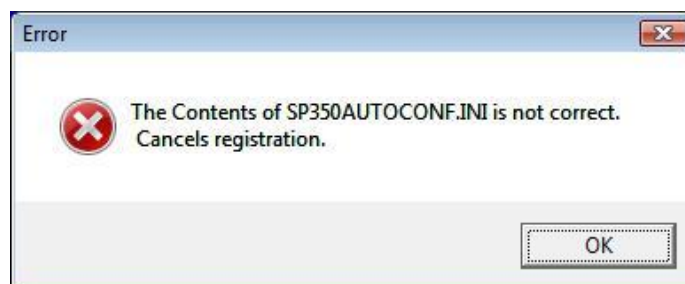
A file available for the simple installation is only the ini file applying "Export" on "Maintenance Setting". If another file such as a file which has been saved by "SP350" -> "Export" -> "Environment setting" has been included, the information cannot be set to a registry. Wait for a while even in such a case because the installation is normally in progress.

Step12. Microsoft.NET Framework 2.0 is installed automatically.
Note that this installation is omitted if .Net Framework 2.0 has already been installed on your PC.

Step13. The registration and start process of the services are performed.
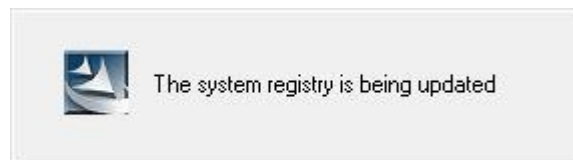
Step14. After the registration and start process of the services are completed, SkyPDF Pro for Softphone is installed automatically.

Step15.   When the installation of SkyPDF Pro for Softphone is completed, the following screen appears. Select [Yes, I want to restart my computer now] and click [Finish] to restart your PC.
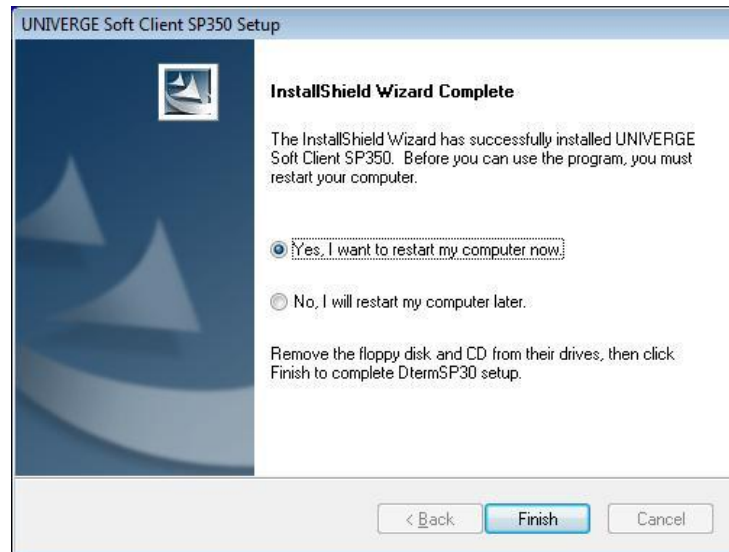
Caution: When the installation of SkyPDF Pro for Softphone is completed, the following warning message may appear. In such a case, please download Adobe® Flash® Player from Adobe Systems Web site or other applicable Web site, and install Adobe® Flash® Player. In order to use Data Meeting, the installation of Adobe® Flash® Player is required.
Please install Adobe® Flash® Player for Microsoft® Internet Explorer.
Data Meeting may not work with Adobe® Flash® Player plug-ins for other browsers.
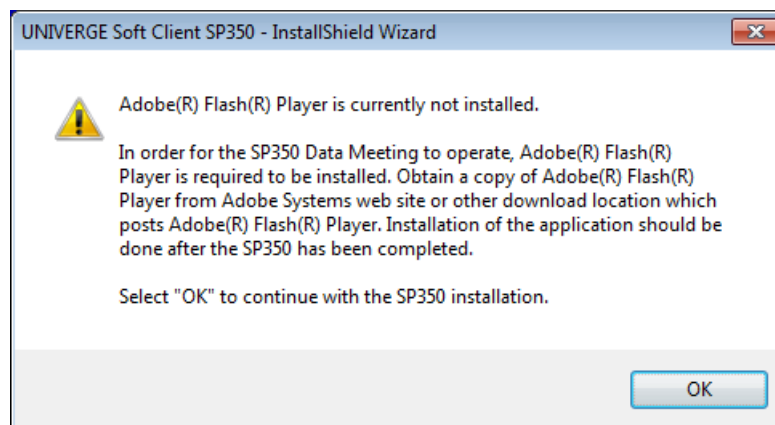
Step16. After completing installation, select "Yes, I want to restart my computer now." and click [Finish] to restart your PC.

This is the end of the installation of the following.

- SP350 (Softphone main program)
- Maintenance settings (Maintenance configuration setting application)
- Automatic startup setting (SP350 startup setting tool)
- File update
- Handset setting

After the new installation completes, you need to start the maintenance configuration setting application (maintenance setting function) to perform the environment settings (for the environment settings, refer to "Chapter 2 SP350 Maintenance Settings").

Note: In the case of a simple installation, the environment setting by the maintenance setting function is not required.

1.8   Program file update

1.8.1   Update using installation file

To update SP350, perform the following procedure.   The program can be updated after downloading a new installation file for SP350 to your hard disk, or preparing the CD-ROM which contains the installation file for SP350.

Step1.   Confirm that "SP350", "Maintenance" and "Applications using SP350 COM (ex. Outlook)" are not running.
If any of them are running, stop them.

Step2.   Download a new installation file for SP350 to your hard disk, or prepare the CD-ROM which contains the installation file.

Step3.   Start the installation file for update that has been saved in the disk.
The following status screen appears to indicate the wizard is been prepared.
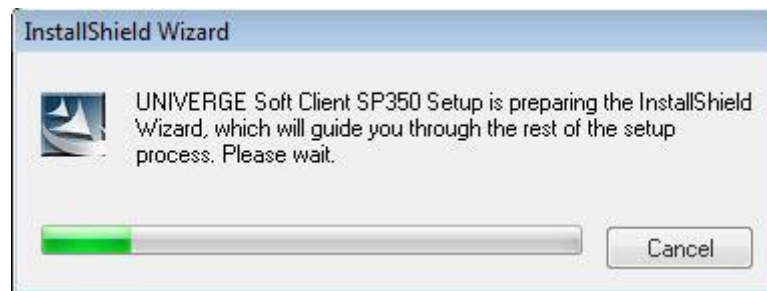
Note: If you use Windows Vista, Windows 7 and Windows 8, the user account controlling screen appears after starting the installation file for update.   Clicking [Continue] displays a screen indicating that the wizard is been prepared.

Step4.   After the wizard is prepared, an update confirmation dialog appears.
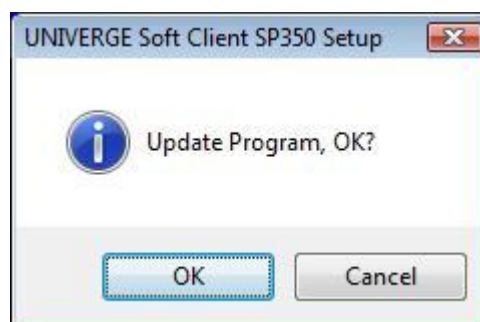
Note: If the following error message appears, Click [OK] and return to Step1.
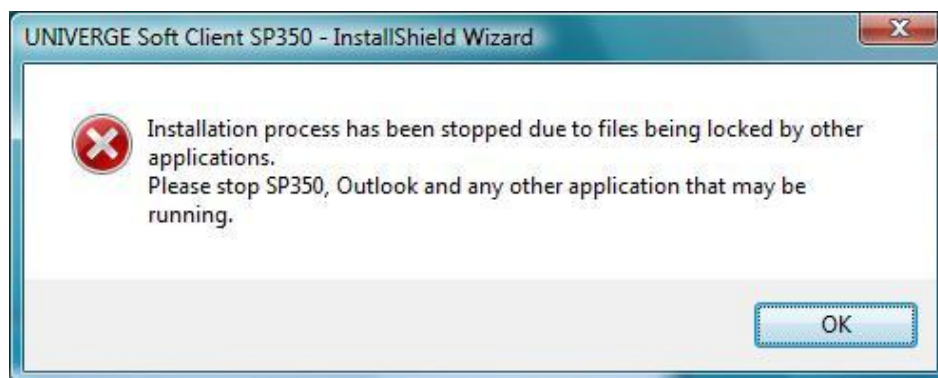
Step5. Click [OK].
If The "License Agreement" screen appears, please read the Software License Agreement. If you accept all items, select "I accept the terms of the license agreement" and Click [Next].

Step6. A status screen appears to show the setup progress during the setup.
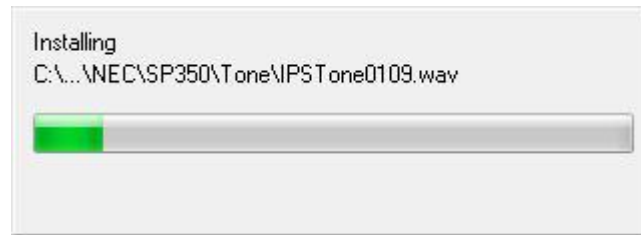
Note: The progress may not be updated with the progress bar remaining at 0%, or the following dialog indicating that the installation is in progress may appear instead of the status screen. Both cases are normal and installation functions well. Please wait for a while.

Step7. Microsoft.NET Framework 2.0 is installed automatically.
Note that this installation is omitted if .NET Framework 2.0 has already been installed on your PC.

Step8. The registration and start process of the services are performed.
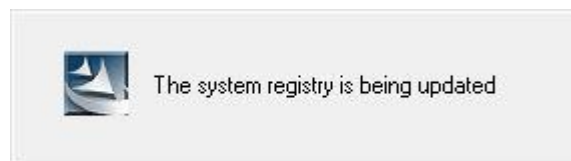
Step9. After the registration and start process of the services are completed, SkyPDF Pro for Softphone is installed automatically.
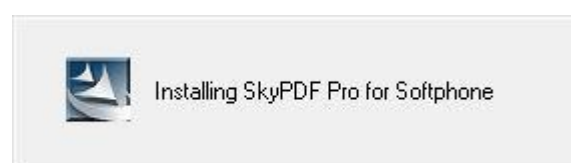
Step10. Click [OK].

The following message notifies that the update has been normally completed.
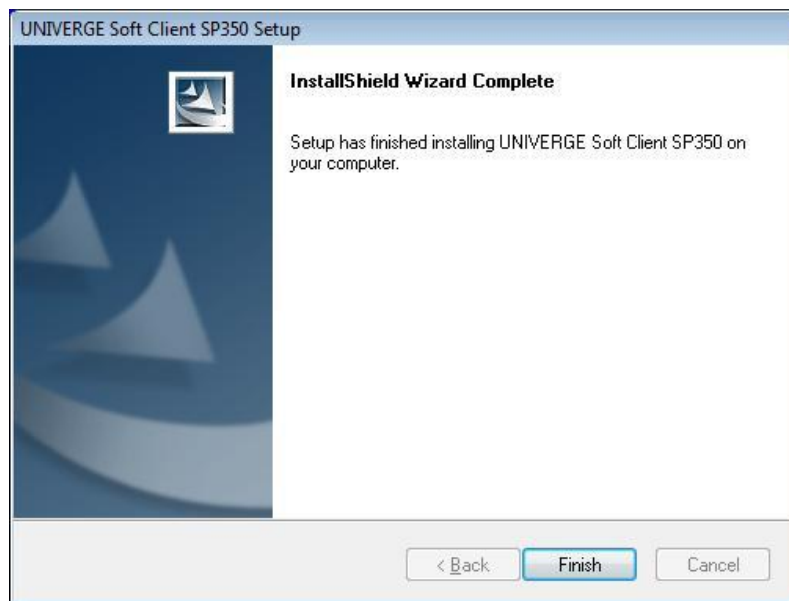
Caution: When the installation of SkyPDF Pro for Softphone is completed, the following warning message may appear. In such a case, please download Adobe® Flash® Player from Adobe Systems Web site or other applicable Web site, and install Adobe® Flash® Player.
In order to use Data Meeting, the installation of Adobe® Flash® Player is required.
Please install Adobe® Flash® Player for Microsoft® Internet Explorer.
Data Meeting may not work with Adobe® Flash® Player plug-ins for other browsers.
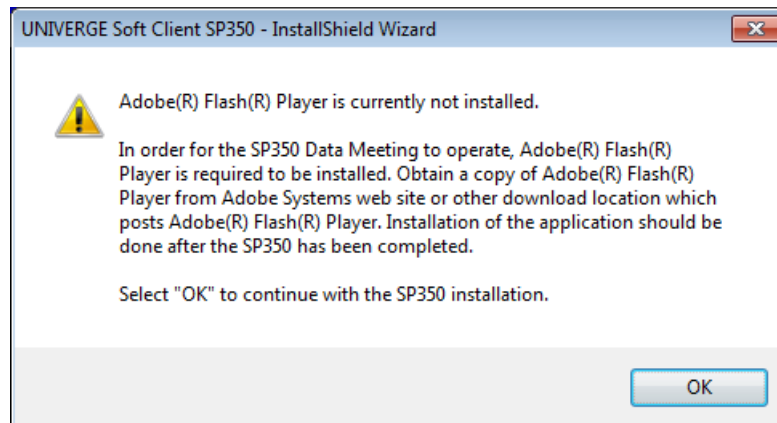
In some cases, the screen indicating the InstallShield Wizard has been completed appears. In such a case, select "Yes, I want to restart my computer now." and click [Finish] to restart your PC.
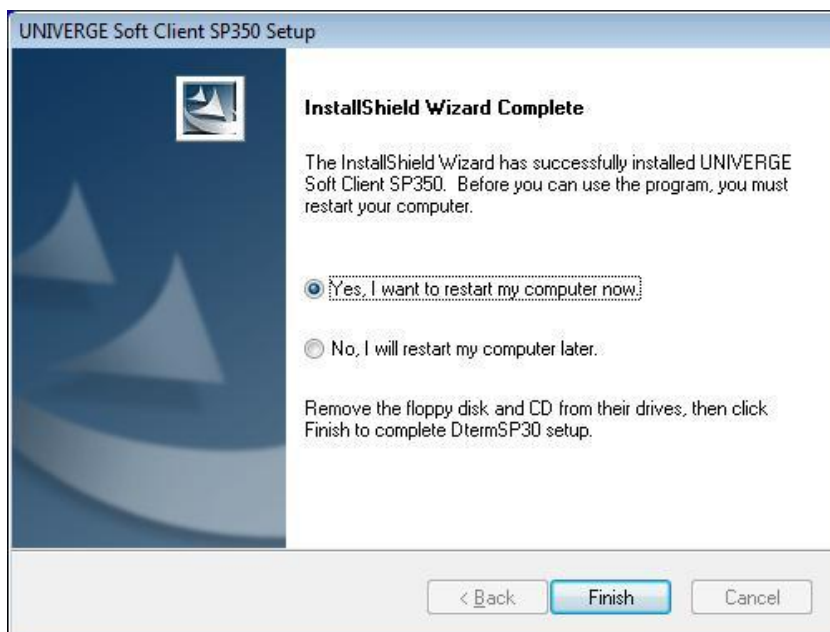
Step11. Click [Finish].

This is the end of the update operation.

1.8.2   Update using FTP

SP350 can also be updated using FTP, in addition to the method of using update installation files. When using FTP, prepare an FTP server separately.   This section describes the respective procedures to be performed by the maintenance person and Softphone user for updating SP350 through FTP.

Note: Only the operation of Microsoft Internet Information Service (IIS) has been verified as an FTP server.

1.8.2.1 Update by maintenance person

The maintenance person should perform the following preparation work for Softphone users to update SP350 through FTP.

Step1.   Prepare an FTP server, and create a user account which has the right to download files from this server ("anonymous" account is also available).
The user account created in this step will be used by Softphone users.

Step2.   Prepare the CD-ROM containing the SP350 update installation files.

Step3.   Create the "SP350" directory under the root directory of the user account created in Step1.

Step4.   Copy all files in the "Install" folder of the CD-ROM into the "SP350" directory created in Step3.
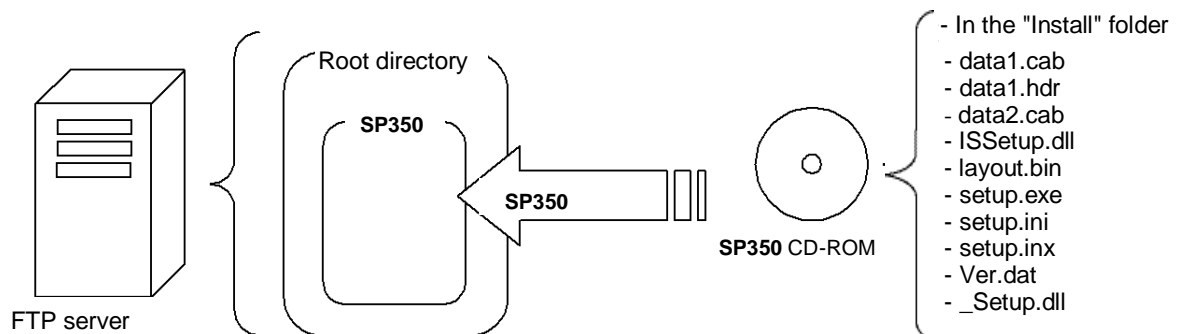
Step5. Using an editor, open the "Ver.dat" file, one of the files copied into the FTP server in Step4, and set "FTPMODE=1" in the file as shown below.

When using an FTP-based simple installation function, proceed to Step6. (When not using this function, skip Step6 and proceed to Step7.)

- When upgrading the version: FTPMODE=1

```
┌────── Ver.dat ──────┐
│                     │
│  VERSION = X.X.X.X  │
│                     │
│  START = 1          │
│                     │
│  FTPMODE = 1        │
│                     │
└─────────────────────┘
```

X.X.X.X: Version information (X: number)

Change this setting.
To upgrade the version,
set "FTPMODE=1".
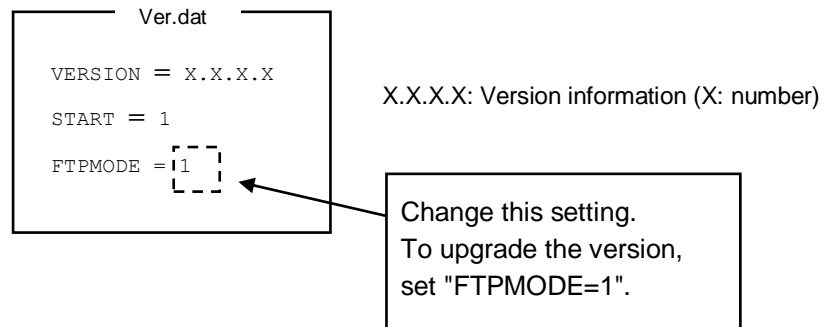
Step6. When using an FTP-based simple installation function, copy a setting file (*Note) used for simple installation into the "SP350" directory created in Step3.

Root directory

SP350
- data1.cab
- data1.hdr
- data2.cab
- ISSetup.dll
- layout.bin
- setup.exe
- setup.ini
- setup.inx
- Ver.dat
- _Setup.dll

Environment setting file
/Data conference setting file

- SP350AutoConf.ini

- SP350DataMeetingAutoConf.xml
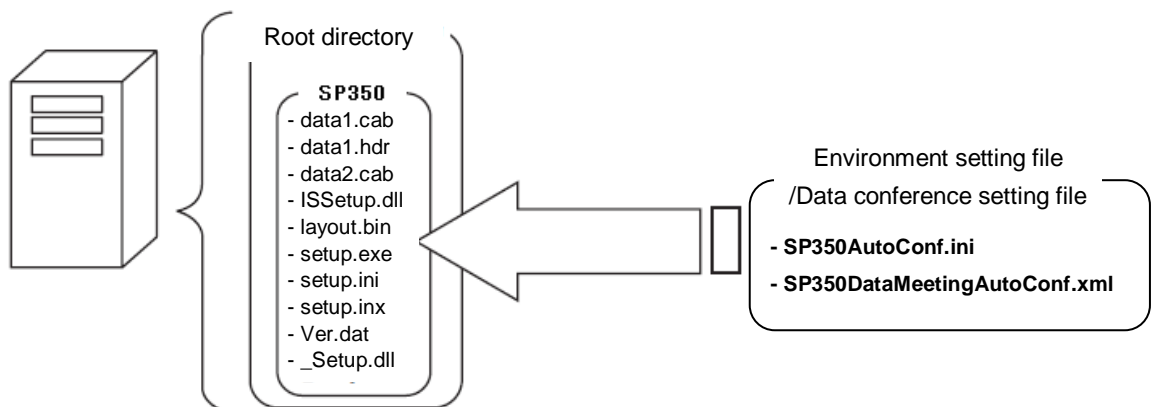
Note: For the simple installation of the environment settings, the file name must be "SP350AutoConf.ini".   For the simple installation of the data conference settings, the file name must be "SP350DataMeetingAutoConf.xml". If a different file name is used, the FTP-based simple installation function cannot be utilized.
Refer to Step1 to Step6 in "1.5.3.2 Operations by maintenance person".

1.8.2.2 Update by Softphone user

The Softphone user needs to perform the following procedure to update SP350 through FTP.

Notes:
  (1) When update is executed from the Start menu, only file update is performed and SP350 is not started.
  (2) Free space of 150MB or more is required in the HD in which SP350 is installed.
  (3) This SP350 user account should have the right to install programs.

1.8.3 Update from Softphone

Note: Configure the required maintenance setting to enable this function.
        Refer to "File Update FTP Server Setting" in "2.3.1.3 Software Update".

Step1. Confirm that "SP350", "Maintenance", and "Applications using SP350 COM (ex. Outlook)" are not running.
        If any of them are running, stop them.

Step2. Start SP350.

Step3. When a file whose version is different from the current version of SP350 used by the user exists in the FTP server, the following dialog to confirm the update appears.
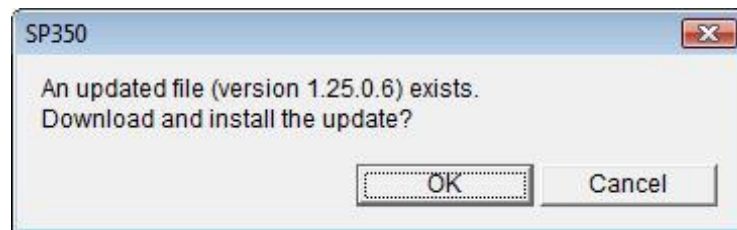
Step4. Click [OK].
   The downloading of the installer is started.
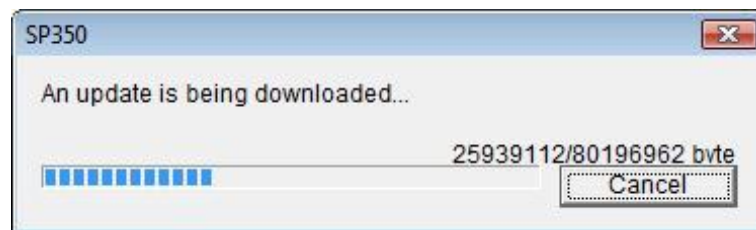
Step5. When the downloading is completed, the dialog indicating that the wizard is been prepared appears.
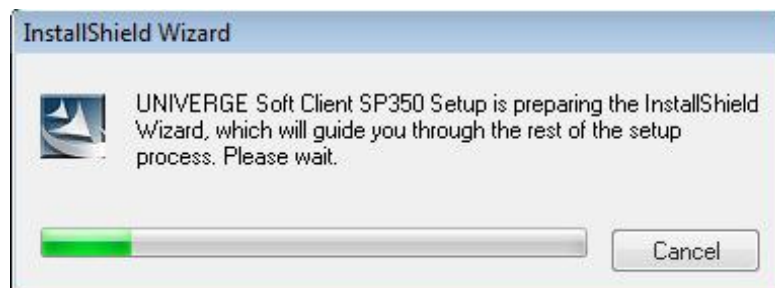
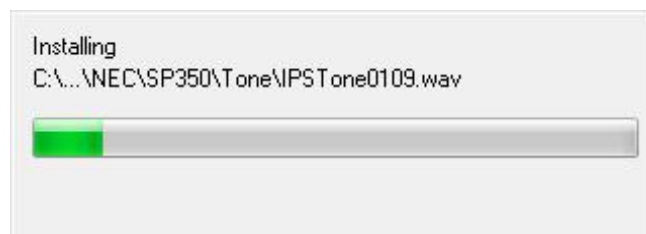Note: If the following error message appears, Click [OK] and return to Step1.
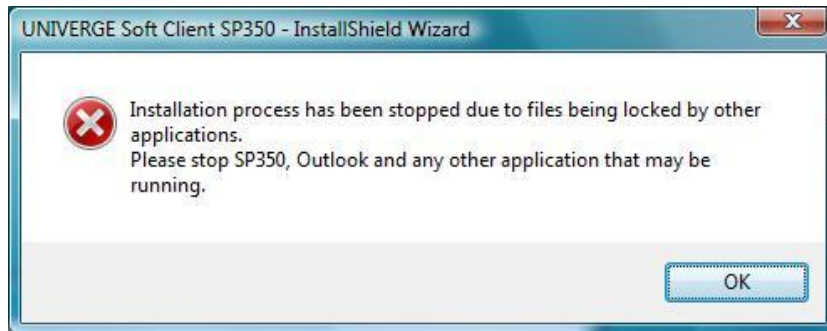
Step6. Click [OK].

If The "License Agreement" screen appears, please read the Software License Agreement. If you accept all items, select "I accept the terms of the license agreement" and Click [Next].

Step7. When the wizard is prepared, the setup is started.

A status dialog appears to show the setup progress during the setup.
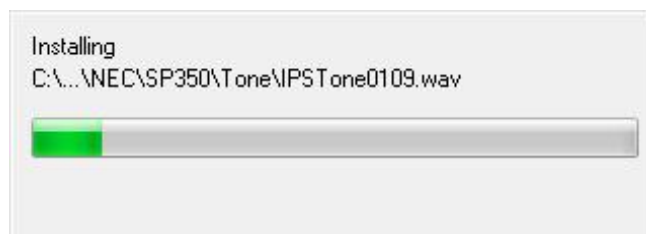
Note: The progress may not be updated with the progress bar remaining at 0%, or the following dialog indicating that the installation is in progress may appear instead of the status screen.   Both cases are normal and installation functions well.   Please wait for a while.
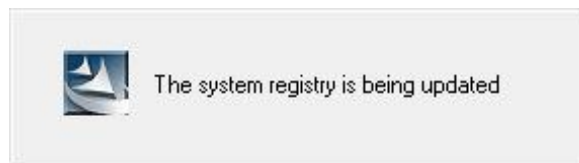

Step8.   Microsoft .NET Framework 2.0 is installed automatically.
Note that this installation is omitted if .NET Framework 2.0 has already been installed on your PC.

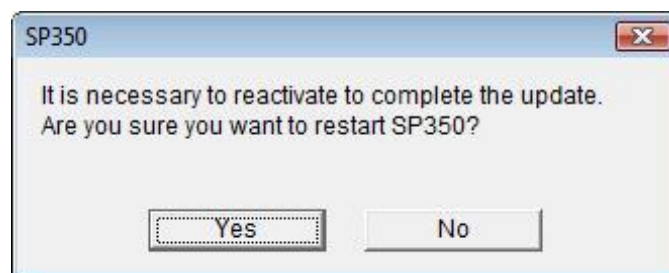Step9.   The registration and start process of the services are performed.

Step10. After the registration and start process of the services are completed, SkyPDF Pro for Softphone is installed automatically.
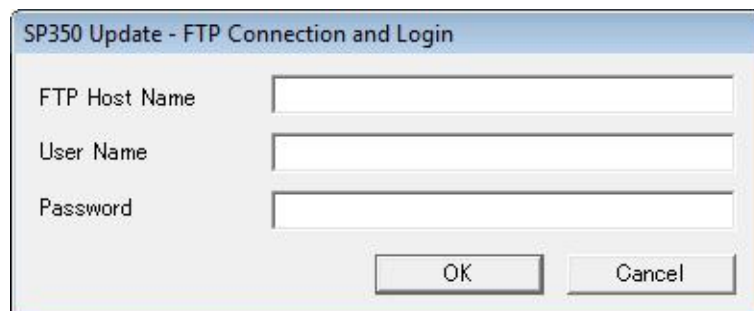

Step11. Click [OK].
After updating, the newly upgraded SP350 starts.

Note: If the version upgrade is failed due to some reason such as a download failure of the installer or out of hard disk space, SP350 will starts with the version which has been already installed after an error message appears.

1.8.4　Update from the Start menu

Step1.　Confirm that "SP350", "Maintenance", and "Applications using SP350 COM (ex. Outlook)" are not running.
If any of them are running, stop them.

Step2.　Select [Programs] -> [UNIVERGE Soft Client SP350] -> [File Update] from the [Start] menu. In case of Windows 8, Right-click [All apps] -> [UNIVERGE Soft Client SP350] -> [File Update] and click it.
The server setting screen appears.

Step3. Enter items in the required field and click [OK].
When a file whose version is different from the current version of SP350 used by the user exists in the FTP server, the following confirmation dialog appears.
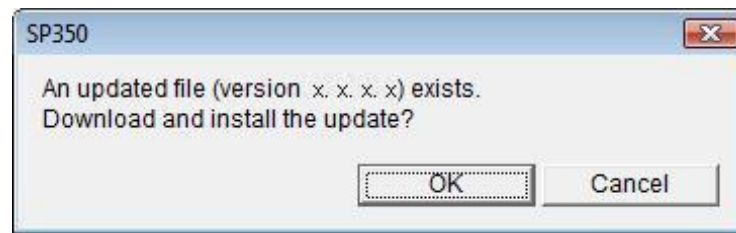
Step4. Click [OK].
The downloading of the installer is started.
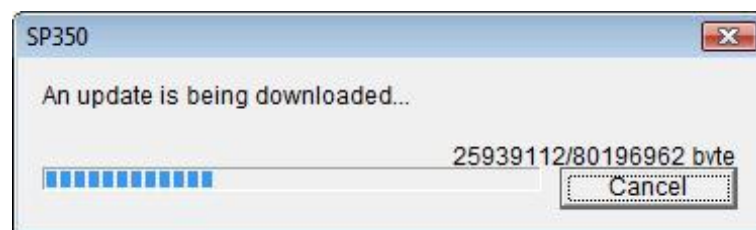
Step5. When the downloading is completed, a dialog appears to indicate the wizard is been prepared.
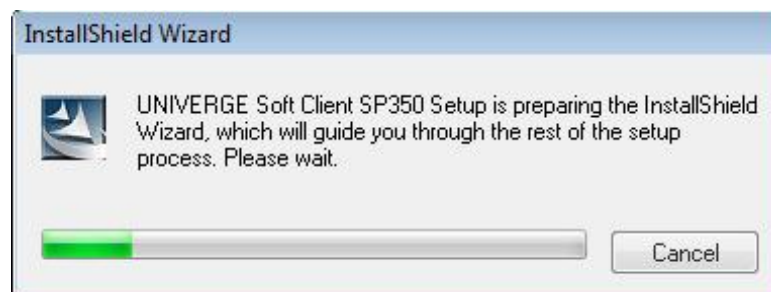
Note: If the following error message appears, Click [OK] and return to Step1.
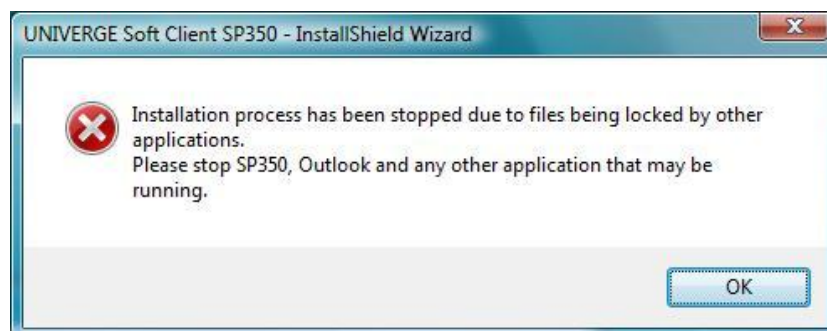
Step6. Click [OK].

If The "License Agreement" screen appears, please read the Software License Agreement. If you accept all items, select "I accept the terms of the license agreement" and Click [Next].

Step7. When the wizard preparation is completed, the setup is started.

A status screen appears to show the setup progress during the setup.

Note: The progress may not be updated with the progress bar remaining at 0%, or the following dialog indicating that the installation is in progress may appear instead of the status screen.   Both cases are normal and installation functions well.   Please wait for a while.

Setp8.   Microsoft .NET Framework 2.0 is installed automatically.
Note that this installation is omitted if .NET Framework 2.0 has already been installed on your PC.

Step9.   The registration and start process of the services are performed.

Step10. After the registration and start process of the services are completed, SkyPDF Pro for Softphone is installed automatically.

Step11. Click [OK].
After updating, the following confirmation dialog appears.

Step12. Click [Yes].
This is the end of the update operation.

1.9 Uninstallation

Perform the following procedure to uninstall SP350. Select [Uninstall or change a program] from [Programs and Features] to start uninstalling SP350.

Step1. Confirm that "SP350", "Maintenance", and "Applications using SP350 COM (ex. Outlook)" are not running.
If any of them are running, stop them.

Step2. Select [Programs and Features] from the [Control Panel] screen, and select "UNIVERGE Soft Client SP350" from the currently installed programs. In case of Windows 8, Right-click on Start screen [All apps] -> [Windows system tools] -> [Control Panel] then it selected to open Control Panel.
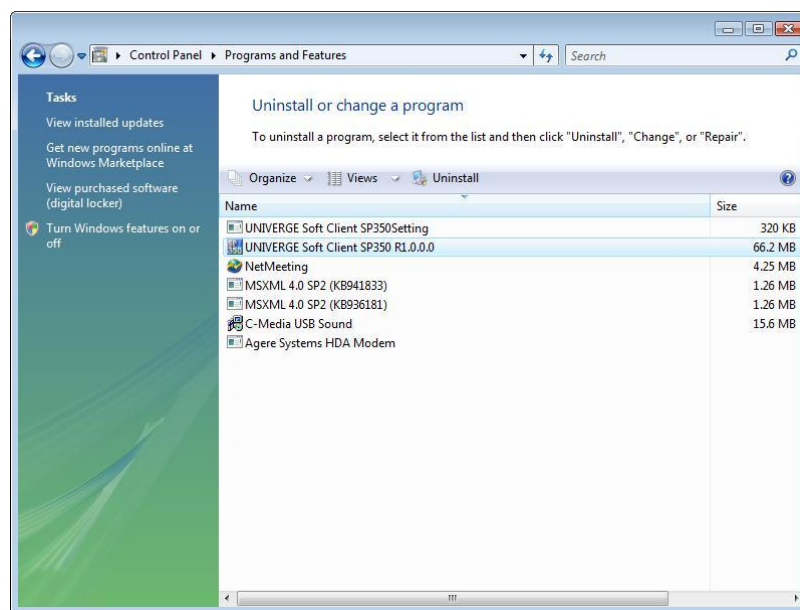
Step3. Click [Uninstall] from the [Uninstall or change a program] screen.
The dialog indicating that the wizard is being prepared appears.
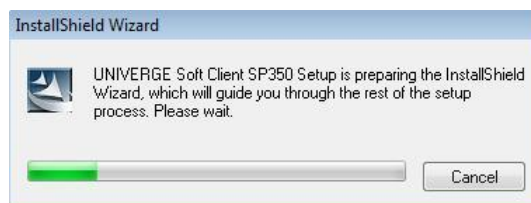
Note: For Windows Vista, Windows 7 and Windows 8, clicking [Uninstall] displays the [User Account Control] dialog. Clicking [Continue] displays the dialog indicating that the wizard is being prepared.

Setp4. When the wizard preparation is completed, the dialog to confirm the uninstallation appears.

Note: If the following error message appears, Click [OK] and return to Step1.
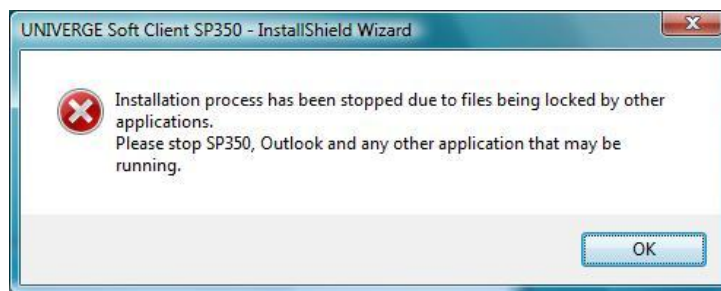
Step5. Click [OK].
The removal of the files is started.   During the removal, the status screen to notify the status of the setup appears.
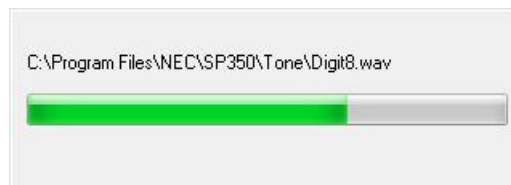
Step6.　After the removal, the following completion screen appears to notify that the removal is finished successfully.
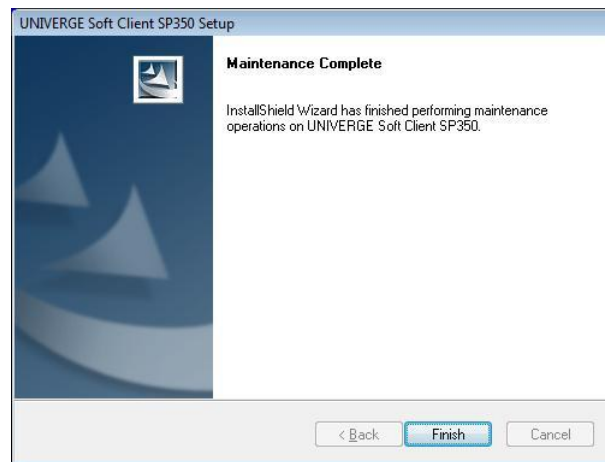
　　Note: In some cases, the following completion screen of InstallShield Wizard may appear after the removal is completed.

　　　　In this case, select "Yes, I want to restart my computer now.", and click [Finish] to restart the PC.
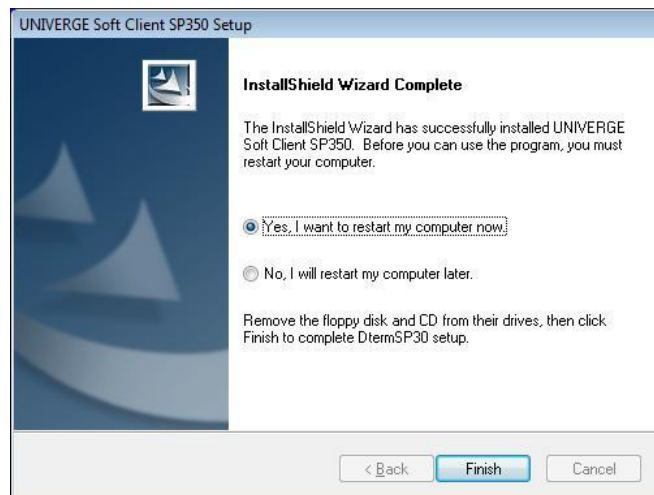
Step7.　Click [Finish].

　　　　The uninstallation is completed.

Next, delete the registry data created by each Windows user account and the directories automatically created by SP350.　("xxxx" indicates a Windows user account.)
The deletion needs to be done for each user account using SP350.

Step8.　Select [Programs and Features] from the [Control Panel] screen, and select "UNIVERGE Soft Client SP350Setting" from the currently installed programs. For Windows8, right-click on Start Screen and click [All apps] -> [Windows System tools] -> [Control Panel] to open Control Panel.
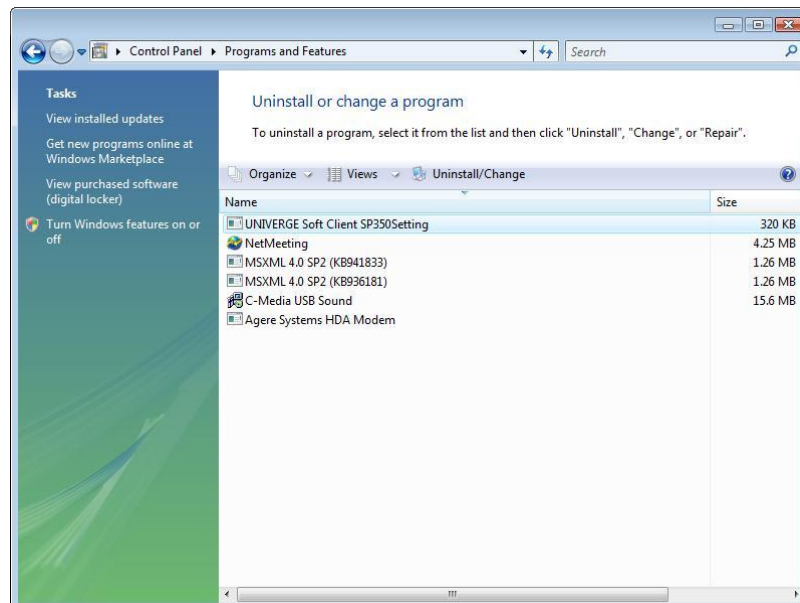
Step9.　Click [Uninstall/Change] from the [Uninstall or change a program] screen.
　　　　The dialog to confirm the uninstallation appears.
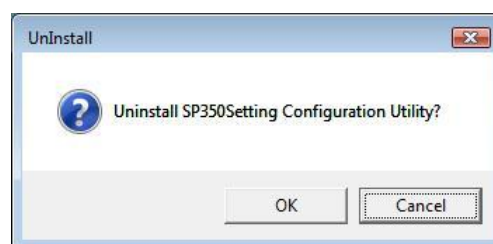
Step10. Click [OK].

Chapter 2 SP350 Maintenance Settings

The Maintenance Setting function of SP350 is a tool to set/save the environment required for introduction of SP350. Maintenance settings in SP350 and PC configuration are explained in the following topics.

- SP350 [Maintenance] screen

- Starting or ending SP350 Maintenance Setting function

- Content of SP350 maintenance settings

- Time setting

- Sound device setting

2.1 SP350 [Maintenance] screen

The following sections describe the [Maintenance] screen of SP350.

- Category Display area·······················[1]
- Setting Item Display area··················[2]
- Concise Description Display area ········[3]
- Control Key Display area ··················[4]
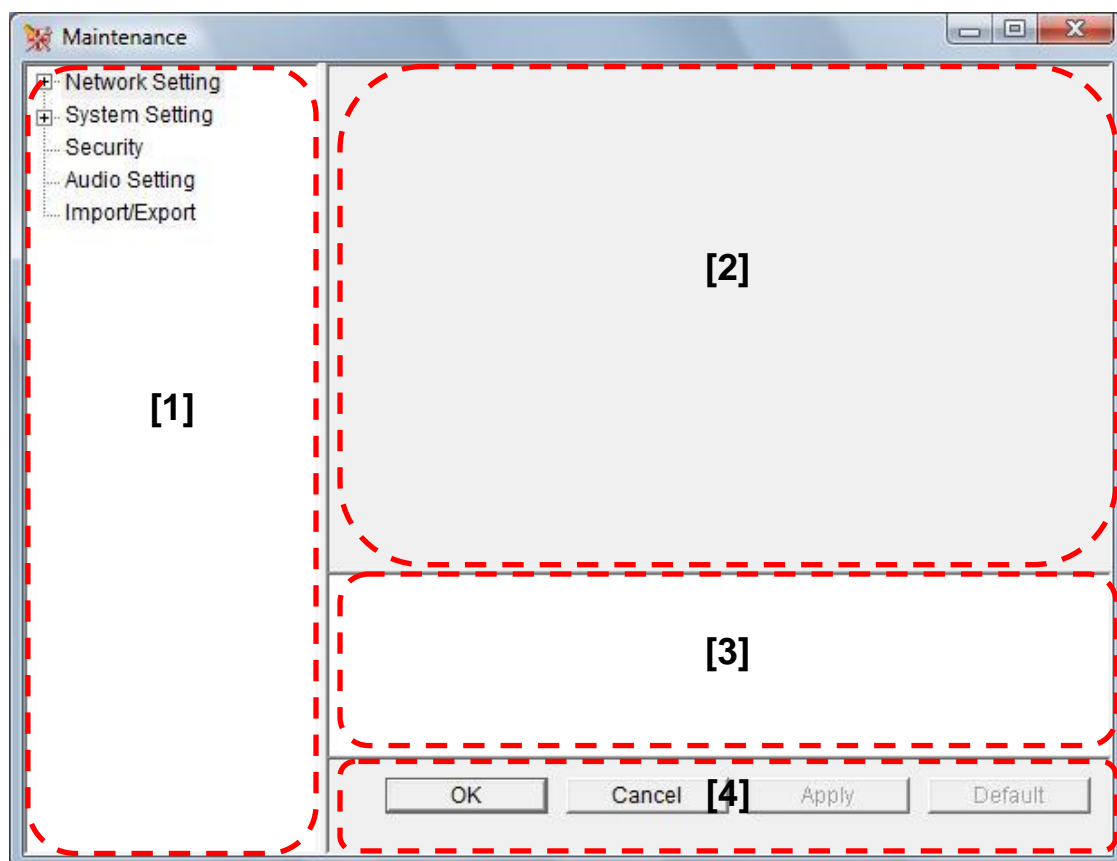
2.1.1 Category Display area

By highlighting an item displayed in this area, the displayed content in the Setting Item Display area can be switched.

2.1.2 Setting Item Display area

In this area, each of current settings is displayed and can be modified.

2.1.3 Concise Description Display area

A concise description about the item highlighted in the Setting Item Display area is displayed in this area.   This area remains blank when any item in the Category Display area or the Control Key Display area is highlighted.

2.1.4 Control Key Display area

The buttons for the following functions are displayed in this area:

● Reflect setting modifications in the Setting Item Display area on the registry
● Restore the settings displayed in the Setting Item Display area to the default values
● Terminate the User Setting function

For details, refer to the following items:

● [OK] and [Cancel]: 2.2.2 "Ending SP350 maintenance setting function"
● [Apply]: 2.2.5 "Saving settings"
● [Default]: 2.2.4 "Restoring settings to default values"

2.2 Starting or Ending SP350 Maintenance Setting function

The following sections describe start/stop of the Maintenance Setting function of SP350.

2.2.1 Starting SP350 Maintenance Setting function

The Maintenance Setting function of SP350 can be started by the following procedure.

● Select [Programs] -> [UNIVERGE Soft Client SP350] -> [Maintenance] from the [Start] menu to open the [Password] screen.　Enter the correct password and click [Login] to start the Maintenance Setting function.
For Windows 8, right-click on Start Screen and select [All apps] -> [UNIVERGE Soft Client SP350] -> [Maintenance] then display Password screen.
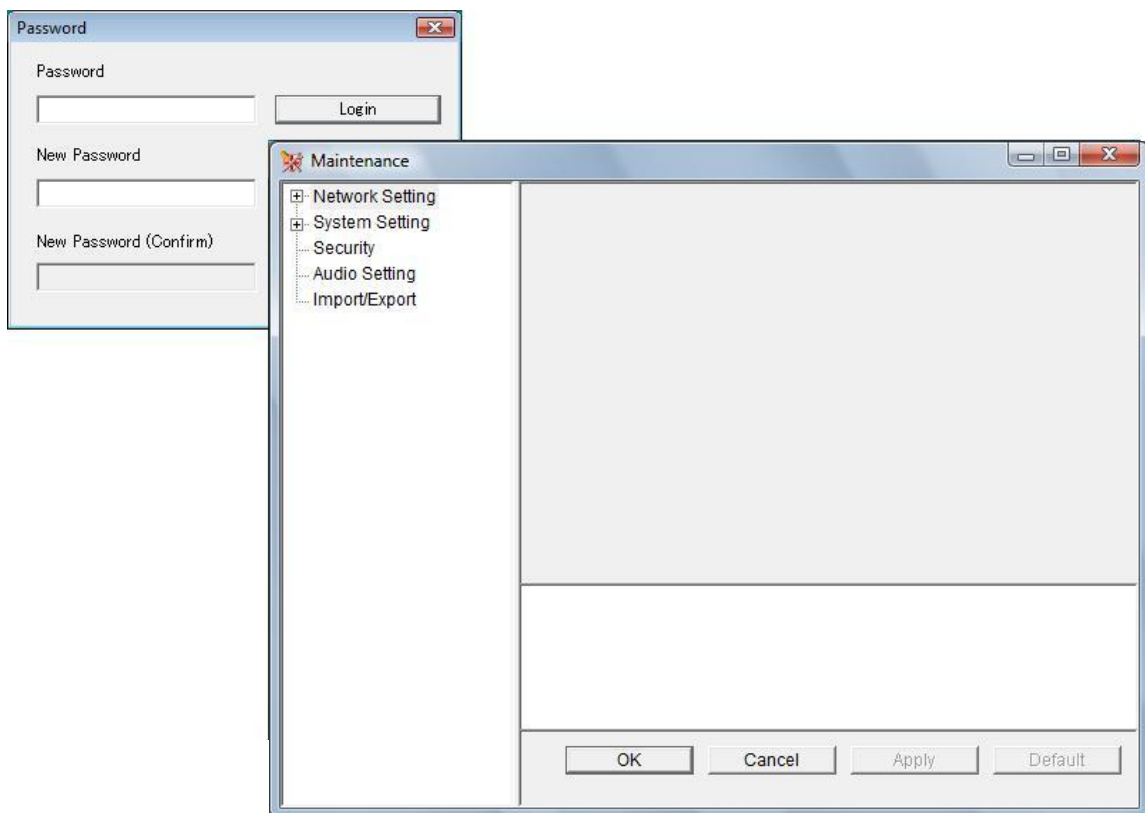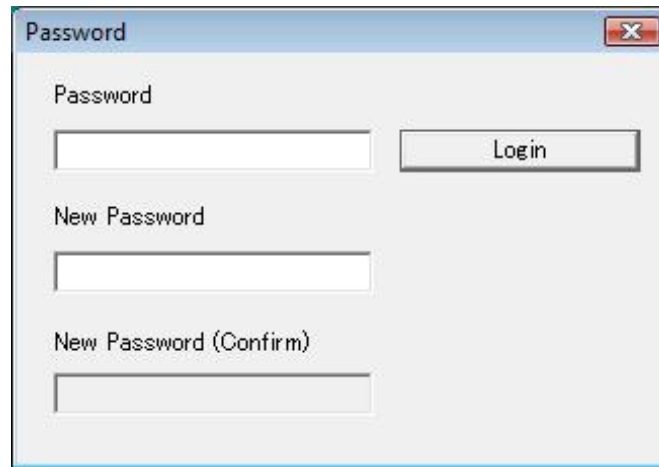
2.2.1.1 Password

Enter the specified password.
"ctiapp" is set as the default password.

- New Password
  Enter the new password when the current password is to be changed.   (Up to 8 alphanumeric characters)
  Note: New password becomes valid after clicking [Login].

- New Password (Confirm)
  This field becomes valid after "New password" is specified.   Enter the string identical with the one in "New password" for confirmation.

- [Login]
  Click this button to execute password confirmation.   If the password is correct, the processing goes on.   If wrong, an error message dialog appears.   In the case of password modification, if the strings specified in "New Password" and "New Password (Confirm)" do not agree, a message dialog appears to indicate the disagreement.

2.2.2 Ending SP350 Maintenance Setting function

The Maintenance Setting function of SP350 can be ended by the following procedure.

● Click [Cancel] (or, click [x] on the upper right corner of the screen).
 When the [Apply] button is valid, a confirmation dialog appears as shown below.   Clicking [OK] makes modified information invalid and ends the Maintenance Setting function.   Clicking [Cancel] continues setting operations without ending the function.   When [Apply] is invalid, the Maintenance Setting function is ended without any confirmation dialog.
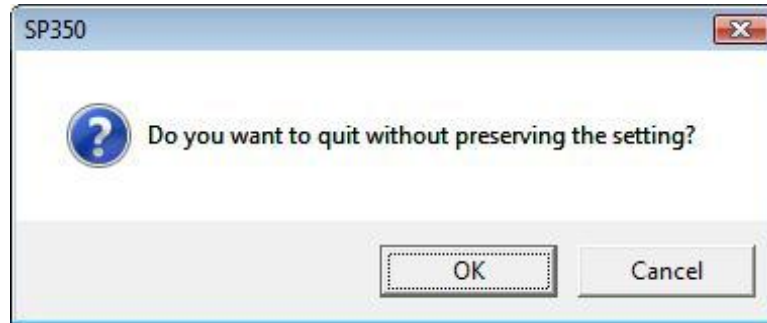
● Click [OK].
 Modified information is reflected to the registry.

2.2.3 Switching displayed content in Setting Item Display area

Displayed content in the Setting Item Display area can be switched by the following procedure.

● Highlighting an item in the Category Display area
 Information relevant to the item highlighted in the Category Display area is displayed in the Setting Item Display area.

 Note: When highlighting another item in the Category Display area, if any entered value is wrong or any mandatory item is left blank, an error message dialog appears and the displayed content in the Setting Item Display area cannot be switched.   In this case, enter the correct value for the item which caused the error and switch the display again.   Or, click [Cancel] to end the Maintenance Setting function.   Then, restart the function and set the items again.

2.2.4　Restoring settings to default values

Current settings displayed in the Setting Item Display area can be restored to the default values by the following procedure.

● Click [Default].
A confirmation dialog (about the category displayed in the Setting Item Display area) is displayed as follows.　Clicking [OK] in this dialog restores the information of the items displayed in the Setting Item Display area to the default values.　Clicking [Cancel] in this dialog retains the current settings without restoring them.
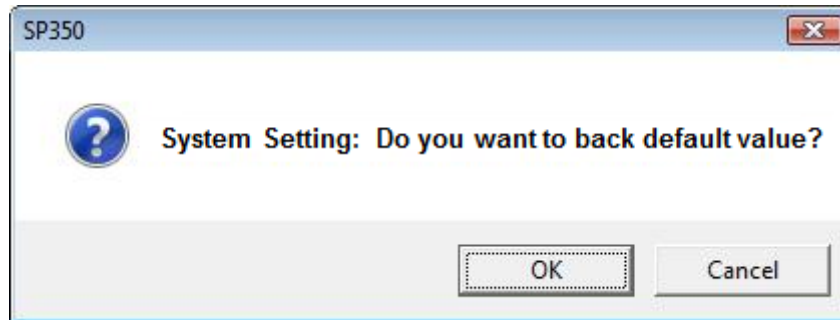
2.2.5　Saving settings

Modified information of the items displayed in the Setting Item Display area can be saved by the following procedure.　Note that this function is available only when [Apply] is valid.

● Click [Apply].
A confirmation dialog is displayed as follows.　Clicking [OK] reflects the setting values of the items set with the Maintenance Setting function to the registry.　Clicking [Cancel] retains the current settings without reflecting them to the registry.

2.3   Method of SP350 maintenance settings

The following items describe the method to set/save the information with the Maintenance Setting function of SP350.

- Network settings
  - IP telephony server
  - Data conference
  - Software update
  - Directory service

- System setting
  - ACD setting

- Security

- Audio setting

- Import/export
  - Import
  - Export

Note: No information other than maintenance settings can be saved.

2.3.1　Network Setting

2.3.1.1　IP Telephony Server

Set the parameters relevant to connection with the IP telephony server.

● VoIP Server Setting (Note 1)

Specify the host name (or the IP address) of the IP telephony server and the destination port number (UDP).

For these settings, contact the installation technician.

- Server 1 Server Name: Mandatory (default: blank).
- Server 2 Server Name
- Server 3 Server Name
- Server 4 Server Name
- Server 1 Port Number: Mandatory (default: 5060).
- Server 2 Port Number
- Server 3 Port Number
- Server 4 Port Number

Specify values within 1024 to 65535.

● Call Control Port Number (Note 2)

Specify the range of the source port number (TCP/UDP) used for call control.   The port which is available and has the smaller number within the specified range is searched and used at the startup (default: 5060 to 5187).   Specify values within 1024 to 65535.   Also, the number of the ports within the specified range should be 128 or more (recommended).

This item is mandatory.

● Sound Port Number (Note 3)

Specify the range of the source port number (UDP) used for sound data communication.   The port which is available and has the smaller number within the specified range is searched and used at the startup (default: 60000 to 60008).   Specify values within 1024 to 65535.   Also, the number of the ports within the specified range should be 9 or more (recommended).

This item is mandatory.

In the case of Thin Client, the port for PC recording will also be searched within this range and then used.

Notes:

(1)   When an octet in the specified IP address is under 3 digits, do not pad it with "0".
- Example of correct setting: 10.43.0.6
- Example of wrong setting: 010.043.000.006

(2)   The specified value must differ from the value for Sound Port Number.

(3)   The specified value must differ from the value for Call Control Port Number.

2.3.1.2 Data Conference

- ● Call Control Port Number
  - • Call Control Port Number range
    Specify the range of the source port number (TCP) used for the Data Conference/File Transfer functions. The port which is available and has the smaller number within the specified range is searched and used at the startup [default: 60010 (start) to 60137 (end)].
    Specify values within 1024 to 65535. Also, the number of the ports within the specified range should be 128 or more (recommended).
    This value must differ from the other specified values excepting the video port number of the Data Conference function.

- ● Video Port Number
  - • A video port number range
    Specify the range of the source port number (UDP) used for the video communication function. The port which is available and has the smaller number within the specified range is searched and used at the startup [default: 60010 (start) to 60019 (end)].
    Specify values within 1024 to 65535. Also, the number of the ports within the specified range should be 10 or more (recommended).
    This value must differ from the other specified values excepting the call control port number of the Data Conference function.

- Video TOS Value
  Specify the TOS value used for video communication (default: 0).
  Specify values within 0 to 255.
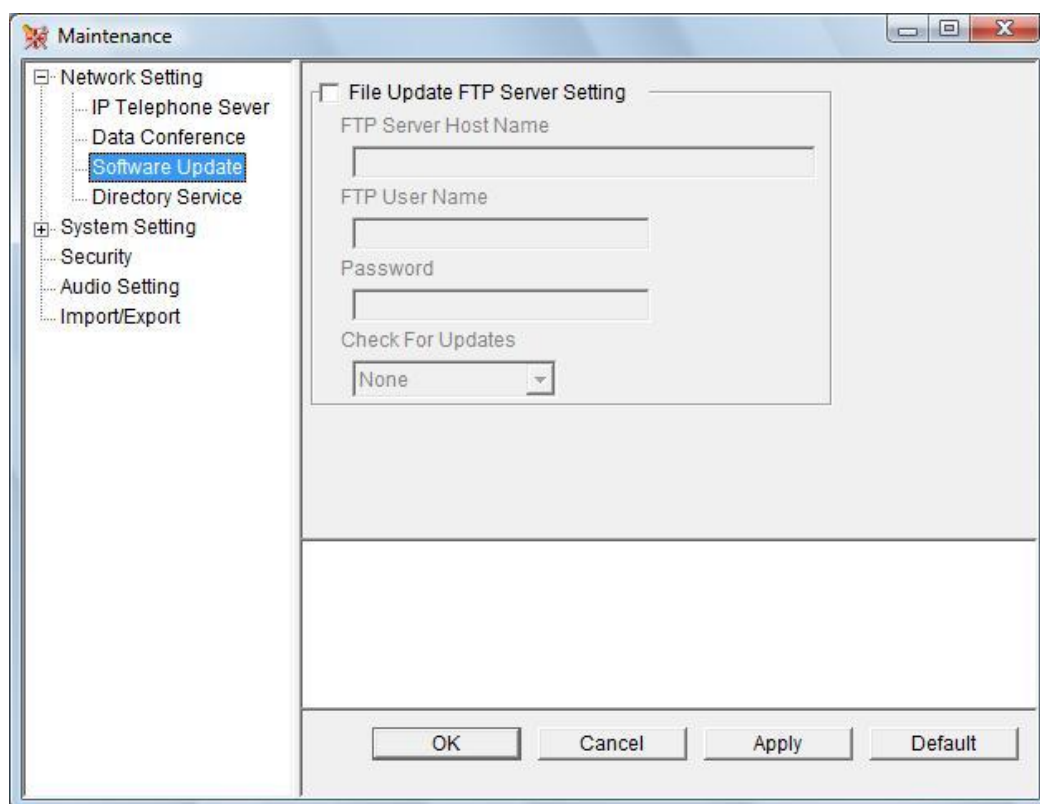 Note that when Windows Vista, Windows 7 and Windows 8 is used as the OS, this value becomes below

  00：0-63
  20：64-127
  A0：128-191
  E0：192-255

2.3.1.3 Software Update

- File Update FTP Server Setting
  Specify whether the Software Update function with FTP used when SP350 is started is to be enabled or disabled (default: unchecked).
  When this function is enabled, the host name (ore the IP address) of the FTP server, user name and password also must be specified. For these settings, contact the installation technician.
  - FTP Server Host Name: Mandatory (default: blank).
  - FTP User Name: Mandatory (default: blank).
  - Password: (default: blank)

- Check For Updates
  Select when the Software Update check function with FTP is to be executed.
  - None: The function is not executed when starting up SP350 (default).
  - Every startup: The function is executed when starting up SP350.
  - Every week: The function is executed when 1 week has passed from the last execution.
  (The function is not executed when starting up SP350 first after installing it.)

2.3.1.4 Directory Service

Set up the directory server to be used for information search. The information acquired from the directory server is used to display directory search results from the search entry box and the information of call counterpart in call log.

- Allow Directory search in search window
  Allow Directory search in Search Window. "Directory Search" will appear in drop down menu on window.

- Allow Directory search in Caller Information lookup
  If information retrieving software is set, SP350 will also search Caller information from Directory.

- Directory Server Setting

  Set the directory server to be used for information search. The information obtained from the directory server will be displayed in the call history as the information of the called party or used for the MOC cooperation.

  - Search Place

    Describe the search place in the following format. (default: %ROOTDSE%)

    Host name [:Port number][/DistinguishedName]

    Example: example.com:390/CN=users,DC=example,DC=com

    An IP address can be specified for the host name indicating the directory server.

    When the special character strings, "%ROOTDSE%" is specified instead of a host name, the host name of the directory server can be obtained from the DNS at the start of the search.

    Specify the port number to be used for the connection to the directory server.   (Specify 389 as standard if no SSL connection is used; specify 636 if SSL connection is used.)   When omitted, the standard port number is used.

    Specify the location of the directory to be searched for DistinguishedName.   When omitted, the whole directories are searched.   For example, to search directories under "CN=users,DC=example,DC=com", describe it as follows.

    example.com/CN=users,DC=example,DC=com

    When this field is left blank, the search place is the same as %ROOTDSE% specified in this field.

  - Search Filter

    Describe the conditional statement to be used for searching the information from the directory service with an origination number.   Refer to **RFC2254** for the syntax.

    (Default: (telephoneNumber=*%PHONENUMBER%))

    This item is mandatory.

    When the following special character strings are used, the strings will be replaced by the strings specified at the execution of the search.

    %PHONENUMBER% will be replaced by the origination number.

    %OFFICECODEPHONENUMBER% will be replaced by the local office number+origination number.

    * When the Numbering Plan of the system setting is not set,

    %OFFICECODEPHONENUMBER% operates as %PHONENUMBER%.

    Example: (|(Telephone=*%PHONENUMBER%)(Mobile=*%PHONENUMBER%)) means that the end of data registered with the attributes Telephone and Mobile is the same as the origination number.

  - Encrypted Connection

    Check this item when connecting the directory server with SSL. (default: unchecked)

  - Attributes of Telephone

    Describe the attribute name of the directory service where telephone numbers are registered.

    (Default: telephoneNumber\mobile\homePhone)

    Multiple specification is allowed by separating attribute names with "/".

    When the same telephone number is registered with multiple attributes, the telephone number corresponding with the attribute described first in this item has a priority.

● Attributes Setting

Describe each of attribute names where the information obtained by the information search is registered.

- Name: Describe the attribute name of the directory service where the name is registered.
  (Default: name)
- Corporation: Describe the attribute name of the directory service where the company name is registered.
  (Default: company)
- Department: Describe the attribute name of the directory service where the department name is registered.
  (Default: department)
- Mail address: Describe the attribute name of the directory service where the mail address is registered.
  (Default: mail)
- SIP address: Describe the attribute name of the directory service where the SIP address is registered.
  (Default: msRTCSIP-PrimaryUserAddress)

2.3.2 System Setting

● Numbering Plan

Specify the local office number (access code + the local office code) to delete it from the number registered in the address book for origination from the address book, transfer, and destination modification.

Also, in the case when the Data Conference function is used between multiple offices, if the local office number is to be attached so that the originator information can be found by searching origination numbers in the address book or the directory service at the termination, specify number of the digits of the originator number to be attached.

- • Access code + the local office code
  Specify the local office number. (Default: blank)
  Specify the local office number with access code included.
- • Maximum of Station Number
  Specify the upper limit of digits for originator number attached the local office number. (Default: 0)

● Use Terminal Cooperation

This item is always unchecked since this function is not provided.

● DTMF Tone

Select one of the following options about DTMF playback during a call. (Default: Follow Server)
- • Follow Server: Follows the indication from the IP telephony server per call.
  Disabled whenever no indication is received from the server.
- • Always enabled: Enabled regardless of indications from IP telephony server.
- • Always disabled: Disabled regardless of indications from IP telephony server.

● RTPLoss Alarm

Select one of the following options about RTPLoss alarm during a call. (Default: Follow Server)
- • Follow Server: Follows the indication from the IP telephony server per call.
  Disabled whenever no indication is received from the server.
- • Always enabled: Enabled regardless of indications from IP telephony server.
- • Always disabled: Disabled regardless of indications from IP telephony server.

● Use Beep Tone(s) when Recording a Call

Specify whether the indication tone of call recording on PC sent to the caller and the caller is to be enabled or disabled (default: unchecked).

To enable this function, check the checkbox.

When checked, select either of [Send multiple Beep Tones (only when starting)] or [Send multiple Beep Tones (at regular intervals)]. Also, when selecting [Send multiple Beep Tones (at regular intervals)], set the interval of the tone within the range from 5 seconds to 120 seconds. (Default: blank)

● Live recording File Format

Specify the file format for call recording on PC (default: PCM).
- • PCM: Recorded with the PCM format (960KB per 1 minute).
- • GSM6.1: Recorded with the GSM6.1 format (95KB per 1 minute).

● File Format During PC Recording (in the case of Thin Client)

Specify the file format for PC recording (default: G.711).
G.711: Records in the G.711 format (approximately 480KB in recording for 1 min).
GSM6.1: Records in the GSM6.1 format (approximately 96KB in recording for 1 min) (*).

(*) It may not be possible to use GSM6.1 depending on the thin client terminal type. In such a case, even if GSM6.1 is specified, recording will be done in G.711. For more information, refer to the restrictions on each terminal.

● Voice mail Address Change Key
Specify the key used to indicate the end of modified number entered; This function is used when the destination number is modified with operations by using address book or member keys during call recording on UMS(ex UnifiedStar series) (default: #).

● Use Remote Mode
Specify whether the remote mode is to be enabled or disabled with the checkbox. (Default: unchecked)

● Area (Tone)
When selecting an option other than [Auto], the tone pattern assigned to the specified area (nation) is applied regardless of indications from the IP telephony server. Note that if the specified area has not been registered in the server, the tone pattern assigned to U.S is applied.
Also, if the server indicates an area other than the options below, the tone pattern assigned to U.S is applied. (Default: Auto)
- Auto
- Japan
- U.S
- Australia
- Other overseas
- Hong Kong
- Malaysia
- Singapore
- UK
- Mexico
- Taiwan
- New Zealand
- South Korea
- Brazil
- China
- Thailand
- Thailand (EGAT)
- Sri Lanka
- Germany
- Italy
- Netherlands (Dutch)
- Denmark
- Sweden
- Spain
- Austria
- Belgium
- UK (United Kingdom) (for NECU)
- Greece
- Swiss
- South Africa
- Brazil (for NECU)

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2.3.2.1 ACD Setting
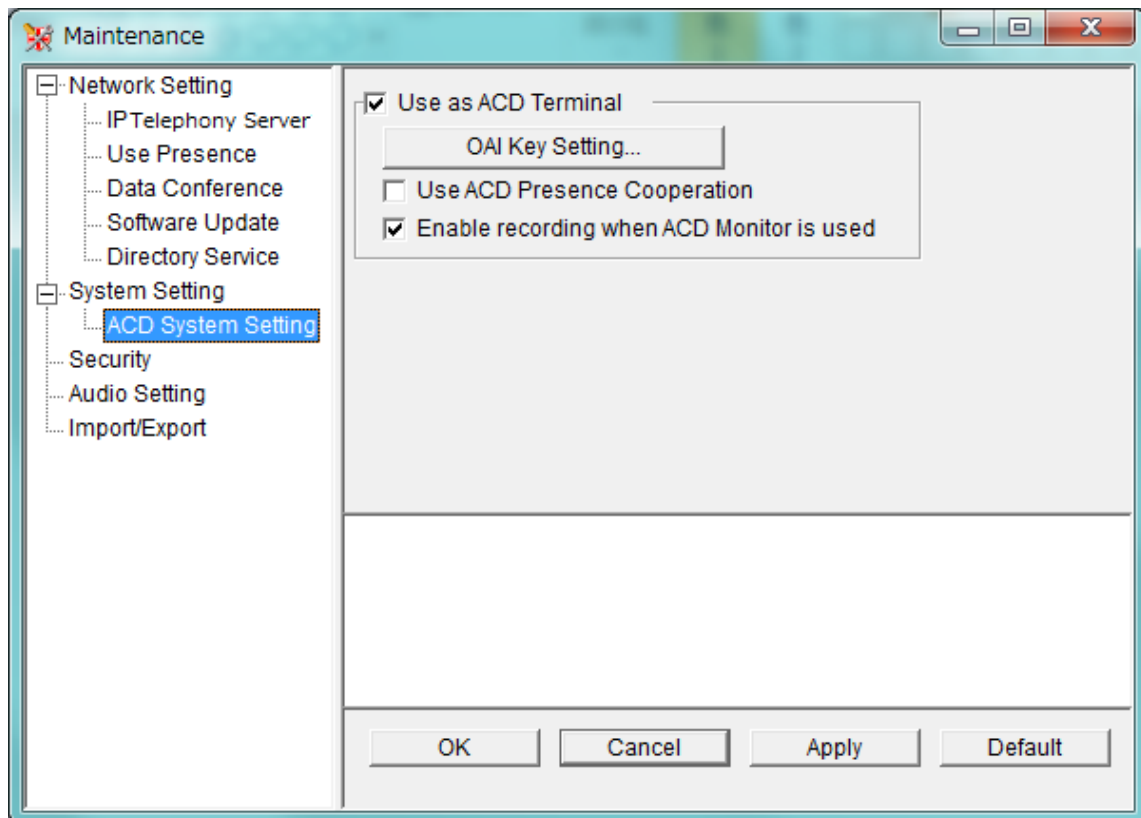
● Use as ACD Terminal
   Check this option if SP350 is used as the ACD terminal. (Default: unchecked)

● OAI Key Setting
   Open the setting screen for OAI key that is used by the ACD terminal.
   This button becomes active only when [Use as ACD terminal] is checked.
   For setting items of OAI key, refer to the next page.

● Enable recording when ACD Monitor is used
   Specify if PC recording while ACD monitor is in progress is to be enabled or disabled.
   (Default: unchecked)
   You can select this option only when [Use as ACD terminal] is checked.
   Note that when PC recording is used while ACD monitor is enabled, the indication tone of call
   recording on PC cannot be sent to the other party.

2.3.2.2 OAI Key Setting

- OP-CODE

  Enter the feature numbers assigned to OAI keys that are used for ACD feature.

  The default value for each key is shown in the figure above.

  If you want to assign the number other than the default, follow the instruction of the installation technician.

- Function Name

  When OP-CODE is entered, the corresponding function name will be automatically displayed. These names cannot be manually edited.

- Popup Numberpad

  Specify whether to display the numberpad automatically when pressing the OAI keys. The OAI keys that are checked as default are shown in the figure above.

2.3.3 Security

● Display Maintenance Setting items in User Setting
   Specify whether the display of maintenance setting items in the [User Settings] screen is to be enabled or disabled (default: checked).

● Use Encryption
   Specify whether the Encryption function is to be enabled or disabled. (Default: unchecked)
   Note: This checkbox must be checked even if either of the Encryption function or the Location Diversity function is used.

- Use Data Conference
  Specify whether the functions provided by the Data Conference function (Video, Communication Boards, File Transfer and Chat) are to be enabled or disabled (* The setting of the organizer is reflected).
  - Use Video (default: checked)
    Check when the Video function is to be enabled.
  - Use Communication Board (default: checked)
    Check when the Communication Board function is to be enabled.
  - Use File Transfer (default: checked)
    Check when the File Transfer function is to be enabled.
  - Use Chat (default: checked)
    Check when the Chat function is to be enabled.

  Note: In the case of Thin Client, only receiving is provided for Video

- Access Information for User Setting
  Specify whether the restriction using password is to be enabled or disabled when opening the [User Settings] screen of SP350 (default: unchecked).
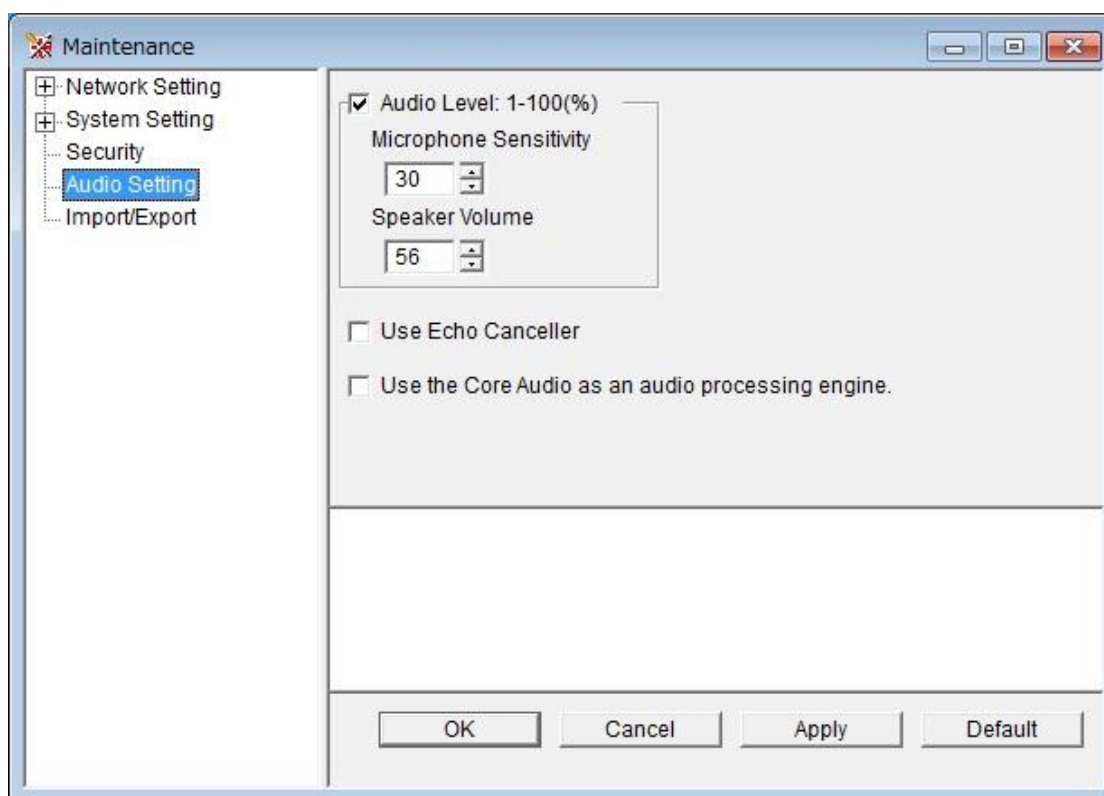 To modify the password, enter the current password in [Password]. Also, enter the modified (new) password in both [New Password] and [New Password (Confirm)] identically.
  Note: The default value of the password is "ctiappconfig".

- Use IM
  Specify whether to use IM (default: unchecked).

2.3.4 Audio Setting

- Audio Level: 1 - 100(%)
  Specify whether the manual adjustments of sound volumes of microphones and speakers are to be enabled or disabled when starting up SP350 with the checkbox (default: unchecked).
  When enabling this function, specify the sound volume for microphones and the one for speakers respectively.
  When the recommended USB handset/headset is used, SP350 identify the type of the device and optimizes the sound volume.   However, the sound volume also can be changed when this function is enabled.

  Note: When this function (manual adjustment of sound volume) is enabled, the sound volume settings of microphones and speakers in the device used when starting up SP350 are changed to the values specified here.   Note that the sound volume settings of the devices on the OS (Windows) are also changed to the values specified here. For necessity of this setting and the parameters to be specified, contact the installation technician.

- Use Echo Canceller
  Specify whether the Echo Canceller function is to be enabled or disabled with the checkbox (default: unchecked).

- Use the Core Audio as an audio processing engine (Regular mode, Only Windows 8/7/Vista)
  Select the Core Audio is to be enable or not for audio processing engine.
  If checked on use Code Audio for audio processing engine for Windows.
  When the Core Audio is use, inhibit delayed voice packet and discard to voice quality.

Note: If the Core Audio is use, it might be connect Audio device and its configuration then please confirm Installer to need its Configuration. Also please refer to 2.7 About use Core Audio.

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2.3.5 Import/Export

The following sections describe the Import and Export functions in the Maintenance Setting function of SP350.
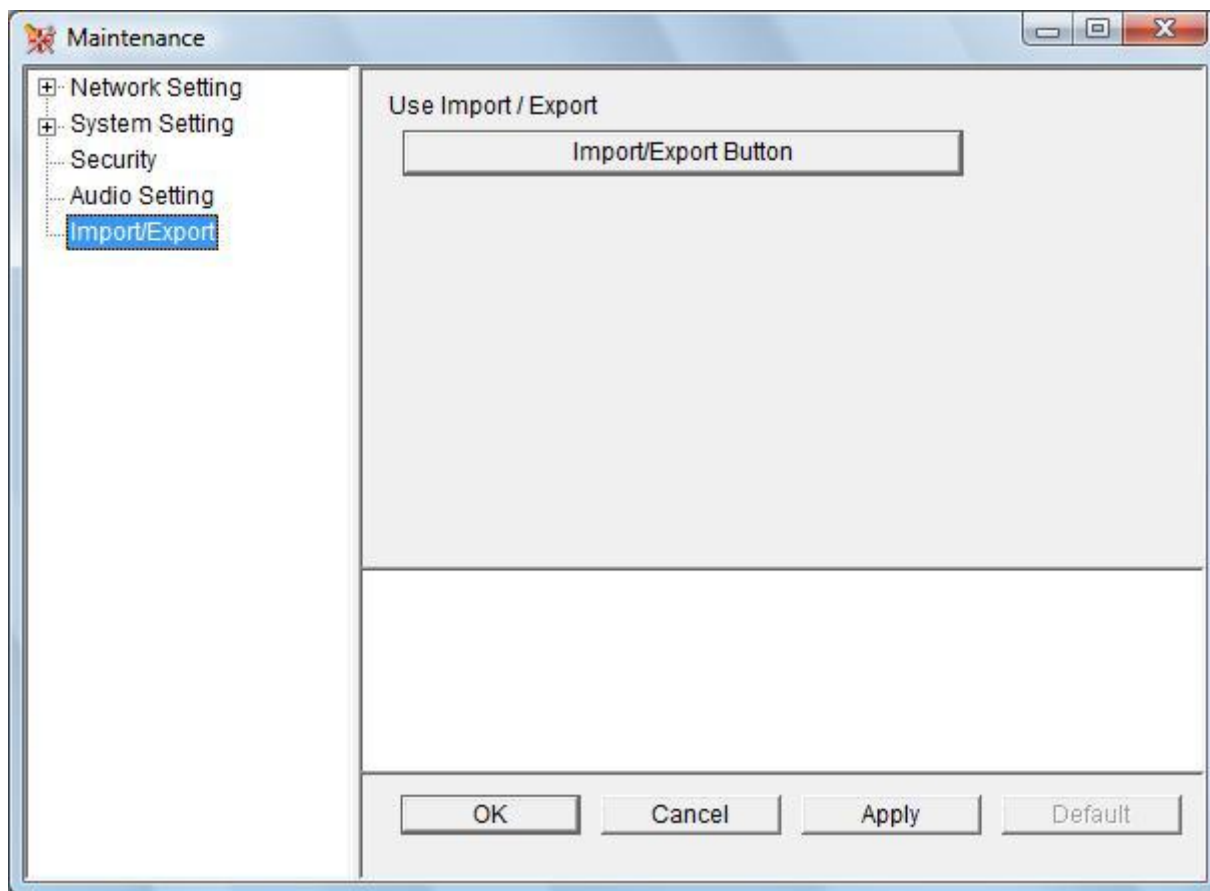
2.3.5.1 Import

Read the maintenance settings from a file.

Step1.   When [Apply] in the Control Key Display area is invalid, click [Import/Export] in the Setting
Item Display area.
The [Import/Export Wizard] screen appears.

Note: If [Apply] in the Control Key Display area is valid, clicking [Import/Export] in the
Setting Item Display area displays the following dialog.   No import/export
processing is executed.
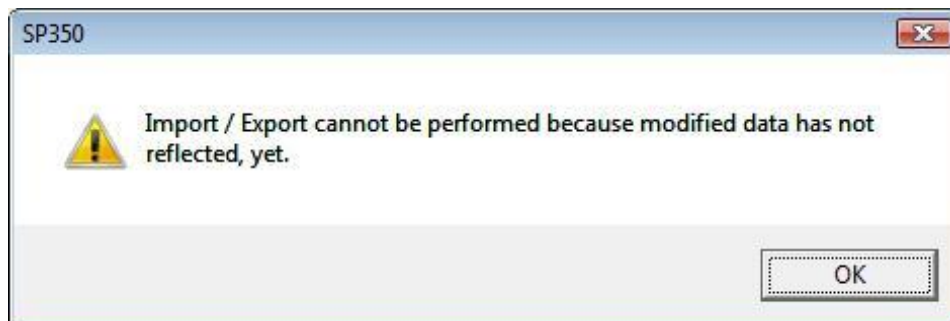
Step2.   Select [Import] and click [Next] on the [Import/Export Wizard] screen.
          The [Import of file] screen appears.
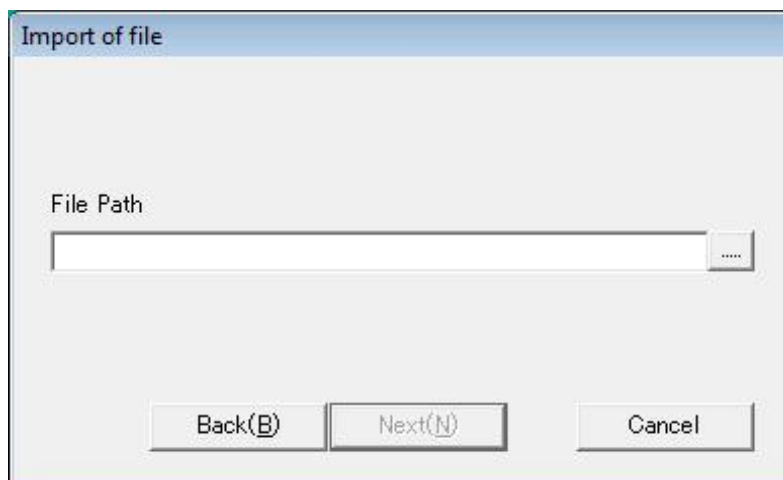
Step3.   Enter the path and name of the target file directly into the [File Path] field.
          Alternatively, click the ___ button on the [Import of file] screen to open the following
          [Open] screen. Select [ini file (*.ini)] in the [Files of type] field and highlight the name of
          the target file. Then, click [Open] to close the [Open] screen.

The [Import of file] screen containing the entered file path should look like the following.

Import of file

File Path

C:¥Users¥nero¥Documents¥UserConfig.ini

Back(B)   Next(N)   Cancel
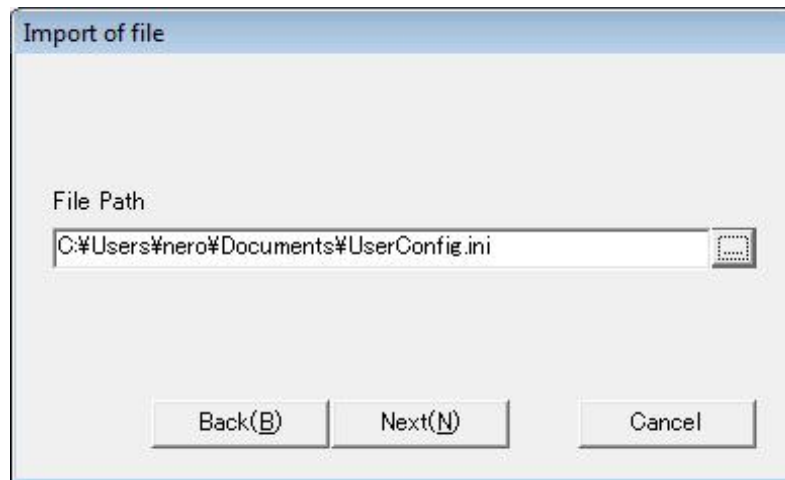
Step4.   Click [Next].
The [Import of file] screen shows the addition method.

Import of file

Addition method   Imports the configuration setting

Replacement

Back(B)   OK   Cancel
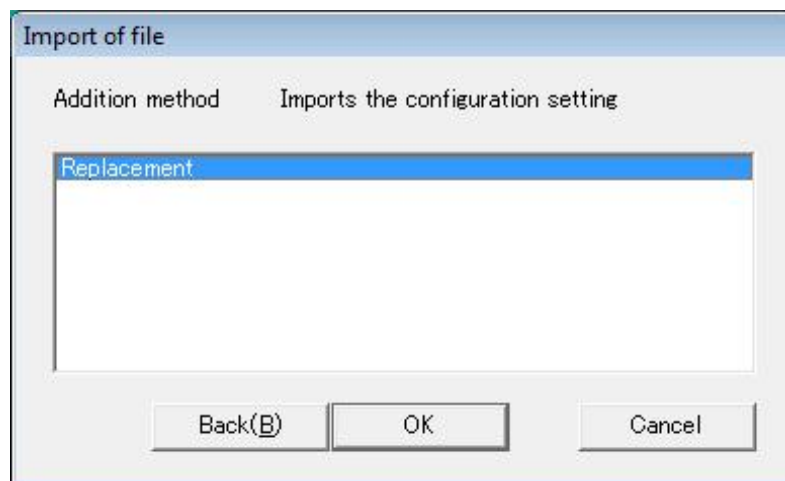
Step5.   Confirm that [Replacement] is highlighted on the [Import of file] screen and click [OK].
The following dialog appears.

SP350

Succeeded in importing configurations.

OK
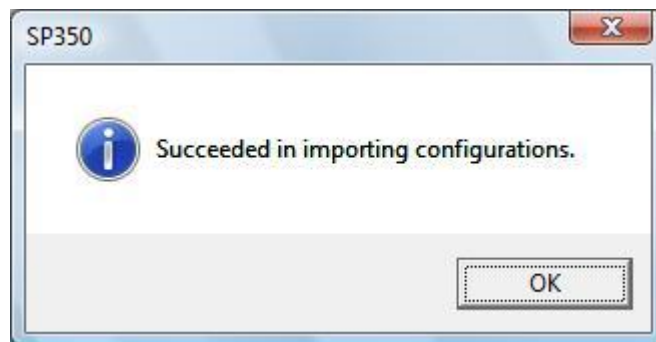
Step6.   Click [OK] to complete the import operation.

2.3.5.2 Export

Save the maintenance settings into a file

Step1. When [Apply] in the Control Key Display area is invalid, click [Import/Export] in the Setting Item Display area.
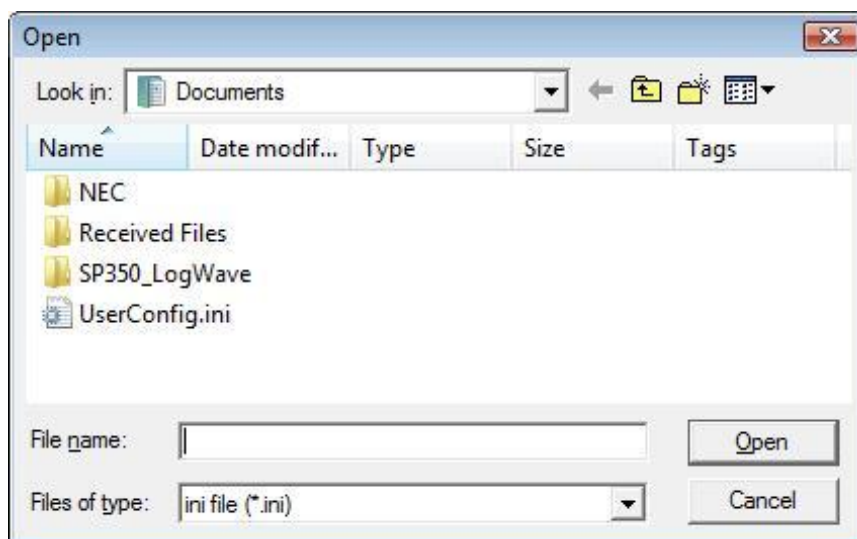The [Import/Export Wizard] screen appears.

Note: If [Apply] in the Control Key Display area is valid, clicking [Import/Export] in the Setting Item Display area displays the following dialog. No import/export processing is executed.

Step2.   Select [Export] and click [Next] on the [Import/Export Wizard] screen.
The [Export of file] screen appears.
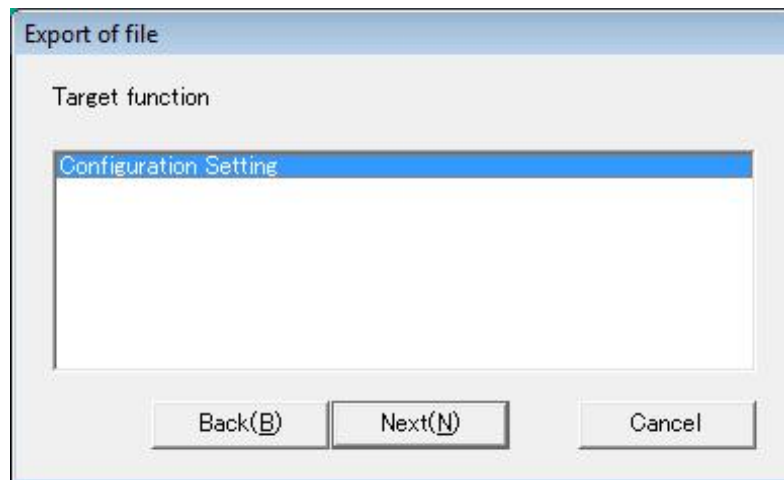
Step3.   Confirm that [Configuration Setting] is highlighted on the screen, and click [Next].
The [Export of file] screen provides the [File Path] field.
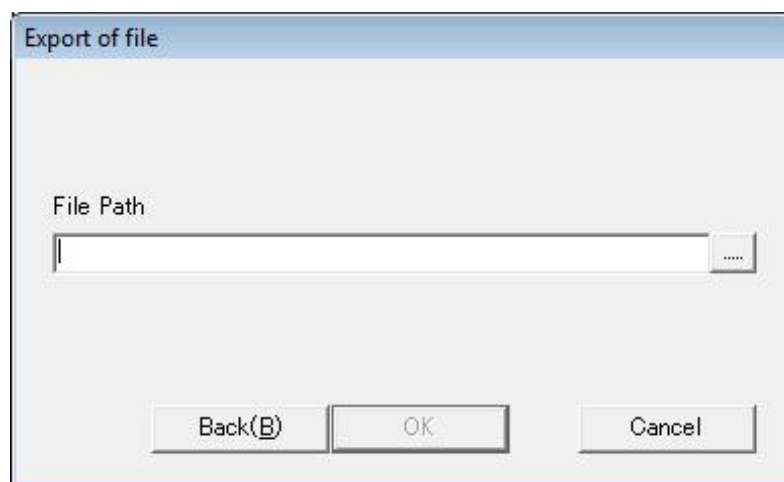
Step4. Enter the save path and name of the target file directly into the [File Path] field.

Alternatively, click the ⬚ button on the [Export of file] screen to open the following [Save as] screen. Select the save directory and file name (file extension: "ini"). Then, click [Save] to close the [Save as] screen.
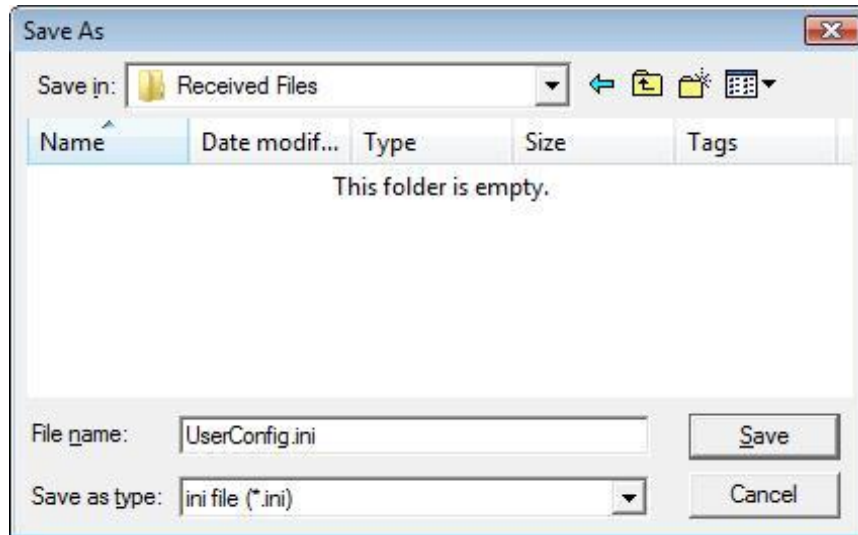
The [Export of file] screen containing the entered file path should look like the following.
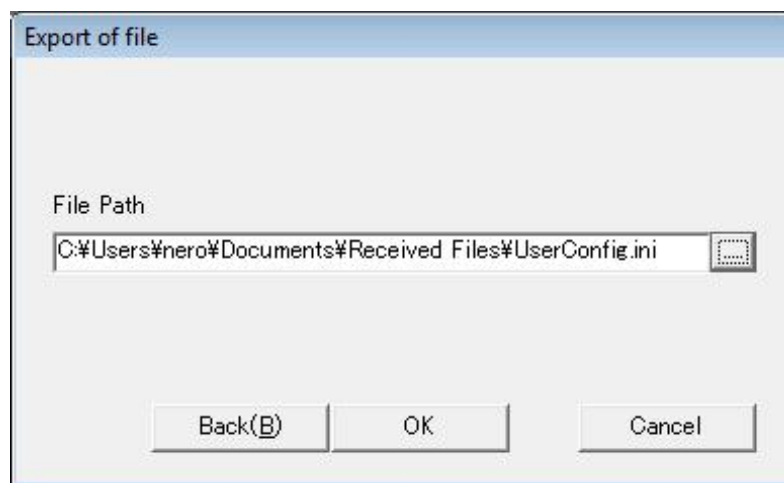
Step5. Click [OK] to save the settings.
The following dialog appears.

Step6. Click [OK] to complete the export operation.

2.4   Setting the time

SP350 uses the personal computer's clock for the functions such as Fault Information, Time Display and Incoming/Outgoing Log.   Therefore, the clock must be exact to operate these functions correctly. The following methods enable automatic clock setting, instead of manual ways.

(1) In the case of Windows XP

    Step1. Click and open the [Internet Time] tab on the [Date and Time Properties] screen.

    Step2. Check the [Automatically synchronize with an Internet time server] checkbox.

    Step3. Click [Update Now].

(2) In the case of Windows Vista, Windows 7 and Windows 8

Step1.   Click and open the [Internet Time] tab on the [Date and Time] screen.
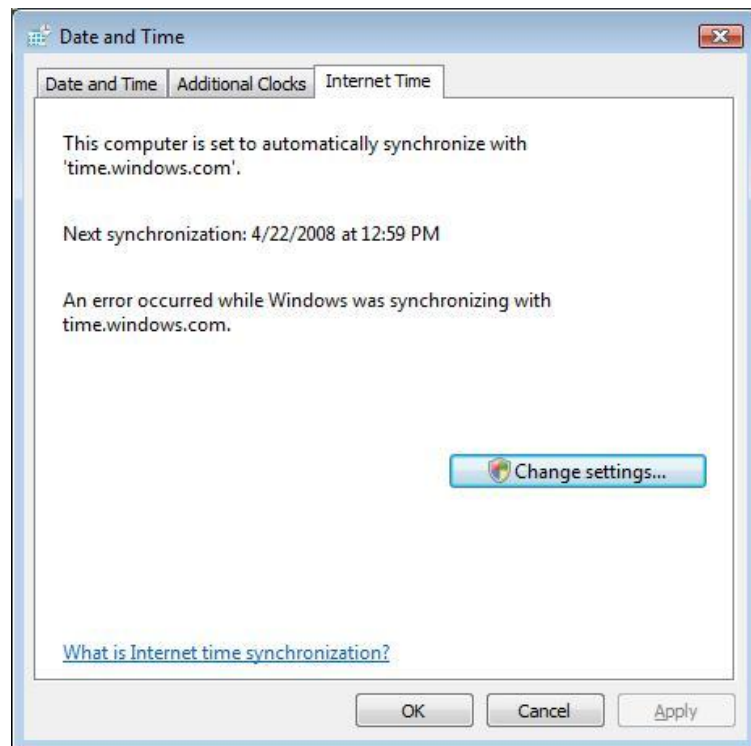
Step2.   Click [Change settings...].
          The [Internet Time Settings] screen appears.

Step3.   Click [Update now].
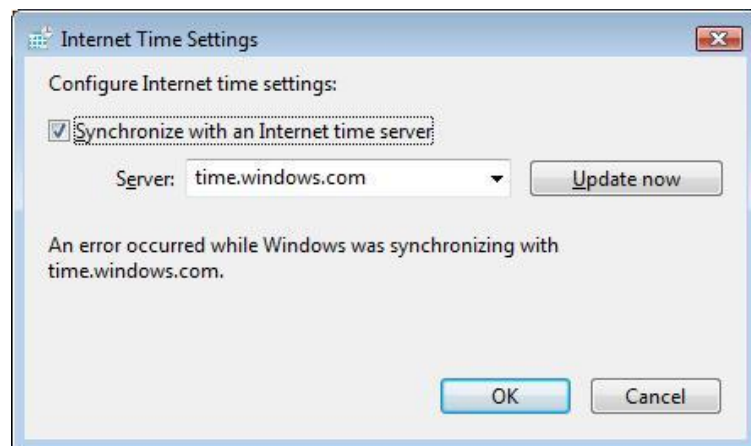
2.5   Setting the sound device

If other than the USB handset/headset is set in your PC, be sure to set the following.
Otherwise, the speaker of the USB handset/headset outputs the Windows starting noise, error sound, etc.

(1) In the case of Windows XP

Step1. Connect the USB handset/headset.   Then, select [Control Panel] -> [Sounds and Multimedia] from the [Start] menu to open the [Sounds and Audio Devices Properties] screen.   Select the [Audio] tab to change the [Default device] fields in [Sound playback] and [Sound recording] to **other than** [Handset for VoIP] (when a handset is used) or [Plantronics Headset] (when a USB headset is used) (select the device name provided for your PC).

Select the device provided for your PC
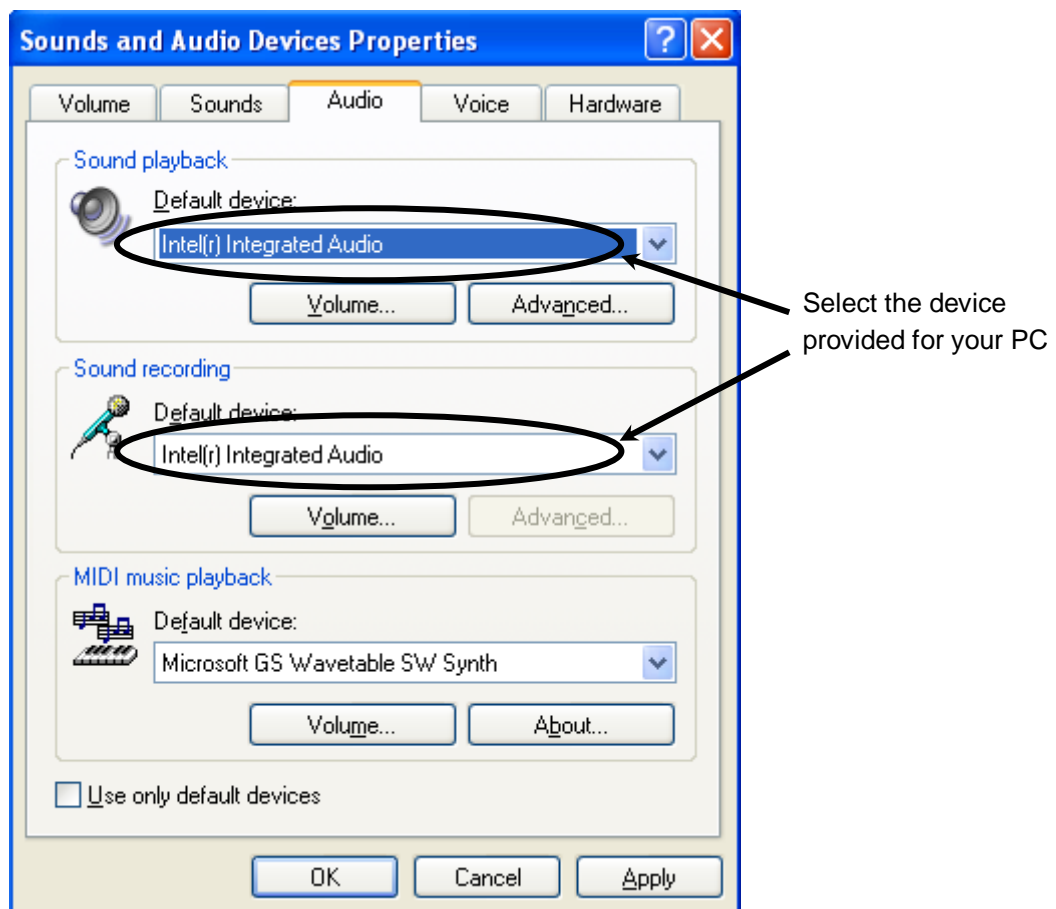
Step2. Check the [Use only default devices] checkbox.
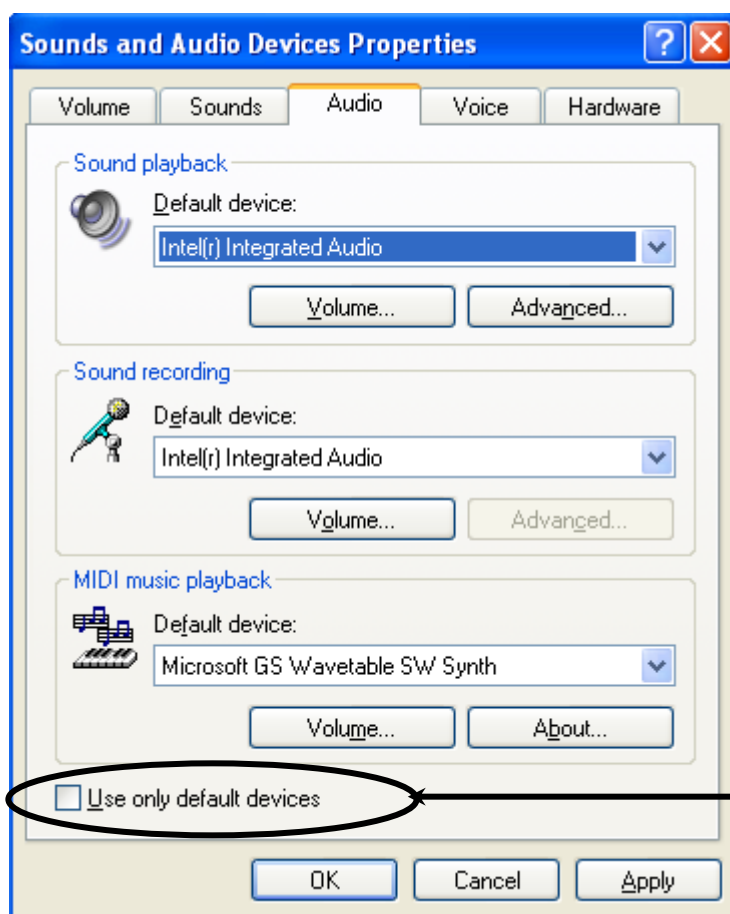
If this check box is checked, the devices cannot be changed.

Step3. Click [OK].

(2) In the case of Windows Vista

● Setting speakers

    Step1. Connect the USB handset/headset. Then, select [Control Panel] -> [Sound] from the [Start] menu to open the [Sound] screen and select the [Playback] tab.

    Step2. Select the device name provided for your PC.
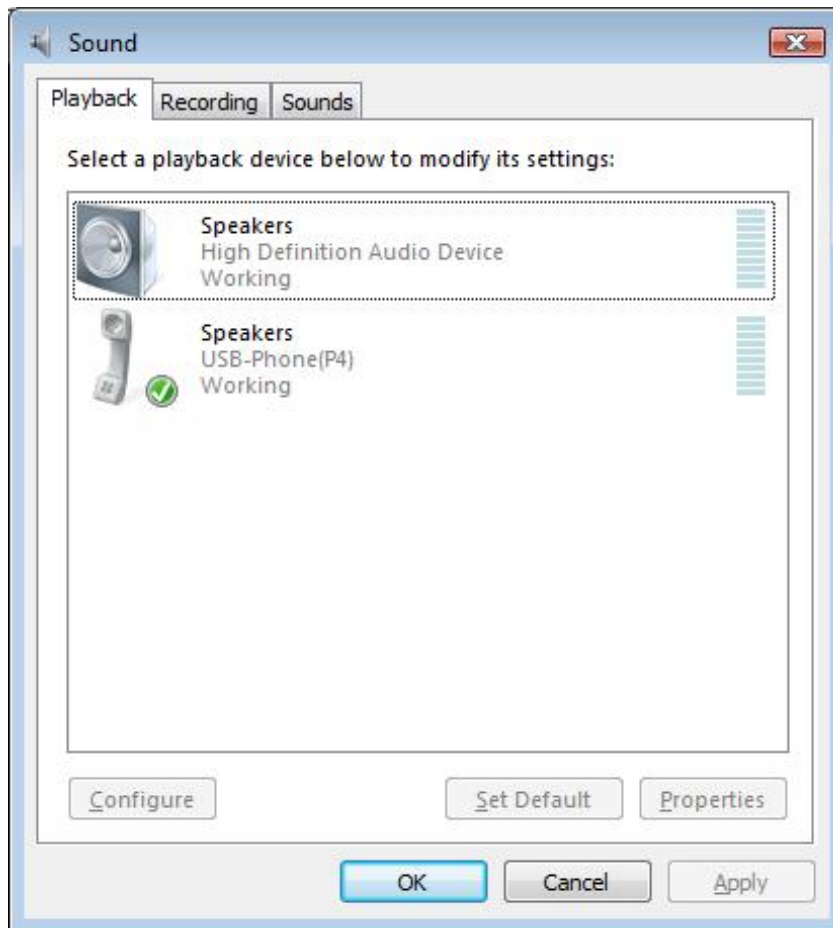
    Step3. Click [Set Default].

    Step4. Click [OK].

● Setting microphone

    Step1. Connect the USB handset. Then, select [Control Panel] -> [Sound] from the [Start] menu to open the [Sound] screen and select the [Recording] tab.

    Step2. Select the device name provided for your PC.
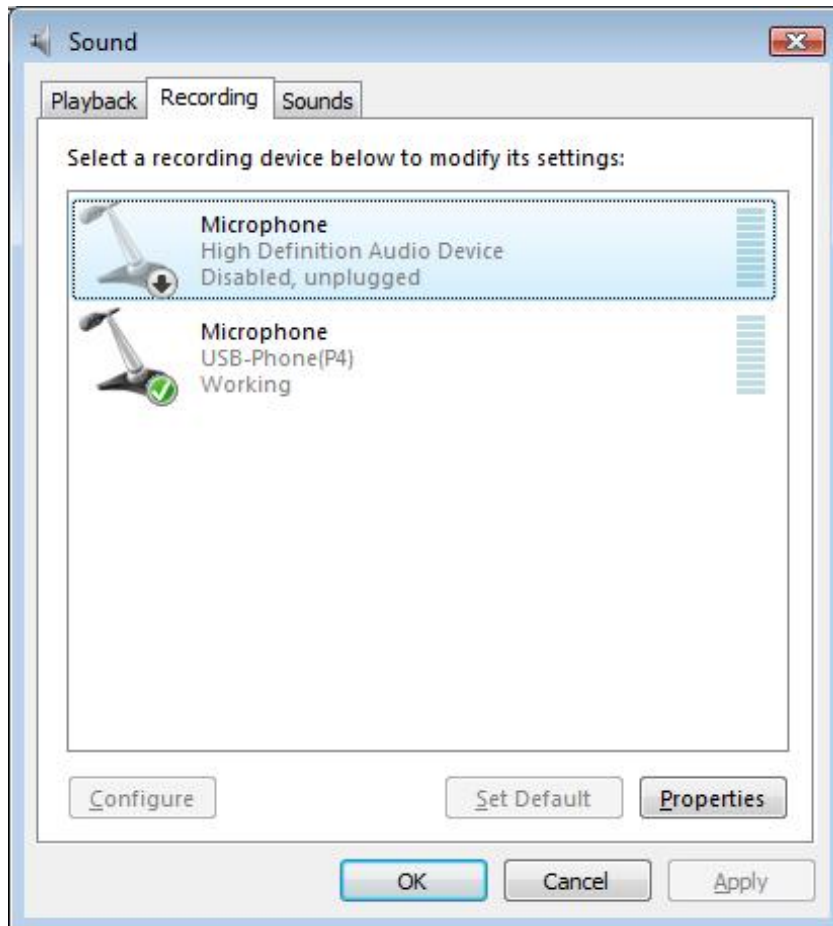
    Step3. Click [Set Default].

    Step4. Click [OK].

(3) In the case of Windows 7

● Setting speakers

    Step1.   Connect the USB handset/headset.   Then, select [Control Panel] -> [Sound] from the [Start] menu to open the [Sound] screen and select the [Playback] tab.

    Step2. Select the device name provided for your PC.
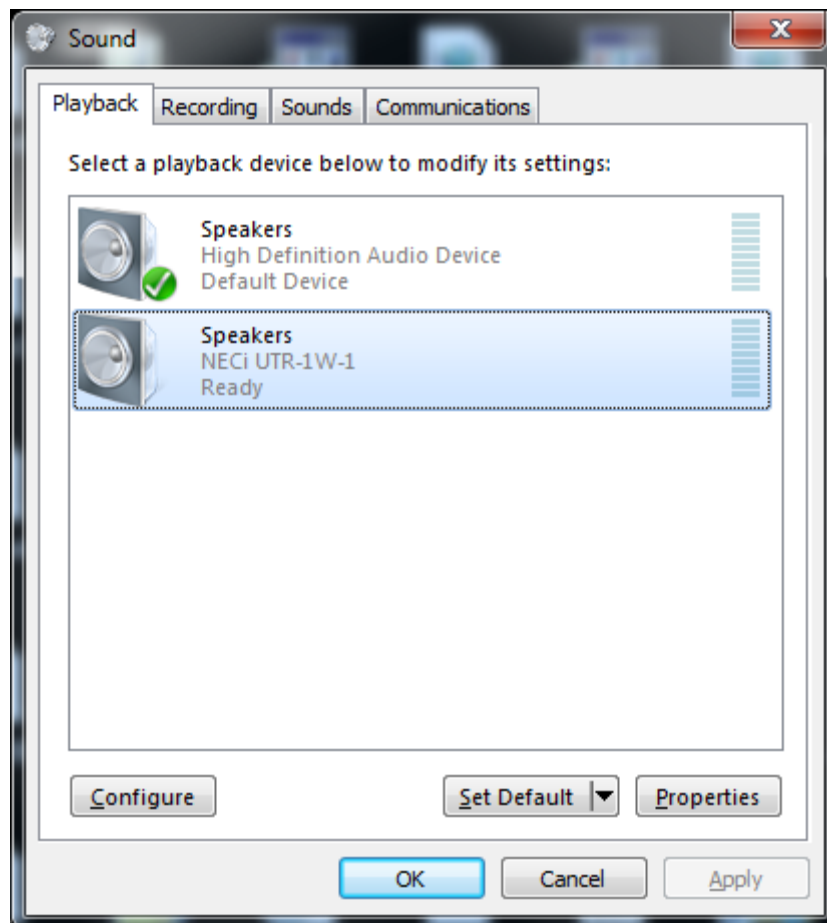
    Step3. Click [Set Default].

    Step4. Click [OK].

● Setting microphone

    Step1. Connect the USB handset. Then, select [Control Panel] -> [Sound] from the [Start] menu to open the [Sound] screen and select the [Recording] tab.

    Step2. Select the device name provided for your PC.
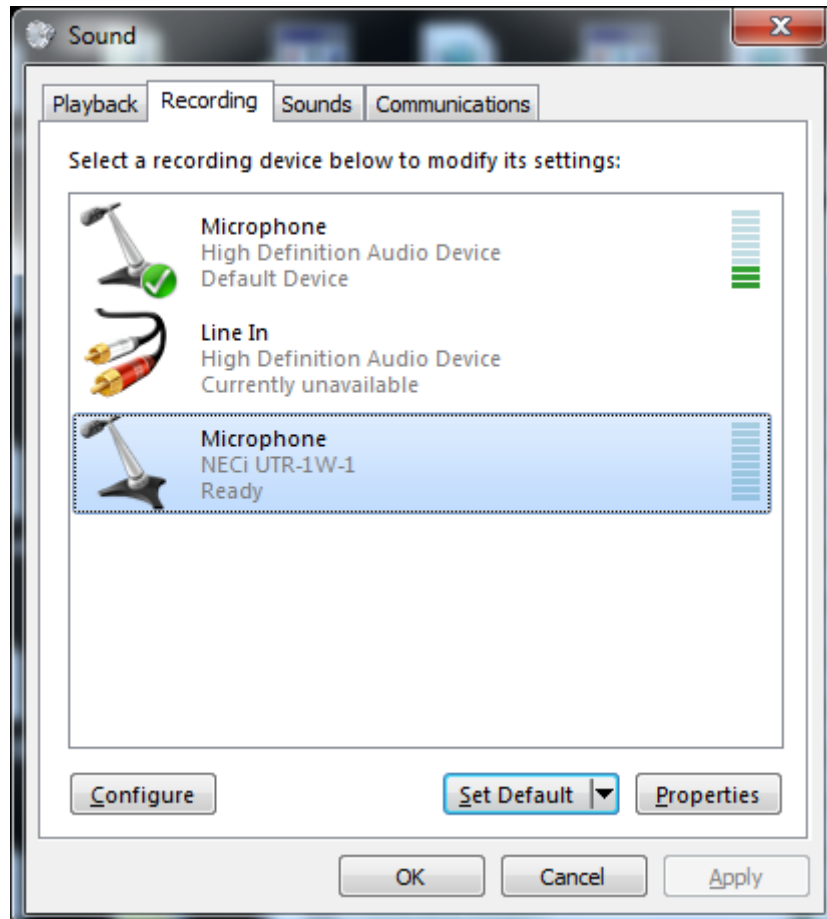
    Step3. Click [Set Default].

    Step4. Click [OK].

(4) In the case of Windows 8

● Setting speakers

Step1. Connect the USB handset/headset. Then, select [Control Panel] -> [Sound] from the [Start] menu to open the [Sound] screen and select the [Playback] tab.

Step2. Select the device name provided for your PC.
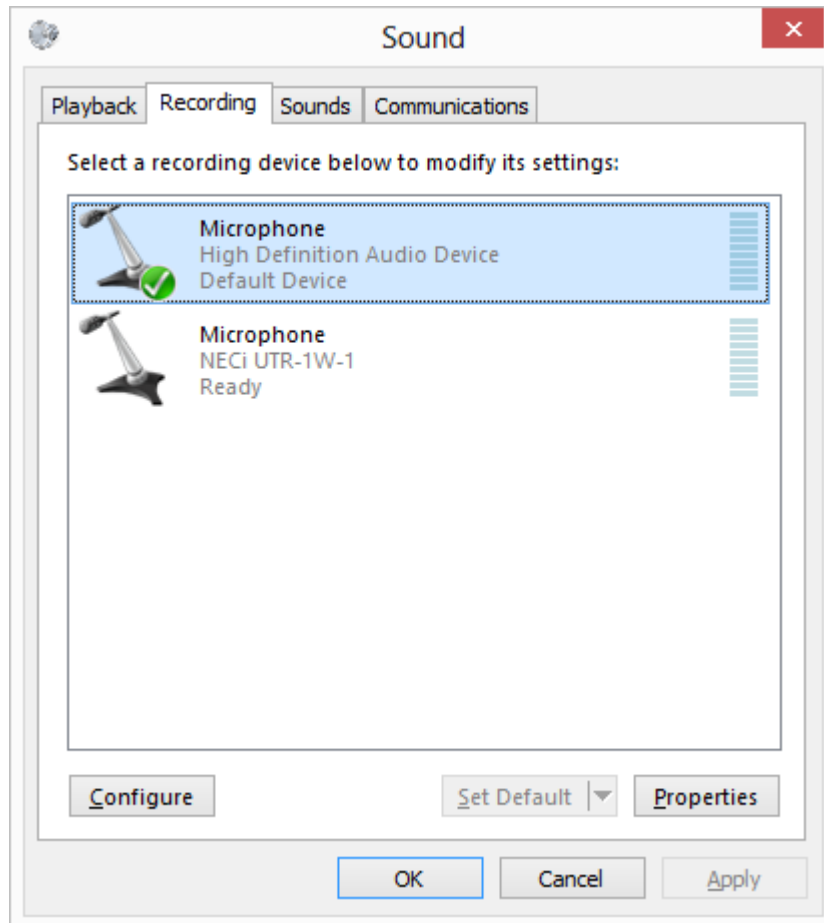
Step3. Click [Set Default].

Step4. Click [OK].

● Setting microphone

   Step1. Connect the USB handset.   Then, select [Control Panel] -> [Sound] from the [Start] menu
           to open the [Sound] screen and select the [Recording] tab.

   Step2. Select the device name provided for your PC.
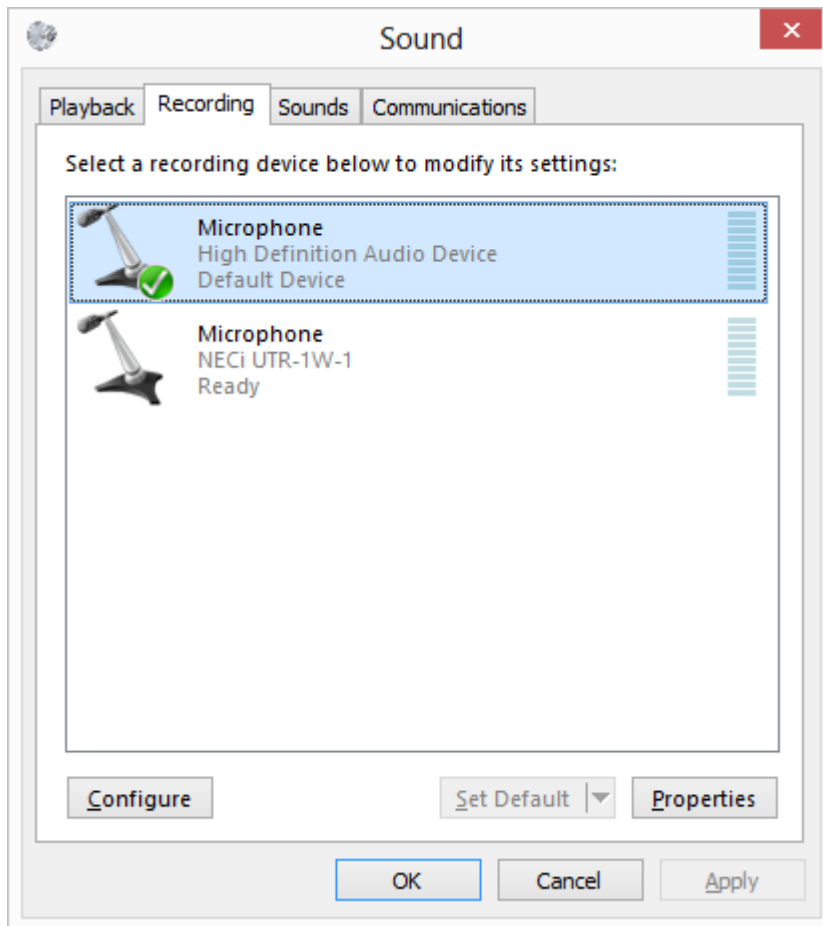
   Step3. Click [Set Default].

   Step4. Click [OK].

2.6   About DirectX version

To use SP350, DirectX version 9.0c or later is required.
If DirectX has not been installed or the installed version is earlier than 9.0c, a warning dialog appears at the SP350 start.

To check the DirectX version, perform the following procedure.

Step1.   Select [Run...] from the [Start] menu.
For Windows 8, right-click on Start Screen select [All apps] -> [Windows System tool] -> [Run...].

Step2.   Enter "dxdiag" and click [OK].
The [DirectX Diagnostic Tool] screen appears if installed.
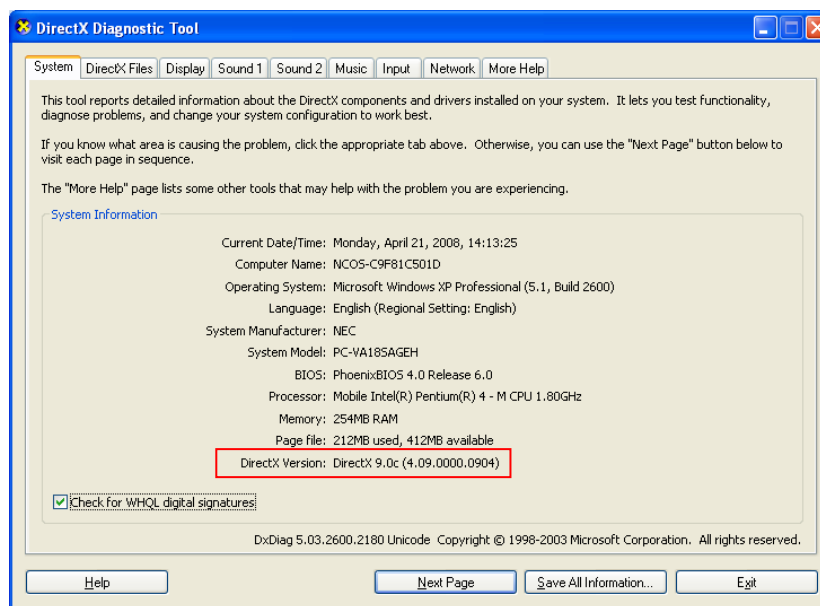
Note: If the screen shown above does not appear, DirectX has not been installed.   In such a case, go to Step4.

Step3. Check the version shown in the [DirectX Version] field on the [System] tab (boxed information on the screen).
This is the end of the procedure if the version is 9.0c or later.
Go to Step4 if the version is earlier than 9.0c.

Step4. Install DirectX in either of the following ways.

- To install DirectX included in the SP350 installation CD-ROM:
  Double-click "Microsoft/ENG/DirectX9.0c/dxsetup.exe" in the CD-ROM.

- To install by downloading the latest DirectX from Microsoft® web site:
  Download the latest DirectX from the following URL to install.
  http://www.gamesforwindows.com/en-US/AboutGFW/Pages/DirectX10.aspx

Note: The URL is subject to change without notice.

2.7   About using Core Audio

If it is select Core Audio for Voice processing then it may display following screen when SP350 is start up.

In this case, it might be wrong setting on play sound or recording device. Please change setting according following procedure and restart SP350. Even if it changed setting and it still shown above screen then it may not be support Core Audio using Audio device and please ask to technical support engineer.

1) Open Sound Properties for [Control Panel] -> [Sound].
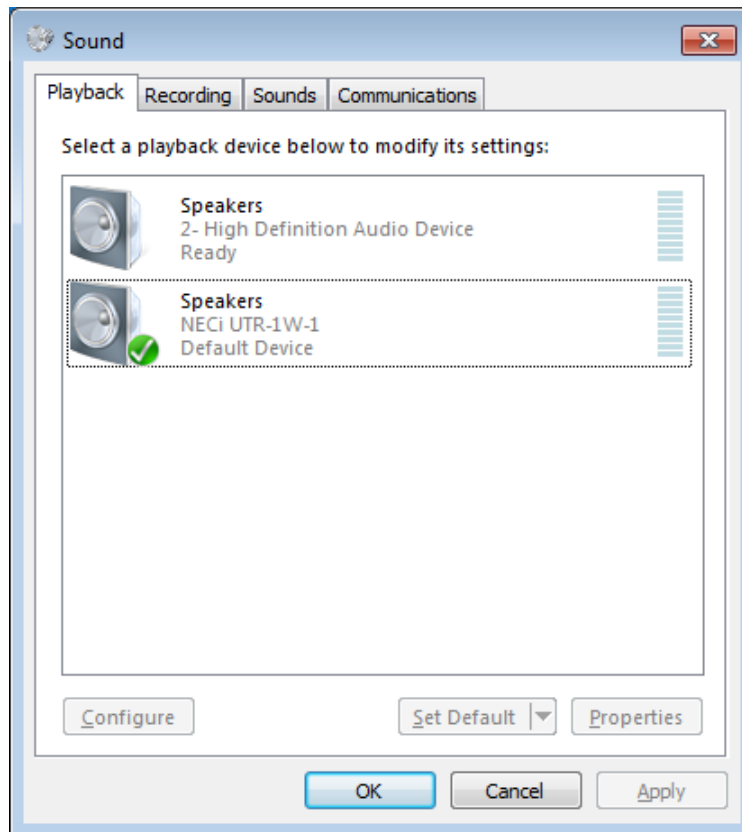
2) Open Speaker Properties using SP350 and open detail tab.
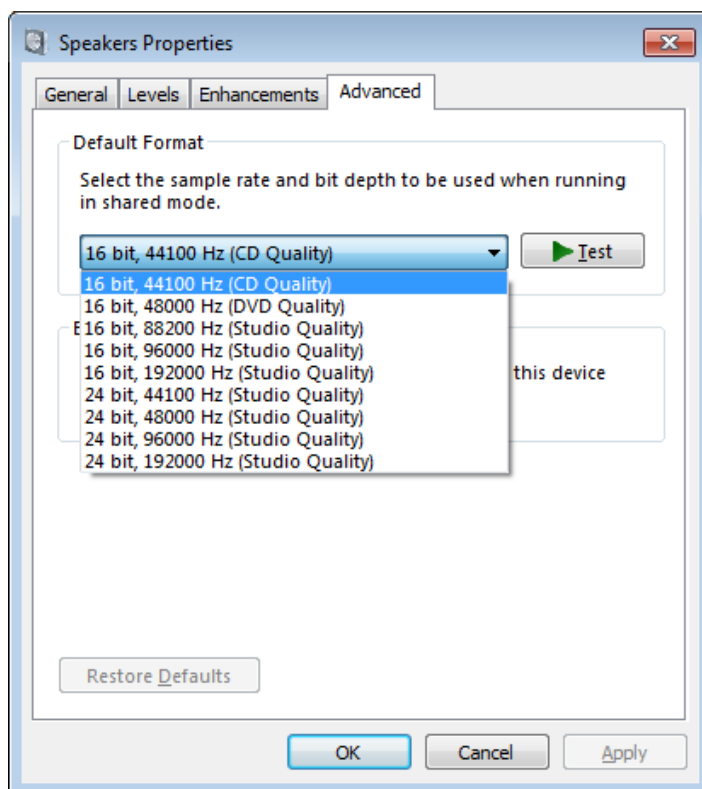
Follow above figure to change sample rate and depth for fault style and restart SP350.

(Note) Please change to recording side it is not only playing side.

Chapter 3 Starting or Ending SP350

This chapter describes how to start or end SP350.

- Starting SP350

- Ending SP350

- How to confirm the version and the operation mode of SP350

- About Windows XP Service Pack 2 support

- About the firewall in Windows XP Service Pack 1 or earlier

3.1   Starting SP350

Start SP350 in any of the following ways.

● Select [Programs] -> [UNIVERGE Soft Client SP350] -> [SP350] from the [Start] menu of Windows.

●   If [Create Shortcut to Desktop] is selec▓▓▓n the shortcut selection screen at the installation, the following shortcut icon is created.   Double-c▓▓▓▓e shortcut icon.
In case of Windows 8, right-click on Start Screen -> [All apps] -> [UNIVERGE Soft Client SP350] -> [SP350]

● If [Run SP350 on startup] is selected on the shortcut selection screen at the installation, the SP350 application starts when Microsoft Windows starts.

When SP350 starts, the following message is displayed until the application completes the connection to the IP telephony server.   Wait until this message disappears.

Now connecting
Please wait...

The following [Login] screen appears.   Enter the login name and the password and click [OK].
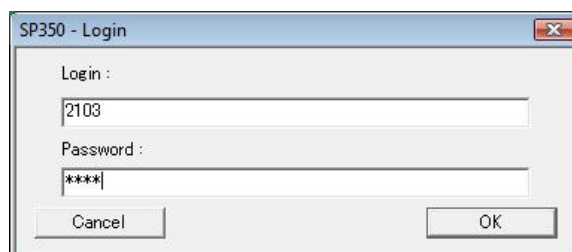
Field	Description
Login	Enter your station number.
Password	Enter your assigned PBX station password.

Note: When collaboration with another phone is used, the login name and the password are the station number (Myline) of SP350, not the station number of the terminal for collaboration.   For details, contact the installation technician.

3.2   Ending SP350

End SP350 in any of the following ways.

● Right-click the icon on the task tray and select [Exit] from the pop-up menu.

● Right-click the icon on the taskbar and select [Close] from the pop-up menu.

● Click [x] on the upper right side of the SP350 screen.

When the above operation is performed, the exit confirmation dialog appears.

Click [OK] on the dialog to end SP350.

3.3 How to confirm the version and the operation mode of SP350

Follow the procedure below to confirm the version and the operation mode of SP350.

● Right-click the SP350 icon on the task tray and select [Version] while SP350 is in operation.
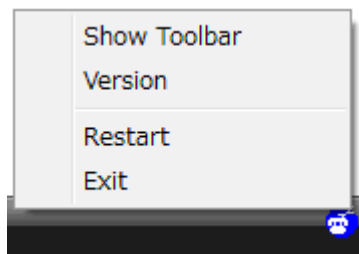
The [SP350 Version Information] screen appears.

3.4 About Windows XP Service Pack 2 support

When Windows XP Service Pack 2 is applied, Softphone may not function normally due to the Windows firewall function which is newly provided.   If any problem occurs which is considered to be caused by this function, unblock this function for Softphone in any of the following ways.

3.4.1 Execute the tool to disable the SP350 firewall

This tool can disable the firewall only for SP350 and the data conference application.

Step1. Execute "FWConfig.exe" in the SP350 installation folder.

Note: Be sure to execute it after ending SP350.

- When successfully completed:
  The following dialog appears.
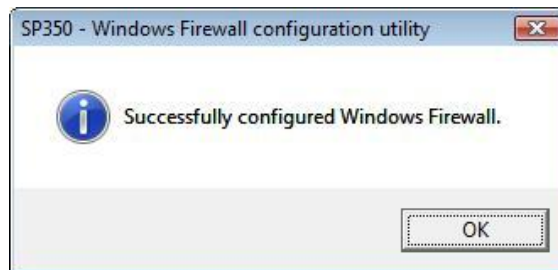
- When failed (Windows XP Service Pack 2 is not applied):
  The following dialog appears.
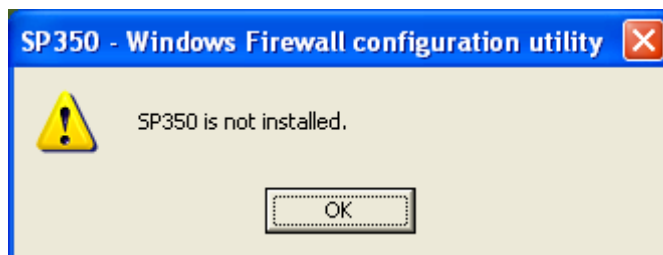
3.4.2 Disable the firewall upon starting SP350 after Windows XP Service Pack 2 is applied

If Windows XP Service Pack 2 is applied after SP350 is installed, the Windows firewall displays the following setting confirmation screen when SP350 is started.

Click [Unblock] on this screen to disable the firewall.   SP350 will function normally.

Similarly, when the data conference application is started, the Windows firewall displays the following setting confirmation screens.

Click [Unblock] on these screens to disable the firewall.   The application collaboration will function normally.

Note: If the [Keep blocking] is clicked, "3.4.1 SP350 Execute the tool to disable the SP350 firewall" or "3.4.3 Disable the firewall manually in advance" must be performed.

3.4.3　Disable the firewall manually in advance

When Windows XP Service Pack 2 is applied, [Windows Firewall] is added to the [Control Panel] screen.　The SP350 firewall can be disabled using this.

    Step1.　Select [Control Panel] -> [Security Center] -> [Windows Firewall] from the [Start] menu and click [Exceptions] tab.
          The following screen appears.
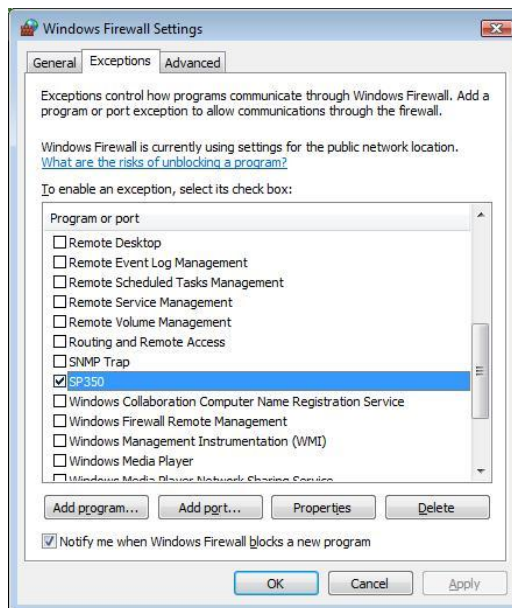
Step2. Click [Add program] to add SP350 and the data conference application.
Specify the executable file of SP350 (when installation destination is not changed, "C:\ProgramFiles\NEC\SP350\ClientPhone32.exe") in the [Path] field and click [OK] to add SP350.
Similarly, specify "C:\Program Files\NEC\SP350\DataMeeting\DataMeeting.exe" and "C:\Program Files\NEC\SP350\DataMeeting\RtcSvGm.exe" to add the data conference application.

Note: The above description assumes that the installation destination of Windows is Drive C.
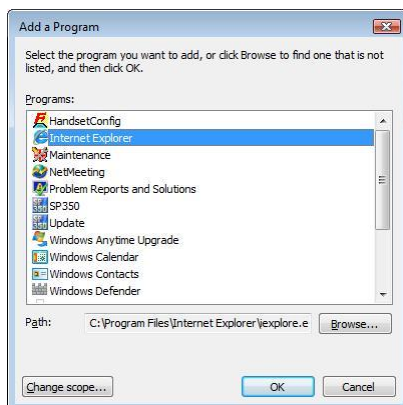
Step3. Confirm that "SP350", "DateMeeting.exe", and "RtcSvGm.exe" are displayed in the list of programs and services in the [Exceptions] tab.
The screen display changes as follows.
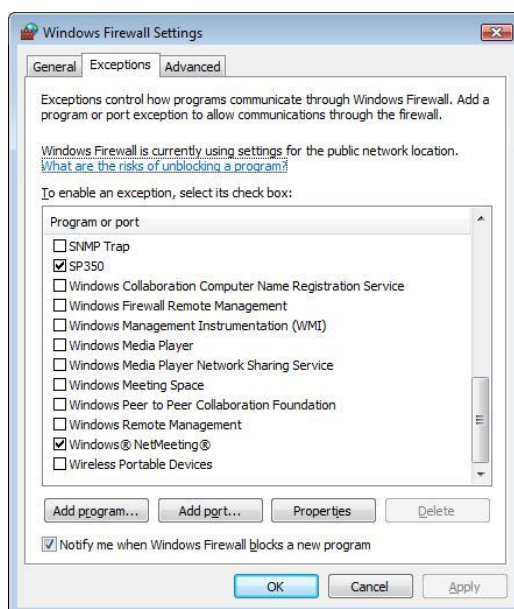
Step4. Click [OK].
The firewall is disabled.

3.5 About the firewall in Windows XP Service Pack 1 or earlier

If the Windows firewall (Internet connection firewall) function is enable in Windows XP Service Pack 1 or earlier, Softphone may not function normally. If any problem occurs which is considered to be caused by this function, disable the firewall in the following way.

Note: Be sure to contact the network administrator before the firewall is disabled.

3.5.1 Disable the Internet connection firewall

Step1. Select [Control Panel] -> [Network and Internet Connections] -> [Network Connections] from the [Start] menu.

Step2. Right-click the network to be used, select [Properties], and click [Advanced] tab.
The following screen appears.
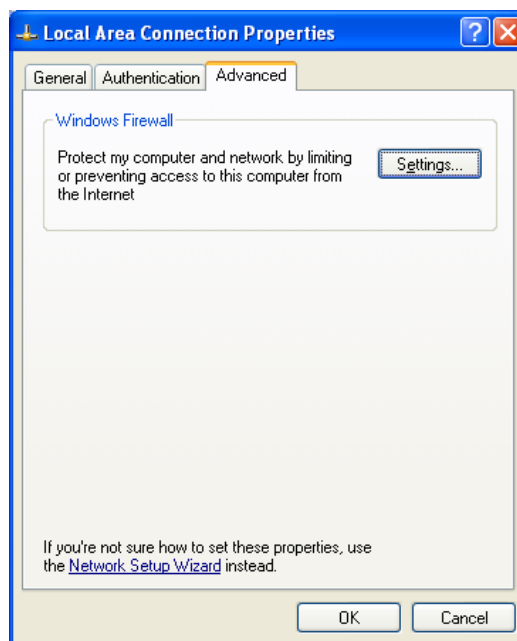
Step3. Uncheck the [Protect my computer and network by limiting or preventing access to this computer from the Internet] checkbox.

Step4. Click [OK].
The Internet connection firewall function is disabled.

Chapter 4 Procedure of Integration into Microsoft Office Communicator

This chapter describes the procedure for integrating the SP350 extended user interface into Microsoft Office Communicator (hereafter abbreviated as MOC).

System integration work is required for integration since the settings to MOC vary depending on the environment.　Knowledge on MOC functions, LDAP, ActiveDirectory, HTML, JavaScript, and ActiveX control is required for system integration work.

The content on MOC described in this chapter may be changed by the judgment of Microsoft Corporation without prior notice.　Though MOC setting examples are provided for reference, refer to the Microsoft documents for the latest information.

● Image of integration into MOC

● MOC registry settings and files

● Documents related to Microsoft Corporation

● ActiveX control setting items and functions provided by SP350 Version 2

● Restrictions of ActiveX control provided by SP350 Version 2

4.1   Image of integration into MOC

SP350 Version 2 (MOC mode) provides the following extended user interfaces to MOC.
This is implemented by the addition of ActiveX control.   Incorporation into MOC is performed by the addition of ActiveX control provided by SP350 Version 2.
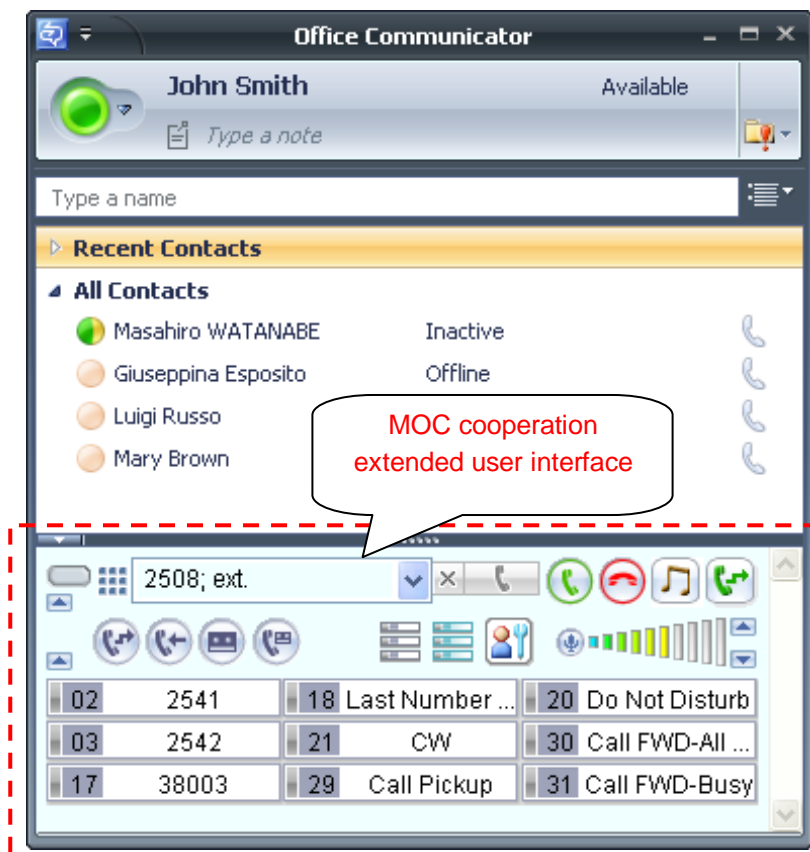
- The main functions of SP350 can be used from the MOC application screen.   The following functions, which cannot be realized only by MOC, are available.
    - Function key operations such as subline operation
    - Forwarding settings including subline
    - Call history including subline
    - Call memo, and
    - Voice message recording
    can be operated.
- Telephone number of users can be searched in collaboration with the contacts list of MOC.
- Termination to the subline is notified, which cannot be implemented only by MOC.

4.2 MOC registry settings and files

SP350 Version 2 (MOC mode) is integrated into MOC by the MOC tab extension function.
To set the MOC tab extension function, you need to configure the following settings at least.

- Registry specifying the location of the tab extension description file
- Preparation of the tab extension description file (XML)
- Preparation of the tab description file (HTML) and the tab icon file (PNG)

For details, refer to the Microsoft documents.   If the setting is not correct, the extension function does not work.
All samples in this section describe the settings as local file for reference.   However, these samples do not apply to all environments.   And, Microsoft Corporation recommends server distribution.

4.2.1 Registry specifying the location of the tab extension description file

MOC reads the location of the tab extension description file from the following registry.

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Communicator]
TabURL = {Character strings indicating the file location}
Example: file:///C:/Program Files/NEC/SP350/octab.xml    (Local file example)
      http://some.server.com/msoc/octab.xml         (Server distribution example)
```

For the details and restrictions of these registries, refer to the Microsoft documents.

4.2.2 Tab extension description file

The tab extension description file describes the MOC tab extension settings as XML text as given below.   Two or more tabs can be defined.   Switching tabs enables you to use the functions other than the SP350 Version 2 MOC cooperation in parallel.

Local file example (octab.xml)

```xml
<?xml version="1.0" ?>
<tabdata>
<tab> <!-- Setting for each tab -->
   <name>SP350</name> <!-- Tab name setting -->
   <tooltip>SP350 MOC integration</tooltip> <!-- Tooltip setting -->
   <image>file:///C:/Program Files/NEC/SP350/SP350.png</image> <!-- Icon setting -->
   <contenturl>file:///C:/Program Files/NEC/SP350/DtermAX.htm</contenturl> <!-- Tab description file
setting -->
   <contactid>true</contactid>
</tab>
</tabdata>
```

For the details and restrictions of this configuration file, refer to the Microsoft documents.

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4.2.3 Tab description file and tab icon file

The MOC tab extension is a function to display arbitrary HTML files. Specifying the HTML file displaying the SP350 Version 2 MOC cooperation extension as the tab description file enables you to integrate the SP350 Version 2 MOC cooperation function into MOC.
Adding the following description in the HTML adds the SP350 Version 2 MOC cooperation function.

```
<OBJECT ID="DtermAX" CLASSID="CLSID:9868433A-22A7-4806-8878-AAC648F7CF7D">
</OBJECT>
```

A tab description file example is given below.

Local file example (DtermAX.htm)

```
<HTML>
<meta http-equiv="Content-Type" content="text/html; charset=utf-8">
<HEAD>
<TITLE>SP350</TITLE>
<style type="text/css">
body {
    margin-top:5px;    margin-bottom:0px;    margin-left:5px;    margin-right:5px;
    background-color:#f0ffff;
}
</style>

<script language="JavaScript">
var imessenger = null;

function OnSelectionChange(contact, group, dgs)
{
    var addr = contact.split(';', 1)[0];
    if (!addr.match(/^sip:/)) return 1;

    var status = 0;
    try {
        if (imessenger == null)
            imessenger = new ActiveXObject("Communicator.UIAutomation");
        var icontact = imessenger.GetContact(addr, "");
        status = icontact.Status;
    } catch (e) {}

    var pref = 0;
    switch (status) {
    default:
        break;
    case 0x01: // MISTATUS_OFFLINE
    case 0x42: // MISTATUS_OUT_TO_LUNCH:
    case 0x22: // MISTATUS_AWAY:
        pref = 2;          // mobile
        break;
    }

    try {
        DtermAX.SearchAddress(addr, pref);
    } catch(e) {}
}
</script>

</HEAD>
<BODY>

<!-- Reading the SP350 Version 2 MOC cooperation function -->
<OBJECT ID="DtermAX" CLASSID="CLSID:9868433A-22A7-4806-8878-AAC648F7CF7D">
</OBJECT>

</BODY>
</HTML>
```

Specify any PNG file with the size of 16 x 16 for the icon file.
For the details and restrictions of the files, refer to the Microsoft documents.

4.3   Documents related to Microsoft Corporation

For the details of the MOC deployment, registry settings of the function extension, and configuration files, refer to the following Microsoft documents.

This document describes the URLs as of the end of September, 2008.   They may be changed by the judgment of Microsoft Corporation.

● Microsoft Office Communicator 2007 Home Page
   http://office.microsoft.com/en-us/communicator/default.aspx
● Microsoft Office Communicator 2007 Deployment Guide
   http://www.microsoft.com/downloads/details.aspx?FamilyId=F1D1A947-6EFF-4AC4-8878-F0A778 94AC99&displaylang=en

4.4　ActiveX control setting items and functions provided by SP350 Version 2

The extended UI ActiveX control for MOC cooperation provided by SP350 Version 2 is set by the PARAM tag in the HTML-standard OBJECT tag.　To support number search from the contact list of MOC, SP350 Version 2 provides the number search function by LDAP.
The setting items for ActiveX control and the provided functions are described below.

4.4.1　Setting items

This ActiveX control performs a number search from the MOC contacts by The LDAP search. Therefore, the LDAP server to be searched and the information to log into it must be set.

```
<object   id="DtermAX"   classid="CLSID:   9868433A-22A7-4806-8878-AAC648F7CF7D">
<param name="LDAPHost" value="ldap.sample.com">   <!-- Setting -->
</object>
```

As described above, the setting is configured with the HTML param tag.
When MOC is integrated into the single sign-on support in the ActiveDirectory environment, all default values can be used.

● LDAPHost
　Setting example: <param name="LDAPhost" value="ldap.example.com">

　Specify in character strings the host name of the LDAP server to be used for The LDAP search of a telephone number.
　When the domain to be searched is specified, set according to the URL description format of LDAP as described below.
　　　"ldap.example.com/OU=com,OU=example,DC=employee"
　For the URL descrption of LDAP, refer to the LDAP protocol specifications.
　The default value is "" (no character strings).　When the PC belongs to a domain, domain controller is used as the Windows default operation (rootDSE is referenced).　For the default operation and settings when ActiveDirectory is used, refer to the Windows specifications.

● LDAPEncryptPassword
　Setting example: <param name="LDAPEncryptPassword" value="1">

　Set in a numeric value whether to encrypt the authentication information (login name and password) when logging into the LDAP server.
　Specify 0 for setting the encryption invalid and 1 for valid.
　Whether this can be set or not depends on the LDAP server.　Refer to the LDAP server specification.

　The default value is 1 (valid).

● LDAPLogin
Setting example: <param name="LDAPLogin" value="login name">

Specify in character strings the login name to log into the LDAP server.   This item does not have to be set when the LDAP server does not require authentication.

The default value is "" (no character strings).

When this item is not set or no character strings are specified and "User name and password must be set for MOC cooperation" is set in the SP350 phone book settings, the user name specified in the SP350 phone book settings is used.

● LDAPPassword
Setting example: <param name="LDAPPassword" value="login password">

Specify in character strings the password to log into the LDAP server.   This item does not have to be set when the LDAP server does not require authentication.

The default value is "" (no character strings).

When this item is not set or no character strings are specified and "User name and password must be set for MOC cooperation" is set in the SP350 phone book settings, the password specified in the SP350 phone book settings is used.

● LDAPAddressAtrribute
Setting example:
  <param name="LDAPAddressAttribute" value="msRTCSIP-PrimaryUserAddress">

Specify in character strings the attribute name on LDAP to be specified as the search key in The LDAP search.   The "SearchAddress" function provided by this ActiveX control searches items whose attribute fully matches the address of the argument

The default value is "msRTCSIP-PrimaryUserAddress" (excluding ").

● LDAPNameAttribute
Setting example: <param name="LDAPNameAttribute" value="name">

Specify in character strings the attribute name to acquire the user name in The LDAP search.

The default value is "name" (excluding ").

● LDAPNumberAttributes
Setting example:
  <param name="LDAPNumberAttributes" value="telephoneNumber;mobile;homePhone">

Specify in character strings separated with "," (comma) the attribute list corresponding to the user's telephone number to be acquired in The LDAP search.   Up to 31 attributes can be specified.   If a space or the like is placed before or after the separating character, it is used (not omitted).   The separating character "," (comma) cannot be included in an attribute name.

The default value is "telephoneNumber;mobile;homePhone" (excluding ").

- LDAPNumberAttributesDesc
  Setting example: <param name="LDAPNumberAttributesDesc" value=" extension;mobile;home">

  Specify in character strings separated with "," (comma) the description on the attribute list specified in "LDAPNumberAttributes" in The LDAP search.　Up to 31 descriptions can be specified.　If a space or the like is placed before or after the separating character, it is used (not omitted).　The separating character "," (comma) cannot be included in a description.

  The default value is "extension;mobile;home" (excluding ").

  The setting values are used only for displaying the LDAP search results, not used for the LDAP search itself.　They are displayed after the number with "," (comma) when the LDAP search results are displayed in the list box.
  Whether the contents of "LDAPNumberAttributes" and "LDAPNumberAttributesDesc" are matched in meaning does not matter.　The values are displayed as set in the item.

- LDAPConnectionTTL
  Setting example: <param name="LDAPConnectionTTL" value="60">

  Specify in a numeric value (in seconds) the time to keep the connection with the LDAP server.　The connection with the LDAP server is closed if the specified time elapses after the last LDAP search. However, whether it is actually closed or not depends on the server and ADSI API operation.

  The default value is 60 seconds.

- LDAPQueryCacheTTL
  Setting example: <param name="LDAPQueryCacheTTL" value="43200">

  The LDAP search results are cached on the memory.　The search results on the memory are used for addresses that are succeeded in the LDAP search once, and they are not searched in the LDAP server.　Specify the valid period of the cache in a numeric value (in seconds).
  Up to 1000 search results can be cached (*).　If the search results exceed 1000, arbitrary data is discarded from the cache.

  The default value is 43200 seconds (12 hours).

  (*) The upper limit of the items to be cached may be changed in a later version without prior notice.

4.4.2   Provided functions

The extended UI for MOC cooperation provided by SP350 Version 2 provides the following functions to perform the LDAP search of a telephone number in the MOC contacts.   Clicking the MOC contacts enables the automatic LDAP search of a telephone number, in combination with the event notification to the tab extension when a selection on the contacts list of MOC changes.

```
<object id="DtermAX" classid="CLSID: 9868433A-22A7-4806-8878-AAC648F7CF7D">
</object>
<script language="JavaScript">
function onSelectionChange(contacts, group, dgs)     // Accepts events issued by MOC
{
try {
var sipaddress = contacts.split(';', 1)[0];
DtermAX.SearchAddress(sipaddress, 0);   // Hands to ActiveX control
} catch (e) {}
}
</script>
```

As described above,
● Reading of the extended UI ActiveX control for MOC cooperation provided by SP350 Version 2
● Event notification of contact selection change by "onSelectionChange" callback of MOC
● Calling of the LDAP search function of ActiveX control by the MOC event notification callback function
are combined for implementation.

● SearchAddress function
  SearchAddress(sip-address, preference)
  Calling example: DtermAX.SearchAddress("sip:foo@sample.com", 0);

  Searches the LDAP server for a telephone number list of users corresponding to the SIP address sent from MOC and displays the search result in the number entry field as list box.
  Searches items whose attribute specified in "LDAPAddressAttribute" fully matches *sip-address* of the argument.
  The SIP address specified for *sip-address* is compared with the SIP address on LDAP.   For MOC, LDAP stores addresses containing "sip" at the beginning such as "sip:user@sample.com". Therefore, note that "sip" is required for the addresses specified for sip-address.
  When the search is successfully completed, a telephone number list is acquired from the attribute list specified for "LDAPNumberAttributes".

  For *preference*, specify in a numeric value which number is given priority for display when two or more telephone numbers are acquired.
  Specify the number, such as 1, 2, 3, etc., from the beginning of the number list specified for "LDAPNumberAttributes".   If the number of the specified order does not exist, the top of the number list that can be acquired is displayed.

This function fails and generates an exception when ActiveX control is being initialized or the connection with SP350 is not established.

- SetNumber function
  SetNumber(number)
  Calling example: DtermAX.SetNumber("12345");

This function enables reflection of the result of the unique search logic to the number input field of ActiveX control.　This function itself does not perform the LDAP search.

Set in character strings the number specified for *number* in the number input field.　The input field is set as specified, even if other than number is specified.　Other than number is ignored in the actual origination/transfer operation.
If the character strings set contain ",", the characters after that are ignored.　You can add description after "," using this.

This function fails and generates an exception when ActiveX control is being initialized or the connection with SP350 is not established.

4.5 Restrictions of ActiveX control provided by SP350 Version 2

Note that ActiveX control provided for this function does not work independently, but works in collaboration with SP350. This ActiveX control does not substantially provide any function in the environment in which SP350 is not running.

This ActiveX control is provided upon installation of SP350. Downloading it from a Web site is not supported. Downloading it independently does not make sense since it does not substantially function if it is not installed with SP350. Therefore, downloading it from a Web site will not be supported even in the future.
The 64 bit version of this ActiveX control will not be provided.
This ActiveX control can be operated only in MOC.

This ActiveX control provides the telephone number function from the SIP addresses using the LDAP server. The numbers do not always match the telephone numbers displayed by MOC. Both this ActiveX control and MOC acquire telephone numbers from the LDAP servers, but MOC uniquely modifies them and performs access restriction for them.
When separate LDAP servers are used for search, different results are acquired, as a matter of course.

Chapter 5 Configuring Directory Search Service in Information Search

This section describes the following items that are required for the directory search service in information search.

- Configuration of directory service in maintenance settings
- Directory search rule file
- Phone number normalization rule file
- Phonebook setup by user definition

To understand the contents described in this section requires the basic knowledge of LDAP, regular expression library and phone number planning.

- Overview of service
- Flow of configuration
- Contents of maintenance settings and user definitions
- About the description format of the directory search rule file
- About the description format of the phone number normalization rule file

5.1 Outline of service

The directory service in information search provides the following function.
- The user enters a search character string (name, etc.) in the information search box and performs "Directory Search." This searches the contact information of the counterpart from the directory and displays the search result.
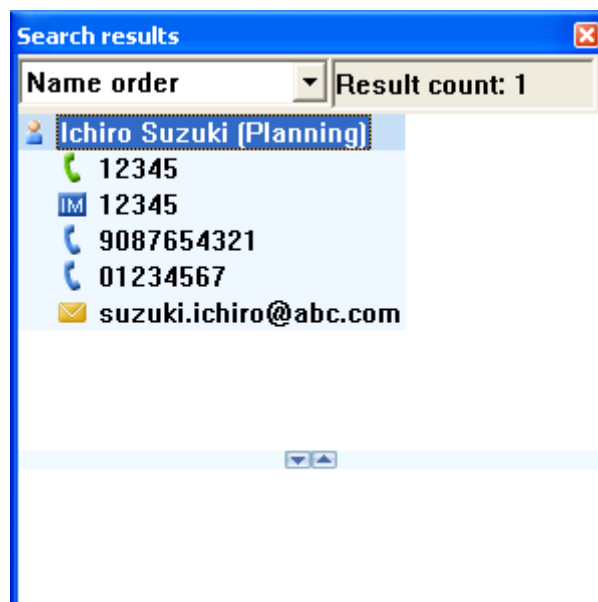
5.2 Configuration Flow

When using this service, the following four items are required.
- Installation of the directory search rule file (LDAPSearchRule.txt)
- Installation of the phone number normalization rule file (NumNormRule.txt) (optional)
- Directory service configuration of maintenance settings
- User-defined phone number configuration

5.2.1 Installation of the Directory Search Rule File and the Phone Number Normalization Rule File

Install the directory search rule file (LDAPSearchRule.txt) and the phone number normalization rule file (NumNormRule.txt) in the installation directory of SP350.
There are the following two types of installation methods.
- Method by automating the installation file (refer to 1.5.3)
- Method by manually copying the installation file

5.2.1.1 Method by Automating the Installation Files

With the method by automating the installation file, a setup file packaged with a configuration file is created using the method in accordance with 1.5.3, "Automatic environment and data conference settings using installation file." However, the IExpress.exe used as described in 1.5.3 has insufficient functions, it is necessary to use a different tool.
Here, we will introduce a method that uses free software 7-zip. The following explains the procedure using 7-zip version 4.65. The screens and display text may be different depending on the version of 7-zip and how it is obtained. Other tools can also be used as long as they satisfy the procedure of automation described later.

Note: In order to use free software including 7-zip, the customer has the responsibility for strictly following the licensing conditions of the corresponding software. NEC shall not be responsible for any damage the customer may incur as a result of using the corresponding free software. Also, NEC does not approve the distribution of SP350 software to the third party by the customer. Please be aware that this is also applicable when SP350 software is embedded into an installer created by using free software such as 7-zip.
The customer shall be responsible for damage NEC may incur when the customer distributes SP350 software to the third party.

5.2.1.2 Procedure of Automation

Similar to 1.5.3, "Automatic environment and data conference settings using installation file," create a self-extract setup file to which LDAPSearchRule.txt and NumNormRule.txt have been added, in addition to SP350AutoConf.ini described in 1.5.3, to the installer file group before compression.
At that time, store LDAPSearchRule.txt and NumNormRule.txt in a folder named "Enhance" and execute Setup.exe by specifying the "/Enhance" option. When this option is specified, the SP350 installer copies the files under the Enhance folder to the SP installation folder by overwriting at the end of installation.

Step 1: Install 7-zip software. Download 7-zip from the URL http://www.7-zip.org/. Also, download a self-extract installer creation kit called 7z_extra.

Step 2: Prepare the setup file of SP350. Prepare the group of setup files provided on the installation media, create LDAPSearchRule.txt and NumNormRule.txt, as well as SP350AutoConf.ini if necessary, and prepare the files in the following folder structure.

```
Enhance¥LDAPSearchRule.txt
Enhance¥NumNormRule.txt      (option)
SP350AutoConf.ini           (option)
_Setup.dll
data1.cab
data1.hdr
data2.cab
ISSetup.dll
layout.bin
setup.exe
setup.ini
setup.inx
Ver.dat
```

Note: Please be aware that LDAPSearchRule.txt and NumNormRule.txt must be created under the Enhance folder, and SP350AutoConf.ini in the same folder as the setup file group.

Step 3: Compress the setup files. Using 7-zip software, compress the above files into one file.
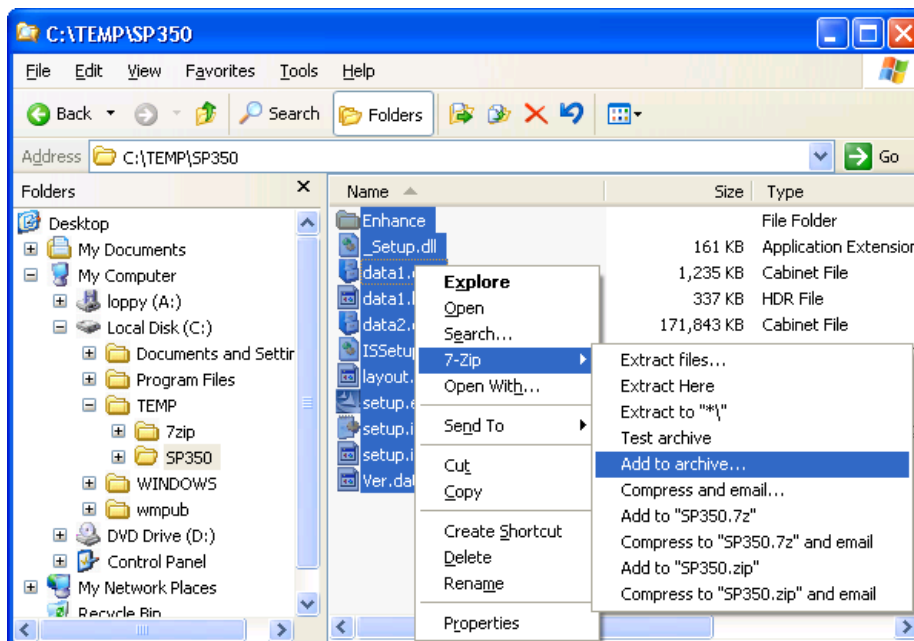
Note: Name the compressed file "archive.7z." When compressing, select "7z" for "Archive format." Select "Normal" for "Compression Level," and "LZMA" for "Compression Method." Also, do not make the file a self-extract file at this point.
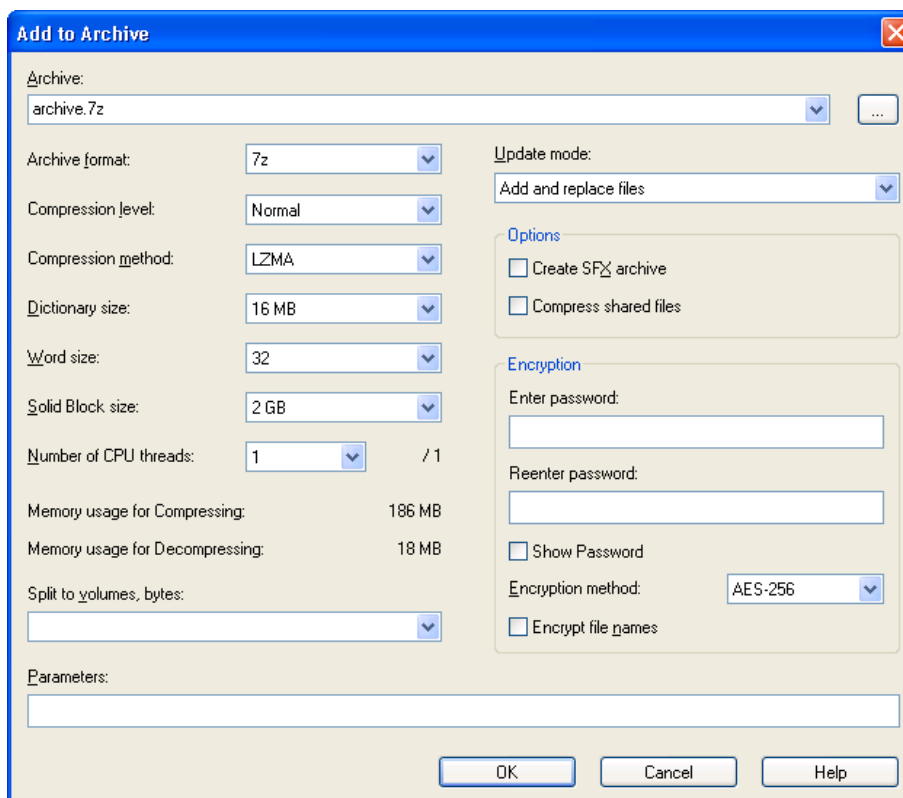
Note: Open the compressed file you created in 7-zip, and verify whether or not the extracted files are stored as shown in Step2 in 4.2.1.2.
Make sure that an unnecessary folder has not been created above Setup.exe.
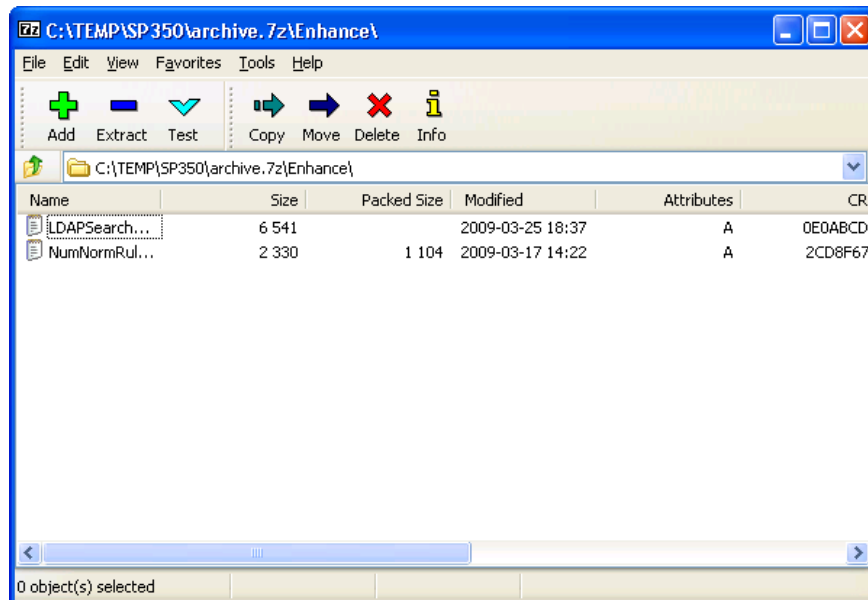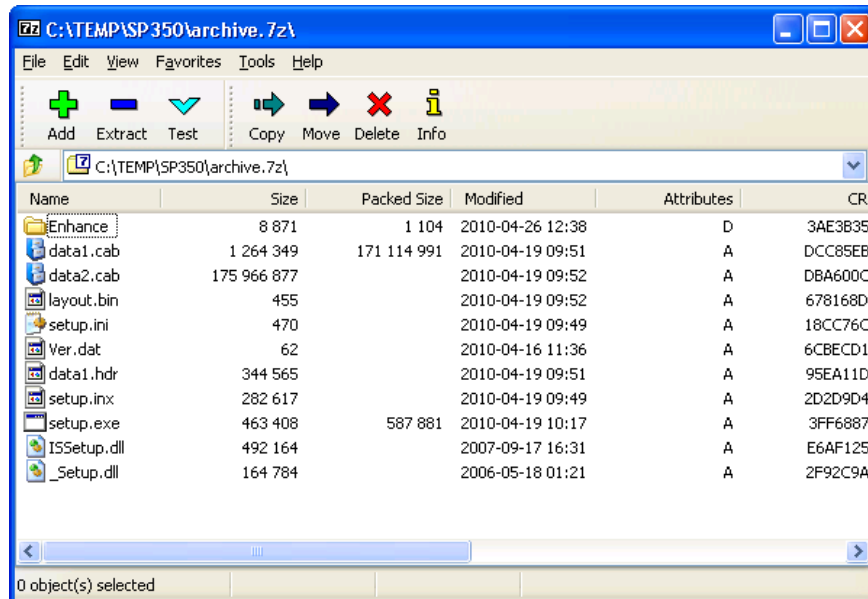
Step 4: Create the configuration file of the self-extract installer, and save it by naming "config.txt."

The configuration file is as shown below.

```
;!@Install@!UTF-8!
Title="SP350"
BeginPrompt=" "Install SP350?"
RunProgram="setup.exe /Enhance"
;!@InstallEnd@!
```

Note: Title and BeginPrompt set the title and message content of the confirmation dialog box respectively when starting the self-extract installer. Specify contents suitable for usage. Note that they must be enclosed with double quotation marks (" ").

Do not change the content of the RunProgram line.

Create the configuration file using Notepad.exe, and save it in UTF-8 format.

Step 5: Create a self-extract installer.
Prepare the 7zSD.sfx file contained in 7z_extra, archive.7z created in Step 3, and config.txt created in Step 4, and place them in the same directory.
Open a command prompt, move these three files into the folder you prepared, and then execute the following command.

```
C:¥folder> copy /b 7zSD.sfx+config.txt+archive.7z  Setup.exe
```

This creates the setup file Setup.exe packaged with environmental setting.

Step 6: Start the self-extract installer you created, and perform the following installation tests.

1. When Setup.exe is started, will the extraction of the compressed file be started and will SP350 Setup start?

If SP350 Setup does not start in 1, the following reasons may be considered; it has been forgotten to specify the "/b" option in the copy command in Step 5, the files prepared in Step 2 were wrong, or compressed files were stored in an unnecessary folder in Step 3, for instance.

2. When Setup.exe is executed, will a confirmation dialog box having the content you set be displayed?

If a dialog box does not appear in 2, config.txt created in Step 4 may be incorrect. Check to see if it has been saved in UTF-8 and there is no misspelling including the ;!@Install@!UTF-8! Line.
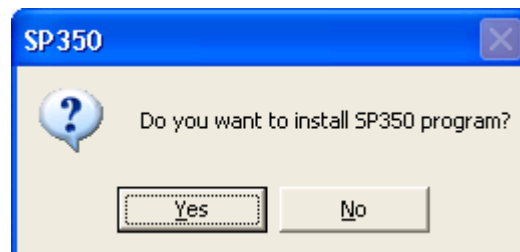
3. After installation, will LDAPSearchRule.txt and NumNormRule.txt be installed in the SP350 installation folder?

If files have not been copied in 3, there may be a possibility that Enhance\LDAPSearchRule.txt and Enhance\NumNormRule.txt were not added in Steps 2 and 3, or the RunProgram line is not as shown in Step 3 in 4.2.1.2.

4. If the Preferences SP350AutoConf.ini is also packaged, has its content been set?

If "4. Preferences" are not automatically set up, there may be a possibility that SP350AutoConf.ini was not added in Steps 2 and 3, or SP350AutoConf.ini has not been correctly created.

5.2.1.3 Method by Manually Copying Files

If you are copying files manually, copy the files into the installation directory of SP350 (the directory containing ClientPhone32.exe; if the installation destination has not been changed, "C:\Program Files\NEC\SP350").
When copying, make sure that the user who will actually use SP350 can load these files. If the files are copied onto the desktop first, file security to allow only the person who has copied the files to load the files may be applied.

5.2.1.4 About Update

If there is no change in the contents of LDAPSearchRule.txt and NumNormRule.txt, the succeeding SP350 update can be performed by using Standard Setup provided with the installation media.
If the update of LDAPSearchRule.txt and NumNormRule.txt is also necessary, use the "Method by automating the installation files" or the "Method by manually copying files."

5.2.2 Directory Service Configuration of Maintenance Settings

It is necessary to check [Allow Directory search in Search Window] in [Network settings – Directory Service] under Maintenance Settings, and set [Search Place], [Encrypted connection], [Attributes of Telephone] and [Attributes Setting] (the SIP address is required for MOC version only) under Directory Server Settings.

[Search Filter] is not used in this service. (The search condition is used for search from the caller's number.)

The default setting values are the standard setting values for coordinating with theActiveDirectory server of MS. It is necessary to change the setting values if the attribute name for storing the name has been customized, for example.

5.2.2.1 Correspondence of LDAP Attribute Values in Maintenance Settings

The attribute names set in Maintenance Settings are used as search results with the correspondence shown in the figure below.
Note that, for IM, the phone number (head) is used for regular version, and the SIP address is used for MOC version.
The regular version does not have the input box for the SIP address,
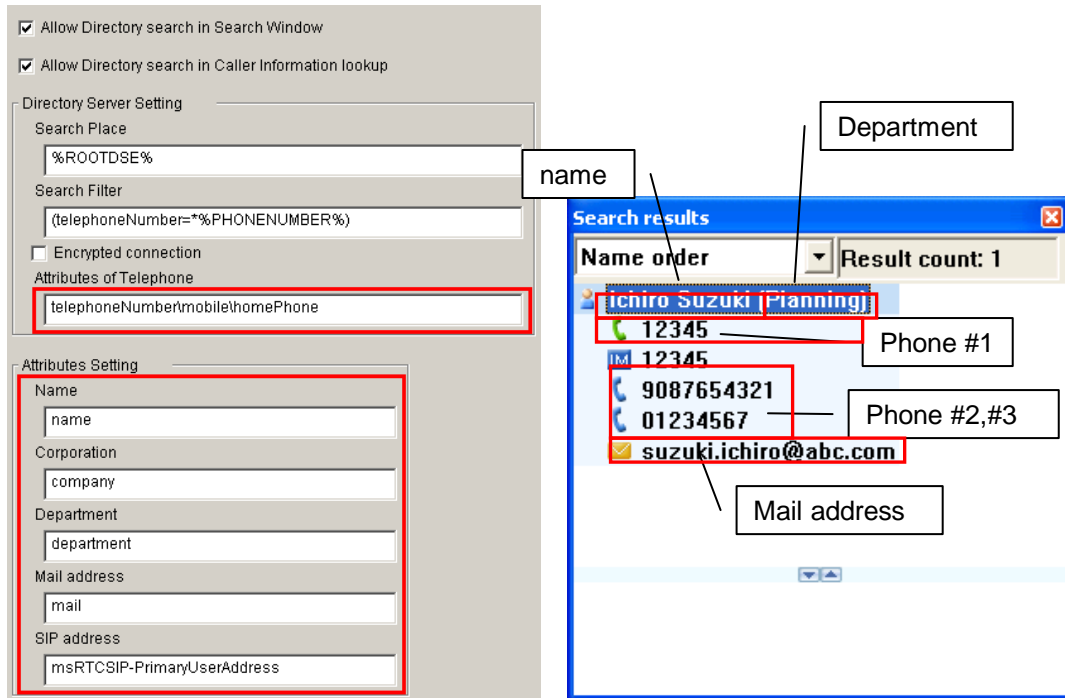
(*) The phone number for regular version, the SIP address for MOC version

The standard settings assume the use of MS ActiveDirectory, and each item corresponds to the following properties that can be checked with [ActiveDirectory User and Computer] management snap-in. Because which attribute names are being used for operation differ depending on the environment, determine the attribute names to be set upon adjusting with the LDAP server operation administrator.

5.2.3 Phonebook Settings in User Configurations

Open the [User Configurations] screen and check [Use directory search] in [Phonebook].
If the LDAP server to be used requires login, also check [You are required to set login ID and password for using MOC cooperation]; the settings of the user name and password are required. Regarding whether or not the LDAP server requires login, please check with the LDAP server operation administrator.
The user name and password must be set by the end user, because of their characteristics; they cannot be set on the maintenance side in advance. Upon examining the advantages and disadvantages in operation, regarding whether to require login, or whether to permit access using an alias and existing user names, please consult with the LDAP server operation administrator.

5.3　　Directory Search Rule File

5.3.1　Overview

Place the directory search rule configuration file with the file name of "LDAPSearchRule.txt." In this configuration file, describe the rule for generating LDAP search filers required to search directories. In creating a configuration file, knowledge on regular expression (PCRE compliant) for describing LDAP search filters and patterns is required.

The sample configuration file for ActiveDirectory is found in \ConfigSample\DirectorySearch\ EN on the CD-ROM.

Note: In creating a directory search rule, adjust with the directory server operation administrator. If an inappropriate LDAP search filer is generated, there is a possibility that it may give excessive load to the server.

In most cases, it is necessary to request the server administrator to create a full text search index for attributes that will be search targets, due to performance issue.

In this configuration file, it is possible to create a search rule totally different from the search rule provided as standard for MS ActiveDirectory. However, because the manual has been created with the assumption that it will be provided as standard, please give consideration not to adversary affect the user's convenience.

This file must be created in UTF-8.

5.3.2　Content of a Directory Search Rule

The following items are set in the configuration file.

Set the following items in the configuration file.

- LDAP attribute name to be acquired and other environments
  The LDAP attribute name to be acquired as a search result can be set as system variable definition.
  All LDAP attributes including [Name]. [Phone number] and [Mail] can be specified in the configuration file.
  Basically, they can be set in Maintenance Settings; however, the settings are given precedence over those in Maintenance Settings in this configuration file.

- Search filter generation rule
  Describe the rule as to what kind of LDAP search filter will be generated for the search key entered by the user. It consists of a pattern recognition line entered by the user and the corresponding filter generation pattern.

  An example of description is as follows.

  ```
  $commonfilter  (objectClass=user)
  ^sip:
  (msRTCSIP-PrimaryUserAddress=sip:$f<)
  ```

  If the user enters "sip:suzuki@x" under this rule, the following will be generated as an LDAP filter.

  ```
  (&(objectClass=user)(msRTCSIP-PrimaryUserAddress=sip:suzuki@x*))
  ```

5.3.3 Basic Structure of the Configuration File

```
;   Comment
```

Lines and blank lines starting with ; are ignored as comments.

```
$sip    msRTCSIP-PrimaryUserAddress
```

A line starting with $ is a substitute into a system variable. Delimit variable names and setting values with a space or tab.
If no setting value is placed after a variable name, that system variable will be set as a null character string.

```
^sip:
      (msRTCSIP-PrimaryUserAddress=sip:$f<)
```

The line that starts excluding ";", "$", "Space", and the "tab" becomes a line for which the input pattern recognition is specified by the regular expression.

Lines starting with other than ;, $, ' ' or tab are lines that specify input pattern recognition in regular expression. SP350 performs pattern matching in regular expression sequentially from the beginning of the file for user entry, and substitutes the specified replacement character string after a matched pattern.
Lines staring with ' ' or tab are replacement character strings. Multiple input pattern recognitions can be specified for one replacement character string.

SP350 combines replacement character strings generated from the above pattern recognition of the configuration file with AND condition, and ultimately generates an LDAP filter of (& $commonfilter {replacement character string 1} { replacement character string 2}…).

5.3.4　**System variables**

$debug　　　　　　　When 1 is set, log output is placed in debug mode.

$ldapserver　　　　Specify the address of the directory server.
　　　　　　　　　　If not specified, it will follow Maintenance Settings.

$commonfilter　　　Specify the search condition always contained in an LDAP search filter.
　　　　　　　　　　If not specified, (objectClass=user)(objectCategory=person) will be set.
　　　　　　　　　　If a null character string is set, the common search condition will not be included in an LDAP filter to be generated.

$name　　　　　　　Specify the attribute name corresponding to "Name" to be acquired during directory search.
　　　　　　　　　　If not specified, it will follow Maintenance Settings. The default in Maintenance Settings is "name."
　　　　　　　　　　If a null character string is set, "name" will not be acquired.

$company	"Company name"	The default in Maintenance Settings is "company"
$department	"Department name"	The default in Maintenance Settings is "department"
$phone	"Phone number 1"	The default in Maintenance Settings is "telphoneNumber"
$phone2	"Phone number 2"	The default in Maintenance Settings is "mobile"
$phone3	"Phone number 3"	The default in Maintenance Settings is "homePhone"
$phone4	"Phone number 4"	The default in Maintenance Settings is "null"
$mail	"Mail"	The default in Maintenance Settings is "mail"
$mail2	"Mail"	The default in Maintenance Settings is "null"
$mail3	"Mail"	The default in Maintenance Settings is "null"
$mail4	"Mail"	The default in Maintenance Settings is "null"
$sip	"SIP address"	The default in Maintenance Settings is "mSRTCSIP-PrimaryUserAddress"

Similar to $name, the above specifies each of attribute names.
Note that these settings take precedence over Maintenance Settings.

Please be aware that misspelled system variables will not generate errors.
System variables cannot be referenced by pattern recognition or within a replacement character string.

5.3.5 Pattern recognition

A character string entered by the user is disassembled into multiple words with ' ', and pattern is recognized for each word.

Example: Suzuki Ichiro → "Suzuki" + "Ichiro"

Describe pattern recognition in regular expression (PCRE compliant). An explanation of regular expression is omitted in this manual.

As a special description, there is a line containing only '*'; this is handled that all input matches (same as ".*").

5.3.6 Replacement Character String

A replacement character string performs variable replacement starting with $, which is then expanded into an LDAP search filter. The following variables can be used from matching results in regular expression.

(1) Usable Variables

$@   Exactly replaced with a word entered.

$0   Matched part (all): Replaced with the matched whole in regular expression.

$1···${32}   Correspond to the capture in regular expression. Up to 32 can be used.
            If the number part consists of 2 digits (10 or larger), enclose it with { } such as {10}. { } is not required for a single digit.

$<   Replace with the character string following the matched part (all).
            Example: When "sip:suzuki@x" is given to "^sip:," $0="sip:" $<="suzuki@x."

(2) LDAP filter escape rule prefix

The following prefixes can be added to replacement variables.
LDAP filter escape rule prefixes

    r   Does not perform LDAP filter escape.
    t   Performs escape for ¥() (default).
    n   Performs escape for ¥*().

Example: For entry "(\01*)"
$r0 -> (\01*)
$t0 -> \28\5c01*\29
$n0 -> \28\5c01\2a\29

(3) Default Part Matching Rule Specification Prefixes

When '*' is not included in the original character string, specify whether or not to add '*' to before and after the character string.

Nothing will be done if '*' has been included in $?. Also, decision on adding * will be made after escape processing.

This is the rule for expanding words entered by the user into partial matching by default.

f   {character string}* forward matching specification

b   *{character string} backward matching specification

e   {character string} not added (default)

s   *{character string}* partial matching

Example: For entry "suzuki"

$0 -> Suzuki

$e0 -> Suzuki

$f0 -> Suzuki*

$b0 -> * Suzuki

$s0 -> * Suzuki*

On the other hand, for "Suzuki*" which contains *, "Suzuki*" will be returned as is regardless of prefix. Because the presence of * is determined after escape processing, If there is an n prefix, it will be processing for "Suzuki\2a"; * will be added according to the above rule, resulting in "Suzuki\2a*" for example.

(4) Special character strings

$$ Replaced with '$.'

%?   Handled as $n? (%0 -> $n0).

                It is considered to be used in phone numbers

%%   Replaced with '%.'

(5) Special Options of Replacement Character Strings

If a replacement character string starts with ':,' it is regarded as option specification until there is a space.

Example: :n (title=$@)

The following options are defined.

:e   Generates an error without generating a replacement character string for a matched character string in pattern recognition. At this time, Softphone does not perform directory search.

The :e option is intended to reject vague search conditions such as (name=*a*)'.

:n   Disables individual specification for a generated replacement character string. If an LDAP filter consisting of only a replacement character string in which :n is specified is generated, Softphone rejects LDAP search.

The :n option is intended to reject individually inappropriate search conditions such as (!(name=Suzuki)).

:a   Enables individual specification for a generated replacement character string. Differently from :n, search is enabled if there are two or more replacement character strings with :a attribute.

The :a option is the same as the :n option, but is a less severe rejection condition.

Be sure to set a rule that matches with all ("*") and replacement character strings at the end of a file.

If an entry does not match with any rule, that entry will be discarded.

5.3.7   About Debugging of the Configuration File

The configuration file can be updated anytime during the execution of Softphone. When Sofiphone detects that the timestamp of the configuration file has been updated, the configuration file is reloaded at the next LDAP search.

Loading errors of generated LDAP search files and the configuration file are saved in the UILog0.log located in the log directory of Softphone with "{time} [LDAPSEARCH]" added. Try searching and check whether or not an intended LDAP search filter can be generated.

Example:
01/22 18:14:37:369 [LDAPSEARCH] input=Ichiro Suzuki suzuki@x generated filter=(&(objectClass=user)(|(sn=Ichiro*)(givenName=Ichiro*))(|(sn=Suzuki*)(givenName=Suzuki*))(mail=suzuki@x*))

5.4   Phone Number Normalization Rule Configuration File

5.4.1   Overview

Place the configuration file of the rule that normalizes phone numbers acquired as a result of directory search with the name "NumNormRule.txt" in the installation directory of SP350. Phone numbers registered in the directory server are often incomplete numbers that cannot be originated as they are. Phone number normalization performs processing that make these incomplete phone numbers usable for call origination by adding appropriate modifications.

Because this configuration file describes the rule for normalizing incomplete phone numbers (such as extension numbers only), detailed knowledge on phone number planning and regular expression (PCRE compliant) for pattern description is required for configuration.

Note that this configuration file is optional; so it is not necessary to install it if phone number normalization is not required.

A sample configuration file that does not have specific functions is found in \ConfigSample\DirectorySearch\EN of CD-ROM.

Note: When creating phone number normalization rule configuration, please make adjustments between the person in charge of directory server operation and the person in charge of phone system operation. It is necessary to check phone number planning and in what rule phone numbers are registered in the directory. If an inappropriate rule is created, calls may be originated to unintended phone numbers by the end user. It is necessary to save this file in UTF-8.

5.4.2   Content of the Configuration File

The phone number normalization rule is applied to the following items acquired from the LDAP server.
-   Phone number 1, Phone number 2, Phone number 3, Phone number 4

In the configuration file, configure the following item.
-   Tule for normalizing phone numbers acquired from the LDAP server

An example of description is as follows.

```
; Rule for a 2-digit area code
^(0[0-9])-?\(?([0-9]{4})\)?-?([0-9]{4})
0-$1-$2-$3
```

This rule normalizes 03-(1234)-4567 to 0-03-1234-4567.

5.4.3 Basic Structure of the Configuration File

The basic syntax is the same as the directory search rule file.

```
; comment
```

Lines and blank lines starting with ; are ignored as comments.

```
$debug    1
```

A line starting with $ is a substitute into a system variable. Delimit variable names and setting values with a space or tab.
If no setting value is placed after a variable name, that system variable will be set as a null character string.

```
^(0[0-9])-?¥(?([0-9]{4})¥)?-?([0-9]{4})
        0-$1-$2-$3
```

Lines starting with other than ;, $, ' ' or tab are lines that specify input pattern recognition in regular expression. SP350 performs pattern matching in regular expression sequentially from the beginning of the file for user entry, and substitutes the specified replacement character string after a matched pattern.
Lines staring with ' ' or tab are replacement character strings. Multiple input pattern recognitions can be specified for one replacement character string.

5.4.4 System Variables

$debug   When 1 is set, log output is placed in debug mode.

5.4.5 Pattern Recognition

Describe the pattern recognition rule in regular expression (PCRE compliant) for phone numbers acquired in directory search. An explanation of regular expression is omitted in this manual.
Because double byte characters in entered phone numbers are converted into single byte characters in advance, it is not necessary to handle double byte characters.
As a special description, there is a line containing only '*'; this is handled that all input matches (same as ".*").

5.4.6 Replacement Character String

A replacement character string performs variable replacement starting with $ and is then expanded. The following variables can be used from matching results in regular expression. Similar to the directory search rule, each variable accepts a prefix. However, do not use prefixes because they are not useful in phone number normalization.

(1) Special Character Strings

$@	Exactly replaced with a word entered.
$0	Matched part (all): Replaced with the matched whole in regular expression.
$1…${32}	Correspond to the capture in regular expression. Up to 32 can be used.
	If the number part consists of 2 digits (10 or larger), enclose it with { } such as {10}. { } is not required for a single digit.
$<	Replace with the character string following the matched part (all).
	Example: If "03-1234-5678 ext:1234" is given to "^[0-9()-]+,"
	$0="03-1234-5678" $<="ext:1234" are set.

(2) Special Character Strings

$$	Replaced with '$.'
%?	Do not use this because the escape rule will be applied, as shown in the LDAP search configuration file. This has no effective use for phone number normalization.
%%	Replaced with '%.'

If an entered phone number does not match with any of the recognition patterns, SP350 does not perform phone number normalization and displays the numbers as they are.

5.4.7 About Debugging of the Configuration File

The configuration file can be updated anytime during the execution of Softphone. When Sofiphone detects that the timestamp of the configuration file has been updated, the configuration file is reloaded at the next LDAP search.

Loading errors of the configuration file are saved in the UILog0.log located in the log directory of Softphone with "{time} [NUMNORMRULE]" added.

Appendix   Procedure for Hiding the NEC Logos on the Panels

The procedure for hiding the NEC logos on the SP350 panels is described.

1. Overview
    It is possible to hide the NEC logos on the standard panel and the toolbar panel.

2. Setup Procedure
    If SP350 is running, quit SP350 first, and then perform the following procedure.

    (1) In Explorer, open the following folder at the SP350 installation destination.
         C:\Program Files\NEC \SP350\Skin\Standard\bitmaps

         Generally, SP350 is installed under C:\Program Files\NEC.

    (2) Rename or delete the following files in the folder.
         - NAME.bmp   For the standard panel (with NEC logo)
         - Base_Logo_NEC.bmp   Toolbar panel (with NEC logo)

    (3) Copy the following files in the logo folder under the Bitmaps folder to the Bitmaps folder.
         - NAME_NoLogo.bmp   For standard panel (without NEC logo)
         - Base_NoLogo_NEC.bmpFor toolbar panel (without NEC logo)

    (4) Rename the files copied into the Bitmaps folder to the following names.
         - NAME.bmp <= NAME_NoLogo.bmp   For standard panel (without NEC logo)
         - Base_Logo_NEC.bmp <= Base_NoLogo_NEC.bmp   For toolbar panel (without logo)

    (5) Start SP350.

3. Showing Hidden Logos
    If SP350 is running, quit SP350 first, and then perform the following procedure.

    (1) In Explorer, open the following folder at the SP350 installation destination.
         C:\Program Files\NEC \SP350\Skin\Standard\bitmaps

         Generally, SP350 is installed under C:\Program Files\NEC.

    (2) Delete the following files in the folder.
         - NAME.bmp   For the standard panel (without NEC logo)
         - Base_Logo_NEC.bmp   Toolbar panel (without NEC logo)

    (3) Copy the following files in the logo folder under the Bitmaps folder to the Bitmaps folder.
         - NAME.bmp   For standard panel (with NEC logo)
         - Base_Logo_NEC.bmp   For toolbar panel (with NEC logo)

    (4) Start SP350.

4.   Restrictions

If software is re-installed or updated, even if NEC logos were hidden according to the procedure described previously, NEC logos will be displayed again.

To hide the logos, please do so by performing "2, Setup Procedure" again.

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