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About This Document

Scope

The scope of this document includes all information required to give the reader a complete view on how to configure services to ready a freshly installed NCC platform for customer specific configuration.

Audience

This guide is written primarily for administrators operating the NCC platform. However, the overview sections of the document are useful to anyone requiring an introduction.

Related documents

The following documents are related to this document:

- NCC Installation Guide
- NCC System Administrator's Guide

Prerequisites

A solid understanding of UNIX and a familiarity with IN concepts are an essential prerequisite for safely using the information contained in this technical guide. Attempting to install, remove, configure or otherwise alter the described system without the appropriate background skills, could cause damage to the system; including temporary or permanent incorrect operation, loss of service, and may render your system beyond recovery.

Although it is not a prerequisite to 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.
## Document Conventions

### Typographical Conventions

The following terms and typographical conventions are used in the Oracle Communications Network Charging and Control (NCC) documentation.

<table>
<thead>
<tr>
<th>Formatting convention</th>
<th>Type of information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Special Bold</strong></td>
<td>Items you must select, such as names of tabs. Names of database tables and fields.</td>
</tr>
<tr>
<td><strong>Italics</strong></td>
<td>Name of a document, chapter, topic or other publication. Emphasis within text.</td>
</tr>
<tr>
<td><strong>Button</strong></td>
<td>The name of a button to click or a key to press.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td>To close the window, either click <strong>Close</strong>, or press <strong>Esc</strong>.</td>
</tr>
<tr>
<td><strong>Key+Key</strong></td>
<td>Key combinations for which the user must press and hold down one key and then press another.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><strong>Ctrl+P</strong>, or <strong>Alt+F4</strong>.</td>
</tr>
<tr>
<td><strong>Monospace</strong></td>
<td>Examples of code or standard output.</td>
</tr>
<tr>
<td><strong>Monospace Bold</strong></td>
<td>Text that you must enter.</td>
</tr>
<tr>
<td><strong>variable</strong></td>
<td>Used to indicate variables or text that should be replaced.</td>
</tr>
<tr>
<td><strong>menu option &gt; menu option &gt;</strong></td>
<td>Used to indicate the cascading menu option to be selected, or the location path of a file.</td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><strong>Operator Functions &gt; Report Functions</strong></td>
</tr>
<tr>
<td><strong>Example:</strong></td>
<td><a href="/IN/html/SMS/Helptext/">/IN/html/SMS/Helptext/</a></td>
</tr>
</tbody>
</table>

**hypertext link** Used to indicate a hypertext link on an HTML page.

Specialized terms and acronyms are defined in the *Glossary* at the end of this guide.
Chapter 1

Introduction to NCC Configuration

Overview

Introduction

This guide is written to give the reader a complete view on how to configure services on a freshly installed Oracle Communications Network Charging and Control (NCC) platform.

It describes the usage and configuration of the different components, and gives a presentation on the service templates delivered with the product. It also provides a walk-through for a custom service creation.

In this chapter

This chapter contains the following topics.

Service Management System

Create a Control Plan

Service Management System

Accessing SMS

Follow these steps to launch Service Management System using Java Webstart. You can use this process to install a shortcut to the SMS on your desktop.

Note: To launch GUI applications using Java Webstart, you must ensure that the Web server supports the jnlp file type. For more information, see Setting up the Screens in SMS Technical Guide.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Using an Internet browser, open the SMS Webstart. There are two methods to do this:</td>
</tr>
<tr>
<td></td>
<td>1 Open the Service Management System default page on the SMS_hostname, then click the WebStart link.</td>
</tr>
<tr>
<td></td>
<td>2 Open SMS Webstart directly. The address is in the format: http://SMS_hostname/sms.jnlp</td>
</tr>
<tr>
<td></td>
<td>Where SMS_hostname is the hostname of the SMS or cluster which is running the SMS application.</td>
</tr>
<tr>
<td></td>
<td>Result: You see the Opening sms.jnlp download screen.</td>
</tr>
</tbody>
</table>
## Chapter 1

### Step 2 Action

Select **Open with** and click **OK**.

**Result:**
The following screens open:

1. **SMS - SMS_hostname** screen, for example:

   ![SMS - SMS_hostname](image)

2. The SMS Login screen will appear.
   
   See *Logging on to SMS* (on page 2).

**Note:** When launching SMS for the first time using Webstart, a shortcut icon is downloaded and displayed on the Desktop.

This enables you to open the SMS GUI directly by double-clicking the shortcut icon. The icon is removed every time you clear the system cache and downloads again when launching SMS through Webstart after clean up.

### Logging on to SMS

Follow these steps to log on to SMS.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>On the SMS Login screen:</td>
</tr>
</tbody>
</table>

![SMS Login](image)
Enter the account details for the default super-user. The:
  - user name is `su`.
  - password is usually `ssob` on freshly installed servers.

**Note:** Please take care entering these account details as three incorrect attempts will lock out all other users. You will use your own user account as soon as you have created one. If you manage to lock the su account, please see your trainer or technical mentor to show you how to unlock it.

### Adding the SMS user

The system is deployed with an already existing user called `su`. It is best to create a specific user, even with the same rights in order to keep `su` as a backup in case the other login becomes corrupted.

Follow these steps to add the SMS user.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Log in to the SMS server as <code>su</code>. See Accessing SMS.</td>
</tr>
<tr>
<td>2</td>
<td>Select <strong>Operator Functions &gt; User Management</strong>. <strong>Result:</strong> The User Management screen, User tab appears.</td>
</tr>
<tr>
<td>3</td>
<td>Enter your details. <strong>Note:</strong> The User Name should be in uppercase. You can click <strong>Help</strong> for a description of the fields.</td>
</tr>
</tbody>
</table>
### Step 4
Click **Set Password**.

**Result:** The Set SMS User Password screen appears.

![Set SMS User Password](image)

### Step 5
Set the user password.

**Note:** Please do not change passwords for any users not created by you.

### Step 6
Click **OK**.

### Step 7
Remember to **Save** and then **Close**.

### Step 8
Close the browser to log out of SMS.

When you logout of SMS, you will find you can no longer log in as another user without restarting the browser and re-accessing SMS.

### Step 9
Now log in to SMS using your new user.

### Step 10
If you set the lifetime of your password to 0 days, or if the lifetime has expired, you will immediately be prompted to change your password.

![Change Password](image)

Change the password, if required, and click **OK**.

### Step 11
When your new SMS user first logs in, no services will have been allocated to them.

On the SMS Main screen, select the **Services** menu to confirm this. All new users are initially created like this by default.

### Assigning Services to user

Follow these steps to assign services to your user.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>First log out of SMS, then log in again as the super user (<strong>su</strong>). Your user does not have the right to assign services.</td>
</tr>
<tr>
<td>2</td>
<td>Select <strong>Operator Functions -&gt; User Management</strong>, then click <strong>Find</strong>. <strong>Result:</strong> You see the SU – Find User screen.</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
3 | Type your user's name (in whole or part) into the **User Name** field and click **Search**.  
**Result:** The Search screen will display all users matching your search terms.

4 | Select your user by clicking the relevant row in the search results, then click **Close**.  
**Result:** The **User** tab is now populated with the target user's ID, and all operations accessible via the tabs across the top of the screen will now relate to that user.

5 | Select the **Template** tab to access Template related options for your user.

6 | You allocate templates to the user to give them the ability to manage component services.  
To allocate templates, select a template from the **Available Templates** list and click **Add**, repeating as required.  
**Note:** The contents of the **Available Templates** list will vary, depending on which packages have been installed.

7 | Press **Save**, then **Close**.
Chapter 1

Step | Action
--- | ---
8 | Log out of SMS then log in again using your newly created SMS user.

**Result:** This time you will find you have the service allocated to the template, for example, for ACS_BOSS, the ACS Service is available.

---

**Create a Control Plan**

**About control plans**

Control plans define how calls are processed. The functionality for creating control plans is available in the ACS Control Plan Editor (CPE) accessible from the ACS UI. It includes functionality that enables you to:

- Create control plans.
- Import and export control plans.

A control plan consists of a number of feature nodes connected together. These connections define the possible routes for a call. Each feature node belongs to a specific feature node group in the control plan palette.

When you create a new user, such as the SMS user, only the Base group, containing just the Start and End feature nodes, is available to them. So that your customer can create the control plans they need, you should ensure they have access to the full feature set within the ACS Control Plan Editor. When your customer has access to additional feature sets, they will be able to access additional palettes in the ACS Control Plan Editor.

For more information on using the ACS Control Plan Editor, see *CPE User's Guide*.

**Creating a Basic Control Plan**

Follow these steps to create a basic control plan that contains only the Start and End feature nodes.

**Step** | **Action**
--- | ---
1 | On the Service Management System screen, select **ACS Service** from the **Services** menu. The **Advanced Control Services** window appears.
2 | Click **Control Plans** to open the CPE.
3 | From the **File** menu in the Control Plan Editor window, select **New**. The Start feature node is added to the control plan.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>From the Base feature node group in the CPE palette, click and drag the End feature node so that it is below the Start feature node in the Control Plan Editor window.</td>
</tr>
<tr>
<td>5</td>
<td>Connect the Start feature node to the End feature node by clicking the connection point on the Start feature node and dragging a connecting line to the End feature node.</td>
</tr>
<tr>
<td>6</td>
<td>Save the control plan by selecting <strong>Save</strong> from the <strong>File</strong> menu and entering a name in the <strong>Plan Structure</strong> field. When you save the control plan it will be compiled at the same time. <strong>Note:</strong> If you experience problems saving your control plan and you logged in through <code>acs.jnlp</code>, please log out, then access the CPE by selecting <strong>Service Management System -&gt;Services &gt; ACS Service.</strong></td>
</tr>
</tbody>
</table>

## Allocating Additional Feature Nodes

Follow these steps to allocate additional sets of feature nodes to the ACS Control Plan Editor for your customer.

**Note:** Only the Start and End feature nodes are available by default.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Log in to ACS through one of the following:  
  - SMS as a SMS administrator (privilege 6 or 7)  
  - ACS directly with a user account that has privilege level 6. |
| 2    | In the ACS main window, click **Customer.** |
| 3    | In the ACS Customer window, select your customer from the **Customer** list, then select the **Resource Limits** tab. |
| 4    | Select your customer in the table and click **Edit.** |
| 5    | On the Edit Customer Resources Limits window, select the **Full** check box in the **Allocate Feature Sets** panel. |
| 6    | Click **Save.** |
| 7    | Click **Close** to close the Customer window, and then log out of SMS or ACS. |
| 8    | Log in to your customer’s user account and re-open the CPE to see the extra feature nodes. |
Overview

Introduction
This chapter explains how to configure a service provider.

In this chapter
This chapter contains the following topics.

- Service Provider Creation 9
- ACS Configuration 15
- Service Provider Limits 22

Service Provider Creation

About service providers
A service provider provides services to your subscribers. You must have at least one service provider. Each service provider contains the specific configuration pertaining to them. For example, service provider configuration includes configuration for charging and accounts.

Each service provider can have their own set of product types. Each product type defines the available services to subscribers with that product type, and includes Product-specific configuration for:

- Subscriber accounts
- Subscriber wallets
- Tariff plans
- Control plans

You can build new services against existing product types that can be unique to a specific service provider or subscriber.

When a call is made that relates to the Prepaid Charging service, the Service Loader performs a number of checks to determine which control plan to use. It looks up the following information:

- The personal wallet of the subscriber's account.
- The product type associated with the subscriber's personal wallet.
- The Capability in that product type that matches the SLEE service key.

The control plan is then matched to the product type Capability.

Allocating CCS permissions
Before you can create a service provider, you should allocate CCS permissions for the SMS user.
Follow these steps to allocate CCS permissions for the SMS user.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Connect to SMS by entering the following url:  
  \[
  \text{http://SMShostname/sms.jnlp}
  \]  
  Where \text{SMShostname} is the hostname of an SMS in the IN. |
| 2    | Log in to the SMS UI as the su user. |
| 3    | Create an SMS user, if you have not created one already. For more information, see \text{Adding the SMS user} (on page 3). |
| 4    | Allocate the following templates to your SMS user to give them CCS permissions:  
  - CCS\_Superuser  
  - ACS\_BOSS  
  For more information, see \text{Assigning Services to user} (on page 4). |

**Creating service provider**

Prepaid Charging uses both CCS (Charging Control Services) and ACS (Advanced Control Services). In ACS you will create and configure your service provider, and the control plans that will be mapped to Prepaid Charging product types.

Follow these steps to create a new ACS customer that will become the service provider.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open the ACS UI by selecting ACS service from the Services menu in the Service Management System screen.</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
<tr>
<td>2</td>
<td>Click <strong>Customer</strong>.</td>
</tr>
<tr>
<td>3</td>
<td>To see what customers are already on the system, clear the <strong>Customer</strong> drop down box and enter.</td>
</tr>
</tbody>
</table>
| 4    | Either: 
  - Click **New** to create a new ACS customer, or 
  - select an existing customer and click **Edit**. |

**Result:** The Advanced Calling Services screen is displayed.
Step | Action
--- | ---
5 | Give your customer a unique Name and reference number (Customer Number / Customer Reference).

Managed customer option means that it is managed through the SMS GUI, so requiring a login to those first. It is also possible to connect directly to the ACS UI by clearing the Managed Customer check box.

An administrative user for your new customer will be created for you if you select **Create User for Customer**.

6 | Select the Termination Number Range Rules.

The default is **No Checking**. This will use the Termination Ranges set up on the Termination Ranges tab of the ACS Resources screen.

7 | **Save** when you have finished adding your customer.

**Note:** You may need to clear the **Customer** drop down field (often defaulting to Boss) and **Enter** to see your new customer in the list.

**Self managed customer**

A self managed ACS customer is a customer who is managed directly in ACS, instead of being managed by the operator in SMS. You must manually create an ACS user for each self managed ACS customer, to enable them to log in to ACS directly.
To create or edit a self managed customer user.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>In the ACS Customer window, select your new customer from the Customer list.</td>
</tr>
<tr>
<td>2</td>
<td>Select the Users tab. <strong>Result:</strong> You see a list of all users that the ACS customer has. If you selected <strong>Create User for Customer</strong> when creating a new customer, you will see Administrator in this list.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>New</strong> to create a new user, or <strong>Edit</strong> to change an existing user. For example you can edit the Administrator user to rename them to be the customer's ACS user.</td>
</tr>
</tbody>
</table>

![ACS Customer Window](image)

![New Users Window](image)
Step | Action
--- | ---
4 | Enter a name, privilege level, and password for the user. Whether you rename Administrator or create a new user, ensure your user has privilege level 5.
   | **Note:** You may also wish to create a level 6 user for your customer just to compare the differences between level 5 and level 6 users. To allocate privilege 6 to the user, you must log into the Service Management System with a privilege level 7 user (such as the su user).
5 | When you have finished creating or editing your user, click **Save**. The updated list of users displays.
6 | Click **Close**.
7 | To test the ACS user for your ACS customer, log in to ACS directly as the ACS user, by entering the following url in an internet browser: `http://SMShostname/acs.jnlp`
   | Where `SMShostname` is the hostname of the SMS on the IN.
   | **Note:** If this is a managed customer, you will not be able to log in this way. Instead, the customer will be managed by the operator using SMS. You can access the SMS by entering the following url:
   | `http://SMShostname/sms.jnlp`

**Create / Allocate data sets to your Service Provider**

You can use existing reusable data sets (from the ACS Configuration screen). Ensure your ACS customer/service provider has at least a public set of the following:
Follow these steps to create / allocate data sets to your service provider.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select Services &gt; ACS Service &gt; Customer.</td>
</tr>
</tbody>
</table>
| 2    | Allocate Resource limits.  
On the Resource Limits tab, select your customer and click Edit.  
**Note:** If there are no publicly available data sets for you to use, on the system, you'll need to create your own data set(s). |
| 3    | On the Edit Customer Resource Limits screen, set the numbers allowed and Save. |

**ACS Configuration**

**Introduction**

To configure the ACs component of NCC, select Services > ACS Services > Configuration.

Configure the:

- Geography set
- Holiday set
- Announcement set
- Feature node set

**Geography set**

A geography set is used to determine the rating. This is done by grouping prefixes. This allows you to group sets of numbers in one geographical location, so you can create a tariff for all of them at once (but you can also create a tariff specific to each of the prefix).

For example, all mobile numbers (3249, 3247 and 3248) can be grouped under “Belgium Mobile” and a tariff to be created for them.

The prefix defines a range of numbers which is generally used to differentiate different operators.
Here you can see the default Prepaid Charging geography set.

Holiday set
This is where holidays are defined (for example, Christmas, New Year...)
Holidays can be defined so that there are cost reductions during that time, it goes from a start date to an end date.
Announcement set

An announcement set is a collection of recorded voice announcements for subscriber interaction.
In that announcement set, you have a collection of announcements which are linked to a resource ID (to be played on the IVR) and a corresponding language.
Feature Node set

This describes the feature nodes that are available for creating a control plan.

You can create a specific set to restrict rights for your users.
Example: If you create a feature set, then edit it to include only the Start feature node:
Chapter 2

The feature set will look like this:

![ACS Configuration](image)

**Service Provider Limits**

**Introduction**

Using CCS, for the service provider, you can set the resource limits, in particular:

- Limits
- Business Prefix
- Sets
- Call barring.
- Number translations

**Setting limits**

Follow these steps to set resource limits.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select <strong>Services &gt; Prepaid Charging -&gt; Service Management.</strong></td>
</tr>
<tr>
<td>2</td>
<td>Select the <strong>Resource Limits</strong> tab.</td>
</tr>
</tbody>
</table>
3 Click **Edit** to open the Edit Resource Limits screen.
Step | Action
--- | ---
4 | In the following options, choose and set appropriate limits for the service provider:
   - Limits
   - Business Prefix. (Business Prefix must be provided otherwise Save button will be disabled).
   - Sets - select all the Reusable Data Sets which the new service provider should have access to.
   
   **Note:** If the Business Prefix is entered by the subscriber at the beginning of a dialed telephone number the call will be charged to their business wallet instead of their personal wallet. Allowed values include 0-9, # and *.

   This functionality is dependant on the configuration of the control plan.

5 | In the Call Barring option, ensure the **Ignore** check box is selected for this service provider.

6 | In the Number Translations option, set up a short number which will connect directly to the main company's call center.
   1. Enter short code to be dialed into the **In** field.
   2. Enter the termination number (actual phone number to be dialed) into the **Out** field.
   3. Click **Add**.

7 | Click **Save**.
Overview

Introduction
This chapter explains the product types.

In this chapter

This chapter contains the following topics.
Product Types 25

Product Types

About product types
A product type is a collection of services that are provided to the group of subscribers who use that product type.

Creating product types
Follow these steps to create a product type.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>You create a product type with:</td>
</tr>
<tr>
<td></td>
<td>• a default tariff plan. See Creating a Tariff (on page 37) to create one</td>
</tr>
<tr>
<td></td>
<td>• a control plan associated with it. See Create a Control Plan (on page 6) to create one</td>
</tr>
<tr>
<td></td>
<td>• some announcements. See Announcement set (on page 18) to create some.</td>
</tr>
<tr>
<td>2</td>
<td>On the Subscriber Management screen, select the Product Type tab, then New.</td>
</tr>
</tbody>
</table>
3. Set the "Initial Value" of the product type to 20 euros.

4. Create a new CCS Capability, see *Creating a capability* (on page 64). Select a CCS Capability from the drop down menu (defined in the acs.conf).

5. Select the control plans option, then **New**.

6. Select the control plan created earlier.

7. Select the Announcements option and select Announcement set created earlier.
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Product Type</td>
<td><img src="image" alt="Image of a new product type window" /></td>
</tr>
</tbody>
</table>

- Name & Periods
- Control Plans
- Announcements
- Friends and Family
- Adjustments
- Product Life Cycle

**Time Left Announcement**
- Announcement Set: PrepaidPlan
- Announcement Entry: Community 6

**Product Name Announcement**
- Announcement Set: PrepaidPlan
- Announcement Entry: Community 6
Chapter 4
Subscribers

Overview

Introduction
This chapter explains how to create subscribers.

In this chapter

This chapter contains the following topics.
Subscriber Creation 29

Subscriber Creation

Introduction
The CCS component of Prepaid Charging provides subscriber account management and tariffing. The VWS provides subscriber account's fund management and implements charging reservations and debiting. The VWS supports these types of subscriber accounts:

- Prepaid
- Postpaid
- Limited Credit
- Prepaid throwaway

A product type is assigned to a subscriber, so this must be first set up before you can create a subscriber. For this example, you will set up a test subscriber account. This will be used to test your product type created in the previous example. You will also use this subscriber for subsequent examples.

Credit type
A subscriber's credit type is set by its Wallet Limit Type:

- Credit/Postpaid subscriber - fully postpaid and rechargeable.
- Limited Negative Credit subscriber - rechargeable subscriber account with a post-paid facility that allows it to go overdrawn to a configurable limit.
- Debit/Prepaid subscriber - rechargeable prepaid.
- Single User Prepaid Card - non-rechargeable credit (can be used as a promotional give-away).

Subscribers and MSISDNs
A subscriber account is linked to a specific MSISDN. The MSISDN is identified by one of the following:

- The Calling Line Identifier (CLI), also known as the Calling or Originating Number.
- A prefix dialed by the subscriber before a call.
You can configure a subscriber in the following ways:

- As a subscriber with a single balance.
- As a subscriber with one or more wallets, and multiple balance types.
- As a balance subscriber account used by multiple MSISDNs.

You can link more than one MSISDN to a subscriber.

**Subscriber experience of making a call**

How a subscriber makes a call depends upon whether the caller is using the subscriber’s known phone line (CLI), or making a call from an independent phone.

- If using a configured CLI, the subscriber goes off-hook and dials a destination number. The control plan for the product type is triggered based on the CLI.
- If the subscriber is making a call from an un-configured CLI, they call the service, (for example, by dialing a dedicated 0800 number).
  1. They are played a beep and must enter their subscriber account ID and PIN.
  2. If successfully validated, the caller is prompted to enter the intended destination number.
  3. The control plan for their product type is triggered on their subscriber account ID.
  The service then checks their balance status and either connects the call as requested, disconnects (in case of no credit), or redirects the call (depending on the control plan).

Subscriber accounts must have product types (which define how the account is charged), and wallets (which hold value). The requests that Prepaid Charging makes on the billing engine contain information on the wallet it is accessing.

**Viewing existing subscribers**

Follow these steps to find all existing subscribers.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select <strong>Services &gt; Prepaid Charging &gt; Subscriber Management</strong>.</td>
</tr>
<tr>
<td>2</td>
<td>Select the <strong>Subscriber</strong> tab.</td>
</tr>
<tr>
<td>3</td>
<td>In the <strong>Card Number</strong> text field, type % and <strong>Search</strong>.</td>
</tr>
</tbody>
</table>

*Result:* The list of subscribers, if any are present, is displayed in the table. For each you see: wallet reference, card number, and subscriber ID.

**Creating a subscriber account**

Follow these steps to create a new subscriber account.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select <strong>Services &gt; Prepaid Charging &gt; Subscriber Management</strong>.</td>
</tr>
<tr>
<td>2</td>
<td>Select the <strong>Subscriber</strong> tab.</td>
</tr>
<tr>
<td>3</td>
<td>Click <strong>New</strong>.</td>
</tr>
</tbody>
</table>

*Result:* The New Subscriber screen is displayed.
### Step 4

**Action**
- **Enter:**
  - Card Number
  - Subscriber ID
  - Language

Click **Save**.

**Result:** The New Wallet screen is displayed.

![New Wallet](image)

### Step 5

Select the tariff plan created earlier, the billing pair you want it to be on.

This is enough to start doing chargeable calls for this subscriber.

---

**Wallet**

A wallet, in concept, is used to hold the balances, for example, for SMS, voice, and general cash. A wallet is allocated to a subscriber to hold their balances. Each subscriber can have a personal and a business wallet (which may be shared). To create or edit wallet data, the SMS must be successfully communicating with the associated VWS. The ccsBeOrb process is used for this communication.

Complete the New Wallet screen. Set up the required data and accept the defaults by clicking **OK**.

**Block a subscriber**

For this task, you will test that a frozen subscriber account cannot make a call.

Change your subscriber’s account to freeze the account:
- On the Edit Subscriber screen, Subscriber > Wallets option, change the **Wallet State** to frozen.
- **Apply** and **Save** the changes.
- Run a Split script to emulate the above ‘frozen’ subscriber trying to make a call.
### Unblock a subscriber

Follow these steps to unblock the previously blocked subscriber account.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Search for the previously blocked subscriber's account and open it.</td>
</tr>
<tr>
<td>2</td>
<td>Unblock the account by changing the account status so that it is active.</td>
</tr>
<tr>
<td>3</td>
<td>Run a Slpit script to emulate the subscriber trying to make a call.</td>
</tr>
</tbody>
</table>
Overview

Introduction

This chapter explains rating and tariffs.

In this chapter

This chapter contains the following topics.

Tariff Creation
Creating a Tariff

Tariff Creation

Introduction

Prepaid Charging calculates the standard tariff from the CLI (calling line identifier / origin) and SN (service number / destination) numbers of the call and accepts or rejects a call. Your new brand provides a standard calling rate which enables subscribers to call cell phones at a reduced cost.

Rating

Rating is provided for:

- Voice calls
- Data calls
- Specified Events (including SMS messages).

Call charges can include a:

- Maximum or minimum charge for each call/data session
- Minimum charge period after which charging starts
- Low credit warning threshold

Rating can be based on complex configurable factors, including:

- Duration
- Destination number, (including its geographical location)
- Foreign roaming network
- Day of year, day of week, and time of day

Components

Calls are controlled using ACS.

The Voucher and Wallet Server (VWS) handles money.
CCS deals with charging rules, for example: it costs $x$ amount of money to call from place A to place B for $n$ minutes. There are also further calculations related to discounts for certain days/weeks and specific sections of a call. The charge for a call or data session is set by the subscriber's product type in CCS.

**Tariff plans**

Tariff plans enable you to define which rate table applies to a product type at a particular time.

Rate tables define how Prepaid Charging charges for calls.

An ACS customer requires a tariff plan, such that they can provide a service which charges special rates for some locations.

**Tariff configuration**

This diagram shows tariff configuration.

Creating tariff plan

The tariff plan defines rules for how a call by your subscribers will be charged. You will also generate the memory mapped file used on the billing engine.

For your product type, you will create a tariff, by:

- Configuring a rate table:
  - Rate table, charge periods, balance type cascade, discount sets, CLxDN tariffs, and the rest
- Configuring a tariff plan:
  - Link tariff plan to rate table using the Tariff Plan Selector tab
- Configuring discounts:
  - Create discount periods, and weekly and holiday tariffs
- Creating named events
- Creating a MFile (memory mapped file for BE containing rating information).

Tariffing needs to be created in order to be able to do billing. It all starts by creating a new tariff plan, this will be the way of billing used in the product type.
Creating a Tariff

Introduction
In order to create a proper tariff, you’ll need to create the following, in this order.

- Geography set (on page 15)
- Holiday set (on page 16)
- Tariff plan (on page 37)
- Rate table (on page 39)
- Tariff plan selector (on page 40)
- Balance type cascade (on page 42)
- Charge period (on page 44)
- Discount set (on page 46)
- Discount period (on page 48)
- CLI-DN (on page 50)
- Weekly tariff (on page 52)
- Holiday tariff (on page 54)
- MFile (on page 56).

Tariff plan
Follow these steps to create a tariff plan.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the Tariff Plan tab.</td>
</tr>
</tbody>
</table>
2 Click **New**.

**Result:** The New Tariff Plan screen is displayed.

2 Give your tariff plan a name.

3 Click **Save**.
Rate table

Rate tables define charging details for calls. This data is used to set the charging rates according to specific dates and geographical location.

**Note:** It is not possible to change the geography set for a rate table once saved. You first must delete all records associated with the rate table, then delete the rate table and re-create it.

Follow these steps to create a rate table.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Select the <strong>Rate Tables</strong> tab.</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| 2    | Click **New**.  
**Result:** The New Rate Table screen is displayed. |
| 3    | Give your rate table a name. |
| 4    | Select a Geography set. |
| 5    | Select a Holiday set. |
| 6    | **Save**. |

**Tariff plan selector**

The tariff plan selector links the tariff plan and the Rate Table. Follow these steps to create a tariff plan selector.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the <strong>Tariff Plan Selector</strong> tab.</td>
</tr>
</tbody>
</table>
### Step Action

#### Rating Management

<table>
<thead>
<tr>
<th>Tariff Plan</th>
<th>Rate Table</th>
<th>Named Event Catalogue</th>
<th>EPRed</th>
<th>Service Provider</th>
<th>OCNCC template</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronze Callback</td>
<td>Bronze Callback</td>
<td>Bronze</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronze HPLMN MO</td>
<td>Bronze HPLMN MO</td>
<td>Bronze</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronze NGN</td>
<td>Bronze NGN</td>
<td>Bronze</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronze VPLMN MO</td>
<td>Bronze VPLMN MO</td>
<td>Bronze</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronze VPLMN MT</td>
<td>Bronze VPLMN MT</td>
<td>Bronze</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS Tariff Plan</td>
<td>CS Tariff Plan</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS Tariff Plan</td>
<td>CS Tariff Plan</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CS Tariff Plan</td>
<td>CS Tariff Plan</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUG Tariff Plan 1</td>
<td>CUG Tariff Plan 1</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUG Tariff Plan 1</td>
<td>CUG Tariff Plan 1</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUG Tariff Plan 2</td>
<td>CUG Tariff Plan 2</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUG Tariff Plan 2</td>
<td>CUG Tariff Plan 2</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUG Tariff Plan 3</td>
<td>CUG Tariff Plan 3</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUG Tariff Plan 3</td>
<td>CUG Tariff Plan 3</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUG Tariff Plan 4</td>
<td>CUG Tariff Plan 4</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUG Tariff Plan 4</td>
<td>CUG Tariff Plan 4</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUG Tariff Plan 5</td>
<td>CUG Tariff Plan 5</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CUG Tariff Plan 5</td>
<td>CUG Tariff Plan 5</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold Callback</td>
<td>Gold Callback</td>
<td>Gold</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold HPLMN MO</td>
<td>Gold HPLMN MO</td>
<td>Gold</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold NGN</td>
<td>Gold NGN</td>
<td>Gold</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold VPLMN MO</td>
<td>Gold VPLMN MO</td>
<td>Gold</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold VPLMN MT</td>
<td>Gold VPLMN MT</td>
<td>Gold</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overdraft Bronze</td>
<td>Overdraft Bronze</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overdraft Bronze</td>
<td>Overdraft Bronze</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overdraft Gold</td>
<td>Overdraft Gold</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overdraft Gold</td>
<td>Overdraft Gold</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overdraft Silver</td>
<td>Overdraft Silver</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overdraft Silver</td>
<td>Overdraft Silver</td>
<td>Default</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver Callback</td>
<td>Silver Callback</td>
<td>Silver</td>
<td>2012-0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Step | Action
---|---
2 | **Click New.**

**Result:** The New Tariff Plan Selector screen is displayed.

![New Tariff Plan Selector](image)

3 | Select a tariff plan.
4 | Select a rate table.
5 | Update the effective date.
6 | **Save.**

**Balance type cascade**

A Balance Type Cascade includes the different Balance Types that are available to pay for the cellphone calls. Here you will set the order in which the balance types will be exhausted.

**Note:** You may want to use this Balance Cascade pattern in other tariffs, so give it a name which is descriptive of the pattern, not the tariff you are planning to use it in.

The Balance cascade is how the balance is going to be used, if we take the example below, we will first use the Promotional Cash, then the General Cash, then the Free SMS. For example:

1. Promotional Cash
2. General Cash
3. Free SMS

Follow these steps to create a balance cascade.

Step | Action
---|---
1 | Select the **Balance Type Cascades** tab.
<table>
<thead>
<tr>
<th>Name</th>
<th>Change User</th>
<th>Change Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>dummyYAScascades</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:25:49</td>
</tr>
<tr>
<td>FD Free Changes</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:00:53</td>
</tr>
<tr>
<td>FF Free Changes</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:00:43</td>
</tr>
<tr>
<td>Loyalty</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 08:39:46</td>
</tr>
<tr>
<td>Overdraft</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:08:32</td>
</tr>
<tr>
<td>PromoSME</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:10:49</td>
</tr>
<tr>
<td>PromoVoica</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:10:20</td>
</tr>
<tr>
<td>Voic</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:10:44</td>
</tr>
<tr>
<td>SMS</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:10:54</td>
</tr>
<tr>
<td>SMSC1</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:11:01</td>
</tr>
<tr>
<td>SMSC2</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:10:27</td>
</tr>
<tr>
<td>VCI</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:10:36</td>
</tr>
<tr>
<td>VCS</td>
<td>CCS_ADMIN</td>
<td>2012-05-19 04:10:14</td>
</tr>
</tbody>
</table>
### Chapter 5

#### Configuration User's Guide

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Click <strong>New</strong>. <strong>Result:</strong> The New Balance Cascade screen is displayed.</td>
</tr>
</tbody>
</table>

![New Balance Cascade screen](image)

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Type a Balance Type Cascade name</td>
</tr>
<tr>
<td>4</td>
<td>Select an available balance type and <strong>Add</strong>. Repeat until you have selected all balance types you require.</td>
</tr>
<tr>
<td>5</td>
<td><strong>Use Up / Down</strong> to order the selected balance types.</td>
</tr>
<tr>
<td>6</td>
<td><strong>Save</strong>.</td>
</tr>
</tbody>
</table>

### Charge period

A charge period is charging rate per minute. First you create a charge period set by simply giving it a name, then you choose a rate table to give you the charge rates. With this information you can then create the charge periods for that set.

For example: 10 cents the first 60 seconds, then 5 cents per minute for the rest of the call.

Follow these steps to create a charge period set with charge periods.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select the <strong>Charge Periods</strong> tab.</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
2 | Click **New Set**.

Result: The New Charge Period Set screen is displayed.

3 | Type a name for the charge period set
4 | Select the associated rate table.
5 | Select the billing indicator.
6 | Save.
Chapter 5

### Step 7

Highlight the charge period and click **New**.

**Result:** The New Charge Period screen is displayed.

![New Charge Period Screen](Image)

### Step 8

The first period starts at 0 sec and is charged at 10c/min.

Create a charge period with:

- Period start of 0
- Charge of 10

and **Save**.

### Step 9

The second period starts at 60 seconds and is charged at 5c/min, but the charge is per second.

Create another charge period with:

- Period start of 60
- Charge of 5

and **Save**.

Refer to *CCS User's Guide* for more information about the fields.

### Discount set

The discount set is only a name and description.

This set is associated with the holiday and weekly tariffs and is used to provide a logical link from the rate table to the CLI-DN data. If no holiday or weekly discounts are set, the discount set will not apply.

A discount period defines the discount percentage to be applied to a charge period.

Follow these steps to create a new discount set and discount periods for the discount period set.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>On the <strong>Discount Sets</strong> tab, select, from the <strong>Rate Table</strong> drop down box, the rate with which to associate a discount set.</td>
</tr>
</tbody>
</table>
Chapter 5

Chapter 5

Rating and Tariffs

Step | Action
2. Click **New**.

**Result:** You see the New Discount Set screen.

The **Rate Table** field displays the rate table selected.

3. Enter a name and description.

4. **Save**

**Discount period**

A discount period defines the discount percentage to be applied to a charge period.

Follow these steps to create a new discount set and discount periods for the discount period set.

1. Select the **Discount Periods** tab.
Step | Action
---|---
2 | **Click New Set.**

**Result:** You see the New Discount Period Set screen.

3 | Enter a name and **Save**.

4 | Then create a new discount period where a percentage of discount is defined.

On the **Discount Periods** tab, select the discount period set from the **Discount Period** drop down box.

5 | **Click New.**
Step | Action
--- | ---
**Result:** | You see the New Discount Period screen.

| **New Discount Period** | ![Image](image.png) |
| Period | Help |
| Percentage Discount | 50 |
| **Save** | **Cancel** |

The *Period* field displays the amount of time before the charge is initiated. In the *Percentage Discount* field, type the numeric percentage of the discount to be applied to the charge period, in this example, 50%.

6 | **Save**.
7 | Create as many discount periods as required to match your charge period.

Refer to *CCS User's Guide* for more information about discount usage.

**CLI-DN**

A CLI-DN (Calling Line Identifier – Destination Number) record defines, for the rate table, the rate for calls between two geographical areas.

Use the records you have defined so, to configure a CLI-DN record applicable to the rate table you created. Each rate table includes rates for calls between two geographical areas.

The tariff code is a 2 digit hexadecimal code that is usually provided by the switch manufacturer. The tariff code is set in *ACS Services -> Resources -> Tariff Codes*. There you will see SCI (Set Charging Info) and FCI (Furnish Charging Info). SCI is set when you receive the tariff code from the switch.

Follow these steps to create a new CLI-DN.

Step | Action
--- | ---
1 | Select the **CLI-DN** tab.
2. Click **New**.

**Result:** The New CLI-DN Tariff screen appears.

Select the following from its respective drop down list:
- DN
- Discount set
- Charge period
- Cross balance type cascade

Set the following fields:
- Maximum charge
- Minimum length
- Billing resolution
- Low credit
Weekly tariff

Weekly tariff are used to define specific discount during period of the week (off-peak for example). Follow these steps to create a weekly tariff.

**Step** | **Action**
---|---
1 | Select the Weekly tab.
### Chapter 5, Rating and Tariffs

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>

#### Rating Management

![Rating Management Interface]

<table>
<thead>
<tr>
<th>Rate Table</th>
<th>Discount Set</th>
<th>Start Time (local T2)</th>
<th>End Time (UTC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Sunday 00:00</td>
<td>Monday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Monday 18:00</td>
<td>Tuesday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Tuesday 18:00</td>
<td>Thursday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Wednesday 18:00</td>
<td>Friday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Friday 18:00</td>
<td>Saturday 24:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Monday 00:00</td>
<td>Monday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Tuesday 18:00</td>
<td>Thursday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Wednesday 18:00</td>
<td>Friday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Friday 18:00</td>
<td>Saturday 24:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Monday 00:00</td>
<td>Monday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Tuesday 18:00</td>
<td>Thursday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Wednesday 18:00</td>
<td>Friday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Friday 18:00</td>
<td>Saturday 24:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Monday 00:00</td>
<td>Monday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Tuesday 18:00</td>
<td>Thursday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Wednesday 18:00</td>
<td>Friday 07:00</td>
</tr>
<tr>
<td>Bronze</td>
<td>Bronze</td>
<td>Friday 18:00</td>
<td>Saturday 24:00</td>
</tr>
<tr>
<td>Gold</td>
<td>Gold</td>
<td>Sunday 00:00</td>
<td>Monday 07:00</td>
</tr>
<tr>
<td>Gold</td>
<td>Gold</td>
<td>Monday 18:00</td>
<td>Tuesday 07:00</td>
</tr>
<tr>
<td>Gold</td>
<td>Gold</td>
<td>Tuesday 18:00</td>
<td>Wednesday 07:0</td>
</tr>
<tr>
<td>Gold</td>
<td>Gold</td>
<td>Wednesday 18:00</td>
<td>Thursday 07:00</td>
</tr>
<tr>
<td>Gold</td>
<td>Gold</td>
<td>Thursday 18:00</td>
<td>Friday 07:00</td>
</tr>
<tr>
<td>Gold</td>
<td>Gold</td>
<td>Friday 18:00</td>
<td>Saturday 24:00</td>
</tr>
<tr>
<td>Gold</td>
<td>Gold</td>
<td>Monday 00:00</td>
<td>Monday 07:00</td>
</tr>
<tr>
<td>Gold</td>
<td>Gold</td>
<td>Tuesday 18:00</td>
<td>Thursday 07:00</td>
</tr>
<tr>
<td>Gold</td>
<td>Gold</td>
<td>Wednesday 18:00</td>
<td>Friday 07:00</td>
</tr>
<tr>
<td>Gold</td>
<td>Gold</td>
<td>Friday 18:00</td>
<td>Saturday 24:00</td>
</tr>
<tr>
<td>Silver</td>
<td>Silver</td>
<td>Sunday 00:00</td>
<td>Monday 07:00</td>
</tr>
<tr>
<td>Silver</td>
<td>Silver</td>
<td>Monday 18:00</td>
<td>Tuesday 07:00</td>
</tr>
<tr>
<td>Silver</td>
<td>Silver</td>
<td>Tuesday 18:00</td>
<td>Wednesday 07:0</td>
</tr>
<tr>
<td>Silver</td>
<td>Silver</td>
<td>Wednesday 18:00</td>
<td>Thursday 07:00</td>
</tr>
<tr>
<td>Silver</td>
<td>Silver</td>
<td>Thursday 18:00</td>
<td>Friday 07:00</td>
</tr>
</tbody>
</table>

**New** | **Edit** | **Delete** | **Close**
Chapter 5

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 2    | **Click New.**  
**Result:** The New Weekly Tariff screen appears. |

![New Weekly Tariff Screen]

<table>
<thead>
<tr>
<th>Rate Table</th>
<th>Bronze Callback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discount Set</td>
<td>No discounts</td>
</tr>
<tr>
<td>Start Time (local TZ)</td>
<td>Sunday 00:00</td>
</tr>
<tr>
<td>End Time (local TZ)</td>
<td>Saturday 23:30</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Discount Period</th>
<th>Bronze holiday discount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Charge ($)</td>
<td></td>
</tr>
<tr>
<td>Minimum Length (secs)</td>
<td></td>
</tr>
<tr>
<td>Billing Resolution (secs)</td>
<td></td>
</tr>
<tr>
<td>Low Credit Configuration</td>
<td>-- No Notifications --</td>
</tr>
<tr>
<td>Cascade</td>
<td>dummyVASCascade</td>
</tr>
<tr>
<td>Tariff Code</td>
<td></td>
</tr>
</tbody>
</table>

| Save | Cancel |

3 | **Fill in the fields.**  
Refer to the *CCS User's Guide* for information on the fields. |

4 | **Save** |

**Holiday tariff**

Holiday tariffs are used to define the specific discounts that will apply during holidays.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Select the Holiday tab.</strong></td>
</tr>
</tbody>
</table>
### Chapter 5

#### Rating and Tariffs

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>

**Rating Management**

- **Service Provider**: OCNCOtemplate
- **Help**:

<table>
<thead>
<tr>
<th>Service</th>
<th>Tariff Plan</th>
<th>Tariff Plan Selectors</th>
<th>Rate Tables</th>
<th>Discount Sets</th>
<th>CLI DN</th>
<th>Weekly</th>
<th>Holiday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronze HPLMN MO</td>
<td>Bronze HPLMN MO</td>
<td>Christmas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronze HPLMN MO</td>
<td>Bronze HPLMN MO</td>
<td>Labour Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronze HPLMN MO</td>
<td>Bronze HPLMN MO</td>
<td>New Year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronze NGN</td>
<td>Bronze NGN</td>
<td>Christmas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronze NGN</td>
<td>Bronze NGN</td>
<td>Labour Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bronze NGN</td>
<td>Bronze NGN</td>
<td>New Year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold HPLMN MO</td>
<td>Gold HPLMN MO</td>
<td>Christmas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold HPLMN MO</td>
<td>Gold HPLMN MO</td>
<td>Labour Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold HPLMN MO</td>
<td>Gold HPLMN MO</td>
<td>New Year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold NGN</td>
<td>Gold NGN</td>
<td>Christmas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold NGN</td>
<td>Gold NGN</td>
<td>Labour Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold NGN</td>
<td>Gold NGN</td>
<td>New Year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver HPLMN MO</td>
<td>Silver HPLMN MO</td>
<td>Christmas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver HPLMN MO</td>
<td>Silver HPLMN MO</td>
<td>Labour Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver HPLMN MO</td>
<td>Silver HPLMN MO</td>
<td>New Year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver NGN</td>
<td>Silver NGN</td>
<td>Christmas</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver NGN</td>
<td>Silver NGN</td>
<td>Labour Day</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver NGN</td>
<td>Silver NGN</td>
<td>New Year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Step 2
Click **New**.

**Result:** The New Holiday Tariff screen appears.

![New Holiday Tariff Screen]

**Step 3**
Fill in the fields.
Refer to the *CCS User's Guide* for information on these fields.

**Step 4**
Click **Save**

### MFile

MFile is the core of the rating system. It is a file that is mapped into memory (using standard Unix `mmap` - memory mapping functionality). The data contained within the file is generated from all the rating data configured within the database. This file removes the requirement for database access for call rating data, which offers speedier access to the data.

Follow these steps to create an MFile.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Select <strong>Prepaid Charging -&gt; Service Management</strong> and select the <strong>MFile Generation</strong> tab.</td>
</tr>
<tr>
<td>Step</td>
<td>Action</td>
</tr>
<tr>
<td>------</td>
<td>--------</td>
</tr>
</tbody>
</table>
| 2    | Click **New**.  
**Result:** The New MFile Configuration screen appears. |
| 3    | Select the Pair on which creating the MFile.  
Select the Type (Rating or Named Event Catalogue).  
Enter a description (optional). |
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Save.</td>
</tr>
</tbody>
</table>

**Result:** The MFile data is replicated and the copied MFile is compiled.
Chapter 6

Adding a Service

Overview

Introduction

This chapter explains how to add an NCC service.

In this chapter

This chapter contains the following topics.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Creation</td>
<td>59</td>
</tr>
<tr>
<td>Triggering on Service Key</td>
<td>60</td>
</tr>
</tbody>
</table>

Service Creation

Introduction

After the installation processes, you now have a functional platform which contains all the required components to run the NCC service.

As seen before some services are delivered as template as part of the installation. Those can be used as such with additional minor configuration. That configuration requires some advanced knowledge due to the service complexity.

Process

Here we shall develop a bit how to create a new service by explaining the different steps. Most of them have been already detailed in this guide, so we shall just refer to them. Here is the step by step service creation.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Determine how your service will be triggered, let assume by SK (not an internal service).</td>
</tr>
<tr>
<td>2</td>
<td>Create the Service Key (on page 62) entry in SLEE.cfg.</td>
</tr>
<tr>
<td>3</td>
<td>Create the Service (on page 62) in SLEE.cfg.</td>
</tr>
<tr>
<td>4</td>
<td>Create the Service Entry (on page 62) in acs.conf.</td>
</tr>
<tr>
<td>5</td>
<td>Create a Service Provider (see &quot;Service Provider Creation&quot; on page 9).</td>
</tr>
<tr>
<td>6</td>
<td>Create a control plan (on page 6) that will define what the service will be doing.</td>
</tr>
<tr>
<td>7</td>
<td>Create a capability (on page 64) for your service use the above control plan as default. For now, you will be able to trigger that control plan for any subscriber. If you want to be able to restrict or to customize the action for range of subscriber as example, you’ll need to create product types and add subscriber in those product types or have multiple capabilities based on CdPN. To create a product type, you will first need to define a rate plan (see &quot;Rating and Tariffs&quot; on page 35).</td>
</tr>
</tbody>
</table>
Step | Action
--- | ---
8 | Create a product type (on page 25).
9 | Create subscribers (see "Creating a subscriber account" on page 30) in that product type.

Now you have a service that will be triggered using the same service key, but which could have different behavior, tariff and configuration based on the product type.

**Triggering on Service Key**

**Introduction**

Most of the time your service will be triggered from the network using an IDP. That IDP would contain the call information that will be used to trigger your service.

**IDP fields**

This table describes the function of each field.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>appContext</td>
<td>This holds the value of application-context-name in the TCAP section of the initialDP. Possible values for this parameter include:</td>
</tr>
<tr>
<td></td>
<td>“0,4,0,0,1,0,50,1” // CAP2</td>
</tr>
<tr>
<td></td>
<td>“0,4,0,1,21,3,4” // CAP3</td>
</tr>
<tr>
<td></td>
<td>“0,4,0,1,1,0,0” // CDMAGW</td>
</tr>
<tr>
<td>CallingPartyNumber</td>
<td>This specifies the A party number (the subscriber making the call) and is defined in SLPIT in the following format:</td>
</tr>
<tr>
<td></td>
<td>(NOA) &quot;MSISDN&quot;</td>
</tr>
<tr>
<td></td>
<td>Some examples include:</td>
</tr>
<tr>
<td></td>
<td>(2) &quot;200&quot; // Unknown NOA for shortcode dialing</td>
</tr>
<tr>
<td></td>
<td>(3) &quot;0241497936&quot; // National NOA</td>
</tr>
<tr>
<td></td>
<td>(4) &quot;64241497936&quot; // International NOA</td>
</tr>
<tr>
<td>CallingPartysCategory</td>
<td>This indicates the type of calling party (for example, operator, pay phone, ordinary subscriber). Values are defined in ETS 300 356-1, an ordinary subscriber will be most common.</td>
</tr>
<tr>
<td>LocationNumber</td>
<td>This indicates the Location Number for the calling party. This number represents the geographical location of the A party. In a scripted test LocationNumber is often fictional as it is rarely examined in service logic.</td>
</tr>
<tr>
<td>Bearer type</td>
<td>The bearer parameters indicate whether the call is voice, video, etc. Some common examples are:</td>
</tr>
<tr>
<td></td>
<td>bearerCapITC 0 // VOICE</td>
</tr>
<tr>
<td></td>
<td>bearerCapITC 8 // VIDEO</td>
</tr>
<tr>
<td></td>
<td>bearerCapITC 24 // VIDEO</td>
</tr>
<tr>
<td>EventTypeBCSM</td>
<td>This indicates the BCSM detection point event. This parameter is used in the IDP that begins the call and also in the trigger detection point that ends the call. Trigger detection points are used for both originating and terminating voice traffic. The full list of possible values for this parameter is provided below, with the values relevant to the IDP highlighted in bold:</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>----------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>origAttemptAuthorized (1)</td>
<td></td>
</tr>
<tr>
<td>collectedInfo (2)</td>
<td></td>
</tr>
<tr>
<td>analyzedInformation (3)</td>
<td></td>
</tr>
<tr>
<td>routeSelectFailure (4)</td>
<td></td>
</tr>
<tr>
<td>oCalledPartyBusy (5)</td>
<td></td>
</tr>
<tr>
<td>oNoAnswer (6)</td>
<td></td>
</tr>
<tr>
<td>oAnswer (7)</td>
<td></td>
</tr>
<tr>
<td>oMidCall (8)</td>
<td></td>
</tr>
<tr>
<td>oDisconnect (9)</td>
<td></td>
</tr>
<tr>
<td>oAbandon (10)</td>
<td></td>
</tr>
<tr>
<td>termAttemptAuthorized (12)</td>
<td></td>
</tr>
<tr>
<td>tCalledPartyBusy (13)</td>
<td></td>
</tr>
<tr>
<td>tNoAnswer (14)</td>
<td></td>
</tr>
<tr>
<td>tAnswer (15)</td>
<td></td>
</tr>
<tr>
<td>tMidCall (16)</td>
<td></td>
</tr>
<tr>
<td>tDisconnect (17)</td>
<td></td>
</tr>
<tr>
<td>tAbandon (18)</td>
<td></td>
</tr>
</tbody>
</table>

### IMSI

The IMSI is a unique number associated with all GSM and UMTS network mobile phone users. It is stored in the SIM inside the phone and is sent by the phone to the network. The first five digits of the IMSI are identical to the countryCode and networkCode parameters. From the example above:

```plaintext
imsi                    "530240100000536"
countryCode             "530"
networkCode             "24"
```

### vlrNumber

This specifies the GT of the visitor location register. In scripted tests the most important part of this number is the Country Code prefix. In the example, the subscriber is attached to a New Zealand VLR (Country Code 64):

```plaintext
vlrNumber               (1) "64241420003"
```

### CellGlobalIdOrServiceAreaIdFixedLength

The parameter in the snoop trace is broken into four parts in the SLPIT script. These parts are extracted following the rule below:

```plaintext
CellGlobalIdOrServiceAreaIdFixedLength ::= OCTET STRING (SIZE (7))
  - Refers to Cell Global Identification or Service Area Identification
  -- defined in 3GPP TS 23.003.
  -- The internal structure is defined as follows:
  -- octet 1 bits 4321 Mobile Country Code 1st digit
  -- bits 8765 Mobile Country Code 2nd digit
  -- octet 2 bits 4321 Mobile Country Code 3rd digit
  -- bits 8765 Mobile Network Code 3rd digit
  -- or filler (1111) for 2 digit MNCs
  -- octet 3 bits 4321 Mobile Network Code 1st digit
  -- bits 8765 Mobile Network Code 2nd digit
  -- octets 4 and 5 Location Area Code according to 3GPP TS 24.008
  -- octets 6 and 7 Cell Identity (CI) value or
  -- Service Area Code (SAC) value
  -- according to 3GPP TS 23.003
```
<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NCC</td>
<td>Chapter 6</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>Field</td>
<td>From the example snoop above, the CellGlobalIdOrServiceAreaidFixedLength is 35F04200023C55, which gives the following fields in the SLPIT script:</td>
</tr>
<tr>
<td>Field</td>
<td>countryCode</td>
</tr>
<tr>
<td>Field</td>
<td>networkCode</td>
</tr>
<tr>
<td>Field</td>
<td>locationAreaCode</td>
</tr>
<tr>
<td>Field</td>
<td>cellID</td>
</tr>
<tr>
<td>callreference</td>
<td>This parameter refers to a call reference number allocated by a call control MSC. This is unused in the call plan, so any previously used callReference can be used. callreference</td>
</tr>
<tr>
<td>mscAddr</td>
<td>This specifies the GT of the mobile switching subsystem (MSC). In scripted tests the most important part of this number is the Country Code prefix. In the example, the subscriber is attached to a New Zealand MSC (Country Code 64): mscAddr</td>
</tr>
<tr>
<td>CalledPartyBCDNumber</td>
<td>This specifies the B party number (the number dialed on the handset) and is defined in SLPIT in the following format:</td>
</tr>
<tr>
<td></td>
<td>calledPartyBCDNumber</td>
</tr>
<tr>
<td>Service Key</td>
<td>Service Key</td>
</tr>
<tr>
<td>Service Key</td>
<td>When the IDP arrives on the platform it would contain an SK. This can be used to trigger the service. This is done using a mapping in the SLEE.cfg configuration file as follows:</td>
</tr>
<tr>
<td>Service Key</td>
<td>The CCS_HPLMN_MO service is attached to service key 102, which is included in the file in a decimal and hex format as below:</td>
</tr>
<tr>
<td>Service Key</td>
<td>SERVICEKEY=INTEGER 102 CCS_HPLMN_MO</td>
</tr>
<tr>
<td>Service Key</td>
<td>SERVICEKEY=INTEGER 0x192000000015 CCS_HPLMN_MO</td>
</tr>
<tr>
<td>Service Key</td>
<td>Refer to SLEE Technical Guide for more information on Service Key definitions.</td>
</tr>
<tr>
<td>Service</td>
<td>Service</td>
</tr>
<tr>
<td>Service</td>
<td>This service is mapped to CCS_HPLMN_MO by the following line in SLEE.cfg:</td>
</tr>
<tr>
<td>Service</td>
<td>SERVICE=CCS_HPLMN_MO 1 slee_acs CCS</td>
</tr>
<tr>
<td>Service</td>
<td>Refer to SLEE Technical Guide for more information on Service definitions.</td>
</tr>
<tr>
<td>Service Entry</td>
<td>Service Entry</td>
</tr>
<tr>
<td>Service Entry</td>
<td>In this example, the CCS service is triggered for mobile originating voice calls as the CCS service library is used to load the service. The Service Entry in acs.conf appears as below:</td>
</tr>
<tr>
<td>Service Entry</td>
<td>ServiceEntry (CCS,ccANLanl,l1CcAnN,cssSvcLibrary.so)</td>
</tr>
<tr>
<td>Service Entry</td>
<td>Refer to ACS Technical Guide for more information on Service Entry definitions.</td>
</tr>
</tbody>
</table>
CCS Capability

The CCS capabilities are defined in the Service Management screen, Capability tab.
For example, **Prepaid Charging > Service Management > Capability**.

Creating a capability
Follow these steps to create a capability.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | On the **Capability** tab, click **New**.  
**Result:** You see the New Capability screen. |
<p>| 2    | In the <strong>Name</strong> field, enter the name to use to identify the capability. |
| 3    | In the <strong>Service</strong> field, enter name of the service for the capability. |
| 4    | In the <strong>Called Party Number</strong> field, optionally enter the CdPN prefix (so that the capability is called only for those terminating numbers). |
| 5    | Select the <strong>Default Control Plan</strong> from the drop down list (that can be overwritten in the product type if set). |
| 6    | From the <strong>Statistics Category</strong> drop down list, select the service to count calls through this capability against in a license report. |
| 7    | From the <strong>Statistics Protocol</strong> drop down list, select the protocol to count calls through this capability against in a license report. |</p>
<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

**Warning:** You must restart the SLEE in order for the changes to take effect. For more information about restarting the SLEE, see *SLEE Technical Guide*.
Overview

Introduction

This chapter explains the tools to use for testing calls and provisioning the service.

In this chapter

This chapter contains the following topics.

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</tbody>
</table>

Basic SLPIT

Introduction

Oracle Communications Network Charging and Control IN Applications ‘talk’ a common language – a subset of CS1-INAP known as G8-INAP. Using this common language, IN Applications can be created that focus on functionality without worrying about the lower-level language(s) spoken by the telephony network(s). To cater for the many different protocols and languages implemented in the physical telephony network Interfaces are designed and/or implemented. The interfaces are responsible for communicating with the physical network in whichever protocol the network demands. They translate the messages from the physical network into G8-INAP so that the applications can understand what is going on (The advantage to this approach is that the applications are portable and plug-able to any network, as long as an effective interface can be implemented). The passing of messages back and forth between the applications and the interfaces takes place in the SLEE, where it is possible for many interfaces to be communicating with many applications concurrently. So, where does the SLPIT test tool fit into this picture?

The functional testing of NCC applications, using the SLPIT (Service Logic Program Instance Tester), can be done without concern for the protocol of a given network. As long as the application provides the correct functionality in G8-INAP it can be assumed that it will perform the same way on a given network with the appropriate interface(s).

SLPIT is a testing tool which is capable of sending and receiving G8-INAP messages across the SLEE from the application under test. SLPIT communicates with the application through the SLEE, just like a regular interface. It ‘receives’ messages from a text file script rather than a real network and sends these messages through the SLEE as G8-INAP. It then ‘parses’ the responses from the application under test, comparing them to the responses expected by the script. From the perspective of the application under test, SLPIT is a real interface converting the network messages to and from G8-INAP.

The main advantage that SLPIT provides is the ability to effectively test IN applications without the need for a physical telephony network, or a low-level network specific test tool.

The main disadvantage with SLPIT is that it is not a real network, and so the quirkiness and variation between networks and their protocols is not simulated.
SLPIT acts as a TCAP interface to trigger Intelligent Network platform service logic, instead of using a 'real' Service Switching Point (SSP). SLPIT supports the following IN protocols: CAP, MAP, SCCP, GPRS and IS41.

You can view supported protocols using the --h option when running SLPIT.

**Basic SLPIT script**

Log in to the SLC `hostname_of_SLC` using the user account: `acs_oper`. This will place you in directory: `/IN/service_packages/ACS`

To test that everything is set up and working, run a basic SLPIT script against the control plan you created in a previous exercise.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Create the following script and name it <code>acs_basic.slp</code>. Save the script in the scripts directory of your backup area.</td>
</tr>
<tr>
<td></td>
<td>Define call basic {</td>
</tr>
<tr>
<td></td>
<td>// replace Destination No. (DN) below with your customer’s service number</td>
</tr>
<tr>
<td></td>
<td>DN ?= &quot;01511111&quot;</td>
</tr>
<tr>
<td></td>
<td>CLI ?= &quot;0139411111&quot;</td>
</tr>
<tr>
<td></td>
<td>Send {</td>
</tr>
<tr>
<td></td>
<td>initialdp</td>
</tr>
<tr>
<td></td>
<td>calledpartynumber DN</td>
</tr>
<tr>
<td></td>
<td>callingpartynumber CLI</td>
</tr>
<tr>
<td></td>
<td>callingpartyscategory 10</td>
</tr>
<tr>
<td></td>
<td>locationnumber CLI</td>
</tr>
<tr>
<td></td>
<td>eventtypebcsm analyzedinformation</td>
</tr>
<tr>
<td></td>
<td>}</td>
</tr>
<tr>
<td></td>
<td>Receive {</td>
</tr>
<tr>
<td></td>
<td>continue</td>
</tr>
<tr>
<td></td>
<td>}</td>
</tr>
<tr>
<td></td>
<td>Startcall basic using once</td>
</tr>
</tbody>
</table>

| 2    | Test the `acs_basic.slp` script against the control plan shown below (you might need to create it and assign it to your customer's service number first). |

![Control Plan Diagram]

**Note:** The Terminate Unchanged feature node indicates that the call should commence without changing the calling party number.

Your SLPIT script should expect to receive continue from the SLC.
### Analyze a basic script

Open your `acs_basic.slp` from your backup area: `/volA | volB/training/your_LDAP_id/scripts/`.

The is a very basic script that currently emulates making a call to a service number (setup earlier) and then passes control back to the Service Switching Point (SSP) with no database lookup or change to the calling number. For this script, the calling party number (CLI) can be anything.
Chapter 7

The call represented as a call flow.

You will see in one example variables have been defined to hold the called and calling party numbers, but you can also just specify them directly if you choose:

```plaintext
... initialdp
calledpartynumber 0151111111
callingpartynumber 0139411111
callingpartyscategory 10
locationnumber 0139411111
...

Remember when testing your scripts, set your SLEE_FILE. Run the script and look at the output:

$ cd /volB/training/your_LDAP_id/scripts
$ slpit -v -k 111 < acs_basic.slp > acs_basic.out

Description of the script acs_basic.slp

This table gives you a description of each part of the script.

<table>
<thead>
<tr>
<th>Script</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>define call basic {</td>
<td>This is the start of the script definition and names it basic and uses { to define the start of the call.</td>
</tr>
<tr>
<td>DN ?= &quot;0151111111&quot; CLI ?= &quot;0139411111&quot;</td>
<td>DN is the Destination / called phone number and CLI is the Calling Line Identifier. A value assigned using ?= is used to specify default values for a variable. If a value is assigned using =, this will take priority over one with ?. So DN = &quot;0151222222&quot; and DN ?= &quot;0151111111&quot;. If the first DN was then blanked out, the second DN (=) would be used.</td>
</tr>
<tr>
<td>Send {</td>
<td>Send defines the data to be sent to the IN platform. The start of the send message block is defined using {,</td>
</tr>
<tr>
<td>Initialdp</td>
<td>The SLC expects to receive an Initial Detection Point containing called and calling numbers. The InitialDP procedure (with parameters, for example required data) is sent by the service switching function (SSF) after trigger detection point TDP-R in the basic call state model to request for instructions to complete the call. This is referred to as the &quot;Waiting for instructions&quot; state.</td>
</tr>
<tr>
<td>Calledpartynumber DN</td>
<td>The calledpartynumber refers to the called party in the forward</td>
</tr>
<tr>
<td>Script</td>
<td>Description</td>
</tr>
<tr>
<td>------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td>Callingpartynumber CLI</td>
<td>The callingpartynumber refers to the calling party number signaling information</td>
</tr>
<tr>
<td>Callingpartyscategory 10</td>
<td>Callingpartyscategory indicates the type of calling party, for example, operator, pay phone, ordinary subscriber, etc. This information is in standards document Q764E. Category 00000010 = operator, English language. Code 00001101 is used for a 'test call'.</td>
</tr>
<tr>
<td>Locationnumber CLI</td>
<td>Locationnumber is used when callingpartynumber does not contain any information about the geographical location of the calling party, for example origin dependent routing when dealing with a mobile subscriber</td>
</tr>
<tr>
<td>Eventtypebcsm analyzedinformation }</td>
<td>eventtypebcsm specifies the type of event that is being reported. For analyzedinformation it will contain the calledpartynumber. The end of the send message is defined using }.</td>
</tr>
<tr>
<td>Receive {</td>
<td>Receive defines what will be received from the SLC. The start of the receive message block is defined using {.</td>
</tr>
<tr>
<td>Continue }</td>
<td>Continue returns control back to the SLC without changing the destination number. Connect would change the dialed number. The end of the receive message block is defined using }.</td>
</tr>
<tr>
<td>} startcall basic using once</td>
<td>The end of the call block is defined using }. This runs the script block named basic. Note: Instead of running it once, you can call a script several times using startcall id using uniform delay count, for example startcall basic using uniform 0.5 10, runs the call every 0.5 seconds 10 times (for delay you must specify a number with a decimal point). Try this if you wish and base your new script on edited version of acs_basic.slp, for example name it acs_basic_delay.slp</td>
</tr>
</tbody>
</table>

SLPIT scripts are based on the sending and receiving of INAP messages. You can find details of each message by searching the INAP standards (for example CS-2, CAMEL).

Refer to the INAP standards document for details of INAP messages, for example initialDP.

**SLPIT script for UATB node**

To test that your product type calls the correct control plan and runs as expected, write a SLPIT script. The SLPIT script will test the Universal Attempt Terminate with Billing node. If you completed Induction Volume 1, you will notice that this script is similar to the script used to test the conditional terminate node. You will also need to add a receive statement to apply charging. See the *SLPIT User’s Guide* for more information.

**Example Script** - your script can be based on the following example:

```plaintext
define call ccs_uatb {
    send {
        initialdp
        appContext "0,4,0,0,1,0,50,1"
        calledpartynumber "441394100005"
        callingpartynumber "441394100009" // change this to your subscriber's number
        callingpartyscategory 10
        eventtypebcsm analyzedinformation }
```
// The maxDuration parameter tells the switch the maximum time permitted before//
the next reservation request should be sent to the SCP
receive {
  applycharging
  maxDuration 2400
  release 0
  tone 0
  requestreportbcsmevent
eventtypebcsm oCalledPartyBusy (2)
eventtypebcsm oNoAnswer (2)
dpspecificcriteria applicationtimer 10
eventtypebcsm oAbandon (1)
eventtypebcsm RouteSelectFailure
eventtypebcsm oDisconnect monitormode interrupted (2)
eventtypebcsm oDisconnect monitormode notifyAndContinue (1)
  connect destroutingaddr "441394100005"
}^c

send {
eventreportbcsm
eventtypebcsm oDisconnect miscallinfo request (1)
  // The timeNoTariffSwitch parameter tells the SLC how long to charge for in
deciseconds
applychargingreport
  receivingSide 2
  timeNoTariffSwitch 1200
  callActive 1
}

startcall ccs_uatb using once

Please do not run your script yet. You will first create and check your environment.

## Provisioning Interface

### Introduction

The Provisioning Interface (PI) provides a mechanism for manipulating data in the NCC solution using an API. It enables bulk or scripted changes to SMF data, where it would be inefficient or more prone to errors for an operator to do so using the Java administration screens.

The provisioning interface uses TCP/IP based Unix sockets to receive commands and parameters that are effectively translated into SQL commands to update the application tables on the SMF database. The PI supports the querying, addition, deletion and modification of database records. It is used by many operators to integrate database-driven software with an existing customer care solution or a web front end.

The PI can be used to provide access to the billing engine for customer care operators or by the operator to enable web based self-care for their customers.

It is a reliable, extensible, network-aware interface based on interoperability standards.

Security on the provisioning interface is achieved by allowing only recognized hosts the ability to connect. For this a username and password is required and checksums are used within the dialogs to ensure messages are not modified or additional messages are not added to the information. The first task you need to perform if you wish to use PI is to configure your PC to access the service. This exercise takes you through the necessary steps in order to set this up.
Component diagram

This diagram shows the PI components and processes.

![Component Diagram](image)

Process descriptions

This table describes the processes involved in the PI application.

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIprocess</td>
<td>Updates the SMF database and the SMS sends the data through replication to the other nodes in the network. PIprocess waits for TCP/IP connections and processes commands sent to it. Commands are processed through a shared library or by executing a PL/SQL function in the SMF database.</td>
</tr>
</tbody>
</table>
| PIManager  | Stops and starts the PIprocess. PIManager is started by init - you should find an entry in `/etc/inittab` called `pim1`. The log file for this command can be found at `/IN/service_packages/PI/tmp/PIManager.log`. You can restart PI in two ways:  
  - `/IN/service_packages/PI/bin/PIreread.sh - re-reads SMF database when all connections have been dropped.  
  - `/IN/service_packages/PI/bin/restart.sh - terminates PIManager and all PIprocesses, which are then restarted by /etc/inittab. |
| PIbatch    | Allows multiple PI commands to be sent to PIprocesses through a script file: `/IN/service_packages/PI/bin/PIbatch script server`. Results are placed in a file of the same name but with a .result extension. |
Configuring user access to PI screens

Follow these steps to configure access to PI screens for a specified user.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Open the SMS user interface (UI) from an internet browser by entering the following url: <a href="http://SMShostname/sms.jnlp">http://SMShostname/sms.jnlp</a>  Where SMShostname is the hostname of an SMS in the IN.</td>
</tr>
<tr>
<td>2</td>
<td>Log in to the SMS UI as the systems administrator (for example by logging in as the user su).</td>
</tr>
<tr>
<td>3</td>
<td>Select User Management from the SMS Operator Functions menu.</td>
</tr>
</tbody>
</table>
| 4    | Find the user to whom you want to give PI permissions by clicking Find, and then Search.  
   Tip: Leave the User Name field empty to find all users. To find a specific user, specify the first few letters of the user's name. |
| 5    | Select the user you want and click Close. |
| 6    | On the Template Creation tab, select the PI group (including PI Screens and PI Tester) from the list in the Available Permissions area and drag and drop them to the Allocated Permissions area. |
| 7    | Click Save. |
| 8    | Click Close.  
   The specified user now has the ability to administer the PI through the PI UI.
Configuring User and PC Connection to PI

Follow these steps to configure personal computer (PC) connection details to the PI for a specified user.

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
</table>
| 1    | Open the SMS UI, and log in as the user who requires a PC connection to the PI.  
**Note:** The user should already have screens access to the PI configured. For more information, see Configuring user access to PI screens (on page 74). |
| 2    | Select the **Administration** option from the SMS **Services, Provisioning** menu. |
| 3    | On **Hosts** tab, click **New**.  
The PI Hosts window displays. |
| 4    | In the **IP Address** field, enter IP address of the PC.  
**Tip:** You can find the PC IP address by using the `ipconfig` command in a CMD window or by entering `ifconfig` from a UNIX terminal. |
| 5    | On **Users** tab, click **New**.  
The PI Users window displays. |
Chapter 7

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Enter the SMS user details for user who will be using the PC. You must allocate security level 99 to the user in the Security Level field.</td>
</tr>
</tbody>
</table>
| 7    | Restart the PI to activate the changes by performing the following steps:  
|      | a. Log in to the SMS as the smf_oper user.  
|      | b. Go to the following directory:  
|      | /IN/service_packages/PI/bin  
|      | c. Check the owner of the PIrestart.sh file and su to this user.  
|      | d. Restart the PI by entering the following command:  
|      | -PIrestart.sh |

Testing your User and PC connection

Follow these steps to test your user and PC connection

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Give PI a moment to restart, then, through SMS: <a href="http://hostname">http://hostname</a> of SMS/sms.jnlp, log in as your SMS user. Service Management System -&gt; Services -&gt; Provisioning -&gt; Tester.</td>
</tr>
<tr>
<td>2</td>
<td>On General tab, select your username from the drop-down list and enter the password.</td>
</tr>
</tbody>
</table>
3  On **Connection** tab, click **Connect**.

**Result:** If connection is:

- **Successful** the following should be displayed in the Connection window:
  >username,********;
  <ACK,SYNSTAMP=2007041108352386;

- **Unsuccessful**, for example invalid username/password, the following should be displayed in the Connection window:
  >username,********;
  <NACK,72-INVALIDLOGON - username,password;
ACS commands

Go to Service Management System -> Provisioning -> Administration to view the list of PI commands available. You will find these in the Commands tab.

A list of ACS PI commands and their expected format can be found at ProjectDrive\Provisioning Interface (PI)\PI_v2.6\Design\ACS Product\Commands

PI ACS commands
Once you have established a connection to the SMS using PI Tester you should be able to execute the following ACS commands. The command should be entered into the ‘command’ window (window above the Send and Connect buttons). PI processes interrogate the timestamp SYNSTAMP at the end of each command and expect this value to be later that the previous timestamp recorded. Therefore, this SYNSTAMP value has to be manually incremented by ‘1’ each time a new command is sent.

CSAdd CLI
ACSCLI=ADD – add a CLI

Use this command to add a new CLI to the ACS customer that the specified control plan belongs to.

When you connect to PI, you will receive a SYNSTAMP. copy and paste this and use it as your SYNSTAMP. For each command you issue, increment the number by 1. See an example of the command entered below:

ACSCLI=ADD:CLI=01206888888,CALLPLAN=callplan,ALLOWED=1|2|3|4|5,SYNSTAMP=2007041108352387;

Try sending some commands where the CLI entered does not exist.

Note: It was observed during testing that the only control plans (call plans) that CLIs could be added and related to were those that belonged to the ACS customer ‘Boss’.

ACS Query CLI (Calling Line Identifier)
ACSCLI=QRY – query an existing CLI, this will return a list of allowed CLIs.
Use this command to perform a database query on one of your ACS customers’ CLIs created earlier. See an example of the command entered below:

ACSCLI=QRY:CLI=01473666666,SYNSTAMP=2007041108352386;

**Note:** If the commands are not present (for some reason), you will get this:

<NACK,75-UNKNOWN COMMAND>ACSCLI=QRY;

**CCS commands**

**Query Subscriber**

CCSCD1=QRY – query a CCS subscriber

Use this command to perform a database query on one of your CCS subscribers created earlier in this induction book. PI commands have mandatory parameters that must be entered and optional parameters that can be entered to gain more information from the database. For this command the mandatory parameter is the subscriber MSISDN. More information may be returned depending on what applications are loaded on the server for example if piWalletSms is loaded onto the server then details of the subscriber’s wallet and balances will also be returned. See an example of the command entered below:

CCSCD1=QRY:MSISDN=44123457,SYNSTAMP=2007041213581396;

The response should be similar to this:

<CCSCD1=QRY:ACK:MSISDN=44123457,ACCOUNT_NUMBER=1044123457,PRODUCT=PT1,SERVICE_PROVIDE
R=Boss,STATUS=A,CREATION_DATE=20070131175807,WALLET_EXPIRY_DATE=,BALANCE_EXPIRY_DATE=20070404165847,BALANCE=56815,INITIAL_BALANCE=100000,LANGUAGE=english,LAST_RECHARGE_DATE=20070405150230,LAST_RECHARGE_AMOUNT=0,PREV_WALLET_EXPIRY_DATE=,PREV_BALANCE_EXPIRY_DATE=,PREV_BALANCE=0,LAST_EXP_CREDIT=0,TOTAL_EXP_CREDIT=0,LAST_EXP_DATE=20070302231001,FIRST_ACTIVATION_DATE=,LAST_STATE_CHANGE_DATE=20070131180057,LAST_STATE_CHANGE_REASON=,BYPASS_NUMBER=,WALLET_TYPE=Personal,CHARGING_DOMAIN=5,FFD=,FFN=,FDN=,CUG=,CURRENCY=EUR,SYNSTAMP=2007041213581396;

**Add Friends and Family number**

Ensure your subscriber’s product type is configured to have Friends and Family numbers. It is set to 0 by default:

Go to Subscriber Management -> Product Type. Edit the product type you are querying and select Friends and Family from the list presented on the left hand side. Change Maximum F&F numbers allowed to say, 5.

Check that F&F is activated for the subscriber you are adding F&F numbers for.

To add a number to the Friends & Family list, use CCSCD8=ADD

CCSCD8=ADD:MSISDN=44123457,FFNUM=01473222222,SYNSTAMP=2007041213581402;

If the number is added to the database successfully the response should be similar to this:

<CCSCD8=ADD:ACK,SYNSTAMP=2007041213581402;

Verify that new number has actually been added to your subscriber’s Friends & Family list using the CCS screens and by querying the database. Did you have any problems adding the new number? You could try to delete the number now.

**Recharge Wallet**

Use the CCSCD3=RCH - Recharge wallet command to change the value of a balance within the subscriber’s wallet. This command has several mandatory parameters:

- **MSISDN** – subscriber number (either MSISDN or Account must be entered)
- **ACCOUNT** – subscriber account number (either MSISDN or Account must be entered)
- **RECHARGE_TYPE** – Credit or Custom
Chapter 7

- **REFERENCE** – for Credit will be????? and for Custom will be the ‘Component’ value defined in the Wallet Bonus Type screen
- **AMOUNT** - Recharge Amount (can be positive or negative)

The command also contains optional parameters which allow the operator to define how the wallet is recharged. Some of the variables are as follows:

- **BALANCE_TYPE** – for example General Cash, Promotional, SMS, etc
- **WALLET_TYPE** – which wallet is recharged – Personal or Business
- **BALMODE** – Type of recharge – Delta or Absolute (default is delta)

If optional parameters are not defined the default values will be used for example default Wallet or default Balance Type as defined for subscriber.

See an example of the command entered below:

```
CCSCD3=RCH:MSISDN=44123457,BALANCE_TYPE=General Cash,AMOUNT=1700,RECHARGE_TYPE=Custom,REFERENCE=10,MODE=2,
SYNSTAMP=2007041213581402;
```

If the wallet is recharged successfully the response should be similar to this:

```
<CCSCD3=RCH:ACK,SYNSTAMP=2007041213581402;
```

Change to the wallet balance can be verified on the Service Management System -> Services -> Prepaid Charging -> Subscriber Management -> Edit Subscriber -> Wallet screen. The CDR/EDR data can also be viewed by clicking on the View CDRs button. Different type of CDRs are created for positive (CDR8) and negative (CDR2) recharge values. More detailed information relating to the CDR can be seen in the beServer.log file.

Using the optional parameters attempt a number of recharges to your subscriber’s wallet(s), applying the recharge to different balance types, positive and negative recharge values and using default and defined parameter values.

**Recharge Bonus**

A bonus set and a bonus type can be configured so that if a subscriber recharges their wallet by an amount that falls within the defined criteria they will receive a bonus percentage on top of their recharge amount.

Define a bonus value and then a bonus type using the tabs on the Service Management System -> Services - > Prepaid Charging -> Wallet Management screen. On the Bonus Values tab create a new bonus set. Define both the recharge range that will generate a bonus and the bonus percentage. Leave the Voucher Type field blank. Now create a new bonus type and link it to the bonus set, previously created. Define the balance type to which the bonus will be added. This can be a different balance to the one receiving the recharge. In the Component field enter a two character value, for example.12. This value must match the REFERENCE value sent in the PI Recharge command CCSCD3=RCH.

Send the PI command and verify that the recharge occurs successfully. Also verify that if recharge value falls within the defined bonus criteria the subscriber receives a bonus amount added to their defined balance type (view CDRs on Subscriber Management screens).
Overview

Introduction

This chapter explains the services that are available when you install Oracle Communications Network Charging and Control (NCC) Prepaid Charging Service Template (PCST). For each available service, this chapter will describe the service logic, the components used by the service, and the different configuration possibilities.

In this chapter

This chapter contains the following topics.

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About Prepaid Charging Service Template

Introduction

When you install NCC, you have the option to install the following service templates:

- The Prepaid Charging Service Template (PCST)
- The Social Networking Service Template (SNST)

The service templates include service configuration that provides operators with the ability to differentiate themselves from the competitors in the market. This section details the services available in the PCST.

Each PCST service has a priority assigned to it that determines the order in which the services will be traversed during real-time call processing.
If more than one service is applicable to a certain call (for example calling a Friends & Family number from the home zone), then only the discount associated with the service that has the highest priority will be applied.

**Default service provider**

The PCST is delivered with the OCNCCtemplate service provider by default.

*Note:* You can specify a different name for this service provider when you install the NCC platform. For more information, see *NCC Installation Guide*.

**Default product types**

The PCST is delivered with the following three default product types:

- BRONZE
- SILVER
- GOLD

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Expire Period</th>
<th>Minimum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronze</td>
<td></td>
<td>180 Days</td>
<td></td>
</tr>
<tr>
<td>Gold</td>
<td></td>
<td>180 Days</td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td></td>
<td>180 Days</td>
<td></td>
</tr>
</tbody>
</table>
Friends and Family

Introduction

Friends and Family (F&F) is a popular service offered by the majority of mobile phone operators. Subject to the service being included in the product package, the user can receive preferential call rates as soon as they nominate their numbers to be included in the scheme. The operator must define which services will be included in the service such as voice and SMS.

The F&F service begins with the operator dictating which destination numbers are eligible to be included in the scheme. These can be from a variety of prefixes such as on-net, national fixed or mobile numbers.

The operator defines the maximum number of entries in the list and also the level of discount which is given.

By calling customer services or by using self care features, the user can:

- Get information about F&F services
- Activate F&F services
- Define / update F&F numbers

It may take several months before the subscriber is happy that they have selected the appropriate numbers to receive maximum discount, and it is likely that they will change their list more than once. The operator can choose the number of occasions a user can modify his list, without charge. After these have been used, a charge may be applied by the operator for every subsequent change that is made.

If desired by the operator, a reoccurring fee may be applied for subscription to the F&F service. Alternatively, the operator may offer F&F with no periodic fee as a way to attract new customers, or as an offer to current customers that are not subscribed – as a means of brand loyalty / stickiness between customers.

The “Friends and Family” service (FF) allows a subscriber to nominate certain MSISDN numbers as FF numbers. When a call is placed or an SMS is send to any of these numbers, a preferential rate will be applied.

The “Best Friend” service (hereafter referred to as BF) can be seen as an extra service on top of the FF service. However, they are covered/seen as one service is this chapter.

A subscriber can additionally nominate one number as a BF number, whereby a special discount will be applied for voice calls/SMSs to this number.

The operator is able to define:

- Which services will be available to the FF service (Voice, SMS).
- Which type of destination will be eligible for FF nomination (On-net, Off-net, National Fixed, International).
- The maximum number of entries a FF List can consist of.
- The FF discount which will be applied.
- The number of times a subscriber is able to modify his FF list without charge.
- The charge to be applied for a FF List change.
- A recurring fee for the FF service.

A FF Self-Care service is also available. For more information on the FF Self-Care, see Prepaid Charging Service Template - Self Care.

You may view all information relating to Friends & Family through the Customer Care screens, or access through the on-line provisioning interface.
You may be enforce any business logic around charges for changing the numbers using the Customer Care screens.

**Balance Types**

The following balance types are used by the FF service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Units</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF Free Changes</td>
<td>Charge</td>
<td>SMS</td>
<td>Used as a “Free Changes” counter, to indicate the number of free FF list changes.</td>
</tr>
</tbody>
</table>

Additionally, a “FF Free Changes” balance type cascade is created, which consists of the following balance types:

- FF Free Changes
- General Cash

This balance type cascade is used to charge for a FF list change. As long as the FF Free Changes balance is greater then zero, the FF List change will be regarded as a free change.

**Named Events**

The following named events are used by the FF service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change Fee</td>
<td>FF</td>
<td>The cost of a FF list change.</td>
</tr>
<tr>
<td>Monthly Fee</td>
<td>FF</td>
<td>The recurring cost for the FF service.</td>
</tr>
</tbody>
</table>

**Example Event Set**

These events are assigned to a product type specific named event catalogue, where they are overridden.
Prepaid Charging > Rating Management > Named Event Catalogue tab, select a named event catalogue and click Edit.

Control Plans

The following control plans (CP) are used by the Friends and Family (FF) service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF IVR - SCP</td>
<td>FF Self-Care logic</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the overall IVR Self Care CP.</td>
</tr>
<tr>
<td>FF Activation – BPL</td>
<td>FF service activation logic (used by BPL)</td>
</tr>
<tr>
<td>FF Deactivation – BPL</td>
<td>FF service deactivation (used by BPL)</td>
</tr>
<tr>
<td>FF Add – BPL</td>
<td>Add a number to the FF List (used by BPL)</td>
</tr>
<tr>
<td>FF Delete – BPL</td>
<td>Delete a number from the FF List (used by BPL)</td>
</tr>
<tr>
<td>BF Change – BPL</td>
<td>Set/Change the Best Friend (used by BPL)</td>
</tr>
<tr>
<td>HPLMN-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains FF Voice service logic)</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the Voice CP (HPLMN-MO)</td>
</tr>
<tr>
<td>HPLMN-MO</td>
<td>HPLMN-MO control plan, which calls the &quot;HPLMN-MO VAS Service Logic – SCP&quot; CP.</td>
</tr>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>SMS-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains FF SMS service logic)</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the SMS CP (SMS-MO).</td>
</tr>
<tr>
<td>SMS-MO</td>
<td>SMS-MO control plan, which calls the &quot;SMS-MO VAS Service Logic – SCP&quot; CP.</td>
</tr>
<tr>
<td>IVR Self Care</td>
<td>Overall IVR Self Care control plan, which calls VAS specific Self Care CPs</td>
</tr>
</tbody>
</table>

### Profile Fields

The following profile fields are used by the FF service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF Recurring Fee</td>
<td>BOOLEAN</td>
<td>2812001</td>
<td>Global Profile</td>
<td>Defines whether a recurring fee should be applied.</td>
</tr>
<tr>
<td>FF Recurring Fee Amount</td>
<td>INTEGER</td>
<td>2812003</td>
<td>Temporary Storage</td>
<td>Amount of the recurring fee charge (used in FF Self-Care control plan).</td>
</tr>
<tr>
<td>FF Temp Number</td>
<td>NSTRING</td>
<td>2812005</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>FF Onnet Allowed</td>
<td>BOOLEAN</td>
<td>2812006</td>
<td>App Specific 2</td>
<td>Defines whether on-net calls and SMSs are allowed.</td>
</tr>
<tr>
<td>FF Offnet Allowed</td>
<td>BOOLEAN</td>
<td>2812007</td>
<td>App Specific 2</td>
<td>Defines whether off-net calls and SMSs are allowed.</td>
</tr>
<tr>
<td>FF Fixed Allowed</td>
<td>BOOLEAN</td>
<td>2812008</td>
<td>App Specific 2</td>
<td>Defines whether national fixed calls and SMSs are allowed.</td>
</tr>
<tr>
<td>FF International Allowed</td>
<td>BOOLEAN</td>
<td>2812009</td>
<td>App Specific 2</td>
<td>Defines whether International calls and SMSs are allowed.</td>
</tr>
<tr>
<td>FF Change Fee Amount</td>
<td>INTEGER</td>
<td>2812010</td>
<td>Temporary Storage</td>
<td>Amount to be charged for a FF list change.</td>
</tr>
<tr>
<td>FF Temp Entry</td>
<td>INTEGER</td>
<td>2812011</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>FF List</td>
<td>LOPREFIX</td>
<td>2812014</td>
<td>App Specific 1</td>
<td>FF list which holds all the FF numbers.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>App Specific 2</td>
<td></td>
</tr>
<tr>
<td>FF Service Active</td>
<td>BOOLEAN</td>
<td>2812015</td>
<td>App Specific 2</td>
<td>Defines whether the FF service is active (product type).</td>
</tr>
<tr>
<td>FF Voice Discount</td>
<td>DISCOUNT</td>
<td>2812017</td>
<td>App Specific 2</td>
<td>Discount percentage for FF voice calls.</td>
</tr>
<tr>
<td>FF SMS Discount</td>
<td>DISCOUNT</td>
<td>2812018</td>
<td>App Specific 2</td>
<td>Discount percentage for FF SMSs.</td>
</tr>
<tr>
<td>BF Number</td>
<td>NSTRING</td>
<td>2815001</td>
<td>App Specific 1</td>
<td>Stores the BF number.</td>
</tr>
<tr>
<td>BF Service Active</td>
<td>BOOLEAN</td>
<td>2815002</td>
<td>Global Profile</td>
<td>Defines whether the BF service is active (globally).</td>
</tr>
<tr>
<td>BF Temp</td>
<td>BOOLEAN</td>
<td>2815003</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>BF Voice Discount</td>
<td>DISCOUNT</td>
<td>2815004</td>
<td>App Specific 2</td>
<td>Discount percentage for BF voice calls.</td>
</tr>
<tr>
<td>BF SMS Discount</td>
<td>DISCOUNT</td>
<td>2815005</td>
<td>App Specific 2</td>
<td>Discount percentage for BF SMSs.</td>
</tr>
</tbody>
</table>
Notifications

The following notifications are used by the FF service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Notification text</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF Disabled</td>
<td>Your F&amp;F service has been disabled.</td>
</tr>
<tr>
<td>FF Extended</td>
<td>Your F&amp;F service has been extended.</td>
</tr>
<tr>
<td>FF Grace</td>
<td>Your F&amp;F grace period has started.</td>
</tr>
</tbody>
</table>

Note: Only the English text is present in the table above. Other languages will also be present on a standard NCC installation.

These notifications are used as periodic charge notifications.

Recharge types

The following recharge types (RT) are used by the FF service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>FF Free Changes</td>
<td>This RT is used to reset the “Free Changes” counter.</td>
</tr>
</tbody>
</table>

Business Process Logic

The following BPLs are used by the FF service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FFADD</td>
<td>Add a number to the FF List.</td>
</tr>
<tr>
<td>FFACT</td>
<td>Activate the FF service for the subscriber.</td>
</tr>
<tr>
<td>FFDEL</td>
<td>Delete a number from the FF List.</td>
</tr>
<tr>
<td>FFDACT</td>
<td>Deactivate the FF service for the subscriber.</td>
</tr>
<tr>
<td>BFCHG</td>
<td>Change the best friend number.</td>
</tr>
</tbody>
</table>

Periodic Charges

The following periodic charge (PC) is used by the FF service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
</table>
| FF   | This PC determines whether the user has subscribed to the FF service and performs two operations, every month:  
|      | - Reset FF free change counter  
|      | - Debit FF periodic fee  
|      | This PC is assigned to all CPS product types.                         |

Screens

The FF service uses two SPM custom screens:

- Product Type
- Subscriber
Product Type screen

Here is an example screen.
Subscriber screen
Here is an example screen.

Screens Template access
A standard NCC installation creates access rights for the custom FF screens, for the following users:

- “CSR”
- “Operator”
- “Administrator”

Service Logic
As with all VAS services, the Voice and SMS control plans each have a “VAS Service Logic” sub control plan, called respectively:

- “HPLMN-MO VAS Service Logic – SCP”
- “SMS-MO VAS Service Logic – SCP”

These “VAS Service Logic” control plans contain the service logic for this service, and are only used for HPLMN-MO and SMS-MO capabilities.
The Voice and SMS FF service logic is identical and looks like this:

**Flow charts**

The flow charts below provide more information on how the F&F service functions for the different call scenarios.
HPLMN SMS-MO

1. **F&F Active for SMS in this product type?**
   - Yes: **F&F Active for sender?**
     - Yes: Apply F&F SMS discount percentage
     - No: Continue SMS (F&F not active)
   - No: Continue SMS (F&F not active)

2. **Is the destination number on the F&F list?**
   - Yes: Apply F&F SMS discount percentage
   - No: Continue SMS (F&F not active)
Self Care

Subscriber has chosen F&F menu > option from main menu

You have entered the F&F service menu.

Yes: F&F Active?

Press 1 to activate the F&F service.
Press 2 to find out more about the F&F service.
Press * to go back to the main menu.

Press 1 to review the numbers on your F&F list.
Press 2 to add a number to your F&F list.
Press 3 to delete a number from your F&F list.
Press 4 to deactivate the F&F service.
Press * to go back to the main menu.

Select Care service activation procedure

Failure:

Select Care add procedure

Success:

Select Care delete procedure

Back to main menu

Select Care deactivation procedure

Select Care help menu
Service activation

Press 1 to activate the F & F service.
Press 2 to find out more about the F & F service.
Press * to go back to the main menu.

You have chosen to activate the F & F service. You will be charged x EUR per month for this service. Press 1 to confirm, or press start to go back to the main menu.

Try to charge monthly fee

You have chosen to activate the F & F service. Press 1 to confirm, or press start to go back to the main menu.

Subscribed to F & F

F & F Free Changes counter exists?

F & F Free Changes = x

Thank you for activating the F & F service.

Back to main menu

To F & F menu

Sorry, your activation failed because you have insufficient credit in your account.
Service de-activation

Press 1 to review the numbers on your F&F list.
Press 2 to add a number to your F&F list.
Press 3 to delete a number from your F&F list.
Press 4 to deactivate the F&F service.
Press # to go back to the main menu.

You have chosen to deactivate the F&F service. Press 1 to confirm, or press 0 to cancel.

Already subscribed?

Your destination request has already been registered. The F&F service will remain active until your current monthly subscription.

F&F is charged by monthly fee?

Terminate F&F subscription

Your F&F service has been deactivated.

Go back to main menu

Unsubscribe

Your destination request has been registered. The service will remain active until your current monthly subscription expires.
Service de-activation

Press 1 to review the numbers on your F&F list.
Press 2 to add a number to your F&F list.
Press 3 to delete a number from your F&F list.
Press 4 to deactivate the F&F service.
Press * to go back to the main menu.

Your F&F list is currently empty.

Entry 1 on your list is: aaa
Entry 2 on your list is: bbb
...

* or timeout
Add number

Press 1 to review the numbers on your F&F list. Press 2 to add a number to your F&F list. Press 3 to delete a number from your F&F list. Press 4 to deactivate the F&F service. Press * to go back to the main menu.

numbers on F&F list < maximum allowed?

no

Sorry, your F&F list is full, you cannot add another number.

yes

Please enter the number you wish to add to your F&F list, followed by the # key.

number

The number you have entered is: <number> Press 1 to confirm, press * to cancel.

is the new number eligible for F&F?

no

The number you have entered is not allowed on your F&F list.

yes

is the new number already on the F&F list?

no

The number you have entered is already on your F&F list.

yes

F&F Free Changes = 0?

no

There will be a charge of $x EUR for this change. Press 1 to continue, or press * to go back to the menu.

yes

Try to change for F&F change

SUCCESS

F&F Free Changes = F&F Free Changes - 1

FAILURE

Add number to F&F list

You have insufficient credit to add a number to your F&F list.

The number has been added.
Delete number

Press 1 to review the numbers on your F&F list.
Press 2 to add a number to your F&F list.
Press 3 to delete a number from your F&F list.
Press 4 to deactivate the F&F service.
Press * to go back to the main menu.

Please enter the number you wish to delete from your F&F list, followed by the # key

number

The number you have entered is: <number>
Press 1 to confirm, press * to cancel.

1

Is the number on the F&F list?

yes

Delete number from F&F list

The number has been deleted.

no

The number you have entered is not on your F&F list so you cannot delete it.
With Best Friends option - HPLMN Voice

HPLMN voice call

F&F Active for voice calls in this product type?
  yes
  no

F&F Active for calling party?
  yes
  no

Is the destination number the Best Friend number?
  yes
  no

Is the destination number on the F&F list?
  yes
  no

Apply F&F voice discount percentage
  yes
  no

Apply Best Friend voice discount percentage

Continue call (F&F active)

Continue call (Best Friend active)

Continue call (F&F not active)
With Best Friends option - HPLMN SMS-MO

1. **HPLMN SMS-MO**
   - **F&F Active for SMS-MO in this product type?**
     - **yes**
       - **F&F Active for sender?**
         - **yes**
           - **Is the destination number the Best Friend number?**
             - **yes**
               - **Apply F&F SMS discount percentage**
                 - **Continue SMS (F&F active)**
             - **no**
               - **Continue SMS (F&F not active)**
         - **no**
           - **Continue SMS (F&F not active)**
     - **no**
       - **Is the destination number on the F&F list?**
         - **yes**
           - **Apply Best Friend SMS discount percentage**
             - **Continue SMS (Best Friend active)**
         - **no**
           - **Continue SMS (Best Friend not active)**
Self care - Friends and Family with Best Friend menu
The flow charts below provide more information on how the F&F self care, including the Best Friend add-on, will function. The differences compared to the F&F self care interface without Best Friend are highlighted in red. Only the flow charts that are different are shown (for example activation/deactivation and number deletion have been omitted).
With Best Friend option - review numbers

Press 1 to review the numbers on your F&F list.
Press 2 to add a number to your F&F list.
Press 3 to delete a number from your F&F list.
Press 4 to set your Best Friend number.
Press 5 to deactivate the F&F service.
Press * to go back to the main menu.

1

# numbers on F&F list = 0 ?

YES

Your F&F list is currently empty.

NO

The first number on your F&F list is ...
The second number on your F&F list is ...
etc

Is the Best Friend number set ?

YES

Your Best Friend number is <Best Friend number>.

NO

You currently do not have a Best Friend number.
With Best Friend option - add number

**Press 1 to review the numbers on your F&F list. Press 2 to add a number to your F&F list. Press 3 to delete a number from your F&F list. Press 4 to set your Best Friend number. Press 5 to deactivate the F&F service. Press * to go back to the main menu.**

2

**# numbers on F&F list < maximum allowed?**

no

**Sorry, your F&F list is full, you cannot add another number.**

yes

Please enter the number you wish to add to your F&F list, followed by the # key.

**The number you have entered is: <number>**

Press 1 to confirm, press * to cancel.

1

**Is the new number eligible for F&F?**

no

**The number you have entered is not allowed on your F&F list.**

yes

**Is the new number already on the F&F list?**

no

**The number you have entered is already on your F&F list.**

yes

**The number you have entered is already set as your Best Friend number.**

no

**There will be a charge of x EUR for this change. Press 1 to continue, or press * to go back to the menu.**

1

**Try to charge for F&F change**

success

**Add number to F&F list.**

failure

You have insufficient credit to add a number to your F&F list.

**The number has been added.**
With Best Friend option - set Best Friend number

1. Press 4 to set your Best Friend number.
2. Press 1 to review the numbers on your F&F list.
3. Press 2 to add a number to your F&F list.
4. Press 3 to delete a number from your F&F list.
5. Press * to go back to the main menu.

Is Best Friend number already set?

- No
  - Enter the new Best Friend number, followed by the * key.
  - The number you have entered is: <number>.
  - Press 1 to confirm, press * to cancel.
  - The number you have entered is not allowed as a Best Friend number.
  - The number you have entered is already set as your Best Friend number.

- Yes
  - Your Best Friend number is currently set to <Best Friend number>.
  - Is the new number eligible for F&F?
    - No
      - Is the new number already on the F&F list?
        - Yes
          - Remember to delete number from F&F list.
        - No
          - The number you have entered is already set as your Best Friend number.
        - The number you have entered is already set as your Best Friend number.
        - There will be a change of x EUR for this change. Press 1 to continue, or press * to go back to the menu.
          - Try to charge for F&F change
            - Delete number from F&F list if required
            - Set Best Friend number.
            - Your Best Friend number has been set.
        - NO
  - Is the new number the same Best Friend number?
    - Yes
    - NO
      - F&F Free Changes > 0 ?
        - NO
          - F&F Free Changes = F&F Free Changes - 1
        - YES
          - You have insufficient credit to set your Best Friend number.
Favourite Destination

Introduction

The Favourite Destination (FD) service allows a subscriber to select a geographic fixed network area for which he gets discounts to the normal service fees.

The service is deployed inside the Prepaid Charging solution and may be offered for voice calls and SMS. The operator may nominate which access mechanisms will take advantage of the discount offered.

The list of possible Favourite Destinations must be defined by the operator, with one area containing either a single or multiple area prefixes. On a per product type basis the operator may restrict which area may be chosen. It is possible to choose either national or international prefixes, depending on the purpose of the service. An area is made up from telephone number prefixes. For example, in Suffolk the towns of Ipswich and Felixstowe are inside a single area. Ipswich uses the prefix area code of +441473 and Felixstowe +441394. When selecting Suffolk as a Favourite Destination, the user would then receive discounts towards all calls to a fixed line in Ipswich and Felixstowe.

By calling customer services, or by using self care features, the user can:

- Get information about FD service
- Activate their FD account
- Define / update their FD

The operator can choose the amount of occasions the user can modify their Favourite Destination without charge; for example the operator may allow 1 change for free, and then every other change there may be a fee applied.

The operator is able to define:

- Which services will be available to the FD service (Voice, SMS).
- Which type of destination will be eligible for FD nomination (based on prefixes).
- The FD discount which will be applied.
- The number of times a subscriber is able to modify his FD Destination without charge.
- The charge to be applied for a FD Destination change.
- A recurring fee for the FD service.

Each subscriber may nominate a single Favourite Destination.

All information relating to Favourite Destination may be viewed through the Customer Care screens or alternatively, accessed through the on-line Provisioning Interface for integration with an operator portal.

A FD Self-Care service is also available. For more information on the FD Self-Care, see Prepaid Charging Service Template - Self Care.

Balance Types

The following balance types are used by the FD service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Units</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD Free Changes</td>
<td>Charge</td>
<td>SMS</td>
<td>Used as a “Free Changes” counter, to indicate the number of free FD free changes.</td>
</tr>
</tbody>
</table>

Additionally, a “FD Free Changes” balance type cascade is created, which consists of the following balance types:

- FD Free Changes
- General Cash
This balance type cascade is used to charge for a FD Destination change. As long as the FD free changes balance is greater then zero, the FD destination change will be regarded as a free change.

**Named Events**

The following named events are used by the FD service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change Fee</td>
<td>FD</td>
<td>The cost of a FD Destination change.</td>
</tr>
<tr>
<td>Monthly Fee</td>
<td>FD</td>
<td>The recurring cost for the FD service.</td>
</tr>
</tbody>
</table>

**Example Event Set**

These events are assigned to a product type specific named event catalogue, where they are overridden.

Prepaid Charging > Rating Management > Named Event Catalogue tab, select a named event catalogue and click **Edit**.

![Named Event Catalogue Image]

**Control Plans**

The following control plans (CP) are used by the FD service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD IVR - SCP</td>
<td>FD Self-Care logic This CP is called by the overall IVR Self Care CP.</td>
</tr>
</tbody>
</table>
### Name | Description
---|---
FD Activation – BPL | FD service activation logic (used by BPL).
FD Deactivation – BPL | FD service deactivation (used by BPL).
FD Change – BPL | Set or change the FD destination (used by BPL).
HPLMN-MO VAS Service Logic – SCP | Overall VAS service logic control plan (contains FD Voice service logic). This CP is called by the Voice CP (HPLMN-MO).
HPLMN-MO | HPLMN-MO control plan, which calls the "HPLMN-MO VAS Service Logic – SCP" CP.
SMS-MO VAS Service Logic – SCP | Overall VAS service logic control plan (contains FD SMS service logic). This CP is called by the SMS CP (SMS-MO).
SMS-MO | SMS-MO control plan, which calls the "SMS-MO VAS Service Logic – SCP" CP.
IVR Self Care | Overall IVR Self Care control plan, which calls VAS specific Self Care CPs.

### Profile Fields

The following profile fields are used by the FD service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD Recurring Fee</td>
<td>BOOLEAN</td>
<td>2813001</td>
<td>Global Profile</td>
<td>Defines whether a recurring fee should be applied.</td>
</tr>
<tr>
<td>Fd Recurring Fee Amount</td>
<td>INTEGER</td>
<td>2813002</td>
<td>Temporary Storage</td>
<td>Amount of the recurring fee charge (used in FD Self-Care control plan and BPLs).</td>
</tr>
<tr>
<td>FD Temp Number</td>
<td>NSTRING</td>
<td>2813006</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>FD Next Rebuild Date</td>
<td>DATE</td>
<td>2813008</td>
<td>App Specific 1</td>
<td>Used to track when the FD destination prefix tree needs rebuilding.</td>
</tr>
<tr>
<td>FD Change Fee Amount</td>
<td>INTEGER</td>
<td>2813010</td>
<td>Temporary Storage</td>
<td>Amount of the recurring fee charge (used in FD Self-Care control plan).</td>
</tr>
<tr>
<td>FD Service Active</td>
<td>BOOLEAN</td>
<td>2813011</td>
<td>App Specific 2</td>
<td>Defines whether the FD service is active (product type).</td>
</tr>
<tr>
<td>FD Tree</td>
<td>PREFIX</td>
<td>2813012</td>
<td>App Specific 1</td>
<td>Stores the current favorite destination.</td>
</tr>
<tr>
<td>FD Voice Discount</td>
<td>DISCOUNT</td>
<td>2813013</td>
<td>App Specific 2</td>
<td>Discount percentage for FD voice calls.</td>
</tr>
<tr>
<td>FD SMS Discount</td>
<td>DISCOUNT</td>
<td>2813014</td>
<td>App Specific 2</td>
<td>Discount percentage for FD SMSs.</td>
</tr>
</tbody>
</table>

### Notifications

The following notifications are used by the FD service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Notification text</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD Disabled</td>
<td>Your FD service has been disabled.</td>
</tr>
<tr>
<td>FD Extended</td>
<td>Your FD service has been extended.</td>
</tr>
<tr>
<td>FD Grace</td>
<td>Your FD grace period has started.</td>
</tr>
</tbody>
</table>
Note: Only the English text is present in the table above. Other languages will also be present on a standard NCC installation.

These notifications are used as periodic charge notifications.

**Recharge types**

The following recharge types (RT) are used by the FD service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD Free Changes</td>
<td>This RT is used to reset the “Free Changes” counter.</td>
</tr>
</tbody>
</table>

**Business Process Logic**

The following BPLs are used by the FD service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FDCHG</td>
<td>Set/Change the FD destination.</td>
</tr>
<tr>
<td>FDACT</td>
<td>Activate the FD service for the subscriber.</td>
</tr>
<tr>
<td>FDDACT</td>
<td>Deactivate the FD service for the subscriber.</td>
</tr>
</tbody>
</table>

**Periodic Charges**

The following periodic charge (PC) is used by the FD service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>FD</td>
<td>This PC determines whether the user has subscribed to the FD service and performs two operations, every month:</td>
</tr>
<tr>
<td></td>
<td>- Reset FD free change counter</td>
</tr>
<tr>
<td></td>
<td>- Debit FD periodic fee</td>
</tr>
</tbody>
</table>

**Screens**

The FD service uses two SPM custom screens:

- Product Type
- Subscriber
Product Type screen
Here is an example screen.
Subscriber screen
Here is an example screen.

Screens Template access
A standard NCC installation creates access rights for the custom FD screens, for the following users:

- "CSR"
- "Operator"
- "Administrator"
Areas

A standard NCC installation creates the FD Destinations (also referred to as Areas). The user can configure the areas which are created by APE, and will be used as input by APE.

Service Logic

As with all VAS services, the Voice and SMS control plans each have a “VAS Service Logic” sub control plan, called respectively:

- “HPLMN-MO VAS Service Logic – SCP”
- “SMS-MO VAS Service Logic – SCP”

These “VAS Service Logic” control plans contain the service logic for this service, and are only used for HPLMN-MO and SMS-MO capabilities.
The Voice and SMS FD service logic is identical and looks like this:

Flow charts

The flow charts below provide more information on how the FD service functions for the different call scenarios.
Self Care
The flow charts below provide more information on how the FD self care functions. The flow charts contain a number of parameter references.

Here is a description of the meaning of each of these parameters:

- **FD Active**: is the FD service active for the subscriber?
- **FD Notice**: has this subscriber requested to unsubscribe from the FD service?
- **FD Grace**: has the FD grace period started for this subscriber?
- **FD Next Charge Date**: date when the monthly recurring fee will be applied next
- FD Free Changes: number of times the subscriber can still change his FD list for no extra charge
Service activation

Press 1 to activate the FD service. Press 2 to find out more about the FD service. Press * to go back to the main menu.

1

Charge a monthly fee?

yes

You have chosen to activate the FD service. You will be charged x EUR per month for this service. Press 1 to confirm, or press star to go back to the main menu.

no

You have chosen to activate the FD service. Press 1 to confirm, or press star to go back to the main menu.

* Try to charge monthly fee

Success failure

Sorry, your activation failed because you have insufficient credit in your account.

FD Active = true
FD Grace = false
FD Notice = false
FD Next Charge Date = now + 30 days

FD Free Changes
Sponcer exists?

no

yes

FD Free Changes = x

Back to main menu

To FD Menu

Thank you for activating the FD service.
Service de-activation

Press 1 to find out what your current FD is. Press 2 to change your FD. **Press 3 to deactivate the FD service.** Press * to go back to the main menu.

You have chosen to deactivate the FD service. Press 1 to confirm, or press star to cancel.

FD is charged by monthly fee?

FD Grace?

FD Notice?

Your deactivation request has already been registered. The FD service will remain active until your current monthly subscription expires.

FD Notice = true

Your deactivation request has been registered. The service will remain active until your current monthly subscription expires.

FD Active = false
Delete FD Next Charge Date tag
Delete FD Notice tag
Delete FD Grace tag

Your FD service has been deactivated.

Back to main menu
Review FD

Press 1 to find out what your current FD is.
Press 2 to change your FD.
Press 3 to deactivate the FD service.
Press * to go back to the main menu.

FD is set?

yes: Your current FD is ...<curFD>

no: You currently do not have a FD set.
Set FD

Press 1 to find out what your current FD is.
Press 2 to change your FD.
Press 3 to deactivate the FD service.
Press * to go back to the main menu.

Please enter the area code that you would like to use as your favourite destination, followed by the hash key.

Is the prefix part of a FD area?

prefix

no

The number you have entered is not a valid area code.

Is the prefix part of a FD area?

yes

You have selected <FD>. Press 1 to confirm your choice, or press * to cancel.

Is the new area code the same as the current one?

yes

The area code you have entered is the same as your current one.

no

Free Charges > 0?

yes

There will be a charge of x cents for this change. Press 1 to continue, or press * to go back to the main menu.

no

You have insufficient credit to change your FD.

Try to change for FD change

failure

success

Set FD

Your FD has been updated.
Balance Dependant Rating

Introduction

The “Balance Dependant Rating” Service (BDR) applies a discount for subscribers who have high balances in their prepaid account (General Cash Balance Type). On a standard NCC install, a BDR configuration with three Levels will be set up.

A BDR Self-Care service is also available. For more information on the BDR Self-Care, see - Prepaid Charging Service Template - Self Care.

Control Plans

The following control plans (CP) are used by the BDR service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDR IVR - SCP</td>
<td>BDR self-care logic</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the overall IVR self care CP.</td>
</tr>
<tr>
<td>HPLMN-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains BDR voice service logic).</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the Voice CP (HPLMN-MO).</td>
</tr>
<tr>
<td>HPLMN-MO</td>
<td>HPLMN-MO control plan, which calls the “HPLMN-MO VAS Service Logic – SCP” CP.</td>
</tr>
<tr>
<td>SMS-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains BDR SMS service logic).</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the SMS CP (SMS-MO).</td>
</tr>
<tr>
<td>SMS-MO</td>
<td>SMS-MO control plan, which calls the “SMS-MO VAS Service Logic – SCP” CP.</td>
</tr>
<tr>
<td>IVR Self Care</td>
<td>Overall IVR self care control plan, which calls VAS specific self care CPs.</td>
</tr>
</tbody>
</table>

Profile Fields

The following profile fields are used by the BDR service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDR Service Active</td>
<td>BOOLEAN</td>
<td>2814000</td>
<td>App Specific 2</td>
<td>Defines whether the BDR service is active (product type).</td>
</tr>
<tr>
<td>BDR Discount Level 1</td>
<td>INTEGER</td>
<td>2814002</td>
<td>App Specific 2</td>
<td>BDR Discount 1 value (Used in BDR IVR).</td>
</tr>
<tr>
<td>BDR Discount Level 2</td>
<td>INTEGER</td>
<td>2814003</td>
<td>App Specific 2</td>
<td>BDR Discount 2 value (Used in BDR IVR).</td>
</tr>
<tr>
<td>BDR Discount Level 3</td>
<td>INTEGER</td>
<td>2814004</td>
<td>App Specific 2</td>
<td>BDR Discount 3 value (Used in BDR IVR).</td>
</tr>
<tr>
<td>BDR Threshold Level 1</td>
<td>INTEGER</td>
<td>2814005</td>
<td>App Specific 2</td>
<td>BDR Threshold 1 value (Used in BDR IVR).</td>
</tr>
<tr>
<td>BDR Discount 1</td>
<td>DISCOUNT</td>
<td>2814006</td>
<td>App Specific 2</td>
<td>Discount percentage 1 for BDR Voice calls and SMSs.</td>
</tr>
<tr>
<td>BDR Discount 2</td>
<td>DISCOUNT</td>
<td>2814007</td>
<td>App Specific 2</td>
<td>Discount percentage 2 for BDR Voice calls and SMSs.</td>
</tr>
<tr>
<td>BDR Discount 3</td>
<td>DISCOUNT</td>
<td>2814008</td>
<td>App Specific 2</td>
<td>Discount percentage 3 for BDR Voice calls and SMSs.</td>
</tr>
</tbody>
</table>
Notifications

The following notifications are used by the BDR service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Notification text</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDR Bronze Discount 1</td>
<td>Your current credit is sufficient to have ( disc )% discount on all national calls and SMS.</td>
</tr>
<tr>
<td>BDR Bronze Discount 2</td>
<td>Your current credit is sufficient to have ( disc )% discount on all national calls and SMS.</td>
</tr>
<tr>
<td>BDR Bronze Discount 3</td>
<td>Your current credit is sufficient to have ( disc )% discount on all national calls and SMS.</td>
</tr>
<tr>
<td>BDR Silver Discount 1</td>
<td>Your current credit is sufficient to have ( disc )% discount on all national calls and SMS.</td>
</tr>
<tr>
<td>BDR Silver Discount 2</td>
<td>Your current credit is sufficient to have ( disc )% discount on all national calls and SMS.</td>
</tr>
<tr>
<td>BDR Silver Discount 3</td>
<td>Your current credit is sufficient to have ( disc )% discount on all national calls and SMS.</td>
</tr>
<tr>
<td>BDR Gold Discount 1</td>
<td>Your current credit is sufficient to have ( disc )% discount on all national calls and SMS.</td>
</tr>
<tr>
<td>BDR Gold Discount 2</td>
<td>Your current credit is sufficient to have ( disc )% discount on all national calls and SMS.</td>
</tr>
<tr>
<td>BDR Gold Discount 3</td>
<td>Your current credit is sufficient to have ( disc )% discount on all national calls and SMS.</td>
</tr>
<tr>
<td>BDR no discount</td>
<td>Your current credit is sufficient to have ( disc )% discount on all national calls and SMS.</td>
</tr>
</tbody>
</table>

Note: Only the English text is present in the table above. Other languages will also be present on a standard NCC installation.

RTW notifications

These notification templates are used as Real-Time Wallet (RTW) Notifications. The following RTW notifications are set up for the BDR service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Template</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDR Bronze drop below Level 1</td>
<td>Charging</td>
<td>BDR no discount</td>
</tr>
<tr>
<td>BDR Bronze drop below Level 2</td>
<td>Charging</td>
<td>BDR Bronze Discount 1</td>
</tr>
<tr>
<td>BDR Bronze drop below Level 3</td>
<td>Charging</td>
<td>BDR Bronze Discount 2</td>
</tr>
<tr>
<td>BDR Bronze climb above Level 1</td>
<td>Recharging</td>
<td>BDR Bronze Discount 1</td>
</tr>
<tr>
<td>BDR Bronze climb above Level 2</td>
<td>Recharging</td>
<td>BDR Bronze Discount 2</td>
</tr>
<tr>
<td>BDR Bronze climb above Level 3</td>
<td>Recharging</td>
<td>BDR Bronze Discount 3</td>
</tr>
<tr>
<td>BDR Silver drop below Level 1</td>
<td>Charging</td>
<td>BDR no discount</td>
</tr>
<tr>
<td>BDR Silver drop below Level 2</td>
<td>Charging</td>
<td>BDR Silver Discount 1</td>
</tr>
<tr>
<td>BDR Silver drop below Level 3</td>
<td>Charging</td>
<td>BDR Silver Discount 2</td>
</tr>
<tr>
<td>BDR Silver climb above Level 1</td>
<td>Recharging</td>
<td>BDR Silver Discount 1</td>
</tr>
<tr>
<td>BDR Silver climb above Level 2</td>
<td>Recharging</td>
<td>BDR Silver Discount 2</td>
</tr>
<tr>
<td>BDR Silver climb above Level 3</td>
<td>Recharging</td>
<td>BDR Silver Discount 3</td>
</tr>
<tr>
<td>BDR Gold drop below Level 1</td>
<td>Charging</td>
<td>BDR no discount</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Template</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>---------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>BDR Gold drop below Level 2</td>
<td>Charging</td>
<td>BDR Gold Discount 1</td>
</tr>
<tr>
<td>BDR Gold drop below Level 3</td>
<td>Charging</td>
<td>BDR Gold Discount 2</td>
</tr>
<tr>
<td>BDR Gold climb above Level 1</td>
<td>Recharging</td>
<td>BDR Gold Discount 1</td>
</tr>
<tr>
<td>BDR Gold climb above Level 2</td>
<td>Recharging</td>
<td>BDR Gold Discount 2</td>
</tr>
<tr>
<td>BDR Gold climb above Level 3</td>
<td>Recharging</td>
<td>BDR Gold Discount 3</td>
</tr>
</tbody>
</table>

These RTW notifications are assigned to the NCC product types.

**Screens**

The BDR service uses the following custom screen:

- **Product Type**

**Product Type screen**

Here is an example screen.

![Example Screen](attachment:image)

The following configuration options are available on a product type level:

- BDR service active
- BDR Voice/SMS Discounts (for 3 BDR Levels)
- BDR IVR Discounts (for 3 BDR Levels)
- BDR IVR Threshold

The IVR settings are used by the IVR Self-Care service logic.

**Screens Template access**

A standard NCC installation creates access rights for the custom BDR screens, for the following users:
Service Logic

As with all VAS services, the Voice and SMS control plans each have a “VAS Service Logic” sub control plan, called respectively:

- “HPLMN-MO VAS Service Logic – SCP”
- “SMS-MO VAS Service Logic – SCP”

These “VAS Service Logic” control plans contain the service logic for this service, and are only used for HPLMN-MO and SMS-MO capabilities.
The Voice and SMS BDR service logic is identical and looks like this:

Flow charts

The flow charts below provide more information on how the BDR service functions for the different call scenarios.
Self Care - Check Discount
The flow chart below provides more information on how the Balance Dependant Rating self care functions.

Closed User Group
Introduction
The “Closed User Group” service (CUG) allows the operator to offer alternative rates between groups of subscribers.
## Control Plans

The following control plans (CP) are used by the CUG service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPLMN-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains CUG voice service logic). This CP is called by the Voice CP (HPLMN-MO).</td>
</tr>
<tr>
<td>HPLMN-MO</td>
<td>HPLMN-MO control plan, which calls the “HPLMN-MO VAS Service Logic – SCP” CP.</td>
</tr>
<tr>
<td>SMS-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains CUG SMS service logic). This CP is called by the SMS CP (SMS-MO).</td>
</tr>
<tr>
<td>SMS-MO</td>
<td>SMS-MO control plan, which calls the “SMS-MO VAS Service Logic – SCP” CP.</td>
</tr>
</tbody>
</table>

## Profile Fields

The following profile fields are used by the CUG service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CUG Service Active</td>
<td>BOOLEAN</td>
<td>2816001</td>
<td>Global Profile</td>
<td>Defines whether the CUG service is active (globally).</td>
</tr>
<tr>
<td>CUG Discount</td>
<td>DISCOUNT</td>
<td>2816002</td>
<td>App Specific 2</td>
<td>Discount percentage for CUG SMSs (used in SMS VAS Service Logic CP).</td>
</tr>
<tr>
<td>CUG Voice Active</td>
<td>BOOLEAN</td>
<td>2816003</td>
<td>Global Profile</td>
<td>Defines whether the CUG service is active for Voice Calls (globally).</td>
</tr>
<tr>
<td>CUG SMS Active</td>
<td>BOOLEAN</td>
<td>2816004</td>
<td>Global Profile</td>
<td>Defines whether the CUG service is active for SMSs (globally).</td>
</tr>
</tbody>
</table>
**Rates**

For CUG Voice calls, a CUG-specific tariff plan is used as opposed to the normal tariff plan. A standard NCC installation will configure five CUG tariff plans. You can assign pre-configured CUG tariff plans to CUGs through the Prepaid Charging > Subscriber Management > Closed User Groups tab.

For CUG SMSs, a CUG discount is applied, as a tariff plan override cannot be used for SMS billing purposes.

**Screens**

The CUG service uses the following custom screen:

- Product Type
Product Type screen
Here is an example screen.

The following configuration options are available on a product type level:

- CUG SMS Discount

Screens Template access
A standard NCC installation creates access rights for the custom CUG screens, for the following users:

- “CSR”
- “Operator”
- “Administrator”

Service logic
As with all VAS services, the Voice and SMS control plans each have a “VAS Service Logic” sub control plan, called respectively:

- “HPLMN-MO VAS Service Logic – SCP”
- “SMS-MO VAS Service Logic – SCP”

These “VAS Service Logic” control plans contain the service logic for this service, and are only used for HPLMN-MO and SMS-MO capabilities.
Voice
The Voice CUG service logic looks like this:
SMS
The SMS CUG service logic looks like this:

Flow charts
The flow charts below provide more information on how the CUG service functions for the different call scenarios.
**HPLMN Voice**

HPLMN voice call

- **CUG Active for voice calls?**
  - yes
  - Calling number and called number in the same CUG?
  - yes
    - Activate alternate tariff plan for this CUG
    - Continue call (CUG active)
  - no
    - Continue call (CUG not active)
  - no

**HPLMN SMS-MO**

HPLMN SMS-MO

- **CUG Active for SMS?**
  - yes
  - Sender and destination in the same CUG?
  - yes
    - Activate CUG discount
    - Continue SMS (CUG active)
  - no
    - Continue SMS (CUG not active)
  - no
Community Services

Introduction

The “Community Service” service (CS) allows preferential rates to be activated between members of the same community.

The operator is able to define:

- Which services will be available to the CS service (voice, SMS).
- Whether a discount or tariff plan override will be used.
- The maximum number of communities a subscriber can belong to (Maximum 8).
- The charge to be applied for a CS community change.
- A recurring fee for the CS service.
- A pre-call announcement or post-call notification, informing the subscriber of the CS call.

The operator could offer a selection of eight different communities, and give the user the option to join one of the communities. It is also the option of the operator to allow a user to join the community for free or to apply a monthly subscription fee.

By calling customer services or by using self care features, the user can:

- Get information about community services
- Join or leave a community

The subscriber can be notified that they are calling a community member by a pre-call announcement or by including community service information in any post-call notification.

A CS self care service is also available. For more information on the CS self care, see Prepaid Charging Service Template - Self Care.

Tariff Plan

A CS-specific tariff plan (with associated rates) is available as the default tariff plan may be overridden in the control plan.

Named Events

The following named events are used by the CS service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Change Fee</td>
<td>CS</td>
<td>The cost of a CS community change.</td>
</tr>
<tr>
<td>Monthly Fee</td>
<td>CS</td>
<td>The recurring cost for the CS service.</td>
</tr>
</tbody>
</table>

Example Event Set

These events are assigned to a product type specific named event catalogue, where they are overridden.
Prepaid Charging > Rating Management > Named Event Catalogue tab, select a named event catalogue and click Edit.

![Edit Named Event Catalogue](image)

**Control Plans**

The following control plans (CP) are used by the CS service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS IVR - SCP</td>
<td>CS self-care logic. This CP is called by the overall IVR Self Care CP.</td>
</tr>
<tr>
<td>CS Activation - BPL</td>
<td>CS service activation logic (used by BPL).</td>
</tr>
<tr>
<td>CS Deactivation - BPL</td>
<td>CS service deactivation (used by BPL).</td>
</tr>
<tr>
<td>CS Change - BPL</td>
<td>Set or change the CS community (used by BPL).</td>
</tr>
<tr>
<td>HPLMN-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains CS voice service logic).</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the Voice CP (HPLMN-MO).</td>
</tr>
<tr>
<td>HPLMN-MO</td>
<td>HPLMN-MO control plan, which calls the “HPLMN-MO VAS Service Logic – SCP” CP.</td>
</tr>
<tr>
<td>SMS-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains CS SMS service logic).</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the SMS CP (SMS-MO).</td>
</tr>
</tbody>
</table>
### Profile Fields

The following profile fields are used by the CS service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS Service Active</td>
<td>BOOLEAN</td>
<td>2817001</td>
<td>Global Profile</td>
<td>Defines whether the CS service is active (globally).</td>
</tr>
<tr>
<td>CS Voice Discount Type</td>
<td>BOOLEAN</td>
<td>2817002</td>
<td>Global Profile</td>
<td>Define the discount type, for example, discount or tariff plan override.</td>
</tr>
<tr>
<td>CS Community</td>
<td>INTEGER</td>
<td>2817003</td>
<td>App Specific 1 CCS Temporary Profile (App 6)</td>
<td>The CS community the subscriber belongs to.</td>
</tr>
<tr>
<td>CS Recurring Fee</td>
<td>BOOLEAN</td>
<td>2817004</td>
<td>Global Profile</td>
<td>Defines whether a recurring fee should be applied.</td>
</tr>
<tr>
<td>CS Recurring Fee Amount</td>
<td>INTEGER</td>
<td>2817005</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>CS Temp Community</td>
<td>INTEGER</td>
<td>2817009</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>CS Change Fee Amount</td>
<td>INTEGER</td>
<td>2817010</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>CS Communities in use</td>
<td>INTEGER</td>
<td>2817011</td>
<td>Global Profile</td>
<td>Defines maximum number of communities a subscriber can belong to.</td>
</tr>
<tr>
<td>CS Temp Nstring</td>
<td>NSTRING</td>
<td>2817012</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>CS Voice Discount</td>
<td>DISCOUNT</td>
<td>2817013</td>
<td>App Specific 2</td>
<td>Discount percentage for CS voice calls.</td>
</tr>
<tr>
<td>CS SMS Discount</td>
<td>DISCOUNT</td>
<td>2817014</td>
<td>App Specific 2</td>
<td>Discount percentage for CS SMSs.</td>
</tr>
<tr>
<td>CS Voice Active</td>
<td>BOOLEAN</td>
<td>2817015</td>
<td>Global Profile</td>
<td>Defines whether the CS service is active for voice calls (globally).</td>
</tr>
<tr>
<td>CS SMS Active</td>
<td>BOOLEAN</td>
<td>2817016</td>
<td>Global Profile</td>
<td>Defines whether the CS service is active for SMSs (globally).</td>
</tr>
</tbody>
</table>

### Notifications

The following notifications are used by the CS service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Notification text</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS Disabled</td>
<td>Your CS service has been disabled.</td>
</tr>
<tr>
<td>CS Extended</td>
<td>Your CS service has been extended.</td>
</tr>
<tr>
<td>CS Grace</td>
<td>Your CS grace period has started.</td>
</tr>
</tbody>
</table>
Note: Only the English text is present in the table above. Other languages will also be present on a standard NCC installation.

These notifications are used as periodic charge notifications.

**Business Process Logic**

The following BPLs are used by the CS service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSCHG</td>
<td>Change the CS community.</td>
</tr>
<tr>
<td>CSACT</td>
<td>Activate the CS service for the subscriber.</td>
</tr>
<tr>
<td>CSDACT</td>
<td>Deactivate the CS service for the subscriber.</td>
</tr>
</tbody>
</table>

**Periodic Charges**

The following periodic charges (PC) are used by the CS service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS</td>
<td>This PC determines whether the user has subscribed to the CS service and debits the subscriber (CS Monthly Fee) every month.</td>
</tr>
</tbody>
</table>

This PC is assigned to all CPS product types.

**Screens**

The CS service uses two SPM custom screens:

- Product Type
- Subscriber panel.
Product Type screen
Here is an example screen.
Subscriber screen
Here is an example screen.

![Subscriber screen example](image)

Screens Template access
A standard NCC installation creates access rights for the custom CS screens, for the following users:

- “CSR”
- “Operator”
- “Administrator”

Service logic
As with all VAS services, the Voice and SMS control plans each have a “VAS Service Logic” sub control plan, called respectively:

- “HPLMN-MO VAS Service Logic – SCP”
- “SMS-MO VAS Service Logic – SCP”

These “VAS Service Logic” control plans contain the service logic for this service, and are only used for HPLMN-MO and SMS-MO capabilities.
Voice
The Voice CS service logic has both the Discount and the Tariff Plan Override functionality, and looks like this.
SMS
The SMS CS service logic only has the Discount functionality, and looks like this.

Flow charts
The flow charts below provide more information on how the CS service will function for the different call scenarios.
HPLMN Voice

- HPLMN voice call
  - CS Active for voice calls?
    - Yes: Calling and called party member of the same community?
      - Yes: Apply CS voice discount (%) or alternative tariff plan
      - No: Continue call (CS active)
    - No: Continue call (CS not active)

HPLMN SMS-MO

- HPLMN SMS-MO
  - CS Active for SMS?
    - Yes: Sender and destination member of the same community?
      - Yes: Apply CS SMS discount (%)
      - No: Continue SMS (CS active)
    - No: Continue SMS (CS not active)
Self Care

Subscriber has chosen «Community Services» option from main menu.

You have entered the Community Services menu.

Member of a community?

Yes

Self Care join procedure

Press 1 to join a Community.
Press 2 to find out more about the Community Services.
Press * to go back to the main menu.

Success

Self Care leave procedure

No

Self Care change procedure

Press 1 to change to another community.
Press 2 to leave this community.
Press * to go back to the main menu.

Back to main menu

Failure

Play CS Help Menu
Joining/leaving a community

Press 1 to join a Community
Press 2 to find out more about the Community Services
Press * to go back to the main menu

Please select the Community that you would like to join
For Community 1, press 1
For Community 2, press 2
... For Community B, press B
To cancel, press *.

Community selected

You have chosen to join Community C. You will be charged 10 EUR per month for this service. Press 1 to confirm, or press star to go back to the main menu.

Try to charge monthly fee

Success: Community = C
Subscribe to CS

Thank you. You are now a member of Community C.

Failure: Sorry, you were unable to join the community because you have insufficient credit in your account.

Back to main menu

You have chosen to join Community C. You will be charged 10 EUR for this action. Press 1 to confirm, or press star to go back to the main menu.

Try to charge joining fee

Success: Community = C

Failure:
Change community - cs

You are currently a member of the <<<< community. Press 1 to change to another community. Press 2 to leave this community. Press * to go back to the main menu.

Please select the community that you would like to change to:
- For community 1, press 1.
- For community 2, press 2.
- ...
- For community 8, press 8.
To cancel, press *.

Community x selected

You have chosen to change to community <<>. You will be charged x EUR for this action. Press 1 to confirm, or press star to go back to the main menu.

Try to change charge fee

Success

Community = x
Subscribe to CS

Sorry, you were unable to join the community because you have insufficient credit in your account.

Back to main menu

Thank you. You are now a member of community <<>>.
Overdraft

Introduction

The overdraft facility (OD) allows the user to use their phone when out of credit. The overdraft may be used only for a restricted set of services – such as calling on-net or calling national. When a user does top-up credit, the overdraft amount will be subtracted from the credit put onto the account.

The operator must define the number of calls that a user is allowed in the overdraft and the maximum duration of each overdraft call. Once the subscriber is using their overdraft, an optional alternative tariff can be used where the tariff will be more expensive than the users’ normal rates.

The operator is able to define:

- Which destinations will be available to the OD service (On-Net, Off-Net, National Fixed, International).
- The number of calls allowed in OD.
- Maximum duration of an OD call.
- OD Rate.

**Tariff Plan**

Three OD-specific tariff plans (with associated rates) are available - one for each product type.

**Balance Types**

The following balance types are used by the OD service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Units</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overdraft counter</td>
<td>Charge</td>
<td>SMS</td>
<td>Tracks the number of Overdraft calls left.</td>
</tr>
</tbody>
</table>

Additionally; an “Overdraft” balance type cascade is created, which consists of only this “Overdraft Counter” balance type. Each time a call is placed, when in OD mode, this Overdraft counter is decreased.

**Named Events**

The following named events are used by the OD service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call</td>
<td>Overdraft</td>
<td>The cost of 1 Overdraft call. Used to decrease the overdraft counter.</td>
</tr>
</tbody>
</table>

**Example Event Set**

These events are assigned to a product type specific named event catalogue, where they are overridden.
Prepaid Charging > Rating Management > Named Event Catalogue tab, select a named event catalogue and click **Edit**.

**Control Plans**

The following control plans (CP) are used by the OD service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPLMN-MO Service Overdraft SCP</td>
<td>Overdraft logic. This CP gets called by the HPLMN-MO control plan.</td>
</tr>
<tr>
<td>HPLMN-MO</td>
<td>HPLMN-MO control plan, which calls the “HPLMN-MO Service Overdraft SCP” CP.</td>
</tr>
</tbody>
</table>

**Profile Fields**

The following profile fields are used by the OD service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>OD Service Active</td>
<td>BOOLEAN</td>
<td>2818001</td>
<td>App Specific 2</td>
<td>Defines whether the OD service is active (product type).</td>
</tr>
<tr>
<td>OD Override Tariffplan</td>
<td>BOOLEAN</td>
<td>2818002</td>
<td>App Specific 2</td>
<td>Defines whether an OD tariff plan should be used.</td>
</tr>
<tr>
<td>OD Onnet Allowed</td>
<td>BOOLEAN</td>
<td>2818003</td>
<td>App Specific 2</td>
<td>Defines whether on-net calls are allowed.</td>
</tr>
</tbody>
</table>
### Bonuses

An Overdraft Bonus is created, for each product type, which will be triggered on a Balance Recharge operation. This Bonus will reset the Overdraft Counter.

This reset operation reward is also automatically added to all other Voucher Types, and PI Bonuses.

### Activation credit promotions

The following activation credits (AC) will be used by the OD service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronze Activation</td>
<td>An OD counter reset reward will be added to the Bronze Activation promotion (AC).</td>
</tr>
<tr>
<td>Silver Activation</td>
<td>An OD counter reset reward will be added to the Silver Activation promotion (AC).</td>
</tr>
<tr>
<td>Gold Activation</td>
<td>An OD counter reset reward will be added to the Gold Activation promotion (AC).</td>
</tr>
</tbody>
</table>

### Screens

The OD service uses one SPM custom screen:
- Product Type
Product Type screen
Here is an example screen.

Screens Template access
A standard NCC installation creates access rights for the custom OD screens, for the following users:

- “Operator”
- “Administrator”

Service logic
As with all VAS services, the Voice control plan will have a “VAS Service Logic” sub control plan, called “HPLMN-MO VAS Service Logic – SCP”. After all this VAS logic has been processed, we return to the HPLMN-MO CP, which will continue by attempting to bill for the call.

If billing is unsuccessful because the subscriber has run out of funds, the Overdraft Logic (“HPLMN-MO Service Overdraft SCP” CP) is invoked.
Control Plan
Overdraft service sub control plan

The Overdraft service logic then looks like this.
Flow charts

The flow chart below provides more information on how the OD service will function for the different call scenarios.

Overdraft

- HPLMN voice call
- Overdraft active for product type of caller?
  - Yes
    - Caller’s Overdraft Call Counter > 0?
      - Yes
        - Called number is an allowed destination for overdraft?
          - Yes
            - You have insufficient credit to make this call. Do you wish to use overdraft to pay for this call?
              - No
            - Yes
              - Overdraft Call Counter = Overdraft Call Counter - 1
                - Apply OD alternative tariff plan (if applicable)
                  - Max call duration exceeded
                    - Disconnect call
                      - Charge call cost to caller
                        - Hangup
                      - Charge call cost to caller
                        - Continue call (CS active)
      - No
        - Disconnect call (OD not active)
  - No

Home Zone

Introduction

The Home Zone (HZ) service enables the subscriber to receive a discount when using the operator’s services from fixed locations.

A subscriber can nominate up to nine different areas as preferred zones. You can offer the subscriber a discount when calling from within one of these zones, and you can also offer them a discount if the person who is receiving the subscriber's call is on-net in one of the nominated zones.

The ability to define up to nine different zones allows multiple location services to be offered. Here are some examples:

- Home Zone
- Office Zone
- School Zone
- Family Member Zone
- Friend Zone

A HZ Self Care service is also available. For more information on HZ Self Care, see Prepaid Charging Service Template - Self Care.

Control Plans

The following control plans (CP) are used by the HZ service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HZ IVR - SCP</td>
<td>HZ Self-Care logic. This CP is called by the overall IVR Self Care CP.</td>
</tr>
<tr>
<td>HPLMN-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains HZ Voice service logic).</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the Voice CP (HPLMN-MO)</td>
</tr>
<tr>
<td>HPLMN-MO</td>
<td>HPLMN-MO control plan, which calls the “HPLMN-MO VAS Service Logic – SCP” CP.</td>
</tr>
<tr>
<td>IVR Self Care</td>
<td>Overall IVR Self Care control plan, which calls VAS specific Self Care CPs.</td>
</tr>
</tbody>
</table>

Profile Fields

The following profile fields are used by the HZ service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home</td>
<td>ZONE</td>
<td>4128770</td>
<td>-</td>
<td>LCP Zone 1</td>
</tr>
<tr>
<td>Work</td>
<td>ZONE</td>
<td>4128771</td>
<td>-</td>
<td>LCP Zone 2</td>
</tr>
<tr>
<td>Zone Home3</td>
<td>ZONE</td>
<td>4128773</td>
<td>App Specific 1</td>
<td>LCP Zone 3</td>
</tr>
<tr>
<td>Zone Home4</td>
<td>ZONE</td>
<td>4128774</td>
<td>App Specific 1</td>
<td>LCP Zone 4</td>
</tr>
<tr>
<td>Zone Home5</td>
<td>ZONE</td>
<td>4128775</td>
<td>App Specific 1</td>
<td>LCP Zone 5</td>
</tr>
<tr>
<td>Zone Home6</td>
<td>ZONE</td>
<td>4128776</td>
<td>App Specific 1</td>
<td>LCP Zone 6</td>
</tr>
<tr>
<td>Zone Home7</td>
<td>ZONE</td>
<td>4128777</td>
<td>App Specific 1</td>
<td>LCP Zone 7</td>
</tr>
<tr>
<td>Zone Home8</td>
<td>ZONE</td>
<td>4128778</td>
<td>App Specific 1</td>
<td>LCP Zone 8</td>
</tr>
<tr>
<td>Zone Home9</td>
<td>ZONE</td>
<td>4128779</td>
<td>App Specific 1</td>
<td>LCP Zone 9</td>
</tr>
<tr>
<td>HZ Service Active</td>
<td>BOOLEAN</td>
<td>2819000</td>
<td>App Specific 2</td>
<td>Defines whether the HZ service is active (product type).</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Tag</td>
<td>Profile Block</td>
<td>Usage</td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------</td>
<td>-----------</td>
<td>---------------</td>
<td>------------------------------------------------</td>
</tr>
<tr>
<td>HZ Number Of Zones</td>
<td>INTEGER</td>
<td>2819001</td>
<td>Global Profile</td>
<td>Defines the number of zones.</td>
</tr>
<tr>
<td>HZ Discount A In Zone</td>
<td>DISCOUNT</td>
<td>2819002</td>
<td>App Specific 2</td>
<td>Discount percentage if A in the zone.</td>
</tr>
<tr>
<td>HZ Discount B In Zone</td>
<td>DISCOUNT</td>
<td>2819003</td>
<td>App Specific 2</td>
<td>Discount percentage if B in the zone.</td>
</tr>
<tr>
<td>HZ Discount A+B In Zone</td>
<td>DISCOUNT</td>
<td>2819004</td>
<td>App Specific 2</td>
<td>Discount percentage if both A and B in the zone.</td>
</tr>
</tbody>
</table>

**Notes:**
- The first two zones are already installed by the LCP software, and will not be installed by APE.
- All these zones will have the “LCP ZONES” profile field (also installed by the LCP software) as parent.

**Screens**

The HZ service uses one SPM custom screen:
- **Product Type**

**Product Type screen**
Here is an example screen.

**Screens Template access**
A standard NCC installation creates access rights for the custom HZ screens, for the following users:
Service logic

As with all VAS services, the Voice control plan will have a “VAS Service Logic” sub control plan, called “HPLMN-MO VAS Service Logic – SCP”. This “VAS Service Logic” control plan will contain the HZ service logic, and is only used for the HPLMN-MO capability.

Voice

The Voice service logic looks like this.

Flow charts

The flow chart below provides more information on how the HZ service will function for the different call scenarios.
HPLMN Voice

HPLMN voice call

HZ Active for voice calls in this product type?

A party in the zone?

B party in the zone?

B party in the zone?

Continue call (HZ not active)

Apply HZ « A+B party »
voice discount percentage

Apply HZ « A party »
voice discount percentage

Apply HZ « B party »
voice discount percentage

Continue call (HZ active)
Chapter 8

Self Care

Subscriber has chosen « Home Zone » option from main menu

You have entered the Home Zone menu.

To record your current location as a home zone, press 1.
To find out what zone you are currently in, press 2.
To find out more about the Home Zone service, press 3.
To cancel, press *

1  
2  
3  

Query Location menu

Store Location menu

Play HZ Help Menu

Back to main menu
Store Location

To record your current location as a home zone, press 1.
To find out what zone you are currently in, press 2.
To find out more about the Home Zone service, press 3.
To cancel, press *

You are about to store your current location as a home zone.
If you are currently at home, press 1.
If you are currently in the office, press 2.
If you are currently ..., press 3.
... up to max. 9 options ...
To go back to the main menu, press *

You have selected <... choice ...>.
To confirm, press 1.
To cancel, press *

Store location for selected zone

Thank you, your location has been recorded.

Back to main menu
Heavy User

Introduction

The Heavy User (HU) service enables the subscriber to receive higher rates of discount on reaching a spending threshold during a period. In order to trigger this new tariff, a predefined amount of credit must be used by the subscriber on the nominated services.

The operator defines the length of the period for the cycle of the service to be carried out. The operator also defines which calling scenarios will be included in the scheme, for example on-net calls, national calls, international calls.

When this has been established, the operator needs to set an amount of credit which needs to be consumed before receiving a heavy user discount—this can be in the currency of the subscriber (for example, 20 EUR), it can be a time limit (for example 3 hours of call time), or it can be a call counter (for example 50 calls). When the user has reached this target, he will be given a discount for the remainder of the period.

Multiple tiers may be offered to reward very heavy users. The operator can distinguish to which product type this service is available, for example it may only be available to ‘gold users’.

The operator is able to define:

- Which type of destination will be eligible for FF nomination (On-net, Off-net, National Fixed, International).
The length of the period for the cycle of the service to be carried out.

The cost (number of calls, money, time …) which needs to be consumed before the discount will become active.

The HU service, as part of a standard NCC installation, uses 3 levels of discount, each with their own threshold.

A HU Self-Care service is also available. For more information on the HU Self-Care, see Prepaid Charging Service Template - Self Care.

**Balance Types**

The following balance types are used by the HU service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Units</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy User – no discount</td>
<td>XBT</td>
<td>Cash</td>
<td>Cross Balance Type to cover initial period (no discount).</td>
</tr>
<tr>
<td>Heavy User – Bronze – Level 1</td>
<td>XBT</td>
<td>Cash</td>
<td>Cross Balance Type to track Level 1 discount (Bronze product type).</td>
</tr>
<tr>
<td>Heavy User – Bronze – Level 2</td>
<td>XBT</td>
<td>Cash</td>
<td>Cross Balance Type to track Level 2 discount (Bronze product type).</td>
</tr>
<tr>
<td>Heavy User – Bronze – Level 3</td>
<td>XBT</td>
<td>Cash</td>
<td>Cross Balance Type to track Level 3 discount (Bronze product type).</td>
</tr>
<tr>
<td>Heavy User – Silver – Level 1</td>
<td>XBT</td>
<td>SMS</td>
<td>Cross Balance Type to track Level 1 discount (Silver product type).</td>
</tr>
<tr>
<td>Heavy User – Silver – Level 2</td>
<td>XBT</td>
<td>SMS</td>
<td>Cross Balance Type to track Level 2 discount (Silver product type).</td>
</tr>
<tr>
<td>Heavy User – Silver – Level 3</td>
<td>XBT</td>
<td>SMS</td>
<td>Cross Balance Type to track Level 3 discount (Silver product type).</td>
</tr>
<tr>
<td>Heavy User – Gold – Level 1</td>
<td>XBT</td>
<td>Time</td>
<td>Cross Balance Type to track Level 1 discount (Gold product type).</td>
</tr>
<tr>
<td>Heavy User – Gold – Level 2</td>
<td>XBT</td>
<td>Time</td>
<td>Cross Balance Type to track Level 2 discount (Gold product type).</td>
</tr>
<tr>
<td>Heavy User – Gold – Level 3</td>
<td>XBT</td>
<td>Time</td>
<td>Cross Balance Type to track Level 3 discount (Gold product type).</td>
</tr>
</tbody>
</table>

**Note:** The unit type can be Cash/SMS/Time, and can be chosen at install time.
Example Wallet
Here is an example screen showing the Balance Types.

Additionally, a “Heavy User” cross balance type cascade is created, for every product type, which consists of the following balance types:

- Heavy User – no period
- Heavy User – Level 1
- Heavy User – Level 2
- Heavy User – Level 3

If the Heavy User service is installed, the HPLMN-MO tariffs will be updated to include these “Heavy User” XBT cascades.

Control Plans
The following control plans (CP) are used by the HU service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HU IVR - SCP</td>
<td>HU Self-Care logic. This CP is called by the overall IVR Self Care CP.</td>
</tr>
<tr>
<td>IVR Self Care</td>
<td>Overall IVR Self Care control plan, which calls VAS specific Self Care CPs.</td>
</tr>
</tbody>
</table>
Profile Fields

The following profile fields are used by the HU service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HU Service Active</td>
<td>BOOLEAN</td>
<td>2822000</td>
<td>App Specific 2</td>
<td>Defines whether the HU service is active. (Used in IVR self-care).</td>
</tr>
<tr>
<td>HU Discount Level 1</td>
<td>INTEGER</td>
<td>2822004</td>
<td>App Specific 2</td>
<td>Discount percentage Level 1. (Used in IVR self-care).</td>
</tr>
<tr>
<td>HU Discount Level 2</td>
<td>INTEGER</td>
<td>2822005</td>
<td>App Specific 2</td>
<td>Discount percentage Level 2. (Used in IVR self-care).</td>
</tr>
<tr>
<td>HU Discount Level 3</td>
<td>INTEGER</td>
<td>2822006</td>
<td>App Specific 2</td>
<td>Discount percentage Level 3. (Used in IVR self-care).</td>
</tr>
</tbody>
</table>

Recharge Types

The following recharge types (RT) are used by the HU Service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy User - Bronze</td>
<td>This RT is used to reset the HU cross balance types for Bronze subscribers (Bronze balance types).</td>
</tr>
<tr>
<td>Heavy User - Silver</td>
<td>This RT is used to reset the HU cross balance types for Silver subscribers (Silver balance types).</td>
</tr>
<tr>
<td>Heavy User - Gold</td>
<td>This RT is used to reset the HU cross balance types for Gold subscribers (Gold balance types).</td>
</tr>
</tbody>
</table>

Periodic Charges

The following periodic charges (PC) are used by the HU service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heavy User - Bronze</td>
<td>This PC uses the “Heavy User – Bronze” RT to reset the Bronze HU XBTs, and is assigned to the Bronze product type.</td>
</tr>
<tr>
<td>Heavy User - Silver</td>
<td>This PC uses the “Heavy User – Silver” RT to reset the Silver HU XBTs, and is assigned to the Silver product type.</td>
</tr>
<tr>
<td>Heavy User - Gold</td>
<td>This PC uses the “Heavy User – Gold” RT to reset the Gold HU XBTs, and is assigned to the Gold product type.</td>
</tr>
</tbody>
</table>

Activation Credit Promotions

The following activation credits (AC) will be used by the HU service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bronze Activation</td>
<td>Bronze HU Balance Type reset rewards will be added to the Bronze Activation promotion (AC).</td>
</tr>
<tr>
<td>Silver Activation</td>
<td>Silver HU Balance Type reset rewards will be added to the Silver Activation promotion (AC).</td>
</tr>
<tr>
<td>Name</td>
<td>Usage</td>
</tr>
<tr>
<td>---------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>Gold Activation</td>
<td>Gold HU Balance Type reset rewards will be added to the Gold Activation promotion (AC).</td>
</tr>
</tbody>
</table>

**Cross Balance Type Tracking**

The HU XBT cascades will be assigned to the CLI-DN pairs to enable XBT tracking. Which tariff plans use the XBT functionality is configurable by the operator.

**Screens**

The HU service uses one SPM custom screen:

- Product Type
Product Type screen
Here is an example screen.

These settings are used by the IVR Self-Care service logic.

Screens Template access
A standard NCC installation creates access rights for the custom HU screens, for the following users:

- “Operator”
- “Administrator”

Flow charts

The flow charts contain a number of parameter references.

Here is a description of the meaning of each of these parameters:

- HU No Discount: this is the initial minimal expenditure threshold; no discounts are activated until this level is reached.
- HU Level 1/2/3: these are the expenditure thresholds which active the 1st/2nd/3rd discount level.
Boosters

Introduction

The Boosters (BO) service allows subscribers to purchase unlimited or discounted services for a defined period.

A BO purchase can be a one-time purchase (also known as “single-shot purchase”), or it can be a subscription to the BO service which implies a periodic cost.

When a subscriber makes a call or sends a message which would relate to the booster, the call is charged as per the booster agreement and not by the standard calling plan of the user.

The operator defines the included services, the validity period and the cost of the boosters up front. The end user can then subscribe to any of the pre-defined boosters.

When a subscriber makes a call or sends a message which would relate to the booster, the call is charged as per the booster agreement and not by the standard control plan of the user.
It is possible to offer a periodic subscription to a booster whereby the user is able to select to make a re-
occuring payment in return for a repeated discount.

If a user has insufficient funds in his account to allow the purchase of the subscribed booster, a short Grace Period is started during which any incoming recharge is used to fund the subscription.

If the user fails to recharge in this period the subscription is automatically cancelled, allowing the user to re-subscribe once there is sufficient credit to fund the purchase.

The operator is able to define:

- Which services will be eligible for BO nomination (On-net, Off-net, National Fixed, International).
- The validity time of the Booster.
- The cost of the Booster.

The PCST provides for 5 Booster types.

A BO Self Care service is also available. For more information on the BO Self Care, see Prepaid Charging Service Template - Self Care.

**Named Events**

The following named events are used by the BO service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boost 1 Periodic Fee</td>
<td>BOOST</td>
<td>Periodic cost of the BO1 subscription.</td>
</tr>
<tr>
<td>Boost 2 Periodic Fee</td>
<td>BOOST</td>
<td>Periodic cost of the BO2 subscription.</td>
</tr>
<tr>
<td>Boost 3 Periodic Fee</td>
<td>BOOST</td>
<td>Periodic cost of the BO3 subscription.</td>
</tr>
<tr>
<td>Boost 4 Periodic Fee</td>
<td>BOOST</td>
<td>Periodic cost of the BO4 subscription.</td>
</tr>
<tr>
<td>Boost 5 Periodic Fee</td>
<td>BOOST</td>
<td>Periodic cost of the BO5 subscription.</td>
</tr>
</tbody>
</table>

**Example Event Set**

These events are assigned to a product type specific named event catalogue, where they are overridden.
Prepaid Charging > Rating Management > Named Event Catalogue tab, select a named event catalogue and click Edit.

Control Plans

The following control plans (CP) are used by the BO service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOST IVR - SCP</td>
<td>BO self-care logic. This CP is called by the overall IVR Self Care CP.</td>
</tr>
<tr>
<td>BOOST Activation - BPL</td>
<td>BO service activation logic (used by BPL)</td>
</tr>
<tr>
<td>BOOST Deactivation - BPL</td>
<td>BO service deactivation (used by BPL)</td>
</tr>
<tr>
<td>BOOST Subscription - BPL</td>
<td>BO service subscription (used by BPL)</td>
</tr>
<tr>
<td>HPLMN-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains BO voice service logic) This CP is called by the Voice CP (HPLMN-MO)</td>
</tr>
<tr>
<td>HPLMN-MO</td>
<td>HPLMN-MO control plan, which calls the &quot;HPLMN-MO VAS Service Logic – SCP&quot; CP.</td>
</tr>
<tr>
<td>SMS-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains BO SMS service logic) This CP is called by the SMS CP (SMS-MO)</td>
</tr>
</tbody>
</table>
### SMS-MO
SMS-MO control plan, which calls the “SMS-MO VAS Service Logic – SCP” CP.

### IVR Self Care
Overall IVR self care control plan, which calls VAS specific self care CPs

### Profile Fields
The following profile fields are used by the BO service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOST Active</td>
<td>BOOLEAN</td>
<td>2820001</td>
<td>App Specific 1</td>
<td>Defines whether a BO single-shot is active.</td>
</tr>
<tr>
<td>BOOST Booster</td>
<td>NSTRING</td>
<td>2820002</td>
<td>App Specific 1</td>
<td>Defines which BO is set for the subscriber.</td>
</tr>
<tr>
<td>BOOST Expiry Date</td>
<td>DATE</td>
<td>2820004</td>
<td>App Specific 1</td>
<td>Defines when BO will expire.</td>
</tr>
<tr>
<td>BOOST Service Active</td>
<td>BOOLEAN</td>
<td>2820005</td>
<td>Global Profile</td>
<td>Defines whether a BO service is active (globally).</td>
</tr>
<tr>
<td>BOOST Temp Booster</td>
<td>NSTRING</td>
<td>2820015</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>BOOST 1 Validity</td>
<td>INTEGER</td>
<td>2820016</td>
<td>App Specific 2</td>
<td>Defines BO1 validity time.</td>
</tr>
<tr>
<td>BOOST 2 Validity</td>
<td>INTEGER</td>
<td>2820017</td>
<td>App Specific 2</td>
<td>Defines BO2 validity time.</td>
</tr>
<tr>
<td>BOOST 3 Validity</td>
<td>INTEGER</td>
<td>2820018</td>
<td>App Specific 2</td>
<td>Defines BO3 validity time.</td>
</tr>
<tr>
<td>BOOST 4 Validity</td>
<td>INTEGER</td>
<td>2820019</td>
<td>App Specific 2</td>
<td>Defines BO4 validity time.</td>
</tr>
<tr>
<td>BOOST 5 Validity</td>
<td>INTEGER</td>
<td>2820020</td>
<td>App Specific 2</td>
<td>Defines BO5 validity time.</td>
</tr>
<tr>
<td>BOOST Temp SorP</td>
<td>BOOLEAN</td>
<td>2820021</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>BOOST 1 Onnet (Voice)</td>
<td>BOOLEAN</td>
<td>2820022</td>
<td>App Specific 2</td>
<td>Defines if BO1 is available for on-net calls.</td>
</tr>
<tr>
<td>BOOST 1 Offnet (Voice)</td>
<td>BOOLEAN</td>
<td>2820023</td>
<td>App Specific 2</td>
<td>Defines if BO1 is available for off-net calls.</td>
</tr>
<tr>
<td>BOOST 1 Fixed (Voice)</td>
<td>BOOLEAN</td>
<td>2820024</td>
<td>App Specific 2</td>
<td>Defines if BO1 is available for National Fixed calls.</td>
</tr>
<tr>
<td>BOOST 1 International (Voice)</td>
<td>BOOLEAN</td>
<td>2820025</td>
<td>App Specific 2</td>
<td>Defines if BO1 is available for International calls.</td>
</tr>
<tr>
<td>BOOST 2 Onnet (Voice)</td>
<td>BOOLEAN</td>
<td>2820026</td>
<td>App Specific 2</td>
<td>Defines if BO2 is available for on-net calls.</td>
</tr>
<tr>
<td>BOOST 2 Offnet (Voice)</td>
<td>BOOLEAN</td>
<td>2820027</td>
<td>App Specific 2</td>
<td>Defines if BO2 is available for off-net calls.</td>
</tr>
<tr>
<td>BOOST 2 Fixed (Voice)</td>
<td>BOOLEAN</td>
<td>2820028</td>
<td>App Specific 2</td>
<td>Defines if BO2 is available for National Fixed calls.</td>
</tr>
<tr>
<td>BOOST 2 International (Voice)</td>
<td>BOOLEAN</td>
<td>2820029</td>
<td>App Specific 2</td>
<td>Defines if BO2 is available for International calls.</td>
</tr>
<tr>
<td>BOOST 3 Onnet (Voice)</td>
<td>BOOLEAN</td>
<td>2820030</td>
<td>App Specific 2</td>
<td>Defines if BO3 is available for on-net calls.</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Tag</td>
<td>Profile Block</td>
<td>Usage</td>
</tr>
<tr>
<td>-----------------------</td>
<td>--------------</td>
<td>---------</td>
<td>---------------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>BOOST 3 Offnet (Voice)</td>
<td>BOOLEAN</td>
<td>2820031</td>
<td>App Specific 2</td>
<td>Defines if BO3 is available for off-net calls.</td>
</tr>
<tr>
<td>BOOST 3 Fixed (Voice)</td>
<td>BOOLEAN</td>
<td>2820032</td>
<td>App Specific 2</td>
<td>Defines if BO3 is available for National Fixed calls.</td>
</tr>
<tr>
<td>BOOST 3 International (Voice)</td>
<td>BOOLEAN</td>
<td>2820033</td>
<td>App Specific 2</td>
<td>Defines if BO3 is available for International calls.</td>
</tr>
<tr>
<td>BOOST 4 Onnet (Voice)</td>
<td>BOOLEAN</td>
<td>2820034</td>
<td>App Specific 2</td>
<td>Defines if BO4 is available for on-net calls.</td>
</tr>
<tr>
<td>BOOST 4 Offnet (Voice)</td>
<td>BOOLEAN</td>
<td>2820035</td>
<td>App Specific 2</td>
<td>Defines if BO4 is available for off-net calls.</td>
</tr>
<tr>
<td>BOOST 4 Fixed (Voice)</td>
<td>BOOLEAN</td>
<td>2820036</td>
<td>App Specific 2</td>
<td>Defines if BO4 is available for National Fixed calls.</td>
</tr>
<tr>
<td>BOOST 4 International (Voice)</td>
<td>BOOLEAN</td>
<td>2820037</td>
<td>App Specific 2</td>
<td>Defines if BO4 is available for International calls.</td>
</tr>
<tr>
<td>BOOST 5 Onnet (Voice)</td>
<td>BOOLEAN</td>
<td>2820038</td>
<td>App Specific 2</td>
<td>Defines if BO5 is available for on-net calls.</td>
</tr>
<tr>
<td>BOOST 5 Offnet (Voice)</td>
<td>BOOLEAN</td>
<td>2820039</td>
<td>App Specific 2</td>
<td>Defines if BO5 is available for off-net calls.</td>
</tr>
<tr>
<td>BOOST 5 Fixed (Voice)</td>
<td>BOOLEAN</td>
<td>2820040</td>
<td>App Specific 2</td>
<td>Defines if BO5 is available for National Fixed calls.</td>
</tr>
<tr>
<td>BOOST 5 International (Voice)</td>
<td>BOOLEAN</td>
<td>2820041</td>
<td>App Specific 2</td>
<td>Defines if BO5 is available for International calls.</td>
</tr>
<tr>
<td>BOOST 1 Voice Discount</td>
<td>DISCOUNT</td>
<td>2820042</td>
<td>App Specific 2</td>
<td>Discount percentage for BO1 Voice calls.</td>
</tr>
<tr>
<td>BOOST 1 SMS Discount</td>
<td>DISCOUNT</td>
<td>2820043</td>
<td>App Specific 2</td>
<td>Discount percentage for BO1 SMSs.</td>
</tr>
<tr>
<td>BOOST 2 Voice Discount</td>
<td>DISCOUNT</td>
<td>2820044</td>
<td>App Specific 2</td>
<td>Discount percentage for BO2 Voice calls.</td>
</tr>
<tr>
<td>BOOST 2 SMS Discount</td>
<td>DISCOUNT</td>
<td>2820045</td>
<td>App Specific 2</td>
<td>Discount percentage for BO2 SMSs.</td>
</tr>
<tr>
<td>BOOST 3 Voice Discount</td>
<td>DISCOUNT</td>
<td>2820046</td>
<td>App Specific 2</td>
<td>Discount percentage for BO3 Voice calls.</td>
</tr>
<tr>
<td>BOOST 3 SMS Discount</td>
<td>DISCOUNT</td>
<td>2820047</td>
<td>App Specific 2</td>
<td>Discount percentage for BO3 SMSs.</td>
</tr>
<tr>
<td>BOOST 4 Voice Discount</td>
<td>DISCOUNT</td>
<td>2820048</td>
<td>App Specific 2</td>
<td>Discount percentage for BO4 Voice calls.</td>
</tr>
<tr>
<td>BOOST 4 SMS Discount</td>
<td>DISCOUNT</td>
<td>2820049</td>
<td>App Specific 2</td>
<td>Discount percentage for BO4 SMSs.</td>
</tr>
<tr>
<td>BOOST 5 Voice Discount</td>
<td>DISCOUNT</td>
<td>2820050</td>
<td>App Specific 2</td>
<td>Discount percentage for BO5 Voice calls.</td>
</tr>
<tr>
<td>BOOST 5 SMS Discount</td>
<td>DISCOUNT</td>
<td>2820051</td>
<td>App Specific 2</td>
<td>Discount percentage for BO5 SMSs.</td>
</tr>
<tr>
<td>BOOST 1 Onnet (SMS)</td>
<td>BOOLEAN</td>
<td>2820052</td>
<td>App Specific 2</td>
<td>Defines if BO1 is available for on-net SMSs.</td>
</tr>
</tbody>
</table>
Chapter 8

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOST 1 Offnet (SMS)</td>
<td>BOOLEAN</td>
<td>2820053</td>
<td>App Specific 2</td>
<td>Defines if BO1 is available for off-net SMSs.</td>
</tr>
<tr>
<td>BOOST 1 Fixed (SMS)</td>
<td>BOOLEAN</td>
<td>2820054</td>
<td>App Specific 2</td>
<td>Defines if BO1 is available for National Fixed SMSs.</td>
</tr>
<tr>
<td>BOOST 1 International (SMS)</td>
<td>BOOLEAN</td>
<td>2820055</td>
<td>App Specific 2</td>
<td>Defines if BO1 is available for International SMSs.</td>
</tr>
<tr>
<td>BOOST 2 Onnet (SMS)</td>
<td>BOOLEAN</td>
<td>2820056</td>
<td>App Specific 2</td>
<td>Defines if BO2 is available for on-net SMSs.</td>
</tr>
<tr>
<td>BOOST 2 Offnet (SMS)</td>
<td>BOOLEAN</td>
<td>2820057</td>
<td>App Specific 2</td>
<td>Defines if BO2 is available for off-net SMSs.</td>
</tr>
<tr>
<td>BOOST 2 Fixed (SMS)</td>
<td>BOOLEAN</td>
<td>2820058</td>
<td>App Specific 2</td>
<td>Defines if BO2 is available for National Fixed SMSs.</td>
</tr>
<tr>
<td>BOOST 2 International (SMS)</td>
<td>BOOLEAN</td>
<td>2820059</td>
<td>App Specific 2</td>
<td>Defines if BO2 is available for International SMSs.</td>
</tr>
<tr>
<td>BOOST 3 Onnet (SMS)</td>
<td>BOOLEAN</td>
<td>2820060</td>
<td>App Specific 2</td>
<td>Defines if BO3 is available for on-net SMSs.</td>
</tr>
<tr>
<td>BOOST 3 Offnet (SMS)</td>
<td>BOOLEAN</td>
<td>2820061</td>
<td>App Specific 2</td>
<td>Defines if BO3 is available for off-net SMSs.</td>
</tr>
<tr>
<td>BOOST 3 Fixed (SMS)</td>
<td>BOOLEAN</td>
<td>2820062</td>
<td>App Specific 2</td>
<td>Defines if BO3 is available for National Fixed SMSs.</td>
</tr>
<tr>
<td>BOOST 3 International (SMS)</td>
<td>BOOLEAN</td>
<td>2820063</td>
<td>App Specific 2</td>
<td>Defines if BO3 is available for International SMSs.</td>
</tr>
<tr>
<td>BOOST 4 Onnet (SMS)</td>
<td>BOOLEAN</td>
<td>2820064</td>
<td>App Specific 2</td>
<td>Defines if BO4 is available for on-net SMSs.</td>
</tr>
<tr>
<td>BOOST 4 Offnet (SMS)</td>
<td>BOOLEAN</td>
<td>2820065</td>
<td>App Specific 2</td>
<td>Defines if BO4 is available for off-net SMSs.</td>
</tr>
<tr>
<td>BOOST 4 Fixed (SMS)</td>
<td>BOOLEAN</td>
<td>2820066</td>
<td>App Specific 2</td>
<td>Defines if BO4 is available for national fixed SMSs.</td>
</tr>
<tr>
<td>BOOST 4 International (SMS)</td>
<td>BOOLEAN</td>
<td>2820067</td>
<td>App Specific 2</td>
<td>Defines if BO4 is available for international SMSs.</td>
</tr>
<tr>
<td>BOOST 5 Onnet (SMS)</td>
<td>BOOLEAN</td>
<td>2820068</td>
<td>App Specific 2</td>
<td>Defines if BO5 is available for on-net SMSs.</td>
</tr>
<tr>
<td>BOOST 5 Offnet (SMS)</td>
<td>BOOLEAN</td>
<td>2820069</td>
<td>App Specific 2</td>
<td>Defines if BO5 is available for off-net SMSs.</td>
</tr>
<tr>
<td>BOOST 5 Fixed (SMS)</td>
<td>BOOLEAN</td>
<td>2820070</td>
<td>App Specific 2</td>
<td>Defines if BO5 is available for national fixed SMSs.</td>
</tr>
<tr>
<td>BOOST 5 International (SMS)</td>
<td>BOOLEAN</td>
<td>2820071</td>
<td>App Specific 2</td>
<td>Defines if BO5 is available for International SMSs.</td>
</tr>
</tbody>
</table>

Notifications

The following notifications are used by the BO service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Notification text</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOST Disabled</td>
<td>Your Booster service has been disabled.</td>
</tr>
<tr>
<td>BOOST Extended</td>
<td>Your Booster service has been extended.</td>
</tr>
<tr>
<td>BOOST Grace</td>
<td>Your Booster grace period has started.</td>
</tr>
</tbody>
</table>

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Note: Only the English text is present in the table above. Other languages will also be present on a standard NCC installation.

These notifications are used as periodic charge notifications.

**Business Process Logic**

The following BPLs are used by the BO service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BOOSTSUBS</td>
<td>Subscribe to the BO service.</td>
</tr>
<tr>
<td>BOOSTACT</td>
<td>Activate a Booster.</td>
</tr>
<tr>
<td>BOOSTDACT</td>
<td>Deactivate a Booster (this BPL will deactivate both a single-shot or subscription BO).</td>
</tr>
</tbody>
</table>

**Periodic Charges**

The following periodic charges (PC) are used by the BO service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boost 1 Bronze</td>
<td>This PC determines whether the user has subscribed to the BO1 service and credits the BO1 Periodic Fee. This is for Bronze subscribers.</td>
</tr>
<tr>
<td>Boost 1 Silver</td>
<td>This PC determines whether the user has subscribed to the BO1 service and credits the BO1 periodic fee. This is for Silver subscribers.</td>
</tr>
<tr>
<td>Boost 1 Gold</td>
<td>This PC determines whether the user has subscribed to the BO1 service and credits the BO1 periodic fee. This is for Gold subscribers.</td>
</tr>
<tr>
<td>Boost 2 Bronze</td>
<td>This PC determines whether the user has subscribed to the BO2 service and credits the BO2 periodic fee. This is for Bronze subscribers.</td>
</tr>
<tr>
<td>Boost 2 Silver</td>
<td>This PC determines whether the user has subscribed to the BO2 service and credits the BO2 periodic fee. This is for Silver subscribers.</td>
</tr>
<tr>
<td>Boost 2 Gold</td>
<td>This PC determines whether the user has subscribed to the BO2 service and credits the BO2 periodic fee. This is for Gold subscribers.</td>
</tr>
<tr>
<td>Boost 3 Bronze</td>
<td>This PC determines whether the user has subscribed to the BO3 service and credits the BO3 periodic fee. This is for Bronze subscribers.</td>
</tr>
<tr>
<td>Boost 3 Silver</td>
<td>This PC determines whether the user has subscribed to the BO3 service and credits the BO3 periodic fee. This is for Silver subscribers.</td>
</tr>
<tr>
<td>Boost 3 Gold</td>
<td>This PC determines whether the user has subscribed to the BO3 service and credits the BO3 periodic fee. This is for Gold subscribers.</td>
</tr>
</tbody>
</table>
### Screens

The BO service uses six SPM custom screens:

- Five Product Type screens
- One Subscriber screen
Product Type screen
There are five BO product type panels, one for each BO. They are all identical and look like this.
Subscriber screen

Here is an example screen.

Screens Template access

A standard NCC installation creates access rights for the custom BO screens, for the following users:

- "CSR"
- “Operator”
- “Administrator”

Service logic

As with all VAS services, the Voice and SMS control plans each have a “VAS Service Logic” sub control plan, called respectively:

- “HPLMN-MO VAS Service Logic – SCP”
- “SMS-MO VAS Service Logic – SCP”

These “VAS Service Logic” control plans contain the service logic for this service, and are only used for HPLMN-MO and SMS-MO capabilities.
Voice and SMS-MO
The Voice and SMS BO service logic is identical and looks like this.
Flow charts

The flow chart below provides more information on how the BO service functions for the different call scenarios.

HPLMN Voice

---

Chapter 8
Self Care
The flow charts below provide more information on how the Booster self care functions.

The flow charts contain a number of parameter references.

Here is a description of the meaning of each of these parameters:

- Booster <x> Active: true if Booster <x> is currently activated for the subscriber
- Booster Subscription: true if the subscriber has a recurring subscription to the Booster
- Booster Expiry Date: end date of the validity period of the Booster for this subscriber
- Booster Grace: indicates whether the subscriber is in the Grace period
- Booster Notice: indicates whether the subscriber is in the Notice period

- You have entered the Booster menu.

- Booster Subscription?
  - Yes:
    - You are currently subscribed to Booster <x>. To terminate your current Booster subscription, press 1. To go back to the main menu, press *
    - Self Care deactivation procedure
  - No:
    - Is any of the Boosters 1-5 Active?
      - Yes:
        - Booster <x> is currently active. This booster will expire on <date>. To subscribe to this Booster or if it is renewed automatically, press 1. To go back to the main menu, press *
      - No:
        - To purchase a Booster, press 1. To subscribe to a Booster, press 2. To find out more about Boosters, press 3. To go back to the main menu, press *
    - Self Care Booster Purchase procedure
    - Self Care Booster Subscription procedure
    - Play Boosters Help Menu
    - Back to main menu
Booster purchase

To purchase a Booster, press 1.
To subscribe to a Booster, press 2.
To find out more about Boosters, press 3.
To go back to the main menu, press *.

1

To purchase Booster 1, press 1.
To purchase Booster 2, press 2.
...
To purchase Booster 5, press 5.
To cancel, press *

<x> (1..5)

You have chosen to purchase Booster <x>.
To confirm, press 1.
To cancel, press *

1

Try to charge booster <x> fee

success

Booster <x> Active = true
Booster Subscription = false
Booster Expiry Date = now + validity period(Booster x)

failure

You have insufficient credit.

Booster <x> has been activated.
It will remain valid for <y> days.

Back to main menu
Booster subscription

Booster \(<x>\) is currently active. This booster will expire in \(<y>\) days.

To subscribe to this Booster so it is renewed automatically, press 1.
To go back to the main menu, press *.

1
Is any of the Boosters active?

1. Yes

You have chosen to subscribe to Booster \(<x>\).
To confirm, press 1.
To cancel, press *

Booster Subscription = true

Your subscription to Booster \(<x>\) has been activated.

Back to main menu

2. No

To purchase a Booster, press 1.
To subscribe to Booster, press 2.
To subscribe to Booster 1, press 1.
To subscribe to Booster 2, press 2.
...
To subscribe to Booster 5, press 5.
To cancel, press *

\(<x>\) (1.5)

You have chosen to subscribe to Booster \(<x>\).
To confirm, press 1.
To cancel, press *

Booster \(<x>\) Active = true
Booster Subscription = true
Booster Expiry Date = \(\text{now} + \text{validity period}(\text{Booster} \,<x>)\)

Try to charge booster \(<x>\) fee

success

You have insufficient credit.

failure

Your subscription to Booster \(<x>\) has been activated.
Happy Birthday

Introduction

The “Happy Birthday” service (HB) allows the operator to wish a subscriber a “Happy Birthday”, and to give the subscriber a discount on the subscriber’s birthday.

When the subscriber registers their SIM details with the network operator, date of birth is one of the pieces of information collected by the operator. When it is the birthday of the subscriber, an SMS can be sent to the customer. This could include a text wishing ‘Happy anniversary’ or other operator specific message. The details of the present would then follow, such as free on-net calls for the day.

The operator is able to define:

- Whether HB is active for Voice/SMS
- Which type of destination will be eligible for HB nomination (On-net, Off-net, National Fixed, International).
- The HB discount
Control Plans

The following control plans (CP) are used by the HB service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HB Change - BPL</td>
<td>HB Change service logic (used by BPL).</td>
</tr>
<tr>
<td>HB SMS - BPL</td>
<td>HB SMS service logic (used internally via a crontab script -&gt; PI to send an</td>
</tr>
<tr>
<td></td>
<td>SMS to the subscriber).</td>
</tr>
<tr>
<td>HPLMN-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains HB Voice service logic).</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the Voice CP (HPLMN-MO).</td>
</tr>
<tr>
<td>HPLMN-MO</td>
<td>HPLMN-MO control plan, which calls the &quot;HPLMN-MO VAS Service Logic – SCP&quot; CP.</td>
</tr>
<tr>
<td>SMS-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains HB SMS service logic).</td>
</tr>
<tr>
<td></td>
<td>This CP is called by the SMS CP (SMS-MO).</td>
</tr>
<tr>
<td>SMS-MO</td>
<td>SMS-MO control plan, which calls the “SMS-MO VAS Service Logic – SCP” CP.</td>
</tr>
</tbody>
</table>

Profile Fields

The following profile fields are used by the HB service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HB Service Active</td>
<td>BOOLEAN</td>
<td>2821001</td>
<td>Global Profile</td>
<td>Defines whether the HB service is active (globally).</td>
</tr>
<tr>
<td>HB Onnet Allowed</td>
<td>BOOLEAN</td>
<td>2821003</td>
<td>App Specific 2</td>
<td>Defines whether on-net calls and SMSs are allowed.</td>
</tr>
<tr>
<td>HB Offnet Allowed</td>
<td>BOOLEAN</td>
<td>2821004</td>
<td>App Specific 2</td>
<td>Defines whether off-net calls and SMSs are allowed.</td>
</tr>
<tr>
<td>HB Fixed Allowed</td>
<td>BOOLEAN</td>
<td>2821005</td>
<td>App Specific 2</td>
<td>Defines whether national fixed calls and SMSs are allowed.</td>
</tr>
<tr>
<td>HB International Allowed</td>
<td>BOOLEAN</td>
<td>2821006</td>
<td>App Specific 2</td>
<td>Defines whether international calls and SMSs are allowed.</td>
</tr>
<tr>
<td>HB Month</td>
<td>INTEGER</td>
<td>2821008</td>
<td>App Specific 1</td>
<td>Stores the subscriber's birthday month. Stores the current month (globally), through a crontab script</td>
</tr>
<tr>
<td>HB Day</td>
<td>INTEGER</td>
<td>2821009</td>
<td>App Specific 1</td>
<td>Stores the subscriber's birthday day. Stores the current day (globally), through a crontab script</td>
</tr>
<tr>
<td>HB Voice Discount</td>
<td>DISCOUNT</td>
<td>2821010</td>
<td>App Specific 2</td>
<td>Discount percentage for HB voice calls.</td>
</tr>
<tr>
<td>HB SMS Discount</td>
<td>DISCOUNT</td>
<td>2821011</td>
<td>App Specific 2</td>
<td>Discount percentage for HB SMSs.</td>
</tr>
<tr>
<td>HB Voice Active</td>
<td>BOOLEAN</td>
<td>2821012</td>
<td>App Specific 2</td>
<td>Defines whether the HB service is active for Voice calls.</td>
</tr>
<tr>
<td>HB SMS Active</td>
<td>BOOLEAN</td>
<td>2821013</td>
<td>App Specific 2</td>
<td>Defines whether the HB service is active for SMSs.</td>
</tr>
</tbody>
</table>
Notifications

The following notification is used by the HB service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Notification text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happy Birthday</td>
<td>Happy Birthday! As a birthday present you will receive excessive discounts today.</td>
</tr>
</tbody>
</table>

**Note:** Only the English text is present in the table above. Other languages will also be present on a standard NCC installation.

This notification is used in the SMS sent to the subscriber.

Business Process Logic

The following BPLs are used by the HB service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HBCHG</td>
<td>Change the HB month/day for the subscriber.</td>
</tr>
<tr>
<td>HBSMS</td>
<td>Internal BPL used to trigger the SMS that will be sent to the subscriber.</td>
</tr>
</tbody>
</table>

Crontab scripts

The following crontab scripts are used by the HB service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>acsSetCurrentDate</td>
<td>This script populates the Global Profile Fields (HB Month and HB Day), with the current Month and Day, and gets run every day, at midnight, from the acs_oper crontab. These Global Profile Fields are used by the CP service logic.</td>
</tr>
<tr>
<td>sendHBSMS</td>
<td>This script checks all subscribers in the DataBase, to check if it’s their Birthday. If it is, the HBSMS BPL will be triggered, via the Provisioning Interface (PI), in order to send an SMS to the subscriber. This script runs every day, at 8:00 am, from the smf_oper crontab.</td>
</tr>
</tbody>
</table>

Screens

The HB service uses two SPM custom screens:

- Product Type
- Subscriber
Product Type screen
Here is an example screen.
Subscriber screen
Here is an example screen.

Screens Template access
A standard NCC installation creates access rights for the custom HB screens, for the following users:

- “CSR”
- “Operator”
- “Administrator”

Service logic
As with all VAS services, the Voice and SMS control plans each have a “VAS Service Logic” sub control plan, called respectively:

- “HPLMN-MO VAS Service Logic – SCP”
- “SMS-MO VAS Service Logic – SCP”

These “VAS Service Logic” control plans contain the service logic for this service, and are only used for HPLMN-MO and SMS-MO capabilities.
Voice and SMS-MO

The Voice and SMS BO service logic is identical and looks like this.

Flow charts

The flow charts below provide more information on how the HB service functions for the different call scenarios.
HPLMN Voice

HPLMN voice call

Today is Birthday?

Happy Birthday discount for voice calls?

Is the destination included in the HB discount?

Apply HB voice discount percentage

Continue call (HB active)

Continue call (HB not active)
Happy Anniversary

Introduction

The “Happy Anniversary” service (HA) allows the operator to wish a subscriber a “Happy Anniversary”, and to give the subscriber a discount on the subscriber's anniversary.

When the subscriber makes his first call with the network operator, this date is stored in the Prepaid Charging database as the “activation date” of the subscriber. When it is the anniversary of the activation date of the subscriber, an SMS can be sent to the customer. This could include a text expressing the gratitude of the operator for the loyalty of the subscriber. The details of the present would then follow, such as free on-net calls for the day.

The operator is able to define:

- Whether HA is active for Voice/SMS
- Which type of destination will be eligible for HA nomination (On-net, Off-net, National Fixed, International).
- The HA discount
Chapter 8

Named Events
The following named event is used by the HA service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA</td>
<td>HA</td>
<td>Used by HA periodic charge. It has a zero-cost, and is only defined because you need to specify an event for a periodic charge which only handles the notification part.</td>
</tr>
</tbody>
</table>

Example Event Set
These events are assigned to a product type specific named event catalogue, where they are overridden.

Prepaid Charging > Rating Management > Named Event Catalogue tab, select a named event catalogue and click Edit.

Control Plans
The following control plans (CP) are used by the HA service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>HPLMN-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains HA Voice service logic). This CP is called by the Voice CP (HPLMN-MO).</td>
</tr>
</tbody>
</table>
Chapter 8

### Profile Fields

The following profile fields are used by the HA service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA Anniversary</td>
<td>DATE</td>
<td>2823000</td>
<td>App Specific 1</td>
<td>Holds the subscriber's anniversary date.</td>
</tr>
<tr>
<td>HA Service Active</td>
<td>BOOLEAN</td>
<td>2823001</td>
<td>Global Profile</td>
<td>Defines whether the HA service is active (globally).</td>
</tr>
<tr>
<td>HA Onnet Allowed</td>
<td>BOOLEAN</td>
<td>2823002</td>
<td>App Specific 2</td>
<td>Defines whether on-net calls and SMSs are allowed.</td>
</tr>
<tr>
<td>HA Offnet Allowed</td>
<td>BOOLEAN</td>
<td>2823003</td>
<td>App Specific 2</td>
<td>Defines whether off-net calls and SMSs are allowed.</td>
</tr>
<tr>
<td>HA Fixed Allowed</td>
<td>BOOLEAN</td>
<td>2823004</td>
<td>App Specific 2</td>
<td>Defines whether national fixed calls and SMSs are allowed.</td>
</tr>
<tr>
<td>HA International Allowed</td>
<td>BOOLEAN</td>
<td>2823005</td>
<td>App Specific 2</td>
<td>Defines whether international calls and SMSs are allowed.</td>
</tr>
<tr>
<td>HA Voice Discount</td>
<td>DISCOUN T</td>
<td>2823006</td>
<td>App Specific 2</td>
<td>Discount percentage for HA Voice calls.</td>
</tr>
<tr>
<td>HA SMS Discount</td>
<td>DISCOUN T</td>
<td>2823007</td>
<td>App Specific 2</td>
<td>Discount percentage for HA SMSs.</td>
</tr>
<tr>
<td>HA Voice Active</td>
<td>BOOLEAN</td>
<td>2823008</td>
<td>App Specific 2</td>
<td>Defines whether the HA service is active for voice calls.</td>
</tr>
<tr>
<td>HA SMS Active</td>
<td>BOOLEAN</td>
<td>2823009</td>
<td>App Specific 2</td>
<td>Defines whether the HA service is active for SMSs.</td>
</tr>
</tbody>
</table>

### Notifications

The following notification is used by the HA service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Notification text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happy Anniversary</td>
<td>Happy Anniversary! As an anniversary present you will receive excessive discounts today.</td>
</tr>
</tbody>
</table>

Note: Only the English text is present in the table above. Other languages will also be present on a standard NCC installation.

This notification is triggered by a successful HA periodic charge.
Periodic Charges

The following periodic charge (PC) is used by the HA service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>HA</td>
<td>This PC determines whether the user has subscribed to the HA service and sends out the HA notification. This PC also has a debit operation (HA named event), but this has a zero-cost, and is only defined because it is not currently possible to define a PC which only does the notification part.</td>
</tr>
</tbody>
</table>

This PC is assigned to all NCC product types.

Screens

The HA service uses two SPM custom screens:

- Product Type
- Subscriber

Product Type screen

Here is an example screen.
Subscriber screen
Here is an example screen.

Screens Template access
A standard NCC installation creates access rights for the custom HA screens, for the following users:

- "CSR"
- “Operator”
- “Administrator”

Service logic
As with all VAS services, the Voice and SMS control plans each have a “VAS Service Logic” sub control plan, called respectively:

- “HPLMN-MO VAS Service Logic – SCP”
- “SMS-MO VAS Service Logic – SCP”

These “VAS Service Logic” control plans contain the service logic for this service, and are only used for HPLMN-MO and SMS-MO capabilities.

Voice
The Voice service logic looks like this.
SMS
The SMS service logic looks very similar to the voice service logic, but does not have the HA subscription logic, as this is only used as a result of the first call through the system.

Flow charts
The flow charts below provide more information on how the HA service functions for the different call scenarios.
Chapter 8

HPLMN Voice

HPLMN voice call

Today is Anniversary?

Happy Anniversary discount for voice calls?

Is the destination included in the HA discount?

Apply HA voice discount percentage

Continue call (HA active)

Continue call (HA not active)
Calling Card

Introduction

The Calling Card (CC) service is an IN service which allows calls to be charged to the owner of the calling card rather than the telephone from which the call is being made. The user dials a predefined service number, enters a security code, then enters the number to which the caller would like to be transferred. The cost of this call is not deducted from the telephone which is making the call, but from the wallet associated with the calling card.

The operator must define any restrictions on calls that can be made from the calling card. For example, international calls may be restricted, but all fixed line and mobile calls will not.

Calling card is particularly appealing in markets where users may not be able to afford their own telephones but have a need for its usage. In certain countries which are developing their telecommunication infrastructure networks, it will be common for many people in an area to not own their own telephone. However, there will be a demand for many people to use a telephone. It is quite common for Public Call Offices (PCO’s) to exist – a place where there is a telephone and where people can go to use the telephone. In this type of situation, the calling card situation can be ideal.

Recharge of the Calling Card wallet may be through any of the existing prepaid interfaces, such as physical vouchers.

The operator is able to define:

- Which type of destination will be eligible for CC nomination (On-net, Off-net, National Fixed, International).
A CC self-care service is also available. For more information on the CC self care, see Prepaid Charging Service Template - Self Care.

**Control Plans**

The following control plans (CP) are used by the CC service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calling Card IVR - SCP</td>
<td>CC self-care logic. This CP is called by the overall IVR Self Care CP.</td>
</tr>
<tr>
<td>Calling Card</td>
<td>CC service logic.</td>
</tr>
<tr>
<td>IVR Self Care</td>
<td>Overall IVR self care control plan, which calls VAS specific self care CPs.</td>
</tr>
</tbody>
</table>

**Profile Fields**

The following profile fields are used by the CC service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>CC Service Active</td>
<td>BOOLEAN</td>
<td>2825000</td>
<td>Global Profile</td>
<td>Defines whether the CC service is active (globally).</td>
</tr>
<tr>
<td>CC Onnet Allowed</td>
<td>BOOLEAN</td>
<td>2825001</td>
<td>Global Profile</td>
<td>Defines whether on-net calls are allowed.</td>
</tr>
<tr>
<td>CC Offnet Allowed</td>
<td>BOOLEAN</td>
<td>2825002</td>
<td>Global Profile</td>
<td>Defines whether off-net calls are allowed.</td>
</tr>
<tr>
<td>CC Fixed Allowed</td>
<td>BOOLEAN</td>
<td>2825003</td>
<td>Global Profile</td>
<td>Defines whether national fixed calls are allowed.</td>
</tr>
<tr>
<td>CC International</td>
<td>BOOLEAN</td>
<td>2825004</td>
<td>Global Profile</td>
<td>Defines whether International calls are allowed.</td>
</tr>
<tr>
<td>CC Invalid Counter</td>
<td>INTEGER</td>
<td>2825005</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
</tbody>
</table>

**Service logic**

CC uses its own CCS Capability, and as such, is triggered by dialing a specific access number.
For example, **Prepaid Charging > Service Management > Capability**.

This CCS Capability specifies the control plan which will be triggered, containing the CC service logic.
The CC service logic looks like this.

**Flow charts**

The flow charts below provide more information on how the CC service functions for the different call scenarios.
**Sponsored Calling**

**Introduction**

The “Sponsored calling” service (SC) is a service whereby an agreement is made between a sponsor and a recipient account. The recipient can make calls to the sponsor from their own phone and have the cost of the call deducted from the sponsor wallet. Therefore, the user is not charged for the cost of any call to a predefined number.

The cost of any sponsored calls is in line with a special ‘sponsored call’ tariff for those associated calls. For example, a sponsored call tariff is created, whereby any call that is sponsored will be charged at 30c per minute.

A sponsoring account can nominate as many users as he would like for them to be able to make sponsored calls – please note that only the sponsor may set up this relationship.

Sponsored calling is particularly useful for the relationship between parents and their children. Using sponsored calling, a child will always be able to call home (a sponsored number) regardless of whether they have any credit for their own personal calls. This is because the cost of the call will be deducted from the wallet of the parent (sponsor account).
Sponsored calls can always be made by a user even if they are out of credit. The only situation where the call will not be allowed will be if the sponsoring account itself is out of credit.

**Tariff Plan**

A SC-specific tariff plan (with associated rate) is available, called “Sponsored Calling Tariff Plan Sponsored Calling Tariff Plan”.

**Control Plans**

The following control plans (CP) are used by the SC service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC Add - BPL</td>
<td>SC add sponsored number logic (used by BPL).</td>
</tr>
<tr>
<td>SC Delete - BPL</td>
<td>SC delete sponsored number logic (used by BPL).</td>
</tr>
<tr>
<td>HPLMN-MO VAS Service Logic – SCP</td>
<td>Overall VAS service logic control plan (contains SC Voice service logic). This CP is called by the Voice CP (HPLMN-MO).</td>
</tr>
<tr>
<td>HPLMN-MO</td>
<td>HPLMN-MO control plan, which calls the “HPLMN-MO VAS Service Logic – SCP” CP.</td>
</tr>
</tbody>
</table>

**Profile Fields**

The following profile fields are used by the SC service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>SC Sponsored Numbers</td>
<td>LOPREFIX</td>
<td>2824001</td>
<td>App Specific 1 CCS Temporary Profile (App6)</td>
<td>Holds the list of sponsored numbers.</td>
</tr>
<tr>
<td>SC Temp Number</td>
<td>LOPREFIX</td>
<td>2824002</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>SC Service Active</td>
<td>BOOLEAN</td>
<td>2824003</td>
<td>Global Profile</td>
<td>Defines whether the SC service is active (globally).</td>
</tr>
<tr>
<td>SC Temp Entry</td>
<td>INTEGER</td>
<td>2824004</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>SC In Progress</td>
<td>BOOLEAN</td>
<td>2824005</td>
<td>Temporary Storage</td>
<td>Used during service logic processing to indicate that a sponsored call is in progress.</td>
</tr>
</tbody>
</table>

**Business Process Logic**

The following BPLs are used by the SC service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCADD</td>
<td>Add a number to the SC list.</td>
</tr>
<tr>
<td>SCDEL</td>
<td>Delete a number from the SC list.</td>
</tr>
</tbody>
</table>

**Screens**

The SC service uses one SPM custom screen:
• Subscriber

**Subscriber screen**

Here is an example screen.

![Subscriber screen example](image)

**Screens Template access**

A standard NCC installation creates access rights for the custom SC screens, for the following users:

- “CSR”
- “Operator”
- “Administrator”

**Service logic**

As with all VAS services, the Voice control plan has a “VAS Service Logic” sub control plan, called “HPLMN-MO VAS Service Logic – SCP”. This “VAS Service Logic” control plan contains the SC service logic, and is only used for the HPLMN-MO capability.

The Voice service logic is situated at the start of the “VAS Service logic” CP, and as such, is processed before any of the other value added services.
CC Service Logic

The SC service logic looks like this.

The “SC In Progress” Profile Field is set here, and is used later to restrict the Overdraft service, as the Overdraft service does not apply for sponsored calls. Please also refer to the Overdraft Service logic (on page 150).

Flow charts

The flow chart below provides more information on how the SC service functions for the different call scenarios.
Peer to Peer Transfer

Introduction

The Peer to Peer (P2P) credit transfer service allows subscribers to move credit between accounts that are connected to the Prepaid Charging solution.

The standard NCC installation sets up two P2P credit transfers per product type, but will allow for five P2P credit transfers per product type, in total.

There is no real P2P service logic, as it is all self care. For more information on P2P self care, see Prepaid Charging Service Template - Self Care. This topic focuses on general P2P configuration.

Named Events

The following named events are used by the P2P service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2P1 Bronze</td>
<td>P2P</td>
<td>Used by the P2P transfer “10 EUR Transfer Bronze”</td>
</tr>
<tr>
<td>P2P2 Bronze</td>
<td>P2P</td>
<td>Used by the P2P transfer “20 EUR Transfer Bronze”</td>
</tr>
<tr>
<td>P2P1 Silver</td>
<td>P2P</td>
<td>Used by the P2P transfer “10 EUR Transfer Silver”</td>
</tr>
<tr>
<td>P2P2 Silver</td>
<td>P2P</td>
<td>Used by the P2P transfer “20 EUR Transfer Silver”</td>
</tr>
<tr>
<td>P2P1 Gold</td>
<td>P2P</td>
<td>Used by the P2P transfer “10 EUR Transfer Gold”</td>
</tr>
<tr>
<td>P2P2 Gold</td>
<td>P2P</td>
<td>Used by the P2P transfer “20 EUR Transfer Gold”</td>
</tr>
</tbody>
</table>

Example Event Set

These events are assigned to a product type specific named event catalogue, where they are overridden.
Prepaid Charging > Rating Management > Named Event Catalogue tab, select a named event catalogue and click Edit.

Control Plans

The following control plans (CP) are used by the P2P service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2P IVR - SCP</td>
<td>P2P self-care logic. This CP is called by the overall IVR Self Care CP.</td>
</tr>
<tr>
<td>IVR Self Care</td>
<td>Overall IVR self care control plan, which calls VAS specific self care CPs.</td>
</tr>
</tbody>
</table>

Profile Fields

The following profile fields are used by the P2P service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2P Service Active</td>
<td>BOOLEAN</td>
<td>2826000</td>
<td>Global Profile</td>
<td>Defines whether the P2P service is active (globally).</td>
</tr>
<tr>
<td>P2P Transfer Name</td>
<td>STRING</td>
<td>2826001</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>P2P Transfer 1</td>
<td>STRING</td>
<td>2826002</td>
<td>App Specific 2</td>
<td>Defines the P2P credit transfer 1.</td>
</tr>
<tr>
<td>P2P Transfer 2</td>
<td>STRING</td>
<td>2826003</td>
<td>App Specific 2</td>
<td>Defines the P2P credit transfer 2.</td>
</tr>
</tbody>
</table>
### Name

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2P Transfer 3</td>
<td>STRING</td>
<td>2826004</td>
<td>App Specific 2</td>
<td>Defines the P2P credit transfer 3.</td>
</tr>
<tr>
<td>P2P Transfer 4</td>
<td>STRING</td>
<td>2826005</td>
<td>App Specific 2</td>
<td>Defines the P2P credit transfer 4.</td>
</tr>
<tr>
<td>P2P Transfer 5</td>
<td>STRING</td>
<td>2826006</td>
<td>App Specific 2</td>
<td>Defines the P2P credit transfer 5.</td>
</tr>
</tbody>
</table>

### Notifications

The following notifications are used by the P2P service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Notification text</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2P Transfer - recipient</td>
<td>$1 has transferred the following credit into your account: $2.</td>
</tr>
<tr>
<td>P2P Transfer - purchaser</td>
<td>$1 has received the following credit which has been deducted from your account: $2.</td>
</tr>
</tbody>
</table>

**Note:** Only the English text is present in the table above. Other languages will also be present on a standard NCC installation.

These notifications are used as transfer notifications.

### Recharge Types

The following recharge types (RT) are used by the P2P service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>P2P1 Bronze</td>
<td>Used by the P2P transfer “10 EUR Transfer Bronze”.</td>
</tr>
<tr>
<td>P2P2 Bronze</td>
<td>Used by the P2P transfer “20 EUR Transfer Bronze”.</td>
</tr>
<tr>
<td>P2P1 Silver</td>
<td>Used by the P2P transfer “10 EUR Transfer Silver”.</td>
</tr>
<tr>
<td>P2P2 Silver</td>
<td>Used by the P2P transfer “20 EUR Transfer Silver”.</td>
</tr>
<tr>
<td>P2P1 Gold</td>
<td>Used by the P2P transfer “10 EUR Transfer Gold”.</td>
</tr>
<tr>
<td>P2P2 Gold</td>
<td>Used by the P2P transfer “20 EUR Transfer Gold”.</td>
</tr>
</tbody>
</table>

### Credit transfers

The following credit transfers (TT) are used by the P2P service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 EUR Transfer Bronze</td>
<td>P2P credit transfer 1 for product type Bronze.</td>
</tr>
<tr>
<td>20 EUR Transfer Bronze</td>
<td>P2P credit transfer 2 for product type Bronze.</td>
</tr>
<tr>
<td>10 EUR Transfer Silver</td>
<td>P2P credit transfer 1 for product type Silver.</td>
</tr>
<tr>
<td>20 EUR Transfer Silver</td>
<td>P2P credit transfer 2 for product type Silver.</td>
</tr>
<tr>
<td>10 EUR Transfer Gold</td>
<td>P2P credit transfer 1 for product type Gold.</td>
</tr>
<tr>
<td>20 EUR Transfer Gold</td>
<td>P2P credit transfer 2 for product type Gold.</td>
</tr>
</tbody>
</table>
Example screen
Here is an example Prepaid Charging Transfer Management screen, displaying the P2P credit transfers.

Screens
The P2P service uses two SPM custom screens:

- Product Type
- Subscriber
Product Type screen
Here is an example screen.
**Subscriber screen**

Here is an example screen.

---

**Screens Template access**

A standard NCC installation creates access rights for the custom P2P screens, for the following users:

- "CSR"
- "Operator"
- "Administrator"

**Flow charts**

The flow chart below provides more information on how the P2P service functions for the different call scenarios.
Peer to Peer Credit Transfer Self Care

IVR Self Care dialled.
Option for Peer-to-Peer Credit Transfer selected.

Welcome to the P2P Credit Transfer service.

For <transfer option 1>, press 1.
For <transfer option 2>, press 2.
To cancel, press *.
(options depend on product type of caller)

1.5

You have selected (option x).
Press 1 to confirm.
Press * to cancel.

Please enter the MSISDN of the recipient of the transfer.
digits

You entered <MSISDN>.
Press 1 to confirm, press * to cancel.

Is the recipient a subscriber?

The number you entered is invalid.

Credit Transfer has been executed.

You have insufficient credit to perform this operation.

Perform Peer-to-Peer Credit Transfer

success

Insufficient credit
Service Bundles

Introduction

The Service Bundles (SB) service allows subscribers to convert purchased credit into credit which is available for use with a specific service.

For example, the subscriber could purchase a "Crazy SMS" package of 100 SMS for use within the next day for only one EUR.

In addition to the ability to define a one-off purchase of a bundle, the subscriber may choose to make a regular transfer of credit for a particular service. For example the "Crazy SMS" pack may provide a monthly option whereby the service provides 100 SMS for use in the next 30 days for a recurring charge of E10.

This may be a one-off purchase or a periodic operation.

The standard NCC installation sets up two SB credit transfers per product type, but will allow for five SB credit transfers per product type, in total.

There is no real SB service logic, as it is all self-care. For more information on SB self-care, see Prepaid Charging Service Template - Self Care. This topic focuses on general SB configuration.

Named Events

The following named events are used by the SB service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB1 Bronze</td>
<td>SB</td>
<td>Used by the SB transfer “Crazy Minutes Bronze”, and by the SB periodic charge “SB1Bronze”.</td>
</tr>
<tr>
<td>SB2 Bronze</td>
<td>SB</td>
<td>Used by the SB transfer “Crazy SMS Bronze”, and by the SB periodic charge “SB2Bronze”.</td>
</tr>
<tr>
<td>SB1 Silver</td>
<td>SB</td>
<td>Used by the SB transfer “Crazy Minutes Silver”, and by the SB periodic charge “SB1Silver”.</td>
</tr>
<tr>
<td>SB2 Silver</td>
<td>SB</td>
<td>Used by the SB transfer “Crazy SMS Silver”, and by the SB periodic charge “SB2Silver”.</td>
</tr>
<tr>
<td>SB1 Gold</td>
<td>SB</td>
<td>Used by the SB transfer “Crazy Minutes Gold”, and by the SB periodic charge “SB1Gold”.</td>
</tr>
<tr>
<td>SB2 Gold</td>
<td>SB</td>
<td>Used by the SB transfer “Crazy SMS Gold”, and by the SB periodic charge “SB2Gold”.</td>
</tr>
</tbody>
</table>

Example Event Set

These events are assigned to a product type specific named event catalogue, where they are overridden.
Prepaid Charging > Rating Management > Named Event Catalogue tab, select a named event catalogue and click **Edit**.

![Edit Named Event Catalogue](image)

### Control Plans

The following control plans (CP) are used by the SB service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB IVR – SCP</td>
<td>SB self-care logic. This CP is called by the overall IVR Self Care CP.</td>
</tr>
<tr>
<td>SB Subscribe – BPL</td>
<td>SB subscribe logic (used by BPL).</td>
</tr>
<tr>
<td>SB Unsubscribe – BPL</td>
<td>SB unsubscribe logic (used by BPL).</td>
</tr>
<tr>
<td>IVR Self Care</td>
<td>Overall IVR self care control plan, which calls VAS specific self care CPs.</td>
</tr>
</tbody>
</table>

### Profile Fields

The following profile fields are used by the SB service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Tag</th>
<th>Profile Block</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB Service Active</td>
<td>BOOLEAN</td>
<td>2827000</td>
<td>Global Profile</td>
<td>Defines whether the SB service is active (globally).</td>
</tr>
<tr>
<td>Name</td>
<td>Type</td>
<td>Tag</td>
<td>Profile Block</td>
<td>Usage</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------</td>
<td>--------</td>
<td>---------------------</td>
<td>------------------------------------------------------------</td>
</tr>
<tr>
<td>SB Name</td>
<td>STRING</td>
<td>2827001</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>SB Single Shot</td>
<td>BOOLEAN</td>
<td>2827005</td>
<td>Temporary Storage</td>
<td>Used during service logic processing.</td>
</tr>
<tr>
<td>SB Name 1</td>
<td>STRING</td>
<td>2827006</td>
<td>App Specific 2</td>
<td>Defines the SB credit transfer 1.</td>
</tr>
<tr>
<td>SB Name 2</td>
<td>STRING</td>
<td>2827007</td>
<td>App Specific 2</td>
<td>Defines the SB credit transfer 2.</td>
</tr>
<tr>
<td>SB Name 3</td>
<td>STRING</td>
<td>2827008</td>
<td>App Specific 2</td>
<td>Defines the SB credit transfer 3.</td>
</tr>
<tr>
<td>SB Name 4</td>
<td>STRING</td>
<td>2827009</td>
<td>App Specific 2</td>
<td>Defines the SB credit transfer 4.</td>
</tr>
<tr>
<td>SB Name 5</td>
<td>STRING</td>
<td>2827010</td>
<td>App Specific 2</td>
<td>Defines the SB credit transfer 5.</td>
</tr>
</tbody>
</table>

### Notifications

The following notifications are used by the SB service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Notification text</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB Success</td>
<td>Your monthly Service Bundle has been purchased.</td>
</tr>
<tr>
<td>SB Failure</td>
<td>Your monthly Service Bundle purchase did not succeed.</td>
</tr>
<tr>
<td>SB Disabled</td>
<td>Your monthly Service Bundle subscription has been canceled.</td>
</tr>
</tbody>
</table>

**Note:** Only the English text is present in the table above. Other languages will also be present on a standard NCC installation.

These notifications are used by the periodic subscription SB transfers.

### Recharge Types

The following recharge types (RT) are used by the SB service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB1 Bronze</td>
<td>Used by the SB transfer “Crazy Minutes Bronze”, and by the SB periodic charge “SB1Bronze”.</td>
</tr>
<tr>
<td>SB2 Bronze</td>
<td>Used by the SB transfer “Crazy SMS Bronze”, and by the SB periodic charge “SB2Bronze”.</td>
</tr>
<tr>
<td>SB1 Silver</td>
<td>Used by the SB transfer “Crazy Minutes Silver”, and by the SB periodic charge “SB1Silver”.</td>
</tr>
<tr>
<td>SB2 Silver</td>
<td>Used by the SB transfer “Crazy SMS Silver”, and by the SB periodic charge “SB2Silver”.</td>
</tr>
<tr>
<td>SB1 Gold</td>
<td>Used by the SB transfer “Crazy Minutes Gold”, and by the SB periodic charge “SB1Gold”.</td>
</tr>
<tr>
<td>SB2 Gold</td>
<td>Used by the SB transfer “Crazy SMS Gold”, and by the SB periodic charge “SB2Gold”.</td>
</tr>
</tbody>
</table>

### Credit transfers

The following credit transfers (TT) are used by the SB Service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 EUR Transfer Bronze</td>
<td>P2P credit transfer 1 for product type Bronze.</td>
</tr>
</tbody>
</table>
### Name | Usage
--- | ---
20 EUR Transfer Bronze | P2P credit transfer 2 for product type Bronze.
10 EUR Transfer Silver | P2P credit transfer 1 for product type Silver.
20 EUR Transfer Silver | P2P credit transfer 2 for product type Silver.
10 EUR Transfer Gold | P2P credit transfer 1 for product type Gold.
20 EUR Transfer Gold | P2P credit transfer 2 for product type Gold.

**Example screen**
Here is an example Prepaid Charging Transfer Management screen, displaying the SB credit transfers.

---

**Business Process Logic**
The following BPLs are used by the SB service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBSUBSCRIBED</td>
<td>Subscribe to a periodic SB credit transfer.</td>
</tr>
<tr>
<td>Field</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>SBUNSUBSCRIBE</td>
<td>Unsubscribe from a periodic SB credit transfer.</td>
</tr>
</tbody>
</table>

**Periodic Charges**

The following periodic charge (PC) is used by the SB service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>SB1Bronze</td>
<td>This PC determines whether the user has subscribed to the SB 1 credit transfer and debits an SB periodic fee. This PC is used for Bronze subscribers.</td>
</tr>
<tr>
<td>SB2Bronze</td>
<td>This PC shall determine whether the user has subscribed to the SB 2 credit transfer and debits an SB periodic fee. This PC is used for Bronze subscribers.</td>
</tr>
<tr>
<td>SB3Bronze</td>
<td>This PC determines whether the user has subscribed to the SB 3 credit transfer and debits an SB periodic fee. This PC is used for Bronze subscribers.</td>
</tr>
<tr>
<td>SB4Bronze</td>
<td>This PC determines whether the user has subscribed to the SB 4 credit transfer and debits an SB periodic fee. This PC is used for Bronze subscribers.</td>
</tr>
<tr>
<td>SB5Bronze</td>
<td>This PC determines whether the user has subscribed to the SB 5 credit transfer and debits an SB periodic fee. This PC is used for Bronze subscribers.</td>
</tr>
<tr>
<td>SB1Silver</td>
<td>This PC determines whether the user has subscribed to the SB 1 credit transfer and debits an SB periodic fee. This PC is used for Silver subscribers.</td>
</tr>
<tr>
<td>SB2Silver</td>
<td>This PC determines whether the user has subscribed to the SB 2 credit transfer and debits an SB periodic fee. This PC is used for Silver subscribers.</td>
</tr>
<tr>
<td>SB3Silver</td>
<td>This PC determines whether the user has subscribed to the SB 3 credit transfer and debits an SB periodic fee. This PC is used for Silver subscribers.</td>
</tr>
<tr>
<td>SB4Silver</td>
<td>This PC determines whether the user has subscribed to the SB 4 credit transfer and debits an SB periodic fee. This PC is used for Silver subscribers.</td>
</tr>
<tr>
<td>SB5Silver</td>
<td>This PC determines whether the user has subscribed to the SB 5 credit transfer and debits an SB periodic fee. This PC is used for Silver subscribers.</td>
</tr>
<tr>
<td>SB1Gold</td>
<td>This PC determines whether the user has subscribed to the SB 1 credit transfer and debits an SB periodic fee. This PC is used for Gold subscribers.</td>
</tr>
<tr>
<td>SB2Gold</td>
<td>This PC determines whether the user has subscribed to the SB 2 credit transfer and debits an SB periodic fee. This PC is used for Gold subscribers.</td>
</tr>
<tr>
<td>SB3Gold</td>
<td>This PC determines whether the user has subscribed to the SB 3 credit transfer and debits an SB periodic fee. This PC is used for Gold subscribers.</td>
</tr>
<tr>
<td>Name</td>
<td>Usage</td>
</tr>
<tr>
<td>----------</td>
<td>----------------------------------------------------------------------</td>
</tr>
<tr>
<td>SB4Gold</td>
<td>This PC determines whether the user has subscribed to the SB 4 credit transfer and debits an SB periodic fee. This PC is used for Gold subscribers.</td>
</tr>
<tr>
<td>SB5Gold</td>
<td>This PC determines whether the user has subscribed to the SB 5 credit transfer and debits an SB periodic fee. This PC is used for Gold subscribers.</td>
</tr>
</tbody>
</table>

**Screens**

The SB service uses three SPM custom screens:

- One Product Type screen
- Two Subscriber screens

**Product Type screen**

Here is an example screen.

The names are used during processing, and need to refer to the actual names of the credit transfers.
Subscriber screens
Here is an example screen.
Here is an example screen.

The following configuration options are available on a subscriber level:

- Recipient MSISDN
- SB Transfers, which can be given to the recipient MSISDN

**screens template access**
A standard NCC installation creates access rights for the custom SB screens, for the following users:

- “CSR”
- “Operator”
- “Administrator”

**flow charts**
The flow chart below provides more information on how the SB service functions for the different call scenarios.
Service Bundles Self Care Purchase Bundle

IVR Self Care dialled. Option for Service Bundles selected.

Welcome to the Service Bundles service.

Active Service Bundle subscription?

You currently have an active subscription to <service bundle name>.

To purchase a Service Bundle, press 1. To subscribe to a Service Bundle, press 2. To cancel, press *.

Please select the Service Bundle that you want to purchase.
For <service bundle name>, press 1.
For <service bundle name>, press 2.
To cancel, press *.
(options depend on product type)

1...5

You have selected <service bundle name>. Press 1 to confirm. Press * to cancel.

1

Purchase Service Bundle

Insufficient credit

You have insufficient credit to perform this operation.

Service Bundle has been purchased

Back to main menu
Service Bundles Self Care Subscribe

IVR Self Care dialled. Option for Service Bundles selected.

Welcome to the Service Bundles service.

Active Service Bundle subscription?

no

To purchase a Service Bundle, press 1. To subscribe to a Service Bundle, press 2. To cancel, press *.

1  To cancel, press *.
2  (options depend on product type)

Please select the Service Bundle that you want to subscribe to.
For <service bundle name>, press 1.
For <service bundle name>, press 2.

1  You have selected <service bundle name>. Press 1 to confirm. Press * to cancel

购买 Service Bundle

1  success

You have been subscribed to the Service Bundle.

1  Insufficient credit

You have insufficient credit to perform this operation.

*  Back to main menu
Promotion Manager

Introduction

The "Promotion Manager" service (PMX) allows the operator to define a number of counters (called 'trackers') which may be used for the application of rewards (called 'promotions') in real time or at the end of each period.
Each counter is defined with a name, along with the period which should be used for the promotion – the options which will be provided will be that rewards can be applied daily, weekly, monthly or by yearly basis. The unit of each tracker will allow cash, time or number of events to be used as the criteria of the promotion – so, for example, a tracker for talk time each day and a counter for cash spend each month may be configured. The number of events functionality allows counting of the number of calls, SMS, or any other Prepaid Charging VWS charged services to be tracked.

When each service and rating scenario is defined the trackers which should be updated are chosen to give the operator full control over which services will be used as part of the promotion.

The Prepaid Charging reward is calculated either at the end of the period during the expiration of the tracker or fired in real time during session closing when the promotion level is reached. This allows the operator to target short term usage campaigns or alternatively, look at longer term strategies where use over each month or year are used as the criteria of the promotion.

Based on a promotion level being reached either a tariff or credit reward may be given.

With a tariff reward, subscribers are automatically moved between product types depending on their level of spend. Thus, a customer with high spend can be rewarded by being moved to a different product type which may offer cheaper tariffs. Alternatively, a low user could be penalized by being moved to a product type which has a more expensive rate plan.

With a credit reward, credit may be awarded to the subscriber based on analysis of his tracker. For example, if the subscriber spent £10 last month on calling they might receive £5 of national talk time credit which may be used in the first week of the next month.

The operator is able to define:

- Promotion period (monthly, yearly, wallet)
- Tracker units (cash, SMS, time)
- Which services will be available to the FF service (voice, SMS).
- Which type of destination will be eligible for FF nomination (on-net, off-net, national fixed, international).
- Whether the reward is applied in real-time or when the tracker balance expires.
- Tariff reward (product type swap) or credit reward (top up operation).

**Balance Types**

The following balance types are used by the PMX service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Period</th>
<th>Units</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward Credit Reward 1 Exp</td>
<td>Expenditure</td>
<td>Daily</td>
<td>Time</td>
<td>Used for PMX credit reward level 1.</td>
</tr>
<tr>
<td>Reward Credit Reward 2 Exp</td>
<td>Expenditure</td>
<td>Yearly</td>
<td>Cash</td>
<td>Used for PMX credit reward level 2.</td>
</tr>
<tr>
<td>Reward Credit Reward 3 Exp</td>
<td>Expenditure</td>
<td>Yearly</td>
<td>SMS</td>
<td>Used for PMX credit reward level 3.</td>
</tr>
<tr>
<td>Reward Tariff Reward Exp</td>
<td>Expenditure</td>
<td>Weekly</td>
<td>Cash</td>
<td>Used for PMX tariff reward.</td>
</tr>
</tbody>
</table>

The period and units can be changed. The table above represents a standard CPS installation.
Expenditure plans

The following expenditure plans (EP) are used by the PMX service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure HPLMN-MO Fixed</td>
<td>Expenditure plan for HPLMN-MO national fixed calls.</td>
</tr>
<tr>
<td>Expenditure HPLMN-MO International</td>
<td>Expenditure plan for HPLMN-MO international calls.</td>
</tr>
<tr>
<td>Expenditure HPLMN-MO Off-net</td>
<td>Expenditure plan for HPLMN-MO off-net calls.</td>
</tr>
<tr>
<td>Expenditure HPLMN-MO On-net</td>
<td>Expenditure plan for HPLMN-MO on-net calls.</td>
</tr>
<tr>
<td>Expenditure SMS-MO Fixed</td>
<td>Expenditure plan for SMS-MO national fixed SMSs.</td>
</tr>
<tr>
<td>Expenditure SMS-MO International</td>
<td>Expenditure plan for SMS-MO international SMSs.</td>
</tr>
<tr>
<td>Expenditure SMS-MO Off-net</td>
<td>Expenditure plan for SMS-MO off-net SMSs.</td>
</tr>
<tr>
<td>Expenditure SMS-MO On-net</td>
<td>Expenditure plan for SMS-MO on-net SMSs.</td>
</tr>
</tbody>
</table>
Screens
The expenditure plans above contain the PMX expenditure balance types (see Balance Types), along with the standard expenditure balance types (monthly, yearly, wallet), and possibly the LO expenditure balance type (see Balance Types). The operator configures which expenditure plan contains which expenditure balance types.
Expenditure tracking

Voice
For voice, the expenditure plans are assigned to the CLI-DN pairs to enable expenditure tracking. The operator configures which tariff plans use the functionality.
Example: Rating Management screen, CLI-DN tab, Edit.

SMS
For SMS, the expenditure plans are assigned to the named events to enable expenditure tracking. The operator configures which named events use the functionality.
Example: Rating Management screen, Named Events tab, Edit.

### Notifications

The following notifications are used by the PMX service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Notification text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reward Credit</td>
<td>You have been awarded with <em>amount</em> Dollar.</td>
</tr>
<tr>
<td>Reward Tariff Bronze</td>
<td>Your Tariff plan has been changed to Bronze.</td>
</tr>
<tr>
<td>Reward Tariff Silver</td>
<td>Your Tariff plan been changed to Silver.</td>
</tr>
<tr>
<td>Reward Tariff Gold</td>
<td>Your Tariff plan has been changed to Gold.</td>
</tr>
</tbody>
</table>

*Note:* Only the English text is present in the table above. Other languages will also be present on a standard NCC installation.

These notifications are used as PMX promotion notifications.
### Reward promotions

The following reward promotions are used by the PMX service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit Reward 1 Exp Bronze</td>
<td>Credit reward level 1 for Bronze subscribers</td>
</tr>
<tr>
<td>Credit Reward 2 Exp Bronze</td>
<td>Credit reward level 2 for Bronze subscribers</td>
</tr>
<tr>
<td>Credit Reward 3 Exp Bronze</td>
<td>Credit reward level 3 for Bronze subscribers</td>
</tr>
<tr>
<td>Credit Reward 1 Exp Silver</td>
<td>Credit reward level 1 for Silver subscribers</td>
</tr>
<tr>
<td>Credit Reward 2 Exp Silver</td>
<td>Credit reward level 2 for Silver subscribers</td>
</tr>
<tr>
<td>Credit Reward 3 Exp Silver</td>
<td>Credit reward level 3 for Silver subscribers</td>
</tr>
<tr>
<td>Credit Reward 1 Exp Gold</td>
<td>Credit reward level 1 for Gold subscribers</td>
</tr>
<tr>
<td>Credit Reward 2 Exp Gold</td>
<td>Credit reward level 2 for Gold subscribers</td>
</tr>
<tr>
<td>Credit Reward 3 Exp Gold</td>
<td>Credit reward level 3 for Gold subscribers</td>
</tr>
<tr>
<td>Reward Tariff Bronze – Bronze</td>
<td>Tariff reward for a product type swap (Bronze – Bronze)</td>
</tr>
<tr>
<td>Reward Tariff Bronze – Silver</td>
<td>Tariff reward for a product type swap (Bronze – Silver)</td>
</tr>
<tr>
<td>Reward Tariff Bronze – Gold</td>
<td>Tariff reward for a product type swap (Bronze – Gold)</td>
</tr>
<tr>
<td>Reward Tariff Silver – Bronze</td>
<td>Tariff reward for a product type swap (Silver – Bronze)</td>
</tr>
<tr>
<td>Reward Tariff Silver – Silver</td>
<td>Tariff reward for a product type swap (Silver – Silver)</td>
</tr>
<tr>
<td>Reward Tariff Silver – Gold</td>
<td>Tariff reward for a product type swap (Silver – Gold)</td>
</tr>
<tr>
<td>Reward Tariff Gold – Bronze</td>
<td>Tariff reward for a product type swap (Gold – Bronze)</td>
</tr>
<tr>
<td>Reward Tariff Gold – Silver</td>
<td>Tariff reward for a product type swap (Gold – Silver)</td>
</tr>
<tr>
<td>Reward Tariff Gold - Gold</td>
<td>Tariff reward for a product type swap (Gold - Gold)</td>
</tr>
</tbody>
</table>

### Loyalty Scheme

#### Introduction

The Loyalty Scheme (LO) service allows subscribers to collect points through the use of their prepaid subscription. At any time the subscriber may choose to convert these points into any type of credit based on the scheme provided.

The PCST configures five loyalty scheme types per product type.

A self care LO service is also available. For more information on LO self care, see Prepaid Charging Service Template - Self Care.

#### Balance Types

The following balance types are used by the LO service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>Period</th>
<th>Units</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loyalty Expenditure</td>
<td>Expenditure</td>
<td>Monthly</td>
<td>Cash</td>
<td>Used for loyalty reward (tracker balance type)</td>
</tr>
<tr>
<td>Loyalty Points</td>
<td>Expenditure</td>
<td>Monthly</td>
<td>SMS</td>
<td>Used for loyalty reward (reward balance type)</td>
</tr>
</tbody>
</table>

The period and units can be changed. The table above represents a standard NCC installation.
Balance Cascade
Additionally, a “Loyalty” balance type cascade is created, which consists only of the “Loyalty Points” balance type.

Named Events
The following named event is used by the LO service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Class</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Point</td>
<td>Loyalty</td>
<td>Cost of 1 loyalty point. Used by the LO IVR service logic to turn loyalty points into credit.</td>
</tr>
</tbody>
</table>

Example Event Set
This event is assigned to a product type specific named event catalogue, where it is overridden.
Prepaid Charging > Rating Management > Named Event Catalogue tab, select a named event catalogue and click Edit.

<table>
<thead>
<tr>
<th>Control Plans</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Description</td>
</tr>
<tr>
<td>LO IVR - SCP</td>
<td>LO Self-Care logic. This CP is called by the overall IVR Self Care CP.</td>
</tr>
<tr>
<td>IVR Self Care</td>
<td>Overall IVR self care control plan, which calls VAS specific self care CPs.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Profile Fields</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Type</td>
</tr>
<tr>
<td>LO Service Active</td>
<td>BOOLEAN</td>
</tr>
<tr>
<td>LO Subscription</td>
<td>BOOLEAN</td>
</tr>
</tbody>
</table>
### Expenditure plans

The following expenditure plans (EP) are used by the LO service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure HPLMN-MO Fixed</td>
<td>Expenditure plan for HPLMN-MO national fixed calls.</td>
</tr>
<tr>
<td>Expenditure HPLMN-MO International</td>
<td>Expenditure plan for HPLMN-MO international calls.</td>
</tr>
<tr>
<td>Expenditure HPLMN-MO Off-net</td>
<td>Expenditure plan for HPLMN-MO off-net calls.</td>
</tr>
<tr>
<td>Expenditure HPLMN-MO On-net</td>
<td>Expenditure plan for HPLMN-MO on-net calls.</td>
</tr>
<tr>
<td>Expenditure SMS-MO Fixed</td>
<td>Expenditure plan for SMS-MO national fixed SMSs.</td>
</tr>
<tr>
<td>Expenditure SMS-MO International</td>
<td>Expenditure plan for SMS-MO international SMSs.</td>
</tr>
<tr>
<td>Expenditure SMS-MO Off-net</td>
<td>Expenditure plan for SMS-MO off-net SMSs.</td>
</tr>
<tr>
<td>Expenditure SMS-MO On-net</td>
<td>Expenditure plan for SMS-MO on-net SMSs.</td>
</tr>
</tbody>
</table>
The expenditure plans above contain the LO expenditure balance types (see *Balance Types*), along with the standard expenditure balance types (Monthly, Yearly, Wallet), and possibly the PMX expenditure balance type (see *Balance Types*). The operator configures which expenditure plan contains which expenditure balance types.

<table>
<thead>
<tr>
<th>Name</th>
<th>Change User</th>
<th>Change Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditure HFLMN-MO Fixed</td>
<td>SMF</td>
<td>2010-03-22 08:53:36</td>
</tr>
<tr>
<td>Expenditure HFLMN-MO International</td>
<td>SMF</td>
<td>2010-03-22 08:53:29</td>
</tr>
<tr>
<td>Expenditure HFLMN-MO Off-net</td>
<td>SMF</td>
<td>2010-03-22 08:53:24</td>
</tr>
<tr>
<td>Expenditure HFLMN-MO On-net</td>
<td>SU</td>
<td>2010-03-22 08:53:30</td>
</tr>
<tr>
<td>Expenditure SNS-MO Fixed</td>
<td>SMF</td>
<td>2010-03-22 08:53:28</td>
</tr>
<tr>
<td>Expenditure SNS-MO International</td>
<td>SMF</td>
<td>2010-03-22 08:53:38</td>
</tr>
<tr>
<td>Expenditure SNS-MO Off-net</td>
<td>SMF</td>
<td>2010-03-22 08:53:26</td>
</tr>
<tr>
<td>Expenditure SNS-MO On-net</td>
<td>SMF</td>
<td>2010-03-22 08:53:23</td>
</tr>
</tbody>
</table>
Expenditure tracking

Voice
For voice, the expenditure plans are assigned to the CLI-DN pairs to enable expenditure tracking. The operator configures which tariff plans use the functionality.
Example: Rating Management screen, CLI-DN tab, Edit.

SMS
For SMS, the expenditure plans are assigned to the named events to enable expenditure tracking. The operator configures which named events use the functionality.
Example: Rating Management screen, Named Events tab, Edit.

Reward promotions

The following reward promotions are used by the LO service.

<table>
<thead>
<tr>
<th>Name</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loyalty Reward Bronze</td>
<td>LO reward, assigning LO points, for Bronze subscribers.</td>
</tr>
<tr>
<td>Loyalty Reward Silver</td>
<td>LO reward, assigning LO points, for Silver subscribers.</td>
</tr>
<tr>
<td>Loyalty Reward Gold</td>
<td>LO reward, assigning LO points, for Gold subscribers.</td>
</tr>
</tbody>
</table>

Recharge types

The following recharge types (RT), also known as LO service bundles, are used by the LO service.

<table>
<thead>
<tr>
<th>Field</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>LO 1 Bronze</td>
<td>Available for purchase (LO IVR) for Bronze subscribers.</td>
</tr>
<tr>
<td>LO 2 Bronze</td>
<td>Available for purchase (LO IVR) for Bronze subscribers.</td>
</tr>
<tr>
<td>LO 3 Bronze</td>
<td>Available for purchase (LO IVR) for Bronze subscribers.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Field</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>LO 4 Bronze</td>
<td>Available for purchase (LO IVR) for Bronze subscribers.</td>
</tr>
<tr>
<td>LO 5 Bronze</td>
<td>Available for purchase (LO IVR) for Bronze subscribers.</td>
</tr>
<tr>
<td>LO 1 Silver</td>
<td>Available for purchase (LO IVR) for Silver subscribers.</td>
</tr>
<tr>
<td>LO 2 Silver</td>
<td>Available for purchase (LO IVR) for Silver subscribers.</td>
</tr>
<tr>
<td>LO 3 Silver</td>
<td>Available for purchase (LO IVR) for Silver subscribers.</td>
</tr>
<tr>
<td>LO 4 Silver</td>
<td>Available for purchase (LO IVR) for Silver subscribers.</td>
</tr>
<tr>
<td>LO 5 Silver</td>
<td>Available for purchase (LO IVR) for Silver subscribers.</td>
</tr>
<tr>
<td>LO 1 Gold</td>
<td>Available for purchase (LO IVR) for Gold subscribers.</td>
</tr>
<tr>
<td>LO 2 Gold</td>
<td>Available for purchase (LO IVR) for Gold subscribers.</td>
</tr>
<tr>
<td>LO 3 Gold</td>
<td>Available for purchase (LO IVR) for Gold subscribers.</td>
</tr>
<tr>
<td>LO 4 Gold</td>
<td>Available for purchase (LO IVR) for Gold subscribers.</td>
</tr>
<tr>
<td>LO 5 Gold</td>
<td>Available for purchase (LO IVR) for Gold subscribers.</td>
</tr>
</tbody>
</table>

**Cumulative Balances**

The LO service sets up a cumulative balances plan for SMSs, which includes the “Loyalty Points” balance type, for use in the LO IVR service logic.

Here is an example screen.
Wallet Management screen, **Cumulative Balance Plans** tab, **Edit**.

**Screens**

The LO service uses two SPM custom screens:

- Product Type
- Subscriber
Product Type screen
Here is an example screen.
Subscriber screens
Here is an example screen.

Screens Template access
A standard NCC installation creates access rights for the custom LO screens, for the following users:

- "CSR"
- “Operator”
- “Administrator”

Flow charts
The flow chart below provides more information on how the LO service functions for the different call scenarios.
Loyalty Service Self Care Convert Points

IVR Self Care dialed.
Option for Loyalty Service selected.

Subscriber has Loyalty Service?

Welcome to the Loyalty Service.

Your current Cash balance is ...
Your Loyalty points balance is ...

To trade Loyalty points for a reward, press 1.
To find out more about Loyalty Service, press 2.
To cancel, press *.

Please select the Reward that you want to purchase.
For <reward name>, press 1.
For <reward name>, press 2.
To cancel, press *.
(options depend on product type)

You have selected <reward name>.
Press 1 to confirm.
Press * to cancel

Trade points for Reward

Success

Reward has been purchased.

Insufficient credit

You have insufficient points to perform this operation.

Back to main menu

Sorry, you need to be registered to use this service.
**IVR Self Care**

**About IVR self care**

In a GSM network you access the self care feature of PCST through a CS1 compatible IVR that is integrated with the SLC nodes (either by using a direct M3UA connection, or by using signaling gateways).

You access the IVR by dialing a specific number or short code to trigger a dedicated IVR self care control plan. From this control plan, you can perform a number of self care tasks.

**Self care main menu**

The Self Care Main Menu provides a single entry point for the IVR self care. The menu provides an overview of the available self care features and allows navigation to sub-menus for the individual self care features.

This table lists the available options.

<table>
<thead>
<tr>
<th>Option</th>
<th>Option Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Language Selection</td>
<td>To choose the language that you want to hear announcements played in.</td>
</tr>
<tr>
<td>2</td>
<td>Balance Status</td>
<td>Provides information on balance status and account status.</td>
</tr>
<tr>
<td>3</td>
<td>Voucher Recharge</td>
<td>Enables you to recharge your account.</td>
</tr>
<tr>
<td>4</td>
<td>Service Management</td>
<td>Enables you to select from a list of value added services.</td>
</tr>
</tbody>
</table>

**VAS menu**

The main IVR Self Care service logic (option 4) calls all Value Added Services (VAS) specific IVR Self Care service logic as individual sub-control plans, as shown below.
### IVR value added services

This table lists the services that are available to you when you choose the Service Management option from the IVR Self Care main menu. It also lists the control plan that is triggered for each service.

<table>
<thead>
<tr>
<th>IVR Option</th>
<th>IVR Control Plan</th>
<th>Refer to</th>
</tr>
</thead>
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<tr>
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<td>FF IVR - SCP</td>
<td><em>Friends and Family</em> (see &quot;Favourite Destination&quot; on page 105)</td>
</tr>
<tr>
<td>Favourite Destination</td>
<td>FD IVR - SCP</td>
<td><em>Favourite Destination</em> (on page 105)</td>
</tr>
<tr>
<td>Balance Dependant Rating</td>
<td>BDR IVR - SCP</td>
<td><em>Balance Dependant Rating</em> (on page 120)</td>
</tr>
<tr>
<td>Community Services</td>
<td>CS IVR - SCP</td>
<td><em>Community Services</em> (see &quot;Home Zone&quot; on page 154)</td>
</tr>
<tr>
<td>Home Zone</td>
<td>HZ IVR - SCP</td>
<td><em>Home Zone</em> (on page 154)</td>
</tr>
<tr>
<td>Heavy User</td>
<td>HU IVR - SCP</td>
<td><em>Heavy User</em> (on page 160)</td>
</tr>
<tr>
<td>Booster</td>
<td>BO IVR - SCP</td>
<td><em>Boosters</em> (on page 167)</td>
</tr>
<tr>
<td>Calling Card</td>
<td>CC IVR - SCP</td>
<td><em>Calling Card</em> (on page 198)</td>
</tr>
<tr>
<td>Peer to Peer</td>
<td>P2P IVR - SCP</td>
<td><em>Peer to Peer Transfer</em> (on page 207)</td>
</tr>
<tr>
<td>Service Bundle</td>
<td>SB IVR - SCP</td>
<td><em>Service Bundles</em> (on page 214)</td>
</tr>
<tr>
<td>Loyalty</td>
<td>LO IVR - SCP</td>
<td><em>Loyalty Scheme</em> (on page 231)</td>
</tr>
</tbody>
</table>
Social Networking Service Template

Overview

Introduction

This chapter provides an overview of the Oracle Communications Network Charging and Control (NCC) Social Networking Service Template (SNST).

In this chapter

This chapter contains the following topics.
Social Networking Service Template Overview

Social Networking Service Template Overview

NCC service templates

NCC service templates include service configuration that provides operators with the ability to differentiate themselves from the competitors in the market. When you install NCC, you have the option to install the following service templates:

- The Prepaid Charging Service Template (PCST)
- The Social Networking Service Template (SNST)

This section provides an overview of the SNST. For a detailed description of the service provided by SNST, see NCC Social Networking Service Template User’s & Technical Guide

For more information on the PCST, see Prepaid Charging Service Template (on page 81).

About SNST

The Social Networking Service Template (SNST) helps an operator to reduce subscriber churn by providing subscriber benefits such as preferential tariffs or discounts when they call each other after establishing relationships.

The SNST enables subscribers to establish relationships by first registering for the SNST service and then inviting other subscribers to become ‘friends’. Once a friend link has been established, whenever a subscriber calls a friend they will receive the applicable SNST discount.

Friends can be on-net (within the same operator) or off-net (in another operator). On-net subscribers can be in a registered, unregistered or deactivated state.

When a friend link has been established:

- With a registered subscriber, both parties can benefit from the SNST discount, and the friend does not need to create a link to the other subscriber.
- With an unregistered or blocked subscriber, only the originating subscriber benefits from the SNST discount, and the friend must become registered to also benefit.
SNST relationship management is mainly performed through SMS interactions that trigger control plans, and through a web portal that talks to the NCC platform using XML or SOAP interactions. Subscribers can use this mechanism to register for the service, and then add or remove friends.

**Integration with IT eco-system**

Here is an example of how the SNST can be integrated with social networking domains.
NCC Glossary of Terms

AAA

AC
Application Context. A parameter in a TCAP message which indicates what protocol is conveyed. May indicate, for example, MAP, CAMEL, or INAP. Also usually specifies the particular version of the conveyed protocol, for example, which CAMEL Phase.

ACS
Advanced Control Services configuration platform.

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

API
Application Programming Interface

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.

BE
Billing Engine

C7
See SS7.

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.

CAP
CAMEL Application Part

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). Over time EDR will replace CDR in the Oracle documentation.

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

Connection
Transport level link between two peers, providing for multiple sessions.

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".

cron
Unix utility for scheduling tasks.

crontab
File used by cron.

CS1
ETSI INAP Capability Set 1. An ITU standard.

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.

EDR
Event Detail Record
Note: Previously CDR. The industry standard for CDR is EDR (Event Detail Record). Over time EDR will replace CDR in the NCC documentation.
**ETSI**

European Telecommunications Standards Institute

**FCI**

Furnish Charging Information. An INAP operation sent from ACS to the SSP to control the contents of EDRs produced by the SSP.

**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.

**GT**

Global Title.

The GT may be defined in any of the following formats:
- Type 1: String in the form "1,<noa>,<BCD address digits>"
- Type 2: String in the form "2,<trans type><BCD address digits>"
- Type 3: String in the form "3,<trans type>,<num plan>,<BCD address digits>"
- Type 4: String in the form "4,<trans type>,<num plan>,<noa>,<BCD address digits>"

The contents of the Global Title are defined in the Q713 specification, please refer to section 3.4.2.3 for further details on defining Global Title.

**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
HTML

HyperText Markup Language, a small application of SGML used on the World Wide Web. It defines a very simple class of report-style documents, with section headings, paragraphs, lists, tables, and illustrations, with a few informational and presentational items, and some hypertext and multimedia.

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).

IP address

Internet Protocol Address - network address of a card on a computer

ISDN

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

ITU

International Telecommunication Union

IVR

Interactive Voice Response - systems that provide information in the form of recorded messages over telephone lines in response to user input in the form of spoken words or, more commonly, DTMF signalling.
**LCP**
Location Capabilities Pack - set of software components used by other applications to look up the location of mobile devices.

**M3UA**
MTP3 User Adaptation. The equivalent of MTP in the SIGTRAN suite.

**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.

**MO**
Mobile Originated

**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).

**MT**
Mobile Terminated
MTP
Message Transfer Part (part of the SS7 protocol stack).

MTP3
Message Transfer Part - Level 3.

NOA
Nature Of Address - a classification to determine in what realm (Local, National or International) a given phone number resides, for the purposes of routing and billing.

Oracle
Oracle Corporation

PC
Point Code. The Point Code is the address of a switching point.

Peer
Remote machine, which for our purposes is capable of acting as a Diameter agent.

PI
Provisioning Interface - used for bulk database updates/configuration instead of GUI based configuration.

PIN
Personal Identification Number

PL/SQL
Oracle's Procedural Language for stored procedures and packages.

PLMN
Public Land Mobile Network

SCCP
Signalling Connection Control Part (part of the SS7 protocol stack).

SCI
Send Charging Information. An INAP operation sent from ACS to the SSP to control real time charging by the SSP.

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.

**Service Provider**
See Telco.

**SGML**

**SGSN**
Serving GPRS Support Node

**SIM**
Usually referred to as a SIM card, the Subscriber Identity Module is the user subscription to the mobile network. The SIM contains relevant information that enables access onto the subscripted operator’s network.

**SK**
Service Key

**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:
- Short Message Service
- Service Management System platform
- NCC Service Management System application

**SMS-MO**
Short Message Service Mobile Originated

**SN**
Service Number
SOAP

SQL
Structured Query Language - a database query language.

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.

SS7
A Common Channel Signalling system used in many modern telecoms networks that provides a suite of protocols which enables circuit and non circuit related information to be routed about and between networks. The main protocols include MTP, SCCP and ISUP.

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.

TDP
Trigger Detection Point.
**Telco**
Telecommunications Provider. This is the company that provides the telephone service to customers.

**Telecommunications Provider**
See Telco.

**Termination Number**
The final number that a call terminates to. Can be set in control plan nodes such as Attempt Termination and Unconditional Termination for re-routing numbers such as Toll Free or Follow Me numbers.

**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.

**Voice Call**
The term "voice call" in this document is intended to denote any call controlled by CAMEL or INAP InitialDP. In practice this also includes fax calls, data-over-voice calls, and also includes 3G voice and video conference calls.

**VWS**
Oracle Voucher and Wallet Server (formerly UBE).

**XML**
*eXtensible Markup Language*. It is designed to improve the functionality of the Web by providing more flexible and adaptable information identification.

It is called extensible because it is not a fixed format like HTML. XML is a "metalanguage"—a language for describing other languages—which lets you design your own customized markup languages for limitless different types of documents. XML can do this because it's written in SGML.
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