SNR IP Phones XML Browser Developer's Guide

IP Phone is not a phone which can only make calls, it also can be integrated with third applications to extend the flexibility for many kinds of customer's needs. SNR IP phones provide the ability with customized XML file to offer more advance features displayed on phone LCD screen. This guild will cover a more in- depth understanding of development of SNR IP phone with XML browser support.

Introduction

The first concept we have to understand is the definition of XML browser. Here， XML browser is a XML based application that the IP phones' LCD screen display can be managed by external applications developed in XML language support. This guide will show you how to use the XML Browser with SNR IP Phones.

Who should use this guide?

Since users have to develop some XML code to control XML browser display for phone, this guide is designed specifically to provide development engineers, system administrators, or network engineers with information for developing and deploying customized client services to SNR IP phones by using the XML browser feature . Therefore, users must to be of one of roles above.

This guide is not intended for end users and does not provide user-level information on how to use any specific XML applications.

What is XML?

XML stands for extensible Markup Language. It is a markup language much like HTML. HTML was designed to display data and to focus on how data looks. XML was designed to describe data and to focus on what data is.

The following are characteristics of XML:

 XML tags are not predefined. You must define your own tags

 XML uses an XML Schema is designed to be self-descriptive

 XML with an XML Schema is designed to be self-descriptive

 XML is a W3C Standard Recommendation

Sample of Basic XML document:

```XML
<?xml version="1.0" encoding="utf-8"?>
<IPPhoneTextScreen style="radio" Beep="yes" wrapList="yes"
```

```
Timeout="30" LockIn="yes" Selection="http://172.23.1.92/xml/">

    <Title Wrap="yes" Showlistcount="no">Text</Title>

    <Text>XML browser </Text>

        <SoftKey
index="1"><Label>Back</Label><URI>SoftKey:Back</URI></SoftKey>

        <SoftKey
index="4"><Label>Enter</Label><URI>SoftKey:Enter</URI></SoftKey>

</IPPhoneTextScreen>
```

Function

The XML Browser in the IP phones allows users to create custom services which

meet user functional requirements on the server. Users can customize practical

applications or any business related online applications, such as airline flights, logistics
courier tracking, remote IOT device access or smart edge device control, etc.

SNR IP Phone supported objects are:

TextMenu

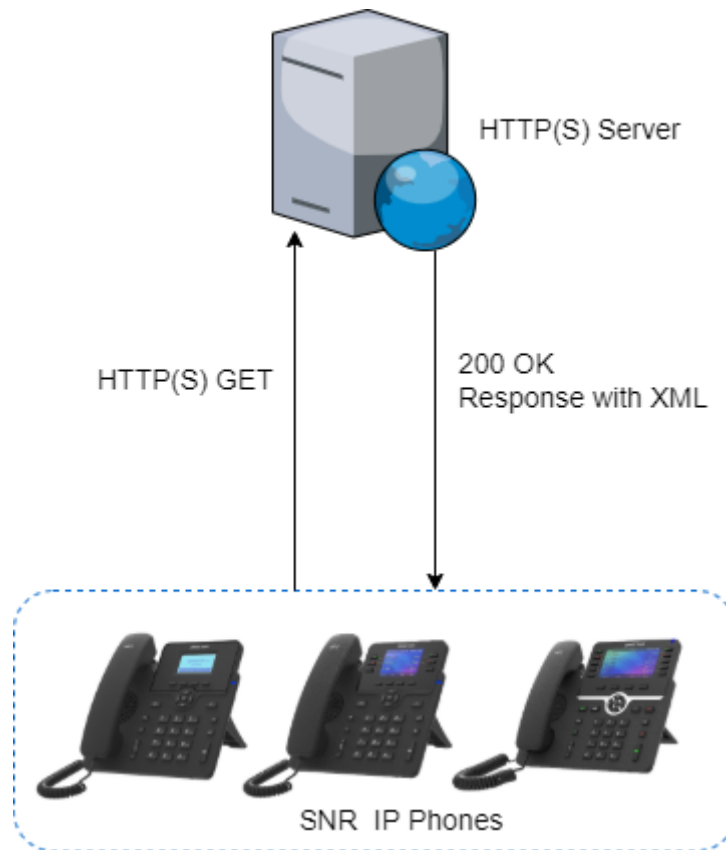**TextScreen**

Directory

InputScreen

How doest it work?

SNR has developed the XML browser capability on the phone by using HTTP transport

protocol.

You can press the predefined key on phone to trigger the phone to initiate application of XML
browser.

After pressing the key, the IP phone issues an HTTP(s) GET command to the server, the
phone

waits for the response from server, once the phone receives the response, parses the
results and displays the results on the LCD screen.

SNR IP Phone XML Objects

This section gives full details about all the XML objects supported by the SNR IP phones. The first XML object supported by SNR SIP phone is TestMenu.

TextMenu

Example of TextMenu Object XML file

```XML
<?xml version="1.0" encoding="utf-8"?>
<IPPhoneTextMenu style="radio" Beep="yes" wrapList="yes" Timeout="30"
LockIn="yes" Selection="http://172.23.1.92/xml/">
    <Title Wrap="yes" Showlistcount="no">Phone Services</Title>
    <MenuItem>
        <Prompt>Text Screen</Prompt>
        <URI>http://172.23.1.92/xml/textscreen.xml</URI>
    </MenuItem>
    <MenuItem>
        <Prompt>Directory</Prompt>
```

```
        <URI>http://172.23.1.92/xml/directory.xml</URI>

    </MenuItem>

    <MenuItem>

        <Prompt>Input Screen</Prompt>

        <URI>http://172.23.1.92/xml/inputscreen.xml</URI>

    </MenuItem>

    <MenuItem>

        <Prompt>Select Directory</Prompt>

        <Selection>directory.xml</Selection>

    </MenuItem>

    <MenuItem>

        <Prompt>Dial 1010</Prompt>

        <Dial>1010</Dial>

    </MenuItem>

        <SoftKey
index="1"><Label>Back</Label><URI>SoftKey:Back</URI></SoftKey>

        <SoftKey
index="2"><Label>Dial</Label><URI>SoftKey:Dial</URI></SoftKey>

        <SoftKey
index="3"><Label>Select</Label><URI>SoftKey:Select</URI></SoftKey>

        <SoftKey
index="4"><Label>Enter</Label><URI>SoftKey:Enter</URI></SoftKey>

</IPPhoneTextMenu>
```

The result displayed on LCD screen is the following:

If users want to add more control parameters, please refer to the **spec as following:**

TextMenu XML Specification

XML Label	Type	Value	Description
IPPhoneTextMenu	Compulsory	None	Root Label
Beep	Optional	"yes" "no"	Ring tone

Timeout	Optional	Integer	Return to idle interface if timeout.Default value is 45
Title	Optional	String	The title name on menu interface
MenuItem	Compulsory	None	Identify menu item
Prompt	Compulsory	String	Title for menu item effected by warplist
URI	Compulsory	URI	The action event for menu item
Dial	Optional	Telephone number	When the menu item is selected, pick up the handset, the specific number will be called
Selection	Optional	String	If softkey URI is server address, the http request will be added this string "?selection=setting parameter" such as "http://10.1.0.105/menu1.xml?selection=0&menu_pos=1"
Softkey	Optional	Xml Object	Refer to soft key object

SoftKeys

If text menu object XML file does not specify any softkeys, the default softkeys are shown below:

Softkey index	Name	URI
1	Exit	Softkey：Exit
4	Enter	Softkey：Enter

Key specifications when using TextMenu XML browser

Key name	Key description	Feature
Select	Softkey,URI="softkey:select "	Call URI action like http, dial.etc
Exit	Softkey,URI="softkey:Exit"	Replay the previous XML interface,if fails, return to idle interface.

| Dial | Softkey,URI="softkey:Dial" | If menu item contain Dial label, the specific number will be dialed |
| Enter | Softkey,URI="softkey:Enter" | Enter key is equivalent to OK. |

TextScreen

Example of TextScreen Object XML file

```HTML
<?xml version="1.0" encoding="utf-8"?>
<IPPhoneTextScreen style="radio" Beep="yes" wrapList="yes"
Timeout="30" LockIn="yes" Selection="http://172.23.1.92/xml/">
    <Title Wrap="yes" Showlistcount="no">Text</Title>
    <Text>XML browser </Text>
        <SoftKey
index="1"><Label>Back</Label><URI>SoftKey:Back</URI></SoftKey>
        <SoftKey
index="4"><Label>Enter</Label><URI>SoftKey:Enter</URI></SoftKey>
</IPPhoneTextScreen>
```

The result displayed on LCD screen is the following:

Screenshot of the Example

TextScreen XML Specification

XML Label	Type	Value	Description
IPPhoneTextScreen	Compulsory	None	Root Label
Beep	Optional	"yes" "no"	Ring tone
Timeout	Optional	Integer	Return to idle interface if timeout.

			Default value is 45
Title	Optional	String	The title name on menu interface
Text	Compulsory	String	Text content
Softkey	Optional	Xml Object	Refer to soft key object

SoftKeys

If TextScreen Object XML file does not specify any softkeys, the default softkeys are shown below:

Softkey index	Name	URI
1	Back	Softkey：Back

Directory

Example of directory Object XML File

```html
<?xml version="1.0" encoding="utf-8" ?>
<IPPhoneDirectory defaultIndex="2" style="numbered" Beep="yes"
wrapList="yes" Timeout="60" LockIn="no"
        Previous="tftp://172.23.23.175/directory_prev.xml"
        Next="tftp://172.23.23.175/directory_next.xml">
        <title>Phone Book</title>
        <DirectoryEntry>
                <Name>Alice</Name>
                <Telephone>1010</Telephone>
                <Presence>busy</Presence>
        </DirectoryEntry>
        <DirectoryEntry>
                <Name>Bob</Name>
                <Telephone>1012</Telephone>
```

```
            <Presence>dnd</Presence>

        </DirectoryEntry>

        <SoftKey
index="1"><Label>Back</Label><URI>SoftKey:Back</URI></SoftKey>

        <SoftKey
index="2"><Label>Previous</Label><URI>SoftKey:Previous</URI></SoftKey
>

        <SoftKey
index="3"><Label>Next</Label><URI>SoftKey:Next</URI></SoftKey>

        <SoftKey
index="4"><Label>Dial</Label><URI>SoftKey:Dial</URI></SoftKey>

</IPPhoneDirectory>
```

The result displayed on LCD screen is the following:

Directory XML Specification

InputType	Type	Value	Description
IPPhoneDirectory	Compulsory	None	Root Label
Next	Optional	URI	Configure URI for "Next" softkey
Previous	Optional	URI	Configure URI for "Previous" softkey
Beep	Optional	"yes" "no"	Ring tone
Timeout	Optional	Integer	Return to idle interface if timeout. Default value is 45
Title	Compulsory	String	The title name for directory
DirectoryEntry	Compulsory	String	The Directory entry
Name	Compulsory	String	The person's name
Telephone	Compulsory	String	The person's telephone number

| | | "offline" | |
| Presence | Compulsory | "dnd" "online" "away" "ringing" "busy" "outgoing" "misscall" | The person's presence status |

SoftKeys

If directory object XML file does not specify any softkeys, the default softkeys are shown below:

Softkey index	Name	URI
1	Exit	Softkey：Exit
2	Dial	Softkey：Dial

Key specification when access directory object XML.

Key name	Key description	Feature
Dial	Softkey,URI="SoftKey:Submit "	Call specific number behind a selected item
Previous	Softkey,URI="SoftKey:Change Mode"	Call URI in <Previous> Label
Next	Softkey,URI="SoftKey:Next"	Call URI in <Next> Label
Select	Select Softkey,URI="SoftKey:Select"	Send the content in <Selection> label
Exit	Softkey,URI="SoftKey:Exit"	Replay previous XML interface

InputScreen

Example of InputScreen Object XML

```html
HTML
<?xml version="1.0" encoding="utf-8"?>
<IPPhoneInputScreen
        type="ipaddr"
        defaultIndex="1"
        style="none"
        Timeout="0"
        LockIn="no"
        LocalData="yes"
        CombineData="StaticIP"
        InputType="123">
    <Title Wrap="yes" Showlistcount="no">IP Setting</Title>
            <Prompt>IP</Prompt>
            <DataID>Combine_StaticIP_IPAddr</DataID>
            <Default></Default>
            <InputField type = "ipaddr">
                    <Prompt>Subnet Mask:</Prompt>
                    <DataID>Combine_StaticIP_SubnetMask</DataID>
                    <Default></Default>
            </InputField>
            <InputField type = "ipaddr">
                    <Prompt>Gateway:</Prompt>
                    <DataID>Combine_StaticIP_Gateway</DataID>
                    <Default></Default>
            </InputField>
    <SoftKey
index="1"><Label>Back</Label><URI>SoftKey:Back</URI></SoftKey>
    <SoftKey index="2"><Label>123</Label><URI></URI></SoftKey>
    <SoftKey
index="3"><Label>Delete</Label><URI>SoftKey:BackSpace</URI></SoftKey>
    <SoftKey
index="4"><Label>Save</Label><URI>SoftKey:Submit</URI></SoftKey>
```

```
</IPPhoneInputScreen>
```

The result displayed on LCD screen is the following:

InputScreen XML Specification

XML Label	Type	Value	Description
IPPhone TextMen u	Compuls ory	None	Root Label
Beep	Optional	"yes" "no"	Ring tone
Passwor d	Optional	"yes" "no"	If the value is "yes", user input will be displayed as "***"
Timeout	Optional	Integer	Return to idle interface if timeout. Default value is 45
InputTyp e	Optional	"ABC" "abc" "123" "1aB" "Abc"	Configure the default input type when access to the XML browser
Title	Compuls ory	String	The input title name
Prompt	Optional	String	Prompt for user input
URL	Compuls ory	URL	Send the input to URL
Paramet er	Compuls ory	String	The parameters in URL,for example, URL?<Parameter>
Default	Optional	String	Default input

InputField	Optional	None	Allow more input fields
type	Compulsory	"ipaddr" "combox" "edit" "date" "progress" "number"	type of InputField
editable	Optional	"yes" "no"	Allow user input if the value is "yes"
Softkey	Optional	Xml Object	Refer to soft key object

SoftKeys

If Input screen object XML file does not specify any softkeys, the default softkeys are shown below:

Softkey index	Name	URI
1	Back	Softkey:Exit
2	123	SoftKey:Change mode
3	Delete	SoftKey:Backspace
4	Save	SoftKey: Submit

Key specifications when accessing inputScreen object XML.

Key name	Key description	Feature
BackSpace	Softkey,URI="SoftKey:Backspace"	Delete input string
Submit	Softkey,URI="S	Execute URI

	oftKey:Submit"	event action
1aB	Softkey,URI="SoftKey:ChangeMode"	Switch input type among"1aB" "ABC""abc" and "123"

Example

[XMLBrowser.zip]