Oracle® Communications Convergent Charging Controller

USSD Gateway User's Guide

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Contents

About This Document

Scope

The scope of this document includes all functionality a user must know in order to effectively operate the USSD GW application. It does not include detailed design of the service.

Audience

This guide is written primarily for USSD GW System Administrators. However, the overview sections of the document may be useful to anyone requiring an introduction to the application.

Prerequisites

Although there are no prerequisites for using this guide, familiarity with the target platform would be an advantage.

This manual describes system tasks that should only be carried out by suitably trained operators.

Related Documents

The following documents are related to this document:

- *USSD GW Technical Guide*
- *CPE User's Guide*
- *SLEE Technical Guide*
- *SMS User's Guide*
- *SMS Technical Guide*

Document Conventions

Typographical Conventions

The following terms and typographical conventions are used in the Oracle Communications Convergent Charging Controller documentation.

Formatting Convention	Type of Information
Special Bold	Items you must select, such as names of tabs. Names of database tables and fields.
Italics	Name of a document, chapter, topic or other publication. Emphasis within text.
Button	The name of a button to click or a key to press. **Example:** To close the window, either click **Close**, or press **Esc**.
Key+Key	Key combinations for which the user must press and hold down one key and then press another. Example: **Ctrl+P** or **Alt+F4**.
`Monospace`	Examples of code or standard output.
`Monospace Bold`	Text that you must enter.
variable	Used to indicate variables or text that should be replaced with an actual value.
menu option > menu option >	Used to indicate the cascading menu option to be selected. Example: **Operator Functions > Report Functions**
hypertext link	Used to indicate a hypertext link.

Specialized terms and acronyms are defined in the glossary at the end of this guide.

Chapter 1

System Overview

Introduction

Purpose

This chapter describes the USSD Gateway and the basic functionality of the system.

In this chapter

This chapter contains the following topics.

What is USSD Gateway?

Introduction

The USSD GW provides the following functions:

- interaction using USSD messages between the subscriber's handset and the platform:
  - processing fast access, single string (typeahead) requests
  - presenting information to mobile users using USSD messages
  - complex interaction through navigation of menus based on user input (interactive USSD)
- IMSI Management:
  - different services can be configured for different IMSI prefixes
  - barring by IMSI or IMSI prefix
  - logging forbidden attempts to use the service
  - tracing for all calls from an IMSI or IMSI prefix
  - CDR Viewing screen provides full information about a call and provides EDR searching support for both USSD phase 1 / MAP1 and USSD phase 2 / MAP2, and roaming USSD Session Control
  - separate control plans for charging and call monitoring
  - with Location Capabilities Pack, session can be initiated directly back to a roaming subscriber.

Control plans

Advanced Control Services (ACS) and the ACS Control Plan Editor (CPE) provide GUI tools to create control plans for USSD-based services. You can use a rich suite of feature nodes in USSD control plans, which enable decision making, interactive dialogue and more.

For more information on managing control plans, see *CPE User's Guide*. For more information about the USSD GW feature nodes, see *Feature Nodes Reference Guide*.

UIS and UPC

USSD GW is provided in two main parts:

- UIS
- UPC

USSD Interactive Services Gateway

The USSD Interactive Services Gateway (UIS) enables operators to provide interactive menu-based portal services to end users.

UIS translates between the network USSD messages received from handsets to the INAP messages used to communicate with ACS. UIS also determines the service that should handle in the incoming service initiation request.

UIS enables operators to provide a range of services using USSD messages from (and to) a subscriber's handset. Interaction is configured using ACS control plans. UIS can also process fast access, single-string requests to trigger platform functionality, including:

- Subscriber account detail reports (with CCS)
- Voucher recharges (with CCS), and
- USSD Roaming call back.

USSD Gateway Portal Service

USSD GW's USSD Portal Service (UPC) is an optional part of USSD GW that provides extended interactivity through the UPC Portal Screens and USSD GW feature nodes.

The *UPC Portal Screens* (on page 69) are used to extend the interactive USSD menus created using the UIS screens (for example by providing menu branching).

Handset integration

USSD GW uses the USSD protocol as defined by GSM phase 1 & 2. This means the majority of subscribers can use the menus without needing to upgrade their handsets.

This approach is an alternative delivery mechanism to WAP, as WAP support is still limited to middle- and higher-tier handsets.

Triggering to different services

Using the USSD GW SMS screens, you can configure USSD GW to trigger USSD messages containing different trigger prefixes to different services. Each trigger corresponds to a different service in ACS.

This table shows an example of setting up calls from different prefixes to trigger different ACS services.

Step	Action
1	In the USSD Gateway Base Configuration Screens, *Trigger Prefix* (on page 16) tab, configure two records: ▪ Trigger1 has a prefix of *123*. ▪ Trigger2 has a prefix of *124*.
2	In the *USSD Gateway Service Configuration Screen* (on page 33), configure two records: ▪ ServiceTrigger1 uses Trigger1 and has a Dest Service Key of 123. ▪ ServiceTrigger2 uses Trigger2 and has a Dest Service Key of 124.

3	In SLEE.cfg, ensure there are SERVICE and SERVICEKEY entries for both service keys.
	Example:
	`SERVICEKEY=INTEGER 123 CallBack`
	`SERVICEKEY=INTEGER 124 CollectCall`
	`SERVICE=CallBack 1 slee_acs CallBack`
	`SERVICE=CollectCall 1 slee_acs CollectCall`
	`APPLICATION=slee_acs slee_acs /IN/service_packages/ACS/bin/ 1 1`

Step	Action

4	In acs.conf, ensure there are ServiceEntry lines for each service key.
	Example:
	`acsChassis`
	`  ServiceEntry (CallBack,ccsSvcLibrary.so)`
	`  ServiceEntry (CollectCall,ccsSvcLibrary.so)`
	Notes:
	• These ServiceEntry lines do not show the source selection configuration which would be expected for a CallBack or CollectCall service. For more information about source selection, see *ACS Technical Guide*.
	• For more information about how the service entries are processed by CCS, see *CCS User's Guide*, Capabilities tab.

Callback

Introduction

USSD GW can be used to enable USSD message-initiated call back. There are a number of ways this can be configured, but the main elements are:

1 subscriber initiates the call back using a USSD message
2 the system initiates the A leg of the call, then
3 the system completes the call by initiating the B leg.

Callback initiation

The subscriber can initiate a callback using:

- a single string which is parsed by the ussdgw process, or
- an initial message followed by interaction defined in a control plan.

A leg

A-leg call initiation is done from a control plan using ACS's Call Initiation feature node. The Call Initiation node attempts to establish the A leg of the call by:

- arming the switch to inform the platform when the A party answers the call (by sending an RRBCSM (oAnswer)), and
- sending an Initiate Call Attempt (ICA) to the switch (the switch then sets up the call).

Note: The Call Initiation node can initiate a call with any destination number using any profile block or a hard coded value. The A leg is selected using the Call Initiation node's configuration.

Because the A leg setup is done in a control plan, any function which is available in the control plan can be used, including:

- checking subscriber's account state or balance, and
- normalising the calling party number.

After Call Initiation node is called, initiating control plan continues when the A leg has answered and the IDP been sent. Further processing should continue in the new call generated by the IDP.

For more information about the Call Initiation feature node, see *Feature Nodes Reference Guide*.

B leg

When the A party answers, the switch returns an ERBCSM (oAnswer) to the control plan and a new forked control plan starts. The new call can use any control plan functionality, including:

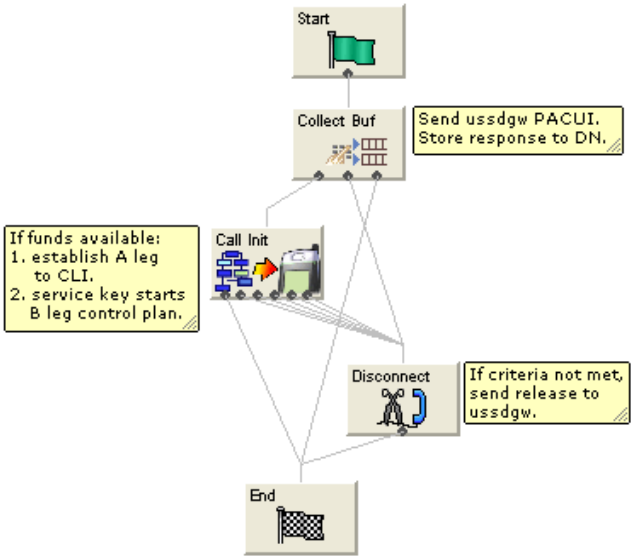
- monitoring the new call, and
- using a retrieved details (including MSRN) for charging.

The new forked call is responsible for connecting to the B leg (for example, by using an AT or a UATB node).

Control plan example

Here is an example of a control plan which provides a very simple call back based on a fast-access USSD string.

Note: This control plan only shows the call back functionality. To complete any validation or billing functions, additional configuration will be required.

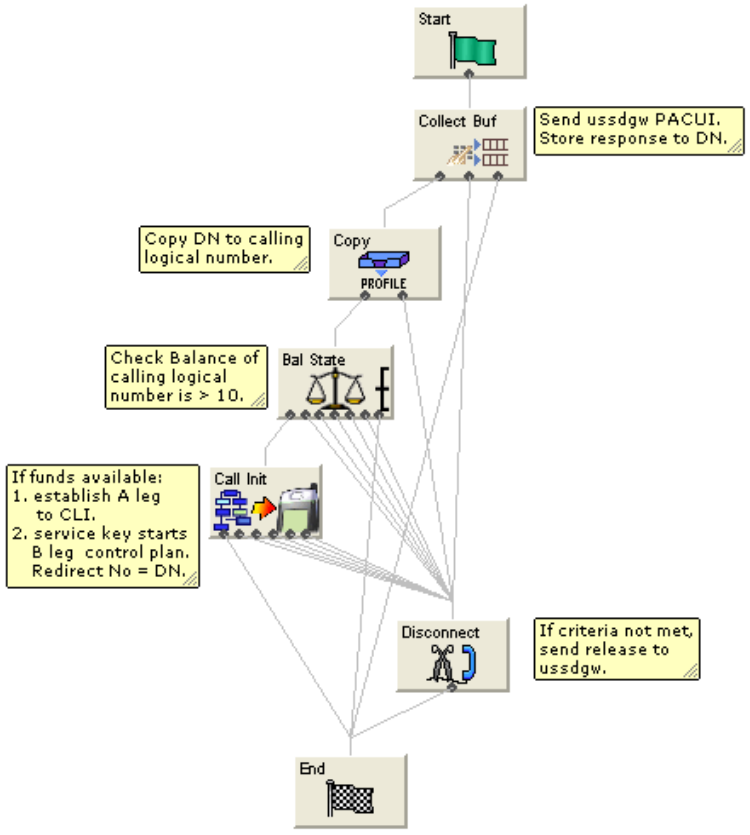


The Call Initiation node will start a simple control plan which connects the A leg based on the CLI. A second control plan is started when the A leg answers and a new IDP arrives at slee_acs with the service key from the Call Initiation node. The second control plan connects the B leg normally (for example by using an Attempt Terminate node).

For information about the message flows produced by this control plan, see *USSD GW Technical Guide*.

Collect call back example

Here is an example of a control plan which could be used to set up a collect call, including checking the B party balance before the A leg is established.



Handset Interaction

Introduction

Menus are created by presenting information to mobile users using USSD messages. The user navigates the menus by selecting options and sending back USSD messages (interactive USSD). Service can send specific messages for different services statuses.

Menus can be set up quickly using wizards. Menus can come from a number of sources, including ACS and CPE control plans. Advanced Control Services (ACS) and the ACS Control Plan Editor (CPE) provide GUI tools which enable the user to use a rich suite of Feature Nodes to define menus which enable decision making, interactive dialogue and more.

Language selection

Users can select the language they want to use for the call from a list of available languages which is defined by the operator.

Status messages

USSD GW can send status messages to a handset when:

- a subscriber's session is ended by the gateway (session cut off).
- a session is put in suspended mode (reconnect) (except when the handset is entering MAP 1 disconnect mode)

Notes:

- If there is no other status cause when the session ends, the display message will have a status cause that maps to “session ending”.
- When a session is suspended, the last display must be preserved otherwise it will always be overwritten with the status display.

UPS menus

In general, to use the concept of menu IDs within ACS, menu sets are provided which allow menus to be grouped together in a logical block that may represent a service or a type of service.

- USSD GW feature nodes control extended interaction (including menu branching) and other specific functions.
- Menu sets enable menus to be grouped in logical blocks.

Performance Reports

Description

Performance Reports are generated by the USSD GW application on the SCP. They are single line events that are only output as NOTICE-type Alarm messages.

These reports are designed to have minimal impact on the performance of the SCP. This includes the ability for the output of these reports to be disabled or only activated for specific USSD Trigger Prefixes.

Report timing

The report must be consistently aligned with the system clock on the SLC. To achieve this, only an integer value that can be computed to be a factor of 60 or 3600, must be used.

Example: `30` or `300`

See *Example values* (on page 6) for a list of allowed values that can be specified to accurately align reports generation to the SLC system clock.

Warning: A warning message will be displayed if a value NOT divisible by 60 or 3600 is entered. This means the report is not aligned to the system clock and hence reports cannot be generated at fixed intervals.

Example values

This table highlights a list of example values for the Performance Report Period field on the Trigger Prefix tab and the corresponding time interval they will produce.

Value	Interval
30	30 seconds
60	1 minute
300	5 minutes
900	15 minutes
1800	30 minutes
3600	1 hour (use for hourly reports)

Accessing performance reports

Performance reports are generated as single-line alarm messages that can be viewed on one of the following:

- SMS in Operator Functions -> **Alarm Management** Panel
- SLC in the `ussdgw` log file

Example

Here are a few examples of Performance Report.

Example 1:

```
Feb 23 22:23:30.007958 cmnError(24758) NOTICE: USSD Performance:
Trigger Prefix '*999#' Period=11; Requests=5; Responses=5; Timeouts=0; Others=0;
Latency: Min=0.158024, Mean=0.165843, Max=0.177295
```

Example 2:

```
Feb 23 22:24:00.033720 cmnError(24758) NOTICE: USSD Performance:
Trigger Prefix '*999#' Period=30; Requests=23; Responses=22; Timeouts=0; Others=0;
Latency: Min=0.137390, Mean=0.161867, Max=0.219761
```

Example 3:

```
Feb 23 22:24:30.002919 cmnError(24758) NOTICE: USSD Performance:
Trigger Prefix '*999#' Period=30; Requests=2; Responses=3; Timeouts=0; Others=0;
Latency: Min=0.137340, Mean=0.152989, Max=0.174586
```

Example 4:

```
Feb 23 22:25:00.001234 cmnError(24758) NOTICE: USSD Performance:
Trigger Prefix '*999#' Period=30; Requests=12; Responses=12; Timeouts=1; Others=0;
Latency: Min=0.122345, Mean=0.154529, Max=0.174236
```

Result:

On the Trigger Prefix tab screen, the **Performance Report Period** is set to 30 seconds for each of the above examples. Therefore, the following timestamps are generated by the respective alarm message:

- **Example 1:** 22:23:30.007958
- **Example 2:** 22:24:00.033720
- **Example 3:** 22:24:30.002919
- **Example 4:** 22:25:00.001234

Chapter 2

Getting Started

Overview

Purpose

This chapter explains how to access the USSD Gateway and describes the contents of the main screens.

In this chapter

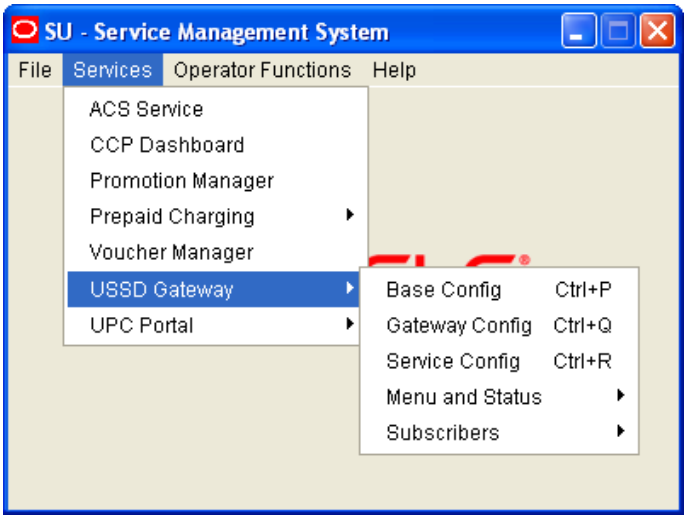
This chapter contains the following topics.

Accessing USSD Gateway

Procedure

Follow these steps to access the USSD Gateway screens.

Step	Action
1	From the Service Management System screen, select the **Services** menu.
2	Select **USSD Gateway**.
3	Select the screen you want to use.



USSD Gateway menu options

This table describes the menu options accessible from the USSD Gateway menu option.

Menu	Description
Base Config	Provides access to the creation and maintenance screens for base USSD Gateway configuration.
Gateway Config	Provides access to the creation and maintenance screens for global USSD Gateway configuration.
Service Config	Provides access to the creation and maintenance screens for USSD Gateway services.
Menu and Status	Provides access to the creation and maintenance screens for menus and statuses of USSD Gateway.
Subscribers	Provides access to the creation and maintenance screens for subscribers.

Base Config screen

The USSD Gateway Base Configuration Screen contains four tabs:

- *Trigger Prefix* (on page 16)
- *Language* (on page 18)
- *Service Interface* (on page 21)
- *Operator* (on page 23)

Gateway Config screen

The USSD Gateway Configuration screen contains one tab:

- *Gateway Configuration* (on page 27)

Service Config screen

The USSD Gateway Service Configuration screen contains one tab:

- *Service Trigger* (on page 34)

Menu and Status screens

The Menu and Status option contains three sub menus:

- Wizard - This option contains two screens:
  - *Menu Wizard* (on page 40)
  - *Status Wizard* (on page 43)
- Config - The USSD Gateway Menu Configuration Screens contains two tabs:
  - *Menu Info* (on page 45)
  - *Status Info Configuration* (on page 47)
- Display - The USSD Gateway Menu Display Screens contains two tabs:
  - *Menu Language* (on page 49)
  - *Status Language* (on page 54)

Subscribers screens

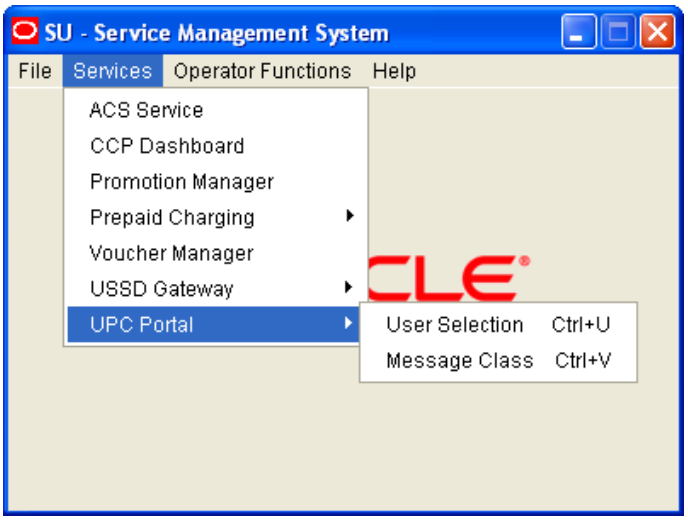
The Subscribers menu option contains the screens:

- *Access Control Screen* (on page 60)

Accessing UPC Portal

Procedure

Follow these steps to open the UPC Portal screens.

Step	Action
1	From the Service Management System screen, select **Services**. 
2	Select **UPC Portal**.
3	Select the entry for the screen you want to use.

UPC Portal menu options

This table describes the menu options accessible from the UPC Portal menu option.

Menu	Description
User Selection	Provides access to the creation and maintenance screens for User Selection.
Message Class	Provides access to the creation and maintenance screens for Message Classes.

Refer to the chapter, *UPC Portal Screens* (on page 69), for details about using these screens.

Common Buttons and Fields

On-screen buttons

This application uses a set of buttons to start specific actions within each screen.

The table below describes the function of each button.

Button	Function
Find	Opens the Find window, enabling you to find records that match the search criteria.
Save	Saves any changes to the record on the current screen to the database.
Clear	Clears all entries from the screen, enabling you to clear the screen before adding a new record.
Close	Closes the current screen and returns you to the previous screen in the screen hierarchy. **Note:** Any changes that have been made on-screen will not be saved (unless **Save** has been clicked previously).
Search	Appears on Find screens and allows you to search the database. This will trigger an Oracle Like% query that returns the first 100 records that begin with the selection criteria. For example, if you enter 123 in the Query field, the system will return records such as 123, 1234, 12345, etc.
Delete	Removes the selected record from the database.
Help	Opens context-sensitive Help containing information about the functionality available in the current screen.

Common fields

The following fields are displayed at the bottom of each screen.

Field	Description
Comment	For adding a comment for the record.
Term	The terminal that the session is using to log on.
Date	Date of last change to record.
User	User who last changed the record.

Data entry

Follow the steps below to enter a new Gateway configuration.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save**. **Result:** The new Gateway configuration is saved.

Using the Find Screens

Introduction

The find screen enables you to find records that match the selection criteria. All find screens in the system contain the following areas:

- Buttons
- Query fields
- Display grid

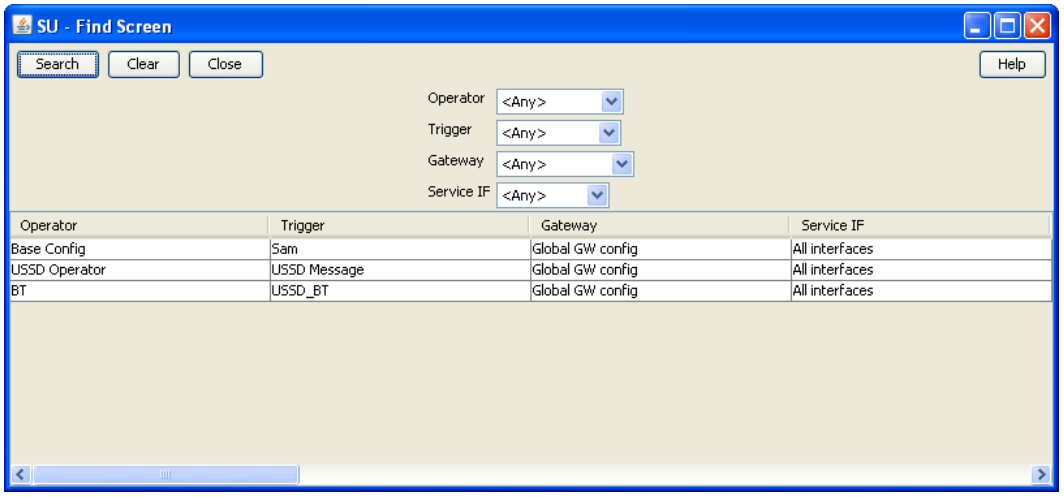
Accessing a find screen

To access the context sensitive find screen for a screen or tab, click **Find**.

Example find screen

Here is an example Find Screen.

Note: Each Find Screen has entry boxes for that particular find, with differing grid column headings.



Editing records

Follow the steps below to edit a record.

Step	Action
1	In the Find screen, select the row you want to edit. **Result:** The associated screen is populated with this data, which you can edit.
2	On the editing screen, make the changes to the data.
3	Click **Save**. **Result:** The edited screen is saved.

Searching the database

Follow these steps to search the database.

Step	Action
1	Enter selection criteria in one or more query fields at the top of the screen and click **Search**. If a field is left empty, the search retrieves all instances of that field. **Result:** This triggers an Oracle Like% query that returns the first 100 records that begin with the selection criteria. These are displayed in the display table at the bottom of the screen. **Example:** If you enter 123 in a query field, the system returns records such as 123, 1234, and 12345. **Note:** These are the first 100 records entered in the database, and they display in no particular order. If you do not find the record you are searching for, you need to conduct a more specific search.
2	To display the record in the main screen, select the record line and click **Close**.

Chapter 3

USSD Gateway Base Configuration Screens

Overview

Introduction

This chapter explains the contents of the Gateway Base Configuration Screens.

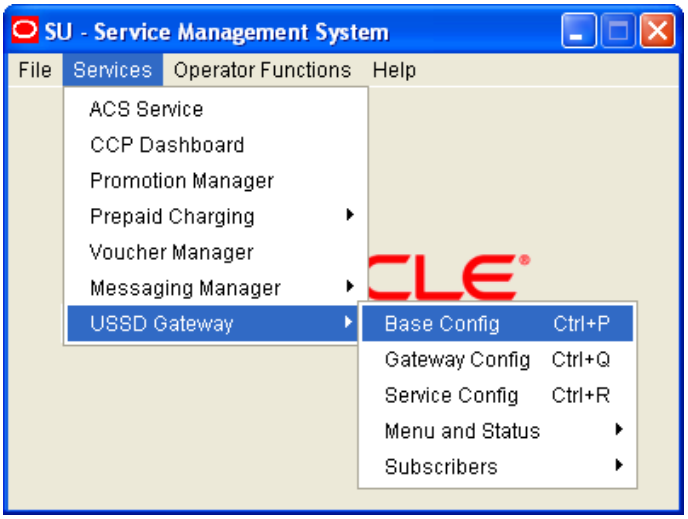
In this chapter

This chapter contains the following topics.

USSD Gateway Base Configuration Screen

Accessing USSD Gateway Base Configuration screen

Follow these steps to access the USSD Gateway Base Configuration Screens.

Step	Action
1	From the Service Management System screen, select the **Services** menu. 
2	Select **USSD Gateway > Base Config**, or use the **Ctrl+P** shortcut keys.

Trigger Prefix

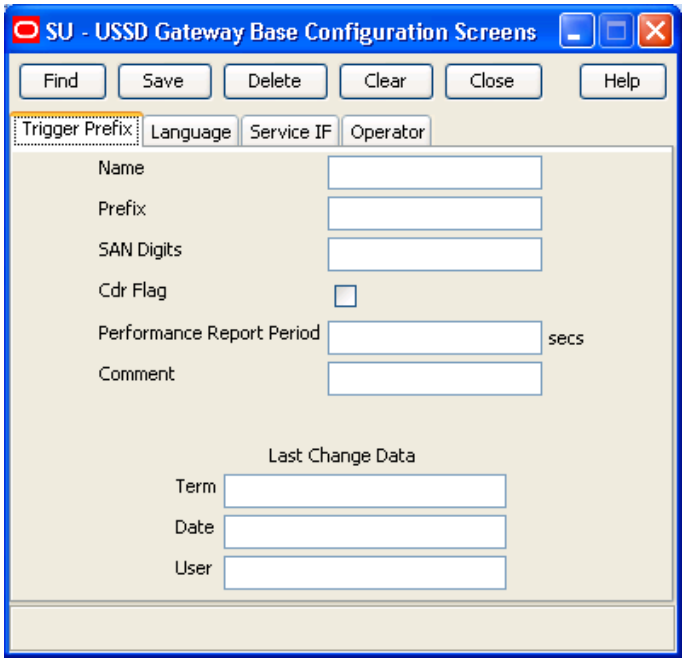
Introduction

The **Trigger Prefix** configuration tab allows you to name Trigger Prefixes and set up the length of the SAN digit.

As part of the installation of USSD GW, a Trigger Prefix is created that represents “all triggers”. It is used for the barring function. This entry has a trigger prefix of “##########”.

Trigger Prefix tab

Here is an example of the **Trigger Prefix** tab.



Fields

Here is a description of the fields.

Field	Description
Name	Unique name of this Trigger Prefix. Required. **Allowed values:** • Alphanumeric string up to 30 characters in length.
Prefix	The Prefix that prefixes the IMSI that can trigger a particular service interface. This prefix is used in the Service Configuration screen. Required. **Allowed values:** • Alphanumeric string up to 10 characters in length.
SAN Digits	The number of digits that should be sent to the Service Interface as the Service Access Number for this session. Optional. **Allowed values:** • 0 to 99.

Field	Description
Cdr Flag	Selecting this check box will enable EDR generation for this Trigger Prefix. **Note:** The global CDR Flag on the *Gateway Configuration tab* (on page 28) must also be checked before the USSD GW application on the SLC can begin to generate EDRs.
Performance Report Period	The interval (in seconds) after which the USSD GW application on the SLC will generate performance reports. **Allowed values:** • An integer value that is a factor of 60 or 3600. **Note:** A value of zero means that no performance reports will be generated.
Comment	This field is used to add any comments required for this Trigger Prefix.
Last Change Data	Shows the following details of when this record was last modified: • Term: For how long was the last change active. • Date: Last modified/created date. • User: Login ID of the user.

Note: For example text for each field, refer to the Find screen in this topic.

Data entry - trigger prefix

Follow the steps below to enter a new Trigger Prefix configuration.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

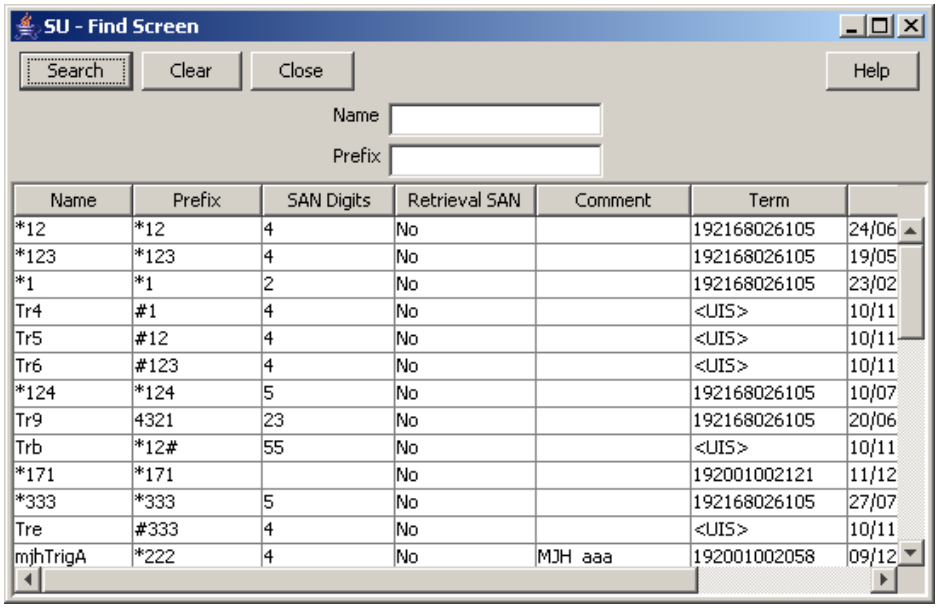
Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

Find Screen

Here is an example Find Screen for the **Trigger Prefix** tab.



Name	Prefix	SAN Digits	Retrieval SAN	Comment	Term	
*12	*12	4	No		192168026105	24/06
*123	*123	4	No		192168026105	19/05
*1	*1	2	No		192168026105	23/02
Tr4	#1	4	No		<UIS>	10/11
Tr5	#12	4	No		<UIS>	10/11
Tr6	#123	4	No		<UIS>	10/11
*124	*124	5	No		192168026105	10/07
Tr9	4321	23	No		192168026105	20/06
Trb	*12#	55	No		<UIS>	10/11
*171	*171		No		192001002121	11/12
*333	*333	5	No		192168026105	27/07
Tre	#333	4	No		<UIS>	10/11
mjhTrigA	*222	4	No	MJH aaa	192001002058	09/12

Using the find screen

You can search on:

- Name
- Prefix

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

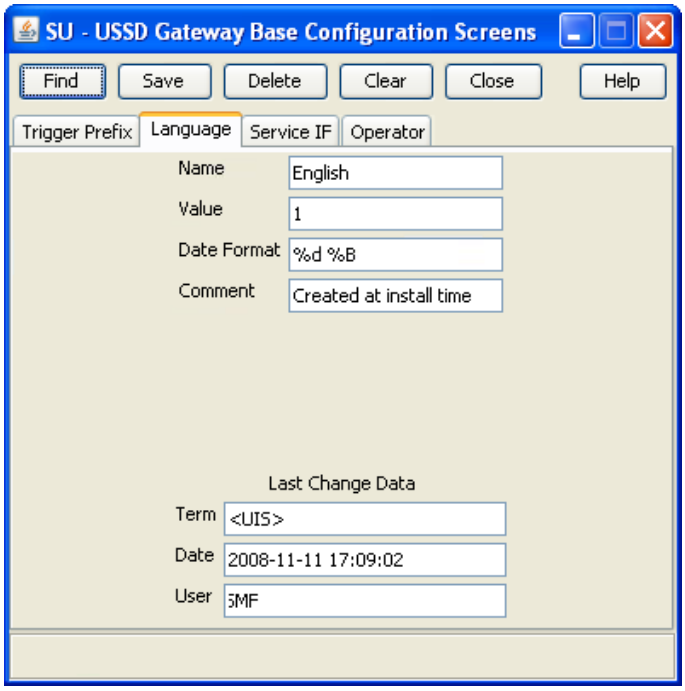
Language

Introduction

The **Language** configuration tab allows you to set up languages and give them specific values. The language value needs to correspond to the language values in the portal.

Language tab

Here is an example **Language** tab.



Fields

Here is a description of the fields.

Field	Description
Name	The language, such as English or French. Alphanumeric field up to 20 characters in length. This field is mandatory.
Value	A unique value that is viewed externally and sent to the gateway interface. Numeric field, valid values 0 – 19. This field is mandatory.
Date Format	The format for date variables when put into a message. This field is mandatory. Valid format tokens are shown below. You can separate tokens with spaces, commas, dashes, slashes, or backslashes. • %a – Three-character day of the week. For example, Mon, Tue, Wed, Thu, Fri. • %A – Full name for the day of the week. For example, Monday. • %b – Three-character month. For example, Jan. • %B – Full name for the month. For example, January. • %d – Two-digit day of the month. For example, 30. • %y – Two-digit year. For example, 15 for 2015. • %Y – Four-digit year. For example, 2015. • %m – Two-digit month. For example, 01 for January. For example, to specify a date format like 04 September 2015, set **Date Format** to %d %B %Y, or to specify a date format like 04-09-15, set **Date Format** to %d-%m-%y.

Notes:

- For example text for each field, refer to the Find screen in this topic.
- If ACS is being used as a service interface, the language ID fields must match the SRF ID in the ACS configuration. This means that if the SRF ID of 1 corresponds to English in the ACS configuration, the language entry on this tab must match.

For example:

```
ACS configuration
English, MSG=2, SRF=1

USSD configuration
Name: English  Value: 1 Date Format=%d %B %Y
```

Data entry

Follow these steps to enter a new Language configuration.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

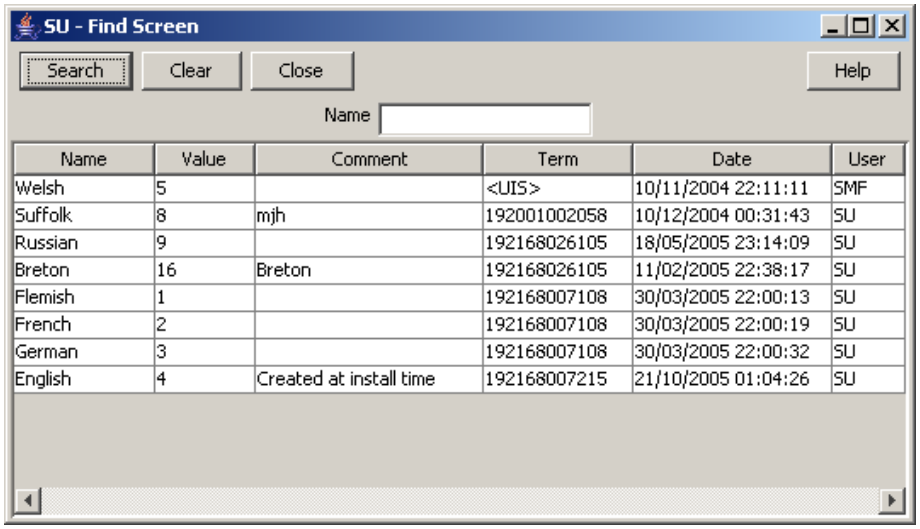
Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

Find Screen

Here is an example Find Screen for the **Language** tab.



Using the find screen

You can search on:

- Name

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

Service Interface

Introduction

The **Service IF** tab allows you to name the different service interfaces.

Service interfaces can define their own set of menus and status displays using the same menu ids or status cause values as other service interfaces. For example: menu id 1 could result in the display "enter birthday" when sent by service interface 1 and could result in the display "password?" when sent by service interface 2.

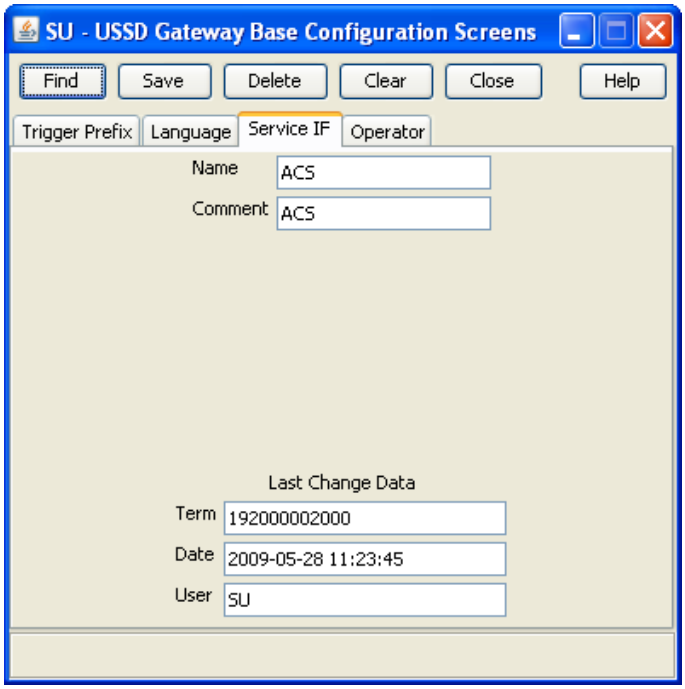
You can partition your menus to a finer resolution (for example: "ACS-mini-News", "ACS-Weather" and so on). These are entered in the Service Interface tab. You must also configure an associated trigger prefix to uniquely identify the service (not just a service group) and both these entries must be referenced in the Service Triggers.

Two Service Interfaces are configured when USSD GW is installed:

- Gateway - used by the gateway to retrieve displays for error or/and service ending conditions that are generated within the gateway itself and not a service interface
- All interfaces - enables service interfaces to share their menus

Service IF tab

Here is an example **Service IF** tab.



Fields

Here is a description of the fields.

Field	Description
Name	Unique name for this Service Interface. Required. **Allowed values:** • Alphanumeric field up to 20 characters in length.

Note: For example text for each field, refer to the Find screen in this topic.

Data entry

Follow these steps to enter a new Service Interface configuration.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

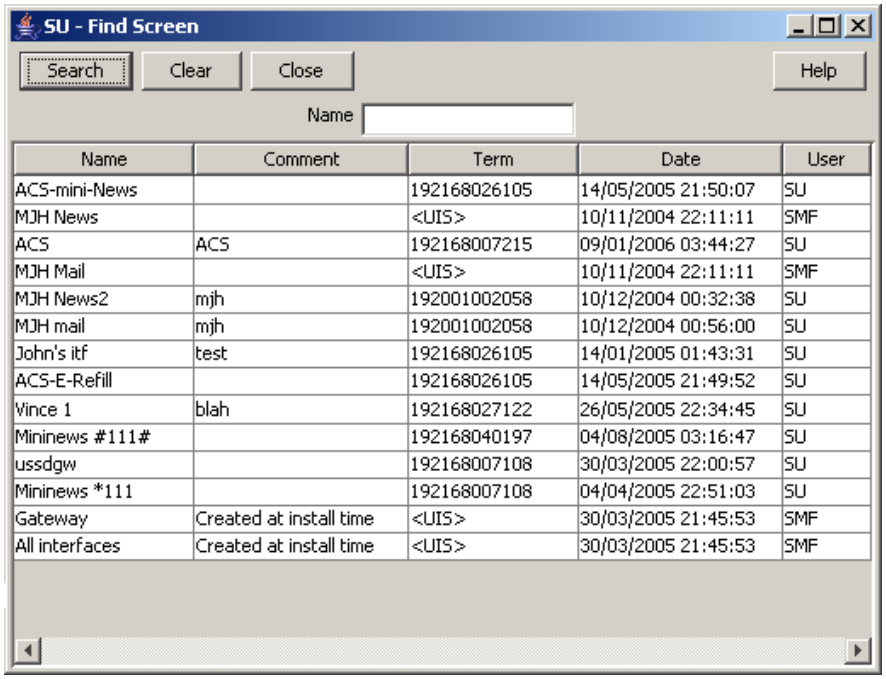
Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

Find Screen

Here is an example Find Screen for the **Service IF** tab.



Using the find screen

You can search on:

- Name

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

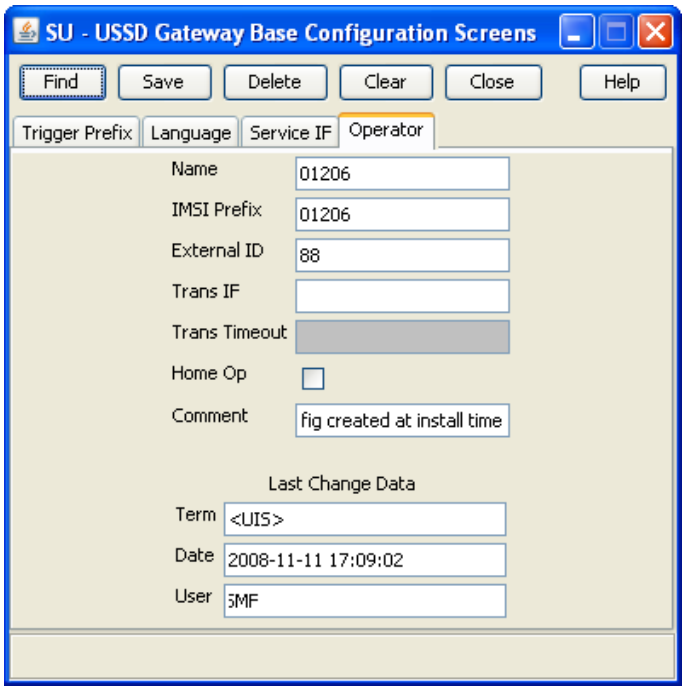
Operator

Introduction

The **Operator** tab allows you to set up different operators against different IMSI prefixes and using different IMSI to MSISDN mapping interfaces.

Operator tab

Here is an example **Operator** tab.



Fields

Here is a description of the fields.

Field	Description
Name	Unique name of the operator. Required. **Allowed values:** • Alphanumeric string, up to 20 characters in length.
IMSI Prefix	Unique IMSI Prefix. Must be 5 digits. • 3 digits for MCC - Mobile Country Code • 2 digits for the MNC - Mobile Network Code
External ID	Unique External ID. Required. If a service is located on an external system this ID is used when internal TCAP messages are sent to the external system.

Field	Description
Trans IF	The SLEE ID of the interface which does the IMSI-MSISDN translation. Optional. For information about SLEE IDs, see *SLEE Technical Guide*.
Trans Timeout	Milliseconds ussdgw process will wait for a response to the IMSI to MSISDN translation request. Required if a Trans IF value is provided. **Allowed values:** • 0 – 99
Home Op	If ticked, this operator is the home operator.

Note: For example text for each field, refer to the Find screen in this topic.

Data entry

Follow these steps to enter a new Operator configuration.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

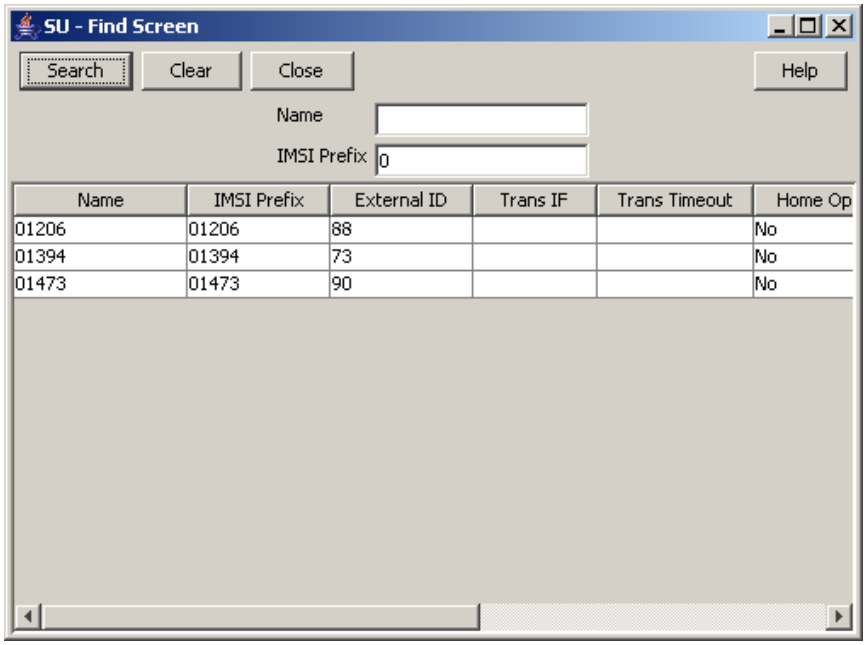
Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

Find Screen

Here is an example Find Screen for the **Operator** tab.



Using the find screen

You can search on:

- Name
- IMSI Prefix

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

Chapter 4

USSD Gateway Configuration Screen

Overview

Introduction

This chapter explains the contents of the USSD Gateway Configuration screen.

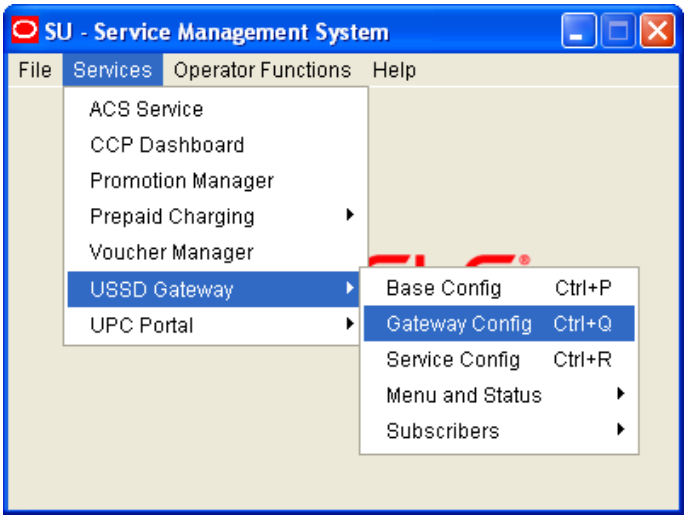
In this chapter

This chapter contains the following topics.

USSD Gateway Menu Configuration Screen

Accessing USSD Gateway Configuration screen

Follow these steps to access the USSD Gateway Configuration Screen.

Step	Action
1	From the Service Management System screen, select the **Services** menu. 
2	Select **USSD Gateway > Gateway Config**, or use the **Ctrl+Q** shortcut keys.

Gateway Configuration Screen

Introduction

The USSD Gateway Configuration Screen allows you to:

- Change the default gateway interface configuration (Global GW config)
- Add new gateway interfaces

Setting up different gateway configurations enables you to configure different gateways to have different service triggers defined. This enables the treatment of service triggers to be handled differently by different gateways.

You do not have to set up different gateway configuration for each gateway.

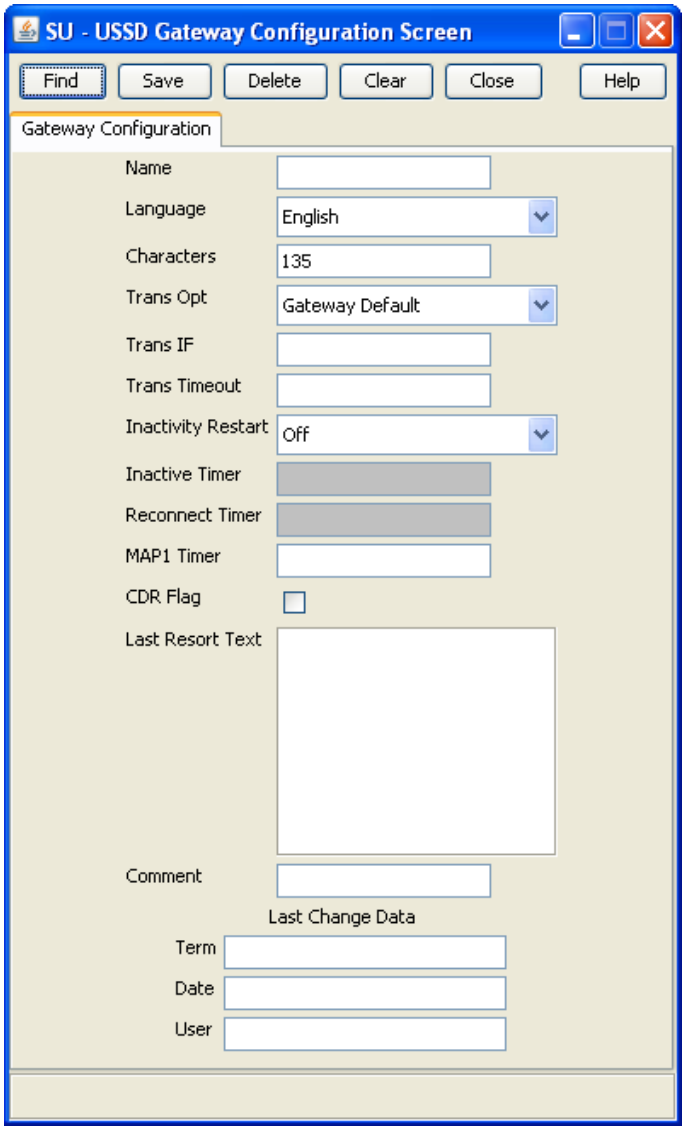
Important: reloading the configuration

If the USSD Gateway Configuration Screen is updated, the SLEE must to be restarted for these changes to take effect.

For instructions about how to restart the SLEE, see *SLEE Technical Guide*.

Gateway Configuration tab

Here is an example **Gateway Configuration** tab.



Fields

Here is a description of the fields.

Field	Description
Name	Unique name of this gateway interface.
Language	Default language of the gateway interface when no usable user preference is available. This list is populated by the entries in the *Language* (on page 18) tab in the USSD Gateway Base Configuration Screen.
Characters	Maximum number of characters to send to handset. Required. This is used to truncate the number of characters in the display sent to the end user to a particular number of digits. **Allowed values:** • 90 to 185
Trans Opt	How the IMSI to MSISDN mapping should be performed. **Allowed values:** • Gateway default. Use the routine specified in the Trans IF field on this screen. • Operator specific. The translation interface specified in the Trans IF field of the operator's Operator record will be used to perform the translation.
Trans IF	SLEE ID of interface that translates the IMSI to MSISDN. If an id is not specified this functionality will not be performed by the gateway. To allow the default mapping functionality to be performed, the SLEE ID of the default interface must be specified. Only available if **Trans Opt** is set to `Gateway default`.
Trans Timeout	Milliseconds gateway will wait for a response to the IMSI to MSISDN translation request. Required when Trans IF is set.
Inactivity Restart	If set to: • OFF, the inactive timer is disabled. • Each User Activity, the inactive timer is reset whenever a message is received from the handset. • TC-BEGIN Rec'd, the inactive timer is reset whenever a TC-BEGIN is received from a handset.
Inactive Timer	Maximum seconds to wait between messages from the mobile network before: • Returning a TC-END • Setting the session to RECONNECT state Optional. **Allowed values:** • 1 to 9999 • 0 = disabled.

Field	Description
Reconnect Timer	Maximum seconds gateway will wait for the handset to send a message after the session has entered RECONNECT state. This timer is stopped if the user reconnects to the service before it expires. The gateway interface can determine if the user is reconnecting to the service if the handset returns the SAN of the currently active service. If the user reconnects, the reconnect timer will be stopped and the service session can return to its normal mode of operation. The inactive timer will be restarted. Required (must be 1 or above if inactive timer is not equal to 0. **Allowed values:** • 1 to 9999 • 0 = disabled.
MAP1 Timer	Seconds gateway will wait when a MAP 1 user enters the RECONNECT state. This timer is stopped if the user reconnects to the service before it expires. A numeric field, valid values 0 to 9999 which represent time in seconds, optional field.
CDR Flag	If this check box is selected, CDRs will be generated.
Last Resort Text	This is the text the gateway will use if no other menus have been configured or defined. Alphanumeric field up to 185 characters in length.

Note: For example text for each field, refer to the Find screen in this topic.

Data entry

Follow these steps to enter a new gateway configuration.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

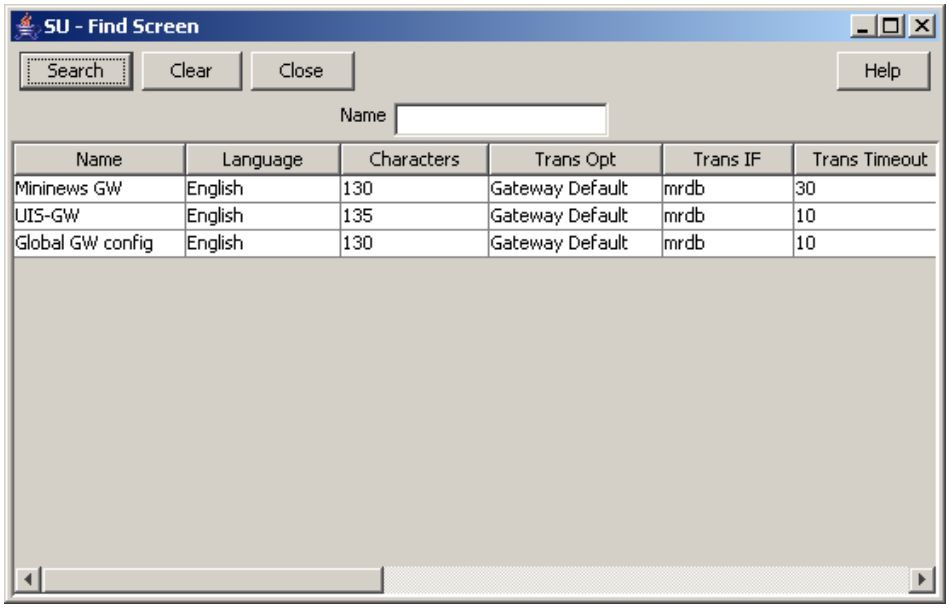
Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

Find Screen

Here is an example Find Screen for the **Gateway Configuration** tab.



Using the find screen

You can search on:

- Name

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

Chapter 5

USSD Gateway Service Configuration Screen

Overview

Introduction

This chapter explains the contents of the USSD Gateway Service Configuration screen.

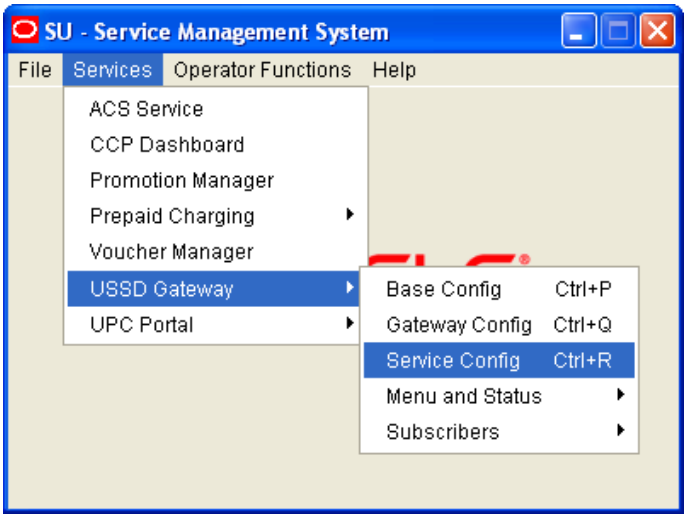
In this chapter

This chapter contains the following topics.

USSD Gateway Service Configuration Screen

Accessing USSD Gateway Service configuration screen

Follow these steps to access the USSD Gateway Service Configuration Screen.

Step	Action
1	From the Service Management System screen, select the **Services** menu. 
2	Select **USSD Gateway > Service Config**, or use the **Ctrl+R** shortcut keys.

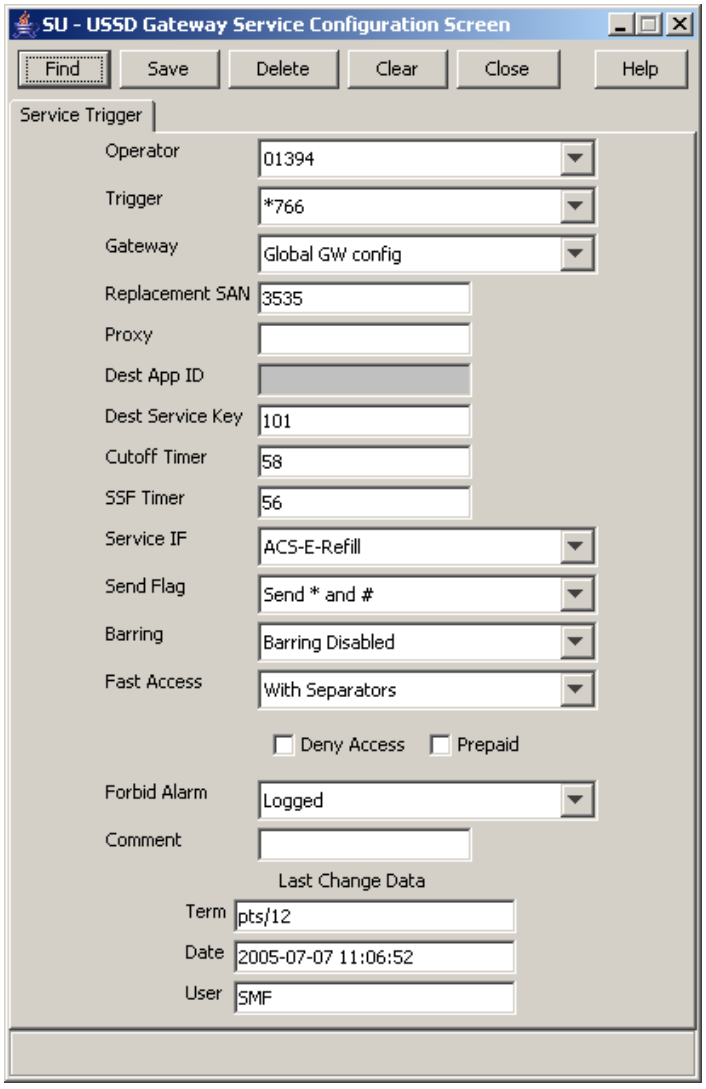
Service Trigger

Introduction

The **Service Trigger** tab on this screen allows you to set up service triggers. A service trigger is a combination of operator, trigger and gateway. The same trigger can be set against different operators or different gateways giving a different service.

Service Trigger tab

Here is an example **Service Trigger** tab.



Service Trigger fields

Here is a description of the fields on the **Service Trigger** tab.

Note: The combination of operator, trigger prefix and gateway must form a unique entry.

Field	Description
Operator	The operator this service trigger is set up for. This field is populated by the USSD Gateway Base Configuration Screen *Operator* (on page 23) tab.
Trigger	The trigger prefix This field is populated with the names of all the trigger prefixes created by the USSD Gateway Base Configuration Screen *Trigger Prefix* (on page 16) tab.
Gateway	The gateway this record belongs to. This field enables multi-Gateway configurations to be deployed across various SLCs. This type of configuration may result in different triggers being configured for the different gateway. This field is populated by the USSD *Gateway Configuration* (on page 27) screen.
Replacement SAN	The code that will be sent in the called party number field of the InitialDP instead of the derived service access number from the trigger prefix. Optional. If specified, between 1 to 20 hexadecimal digits. These digits will be BCD encoded.
Proxy	Proxy SLEE ID. Optional. This field should only be populated if the destination service could require a service handover (possibly resulting in a voice call initiation) as this would require the proxy to perform the handover. **Allowed values:** • Alphanumeric field up to 20 characters in length.
Dest App ID	SLEE ID for the destination application. If the application is on a remote machine, this should contain the address of the local TCRelay application. **Allowed values:** • Numeric field up to 10 digits in length. For more information about SLEE IDs, see *SLEE Technical Guide*. **Note:** This field cannot be used with the **Dest Service Key** field.
Dest Service Key	Service key for the destination application. This service key is placed in the InitialDP used to trigger the application. Required if Dest Service Key is not set. **Allowed values:** • Alphanumeric field up to 20 characters in length.
Cutoff Timer	The amount of time after a session is started before the USSD GW will end the session and send a message to the handset (corresponds to the status of "Session cut off timer expiry"). Required. This timer cannot be reset. **Allowed values:** • Numeric field up to 9 digits in length.
SSF Timer	Time to wait for a response from the service interface or portal. Required. If no response is received within this period, the session is ended and USSD GW sends the handset a message (corresponds to the status of "SSF timer expiry"). If a response is received before the timer expires, the timer is stopped. **Allowed values:** • 1-999999999

Field	Description
Service IF	The service interface triggered by this service trigger. Dictates the menus that are required for the service. This field is populated by the *Service Interface* (on page 21) tab on the USSD Gateway Base Configuration Screen. **Example:** For triggers that initiate ACS-Weather control plans, this is must reference the entry in the **Service IF** tab that has the name of "ACS-Weather".
Send Flag	Whether '*' or '#' characters should be sent to the service interface for responses to PACUIs. If set to "Send '*' and '#'", the characters will be encoded as BCD 'c' and 'd' respectively. The terminating '#' character will never be used as a selection character. This field is populated at startup.
Barring	Contains the following text and database values: • "Barring Disabled" – value of 0 • "Barring IMSI" – value of 1, and • "Barring MSISDN" – value of 2.
Fast Access	Indicates whether the "fast access" (also known as dial/type ahead) feature should be enabled for sessions which use this Service Trigger. Fast access causes excess characters to be stored in a buffer and be used as input to subsequent user input requests. This field is populated when USSD GW is installed. It contains the following options: • Fast Access Disabled • Always send max • With Separators • Always send max and current buffer • With Separators and current buffer
Deny Access	Selecting this check box unconditionally bars all users from the service that meet the trigger criteria.
Prepaid	Enables service interfaces to determine whether the service uses prepaid checking or not. **Allowed values:** • ticked = prepaid checking is required. • clear = prepaid checking is not required.
Forbid Alarm	Specifies whether barred attempts should generate alarms. This box has two values: • Logged • Not Logged

Note: For example text for each field, refer to the Find screen in this topic.

Data entry

Follow these steps to enter a new service configuration.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

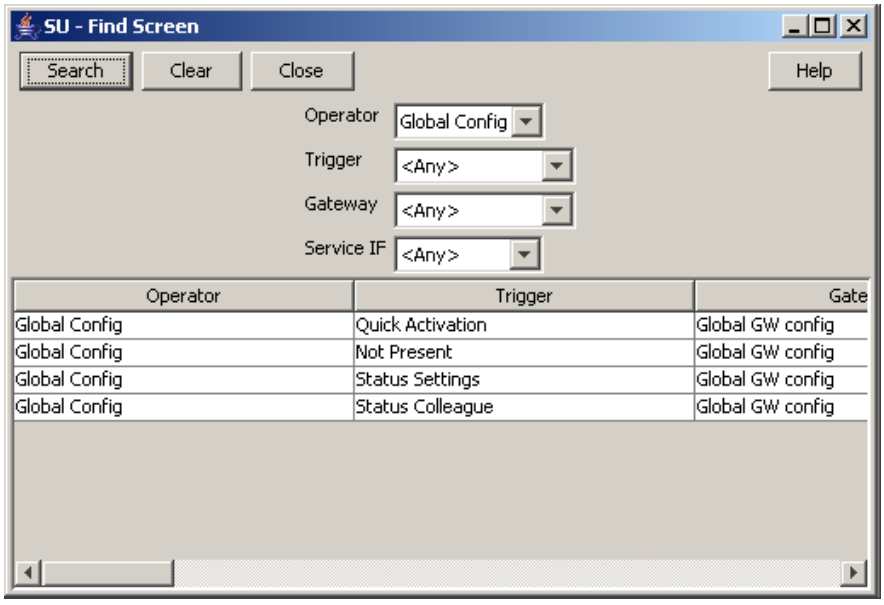
Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

Find Screen

Here is an example Find Screen for the **Service Trigger** tab.



Using the find screen

You can search on:

- Operation
- Trigger
- Gateway
- Service IF

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

Chapter 6

Menu and Status Screens

Overview

Introduction

This chapter explains the contents of the USSD Gateway Menu and Status screens.

In this chapter

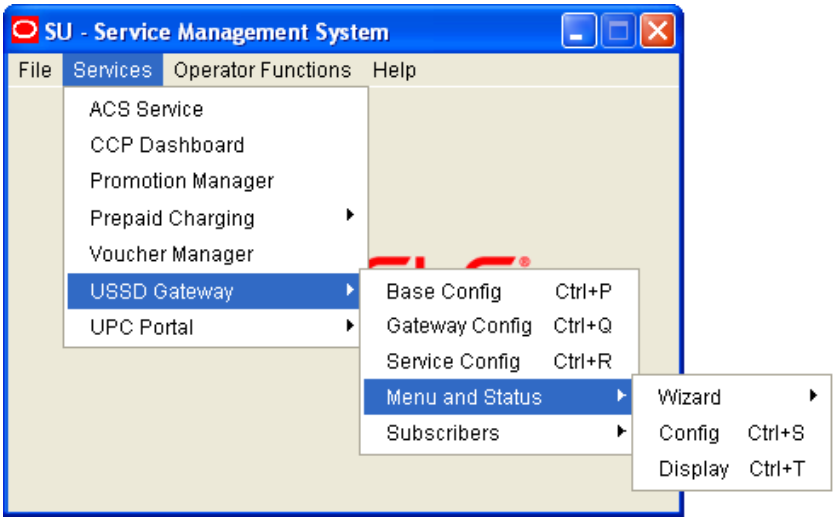
This chapter contains the following topics.

USSD Gateway Menu Configuration Screen

Accessing USSD Gateway Menu configuration screens

Follow these steps to access the USSD Gateway Menu configuration screens.

Step	Action
1	From the Service Management System screen, select the **Services** menu.
2	Select **USSD Gateway**, then **Menu and Status**.
3	Select the screen you want to use.



Menu Wizard

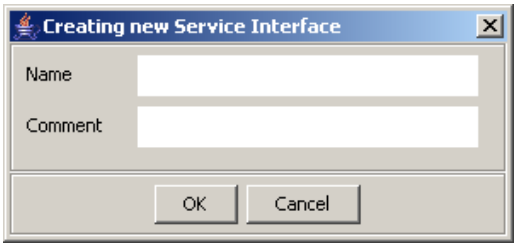
Introduction

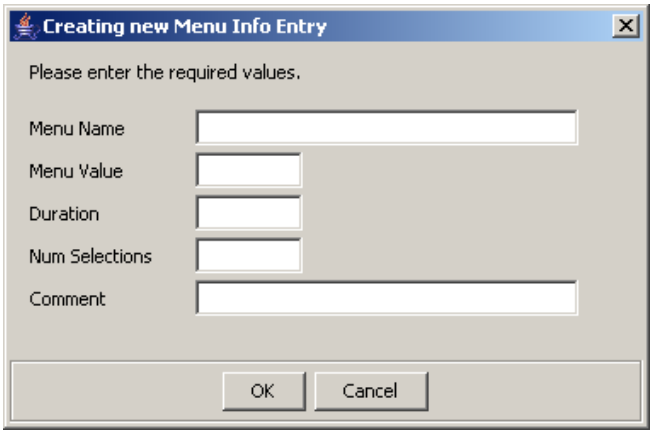
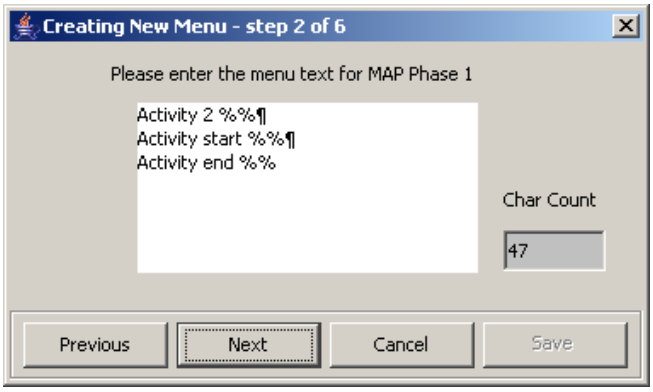
The Menu Wizard allows you to set up menus easily, by allowing you to select and update the Service Interface and Menu Info Entry data, then enter the menu text for MAP 1 and MAP 2. If configuring menus for the *User Selection* (on page 87) node, you will also define a keyword for each branch.

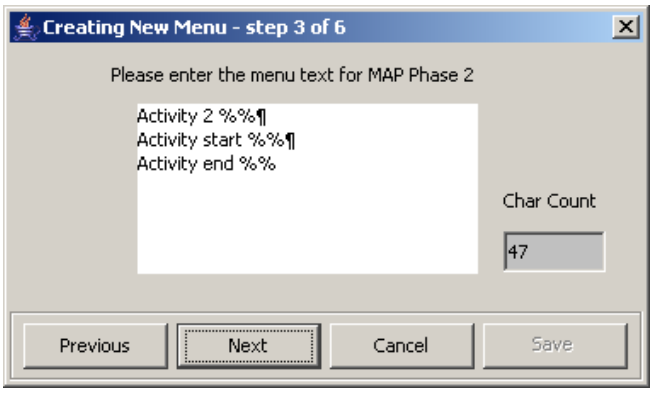
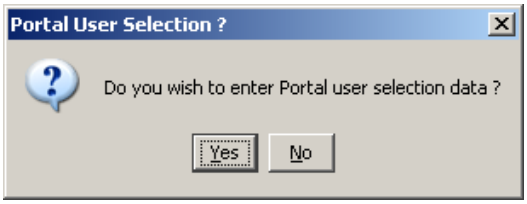
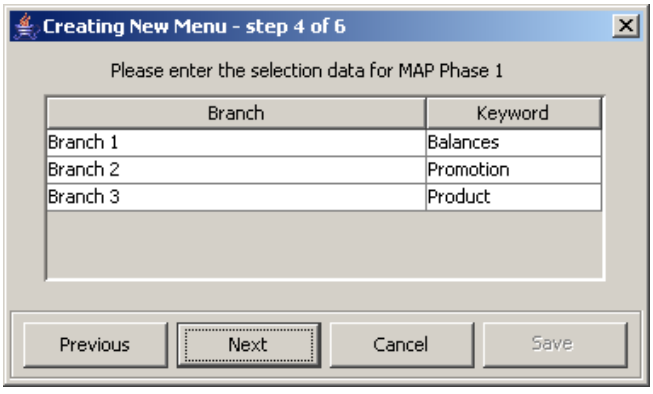
Setting up menus

Follow these steps to set up a menu.

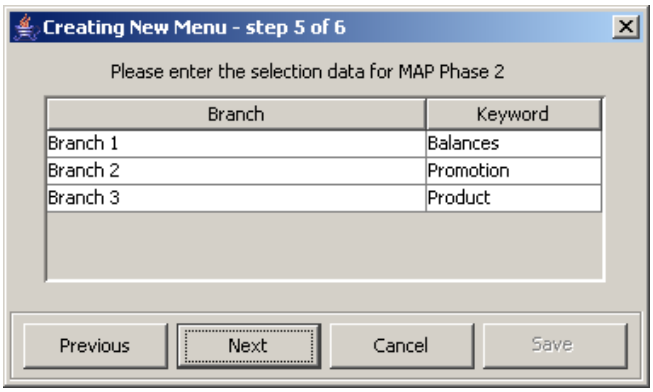
Note: You can select **Previous** to go back through the screens and change any values before saving.

Step	Action
1	Select **Menu Wizard** from the **Menu and Status** option. **Result:** You see Step 1 of the Creating New Menu screens. 
2	Select the **Language** from the drop down list.
3	Select an existing Service Interface from the drop down list. You can click **Edit** if you need to change the details. If you require a new Service interface, create a new one by clicking **New** to the right of the **Service** field. **Result:** You see the Creating new Service Interface screen.  Fill in the fields, as described in *Service Interface* (on page 21) and click **OK**. **Result:** The database is updated.

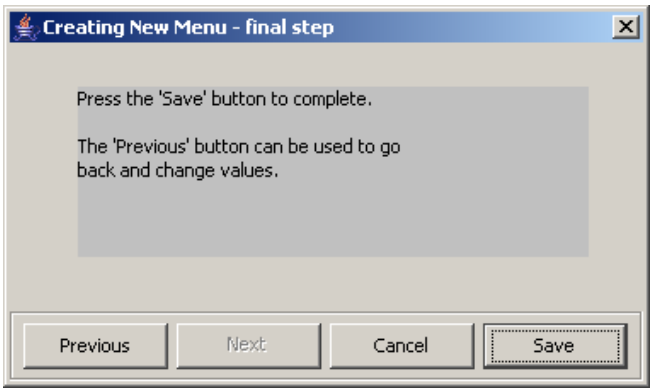
Step	Action
4	Select an existing Menu information entry from the drop down list. You can click **Edit** if you need to change the details. If you require a new Menu information entry, create a new one by clicking **New** to the right of the **Menu** field. **Result:** You see the Creating new Menu Info Entry screen.  Fill in the fields, as described in *Menu Info Configuration* (on page 45) and click **OK**. **Result:** The database is updated, and the step 1 of 6 screen redisplays.
5	Click **Next**. **Result:** You see the Step 2 screen. If this is for a new menu info entry, the screen is blank. Otherwise it will contain the existing menu text.  **Note:** In this example, the text contains variables (%%). Refer to the description of the MAP 1 and MAP 2 fields for the *Menu Language* (on page 49) tab. The menu text can also be edited using this tab.
6	Type in the menu display text for MAP 1. **Tip:** The percent symbol (%) is not valid. To include a % type \% where the % is required. For example, If the text was defined as "Your usage is %%.%%\%", the result on the mobile would appear as "Your usage is 23.23%"

Step	Action
7	Click **Next**. **Result:** You see the Step 3 screen. 
8	Type in the menu display text for MAP 2. **Tip:** The percent symbol (%) is not valid. To include a % type \% where the % is required. For example, If the text was defined as "Your usage is %%.%%\%", the result on the mobile would appear as "Your usage is 23.23%"
9	Click **Next**. **Result:** You see the following dialog box. 
10	The UPC package must be loaded to create menus for the User Selection nodes. If the UPC package is loaded, you can enter Portal Selection data. To continue, click **Yes.** **Result:** You see the Step 4 screen.  **Note:** This branch-keyword mapping table is the same as the one accessed on the *User Selection screen* (on page 69). Otherwise, click **No** to go to the Final Step screen.
11	Select each Keyword cell and type in the selection data for MAP 1.

Step	Action
12	Click **Next**. **Result:** You see the Step 5 screen.



13	Select each Keyword cell and type in the selection data for MAP 2.
14	Click **Next**. **Result:** You see the Final Step screen.



15	To complete the menu creation, click **Save**.

Status Wizard

Introduction

The Status Wizard allows you to set up status menus easily, by allowing you to select and update the Service Interface and Status Info Entry data, then enter the status text for a specific language.

Setting up status menus

Follow these steps to set up a status menu.

Note: You can click **Previous** to go back through the screens and change any values before saving.

Step	Action
1	Select **Status Wizard** from the **Menu and Status** option. **Result:** You see the Creating New Status Menu - step 1 of 3 screen.

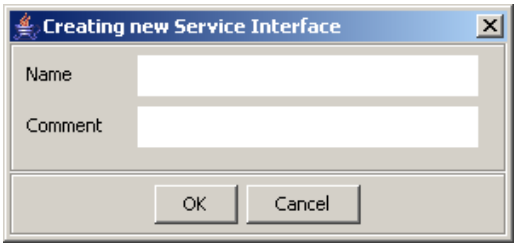
Step	Action

2 Select the **Language** from the drop down list.

3 Select an existing Service Interface from the drop down list. You can click **Edit** if you need to change the details.

If you require a new Service interface, create a new one by clicking **New** to the right of the **Service** field.

Result: You see the Creating new Service Interface screen.



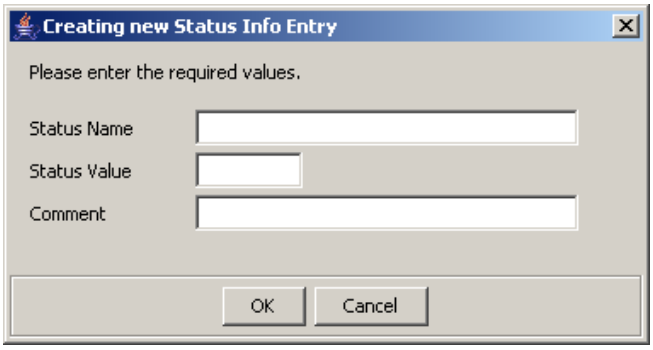
Fill in the fields, as described in *Service Interface* (on page 21) and click **OK**.

Result: The database is updated.

4 Select an existing Status information entry from the drop down list. You can click **Edit** if you need to change the details.

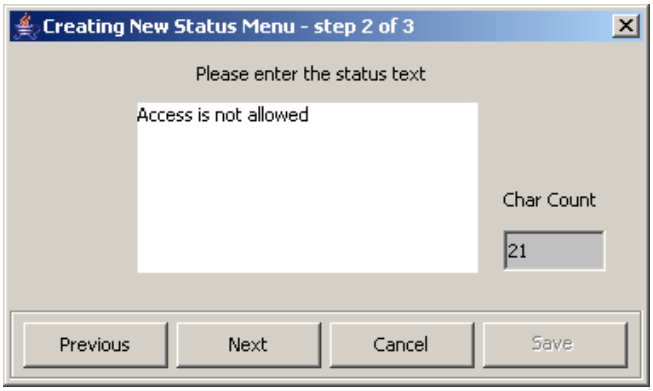
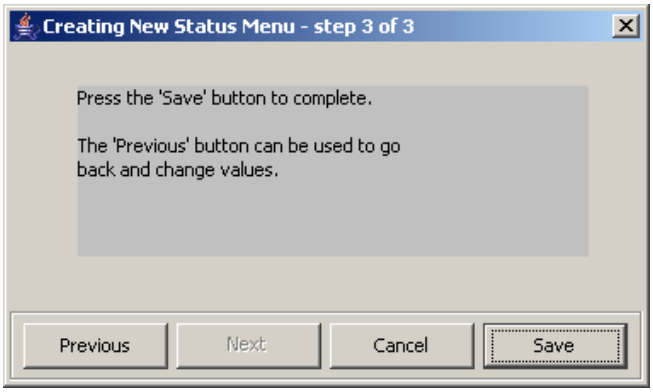
If you require a new Status information entry, create a new one by clicking **New** to the right of the **Menu** field.

Result: You see the Creating new Status Info Entry screen.



Fill in the fields, as described in *Status Info Configuration* (on page 47) and click **OK**.

Result: The database is updated.

Step	Action
5	Fill in the fields with the required options from the drop-down boxes and click **Next**. **Result:** You see the Step 2 of 3 screen. If this is for a new status, the screen is blank. Otherwise it will contain the existing status text.  **Note:** The status text can also be edited using the *Status Language* (on page 54) tab.
6	Type in the status text and click **Next**. **Result:** You see the Step 3 of 3 screen. 
7	To complete the status text creation, click **Save**.

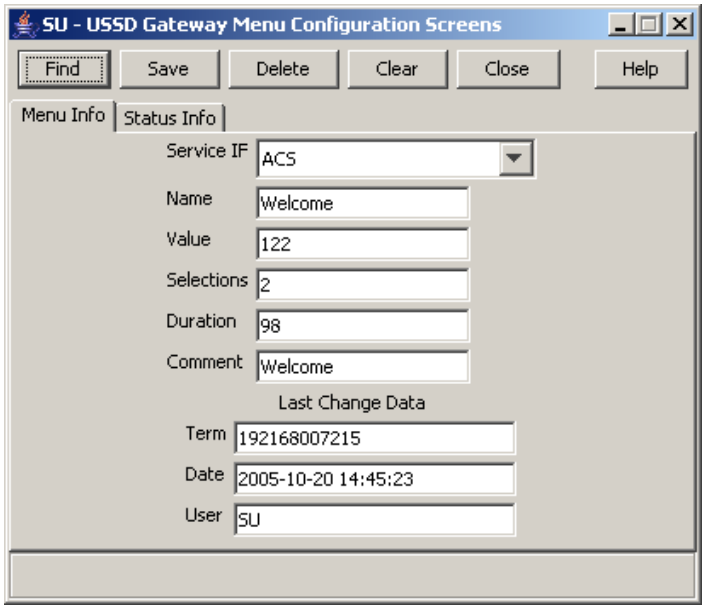
Menu Info Configuration

Introduction

The **Menu Info** tab allows you to set up menus with names and values against service interfaces. The menu information is language independent. See *menu language* (on page 49).

Menu Info tab

Here is an example **Menu Info** tab.



Fields

Here is a description of the fields.

Field	Description
Service IF	The list of service interfaces. **Note:** These are set up on the USSD Gateway Base Configuration Screen *Service Interface* (on page 21) tab.
Name	Name of the menu for that service interface. Alphanumeric field up to 40 characters in length, mandatory field.
Value	The announcement ID in the PA or PACUI received from slee_acs which will be translated into this message. This record must have an announcement with this id specified in an interaction node used in a control plan or it will not ever be used. For more information about how PAs and PACUIs are used in generating menus, see *USSD GW Technical Guide*. Numeric field up to 7 digits in length, mandatory value.
Selections	The number of selections that the menu will have. Numeric field, valid values are 0 to 20, mandatory field.
Duration	Specifies the length of time the display will be present to the user. Numeric field, valid values 1 to 99. Optional.

Note: For example text for each field, refer to the Find screen in this topic.

Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

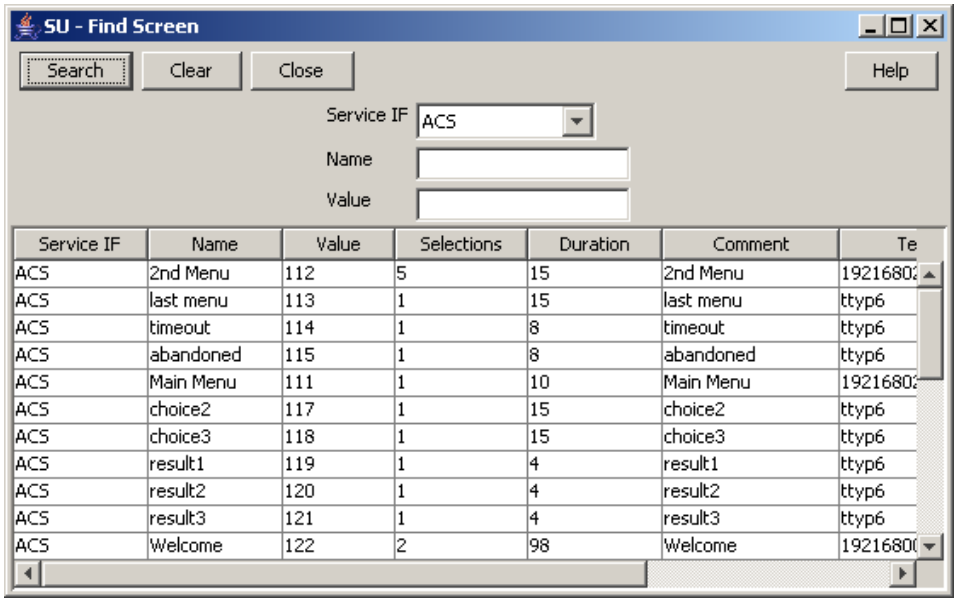
Data entry

Follow these steps to enter a new menu Info.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

Find Screen

Here is an example Find Screen for the **Menu Info** tab.



Using the find screen

You can search on:

- Service IF
- Name
- Value

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

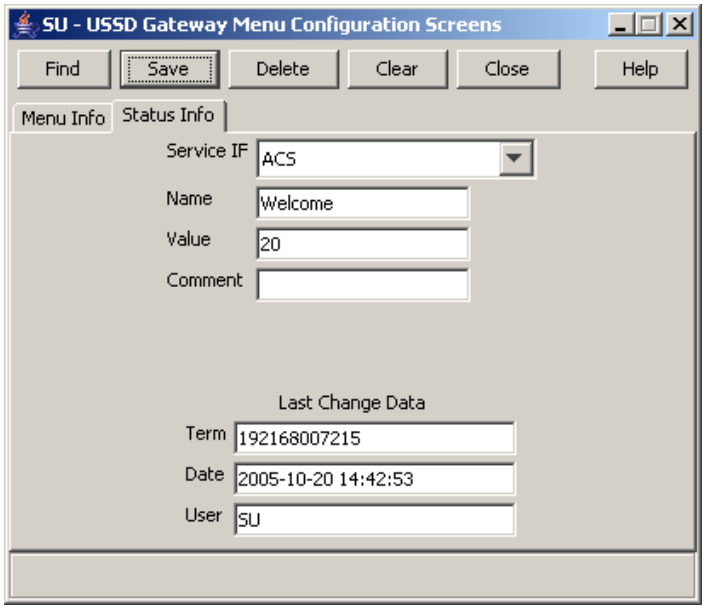
Status Info Configuration

Introduction

The **Status Info** tab allows you to map status values to more meaningful status messages. The majority of them are created at install time.

Status Info tab

Here is an example **Status Info** tab.



Fields

Here is a description of the fields.

Field	Description
Service IF	The service interface this status info entry will be used for. **Note:** These are set up on the USSD Base Configuration Screen *Service Interface* (on page 21) tab.
Name	Name of this status cause for the selected service interface. Required. **Allowed values:** • Alphanumeric field up to 50 characters in length.
Value	The value that placed in the release cause field of the RELEASE INAP operation sent to the gateway. Required. **Allowed values:** • Numeric field up to 7 digits in length. **Note:** If a status entry is for a service interface other than “Gateway”, you can only enter values between 0 and 127 for this field. This is the range of value allowed for the release cause within an INAP RELEASE operation.

Note: For example text for each field, refer to the Find screen in this topic.

Data entry

Follow these steps to enter a new status info.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

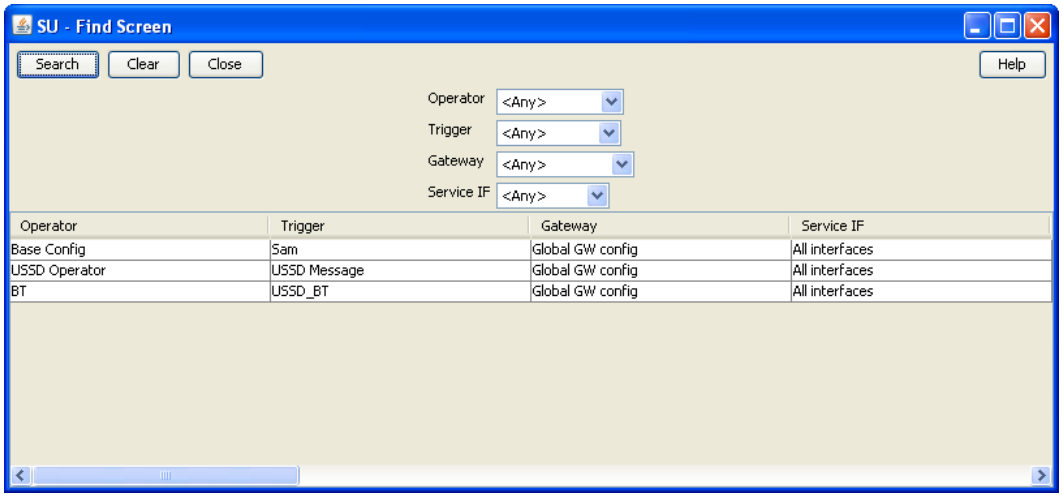
Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

Find Screen

Here is an example Find Screen for the **Status Info** tab.



Using the find screen

You can search on:

- Service IF
- Name
- Value

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

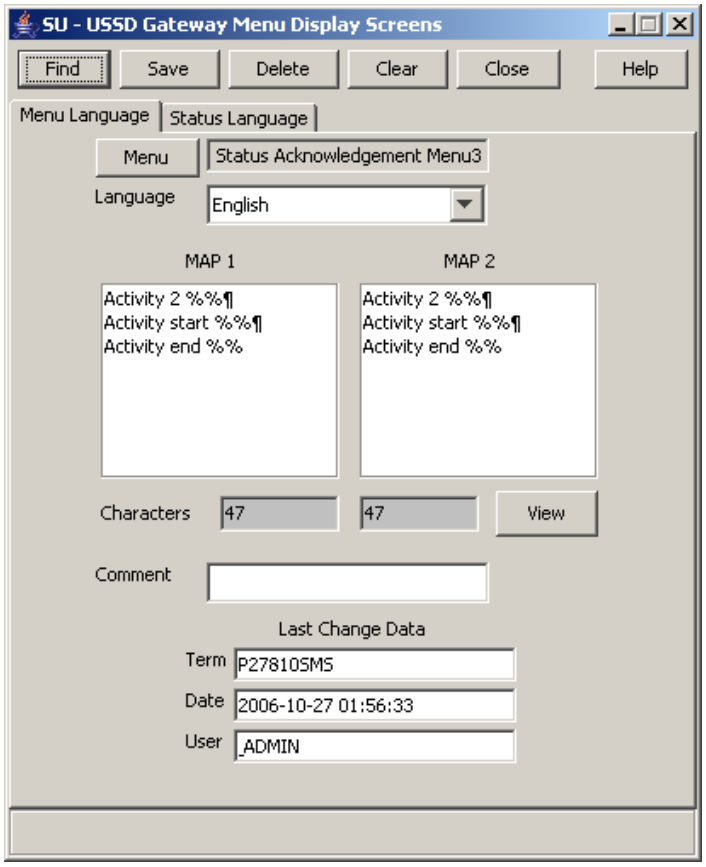
Menu Language Display

Introduction

The **Menu Language** tab allows you to enter language specific text for a given menu. MAP 1 and MAP 2 text can be different.

Menu Language tab

Here is an example **Menu Language** tab.



Fields

Here is a description of the fields.

Field	Description
Menu	The menu selected from the list provided when the button is selected. Text screens for MAP 1 and 2 - text to be sent to the mobile hand set. You cannot edit this field directly. See **Menu** button below.
Language	The list of available languages. **Note:** These are set up on the USSD Base Configuration Screen *Language* (on page 18) tab.
MAP 1 and MAP 2	There are separate fields for both MAP 1 and MAP 2. The fields represent the display screen of a mobile phone. The text may contain variable parts, which are assigned using the Variable Part Announcement Dialog (See the *User Input* (on page 83) node). Enter each variable part as a pair of percentage symbols (%%). **Note:** The MAP 1 and MAP 2 text may be different, but both must contain the same number of variables.
Characters	Displays the number of characters in the MAP 1 and MAP 2 display screens.

Note: For example text for each field, refer to the Find screen in this topic.

Buttons

Here is a description of the buttons.

Button	Description
Menu	Clicking this button displays the Menu Selector screen, allowing you to search for and select a menu value, which will be entered into the Menu field.
View	Clicking this button displays the Text Display Viewer screen, which displays the text and the number of characters. See *Viewing menu text* (on page 51).

Data entry

Follow these steps to enter a new menu language.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

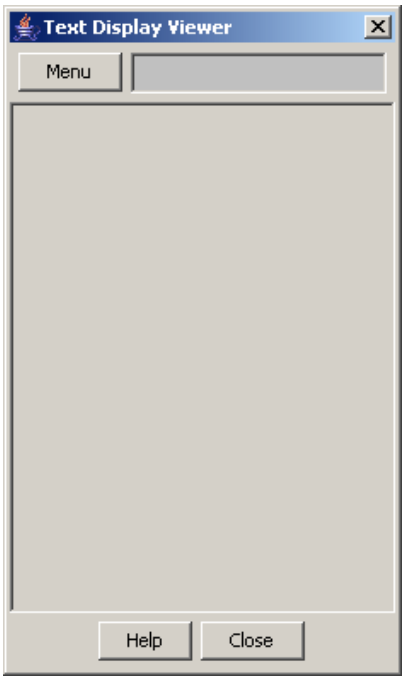
Clicking **Find** displays the Find screen.

Viewing menu text

Follow these steps to view menu text.

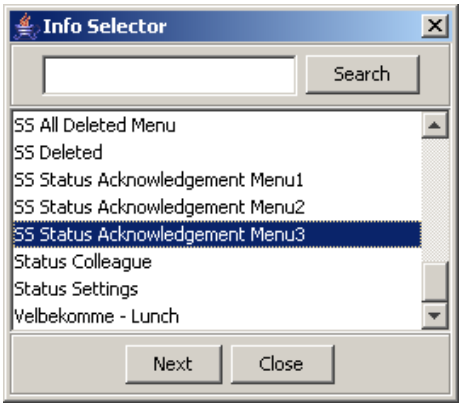
Step	Action
1	On the **Menu Language** tab, click **View**. **Result:** You see the Text Display Viewer. If this is the first time you have used the text display viewer during the current session, the screen will display the text in the MAP 1 and MAP 2 text fields on the tab. If no menu has been selected, the field will be blank. If you have already used the text display viewer, you will see the last menu text you viewed before.

Step	Action



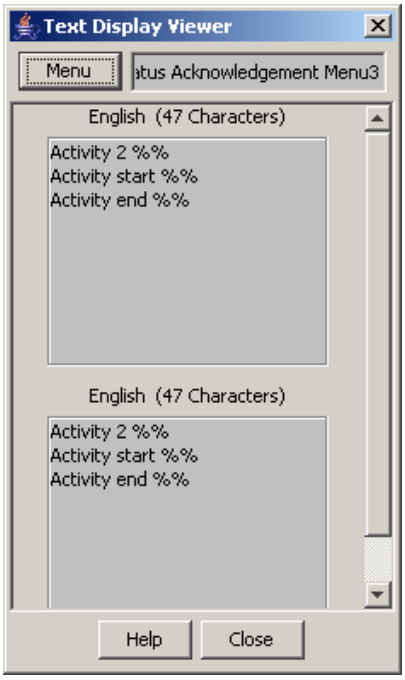
2 Click **Menu**.

Result: You see the Info Selector, displaying the menus.



You can search for menus by entering search criteria in the box and clicking **Search**.

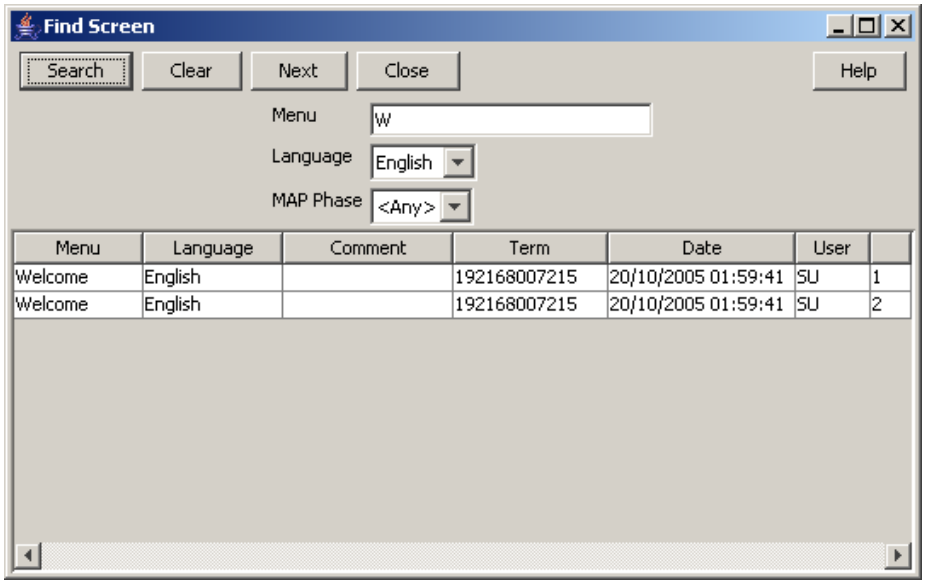
Step	Action
3	Select the required menu from the list. **Result:** The Menu text is displayed in the Text Display Viewer.



4	To close the text display viewer, in the Info Selector, click **Close**, then in the Text Display Viewer, click **Close**.

Find Screen

Here is an example Find Screen for the **Menu Language** tab.



Using the find screen

You can search on:

- Menu
- Language
- MAP Phase

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

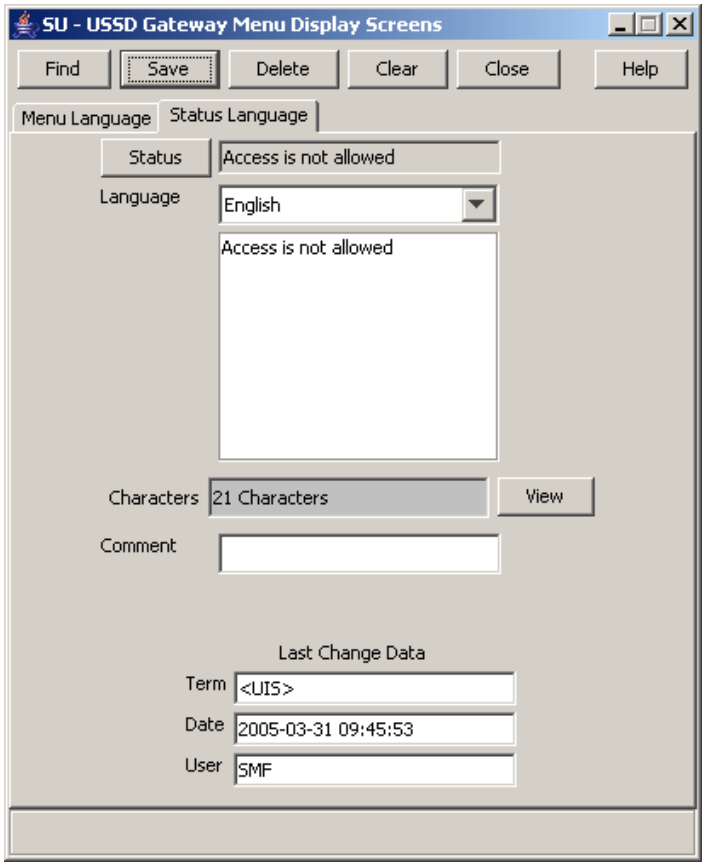
Status Language Display

Introduction

The **Status Language** tab allows you to set language specific status text for a given status.

Status Language tab

Here is an example **Status Language** tab.



Fields

Here is a description of the fields.

Field	Description
Status	Displays status info name once selected, created by the USSD Gateway Menu Configuration Screen *Status Info Configuration* (on page 47) tab. You cannot edit this field directly. See **Status** button below.
Language	The list of available languages. **Note**: These are set up on the USSD Base Configuration Screen *Language* (on page 18) tab.
Text box	This represents the display screen of a mobile phone
Characters	Displays the number of characters in the message in the field above.

Note: For example text for each field, refer to the Find screen in this topic.

Buttons

Here is a description of the buttons.

Button	Description
Status	Clicking this button displays the Status Selector screen, allowing you to search for and select a value, which will be entered into the Status field.
View	Clicking this button displays the Text Display Viewer, which allows you to view the text of a status, its language and number of characters. See *Viewing status text* (on page 55).

Data entry

Follow these steps to enter a new status language.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

Buttons and other fields

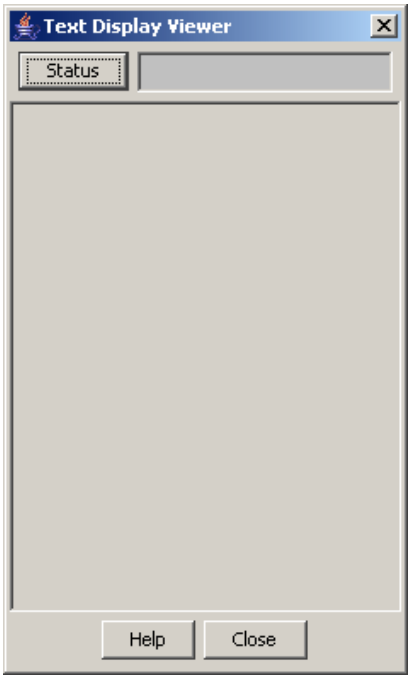
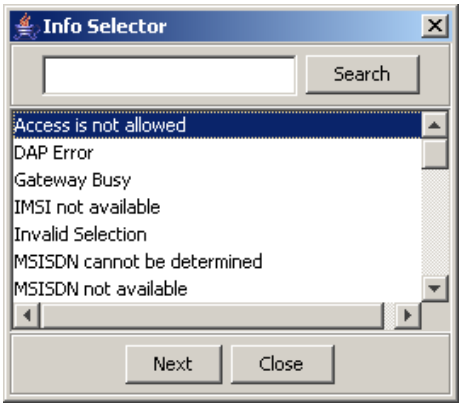
For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

Viewing status text

Follow these steps to view status text.

Step	Action
1	On the **Status Language** tab, click **View**. **Result:** You see the Text Display Viewer. If this is the first time you have used the text display viewer during the current session, the screen will display the text in the field in the tab. If no status has been selected, the field

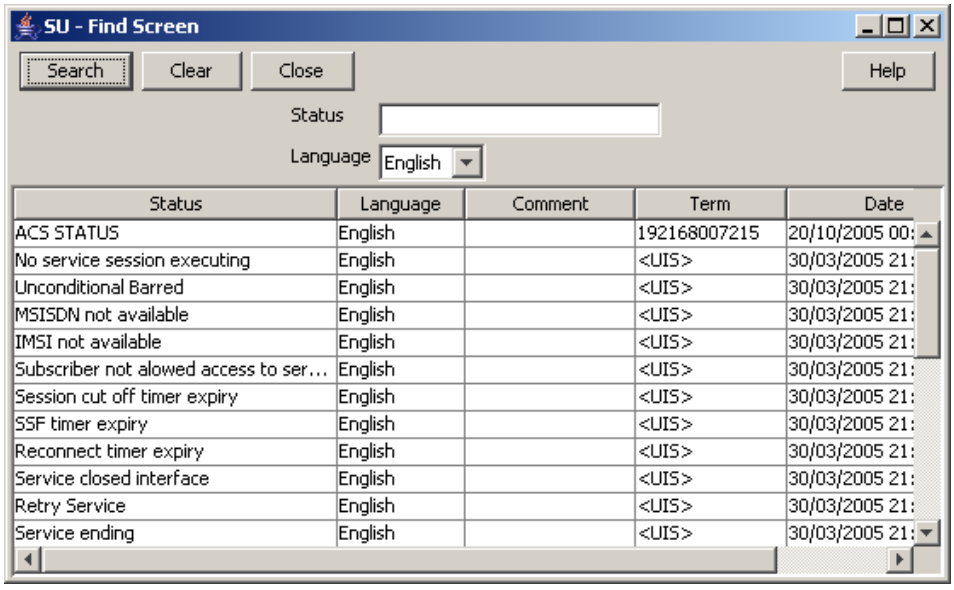
Step	Action
	will be blank. If you have already used the text display viewer, you will see the last text you viewed before. 
2	Click **Menu**. **Result:** You see the Info Selector, displaying the status info names.  You can search for status info names by entering search criteria in the box and clicking **Search**.
3	Select the required menu from the list. **Result:** The Status text is displayed in the Text Display Viewer.

Step	Action

4 To close the text display viewer, in the Info Selector, click **Close**, then in the Text Display Viewer, click **Close**.

Find Screen

Here is an example Find Screen for the **Status Language** tab.



Using the find screen

You can search on:

- Status

- Language

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

Chapter 7

Subscribers Screens

Overview

Introduction

This chapter explains the contents of the Subscribers screens.

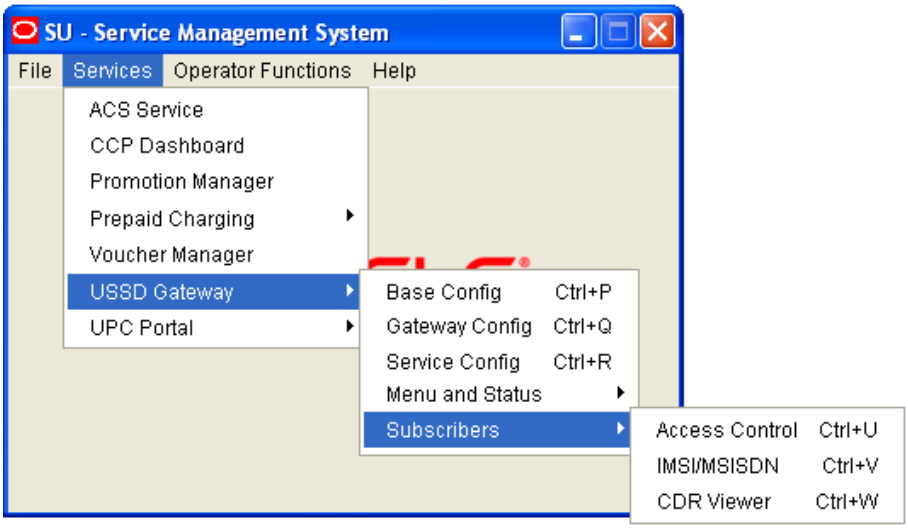
In this chapter

This chapter contains the following topics.

USSD Gateway Subscribers Screens

Accessing USSD Gateway Subscribers screens

Follow these steps to access the USSD Gateway Subscribers configuration screens.

Step	Action
1	From the Service Management System screen, select the **Services** menu. 
2	Select **USSD Gateway**, then **Subscribers**.
3	Select the screen you want to use.

Access Control Screen

Introduction

The Access Control screen controls access to the services. Its use is dependent on whether barring is set up on each particular service trigger. Barring can be set to:

- Disabled, in which case this screen becomes irrelevant
- IMSI
- MSISDN

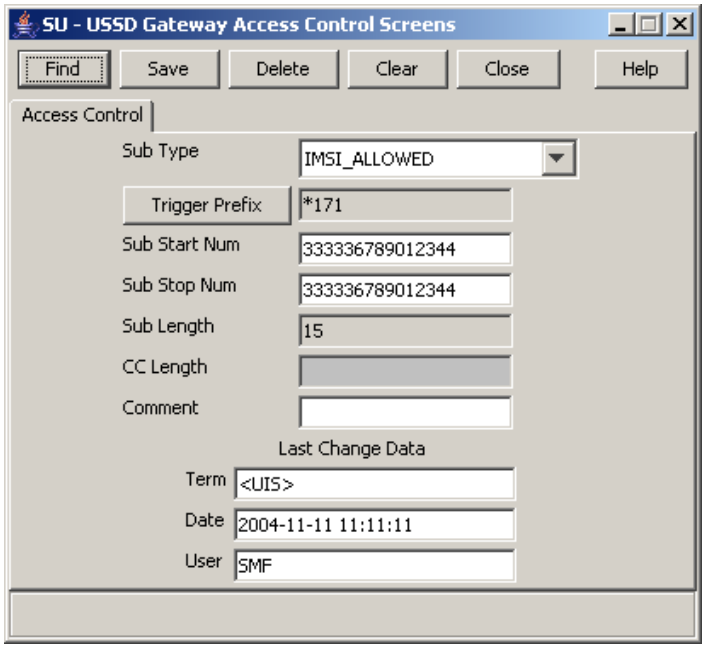
For a customer to have access to the service, if barring is set to:

- IMSI, it must be provided with sub_type of IMSI_allowed
- MSISDN, it must be provided with sub_type of MSISDN_allowed.

For these customers then to be barred they must again be provisioned in this screen with IMSI_barred or MSISDN_barred.

Access Control tab

Here is an example **Access Control** tab.



Fields

Here is a description of the fields.

Field	Description
Sub Type	This field is populated with all of the **NAME** values from the UIS_SUB_TYPE table. **Note:** These values are created at installation time.
Trigger Prefix	Displays the trigger prefix. You cannot edit this field directly. See **Trigger Prefix** button.

Field	Description
Sub Start Num	Numeric field and is a mandatory field. The number of digits that must be entered in this field is dependent on the value selected in the **Sub Type** field. • IMSI_ALLOWED or IMSI_BARRED – length must be between 15 and 20 characters • MSISDN_ALLOWED or MSISDN_BARRED – length must be between 10 and 15 characters
Sub Stop Num	Same format as for **Sub Start Num** and must contain the same number of digits.
Sub Length	This field is automatically populated by the screen during a save operation. The user cannot modify this value. The field will contain the number of digits in the Sub Start/Stop number field.
CC Length	Numeric field used to indicate how many digits are used to represent the country code in the Start and Stop number fields, and is a mandatory field.

Note: For example text for each field, refer to the Find screen in this topic.

Buttons

Here is a description of the buttons.

Button	Description
Trigger Prefix	Clicking this button displays the Trigger Selector screen, allowing you to search for and then select a value to set a trigger prefix for the access control entry. To select, click on the entry in the list and click **Close**. **Note:** These are set up on the USSD Base Configuration Screen *Trigger Prefix* (on page 16) tab.

Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

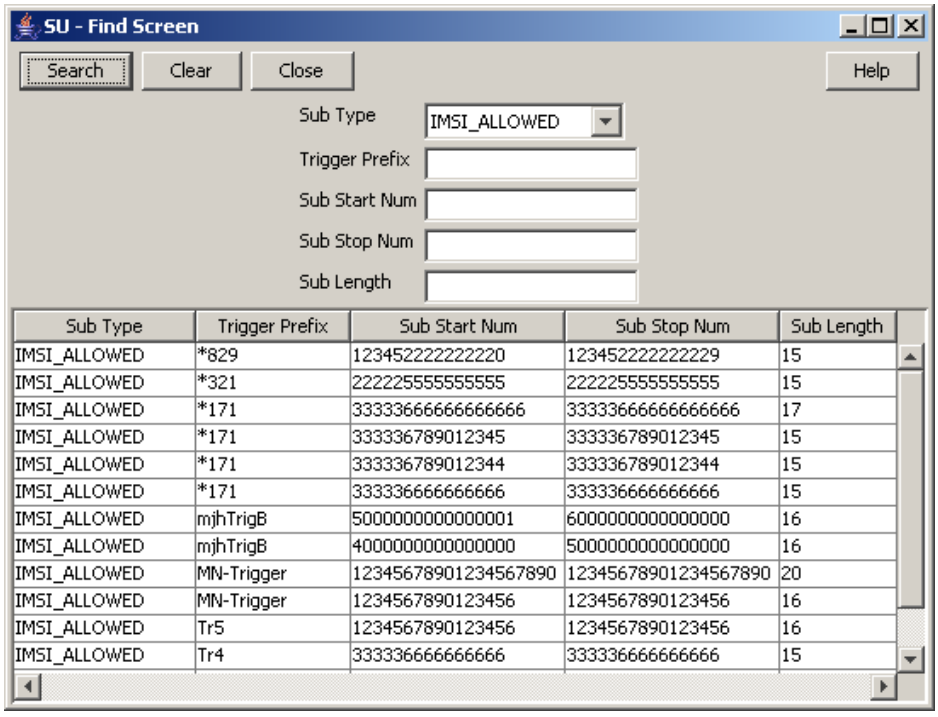
Data entry

Follow these steps to enter a new access control.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

Find Screen

Here is an example Find Screen for the **Access Control** tab.



Sub Type	Trigger Prefix	Sub Start Num	Sub Stop Num	Sub Length
IMSI_ALLOWED	*829	123452222222220	123452222222229	15
IMSI_ALLOWED	*321	222225555555555	222225555555555	15
IMSI_ALLOWED	*171	33333666666666666	33333666666666666	17
IMSI_ALLOWED	*171	333336789012345	333336789012345	15
IMSI_ALLOWED	*171	333336789012344	333336789012344	15
IMSI_ALLOWED	*171	333336666666666	333336666666666	15
IMSI_ALLOWED	mjhTrigB	5000000000000001	6000000000000000	16
IMSI_ALLOWED	mjhTrigB	4000000000000000	5000000000000000	16
IMSI_ALLOWED	MN-Trigger	12345678901234567890	12345678901234567890	20
IMSI_ALLOWED	MN-Trigger	1234567890123456	1234567890123456	16
IMSI_ALLOWED	Tr5	1234567890123456	1234567890123456	16
IMSI_ALLOWED	Tr4	333336666666666	333336666666666	15

Using the find screen

You can search on:

- Sub Type
- Trigger Prefix
- Sub Start Num
- Sub Stop Num
- Sub Length

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

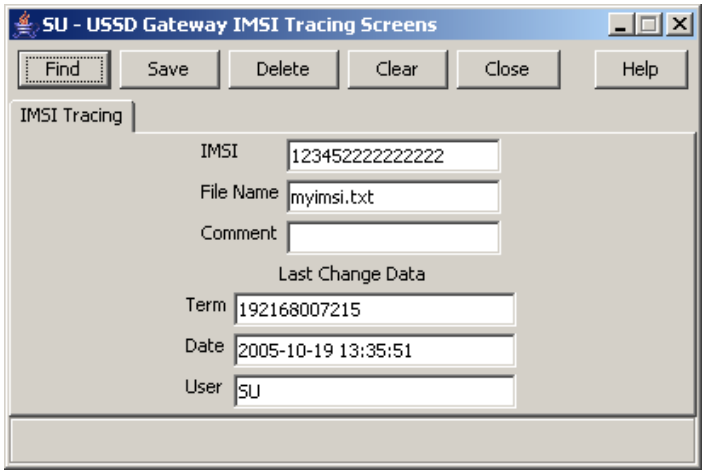
IMSI Tracing Screen

Introduction

The IMSI Tracing configuration screen is used to set up technical tracing on individual IMSIs.

IMSI Tracing tab

Here is an example **IMSI Tracing** tab.



Fields

Here is a description of the fields.

Field	Description
IMSI	The full IMSI number to be traced. Numeric field of between 15 and 20 digits, mandatory field.
File Name	Name and path of the logging file, may be up to 100 characters in length and is a required field. The file name must have a valid path name.

Note: For example text for each field, refer to the Find screen in this topic.

Buttons and other fields

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Clicking **Find** displays the Find screen.

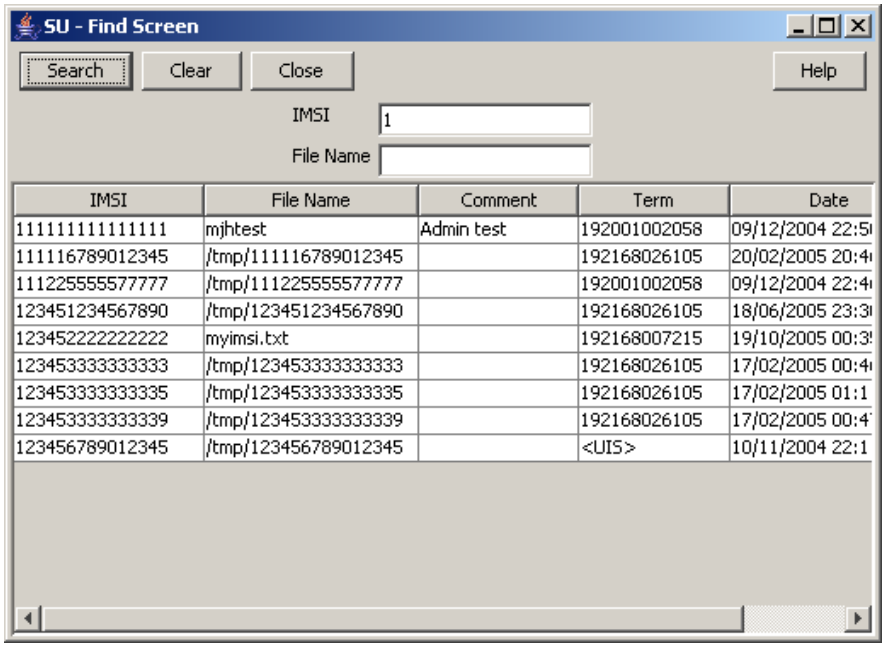
Data entry

Follow these steps to enter a new IMSI tracing.

Step	Action
1	Click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save.**

Find Screen

Here is an example Find Screen for the **IMSI Tracing** tab.



Using the find screen

You can search on:

- IMSI
- File Name

For more information about searching and editing records, see *Using the Find Screens* (on page 12).

CDR Viewer Screen

Introduction

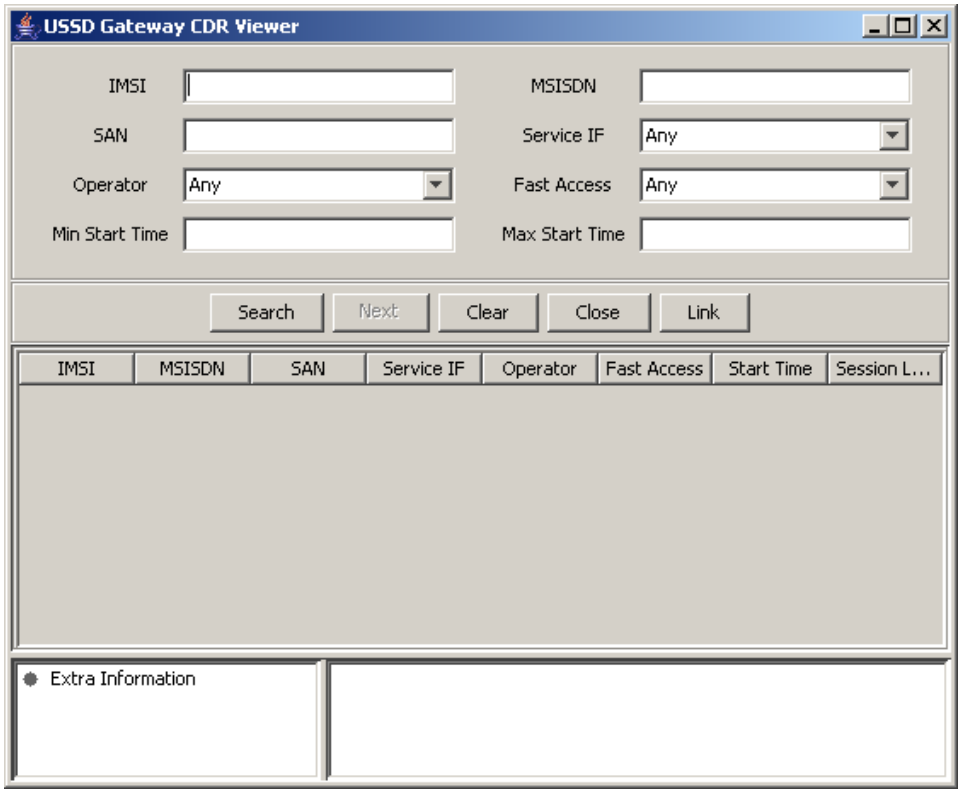
The CDR Viewer screen allows you to view EDRs.

Note: For the EDRs to be logged during calls, the **CDR Flag** check box must be ticked on the *Gateway Configuration screen* (on page 27). You must restart the SLEE after selecting this box.

If cross-linking is enabled, this viewer will search for any Gateway EDRs generated during the same session as the selected item in the UPC CDR Viewer screen.

USSD Gateway CDR Viewer screen

Here is an example USSD Gateway CDR Viewer screen.



Fields

Here is a description of the fields that you can use to search on.

Field	Description
IMSI	Numeric field of between 15 and 20 digits
MSISDN	Numerical field of between 10 and 15 characters
SAN	Service Activation Number Numerical field up to 10 digits
Service IF	Numerical field
Operator	Numerical field
Fast Access	Y or N
Start Time	In the format 2003-04-09 16:31:02.0
Duration	Length of the call

Note: For example text for each field, refer to the Find screen in this topic.

Buttons and other fields

This table describes the function of each field.

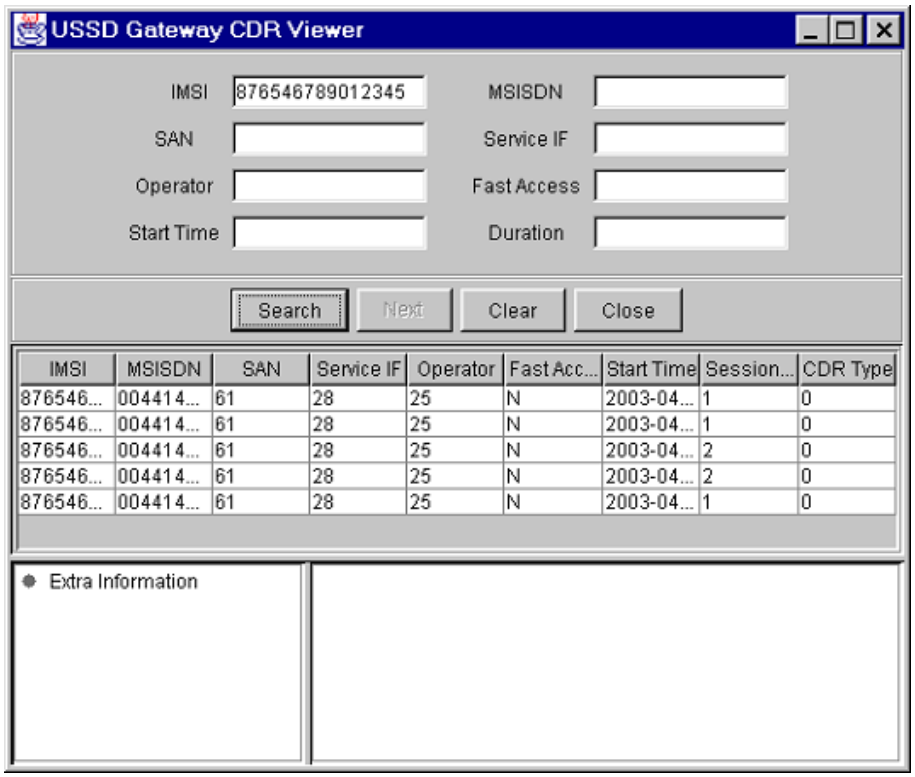
Field	Description
Search	Displays all records that correspond to the search criteria entered.
Next	Displays the next CDR.

Field	Description
Link	Only available if the UPC CDR Viewer screen is available.

For information about the buttons and fields at the bottom of the screen, see *Common Buttons and Fields* (on page 11).

Find screen

Here is an example CDR Viewer screen where the IMSI has been used to search for entries.



Extra information

Select the entry you require extra information for. Highlight the line to bring up the extra information details:

- General
- Time outs
- Alarms

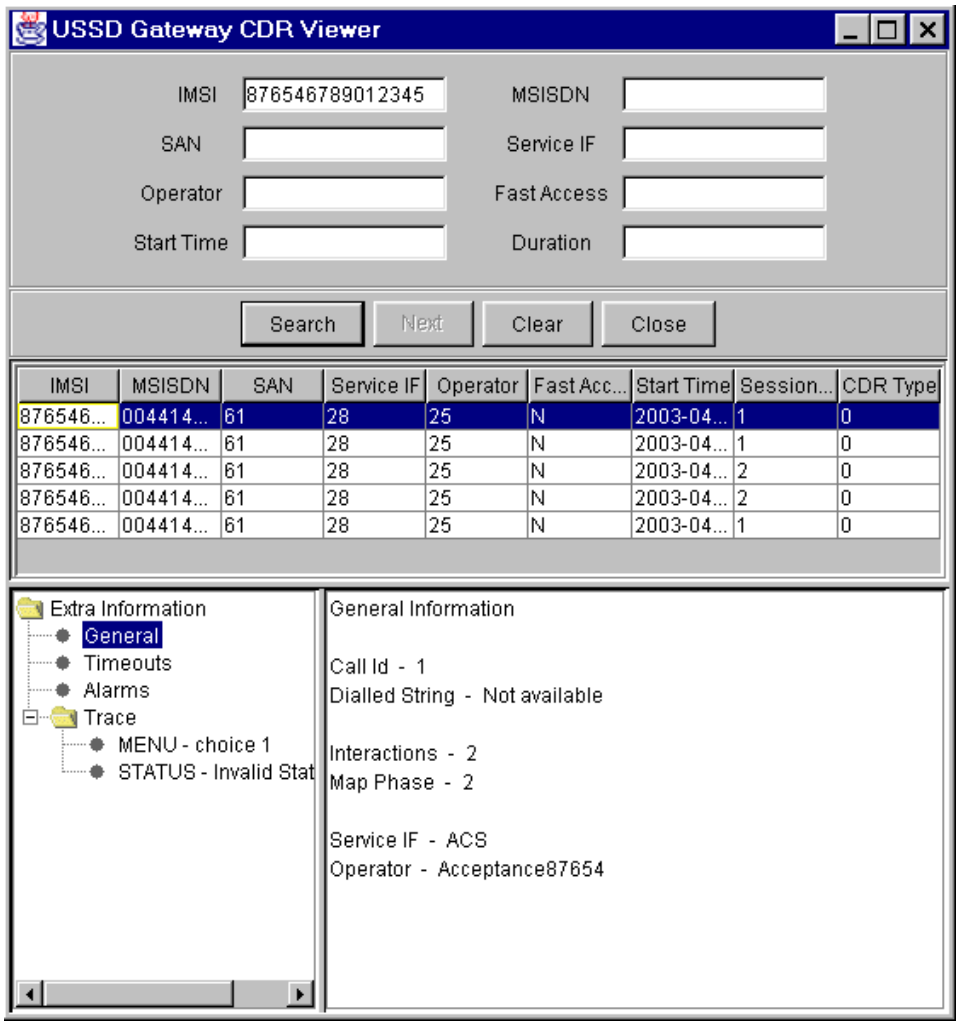
Trace

Also brought up are the trace details for the call:

- Menu
- Status

Available details

Clicking on any of the sub headings brings up the available details.



UPC CDR Viewer Screen

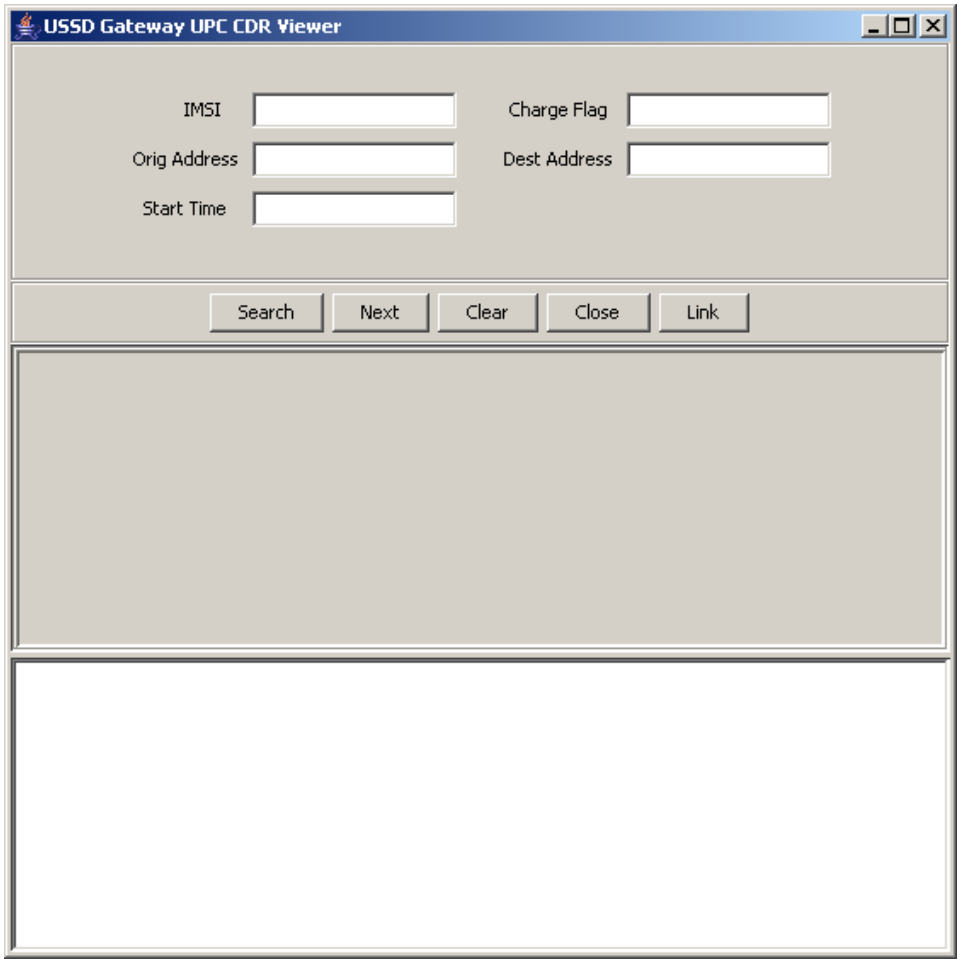
Introduction

The UPC CDR Viewer screen enables you to search for and view EDRs created by the Send Buffer feature node.

If the UPC CDR Viewer is available, it can register as a listener to the CDR Viewer to allow cross-linking between the two.

USSD Gateway UPC CDR Viewer screen

Here is an example USSD Gateway UPC CDR Viewer screen.



Chapter 8

UPC Portal Screens

Overview

Introduction

This chapter explains the contents of the UPC Portal screens.

In this chapter

This chapter contains the following topics.

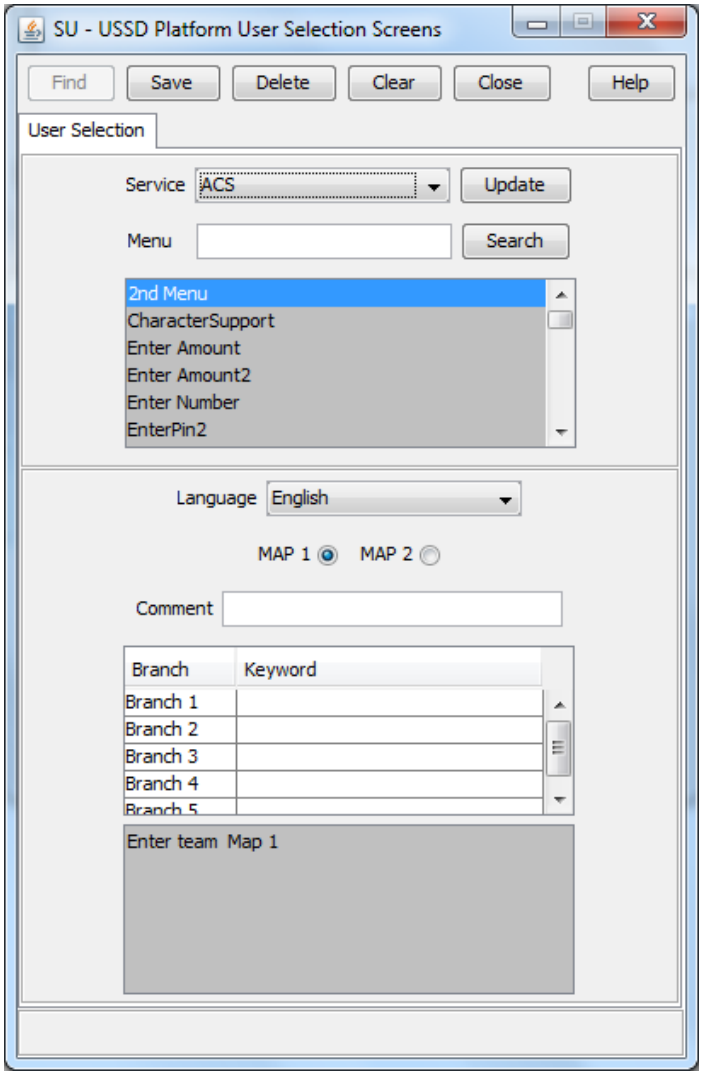
USSD Platform User Selection Screens

Introduction

The User Selection configuration screen allows you to enter keyword specific text for a given menu exit branch. MAP 1 and MAP 2 keywords can be different. This screen is used with the *User Selection* (on page 87) node.

User Selection tab

Here is an example **User Selection** tab.



Fields

Here is a description of the fields.

Field	Description
Service	This field is populated with all the NAMEs created by the USSD Gateway Base Configuration Screen *Service Interface* (on page 21) tab. By selecting a Service, all the menus associated with this Service populates the Menu field.
Menu	By selecting a Service, all the menus associated with this Service populate this field.
Language	This is populated with the language associated with the selected menu.
MAP 1 MAP 2 options	Selecting MAP 1 or MAP 2 shows which keyword corresponds to which MAP version.
Branch	After selecting the menu in the Menu field, this field is populated by the branch number.
Keyword	This field is populated by the keyword for that branch. You can edit this field and

Field	Description
	modify an existing entry or create a new one.

Buttons

Here is a description of the buttons.

Field	Description
Update	Has no function in this case.
Search	Entering a menu name in the menu field and clicking the **Search** button will display the menu for the selected service, if it exists in the database.

Data entry

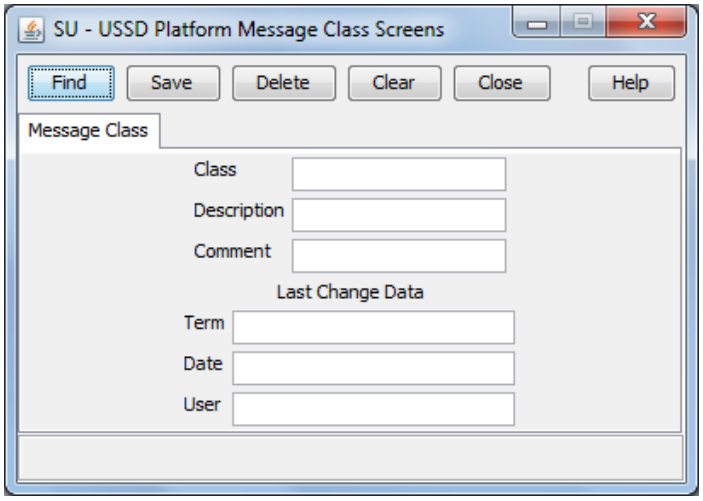
Follow these steps to update a menu.

Step	Action
1	Click **Clear** to clear the screen of previous data. By selecting a Service, all the menus associated with this Service will populate the Menu listing box. After selecting the menu in the **Menu** field, you can enter keywords associated for each branch.
2	Enter new data and click **Save**. **Note:** When editing keywords, you must **Save** before selecting the other MAP version to edit.

USSD Portal Message Class Screens

Message Class tab

Here is an example **Message Class** tab.



Creating a message class

Follow these steps to create a message class.

Step	Action
1	On the **Message Class** tab, click **Clear** to clear the screen of previous data.
2	Enter new data and click **Save**.

Editing records

Follow the steps below to edit a record.

Step	Action
1	In the Find screen, select the row you want to edit. **Result:** The associated screen is populated with this data, which you can edit.
2	On the editing screen, make the changes to the data.
3	Click **Save**. **Result:** The edited screen is saved.

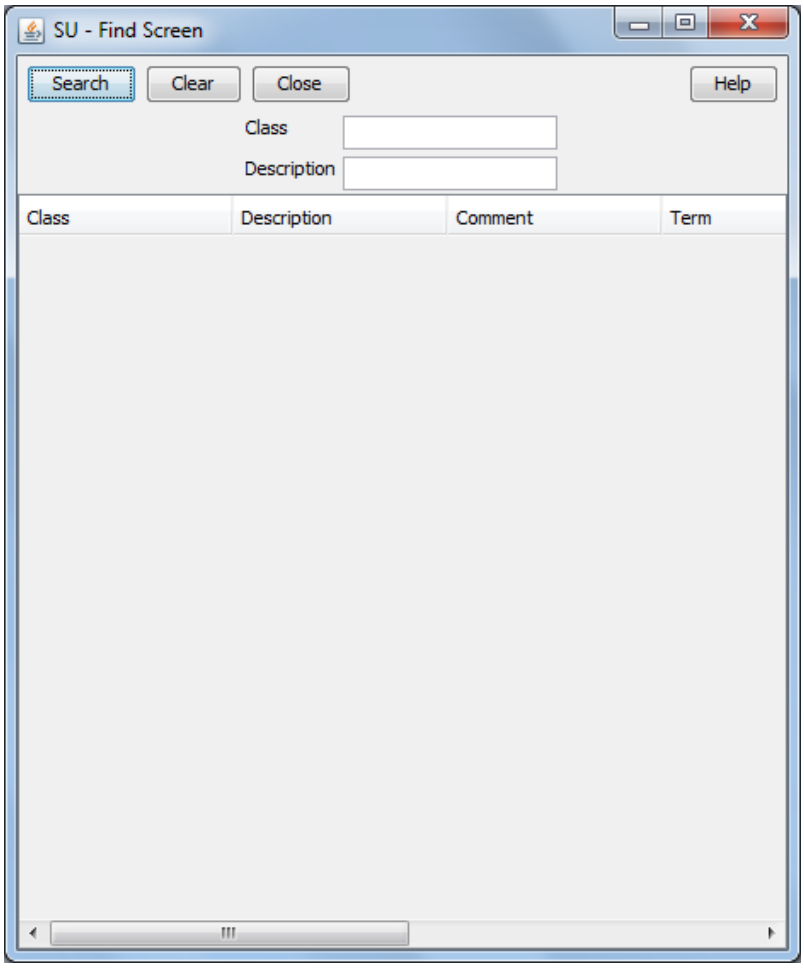
Finding a message class

Follow these steps to find a message class.

Step	Action
1	On the **Message Class** tab, click **Find**. **Result:** The *Find Screen* (See example on page 72) is displayed.
2	Enter a search query string in the **Class** or **Description** field and click **Search**. **Result:** The grid will display all records matching the query. **Note:** Leaving both fields blank will return all records.
3	Select the record in the grid. **Result:** The record is displayed on the **Message Class** tab.
4	Click **Close**.

Find Screen

Here is an example Find Screen.


SU - Find Screen
Search
Clear
Close
Help
Class
Description
Class
Description
Comment
Term

Chapter 9

UPC Portal Nodes

Overview

Introduction

This chapter explains the contents of the Gateway Portal nodes provisioning screens.

In this chapter

This chapter contains the following topics.

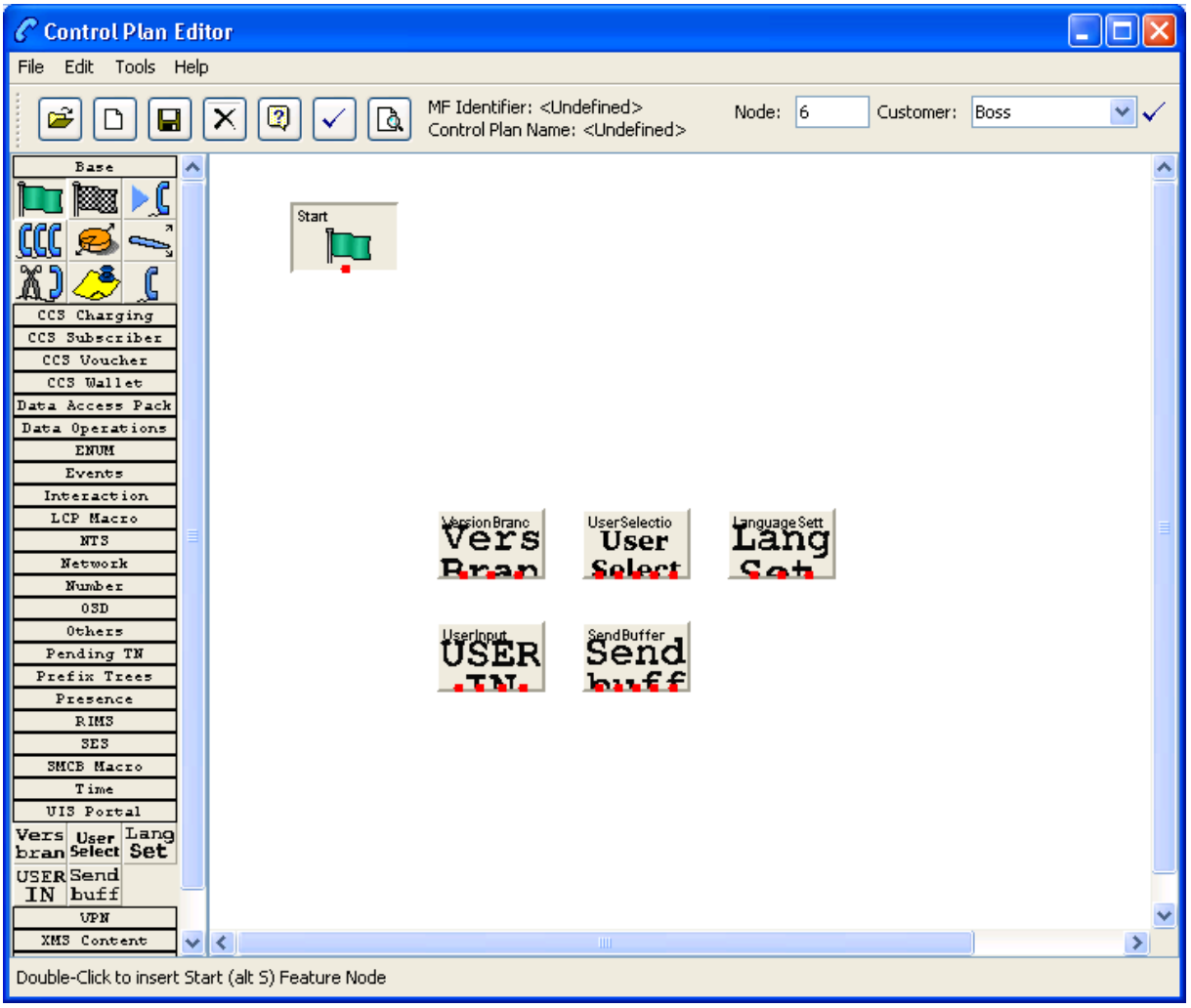
Control Plan Editor Screen

Introduction

You can select the portal nodes from the ACS Control Plan Editor screen, as shown below. Double click on the node icon to open the node configuration screen.

Screen

Here is an example Control Plan Editor screen, showing the portal nodes.



Making Nodes Available

Introduction

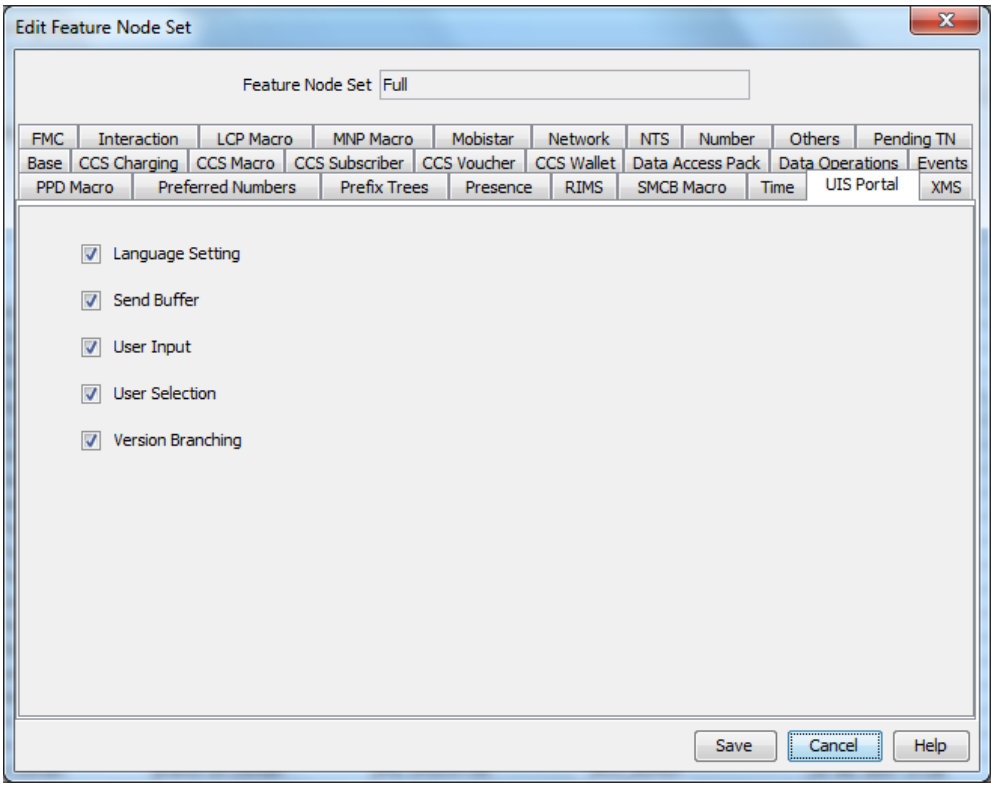
The portal nodes can be added to the Full Feature Node using the ACS Configuration option. Once selected these macro nodes become available to use in the CPE for the configured user.

Procedure

Follow these steps to make the macro nodes available.

Step	Action
1	From the Procedure, select **Configuration**.
	Result: You see the ACS Configuration screen.
2	Select the **Feature Sets** tab and click **Edit Set**.
	Result: You see the Edit Feature Node Set screen.
3	Select the **UIS Portal** tab.

Step	Action



4 Tick the nodes to be available and click **Save**.

Available Feature Nodes

Introduction

This topic lists all the feature nodes that may be available within the CPE. In some cases, additional nodes may have been created and installed to fit a specific customer need. These custom (and ACS) nodes do not appear in this list.

Node list

This table lists all the available USSD Gateway feature nodes.

Node name	Node icon	Node description	Reference
Language Setting		Enables the caller to select the language they want to use for this service.	*Language Setting* (on page 78)
Send Buffer		Sends data to the SMSC.	*Send Buffer* (on page 81)
User Input		Collects input from the calling party.	*User Input* (on page 83)

Node name	Node icon	Node description	Reference
User Selection		Enables user selection from a menu.	*User Selection* (on page 87)
Version Branching		Branches on the Version of MAP used.	*Version Branching* (on page 91)

Language Setting

Node description

The Language Setting node enables the subscriber to select one of a set of configured languages.

This node plays an announcement to the user, prompting them to select a language to use for the USSD call. This user's temporary profile is updated with the selected language.

Note: The selection only lasts for the duration of the call.

Node icon

Restrictions

This node may be used any number of times within a control plan.

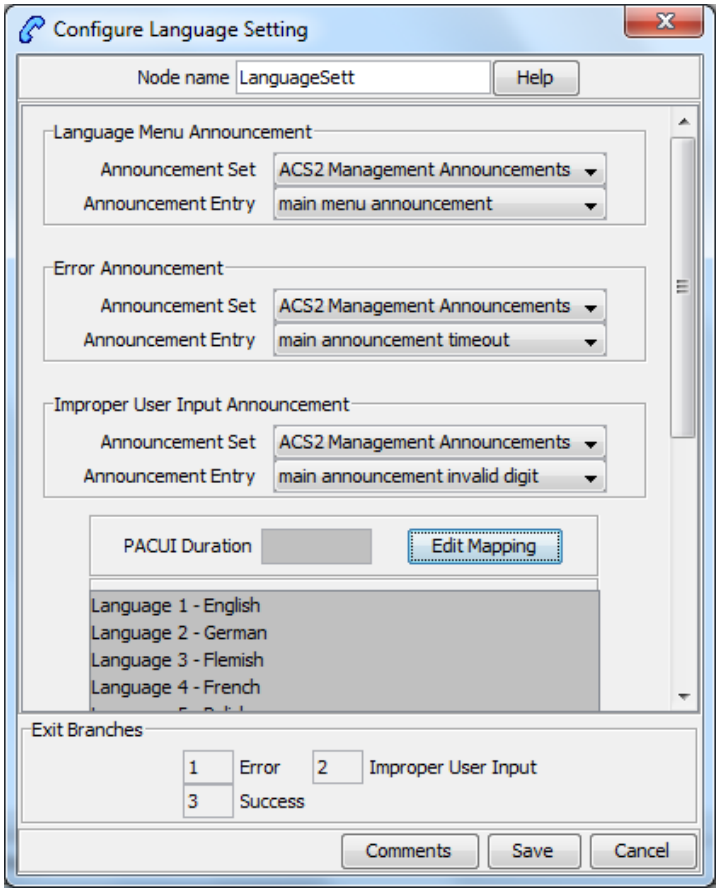
Node exits

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Error	Node encountered an error during execution. The Error or Timeout announcement will be played.
2	Improper User Input	User entered a digit which does not map to a language.
3	Success	Temporary profile updated with selected language.

Configuration screen

Here is an example Configure Language Setting screen.

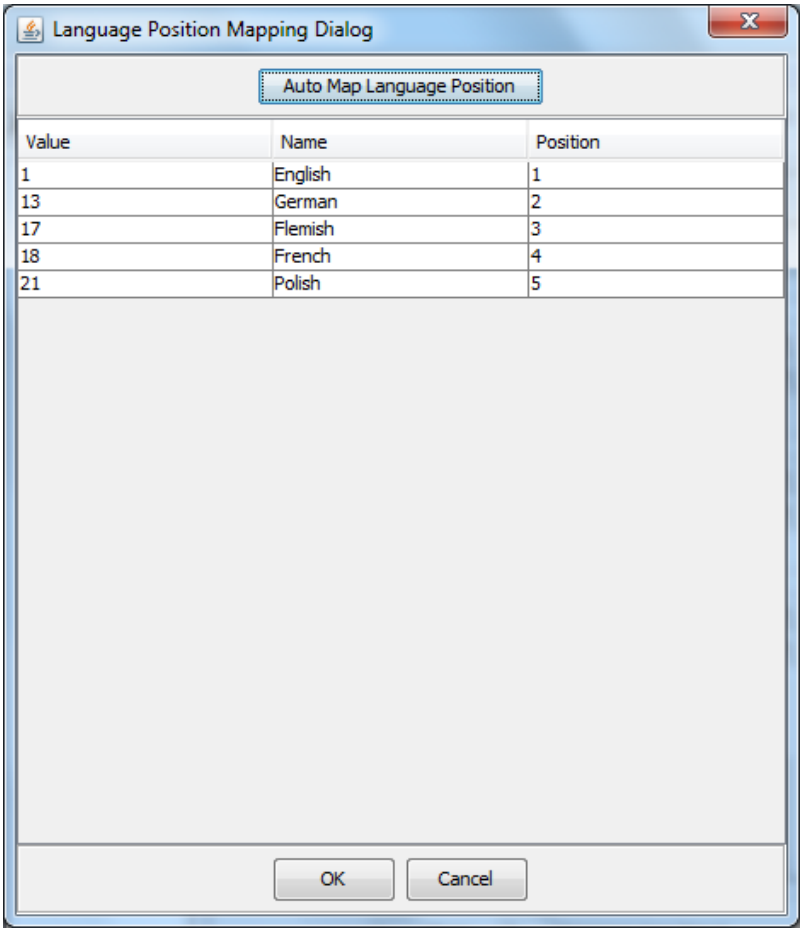


Configuring the node

Follow these steps to edit the node configuration.

Step	Action
1	In the Language Menu Announcement area, select the **Announcement Set** which contains the language menu announcement you want to play to the caller. **Result:** The **Announcement Entry** field is populated with the entries for the selected set.
2	From the **Announcement Entry** drop-down list, select the announcement you want to play to the caller.
3	In the Error Announcement area, select the Announcement Set and Announcement Entry you wish to play for an error.
4	In the Improper User Input Announcement area, select the Announcement Set and Announcement Entry you wish to play if the user has input incorrectly.
5	In the **PACUI Duration** field type the number of seconds' duration to play announcement and collect user information.
6	Click **Edit Mapping**. **Result:** You see the Language Position Mapping Dialog.

Step	Action



7 Use the Language Position Mapping Dialog screen to construct a list of ordered languages. This screen displays a grid populated with all of the available languages. The grid has three columns:

- Value - This column contains the language id / value that is sent to the gateway interface. This value will a number between 0 and 19. Any changes you make to this column will be ignored.
- Name - The language name, for example English, French, or German. Any changes you make to this column will be ignored.
- Position - The position column is used to determine which languages will be included in the list and in what order.

A valid list will contain:

- At least one language (starting at position 1)
- The positions numbered consecutively, for example. 1, 2 and 3
- No more than one language for any given position. If more than one language is mapped to the same position then an error will be generated when **OK** is clicked

You can map the positions of the languages in one of the following ways:

- Manually
- Automatically

Step	Action
8	To manually map the languages: a. Click on the Position cell in the row for the language. b. Type the number in the cell c. Repeat for each language. To automatically map the language positions: a. Click **Auto Map Language Position**. **Result:** A list will be generated which contains all of the available languages, positioned in the order that they are stored in the system database. You can subsequently manually edit this configuration if required.
9	Click **OK**. **Result:** Validation checks are carried out to determine whether or not the criteria detailed above has been met. If not, you will be informed via an error dialog. If the validation checks are successful, then the dialog box will close, and the language list on the Configure Language Setting screen will be updated.

Send Buffer

Node description

The Send Buffer node sends the final selection buffer that has been built through the various Menu Selection and User Entry macro nodes to an SMSC through the UCP Interface.

Once the final selection buffer has been sent, the Send Buffer node writes an EDR to record the transaction.

Node icon

Restrictions

This node may be used any number of times within a control plan.

Node exits

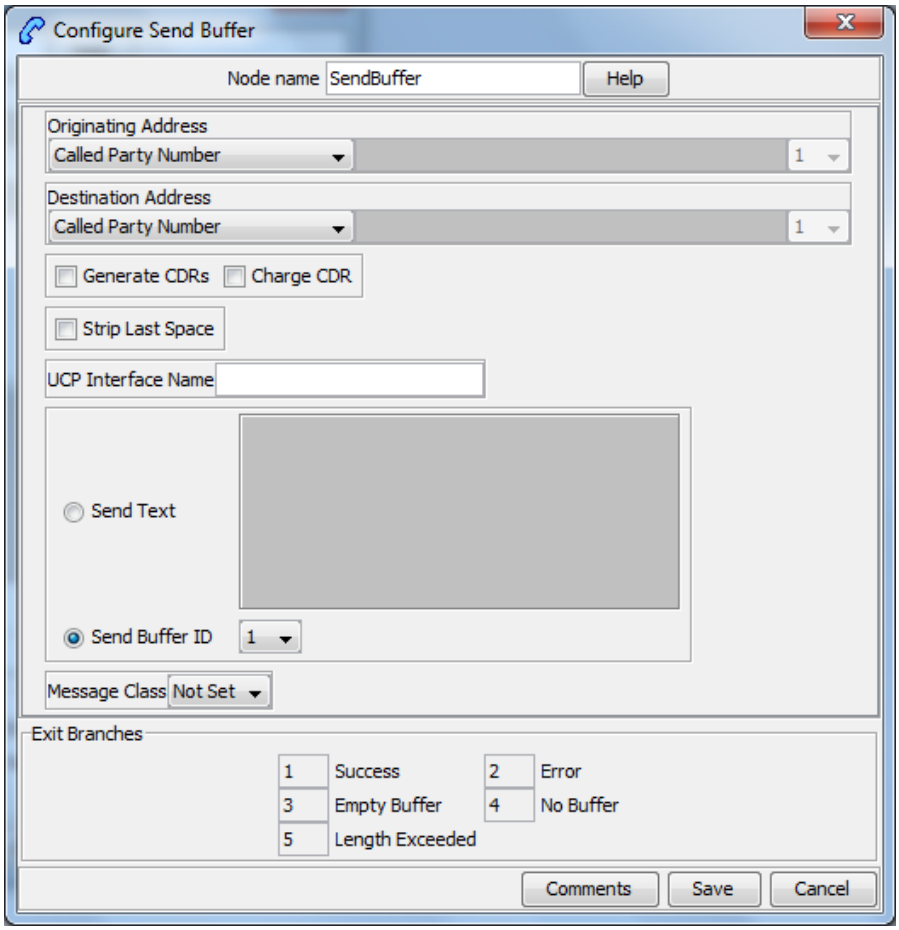
This node has one entry and five exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Success	Both the final selection buffer, and the CDR have been successfully sent.
2	Error	Node encountered an error receiving or sending data.
3	Empty Buffer	Final selection buffer retrieved from the configured ProfileTag has been allocated but is empty. This situation will occur if the previous node in the call plan was a menu selection node that was set to clear the buffer.
4	No Buffer	Final selection buffer does not exist. Suggests a configuration error in the CPE.

Exit	Cause	Description
5	Length Exceeded	Received buffer length exceeded 255 characters.

Configuration screen

Here is an example Configure Send Buffer screen.



Configuring the node

Follow these steps to edit the node configuration.

Step	Action
1	In the **Originating Address** field, select an address from the list: ▪ Called Party Number ▪ Calling Party Number ▪ Normalised Called Party Number ▪ Normalised Calling Party Number ▪ Pending TN Buffer ▪ Application Buffer ▪ Manually Inserted For details on normalization, refer to either the *USSD Gateway*, or the *ACS Technical Guide*.

Step	Action
2	If you selected: • Application Buffer, select the buffer value from the drop down list to the far right of the field. • Manually Inserted, type the originating address in the text field to the right of the field. Maximum of 31 characters.
3	In the **Destination Address** field, select an address from the list. This will normally contain the MSISDN of the subscriber using the service. The available options are the same as for the originating address.
4	Select the **Generate CDRs** check box if you wish to generate CDRs. **Note:** You can view these CDRs on the *UPC CDR Viewer Screen* (on page 67).
5	Select the **Charge CDR** check box if you wish to charge CDRs.
6	Select the **Strip Last Space** check box if you wish to strip the last space from the buffer.
7	Type the name of the UCP interface to be used. This alphanumeric field can be populated with up to 19 characters.
8	The **Send Text** option allows you to enter hard coded text, in the text field, which is sent to the UCP interface at run time.
9	The **Send Buffer ID** option allows you to select the buffer, in the drop down box, in which data is collected.
10	The **Message Class** drop-down menu selects "Not Set". **Note:** This feature is for future enhancements.
11	Click **Save**.

User Input

Node description

This node plays an announcement to the subscriber which prompts them for input. It then collects the input and appends it to the configured selection buffer.

Node icon

Restrictions

This node may be used any number of times within a control plan.

Node exits

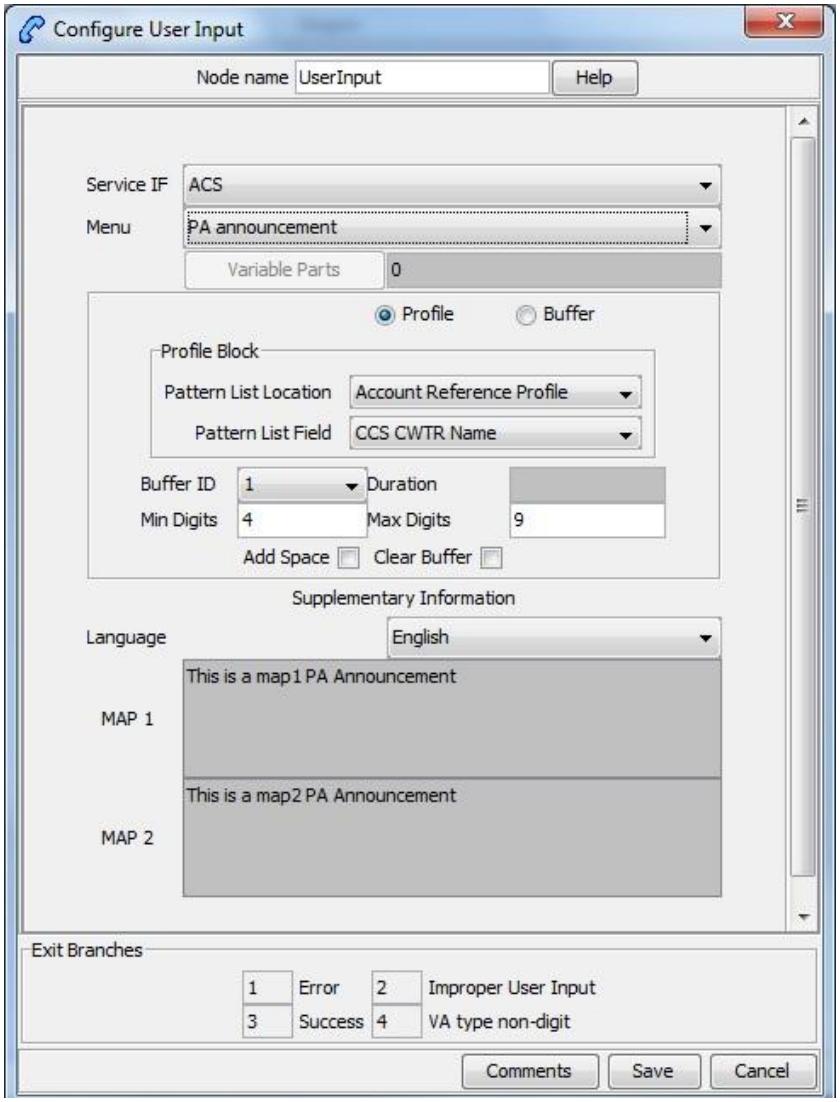
This node has one entry and four exits. The number of exits cannot be changed.

Exit	Cause	Description
1	Error	Node encountered an error during execution.

Exit	Cause	Description
2	Improper User Input	There was a problem with the user's input.
3	Success	Node executed correctly.
4	VA type non-digit	Problem using the Variable Part Announcements configuration.

Configuration screen

Here is an example Configure User Input screen.



Configuring the node

Follow these steps to edit the node configuration.

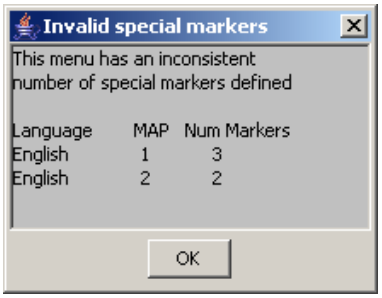
Step	Action
1	In the **Service IF** field, select the service from the drop down list.
	Note: The list is populated with all the Service Interface names created by the USSD

Gateway Base Configuration screen, *Service Interface* (on page 21) tab.

2 In the **Menu** field, select the menu from the drop down list.

The list is populated with all the Menu names created by the USSD Gateway Menu Configuration screen, *Menu Info* (on page 45) tab which was created for a particular Service Interface.

Note: If the menu has been set up containing variable parts, but a different number of variables have been set up in the text for MAP 1 and MAP 2, you will see an error, for example:



In this example, the MAP 1 menu has 3 variables, but the MAP 2 has only 2.

You must correct this using the *Menu Language* (on page 49) tab before you can select the menu.

3 The field to the right of the Variable Parts button displays the number of variable parts contained within the selected menu.

If the value displayed in the field is not 0, then the menu item contains variable parts. These are displayed in the MAP 1 and MAP 2 text display boxes, as pairs of percentage symbols (%%). See *Menu Language* (on page 49) for details.

You must click **Variable Parts** to open the Variable Part Announcement screen and insert substitutions for each variable part in the message. See *Setting Variable Part Announcements* (on page 86).

4 Select the option of where to store the user input:

- Profile - This allows you to select Profile Blocks and Primary Tags
- Buffer - This allows you to enter information into a buffer.

5 If you selected:

- Profile option, select the:
  - **Pattern List Profile Block** and
  - **Pattern List Primary Tag**.

  For the USSD Gateway service, the following profiles are writable to the database:
  - Customer
  - Call Plan
  - CLI Subscriber
  - Service Number

  In addition the following is specified as a temporary profile, stored in memory:
  - Application Specific 7

  For more information on Profile Blocks and tags, refer to the *CPE User's Guide*.
- Buffer option - fill in the following field:
  - **Buffer ID** - This drop-down menu allows you to select which buffer to use to store the user input.
    Note: The USSD Gateway Portal run-time system uses ten data buffers to store data.

6 In the **Duration** field, set the length of time, in seconds that the user has to enter their selection.

Note: Optional

7 In the **Min Digits** and **Max Digits** fields, set the minimum and maximum number of digits the user is required to input.

8 Ticking the **Add Space** check box will add a space at the end of the string entered into the buffer.

9 Ticking the **Clear Buffer** check box will clear any value entered into the buffer before any selection has been entered.

10 In the **Language** field, select the language to use.

This is populated with the language names created by the USSD Gateway Base Configuration screen, *Language* (on page 18) tab.

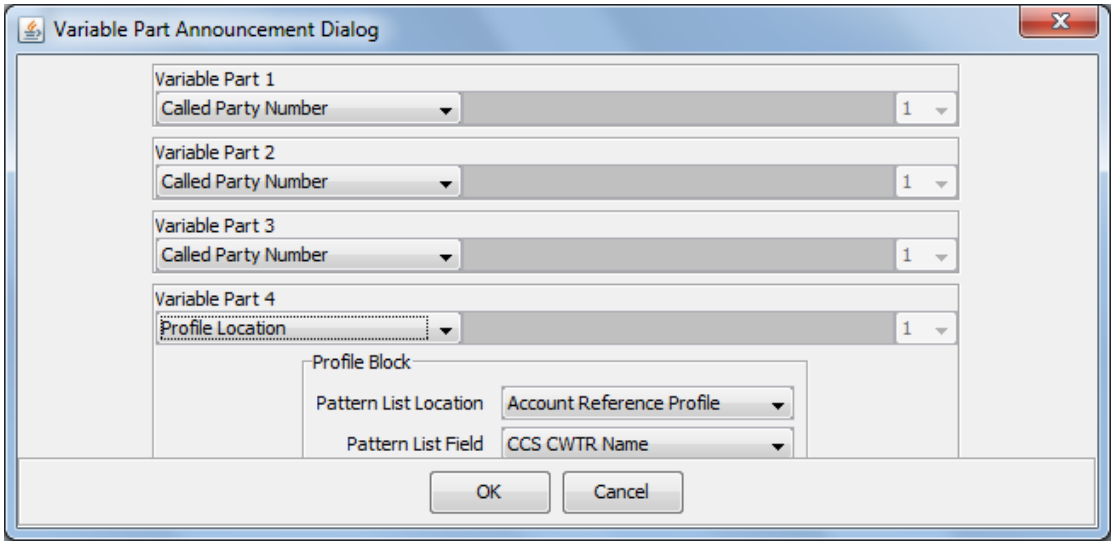
The **MAP 1** and **MAP 2** fields will display the text information presented to the user using a MAP1 or MAP2 version device, in the selected language.

11 Click **Save**.

Setting Variable Part Announcements

If the menu contains one or more variable announcement parts, use the Variable Part Announcement screen to define each variable part.

Here is an example Variable Part Announcement Dialog.



This example contains four variable parts, each illustrating a different option from the list of buffers.

Buffers

Here are the buffers available in the Variable Part Announcements Dialog and the action to perform when the buffer is selected.

Buffer	Action
Called Party Number Calling Party Number Normalised Called Party Number Normalised Calling Party Number Pending TN Buffer	No further action required
Application Buffer	Select the buffer used to store the user input in the drop down list
Manually inserted	Type a value in the text field.
Profile Location.	Select the: • **Pattern List Profile Block** and • **Pattern List Primary Tag**. For more information on Profile Blocks and tags, refer to *CPE User's Guide*.

For a description of the buffers, refer to *CPE User's Guide*.

User Selection

Node description

The User Selection node displays a menu and collects the user's choice. The node matches the choice to a keyword in the UPC menu string. If a keyword matches, it is appended to the final selection buffer.

Node icon

Restrictions

This node may be used any number of times within a control plan.

Node exits

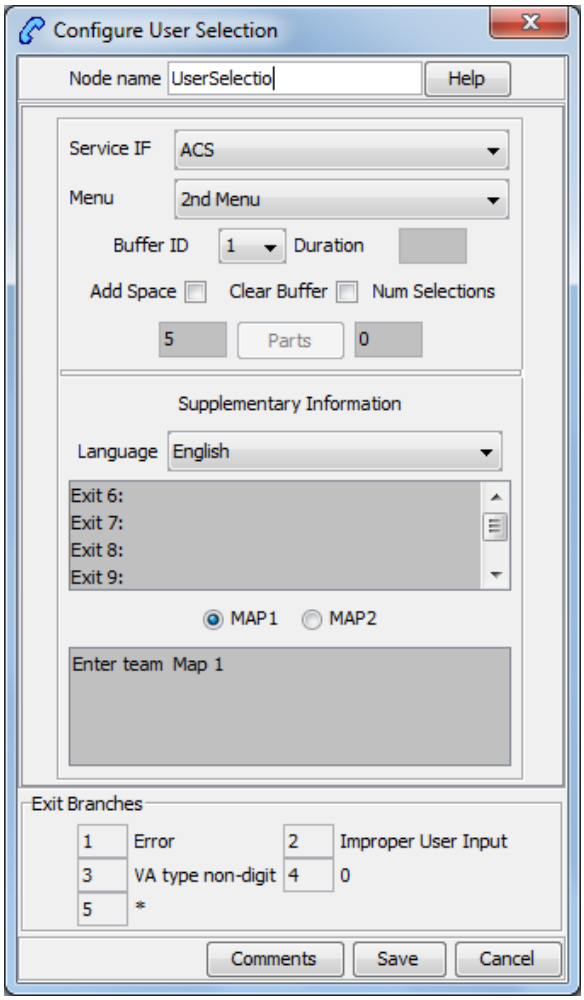
The User Selection node has one entry and may have 5 through 25 exits. Each exit is mapped to a day of week range, and must be connected to an appropriate node. You can configure the number of exits using the *Editing the number of exit branches* (on page 90).

Exit	Cause	Description
1	Error	Node encountered an error during execution.
2	Improper User Input	User Selection doesn't match keyword choice.
3	VA type non-digit	Problem using the Variable Part Announcements configuration.
4	0	User selected 0.

Exit	Cause	Description
5	*	User selected *.

Configuration screen

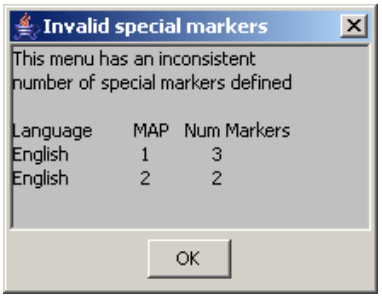
Here is an example Configure User Selection screen.



Configuring the node

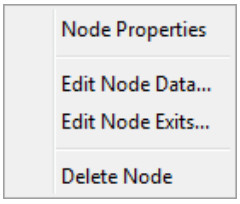
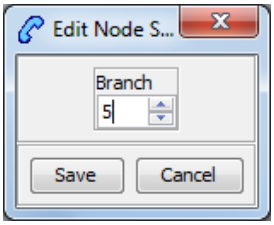
Follow these steps to edit the node configuration.

Step	Action
1	In the **Service IF** field, select the service from the drop down list. **Note:** The list is populated with all the Service Interface names created by the USSD Gateway Base Configuration screen, *Service Interface* (on page 21) tab.
2	In the **Menu** field, select the menu from the drop down list. The list is populated with all the Menu names created by the USSD Gateway Menu Display screen, *Menu Language* (on page 49) tab which was created for a particular Service Interface. **Note:** If the menu has been set up containing variable parts, but a different number of

Step	Action
	variables have been set up in the text for MAP 1 and MAP 2, you will see an error, for example:
	
	In this example, the MAP 1 menu has 3 variables, but the MAP 2 has only 2. You must correct this using the *Menu Language* (on page 49) tab before you can select the menu.
3	Fill in the **Buffer ID** field. This drop-down menu allows you to select which buffer that the user input has been stored in. **Note:** The USSD Gateway Portal run-time system uses ten data buffers to store data.
4	In the **Duration** field, set the length of time, in seconds that the user has to enter their selection.
	Note: Optional
5	Ticking the **Add Space** check box will add a space at the end of the string entered into the buffer.
6	Ticking the **Clear Buffer** check box will clear any value entered into the buffer before any selection has been entered.
7	The field to the left of the Parts button displays the number of exits listed in the field below the **Language** field, which displays the Exit-Keyword mapping set up in the *User Selection* (on page 69) tab.
	Note: To make these exits available, you must add the required number of exits to the node. See *Editing the number of exit branches* (on page 90).
8	The field to the right of the Parts button (**Num Selections**) displays the number of variable parts contained within the selected menu. If the value displayed in the field is not 0, then the menu item contains variable parts. These are displayed in the MAP 1 and MAP 2 text display boxes, as pairs of percentage symbols (%%). See *Menu Language* (on page 49) for details. You must click **Parts** to open the Variable Part Announcement screen and insert substitutions for each variable part in the message. See *Setting Variable Part Announcements* (on page 90).
9	In the **Language** field, select the language to use. This is populated with the language names created by the USSD Gateway Base Configuration screen, *Language* (on page 18) tab.
10	Selecting the **MAP 1** and **MAP 2** options will display, in the field below, the text information presented to the user using a MAP1 or MAP2 version device, in the selected language.
11	Click **Save**.

Editing the number of exit branches

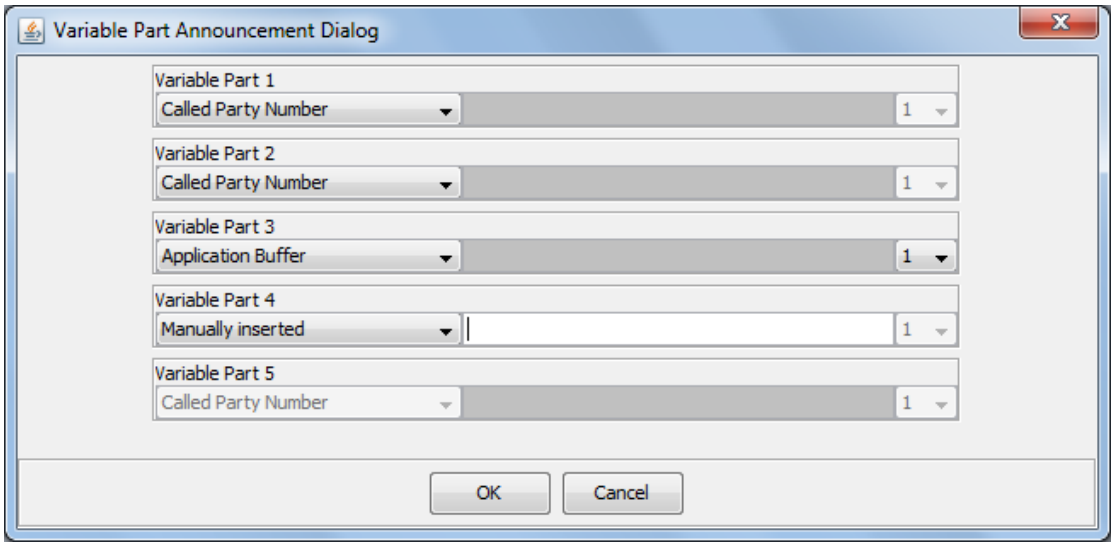
Follow these steps to edit the number of exit branches of a node.

Step	Action
1	Ensure Call Plan Editor is in Graphical mode.
2	Right-click on node you want to change the number exits for. **Result:** You see a shortcut menu. 
3	Click **Edit Node Exits**. **Result:** You see the Edit Node Structure screen. 
4	Use the arrows to change the number displayed. The up arrow will increase the displayed number and the down arrow will decrease the displayed number. The number of exits on the node will now reflect the number that was entered into the Edit Node Structure screen.
5	Click **Save**. **Result:** The Edit Node Structure screen will close.

Setting Variable Part Announcements

If the menu contains one or more variable announcement parts, use the Variable Part Announcement screen to define each variable part.

Here is an example Variable Part Announcement Dialog.



This example contains four variable parts, each illustrating a different option from the list of buffers.

Buffers

Here are the buffers available in the Variable Part Announcements Dialog and the action to perform when the buffer is selected.

Buffer	Action
Called Party Number Calling Party Number Normalised Called Party Number Normalised Calling Party Number Pending TN Buffer	No further action required
Application Buffer	Select the buffer used to store the user input in the drop down list
Manually inserted	Type a value in the text field.

For a description of the buffers, refer to *CPE User's Guide*.

Version Branching

Node description

The Version Branching node attempts to determine which version of MAP is being used for the call. It branches on MAP version or takes a default exit if a version cannot be determined.

The node determines the subscriber's MAP version by querying the Additional Calling Party Number using the IDP Query action.

Node icon

Restrictions

This node may be used any number of times within a control plan.

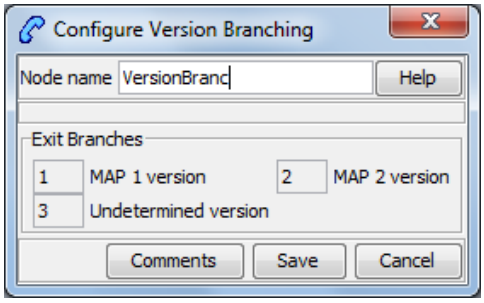
Node exits

This node has one entry and three exits. The number of exits cannot be changed.

Exit	Cause	Description
1	MAP 1 version	Call is using MAP1.
2	MAP 2 version	Call is using MAP2.
3	Undetermined version	MAP version could not be determined.

Configuration screen

Here is an example Configure Version Branching screen.



Configuring the node

This node may have a Tracking String added. It does not require any other configuration.

Click **Save** to save the node.

Glossary of Terms

AAA

Authentication, Authorization, and Accounting. Specified in Diameter RFC 3588.

ACS

Advanced Control Services configuration platform.

ANI

Automatic Number Identification - Term used in the USA by long-distance carriers for CLI.

BCSM

Basic Call State Model - describes the basic processing steps that must be performed by a switch in order to establish and tear down a call.

CAMEL

Customized Applications for Mobile network Enhanced Logic

This is a 3GPP (Third Generation Partnership Project) initiative to extend traditional IN services found in fixed networks into mobile networks. The architecture is similar to that of traditional IN, in that the control functions and switching functions are remote. Unlike the fixed IN environment, in mobile networks the subscriber may roam into another PLMN (Public Land Mobile Network), consequently the controlling function must interact with a switching function in a foreign network. CAMEL specifies the agreed information flows that may be passed between these networks.

CC

Country Code. Prefix identifying the country for a numeric international address.

CCS

1) Charging Control Services (or Prepaid Charging) component.

2) Common Channel Signalling. A signalling system used in telephone networks that separates signalling information from user data.

CDR

Call Data Record

Note: The industry standard for CDR is EDR (Event Detail Record).

CLI

Calling Line Identification - the telephone number of the caller. Also referred to as ANI.

Convergent

Also “convergent billing”. Describes the scenario where post-paid and pre-paid calls are handed by the same service platform and the same billing system. Under strict converged billing, post-paid subscribers are essentially treated as “limited credit pre-paid”.

CPE

Control Plan Editor (previously Call Plan Editor) - software used to define the logic and data associated with a call -for example, "if the subscriber calls 0800 *nnnnnn* from a phone at location *xxx* then put the call through to *bb bbb bbbb*".

Diameter

A feature rich AAA protocol. Utilises SCTP and TCP transports.

DP

Detection Point

DTMF

Dual Tone Multi-Frequency - system used by touch tone telephones where one high and one low frequency, or tone, is assigned to each touch tone button on the phone.

FDA

First Delivery Attempt - the delivery of a short message directly to the SME rather than relaying it through the MC.

GPRS

General Packet Radio Service - employed to connect mobile cellular users to PDN (Public Data Network- for example the Internet).

GSM

Global System for Mobile communication.

It is a second generation cellular telecommunication system. Unlike first generation systems, GSM is digital and thus introduced greater enhancements such as security, capacity, quality and the ability to support integrated services.

GUI

Graphical User Interface

HLR

The Home Location Register is a database within the HPLMN (Home Public Land Mobile Network). It provides routing information for MT calls and SMS. It is also responsible for the maintenance of user subscription information. This is distributed to the relevant VLR, or SGSN (Serving GPRS Support Node) through the attach process and mobility management procedures such as Location Area and Routing Area updates.

HPLMN

Home PLMN

ICA

InitiateCallAttempt. A CAMEL/INAP operation sent by the SLC to an SSP request that a voice call is started.

IDP

INAP message: Initial DP (Initial Detection Point)

IMSI

International Mobile Subscriber Identifier. A unique identifier allocated to each mobile subscriber in a GSM and UMTS network. It consists of a MCC (Mobile Country Code), a MNC (Mobile Network Code) and a MSIN (Mobile Station Identification Number).

The IMSI is returned by the HLR query (SRI-SM) when doing FDA. This tells the MSC exactly who the subscriber is that the message is to be sent to.

IN

Intelligent Network

INAP

Intelligent Network Application Part - a protocol offering real time communication between IN elements.

Initial DP

Initial Detection Point - INAP Operation. This is the operation that is sent when the switch reaches a trigger detection point.

IP

1) Internet Protocol

2) Intelligent Peripheral - This is a node in an Intelligent Network containing a Specialized Resource Function (SRF).

ISDN

Integrated Services Digital Network - set of protocols for connecting ISDN stations.

ITU

International Telecommunication Union

MAP

Mobile Application Part - a protocol which enables real time communication between nodes in a mobile cellular network. A typical usage of the protocol would be for the transfer of location information from the VLR to the HLR.

MC

Message Centre. Also known as SMSC.

MCC

Mobile Country Code. In the location information context, this is padded to three digits with leading zeros. Refer to ITU E.212 ("Land Mobile Numbering Plan") documentation for a list of codes.

MNC

Mobile Network Code. The part of an international address following the mobile country code (MCC), or at the start of a national format address. This specifies the mobile network code, that is, the operator owning the address. In the location information context, this is padded to two digits with a leading zero. Refer to ITU E.212 ("Land Mobile Numbering Plan") documentation for a list of codes.

MS

Mobile Station

MSC

Mobile Switching Centre. Also known as a switch.

MSIN

Mobile Station Identification Number.

MSISDN

Mobile Station ISDN number. Uniquely defines the mobile station as an ISDN terminal. It consists of three parts; the country code (CC), the national destination code (NDC) and the subscriber number (SN).

MSRN

Mobile Station Roaming Number

MT

Mobile Terminated

PACUI

Play Announcement and Collect User Information

PLMN

Public Land Mobile Network

RRBCSM

Request Report BCSM.

SAN

Service Access Number

SCP

Service Control Point. Also known as SLC.

SCTP

Stream Control Transmission Protocol. A transport-layer protocol analogous to the TCP or User Datagram Protocol (UDP). SCTP provides some similar services as TCP (reliable, in-sequence transport of messages with congestion control) but adds high availability.

Session

Diameter exchange relating to a particular user or subscriber access to a provided service (for example, a telephone call).

SGSN

Serving GPRS Support Node

SLC

Service Logic Controller (formerly UAS).

SLEE

Service Logic Execution Environment

SME

Short Message Entity - an entity which may send or receive Short Messages. It may be located in a fixed network, a mobile, or an SMSC.

SMS

Depending on context, can be:

- Service Management System hardware platform
- Short Message Service
- Service Management System platform
- Convergent Charging Controller Service Management System application

SMSC

Short Message Service Centre - stores and forwards a short message to the indicated destination subscriber number.

SN

Service Number

SRF

Specialized Resource Function – This is a node on an IN which can connect to both the SSP and the SLC and delivers additional special resources into the call, mostly related to voice data, for example play voice announcements or collect DTMF tones from the user. Can be present on an SSP or an Intelligent Peripheral (IP).

SRI

Send Routing Information - This process is used on a GSM network to interrogate the HLR for subscriber routing information.

SSF

Sub Service Field.

SSP

Service Switching Point

Switching Point

Anything that can send and receive C7 messages.

System Administrator

The person(s) responsible for the overall set-up and maintenance of the IN.

TCAP

Transaction Capabilities Application Part – layer in protocol stack, message protocol.

TCP

Transmission Control Protocol. This is a reliable octet streaming protocol used by the majority of applications on the Internet. It provides a connection-oriented, full-duplex, point to point service between hosts.

UIS

USSD Interactive Services

UPC

USSD Portal Components

USSD

Unstructured Supplementary Service Data - a feature in the GSM MAP protocol that can be used to provide subscriber functions such as Balance Query and Friends and Family Access.

VLR

Visitor Location Register - contains all subscriber data required for call handling and mobility management for mobile subscribers currently located in the area controlled by the VLR.

WAP

Wireless Application Protocol. A standard designed to allow the content of the Internet to be viewed on the screen of a mobile device such as mobile phones, personal organisers and pagers. It also overcomes the processing limitation of such devices. The information and services available are stripped down to their basic text format.

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