SVI MS (Management System)

Billing User Guide

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Change History

Date	Version	Description	Author
25.07.10	0.1	Initial Version of Billing User Guide	SPC
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1 INTRODUCTION

The Billing support within the SVI system provides mechanisms for charging customers for calls made according to rate sheets. These charges can then be billed to the customer.

The Billing system is setup and managed within the same SVI-MS Management System that is used to control the other features of the SVI system. A system that is licensed for billing support has an extra tab in the main central display of the SVI-MS called Billing. All configuration, reporting etc. of the billing data is done within this tab.

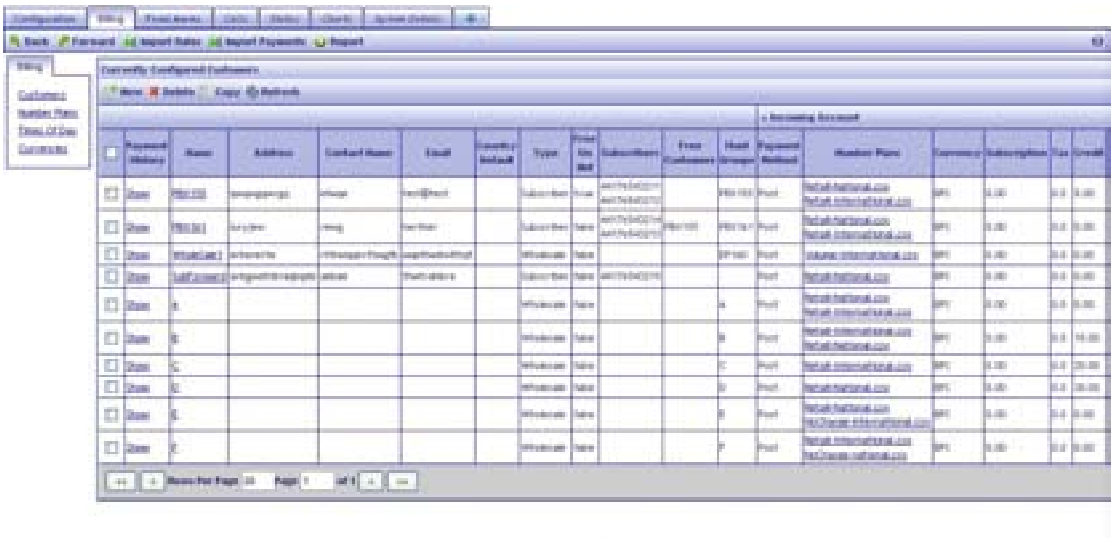

Figure 1 - Billing Tab

2 CONFIGURING THE BILLING SYSTEM

To configure the Billing support there are four types of entry that need to be configured; Customers, Number Plans, Times of Day and Currencies.

2.1 CURRENCIES

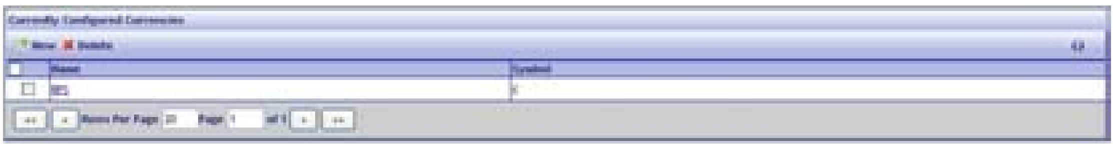

Figure 2 - Currency Table

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The SVI-MS billing system can support setting rates, calculating charges and generating bills in any currency. Because of this the Currencies that are going to be used need to be set up.

Clicking on the Currencies entry in the left hand side list shows the currently configured Currency records.

To add a Currency record, click the New button.

Figure 3 - Editing a Currency Record

Enter the name or identifier of the Currency (eg. GBP for British Pound, USD for US Dollar) and the currency symbol (eg. £, $).

Clicking Done, commits the new Currency record to the system.

2.2 TIMES OF DAY

Figure 4 - Time of Day Table

The SVI-MS billing system can charge different rates for calls at different times of day and on different days. To support this, Time of Day records need to be configured.

Clicking on the Times of Day entry in the left hand side list shows the currently configured Times Of Day records.

To add a Time Of Day record, click the New button.

Figure 5 - Edit a Time of Day Record

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Enter the start and end times for the Time of Day entry. Also, select either the days of the week for this entry of a specific date by clicking either of the '...' buttons.

Each Time Of Day record can contain multiple time entries. Each time entry cannot cross a 24 hour clock boundary, so to make a Time of Day record which encompasses an overnight period, two entries can be used one up to 23:59 and another from 00:00. Extra entries can be added by clicking the Add button or remove by clicking the red X.

2.3 NUMBER PLANS

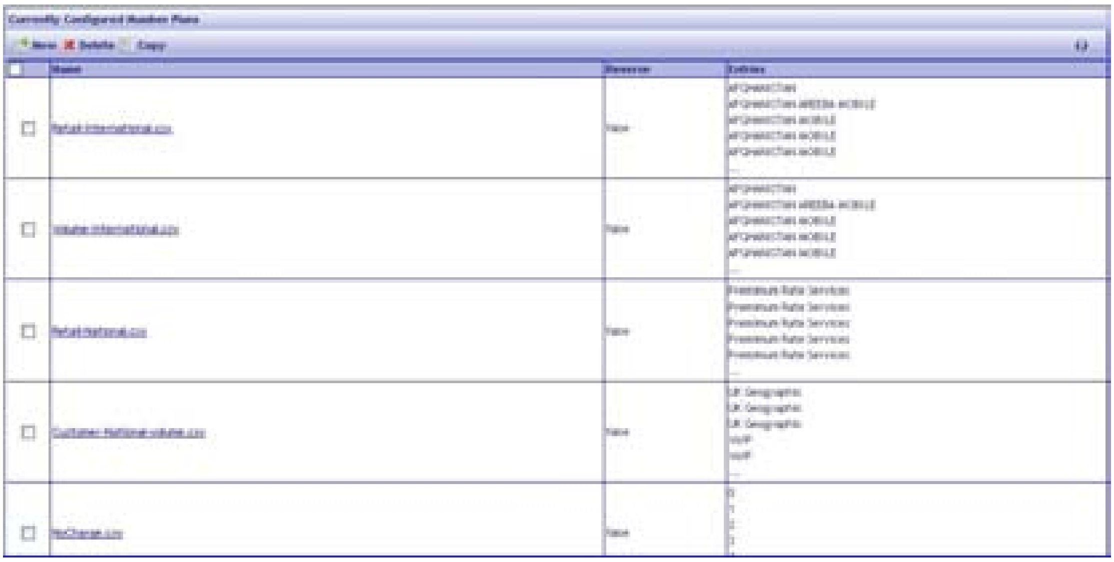

Figure 6 - Number Plan Table

Number Plans, also referred to as Rate Sheets, Tariffs or A to Z lists, are used by the SVI-MS billing system to apply charge rates to calls. In the simplest sense a Number Plan relates a charge (or sequence of charges) to a specified phone number prefix and time of day.

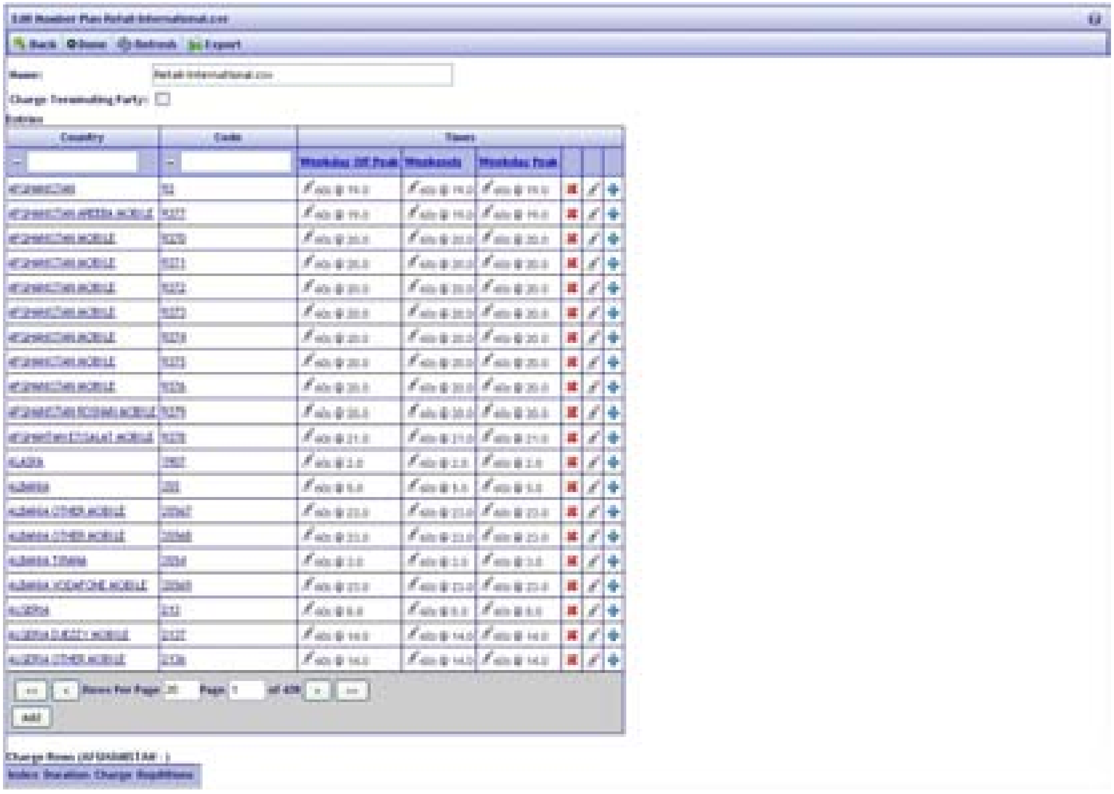

Figure 7 –Edit a Number Plan Record

Number Plans can be entered by manually into the system, but when dealing with a large number of plan or plans with a large number of entries, it is much easier to import the details for the number plan from a CVS (comma separated variable) file. MS Excel will export a spreadsheet as CSV.

The SVI-MS system is able to import CSV files in any format, it does not require a particular configuration of columns.

2.3.1 IMPORTING RATES

To import rates for Number Plans the Import Rates button in the toolbar in the Billing tab should be clicked.

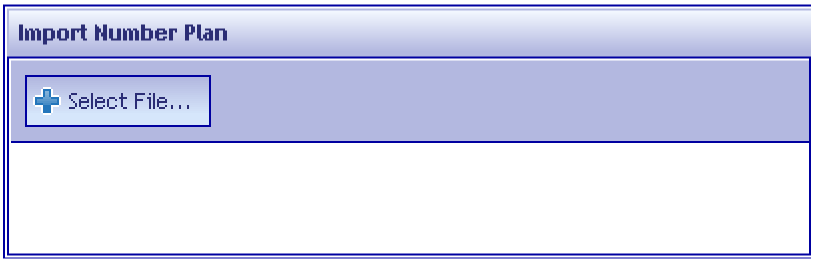

Figure 8 - Import Number Plan

The resulting page provides a button to allow the selection of the file to import. Clicking the 'Select File...' button displays a standard file browser according to the operating system of the local host. Using this, the file to import can be selected from the local hosts file system or other location. When the file is selected it is uploaded to the SVI system.

Figure 9 - Number Plan Import Controls

Now the details of how to use the information in the uploaded to import rates must be specified. The Import Controls page is shown. How to set these controls is perhaps best shown with an example;

Imagine we have a CVS file which contains the following columns:

A. Name
B. Number Prefix
C. Country
D. Peak Rate
E. Off Peak Rate
F. Setup Charge

	A	B	C	D	E	F
1	**Name**	**Number Prefix**	**Country**	**Peak Rate**	**Off Peak Rate**	**Setup Charge**
2	**UK London (inner)**	**0207**	**UK**	**2**	**1.5**	**10**
2	**Uk London (outer)**	**0208**	**UK**	**2**	**1.5**	**10**
4	**UK Birmingham**	**0121**	**UK**	**2.5**	**2**	**10**

Once this file is uploaded, the Import Controls would be displayed and we can select the information to import the rate plan.

The first entry in the page is Name. This simply provides the name for the Number Plan. It is defaulted to the name or the file we are importing but we can alter this to any other meaningful name. The next control is a check box for Charge Terminating Party. Normally, when a number plan is applied to an incoming account, calls originating from that customer are charged accordingly. If a number plan is applied to an outgoing account it will define the cost of routing that call to the terminating end. This can then be deducted from the charge to the originating end to determine profit. To invert the direction of these charges (ie. so that the terminating end is charged for a call or the originating end is supplied with revenue share), the Charge Terminating Party check box should be selected.

Following this, the remaining controls allow the selection of columns to import into the specific items. The names of the columns are shown in these drop down list which have been fetched from the uploaded CSV file. Returning to out example, if we pull down the drop down list for Code Name, we can select the entry Name. This tells the system that the name to use for the entry in the Number Plan should be read from the Name column (column A). Similarly, we can select the Number entry as the column Number Prefix.

The next controls allow the setting up of rules to apply to the numbers as they are imported. The SVI billing system requires that all numbers configured in rate plans be in international format (eg. 44... for UK). The numbers in this file are not in that format, so we need to use rules to modify them.

These rules are built in the same way that SVI configuration makes number manipulation rules. We need to remove the first 0 from the number and prefix 44 to it. To do this we need to add a rule, by clicking the Add button and entering the following information:

Min. Length:	0
Max. Length:	15
Match:	0
Strip:	1
Prefix:	44

This tells the system to match any number which is between 0 and 15 digits long and starts with a 0 (from Match), if it matches to strip 1 digit from the beginning of the number and prefix 44 on the start. Thus changing out 0207 entry to 44207.

Each Number Plan entry can have multiple charge entries for each time of day. This allows us to configure setup charges, grace periods and more than one charge bands. In our example file we have a Setup Charge and both Peak and Off Peak rates. Lets assume that we have already configured Time of Day records for Peak and Off Peak in the system. To import these rates we need three entries in the Charges table. We can click Add three times to create these. To import the rates we need to set the following information into the Charges table:

Time of Day	Duration	Charge	Charge Type	Repeat	Fixed Rate
All	**0**	**Setup Charge**	**Initial Charge**	**0**	
Off Peak	**60**	**Off Peak**	**Normal**	**0**	
Peak	**60**	**Peak**	**Normal**	**0**	

This will import the rates in the CSV file into the system with the Setup Charge applied to all Times of Day and the Off Peak rate applied to the Off Peak time of day at a duration of 60 seconds (ie. the value is per minute), and the Peak rate applied to the Peak time of day at a duration of 60 seconds. The Repeat field is used to enable charge items to be applied multiple times, for instance you could set up a charging system of the following:

Setup Charge	10p
Grace Period	30s
Next 5 minutes at	5p a minute
Next 10 minutes at	2p a minute
Then	1p a minute thereafter

This would be set up by the following configuration in the Import Rates table

Time of Day	Duration	Charge	Charge Type	Repeat	Fixed Rate
Combined	**0**	**10**	**Initial Charge**	**1**	
Combined	**30**	**0**	**Grace Period**	**1**	
Combined	**60**	**5**	**Normal**	**5**	
Combined	**60**	**2**	**Normal**	**10**	
Combined	**60**	**1**	**Normal**	**0**	

A repeat value of 0 means repeat infinitely.

2.4 CUSTOMERS

Figure 10 - Customer Table

The SVI Billing system uses Customer and Account records to record names, contact details and accounting information, to enable the recording of charges and generation of bills and invoices.

The Customer record can be used to set the name, address and other general details about the customer. In addition to the general details in the customer record, subscriber numbers and hunt groups can be specified to tie the customers to the calls made.

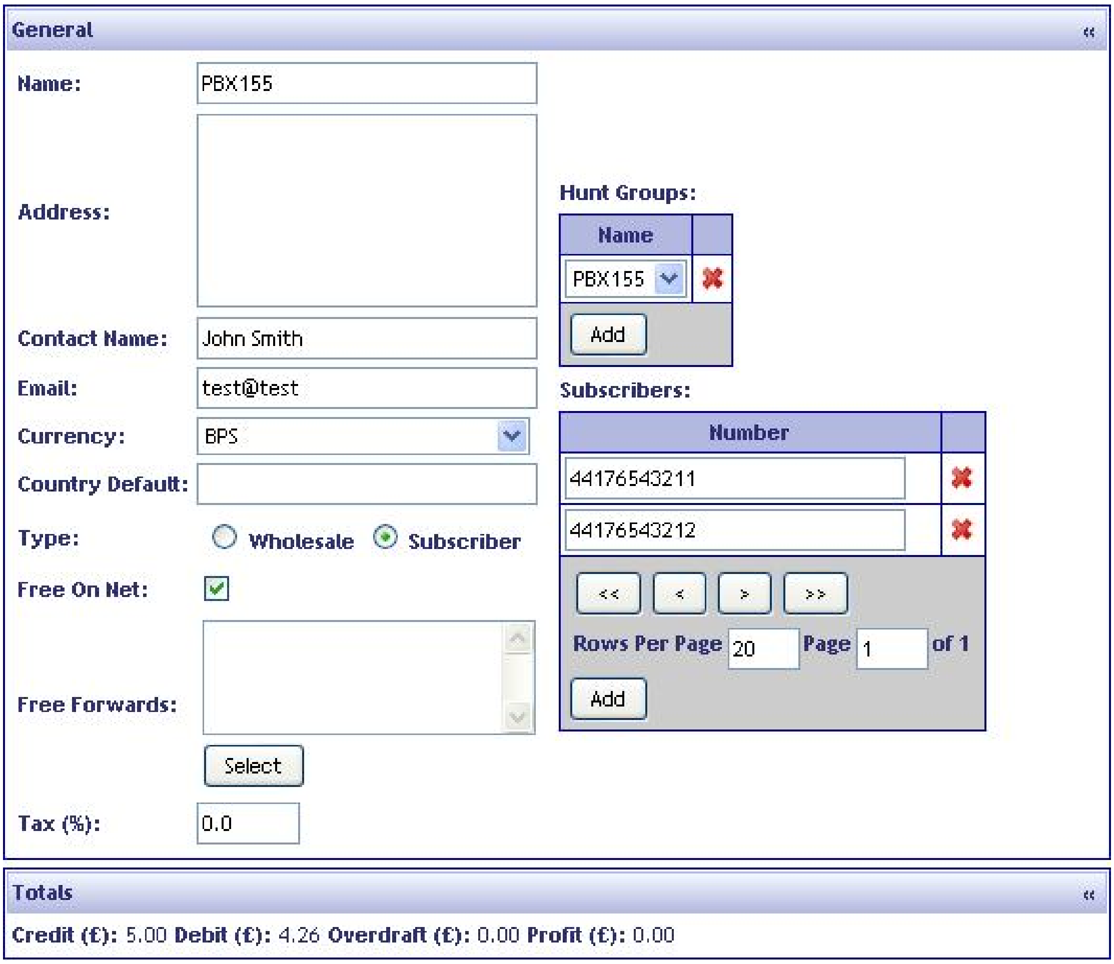

Figure 11 - Edit a Customer Record

The fields that can be specified for a Customer record are:

Name:	The name of the customer
Address:	The billing address for the customer
Contact name:	The name of a contact within the customer
Email:	The email address of the contact in the customer
Currency:	The currency that the customer works in. i.e. the currency that they should be billed and paid in.
Country Default:	
Type:	Wholesale or Subscriber
Tax:	A percentage level of tax to apply to any charges for this customer.
Hunt Groups:	The hunt groups which are attached to this customer record. The billing system uses hunt groups and subscriber numbers to determine which customers to charge for the calls that are routed through the SVI system.

Subscriber Numbers: A set of numbers of subscribers which are managed by the customer record.

2.4.1 ACCOUNTS

Each customer record can have at most one incoming account and one outgoing account. The incoming account is used to record billing information for calls made into the SVI system from this customer, and the outgoing account is used to record billing information for calls made from the SVI to the customer (ie. for the purpose of revenue share).

There are two types of accounts, Pre-paid and post-paid. Pre-paid accounts work on the basis of credit which is paid for in advance, and then used, and then topped up again. This is the same as the way pre-paid mobile or cell phones work. Post-paid accounts work by recording the amount of usage, for which the customer is billed after the fact, usually on a regular basis. Both types of accounts can have credit limits which allow the system to limit the calls from or to a particular customer to prevent the running up of large debts or fraud of other kinds.

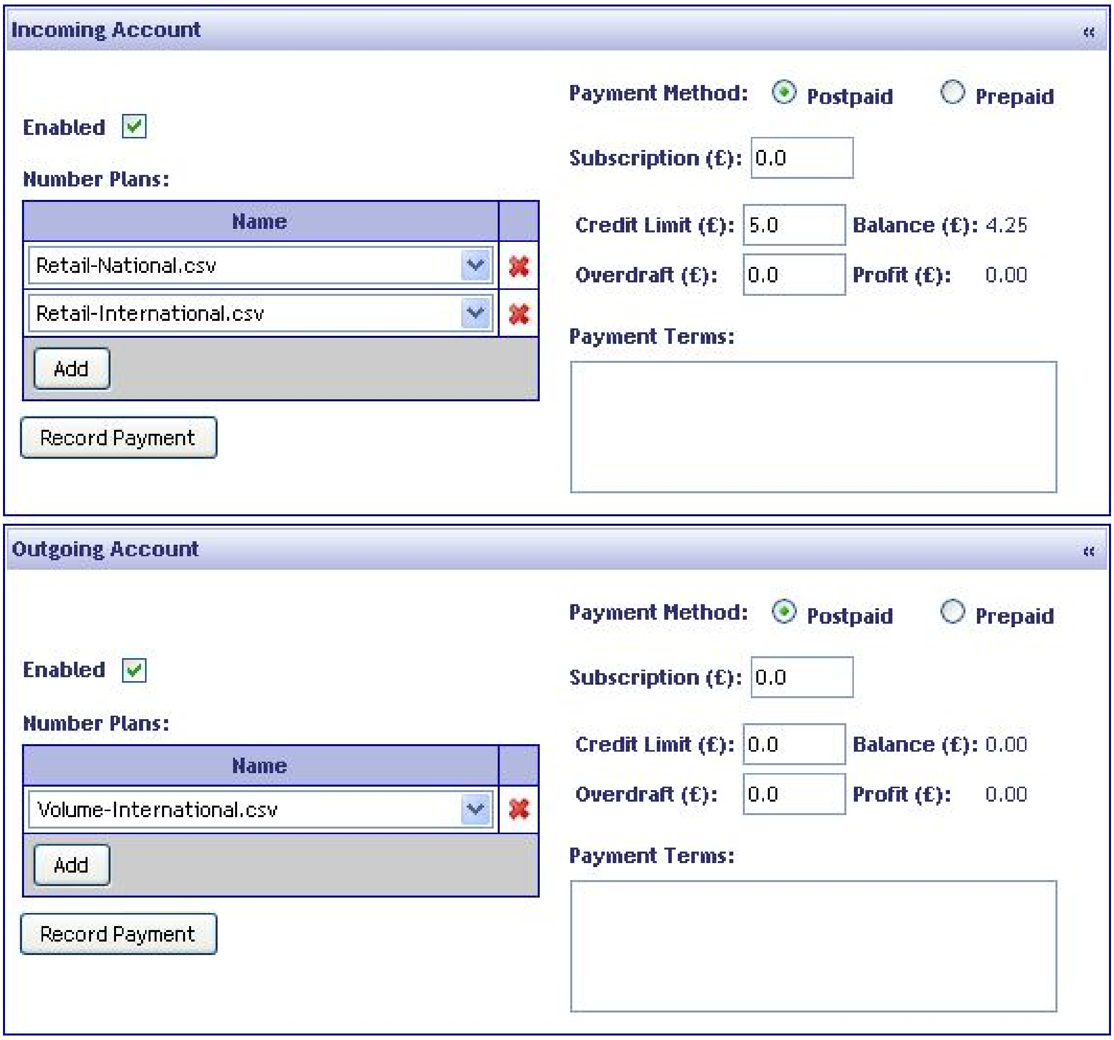

Figure 12 - Edit Account records within a Customer Record

The fields that can be specified for a Account record are:

Account Type:	Prepaid or Postpaid
Number Plans:	A set of number plans that are used to calculate charges for the account.
Subscription:	Fixed value applied to all invoices (e.g. line rental)
Credit Limit:	A credit limit applied to the account. Limits the customer's calls while there is credit available.
Overdraft:	An additional overdraft facility to allow the account to temporarily go over the credit limit.

3 SETTING CREDIT LIMITS

Credit Limits allow the system to limit calls from (or to) certain customers. Calls can be made only so far as there is sufficient credit. For pre-paid accounts this is the normal credit value that is on the account.

For postpaid accounts there is a specific credit limit that can be set. In addition an overdraft can be specified to give the account temporary ability to go over its credit limit.

When the credit limit and any overdraft is exhausted any calls in progress will be interrupted and no further calls will be allowed from/to that customer until the credit limit is increased.

Credit limits can be applied to both incoming and outgoing accounts so either the incoming or outgoing call leg can cause the call to be dropped by running out of credit.

The credit limit checking can be enabled separately on each PBX or route which is configured in the SVI system.

4 RUNNING REPORTS AND INVOICES

The SVI Billing system provides a comprehensive reporting and query system which allows reports to be run and invoices/bills to be generated.

When the Reports button in the Billing tab takes you to the Reports page, which allows the running of reports.

This Reports page allows queries to be defined to fetch information from the billing data. Multiple queries can be defined. In addition Groups can be created to group the queries together.

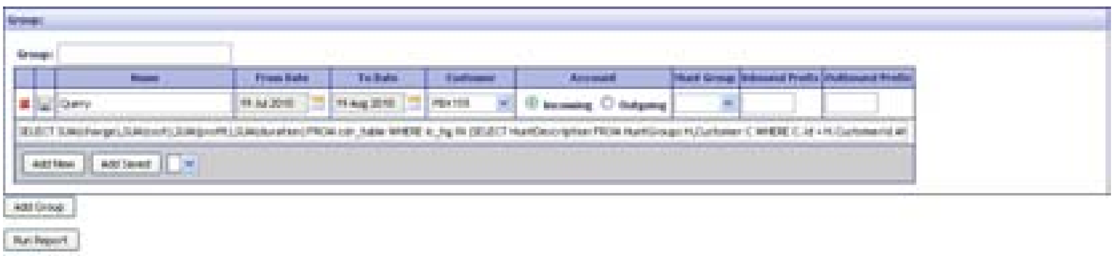

Figure 13 - Running a Report

Each query can set the following items:

name: a name for the query. This is not essential for a temporary query, but is require if the query is to be saved

Start date: The start date to get data from

End date: The end date to get data for

Customer: The customer to get data for

Account: The account (incoming or outgoing) to get data for

Hunt Group: The hunt group of the customer to filter the data for. If specified then only calls to or from this hunt groups will be included in the results of the query. If not specified all calls will be retrieved.

Incoming Prefix: A prefix to filter the calls according to the called party number. This will filter calls according to the called party number as it was on the originating call.

Ougoting Prefix: A prefix to filter the calls according to the called party number. This will filter calls according to the called party number as it was on the terminating end of the call. This may be different from the originating end if the call was forwarded within the SVI.

In addition to setting these values, arbitrary SQL statements can be used for queries for the advanced user.

When the Run Report button is pushed the queries are executed and the results displayed in a table below.

Name	Minutes	Cost	Charge	Profit	
					Generate Invoice
Query	80.71667	375.63333	415.5833	39.95	Generate Invoice
Total	**80.71667**	**375.63333**	**415.5833**	**39.95**	Generate Invoice

Figure 14 - Results of a Report

The results show:

name:
Minutes:
Cost:
Charge:
Profit:

To use the results of the queries to make an invoice, the Generate Invoice button can be pushed. If the button against a group or the total line is pushed an invoice will be generated including all items in the group.

When the Generate Invoice button is pushed a page is displayed which allows extra information to be added, such as reference number, notes or a discount percentage.

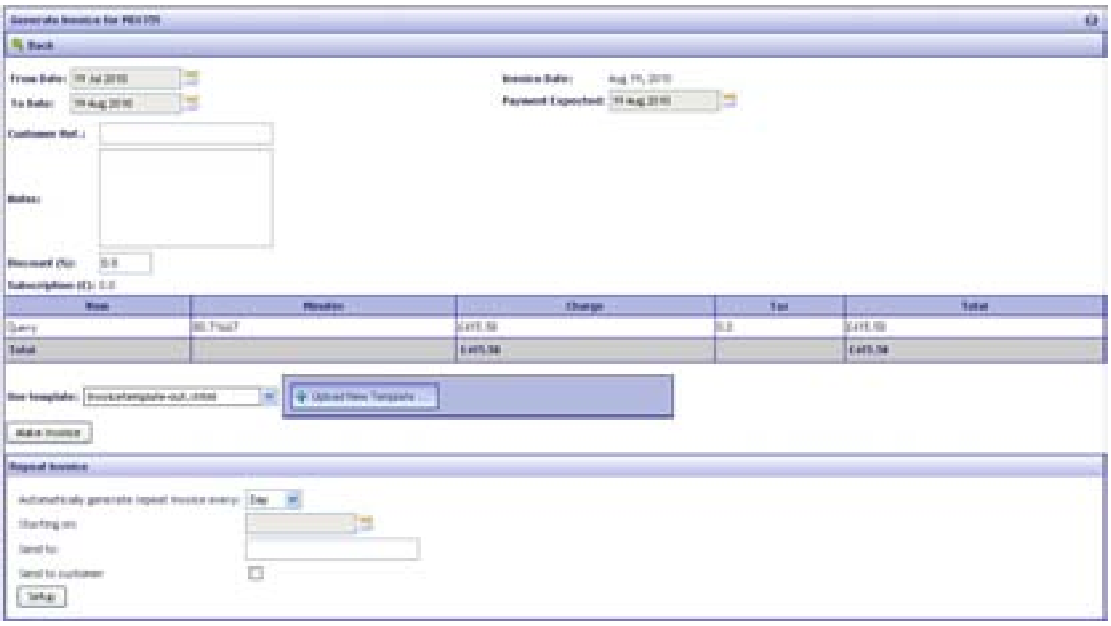

Figure 15 - Generating an Invoice

This page can also be used to select which invoice template to use when generating the invoice.

4.1 INVOICE TEMPLATES

The SVI billing system supports customisable invoice templates. This allows the invoices generated by the system to look however you want, including branding and layout.

Invoice templates are designed in XHTML (a stricter form of HTML) with the use of a special notation to include values from the invoice data. For example the statement #{Invoice.customerAddress} would be replaced with the customers address.

An example of an invoice template can be seen in Appendix ?

4.2 RECURRING INVOICES

Invoices can be set up to be generated automatically at regular intervals. This is done with the Repeat

Invoice controls at the bottom of the page. The invoices can be set up to be repeated every day, week or month, from a starting date. The generated invoices will be sent via email to addresses provided and optionally the customers email address.

5 RECORDING PAYMENTS

Once payments have been received in response to invoices, or to increase credit, they can be recorded against the accounts to keep a record and adjust the customers balance and credit limit.

For post paid accounts payments can be recorded against the account in the Customer edit page using the Make Payment button. This displays the Record Payment page which allows you to specify the amount paid, and the invoice to which it is being associated as well as any optional notes and a customer reference.

Figure 16 - Record a Payment

For pre paid accounts credit can be added to the account in the Customer edit page using the Top Up buttons. This displays the Add Credit page which allows you to specify the amount to top-up as well any optional notes and a customer reference.

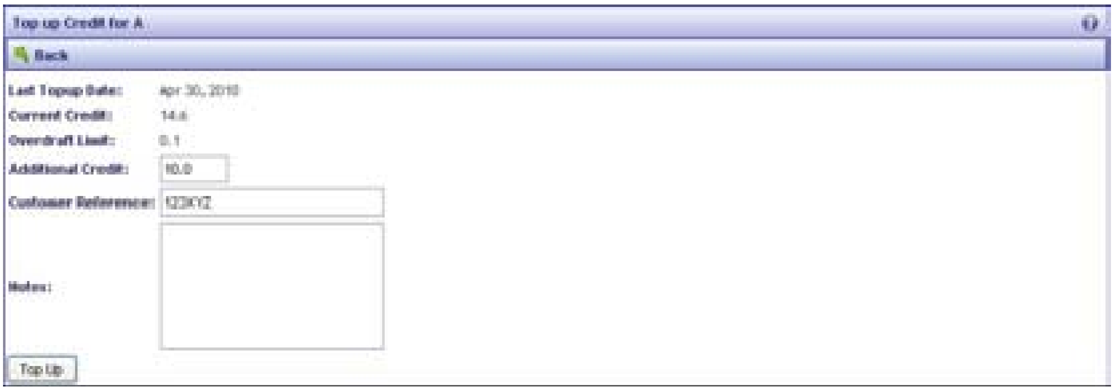

Figure 17 - Top-Up Credit

Once payments are made or credit topped up, the balance for the accounts is modified and the payment or top-up is recorded.

The previous payments, top-ups and invoices for a customer can be viewed by clicking the Show entry in the Payments column of the Customers table.

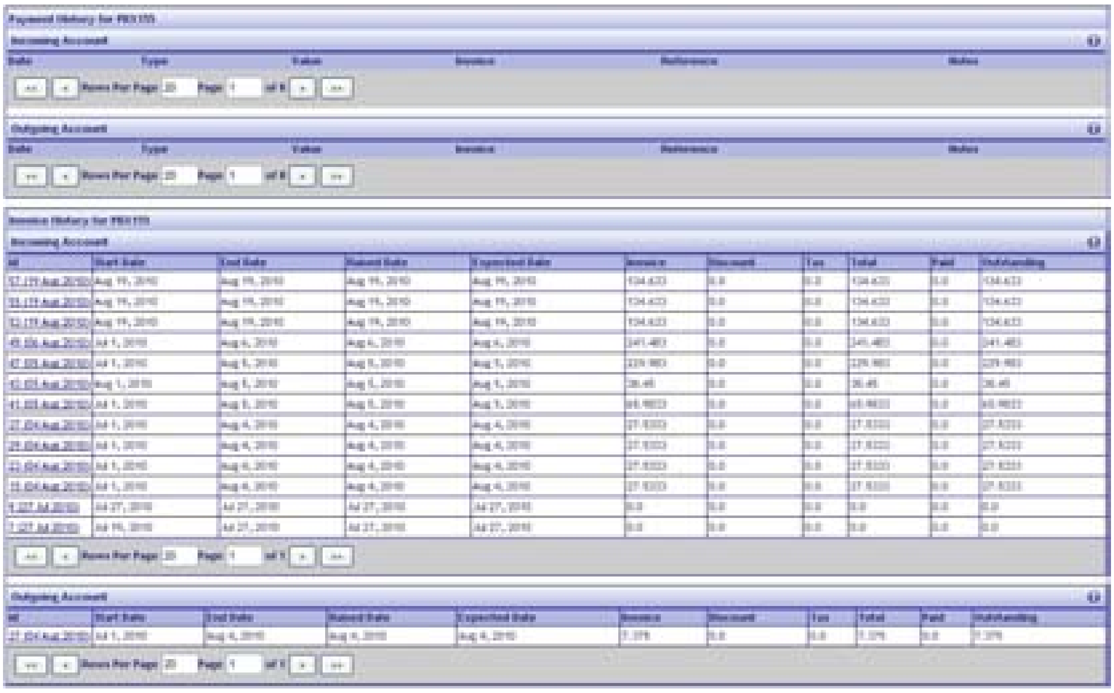

Figure 18 - Payment History

5.1 IMPORTING PAYMENTS

In the same way that you can import rate sheets into the SVI billing system, records of payments made can be imported as well. This is useful if there is a financial system which can export information of many payments. These can be imported into the SVI billing application without having to manually record each payment.

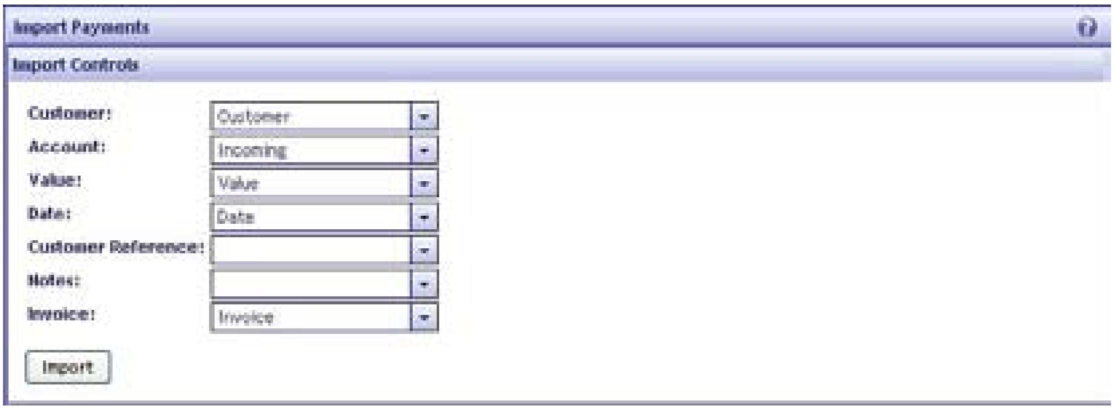

Figure 19 - Payment Import Controls

The importing of payment works in the same way as the importing of rate sheets, from a CSV file using controls similar to the import rate sheet controls.

6 APPENDIX A – EXAMPLE INVOICE TEMPLATE

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
          "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
<html xmlns="http://www.w3.org/1999/xhtml"
       xmlns:ui="http://java.sun.com/jsf/facelets" >
<head>

</head>
<body style="font:arial">
<p align="right">
My
Address
Here
</p>
<p align="left">
<pre>
#{Invoice.customerAddress}
</pre></p>

<table>
       <tr>
              <td style="FONT-WEIGHT: bold;">Start
Date:</td><td>#{Invoice.startDate}</td>

              <td style="FONT-WEIGHT: bold;">End
Date:</td><td>#{Invoice.endDate}</td>
       </tr>
       <tr>
              <td style="FONT-WEIGHT: bold;">Invoice
Date:</td><td>#{Invoice.raisedDate}</td>

              <td style="FONT-WEIGHT: bold;">Due
Date:</td><td>#{Invoice.expectedDate}</td>
       </tr>
       <tr>
              <td style="FONT-WEIGHT: bold;">Customer
Reference:</td><td>#{Invoice.reference}</td>
       </tr>

</table>

       <ui:repeat value="#{Invoice.items}" var="item" >
              <table >

       <tr><th>Time</th><th>From</th><th>To</th><th>Minutes</th><th>Charge to
Originator</th></tr>
              <ui:repeat value="#{item.calls}" var="call" >
                     <tr><td>#{call.time}</td>  <td>#{call.cgpn}</td>
<td>#{call.cdpn}</td>  <td>#{call.minutes}</td>  <td>#{call.charge}</td>
</tr>
              </ui:repeat>

              <tr><td style="FONT-WEIGHT: bold;">Total</td>  <td></td>
<td></td> <td>#{item.minutes}</td>  <td>#{item.charge}</td> </tr>
              </table>
       </ui:repeat>

</body>
</html>
```