CTI Billing Solutions Limited

Product Specification

Analysis 7 1.10 Core Front-office

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Preface

Document definition

Objectives

This *Product Specification Document (PSD)* describes the core *Analysis 7* (*A7*) functionality available in product release *1.10*, identifying the key functional components together with any constraints or variations to their use.

As the basis for a common understanding of available functionality and options it will aid the design, configuration and deployment of solutions.

Audience

The *PSD* is intended to aid the communication between *CTI* and their customers enabling both parties to have a clear and common understanding of the product's capabilities, and of the options available.

Things you'll need before you start

- An understanding of the Telecoms' service-provider environment and terminology.
- Awareness of analytics solutions and of the user-interfaces (UI) they typically utilise.

Related documents

This document is part of the ***Analysis 7 documentation set***, which comprises:

Description	Reference
Analysis 7 v1.10 – Analysis OTS Deployment Process	MMOTSDEPP
Analysis 7 v1.10 – Admin user guide	MMOTSUGA
Analysis 7 v1.10 – Call, Charge & Currency Import Guide	MMOTSIMPG
Analysis 7 v1.10 – Data Interface Specification	MMOTSDIS
Analysis 7 v1.10 – Data Limits Document	MMOTSDL
Analysis 7 v1.10 – Data Description Document	MMOTSDD
Analysis 7 v1.10 – Deployment Process Document	MMOTSDEPG
Analysis 7 v1.10 – Help desk guide	MMOTSHDUG
Analysis 7 v1.10 – Product Specification – Core Back-office	MMOTSBPS
Analysis 7 v1.10 – Product Specification – Core Front-office	MMOTSFPS
Analysis 7 v1.10 – Sandbox user guide	MMOTSSBX
Analysis 7 v1.10 – Subscriber user guide	MMOTSUGS
Analysis 7 v1.10 – Translation Server Guide	MMOTSTSG

Documentation conventions and devices

General

This document uses the term *service-provider* to refer to the organisation purchasing (or licensing) the A7 solution from *CTI* and offering it as a service to its own customers and subscribers.

Images of pages and reports

Screen and report images are included for illustrative purposes only. They do not necessarily reflect the exact layout and functionality of the solution provided to a specific *service-provider*. All reasonable endeavours are taken to ensure that data so displayed is either test data or anonymised data.

Typography

The following typographical conventions are used throughout this document.

Special notices

Hints and tips

Warning statements.

Supplementary information.

Contextual indicators

This text is a cross-reference.

This text refers to an object or feature.	The *Scheduled reports* tab, the *Main Menu*
`This text indicates computer input, or computer file path names.`	▪ Navigate to /`directory/path` name ▪ **Input** `This is a description` as **Data description**

This text introduces a numbered list of instructions.

1. Numbered lists are always instructions.

Text like this is the name of a page object; something you type into, press or select.	▪ **Input** `This is a description` as **Data description** ▪ **Next** to continue ▪ **Select Data category**
[This text is a physical button to be pressed]	**[Enter}**

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Part one

Analysis 7 essentials

Introduces A7's key features and concepts

Chapters in Part one ...

1. Functionality at release 1.10

A7 provides analytical reports on usage and charge-data accessed through an easy to use drill-down interface, coupled with intuitive reporting wizards for the production of pre-defined or custom reports. A7's *consolidated bill view* approach means that:

- Reporting for all accounts is by month and not by bill;
- Data can be appended to the same billing run throughout the month, allowing customers to have multiple bills within a billing-period.

A *Billing-period* is seen as a month (this can be a calendar month)

1.1. A7 feature-sets

A collection of feature-sets deliver rich functionality:

Table 1 Standard A7 feature-set

Feature-set	Functionality	Location
Home feature-set	▪ The. *Home page* panels *(on page 27)* ▪ Provides an at-a-glance view of the current and recent costs and charges associated with the *Current analysis context* in addition to providing easy navigation links to favourite features. Earlier versions of Home are now deprecated – see *Deprecated features (on page IX).*	*Ch. 6 (on page 27)*

Reporting feature-set	The *Reporting* feature-set comprises:
	▪ *Main reports (on page 46)*
	  ▪ A set of *Predefined reports* analysing usage and Charge-data,
	  ▪ My reports – customisable reports created and maintained using a report wizard;
	▪ *Trends (on page 75)*
	The *Trends* feature-set shows usage data in graphical format
	▪ *Audit reports(on page 78)*
	The *Audit Reports* feature-set enables viewing of:
	  ▪ The *Structure audit log* (a record of changes made to the organisational structure)
	  ▪ The *Manage charges audit log* (if the *Manage charge module* is implemented).
		Ch. 7 (on page 35)

Usage tagging feature-set	*Usage tagging* enables tagging, viewing and analysing of business and personal usage via standard reports and a *usage reporting* wizard	*Ch. 8 (on page 81)*
Administration feature-set	▪ The *Administration management* feature-set *(on page 91)* Enables the creation, maintenance and management of the organisational infrastructure supporting the analysis of billing data; ▪ The *Currency conversion feature-set (on page 98)* Enables the creation and on-going maintenance of Currency conversion rates;	*Ch. 9 (on page 91)*
Download feature-set	*A7* provides the ability to download usage data (*Data export*), invoice data (*invoices*), raw *CDR* data (*usage*) and *Unbilled usage files*	*Ch. 10 (on page 101)*
Support feature-set	Access standard and custom support options.	*Ch. 11 (on page 109)*

A number of optional modules are also available to extend A7 functionality.

Table 2 Extended A7 feature-set

Feature-set	Functionality	Location
Manage charges	The *Manage charges module* enables the manual reassignment of *Usage charges* within the *Default structure*.	*Ch. 12 (on page 114)*
Advanced usage tagging	The *Advanced Usage tagging* feature-set comprises: ▪ Usage Tagging Configuration feature (*on page 121*) ▪ Phone book management (*on page 120*) The Phone book management feature extends the Dialled number description feature; enabling maintenance of personal and company phone books ▪ Manage rules feature (*on page 121*) ▪ Non-participating user feature (*on page 122*)	*Ch. 13 (on page 118)*
Multi-instance	The Multi-instance module enables A7 to account for all instances of a subscriber that belongs to multiple groups.	*Ch. 14 (on page 123)*
Single sign-on	User management, authentication and login is managed outside of A7 by service-provider functionality.	*Ch. 15 (on page 126)*
Analysis RT	Provides analysis for unbilled data	*Ch. 16 (on page 127)*

1.2. Home

Home provides an at-a-glance view of the current, and recent, costs and charges – see *Section 6.1 (on page 27)*.

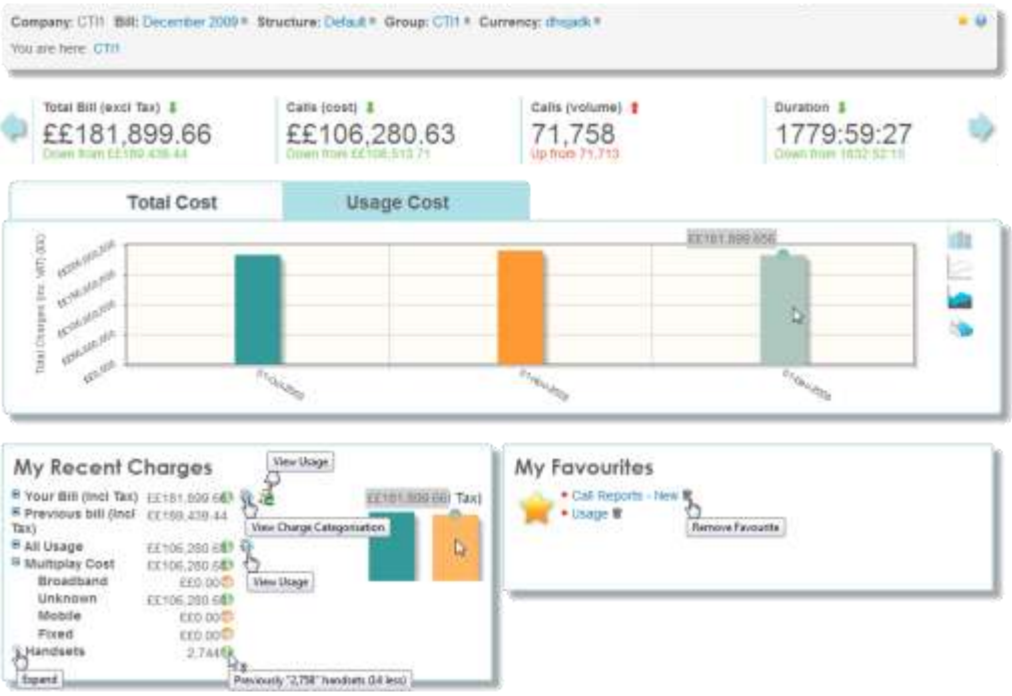


Figure 1: Home page

The data on view is controlled by the *Current analysis context* – see *Topic 4.3.1 (on page 18)*. Embedded hyperlinks provide easy access to additional, related, information and to favourite features.

1.3. Reporting

The *Reporting* feature-set comprises three sub-sets:

Further information

Chapter 7 Reporting feature-set .... page 35

- Main reports – see *Section 7.3 (on page 46)*
  - A set of *Predefined reports* analysing usage and Charge-data,
  - My reports – customisable reports created and maintained using a report wizard;
- Trends – see *Section 7.4 (on page 75)*

  The *Trends* feature-set shows usage data in graphical format
- Audit reports – see *Section 7.5 (on page 78)*

  The *Audit Reports* feature-set enables viewing of:
  - The *Structure audit log* (a record of changes made to the organisational structure)
  - The *Manage charges audit log*, which is available only if the *Manage charges module* is implemented – see *Chapter 12 (on page 114)*.

1.3.1. Main reports

Utilising *A7's* pre-processing engine all reports are instantly available and can be run within seconds, so the user gets just what they need, when they need it

Figure 2 Main reports overview

My reports (that is, custom reports) can be saved and re-run according to user needs.

1.3.2. Trends

The *Trends* feature-set displays usage data in graphical format – see *Section 7.4 (on page 75)*.

Figure 3: Trends page

The *Trends* page presents two chart panels side-by-side, making for easy comparison of datasets. The feature comprises functionality to:

- View and Print standard *Trend charts*;
- Create and maintain *Custom trend charts*.

1.3.3. Audit report

The *Audit Reports* feature-set enables viewing of the *Structure audit log* (a record of changes made to the organisational structure) and the *Manage charges audit log* (if the *Split charging module* is implemented) – see *Section 7.5 (on page 78)*.

Figure 4: Audit Reports page

1.4. Usage tagging

The *Usage tagging* feature-set enables *Subscriber users* – see *Figure 7 (on page 6)* – to tag usage as business or personal and Administrator users – see *Figure 5 (on page 6)* – to manage the tagging process, including standard and custom reports – see *Chapter 8 (on page 81)*.

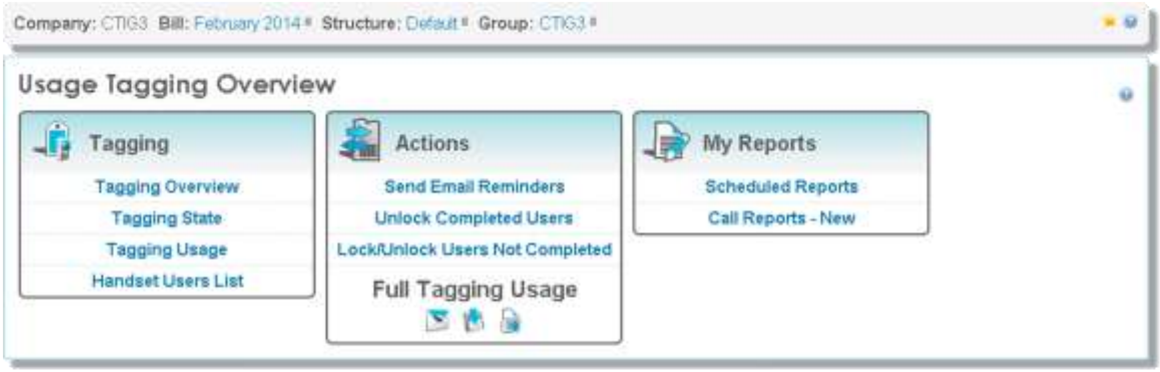


Figure 5: Usage tagging overview– Administrator users

Figure 6: Usage tagging management overview– optional module

Figure 7: Usage tagging overview– subscriber users

1.5. Administration

1.5.1. Administration – Management

The *Administration management* feature-set enables the creation, maintenance and management of the organisational infrastructure supporting the analysis of billing data – see *Section 9.1 (on page 91)*

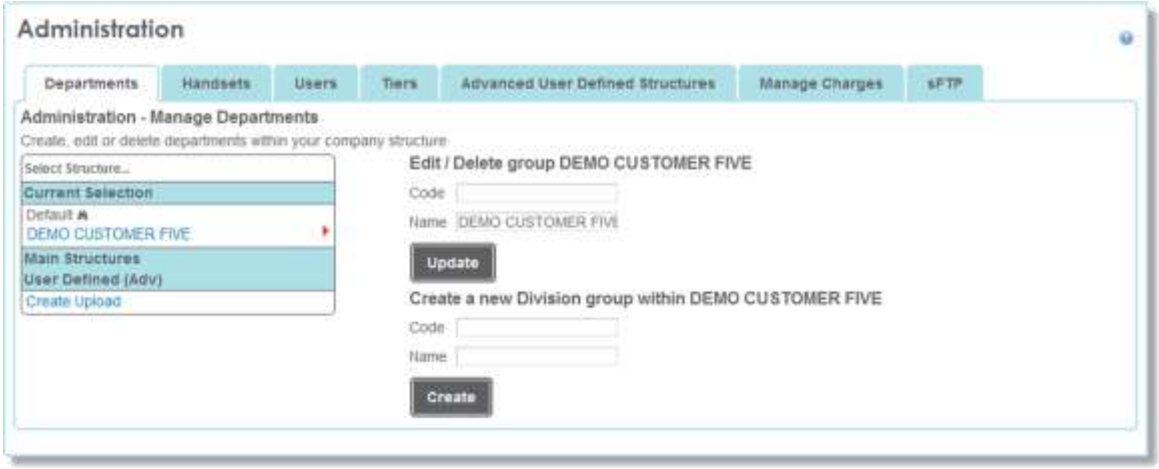


Figure 8: Administration management page

1.5.2. Administration – Currency conversion

The *Currency conversion* page enables the creation and on-going maintenance of *Currency conversion lists* – see *Section 9.2 (on page 98)*.

Figure 9: Currency conversion page

1.6. Download

A7 provides the ability to download usage data (*Data export*), invoice data (*Invoices*), raw *CDR* data (*Usage*) and *Unbilled usage files* – see *Chapter 10 (on page 101).*

Figure 10: Downloads page

1.7. Support

Provides a number of optional panels including: Help (FAQ), hyperlinks for downloadable guides, a feedback form and *Contact us* details – see *Chapter 11 (on page 109).*

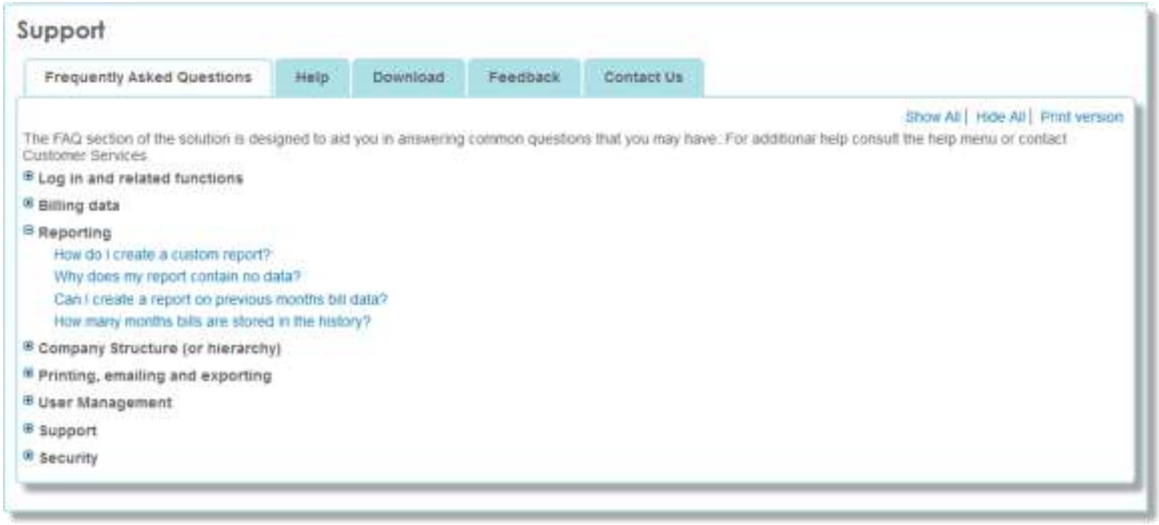


Figure 11: Support page

2. Changes at release 1.10

2.1. UI and Reporting changes

A new report, *Invoice statements,* is introduced*.* At the top-level the report displays a one-line per invoice summary, which can be expanded to show the tax breakdown – as show in Figure 44 *(on page 52)*.

2.2. Background changes

- The Twelve-Charge-category model is the default model as at this release;
- New *Tax Break down* and *Total Tax* fields, provide for tax breakdowns at both invoice- and subscriber-level
- A *Tax total* field is added to the *Usage* (*CDR*) and *Charge* records.
- Browser compatibility is documented fully in *Appendix A* *(on page II)**,* but for this release *IE7* support is revoked.

What if I provide tax at both levels?

If both invoice level and subscriber level tax figures are supplied, A7 assumes the invoice figure includes the subscriber figure; that is if invoice tax = £100, and subscriber tax = £50 the total tax is £100 not £150.

Avoiding tax line duplication …

Because the tax figure is stored in both Usage (CDR) and Charge records any summaries that contain both CDR and Charge-data display only the CDR tax figures.

2.3. Deprecated functionality

2.3.1. Dashboard

The *A7 Dashboard* feature, superseded by *Home* at release 1.07, is available only to *service-providers* upgrading from previous A7 versions who already use that feature.

2.3.2. Six-Charge-category model

Existing users using only six Charge-categories are advised to switch to the Twelve-Charge-category model as soon as practicable.

The *Six-Charge-category* model available in previous A7 releases is to be phased out in favour of the Twelve-Charge-category model, which becomes the default model as at this release.

The older model catered for six pre-set categories, with service-providers supplying the exact charge codes dictated by the Data Interface Specification (***DIS***), which map to:

- Recurring charges
- One-off charges
- Usage charges
- One-off credits
- Recurring credits
- Usage credits

A number of (older) reports and features only support the *Six-Charge-category* model and these will either be replaced or deprecated. These include, for example, the *Subscriber Summary report* , which sums the three credit categories and presents only four charge columns (Recurring charges, One-off charges, Usage charges and 'Credits').

2.3.3. User interface

As a result of the *Six-charge-category* model deprecation, the following components are also deprecated, albeit that they are replaced by similar equivalents:

- Headline summary;
- Recent charges (*Six-charge-category* model).

2.3.4. Reports

As a result of the *Six-charge-category* model deprecation, the following reports are also deprecated:

- Subscriber summary,
- Cost allocation,
- Invoice Details,
- Monthly charge analysis,
- Billing period/Billing period history.

2.4. End-of-life functionality

Support for *Office 2003* will be revoked as of the end of July 2015.

2.5. Revoked functionality

A7 no longer supports *IE7.*

3. Key concepts

3.1. Concept – organisational structure

A7 allows for the implementation of multiple organisational structures – see *Table 3 (below).*

An organisational structure being a hierarchy of *structure positions* (also known as *nodes*) which are either groups or subscribers. The groups represent meaningful units within an organisation (for example, these might be *Divisions*, *Departments*, *Accounts*, *Cost-centres* or *Teams*; indeed any collective term meaningful to the *service-provider*).

Table 3 Main organisational structure types

Structure name	Description	Properties and constraints
Default	The structure for the most recent month.	This structure is *customer* maintainable. A7 copies it from the *billing-defined structure* during the initial data load. In subsequent data loads A7 adds new groups and subscribers in the appropriate structure positions or to the *Unallocated* group if a position cannot be determined. Configurable:{Active=**Yes**, No} The structure may be the active structure when A7 launches.
Billing-defined	The data structure as provided by the billing system.	This structure is read-only. Each data load creates this structure afresh. A copy of the structure becomes the *Default structure* during the first data load. Configurable:{Active=**No**, Yes} The structure may be the active structure when A7 launches.
Historical	A snapshot of the *Default structure* taken immediately prior to each billing data load	Configurable:{MonthsRetained =**13**} A7 retains up to 13 months of *Historical structure* data.
User-defined	User created structures mapping their own needs.	Based-on or built from existing structures – as described in Section 3.2 (below)

3.2. Concept – User-defined structures

Service-providers may implement either *User-defined* or *Advanced User-defined structures*, but not both.

A7 supports the creation of structures that reflect a users' organisational needs through two mutually exclusive feature-sets:

- *User-defined structures (UDS)*;
- *Advanced user-defined structures (AUDS)*.

Related information:

9.1.1 Manage groups and user-defined structures.........92
9.1.6 Manage advanced user-defined structures 96

Table 4 Feature-sets for user-defined structures

Feature	Description	Properties and constraints
User-defined structures (UDS)	Comprises groups and subscribers from the *Default structure;* which may be arranged and renamed as required.	Available to all users It enables the creation and management of hierarchies up to ten levels deep. ▪ The skeleton *User-defined structure* is created by adding groups and levels using *Manage groups*; ▪ Subscribers are then added from the *Default structure* using *Manage subscribers.*
Advanced User-defined structures (AUDS)	*Advanced User-defined structures* comprise subscribers or groups from anywhere in the *Default* or *Billing-defined structures* irrespective of the parent group.	Available to *Top-level users* only. This feature provides the ability to create groups without the group's users having access to the parent group This is ideal for project related resource management analysis, since it allows subscribers from multiple departmental groups to be added to a project group without that project having access to departmental level data.

3.2.1. About User-defined structures

Core feature
Available to all users
Not available if the optional Advanced User-defined Structures feature is deployed

Users may define structures that reflect their own analytical needs, for example, to analyse costs for a particular collection of subscribers independent of the other structures.

For information on creating UDS ...

... see topic 9.1.1 Manage groups on page 86

These *User-defined structures* (*UDS*):

- May be based-on an existing structure, or be blank (to be populated manually by the user);
- Comprise groups and subscribers from the Default structure; which may be arranged and renamed as required in a hierarchy up to ten levels deep;
- May contain all, or a sub-set, of the subscribers within a bill;
- Are available to everyone irrespective of their structure/user rights;
- May be deleted only by the creating user.

Once created the *UDS* is managed using the functionality presented by the *Manage groups* and *Manage subscribers* tabs.

3.2.2. About Advanced User-defined structures

Optional feature
Available to Top-level users only.

Advanced User-defined structures comprise subscribers or groups from anywhere in the *Default* or *Billing-defined structures* irrespective of the parent group.

For information on creating AUDS

Topic *9.1.6 Manage advanced user-defined structures (on page 96)*

This feature provides the ability to create groups without the group's users having access to the parent group

This is ideal for project related resource management analysis, since it allows subscribers from multiple departmental groups to be added to a project group without that project having access to departmental level data.

3.3. Concept – Users

Each user is assigned to either or both of:

- One or more subscribers;
- One or more groups within a specific organisational structure;

Being assigned to a single group means that even If a user has multiple subscribers they need only log in once to see their billing data.

Subscribers with multiple positions

The optional Multi-instance feature-set – *Chapter 14 (on page 123)* – enables the assigning of subscribers to multiple positions in a single organisational structure (providing those positions are on different paths).

The *user* can view each *group* individually using the *Current analysis context controls*.

Once a user has been assigned to a subscriber, they will see data for the current month; an *Administrator user* with access to this subscriber will see all loaded data.

3.4. Concept – Users permissions

Users assigned to a group within an organisational structure have an associated set of permissions:

Permissions	Description of permissions
Full administrator	The user can create and maintain organisational structures and users.
Structure	The user can create and maintain structures.
User	The user can create and maintain users
Read-only	The user cannot create or maintain structure and user rights.

These permissions are applied at the user's organisational level, meaning users can maintain their own group and any attached groups below it in the organisational structure.

3.5. Concept – Users with more than one subscriber

Users assigned to more than one subscriber must use the *Current analysis context controls* to select a single subscriber before they can perform any *Usage tagging* actions.

- *Home*, *Dashboard*, *Trends* and *Reports* features display all of a user's subscribers.
- The *Current analysis context controls* enable a *user* to view information for all subscribers or for an individual subscriber.
- *Learnt tagging*

Tagging a number for one subscriber does not be automatically tag it for any other subscribers associated with the user. However, after the next data load, *Learnt tagging* does recognise the learnt number for any of the user's subscribers.

Similar logic also applies to adding any *Dialled number description* to *Dialled numbers*; following the next data load the description is displayed on all subscribers associated with the user.

3.6. Concept – Users with multiple subscribers and currencies

If a user with multiple subscribers has one or more subscribers using different currencies:

- *A7* combines all *usage* for all subscribers;
- The *Currency conversion context* tab enables users to select the currency to be used when viewing functionality, such as reports for multiple subscribers;
- Viewing in the original billed currency is possible only at the individual subscriber level.

3.7. Concept – Change of subscriber ownership

Subscribers can be reassigned from one user to another as required.

Subscriber users assigned a previously assigned subscriber have no access to any subscriber activity prior to the transfer.

A *Group user* with multiple subscribers is able to drill down and see all the usage for all subscribers under their management, regardless of the *subscriber user* they are currently assigned to.

- Where a subscriber is reassigned from a group outside their management the *group user* is able to see only usage for the current bill;
- Where a subscriber is reassigned to a group outside their management the *group user* is able to see only pre-reassignment usage.

3.8. Concept – Charge-categorisation

By default *A7* provides for Charge-categorisation based on a maximum of twelve categories. Category names are defined within the scope of the deployment project. Configurable:{**Charge 1; Charge 2 … Charge 11; Charge 12**}.

An unlimited number of sub-categories may also be defined.

This categorisation model supersedes the *Six-Charge-category* model, available in previous releases – see section *2.3 Deprecated functionality (on page 9)*.

3.9. Concept – Tax and Tax Lines

Service-providers may supply Tax amounts in any of the following ways:

- In the invoice record as a total amount;
- In the invoice record broken down into tax lines;

- In the Subscriber record.

The *Tax total* is included in both the *Usage records* (CDR) and *Charge records*. Any summaries containing both records will store only the *Usage record tax value*.

If both *Invoice* and *Subscriber level Tax lines* exist *A7* assumes that the *Invoice level* includes the values of the *Subscriber level*.

So, for example, with an Invoice level Tax line of £100 and a Subscriber Tax line of £50, the Total tax is assumed to be £100 and not £150.

4. Common features

This section introduces standard A7 user interface (UI) elements and features.

4.1. UI elements

Figure 12 Analysis 7 UI Map

Table 5: Standard names for common UI elements.

Key	Name	Description
01	*User drop-down menu*	The user drop-down menu – also known as the *Welcome menu* – allows the user to access and manage their A7 user account.
02	*User sign-out* hyperlink	The user sign-out hyperlink option allows the user to end the A7 session and sign-out.
03	*Main menu bar*	The *Main menu bar* enables the user to quickly access A7 features.
04	*My View*	*My view* contains the *Current analysis context controls*, which enable the viewing and changing of the *Current analysis context*. This includes the ability to select the *Billing-period*, *Organisational structure*, *Group* or *Subscriber*, and *Currency conversion list*.
05	*User identifier*	The *user identifier* is displayed only when A7 is used in Impersonation mode. It displays the user being impersonated and a hyperlink, which returns to the originating user and normal operating mode.
06	*My favourites* hyperlink	Select to open the my favourites panel
07	*Help Icon*	The *Help Icon* provides easy access to further information on the functionality of the panel. It opens a *Help* panel, which describes the features available in the calling panel and may also contain links to further resources.

Key	Name	Description
08	*Breadcrumb trail*	The *Breadcrumb trail* displays the currently selected position (group or subscriber) within the selected organisational structure.
09	*Horizontal scroll arrows*	
10	Inactive tab	Click to activate *Inactive tabs*.
11	Active tab	Active tabs move to the front of the page to display their content. Panels are the functional windows within which *A7* features interact with the user.
12	Hover-over action:	Holding the cursor over components, such as chart bars, will reveal additional information (in this case the value represented by the bar).
13	*Chart type menu*	charts and reports normally display a function menu, providing access to additional functionality (for example, Print or email).
14	Feature icon	Links to a related feature (show invoices in this instance).
15	Report *Icon*	These icons are short cuts to reports; Click to open the report.
	Download *Icon*	These icons are short cuts to dialog panels providing additional information and Download functionality; Click to open.
16	Delete *Icon*	Icons such as this provide basic housekeeping functions.
17	*Expandable list*	The *Expandable list* icon appears whenever a list item contains hidden detail. use it – and the corresponding contract list icon – to view or hide the additional detail.
18	*Cost adjustment arrows*	*Cost adjustment arrows* highlight variances between current and previous billing-period values. They are displayed next to *Cost* and *Original Cost* figures on reports..
19	*Embedded* hyperlink	Embedded hyperlinks are used within A7 to provide shortcuts to other features (for example, a relevant report).
20	*Language selection* menu	The *Language selection menu* provides an easy means of changing the user interface language.
Others – not shown	*drop-down list*	Drop-down lists enable the user to quickly and accurately select from a pre-defined list of options.
	Action button	The *Action button* enables users to access additional functionality within a feature; for example, to Edit the list of *Watchpoints*.

4.2. User menu

The *User menu* – also known as the *Welcome menu* – allows the user to access and manage their *A7* user account

Figure 13 The user drop-down menu

The user *drop-down menu* provides access to functionality that:

- Returns to the *Home* page;
- Displays the *Control panel*;
- Displays the user's account details;
  - Changes password details;
  - Changes preferences (for example, stop notification emails) via My Account.

4.3. Context indicators and controls

The *My view* panel comprises a set of context controls, which collectively govern the displayed dataset.

Figure 14 My view panel – showing collapsed view

4.3.1. Current analysis context

The *Current analysis context* comprises the currently selected values of the *Current analysis context controls*, namely the*:*

- *Billing-period*;
- *Organisational structure* (for example, *Default structure* or *billing-defined structure*);
- *Group* within the organisational structure (or subscriber) selected – see *Topic 4.3.2 Selecting group context (on page 19)*;
- *Currency conversion* list;
- *User*, their us*er type*, *customer profile* and assigned *organisational level*.

The combination of all of those elements determines the dataset visible at any given time; and naturally the dataset reported on by *A7* features such as reports.

The *Current analysis context controls* handle all but the last of the above contexts. The final item (*Users*) is created and maintained by the system administrator.

Users are assigned to either or both of:

- Zero, or more subscribers;
- A position (a gro*up*) within a specific organisational structure.

4.3.2. Current analysis context controls

Current analysis context controls enable the viewing and manipulation of the *Current analysis context*; that is, the dataset currently being viewed, including the time period and Currency conversion rates.

The *Current analysis context controls* are hidden by default, but can be accessed using the *Expander Icon* (☰), which appears beside each context control element:

- *Billing-period*;
- *Organisational structure*, which includes the *Find* context control;
- *Group* or subscriber;
- *Currency conversion*.

Setting Billing-period context

The *Billing-period* context control enables selection of the *Billing-period* for the *Current analysis context.*

Figure 15: Billing-period context control

Up to 13 billing-periods (months or bills) are available at any one time. By default the panel displays

- A list of *Billing-period hyperlinks* for the three most recent bills loaded;
- A *Billing-period drop-down list* to enable selection of earlier billing-periods.

Once selected the billing-period becomes part of the *Current analysis context* (and hence influences the displayed dataset).

Selecting organisational structure context

The *Structure browser control* enables the navigation and selection of an organisational structure and the structure positions within it to become part of the *Current analysis context*.

This control displays the structures in one of three categories:

- *Current selection*;
- *Main structures*;
- *User-defined structures*.

Figure 16: Structure browser control

Current selection

The *Current selection* expands to display the *Current analysis context* control's organisational structure

Main structures

The *Main structures* list expands to display one or more of:

- *Default structure*,
- *Billing-defined structure*,
- *Historical structure.*

Selecting group context

The *Group context control* expands *My view* and displays the *Structure browser control* – *Figure 16 (above)* – to enable navigation-to and selection-of a subscriber (or group), which then becomes part of the *Current analysis context.*

Selecting subscriber context

The *Subscriber context control* is displayed when a subscriber rather than a group is selected as part of the *Current analysis context*; despite its name this context control does not preclude selection of groups within the *Structure browser control*.

Selecting the control expands *My view* to display the *Structure browser control* – *Figure 16 (on page 19)* – which enables navigation-to (and selection-of) a structure position (subscriber or group), which then becomes part of the *Current analysis context*.

Figure 17: Structure browser control – showing selection of s subscriber

Setting Currency conversion context

The *Currency conversion context* tab enables selection of an alternative *Currency conversion list*.

Figure 18: Currency conversion context tab

Constraints

- Requires the *Currency conversion* module;
- *Currency conversion lists* must be used if customers may be billed in multiple currencies; they provide the target (default) currency for reports.

4.3.3. Structure browser control

The *Structure browser control* (used by all structure-based context controls) enables the selection and navigation of a structure down to group and subscriber levels. Items selected using this control become an active part of the *Current analysis context*.

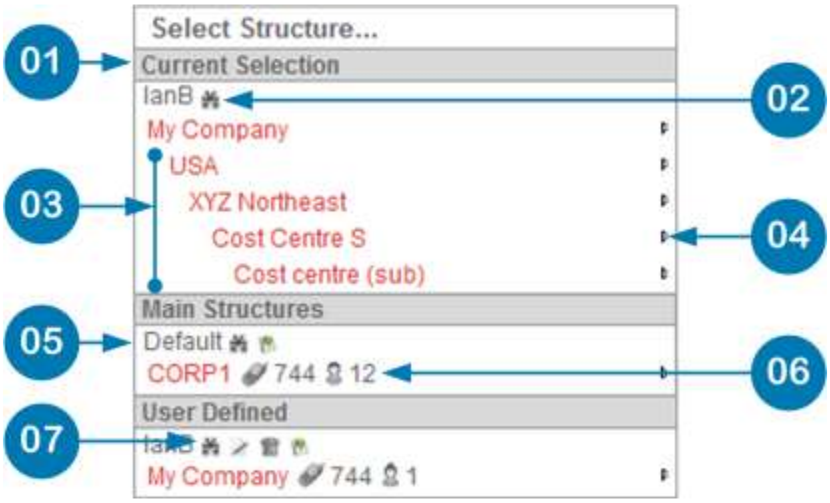


Figure 19: Structure browser control UI map

Table 6: Structure browser control – UI components.

Key	Component	Use
01	*Current selection*	*Current selection* expands to display the *Current analysis context* control's organisational structure
02	*Search*	The *Find* control enables searching for specific subscribers or gro*ups* within the selected organisational structure – *Figure 20 (below)*. Previously a context control in its own right, *Find* is accessed from within the *Structure browser control* (as of *A7* 1.07). *Find* uses predictive functionality to return a set of possible matches as soon as the first three characters have been typed into the *Find* text box.
03	*Levels*	The levels within the organisational structure hierarchy; for example, Division, Department and Team.
04	*Expand group Icon*	Expand the level to show child groups within it.
05	*Default structure*	
06	*Child node summary*	A summary of the gro*ups* within the organisational structure, showing the number of subscribers and us*ers*.
07	*Tools menu bar*	▪ Search; ▪ Edit; ▪ Delete; ▪ Download. The options are context driven and so not all will necessarily be available in all situations.

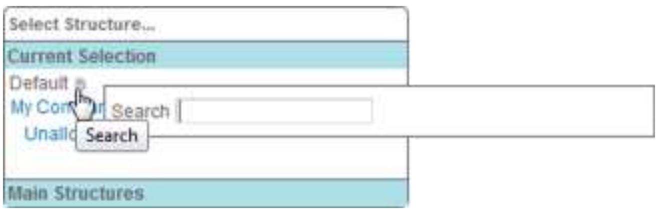


Figure 20: Structure browser control –search filter

4.4. User identifier

The *User identifier* is displayed only when *A7* is used in *Impersonation mode (see: **Analysis 7 1.10Core Back-office Product specification**)*.

It displays the user being impersonated and a hyperlink, which returns to the originating user and normal Back-office operating mode.

4.5. Breadcrumb trail

The *Breadcrumb trail* displays the currently selected structure position (group or subscriber) within the selected organisational structure, providing an easy means of orientation. The embedded hyperlinks can be used to quickly navigate to a higher positions within the selected structure.

It is context-driven and so not displayed on every page.

Part two

A7 feature-sets

Chapters in Part two ...

5. User access control feature-set

5.1. User registration feature

The *User registration* feature enables *Administrator users* and Back-office u*sers* – who are required to register to use *A7* – to enter their issued credentials and activate their user accounts

The *Registration keyword* and *Registration code* credentials are generated either by an existing *A7* user using the *Registration code generator* or through the initial data load.

The user's registered email address is used to notify them when a bill has been loaded and also as a delivery point for temporary passwords requested via the *Password request* feature.

Figure 21 User registration panel

Users can also be created using the *Add user* feature within *Administration management* or the data upload. Users created in this manner are pre-registered and are sent an email confirming their sign-in details.

Constraints

- User registration is not normally required in *Single sign-on option (SSO)* solutions.
- *Registration keyword* and *Registration code* credentials are required.

Configurable-items

None specified

Access path

Access user registration functionality at:
`http://<A7serviceDomain>/web/guest/register`

5.2. User Sign-in feature

The *User Sign-in* feature ensures only registered *A7* users access the system.

User Sign-in:

- Verifies that the supplied sign-in credentials are valid before allowing access to the *A7* system;
- Enables the u*ser* to request a new password via the *Forgot password hyperlink* ;

Figure 22: The sign-in panel

> A temporary password is sent via email to the registered u*ser email address*;

- [Optionally] Prompts the user to change their temporary password. {Configurable}

Constraints

Not normally available in an *SSO* environment.

Configurable-items

- Single-use passwords

  Enforce single-use temporary passwords – see *Section 5.3 (below)*. If a temporary password is used to sign-in the system insists it is changed on first use.
- Marketing Messages

  The service-provider may define a maximum of four marketing images to be displayed sequentially on the *User Sign-in* page.

5.3. Password recovery feature

Password recovery resets the user password. It requires entry of a valid username, user email address and dynamically generated verification code. The new password is sent to the registered user *email address*.

5.4. User menu

The *User menu* allows easy access to:

- *Control panel*;
- *Home;*
- *My account*.

5.4.1. My account feature

Figure 23: My account panel

My account enables users to:

- Change name details;
- Change email address;
- Change password details;
- Access preference settings (*My preferences*).

5.4.2. My preferences feature

The *User menu* allows the user to easily access the *Control panel* where they can use the *My preferences* feature to :

Switch off email bill *alert* notifications. Configurable:{**On**; Off}.

6. Home feature-set

A7's *Home* page provides a concise display of a subscriber or group's usage and charges.

The page highlights key indicators in a scrollable *Headline Summary* panel and its embedded links make it easy to drill-down to the detail behind the headline figures.

Pre-A7 1.07 Dashboard

A7 1.07 introduced a redesigned *Home* page and deprecated the pre-107 *Dashboard* feature, which is no longer developed.

Service-provides who use that feature may retain it on upgrading, solely to plan and effect a smooth transition to the *Home* feature.

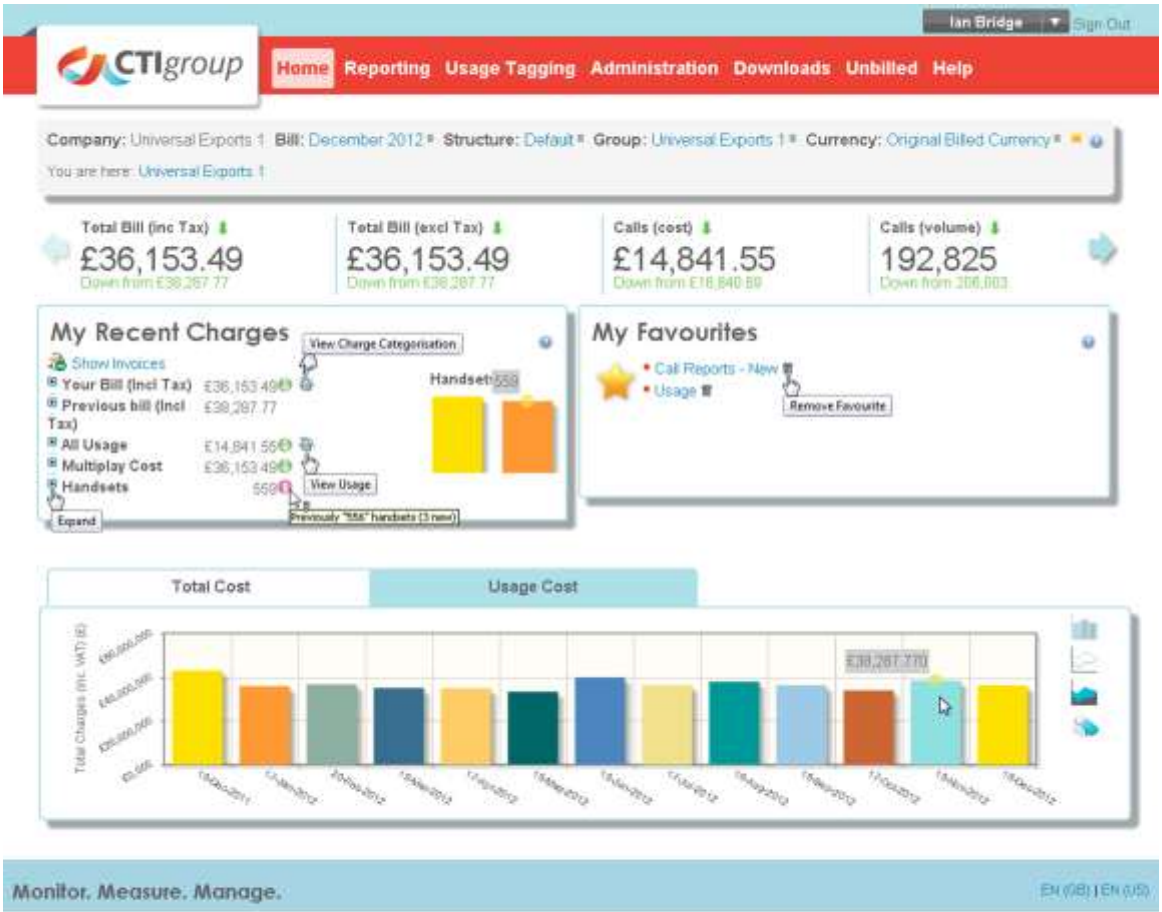


Figure 24: Home page

6.1. Home page panels

The *Home* page comprises:

- A *My view* panel – which contains the *Current analysis context controls*;
- The *Headline summary* panel – a scrollable display of key indicators such as *usage totals* and costs;
- The tabbed *Total Cost and usage* charts panel – showing *Total cost* and *Usage cost* over the months of data loaded, which provides a convenient way to see periodic changes throughout the year;

Related information:

- The *Recent charges* panel - displaying summary totals for recent changes together with quick links to the *Charge-categorisation report*, *Usage report* and *Recent charges – invoices*, which lists loaded invoices and enables their download in *PDF* format;
- The *My favourites* panel – displaying a list of user selected links to A7 reports.

6.2. Headline summary

> This feature caters for up to Twelve-Charge-categories and supersedes the deprecated six-category version – see *Appendix A.1 Headline summary – six-category (on page X).*

The *Headline summary* panel is part of the *A7 Home* page, this scrollable panel displays *Usage totals* for the *Current analysis context*, with click-through hyperlinks to more detailed information.

Figure 25: Headline summary UI map

Table 7: Headline summary – functional components.

Element		Description
01	Summary data items	The *Headline summary panel* displays a maximum of 18 *Summary data items* in a pre-determined priority order. CTI will work in conjunction with the *Service-provider* during project set-up to determine the required items and their relative priority. ▪ *Total bill (incl. Tax)* , ▪ *Total bill (excl. Tax)* , ▪ *Usage (volume)* , ▪ *Duration,* ▪ *Events (count),* ▪ *Data (volume)* ▪ *Subscribers,* ▪ *Billing Entities,* ▪ *Tax.* ▪ Up to Twelve-Charge-categories: ▪ Charges 1–6 Configurable {**on**; off}; ▪ Charges 7–12 Configurable {on; **off**}; The *Headline summary* does not display selected *Summary data items* when no data is available for them; it displays the next highest priority item (if any) instead.
02	Scroll controls	The *Headline summary* displays *Scroll controls* when data is available for more than four selected *Summary data items*; these controls allow the user to scroll the *Headline summary* panel (right or left) to view the off-page items.
03	Data change indicators	The *Headline summary* panel displays a *Data change indicator* for each *Summary data item* to show how the current *Billing-period*'s value differs from that of the previous *Billing-period*
	Summary data item drill-down	Where appropriate, *Summary data items* are hyperlinked to a relevant usage or charge report – see *Table 8 (on page 29)*. Selecting the item opens and displays the report.

Table 8 Headline summary drill-downs

Headline summary data item	Report drill-down destination
Billing Entities (number of).	No drill-down available
Data (size of),	Usage summary report
usage (number of),	No drill-down available
Duration (length of),	Usage summary report
Events (number of),	Usage summary report
Subscribers (number of).	Subscriber summary report
Charge 1	As defined at deployment time.
Charge 2	As defined at deployment time.
Charge 3	As defined at deployment time.
Charge 4	As defined at deployment time.
Charge 5	As defined at deployment time.
Charge 6	As defined at deployment time.
Charge 7	As defined at deployment time.
Charge 8	As defined at deployment time.
Charge 9	As defined at deployment time.
Charge 10	As defined at deployment time.
Charge 11	As defined at deployment time.
Charge 12	As defined at deployment time.

By default the Twelve-Charge-categories are labelled *Charge 1 – Charge 12*. These items will be labelled appropriately at deployment time and will typically include, for example:

- Usage costs,
- Recurring charges,
- Credits.

The definable drilldown report destinations include, for example:

- Charge-categorisation report,
- Cost Allocation report,
- Monthly charge analysis report,
- Usage summary report.

6.3. Total cost and usage feature

Total Cost and usage comprises two chart tabs, showing *Total Cost* and us*age Cost* over the months of data loaded, providing a convenient way to see periodic changes throughout the year.

Figure 26: Total cost and usage chart UI map

The charts operate over the total number of months for which data has been loaded, enabling the user to easily see variances throughout the year. The charts show:

- The total cost of the bill;
- The total cost of the usage element of the bill.

Table 9: Total cost and usage functional components.

Key	Component	Use
01	chart selector tab	Select required chart type.
02	*chart type menu*	Select required function (that is, *Bar chart, Line chart, Area chart or Print*).
03	chart	Hover-over action: Shows the numerical value of the selected bar.

Constraints

- No drill-down is available from either chart;
- Charts are organisational structure and user context aware;
- Both charts use the *Billing-defined structure*, which means that all billing-periods are visible to *Top-level users on* a *Default structure*, *Billing-defined structure* or *User-defined structure*, whilst group or *subscriber users* will see only the latest billing-period.

Configurable-items

This chart can be added to the pre-1.07 *Dashboard* page if required.

6.4. Recent charges feature

The *Recent charges* panel displays summary totals for recent charges together with quick links to *Recent charges – invoices*, the *Charge-categorisation report* and the *Usage report.*

Multiple multiplay services.

The breakdown of multiplay types against subscribers/billing-entities, may not necessarily equal the total subscribers/billing-entities count because each may have multiple multiplay services against them.

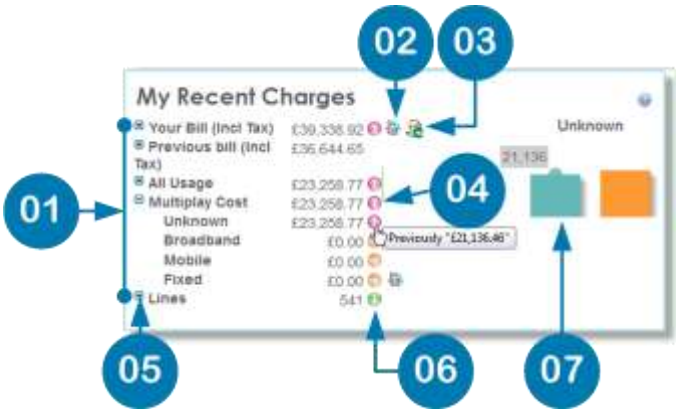


Figure 27: Recent charges panel UI map

The Recent charges panel shows a summary of the most recent bill, together with *Cost adjustment arrows* that indicate any variation from the corresponding values in the preceding bill.

The charge values are also reflected in the chart. Hover over a charge summary subscriber and the chart dynamically updates to display the appropriate preceding and current bill values.

Table 10: Recent charges summaries.

Summary	Description
Your bill	Displays *Your bill* values with drill-down showing tax values: This is the total cost of the combined Invoice and usage Charge-cat the level the user is viewing. ▪ For *Top-level users on* the *billing-defined structure* this is the actual cost of the bill; ▪ For gr*oup* and *subscriber users* it is the total of the usage and invoices at that level; ▪ *Cost adjustment arrows* indicate the direction of variance from the preceding bill; ▪ A *Show invoices* hyperlink is displayed if one or more invoices are available; ▪ A *Report selection* icon linking to the *Cost allocation* report is displayed – if the report is available.
Previous bill	Displays the *Previous bill values* (tax inclusive). ▪ Drill-down to see tax values; ▪ No *Cost adjustment arrows* are displayed.
All usage	Displays summary of all usage, with a drill-down to display a breakdown by *Usage type.* It derives its data from a configurable Charge-category. ▪ *Cost adjustment arrows* are displayed; ▪ A *report selection icon* is displayed, linking to the *usage report*.
Invoice/Bill charges	▪ Displays Invoice/Bill charges; ▪ *Cost adjustment arrows* are displayed.
Multiplay cost	▪ Displays *Your bill* values broken down by Multiplay category (drill-down); ▪ {Configurable: Displayed only if *Multiplay* is implemented by the *service-provider*.
Subscribers	▪ Displays subscriber totals, where subscriber includes, for example, subscriber, Broadband, VOIP, Mobile, Fixed, TV; essentially anything that can have us*age* associated with it; ▪ *Cost adjustment arrows* are displayed; ▪ *Cost adjustment arrows* have a Hover-over action: the previous *Billing-period's* value is displayed.

Table 11: Recent charges functional components.

Key	Component	Use
01	*Returned list of charges*	Expandable list of recent charges grouped by Charge-category. Hover-over action: Displays a chart showing previous and current values for the selected Charge-category.
02	*report selection Icon*	Select to view *Charge-categorisation report*.
03	*invoices Show all Icon*	Select to view all *invoices* for the latest bill.
04	*Cost adjustment arrows*	Indicates the movement in charge value from a preceding billing-period.
05	*Expand group Icon*	Click to expand/contract a Charge-category group.
06	*report selection Icon*	Select to view *usage report*.
07	Variable chart	The chart showing previous and current values for the Charge-category selected by 01 above. Hover-over action: Displays the value of the selected chart bar.

Constraints

- *Multi-instance* subscribers are counted as one subscriber;
- Multiplay is displayed only where *Service-provider* uses it.
- The Six-category version of this feature is deprecated; its separate *Profile management* feature is switched-off.

Configurable-items

None specified

Variations for *subscriber users*

None specified

6.5. Recent charges – invoices feature

Accessible from *Recent charges*, this panel displays a list of the loaded invoices, presenting the option to download *PDF* versions.

Figure 28: Recent charges – invoices panel UI map

The *Show invoices hyperlink* opens the *Recent charges – invoices* panel, which displays all invoices for the current billing-period, together with a *Download PDF invoice* hyperlink (dependent upon availability of downloadable data and user permissions).

Table 12: Recent charges – invoices functional components.

Key	Component	Use
01	Return to Recent charges hyperlink	Click to return to the Recent charges panel.
02	*invoice number Search filter* text box	Filter the *Returned list* by *invoice number*.
03	*Clear filter hyperlink*	clear applied filter
04	*Returned list* of *invoices* for bill	Browse list using *Page browse* controls (see 6 below).
05	*Download PDF i nvoice* hyperlink	Select to download a copy of the invoice.
06	*Page browse* controls	Page through the *Returned list* or go to first, last or numbered page.

Constraints

- The *Billing-defined structure* is used irrespective of the organisational structure selected in the context control; which means the user does not have to manually switch to the *billing-defined structure* to view the *PDF*;
- *PDF* hyperlinks are displayed only if the user has permissions to view a *PDF*;
- Any *invoices* below the user in the organisational structure will be visible.

Configurable-items

Restricting access to invoice downloads requires bespoke configuration.

6.6. My favourites feature

The *My favourites* feature displays a list of user selected links to *A7* reports.

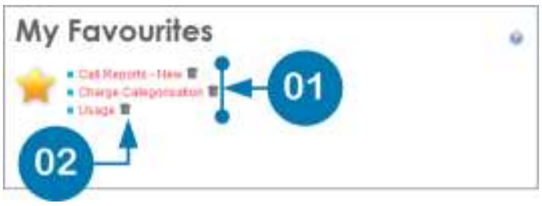


Figure 29: My favourites panel UI map

Any report (including custom *Trend charts* and *Usage tagging* reports) can be added to the *My favourites* hyperlinks using the *Add to My favourites* icon on the *Report option menu:*

When A7 detects that the maximum number of favourites has already been saved it displays the least used one and prompts the user to confirm its replacement; a confirmation message reporting the success or failure of *Add to My favourites* is displayed.

Any *Trend chart*s created using the *Custom trend chart* wizard can be added as *My favourites* hyperlink (via the *Add to My favourites Icon* in Add/Edit *Custom trend chart*).

Any custom usage- or charge-based report can be added to *My favourites* hyperlinks.

Selecting a favourite *Trend chart* from the *My favourites* panel opens the *Trends* page and displays the selected *Trend chart* in the right hand panel.

Table 13: My favourites functional components.

Key	Component	Use
01	*Returned list* hyperlinks	Select required hyperlink.
02	**Delete** *Icon*	Click to remove the selected favourite hyperlink; the object linked-to is not deleted.

Constraints

- A maximum of ten hyperlinks can be saved;
- Only user created *Trend chart*s can be saved as *My favourites* hyperlinks;
- The hyperlinks open and display the associated report but do not retain any drill-down or sort options; they adopt the *Billing-period* context used for the *Total Cost and usage* feature;
- If a report or feature is removed from a *Customer profile* then any associated hyperlinks to that report or feature are also removed from *My favourites*;
- *My favourites* are user-based entities, which means that users with both subscriber and group positions will see the same *My favourites* hyperlinks irrespective of the position they choose;

  If the selected *My favourites* hyperlink accesses a report that is unavailable in the *Current analysis context*, a message is displayed stating the unavailability and requesting selection of an appropriate organisational structure.

Configurable-items

Predefined hyperlinks can be configured during system setup, by default two report hyperlinks are configured:

- *Usage* report;
- *New usage report* hyperlink, which opens the wizard to create new *usage* based reports.

Either or both of these hyperlinks can be deleted or replaced by the user.

7. Reporting feature-set

Reports *provide comprehensive analysis of billing data; this section describes features common to all the reports.*

7.1. Report functionality

A7 reports, whether *Predefined*, *Custom*, *Usage tagging* or *Audit reports* all share a common set of functional components, including:

- Data selection components
  - My view,
  - Report category menu,
  - Report filters;
- Data presentation components
  - Report *column-sets* or report charts,
  - *Report views* and *selectable columns*,
  - *Report options menu*,
  - Sort Icons;
- Data navigation components
  - Drill-down Icons,
  - Page browser controls;
- Other components
  - Report actions menu,
  - Report favourites,
  - Inline editor.

Each report comprises a combination of some (or all) of the components, which are described further in the remainder of this chapter.

7.1.1. Data selection components

My view

The *My view* component sets the *Current analysis context* for the report – see *Topic 4.3.2 (on page 18)*.

Report category menu

The *Report category menu* provides easy access to the *Report overview* and the *Report categories*, enabling users to quickly switch between reports.

Figure 30: The report menu bar

Report filters

A7 Report filters apply to the returned list of results, filtering out those that do not match the specified criteria.

Figure 31 Report filters pane

Report filters are context-sensitive with:

- Customer-based reports allow filtering by *Customer Name or Corporate ID*,
- User-based reports allow filtering by us*ername* or us*er email address*.

Users define *Report filter* criteria by:

- Selection from a drop-down list;
- Selection from a date-picker;
- Selecting a check-box option;
- Entry into a *Search filter* text box.

Search filter text boxes …

Search filter text boxes are where users specify text to be searched-for; they begin to filter results when as few as three characters are input, entering more characters refines the search further.

Table 14 Standard report filters

Filter name	Description
Showing data for	This is a read-only, breadcrumb-style, filter that reflects the *Current analysis context* as defined in the *My view* pane; it is changed using *Current analysis context controls*.
Multiplay service	The *Multiplay service* filter restricts the report to the selected *Multiplay service type*. *CTI* recommend using no more than ten *Multiplay service types* per *customer*, although no hard limit is enforced. The drop-down list contains all the customer's *Multiplay service types* irrespective of whether any data refers to a specific *Multiplay service type*.
Zero entries	The *Zero entries* filter determines whether zero value rows are included when drilling down into a report via the organisational structure. {Configurable: **Hide**; Show}. For example, If the report results contain seven rows, of which three are zero value and Zero entries=Hide then the *summary level* reports seven subscribers but the drill-down level displays only four rows.
One line per	The *One line per* filter flattens the report displaying all levels at (or below) the selected level in a flat-structure, ignoring the organisational structure hierarchy. Selecting *One line per* filter=*Subscribers* displays all subscribers in the organisational structure at (or below) the *Current analysis context* but with no summary for subordinate *levels* (for example, Divisions, Departments, Teams or Cost-centres). Flattening the organisational structure impacts the subscriber count because it includes all subscribers, irrespective of whether they have data.

7.1.2. Data presentation components

Report options menu

The *Report options menu* presents a context-sensitive set of options, with each option working on the selected report; for a list of available options see *Table 15 (below)*.

Access the options using the *Report options* icon:

Table 15 Available report options

Icon	Name	Description
	Chart	A7 will present the report data in chart formation within a pop-up panel, with options to Print or view it as a Bar, Line or Pie chart. Not all reports display as a chart. This option is active ONLY if the contents of the selected column are numeric (for example, events, duration, costs, averages or data volumes).
	Configuration	A7enables the user to select and optionally save a custom *report view* comprising the: ▪ Columns to appear in the report (some columns are mandatory), ▪ Report sequence ▪ Number of rows per page. If the width of the selected columns exceeds the page width then a horizontal scrollbar is displayed to enable viewing of off-page column contents. By default all columns are displayed See: *0 Report views and Selectable columns (on page 38)*.
	Download	Report downloads are available – see *Topic 7.2.4 (on page 45)*.
	Email	A7 sends the report to the registered email address of the user viewing it in the selected format – see *Topic 7.2.4 (on page 45)*.
	Print	Click to preview the printed report. The page will display the information in flat format; presenting the options to: ▪ Print the information as it is displayed on the page ▪ Return to the displayed report.
	Schedule	A7 enables the scheduling of *Usage* or *charge* reports to run on a recurring (or ad-hoc) basis – see *Topic. 7.3.6 (on page 73)*.

System-defined report column-sets

A7's reports comprise one or more system-defined column-sets, each of which presents results at:

- A data summary level, for example a Multiplay service or a Charge-category;
- *An organisational structure* level – for example, a *Group* representing a department or division;
- The report detail level.

Report context columns

Column one of a *column-set* normally reflects the *Report context*. So, in a *Cost range* report, column one would be the *Cost range*. The *Report context* will change to reflect the:

- *Organisational structure* level as selected by either the *Select group* drill-down or the *One line per* filter;
- *Summary of search results* > *group by* option selected.

These system-defined column-sets are shown in the description of each report – see: *Section 7.3 (on page 46)*; they are also defined in *Appendix B (on page III)*.

Multiple column-sets may apply to any given report, depending upon the drill-down level chosen:

- *Summary level* – consolidated at the selected drill-down level; for example:

  This is the initial level displayed when accessing a report.

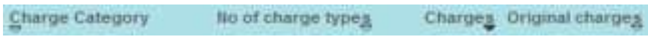


Figure 32: Example of a Summary of search results > Detail column-set.

- *Report details level* – displaying the lowest level of usage or charge detail;

Figure 33: Example of a report detail level column-set.

Report views and *Selectable columns*

A7's *Selectable columns* feature enables users to create *Report views*, which display only the columns they are interested; although some reports contain some columns that are mandatory – see: *Month* in *Figure 34 (below)*.

Users are able to also define the:

- Name of the saved *Report view*;
- Relative positions of the selected columns; using drag-and-drop to arrange them as required;
- Sort column and sequence direction;
- Number of rows displayed per page.

Report view scope …

Report views apply only to the selected report and report level. So, for example, columns removed at the top-level are not automatically removed at the report detail level (nor in any other report), unless an additional *report view*(s) is created to do this.

Legacy view …

Service-providers can opt to retain the fixed system-defined column-sets and not implement selectable columns. However, this may not display all reports in a tidy manner.

This is an unsupported option.

Figure 34 Report view configuration panel

The *Default report view* comprises all the service-provider defined columns for that report, but does not include *Export only* columns.

Report columns to the left of (and including) the drill-down icons are mandatory columns.; they can neither be moved nor removed.

Report view selection

If a *Report view* other than the *Default report view* exists then A7 displays the *Report view filter* to allow selection from the available list of views.

Initially reports display in accordance with the *Default report view*, but once an alternative Report view is selected it is remembered and displayed whenever the report is used.

Scheduled reports save the *Report view* selected when the scheduled report is created and continue to use that view even if the *Report view* itself is changed or deleted.

If a report is printed, the selected *Report view* is used; A7 neither truncates, trims nor rearranges columns to fit the page width. Use the browser's *Shrink to fit* option.

If a *Report view* is invalid (that is, it contains columns not available in the selected organisational structure) then it is ignored and the *Default report view* displayed. This caters for columns such as *Handset version,* which are available in the *Billing-defined structure*, but not in the *Default structure*.

Report total lines

Each report has a *Total line*, which displays the report total (not page total) for each numeric column.

Report average lines

Report averages are derived using only duration-based *usage* for reports which split us*age* into data, events and duration.

{Configurable} The average column may be removed from reports during system setup stage.

Example

The *Cost range* report sums us*age* (duration, events and data) and divides the sum by the number of duration-based calls to obtain an average usage figure.

Report sorting

Column-sort icons appear in the title bar of each column-set, they enable the sorting of reports based on the contents of the selected column;

Table 16 Column sort icons

Icon	Name	Description
▲	Sort ascending	Click to sort the data into ascending order based on the values in the selected column. The sort key column is highlighted in grey.
▼	Sort descending	Click to sort the data into descending order based on the values in the selected column. The sort key column is highlighted in grey.

The *Report detail level* is always sorted on the default sort column (*Subscriber label*).

Column scrollbars

If the number of columns selected for display in a report exceeds the available display width then A7 displays a horizontal column scrollbar below each level of the report (that is, not the browser page).

The scrollbar scrolls only columns appearing after the drill-down icons (that is, selectable columns; mandatory columns remain fixed).

7.1.3. Data navigation components

A7 allows navigation through the report structure using:

- Drill-down filters *Select detail and Select group* to move between the different summary levels of the report.
- Page browse controls

Drill-down filters

The *Drill-down* filters enable users to navigate the organisational structure and dataset.

Table 17 Drill-down filters

Filter name	Icon	Description
Select detail		The *Select detail* drill-down filter displays the next data summary level within a report. For example selecting a particular Charge-category from a list of Charge-categories.
Select group		The *Select group* icon drills-down to the next tier of the organisational structure; for example, selecting a department from within a divisional list of departments. The displayed data is based on the level selected.

Use the **Remove** links to remove an applied *Select detail* drill-down filter and redisplay the unfiltered data.

Page browse controls

Page browse controls display at the top and bottom of every page whenever the report contains more rows than the number of lines per page.

Report pages …

Report results are organised in result-sets (that is, pages) containing a user configurable number of lines per page **{Default=15}**.

Figure 35 Page browse controls

Page browse controls comprise, from left to right, see *Figure 35 (above)*:

- The *Report position* message

  For example, '`Showing x-y of z rows`';
- A (Go to the) *Previous page* icon;
- Two or more *Page number* icons
- The page number for the first page and the final page are always displayed,

- Up to three consecutive intermediate page numbers are also displayed – for example, `2`, `3` and `4` in in *Figure 35 (above)*;
- A (Go to the) *Next page* icon;
- A *Page number* search filter text box and *Go* hyperlink
  Input a number and **[Go]** to go to that page.

7.1.4. Report actions menu

The *Report actions menu* presents users with a context-sensitive list of actions to be applied to the selected row. The report type and context governs the actions available.

See *Table 18 (below)* for a list of reports displaying the *Report actions* menu and *Table 19 (below)* for a list of *Report actions*.

Table 18 List of reports displaying the Report actions menu

Report name	Available actions
Downloads – Data exports	(Re)Schedule and Download.
Admin – Manage users	Edit
Admin – Manage sFTP	Test settings
Advanced Usage tagging – Manage rules	View, Edit and Delete.
Advanced Usage tagging – Phone book	Delete
Scheduled report management	Edit, Run, Stop and Delete

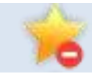
Table 19 Actions within the Report action menu

Icon	Name	Description
	Edit	Click to edit the selected object.
	Run	Click to run the *Scheduled report*.
	Delete	Click to delete the selected object.
	Stop	Click to stop running a *Scheduled report*.
	(Re)Schedule report/export	Click to schedule or reschedule the selected report or data export.
	Download data export	Click to download the selected data export object.
	Test settings	Click to test the sFTP settings.
	View	Click to view the selected object.

7.1.5. My favourites icons

A7's *My favourites* feature enables users to mark a report as a favourite, these reports are then displayed in the *My favourites* panel – see: *Topic 6.6 (on page 33)*.

Icon	Name	Description
	Add to My favourites Icon	Click to save this page to *My favourites*.

Icon	Name	Description
	*Remove from My favourites Icon*	Click to remove this page from *My favourites*.

7.1.6. Inline editor

The *Report detail level* of Usage-based reports, and some *Report summary levels,* display *Inline editor* icons.

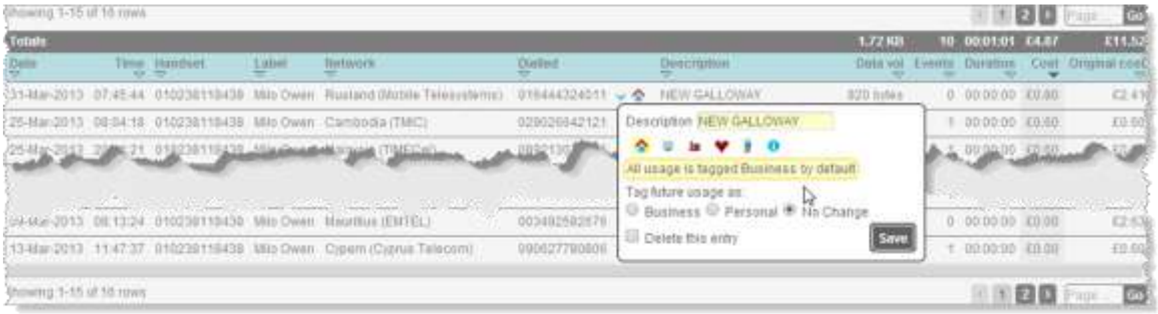


Figure 36 Inline editor panel

Selecting these icons displays the pop-up *Inline editor* panel, which allows the user to:

- Select a default *Tag future usage* setting;
- Associate a personal *Description* and *Icon* with the selected item;
- Remove an existing *Description*.

7.2. Report structure

The report structure comprises:

- None, one or multiple *Report summary level(s)*;
- A *Report results summary* level;
- A *Report details level*.

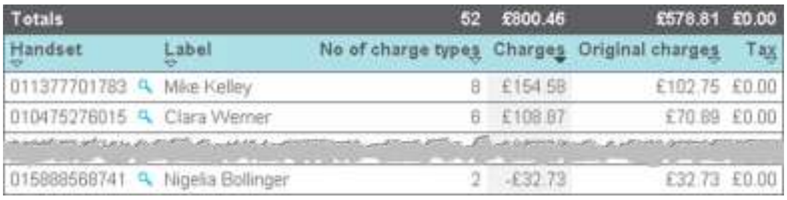
7.2.1. Report summary levels

The *Report summary level* page comprises:

- A *My favourites* icon (that is, either an *Add to* or a *Delete from* icon)
- The *Help* icon;
- The *Report category menu;*
- The *Report options menu* icon*;*
- An expandable *Filters* pane containing one or more filters, depending upon the report The *Showing data for* filter is always present;
- The *report totals line*;
- The *Report summary row*(*s*) with *Select detail* and/or *Select group* drill-down icons.

Use *Select detail* to move down the data hierarchy. If there are no data summary rows then this option displays the *Report results summary* – *Topic 7.2.2 (on page 44)*. A data hierarchy may show, for example, a list of *Charge-categories*, then a list of *sub-categories* before finally opening the *Report results summary* page.

Use *Select group* to move down the organisational structure. Your starting point in the structure will determine the levels you can drill-down into. Ultimately the drill-down will display a *Subscriber level summary* – see *Figure 37 (below)* – from which *Select detail* will drill-down to the *Report results summary.*



Totals		52	£800.46	£578.81	£0.00
Handset	Label	No of charge types	Charges	Original charges	Tax
011377701783	Mike Kelley	8	£154.58	£102.75	£0.00
010475276015	Clara Werner	6	£108.87	£70.89	£0.00
015888568741	Nigella Bollinger	2	-£32.73	£32.73	£0.00

Figure 37 Example subscriber level summary

7.2.2. Report results summary

The *Report results summary* page is the access-point to the *Report detail level*. In addition to summarising the data, it also provides features to refine the returned search results.

Figure 38: Report results summary page

Table 20 Report results summary components

Component	Description
Summary of search results	The *Summary of search results* pane summarises the report and presents the option to either *View details* or *Return to the report* If the report exceeds the Maximum search volume A7 does not activate the *View detail* option and you must either refine the search or run the report as a *Scheduled report*. The *Maximum search volume* defines the number of records to be searched {Configurable: **Default: 200,000;** Recommended max: 200,000}.
Reporting criteria	The *Reporting criteria* pane presents the user with the option to refine the selection criteria. The report type determines the actual criteria available for editing. This pane may be expanded or collapsed when viewing report detail level using either *View detail* or *View report using criteria* button.
Presentation criteria	The *Presentation criteria* pane enables the user to set group-by and sorting options, to limit the rows returned and to view the data as a *chart* rather than a table. Available for standard and custom reports.

7.2.3. Report detail level

The *Report detail level* presents transaction level data using one of the *column-sets* defined in *Table 21 (below),* depending upon whether the report is *usage-* or *charge-based*.

Table 21 Report detail level column-sets

Report basis	Report column set		Reports using this basis and column set	
Charge detail	▪ Subscriber ▪ Label ▪ Charge description ▪ Charge start date ▪ Charge end date ▪ Charge amount	▪ Original amount ▪ Tax ▪ Tax rate ▪ Tax description ▪ Quantity ▪ Unit price	▪ Charge-categorisation ▪ Cost allocation ▪ Subscriber Summary	▪ Invoice backup ▪ Invoice detail ▪ Invoice Statement
Usage detail	▪ Date ▪ Time ▪ Subscriber ▪ Version ▪ Label ▪ Network ▪ Dialled	▪ Description ▪ Data vol ▪ Events ▪ Duration ▪ Cost ▪ Original cost ▪ Tax	▪ Cost range ▪ Billing Period ▪ Billing Period History ▪ Bundle Usage ▪ Daily Distribution ▪ Destinations ▪ Duration Range ▪ Frequently Dialled ▪ Internal	▪ Monthly Trend Analysis ▪ Multiplay Service ▪ Peak/Off-Peak ▪ Roamed ▪ Tax Exempt ▪ Transmission Type ▪ Usage ▪ Usage By Direction ▪ VPN

Charge detail example:

Handset	Label	Charge description	Charge start date	Charge end date	Charge amount	Original amount	Tax	Tax rate	Tax description	Quantity	Unit price
Totals					£94.98	£29.69					
010238118438	Milo Owen	Call Charges	01-Apr-2013	30-Apr-2013	£4.87	£0.00	£0.00	17.5 %	Standard Rate	0.00	£0.00
010238118438	Milo Owen	SIM Replacement Charge	01-Apr-2013	07-Apr-2013	£19.37	£9.88	£0.00	17.5 %	Standard Rate	5.00	£19.37
010238118438	Milo Owen	Monthly Tariff Charge	01-Apr-2013	25-Apr-2013	£28.74	£14.87	£0.00	17.5 %	Standard Rate	3.00	£14.87

Usage detail example:

Date	Time	Handset	Label	Network	Dialled	Description	Data vol	Events	Duration	Cost	Original cost	Tax
Totals							178 bytes	18	00:16:13	£8.65	£17.17	
23-Apr-2013	04:54:18	017126651478	Angel Saltser	Rusland (Tele2)	023694834658	023 Geographic expansi	0 bytes	0	00:00:24	£0.14	£0.14	£0.00
23-Apr-2013	18:13:50	017126651478	Angel Saltser	Island (Wang Wireless)	023594834859	023 Geographic expansi	0 bytes	0	00:38:13	£0.38	£0.38	£0.00
21-Apr-2013	20:45:18	017126651478	Angel Saltser	Afghanistan (TDCA)	016444334011	NEW GALLOWAY	0 bytes	1	00:00:00	£0.07	£0.80	£0.00

Select **Export Hidden Columns** to expand the *A-* and *B-Post Codes* into full addresses (eight columns including the post code) when exporting *Charge details* to CSV, XLS or XML formats:

7.2.4. Report exports

Reports can be saved in various formats:

- CSV, [3]
- PDF,
- XML,
- Postscript,
- Word 2003,
- Excel 2003, [4]
- PowerPoint 2003.

[3] The text delimiter can be defined.
[4] The text qualifier can be defined.

The following constraints apply to reports exported from *A7*:

Table 22: Constraints on exported reports.

Element	Constraints
Orientation	Landscape by default
Column-wrapping	▪ On breaking words if present; ▪ Mid text if there are no breaking words.
Formatting	▪ Exported columns are formatted as **`Text`**. Change the column format to **`Number`** in Excel to view data in raw number format. ▪ Images are not supported with Excel exports.
Displayed columns	All available columns are included in displayed reports and exports by default. {Configurable: See hidden columns (below). This is only applicable to reports not the presentation criteria..
Hidden columns	*Charge reports* contain hidden columns. {Configurable: system setup stage. Hidden columns are: ▪ Only included in exported data; ▪ Not displayed in custom reports; ▪ Exported only in CSV, XML and XLS file formats; ▪ Exported by default. To exclude hidden columns: (Deselect the *Export hidden columns* checkbox during the export process to exclude hidden columns {**Default=Selected**, that is, include all hidden columns}.
Limits	You must run reports returning more than 5,000 result rows as *Scheduled reports*; this limit does not apply to downloads, including full tagging usage.
Pre-requisites	Excel 2003 service pack 3 and above is supported within *A7*.

7.3. Main reports

Unless stated as an exception all reports can display data as *report charts* or *column-sets* – see *Appendix B Column-set definitions (on page III)*. A7 groups the predefined reports into categories:

Costs reports; *Where reports*; *My reports*.

When reports; *How reports*;

Most reports comprise:

- A *Summary level* view that presents drill-down options to the *Report results summary* page;

  The drill-down hierarchy is either or both of:
- The organisational structure, (*Select group*);
- The report's data structure (*Select detail*) – for example, bill»*invoices*»charge *types* »*Subscribers*»charges;
- A *Report results summary* – see *Topic 7.2.2 (on page 44);*
- The *Report detail level*– see *Topic 7.2.3 (on page 45)*.

7.3.1. Reports overview

The *Report overview* displays the reports available in each category; *Observations* are displayed for some reports. {Configurable}.

Figure 39: Report overview page

Components

- A click-through link for each report;
- Configurable:{**OFF**; On} *Observations* pertinent to a report..

Actions

- Select the embedded report hyperlink to open the report at its highest level;
- Select an *Observation* to open the report at that corresponding point.

Constraints

- The ability of *A7* to display the reports outlined within this section is dependent upon the data provided by the *service-provider*;
- Not all reports are available to all *service-providers*.

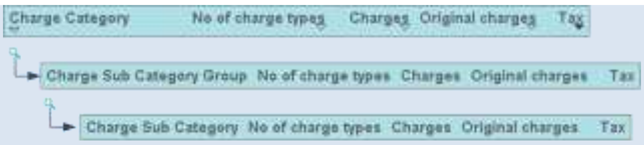
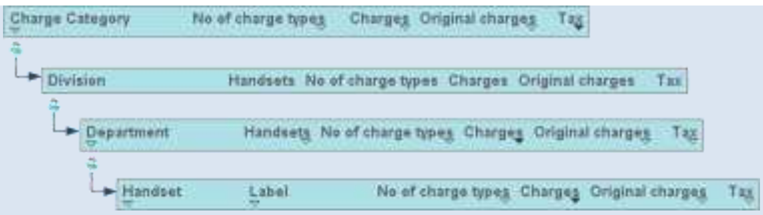
These reports are unavailable for *subscriber users*:

- *Monthly charge analysis;*
- *Subscriber summary;*
- *Monthly trend analysis;*
- *Billing-period history;*
- *Frequently dialled.*

7.3.2. Costs reports

Charge-categorisation report definition

Figure 40 Charge-categorisation report

Report title	Charge-categorisation
Description:	Displays charges by Charge-category. The top-level report displays a summary line per Charge-category showing: ▪ Charge-category; ▪ Number of charge types; ▪ Charges (amount); ▪ Original charges (amount); ▪ Tax (amount).
Constraints:	Available only to *Service-providers* using Twelve-Charge-*categories*: ▪ There must be at least one sub category per Charge-category; ▪ Sub categories are dynamic; ▪ A maximum of Twelve-Charge-categories can be defined.
Variations:	Unavailable report functionality: ▪ *One line per* filter; ▪ *Zero entries* filter ▪ *Report overview observations*.
Report basis	Charge detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Sequence:	Charge-category – descending
Select detail	
Select group	

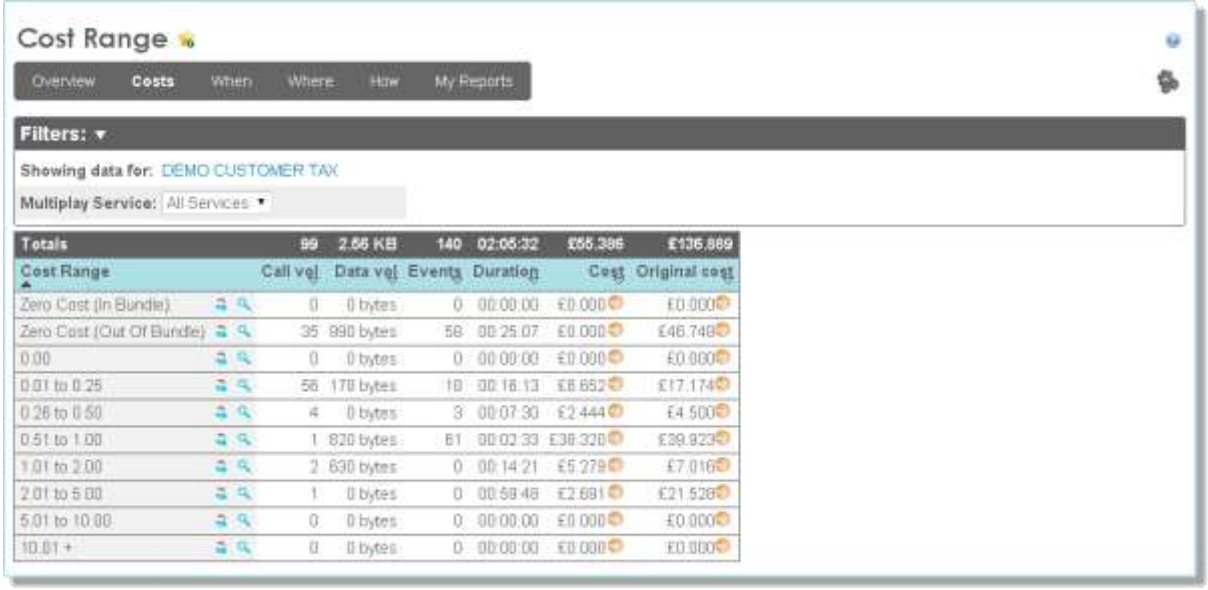
Cost allocation report definition

For *Six-Charge-category* deployments see *Appendix F.2 Deprecated Six-Charge-category reports (on page XI).*

Figure 41 Cost allocation report

Report title	Cost allocation
Description:	Displays billing costs at each level of the organisational structure. All twelve categories are available for display, but categories Charge 7 through Charge 12 are switched-off by default. Use the selectable columns feature to activate any or all of them.
Sequence:	Cost – descending
Constraints:	Does not break down the total cost by Charge-category at each *organisational level*. The report lines will wrap-around when exporting All columns in MS Word, PDF or PowerPoint format, so we recommend users either limit the number of columns being reported or exporting All columns in CSV format.
Variations:	Unavailable report functionality: *Cost adjustment arrows*.
Report basis	Charge detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy.

Cost range report definition



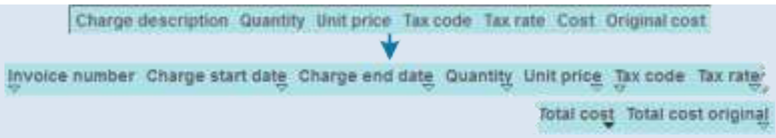
Cost Range	Call vol	Data vol	Events	Duration	Cost	Original cost
Totals	99	2.66 KB	140	02:05:32	£55.386	£136.889
Zero Cost (In Bundle)	0	0 bytes	0	00:00:00	£0.000	£0.000
Zero Cost (Out Of Bundle)	35	990 bytes	58	00:25:07	£0.000	£46.748
0.00	0	0 bytes	0	00:00:00	£0.000	£0.000
0.01 to 0.25	56	170 bytes	10	00:16:13	£6.652	£17.174
0.26 to 0.50	4	0 bytes	3	00:07:30	£2.444	£4.500
0.51 to 1.00	1	820 bytes	61	00:02:33	£38.320	£39.923
1.01 to 2.00	2	630 bytes	0	00:14:21	£5.279	£7.016
2.01 to 5.00	1	0 bytes	0	00:59:46	£2.691	£21.528
5.01 to 10.00	0	0 bytes	0	00:00:00	£0.000	£0.000
10.01 +	0	0 bytes	0	00:00:00	£0.000	£0.000

Figure 42 Cost range report

Report title	**Cost range**
Description:	Highlights areas of high or low spend; it displays the volume, duration and cost in pre-defined cost ranges {Configurable}.
Sequence:	Cost range -ascending.
Constraints:	Available only in single-currency deployments. A maximum of twelve ranges can be defined. [Optionally] Two of the ranges can be designated to display: ▪ All bundled usage records (that is, zero cost). ▪ All unbundled zero cost usage.
Variations:	None
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down directly to *Report detail level* .
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

Invoice backup definition

Report title	**invoice backup**	
Description:	Displays invoice charges by charge description	
Sequence:	Cost - descending	
Constraints:	Available only if the service-provider can supply summarised charges in the data. Available only to Top-level users on the Billing-defined or Default structure.	
Variations:	Unavailable report functionality:	
	▪ *Report filters* (all) – at top-level; ▪ *Multiplay service* filter – at any level; ▪ Charts;	▪ *Cost adjustment arrows*; ▪ *Report overview Observations*.

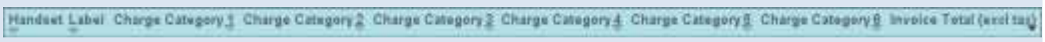
Report title	invoice backup
Report basis	Charge detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	
Select group	

Invoice details report definition

For *Six-Charge-category* deployments see *Appendix F.2 (on page XI)*.

Figure 43 Invoice details report

Table 23: Invoice detail report definition

Report title	invoice details
Description:	Displays a summary line per loaded invoice All twelve categories are available for display, but categories Charge 7 through Charge 12 are switched-off by default. Use the selectable columns feature to activate any or all of them.
Sequence:	Invoice number – ascending.
Constraints:	▪ Available only to Top-level users on the Billing-defined or Default *structures.* ▪ Cannot be deployed alongside the *Invoice Statement* report; these are mutually exclusive reports. ▪ The *Charge Original* columns are not available.
Variations:	Not linked to organisational structure. Unavailable report functionality: ▪ *Multiplay service* filter; ▪ Charts; ▪ *Select group*; ▪ *Report overview Observations*; ▪ *Cost adjustment arrows*; ▪ Report totals.
Report basis	*Charge* detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to invoice details 
Select grou p	Drill-down unavailable

Invoice statement report definition

Figure 44 Invoice statement report

Table 24: Invoice statement report definition

Report title	Invoice statement
Description:	At the top-level the report displays a one-line per invoice summary, which can be expanded to show the tax breakdown – as show in Figure 44 *(above)*. The following columns are available at the top-level: ▪ Invoice Number ▪ Invoice Total (Ex tax) ▪ Total Tax ▪ Invoice Total (incl. Tax) ▪ Previous Balance ▪ Payment Received ▪ Balance Outstanding The taxes shown are applicable to that invoice only; all taxes included in the invoice are displayed even those of zero value Expand the tax data using the expander icons [▸ ▾], the columns available comprise: ▪ Invoice Number ▪ Tax Code ▪ Tax Description ▪ Tax Rate ▪ Tax Amount
Constraints:	▪ Available only to Top-level users. ▪ Cannot be deployed alongside the *Invoice Detail* report; these are mutually exclusive reports. ▪ Cannot be deployed by customers using Tax as a Charge-category ▪ Tax expander icons are displayed even where service-providers do not have multiple taxes or where tax is only at invoice level. ▪ The selectable columns feature does not extend to columns in the tax breakdown view.
Variations:	▪ If this report is deployed, then the *Headline summary* will point to this report not the *Invoice Detail report*. ▪ *Payment* and *Balance* are optional fields populated only if the service-provider can send that information. ▪ Both the Download and Email options will prompt you to select between downloading without a tax break down or downloading a tax break down only. **Unavailable report functionality:** ▪ *One line per* filter; ▪ *Zero entries* filter ▪ *Report overview observations*.
Report basis	Charge detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Sequence:	Invoice number – ascending

<table>
<tr><th>Report title</th><th>Invoice statement</th></tr>
<tr><td>Select detail</td><td>For the selected invoice, this drill-down displays a one-line per Charge-category summary showing total tax and the charge amount.
The Select detail icon in this column-set launches the Report results summary panel to access Report detail level.</td></tr>
<tr><td>Select group</td><td>This drill-down shows the charges for each subscriber.


By default charges 1 thru 6 are shown; use Report option menu»Configuration to select additional or different charges.
User the expander icons in the Total tax column to show the tax breakdown for the selected subscriber. The columns show include: Tax Code, Tax Description, Tax Rate, Tax Amount
The Select detail icon in this column-set launches the Report results summary panel to access Report detail level.</td></tr>
</table>

Monthly charge analysis report definition

For *Six-Charge-category* deployments see *Appendix F.2 (on page XI).*

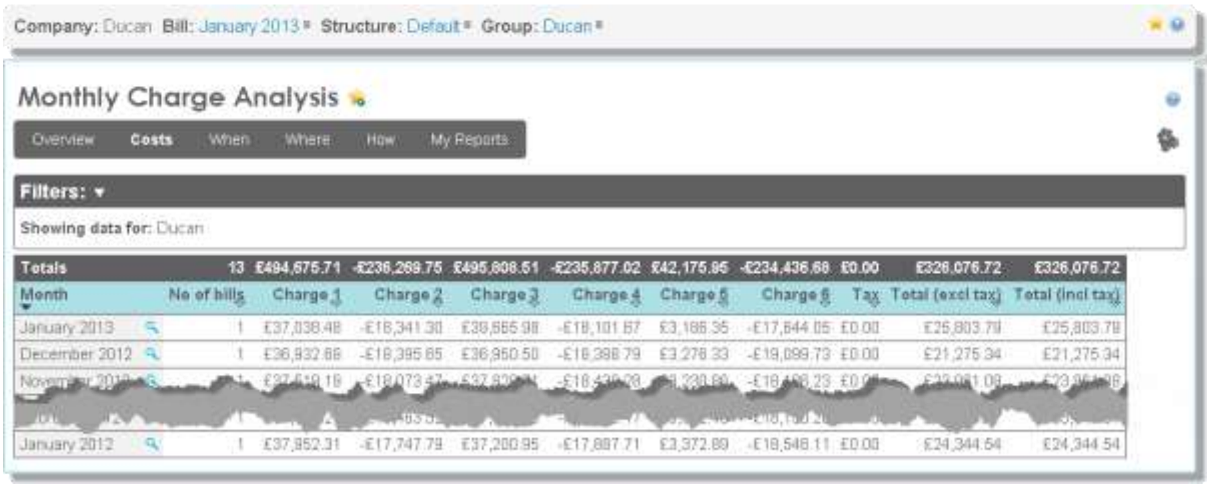
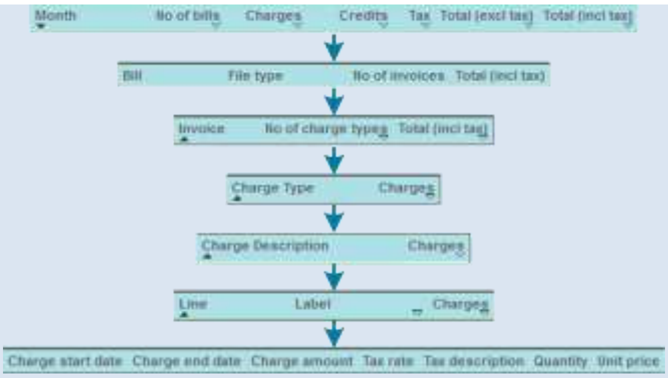


Figure 45 Monthly charge analysis report

<table>
<tr><th>Report title</th><th>Monthly charge analysis</th></tr>
<tr><td>Description:</td><td>Summarises charges for each month's loaded data (up to 13 months), with Select detail drill-down, to associated bills, invoices and charges.
Report totals consolidate all bills received in a month regardless of the Billing-period selected in the Current analysis context.
All twelve categories are available for display, but categories Charge 7 through Charge 12 are switched-off by default. Use the selectable columns feature to activate any or all of them.</td></tr>
<tr><td>Sequence:</td><td>Month - descending.</td></tr>
<tr><td>Constraints</td><td>Available only to Top-level users on the Default structure.
Unavailable in User-defined, billing-defined and Historical contexts.
The report lines will wrap-around when exporting All columns in MS Word, PDF or PowerPoint format, so we recommend users either limit the number of columns being reported or exporting All columns in CSV format.</td></tr>
</table>

Report title	Monthly charge analysis
Variations:	Not linked to organisational structure. ▪ All twelve *Charge Original* columns are available, but are switched-off by default. Unavailable report functionality includes: ▪ *Multiplay service* filter; ▪ *Select group* drill-down; ▪ *Cost adjustment arrows*; ▪ *Report charts*; ▪ *Report overview Observations*; ▪ Report totals.
Select detail	
Select group	Drill-down unavailable

Most expensive report definition

Figure 46 Most expensive report

Report title	Most expensive
Description:	Highlights high cost usage records (within the current context)
Sequence:	Cost - descending.
Constraints:	Available only to ▪ Top-level users on the *billing-defined structure*; ▪ *Top-level users on the Default structure*; ▪ *Subscriber user*; Includes: ▪ Previous three *Billing-period*; {Configurable: ▪ Top 50 records; {Configurable: Excludes Zero-charge usage.

Report title	Most expensive
Variations:	The *Personal description filter* is displayed for *subscriber users*. Unavailable report functionality: ▪ Filters (all)); ▪ *Select group* drill-down; ▪ *Select detail* drill-down; ▪ *Cost adjustment arrows*; ▪ *Report overview Observations*; ▪ Report totals.
Select detail	Drill-down unavailable.
Select group	Drill-down unavailable.

Subscriber summary report definition

For *Six-Charge-category* deployments see *Appendix F.2 (on page XI).*

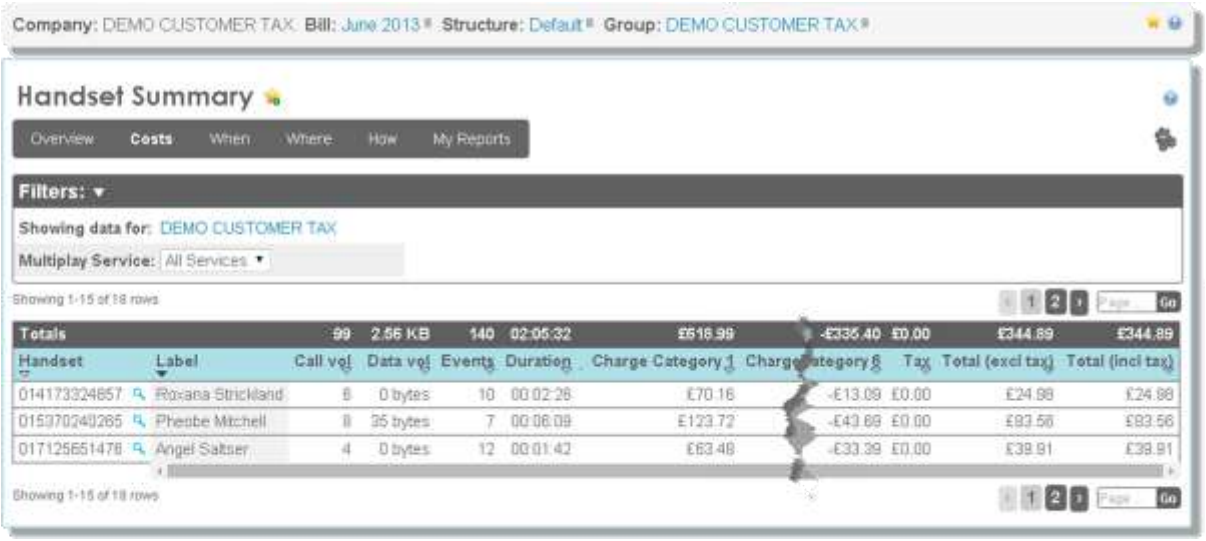


Figure 47 Subscriber summary report

Report title	Subscriber summary
Description:	Summary of invoice related charges against each subscriber. All twelve categories are available for display, but categories Charge 7 through Charge 12 are switched-off by default. Use the selectable columns feature to activate any or all of them.
Sequence:	Charge total - descending.
Constraints:	Not available to *subscriber users* The report lines will wrap-around when exporting All columns in MS Word, PDF or PowerPoint format, so we recommend users either limit the number of columns being reported or exporting All columns in CSV format.
Variations:	Billing entities are displayed Configurable:{**OFF**; On}. **Unavailable report functionality:** ▪ *Cost adjustment arrows*; ▪ Charts; ▪ *One line per* filter - at top-level; ▪ *Zero entries* filter - at top-level.
Report basis	Charge detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down unavailable

Tax exempt report definition

For *Six-Charge-category* deployments see *Appendix F.2 (on page XI)*.

Figure 48 Tax exempt report

Report title	Tax exempt
Description:	Displays calls with no associated tax (for example, VAT) charge
Sequence:	Cost – descending
Constraints:	Available only if the service-provider can provide a Tax flag at CDR level.
Variations:	Includes VAT exempt or zero rated usage records (for example roaming calls outside of European Union). Unavailable report functionality: ▪ Charts; ▪ *Cost adjustment arrows*; ▪ *Report overview Observations*.
Report basis	Charge detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down directly to *Report detail level* .
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

Usage report definition

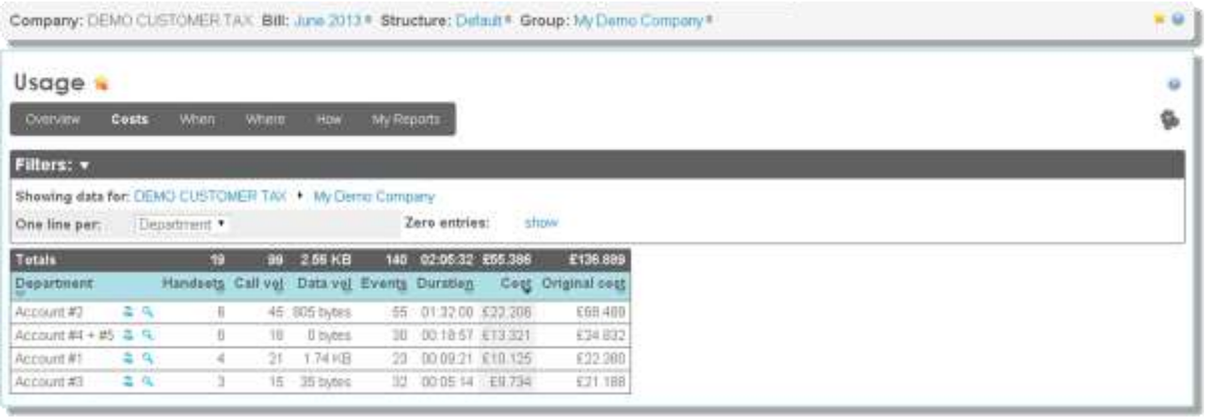


Figure 49 Usage report

Report title	Usage
Description:	Displays us*age* against organisational structure
Sequence:	Cost - descending
Constraints:	None specified.
Variations:	Unavailable report functionality: ▪ *Multiplay service* filter; ▪ Charts; ▪ *Report overview Observations*.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down directly to *Report detail level* .
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

7.3.3. When reports

Billing period report definition

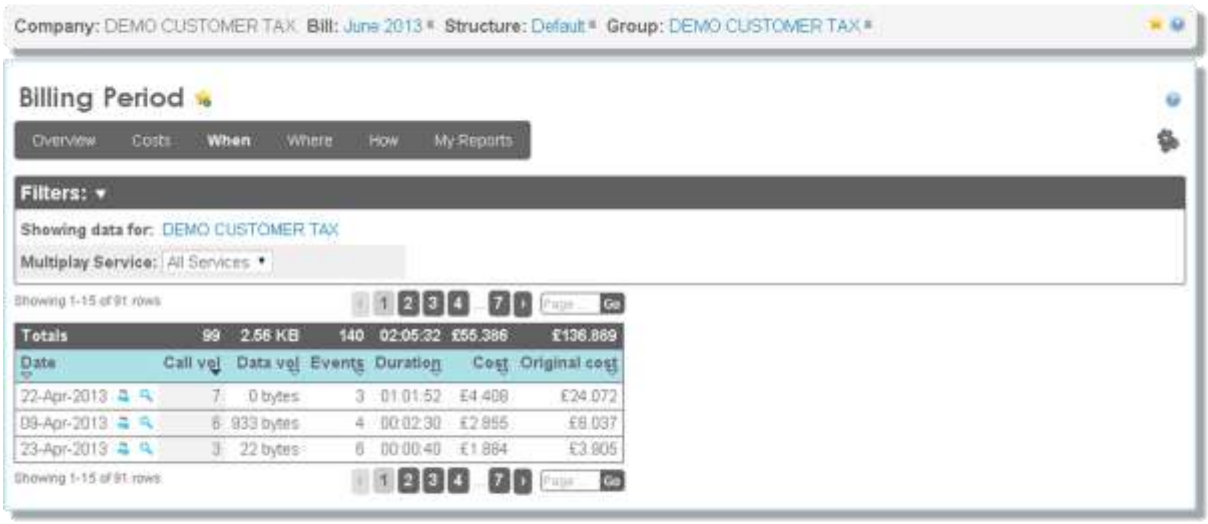
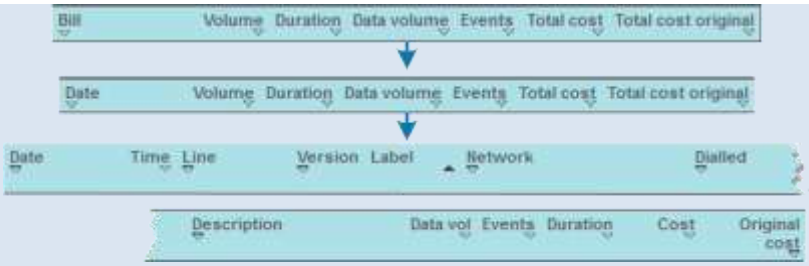


Figure 50 Billing-period report

Report title	Billing period
Description:	Displays usage summary for each loaded bill. The report displays usage each day within the *Current analysis context's Billing-period*, revealing usage patterns and the subscribers involved.
Sequence:	Date – ascending.
Constraints:	Available only to *Top-level users on the Default structure*; ▪ Not organisational structure aware; ▪ Displays all usage irrespective of the: ▪ Bill selected – even where multiple bills contain usage for the same day; *Current analysis context*'s *Billing-period* – so may include more than one month's data.
Variations	Unavailable report functionality: ▪ *One line per* filter (at top level); *Cost adjustment arrows*. ▪ *Zero entries* filter (at top level);
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down directly to *Report detail level* .
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

Billing period history report definition

Figure 51 Billing-period history report

Report title	Billing period history
Description:	Displays usage within *Billing-period* for loaded bills up to and including the *Billing-period* set by the *Current analysis context*. The report initially displays a *Billing-period*-level summary, allowing the user to drill-down to a see usage on a selected date.
Sequence:	*Billing-period* – descending
Constraints:	✪ Available only to *Top-level users on the Default structure*; ▪ Not organisational structure aware. ▪ Displays all usage irrespective of the bill selected – even where multiple bills contain usage for the same day
Variations	Unavailable report functionality: ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level); ▪ *Graph or chart*. ▪ *Cost adjustment arrows*; ▪ *Report overview Observations*.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	
Select group	Drill down unavailable

Daily distribution report definition

Figure 52 Daily distribution report

Report title	Daily distribution
Description:	Displays usage per hour over a 24 hour cycle. This report is ideal for identifying busy/quiet spots within a day, with individual hours viewable via the *Select detail* drill-down.
Sequence:	*Time of day* – ascending
Constraints:	None identified
Variations:	[Optionally] Usage records without a default *timestamp* of midnight can be excluded; in which case the message "`The report may not contain all usage records`" is displayed. Excluded records have a charge base of 'data volume'. Unavailable report functionality: ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level); ▪ *Cost adjustment arrows*; ▪ *Report overview Observations*.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy.

Duration range report definition

Figure 53 Duration range report

Report title	
Description:	Displays usage by *Duration range*. Categories are also displayed for: ▪ *Usage* not charged by duration; ▪ *Usage* allocated an automatic zero duration. The *Duration ranges* are defined at system set-up. {Configurable:
Sequence:	*Duration range* – ascending
Constraints:	None specified
Variations:	Unavailable report functionality: ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level); ▪ *Graph or chart*.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy.

Longest report definition

Figure 54 Longest report

Report title	Longest report
Description:	Displays the 50 longest duration us*age* records.
Sequence:	*Duration* – descending.
Constraints:	Available only to Top-level users on the *Default or Billing-defined structures and to subscriber users*; Includes: ▪ Previous three *Billing-period*; {Configurable}; ▪ Top 50 records; {Configurable}; ▪ Excludes zero duration usage.
Variations:	The *Personal description filter* is displayed for *subscriber users*. Unavailable report functionality ▪ *Report filters* (all); ▪ *Select group* drill-down; ▪ *Select detail* drill-down; ▪ *Cost adjustment arrows*; ▪ *Report overview Observations*; ▪ Report totals.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drill down unavailable
Select group	Drill down unavailable

Monthly trend analysis report definition

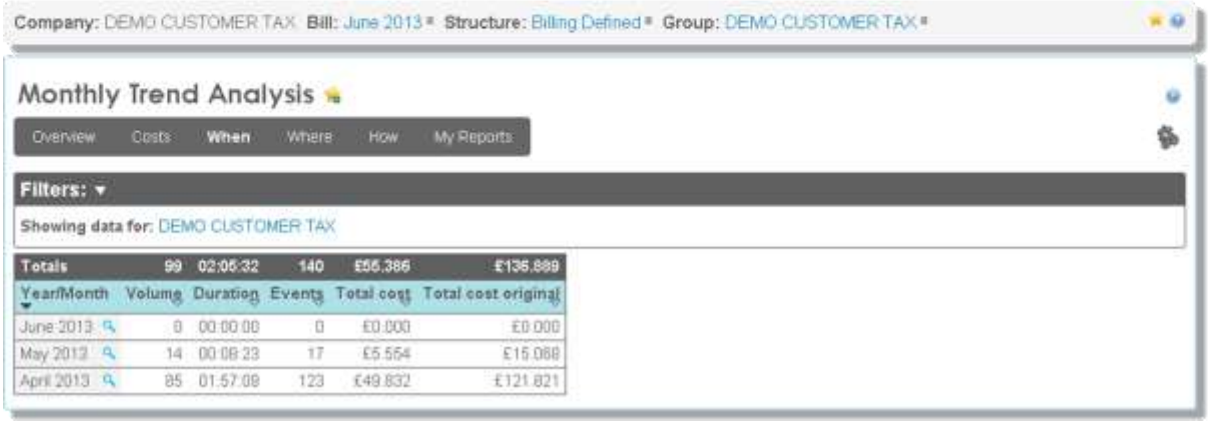


Figure 55 Monthly trend analysis report

Report title	Monthly trend analysis
Description:	Displays monthly trend information based on the *CDR* rather than the invoice items. Analysis is by *CDR* date, not invoice *Billing-period*. The report is for the whole of the selected organisational structure irrespective of the *Current analysis context*.
Sequence:	: Year/Month – descending.
Constraints:	Available only to *Top-level users* on *Default, Billing-defined* or *User-defined structures*. Not organisational structure aware.
Variations:	Unavailable report functionality: ▪ *Multiplay service* filter; ▪ *One line per* filter; ▪ *Zero entries* filter; ▪ *Select group* drop-down list; ▪ *Cost adjustment arrows*; ▪ *Report overview Observations*.
Report basis	Usage detail records *Report detail level* columns are as described in Table 21 (on page 45)
Select detail	
Select group	drill-down unavailable

Peak/Off peak report definition

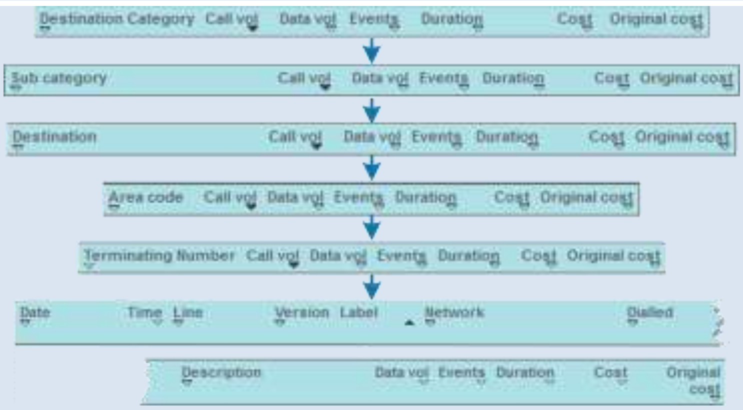
Figure 56 Peak/Off-peak report

Report title	Peak/Off peak
Description:	Displays usage grouped into charge bands (for example, peak, weekend peak, or off-peak) The charge banding can either flagged in the data or be determined from the *CDR* time stamp {Configurable}.
Sequence:	*Call volume* – descending
Constraints:	None specified
Variations:	{Configurable} The report can be configured to group usage by *time period* if *Peak/Off Peak categorisation* is not used by the service-provider. Unavailable report functionality: ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level).
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

7.3.4. Where reports

Destinations report definition

Figure 57 Destinations report definition

Report title	Destinations report
Description:	Displays *Call* destinations grouped by *Destination category* *Destination categories* may include, for example, Landline, On Net, Roaming, Other Mobile Networks, Text Messages, Answer phone, International and Premium Rate.
Sequence:	usage category – ascending
Constraints:	▪ A maximum of 15 *Destination categories* may be defined; ▪ *Subscriber users* see only *Destination category* and usage *sub-category* drill-down levels.
Variations:	Unavailable report functionality: ▪ *One line per* filter at top-level; ▪ *Zero entries* filter at top-level.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

Frequently dialled report definition

Figure 58 Frequently dialled report

Report title	**Frequently dialled**
Description:	Displays the most popular dialled numbers, with a drill-down-that reveals who has been dialling those numbers. {Configurable} The report can display the dialled location in addition to the number
Sequence:	Call volume - descending.
Constraints:	Available only to *Top-level users on* the *Default structure*. The graph relates to each specific page of results.
Variations:	Unavailable report functionality: ▪ *Multiplay service* filter; ▪ *Select group drill-down*; ▪ *Cost adjustment arrows;* ▪ *Report overview Observations*.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

Internal report definition

Figure 59 Internal usage report

Report title	Internal
Description:	Displays usage between subscribers that are associated with the same bill.
Sequence:	Call volume - descending
Constraints:	The report is available only if the *service-provider* data feed can flag internal usage against each usage record {Configurable: .
Variations:	**Unavailable report functionality:** ▪ *Multiplay service* filter; ▪ *Cost adjustment arrows*; ▪ Charts.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

Usage by direction report definition

Figure 60Usage by direction report

Report title	Usage by direction
Description:	Displays a summary of the Incoming and Outgoing usage for billed items.
Sequence:	*Call volume* – descending
Constraints:	None specified
Variations:	*Report overview observations* unavailable.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

7.3.5. How reports

Bundle usage report definition

Figure 61Bundle usage report

Report title	Bundle usage
Description:	Displays usage by *Bundle usage*. View *Bundle usage* to determine whether the Account's *bundle package* is an appropriate type and level. The *bundle category Partially in bundle* is used when only part of the usage is included in the *bundle*. The remaining usage is costed once the *bundle* allowance has expired.
Sequence:	*Call volume* – descending.
Constraints:	Up to four *Bundle categories* can be defined. {Configurable}
Variations:	*Report overview observations* unavailable. ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level); ▪ *Report overview Observations*.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*

Report title	Bundle usage
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

Multiplay service report definition

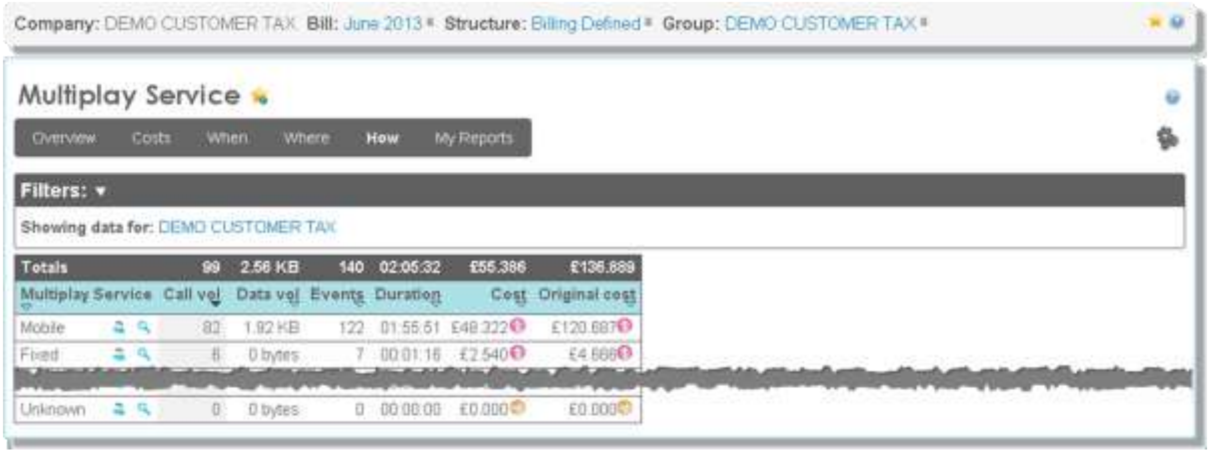


Figure 62 Multiplay service report

Report title	Multiplay service
Description:	Displays usage by *Multiplay service type*. Identifies the cost of each service.
Sequence:	*Call volume* – descending.
Constraints:	None specified.
Variations:	Unavailable report functionality: ▪ *Multiplay service* filter; ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level); ▪ *Report overview Observations*.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

Roamed status report definition

Figure 63 Roamed status report

Report title	Roamed status report
Description:	Displays usage by *Roamed status*. View usage by *Roamed status* to identify roaming costs and anomalies.
Sequence:	*Call volume* – descending.
Constraints:	Up to five *Roamed status* categories can be defined. {Configurable:
Variations:	Unavailable report functionality: ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level); ▪ *Report overview Observations*.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

Transmission type report definition

Figure 64Transmission type report

Report title	Transmission type
Description:	Displays usage by *Transmission type*. Viewing usage by *Transmission type* reveals how subscribers are being used.
Sequence:	*Call volume* – descending
Constraints:	{Configurable} A maximum of ten *Transmission type* categories can be defined (for example, Data, Voice, SMS, GPRS or Fax).{Configurable}
Variations:	Unavailable report functionality: ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level).
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

VPN report definition

Figure 65 VPN report

Report title	VPN
Description:	Displays VPN usage by *VPN Status*. {configurable} The default *VPN Status* categories include: ▪ On-Net – zero cost VPN usage (within the company); ▪ Off-Net – external VPN usage (with a cost); ▪ NON-VPN – non-VPN usage (with or without cost).
Sequence:	*Call volume* – descending.
Constraints:	Up to five *VPN Status* categories can be defined.
Variations:	Unavailable report functionality: ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level); ▪ *Report overview Observations*.
Report basis	Usage detail records *Report detail level* columns are as described in *Table 21 (on page 45)*
Select detail	Drills down to Report detail level – see *Table 21 (on page 45)*
Select group	Drills down through the organisational structure hierarchy and then via *Select detail* to Report detail level for the selected subscriber..

7.3.6. My Reports

The *My reports* feature comprises both *Scheduled reports* and *Custom reports*.

Scheduled Reports

Scheduled reports are available to all us*ers* and can be run on all structures. They are set-up to run on an ad-hoc (once only) or a recurring basis (that is, once per *Billing-period*) and may direct their output to selected us*ers* or gro*ups* in a specifiable file format.

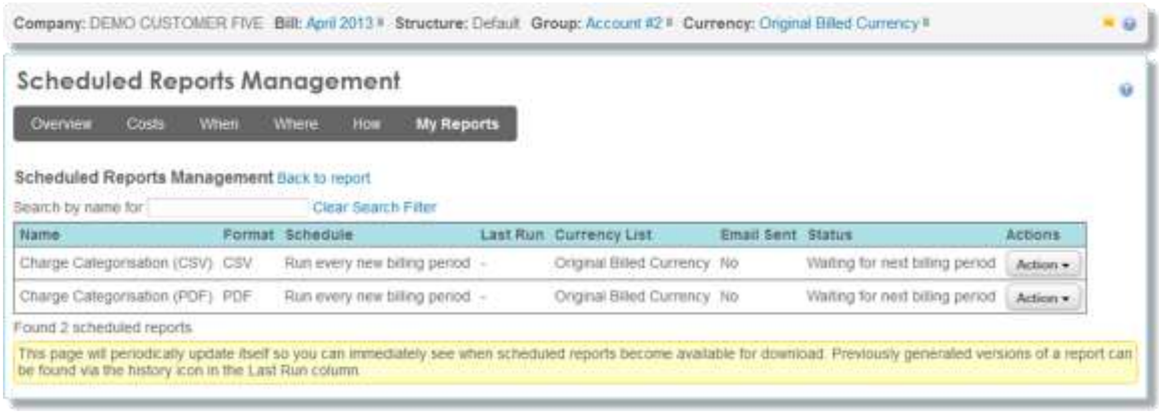


Figure 66: Scheduled Report Management page

Any us*age* or char*ge* report can be setup as a *Scheduled report* using the *Schedule icon* in the *Report options menu* – see .*Section 7.1 (on page 35)*.

The Report view in use when the scheduled report is created is also saved; it is used to display the report on subsequent runs, even if the actual *Report view* itself is deleted.

Custom reports

Custom report for us*age* and char*ge* details are defined using the *Call reports – New* or *Charge reports – New* wizards, which prompt for the criteria needed to build the report.

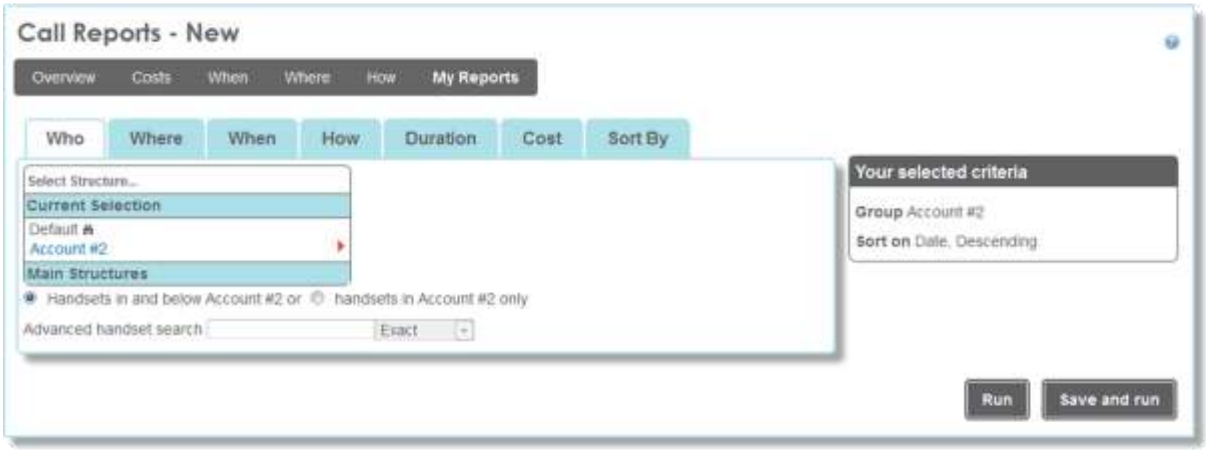


Figure 67 My reports panel showing Call Reports – New

Custom reports can be saved, edited and (re) run. Saved reports are listed in the *Report category* menu under *My reports.*

The *My reports* wizards comprises a series of panels, each of which prompt for a set of criteria, as defined in the table:

Prompt tab	Usage report wizard		Charge report wizard	
Who	Select from organisational structure		Select from organisational structure	
Where	▪ *Dialled number*; ▪ *Area code*; ▪ *Dialled number description*;	▪ Internal usage; ▪ Source country; ▪ *Usage direction*.		
When	▪ Date range; ▪ Time range;	▪ All bills; ▪ *Peak category*.	▪ Date range; ▪ All bills.	
How	▪ *Multiplay service*; ▪ Transmission type; ▪ *Destination category*; ▪ VPN;	▪ *Roaming category*; ▪ Data volume range; ▪ *Event vol* range; ▪ *Bundle usage*.	▪ *Multiplay service*; ▪ Charge type; ▪ Charge detail description; ▪ Quantity range (between or greater-than).	
Duration	▪ Select a duration from drop-down list; ▪ Specify min/max duration range; ▪ Select inside or outside of the specified duration range.			
Cost / charge	▪ *Cost band*; ▪ *Cost* range; ▪ Original cost range;	▪ Tax description; ▪ Tax exempt.	▪ Charge range; ▪ Original charge range;	▪ Unit price range; ▪ Tax description.
Sort by	Select Sort direction and column from:		Select Sort direction and column from:	
	▪ Date; ▪ *Subscriber*; ▪ *Subscriber label*; ▪ Network; ▪ *Dialled number*; ▪ *Dialled number description*;	▪ Data volume; ▪ *Event vol*; ▪ *Duration*; ▪ Cost; ▪ Original cost.	▪ *Subscriber*; ▪ *Subscriber label*; ▪ Description; ▪ Date from; ▪ Date to; ▪ Cost;	▪ Original cost; ▪ Tax rate; ▪ Tax description; ▪ Quantity; ▪ Unit price.

Constraints

- There is no limit to the number of reports that can be created by each user;
- Up to three reports in each category are displayed in the *report category* menu under *My reports*. The remaining reports are accessed via the *See all reports* option.

7.4. Trends

The *Trends* feature-set displays usage data in graphical format.

Figure 68: Trends page

The *Trends* page presents two *Trend charts* side-by-side, making for easy comparison of datasets. The feature-set comprises functionality to:

- View and Print a set of *Predefined trend charts*;
- Create and maintain *Custom trend charts*.

Features

- *View Trend chart*
  View or print *Trend chart*;
- *Maintain Custom trend charts*
  Create, Edit, Copy, or Delete *Custom trend charts*. [Optionally] **Save** as a new chart.

Standard components

- *Breadcrumb trail* – see *Section 4.5 (on page 22)*;
- *Context control* tab – see *Topic 4.3.2 (on page 25)*;
- *User identifier* if impersonation mode is in operation.

Constraints

When *Top level users* and *group users* are created against the *Billing defined* organisational structure they see only the current – and any future – billing period; previous billing periods are not displayed.

7.4.1. View Trend chart feature

Trend charts present a graphical view of the user's data.

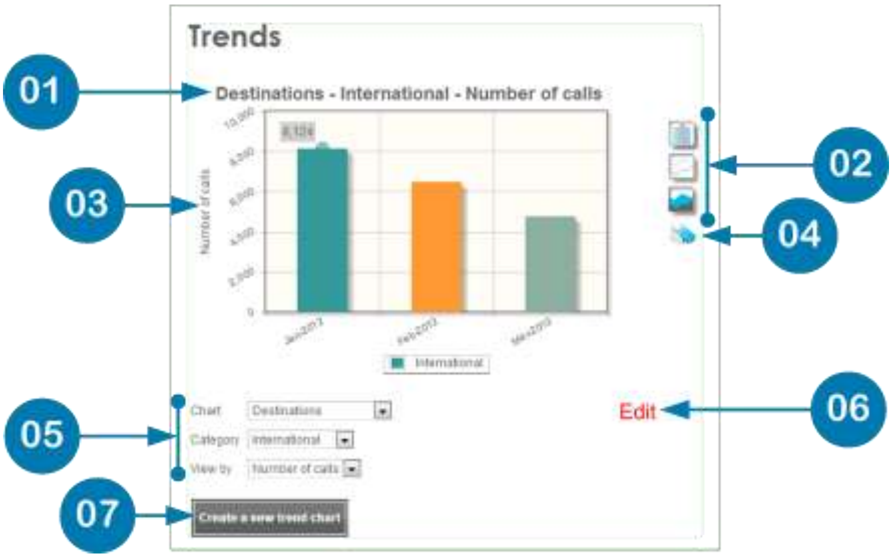


Figure 69: Trend charts UI map

Table 25: Trend charts functional components.

Key	Component	Use
01	Title bar	Incorporates chart name, data category and view by selections.
02	*Chart type menu*	Select the chart type to be displayed (Bar chart, Line chart or Pie chart).
03	Y-Axis	The Y-axis, represents the measure, for example *Call* or *Data volume*.
04	**Print** *Icon*	Print the displayed chart.
05	*Trend chart definition details*	▪ *Trend chart drop-down list* The drop-down list shows *standard Trend charts* –that is, those generated by *A7* –followed by *Custom trend charts*. ▪ *Category filter* Refine the chart by selecting a sub-category of the data (for example, *Destination category* for the *Destinations Trend chart*. [5] ▪ *View-by filter* Select the y-axis measure (for example *Call volume*, or *Data volume*).
06	**Edit** hyperlink	Edit the displayed *Custom trend charts*. [6] [Optionally]Save as a new chart.
07	*Create a new Trend chart button*	Access *Maintain Custom trend charts* functionality to Create, Edit or Delete *Custom trend charts*..

Constraints

Trend charts incorporate all loaded billing data irrespective of the *Billing-period* selected in the *Current analysis context*.

[5] The contents of the Category filter drop-down list is determined by the selected Trends: chart.
[6] Available for Custom Trends: charts only.

Configurable-items

None specified

7.4.2. Maintain Custom trend charts feature

Users can create, edit and delete *Custom trend charts*.

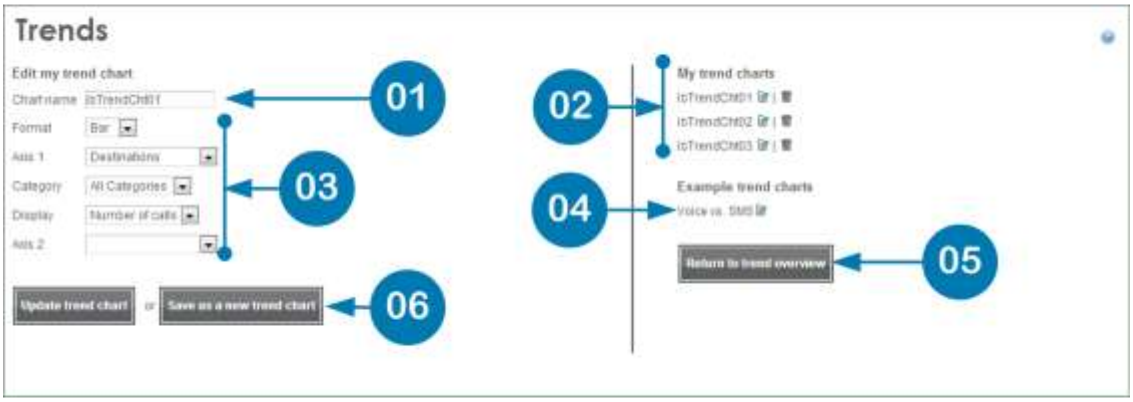


Figure 70: Edit Custom trend charts panel UI map

The *Create a new trend chart* button in the chart panel opens the *Edit my trend chart* panel, which enables users to either:

- Edit or delete and existing *Trend chart*;
- View the settings of an example chart;
- Use the *Update chart button* to save the settings to an existing chart;
- Use the *Save as new trend chart button* to
- Create a new chart using the input settings,
- Clone an existing chart, incorporating the original settings with any changes they may have made.

Table 26: Edit Custom trend charts functional components

Key	Component	Use
01	*Custom trend charts* edit pane;	The *Custom trend charts* edit pane is used to create new –or edit existing – *Custom trend charts* details.
02	*Trend chart* list	The *Trend chart* list displays existing custom charts, with options to: ▪ Edit Details of the selected chart are displayed in the *Custom trend charts* edit pane for amendment. ▪ Delete Delete the chosen chart. No confirmation prompt is given and no undo action is available.

Key	Component	Use
03	*Trend chart definition details*;	**Input** or Edit *Trend chart definition details*. ▪ *Chart name*; ▪ *Chart format* – Bar chart, *Line chart* or Pie chart; ▪ *Trend chart drop-down list* –select the chart data to be displayed on the horizontal (X-axis); ▪ [Optionally] Category –Select the *Data category* (or leave blank for All); ▪ Display –Specify the vertical (Y-Axis) data; ▪ [Optionally] A second X and Y Axis dataset can be specified.
04	*Trend chart example* hyperlink	Click to populate the *Custom trend charts* edit pane with an example of the details necessary to create a chart.
05	**Return** button	Click to return to the *Trends* page.
06	*Update chart button* and *Save as new chart button*	▪ Click *Update chart button* to update the chart details This button is not displayed for the *Create chart* action. ▪ Click *Save as new chart button* to save the details as a new chart

7.5. Audit reports

Available only to Top-level users on the *Default, Billing-defined* or *User-defined structures*.

The *Audit reports* feature-set enables viewing of the organisational structure audit log, which is a record of changes made to the organisational structure and the *Manage charges audit log* (if that *Module* is implemented)

Figure 71: Audit Reports page

- The *Structure audit log* displays organisational structure change for all structures, together with any user updates;
- [Optionally] The *Manage charges audit log* displays the movement of charges between groups within the organisational structure.

7.5.1. Structure audit log report

The *Structure audit log* displays organisational structure change for all structures, together with any user updates

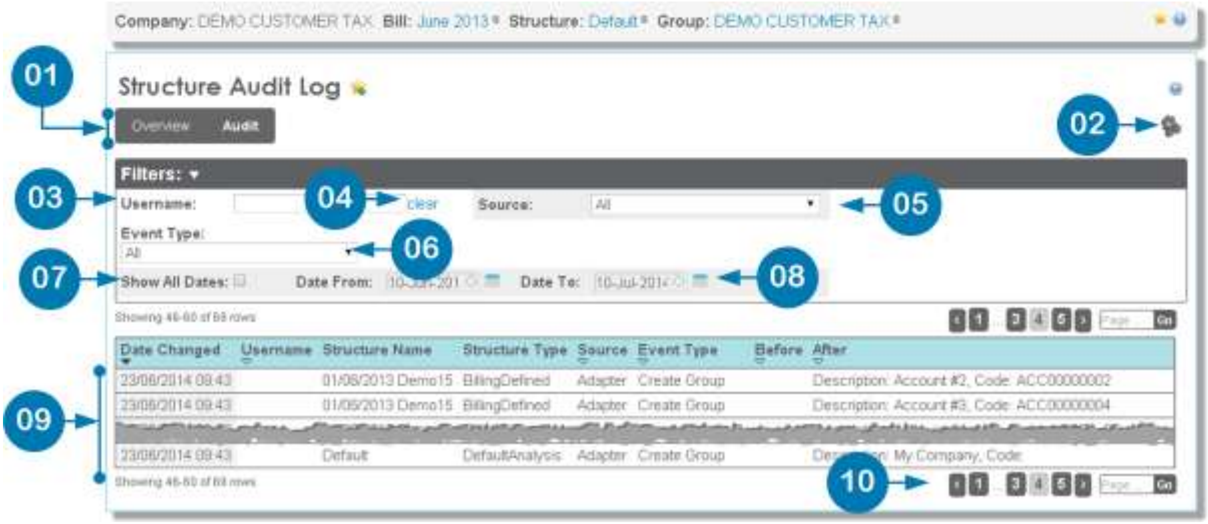


Figure 72: Structure audit log UI Map

Table 27: Structure audit log – functional components.

Key	Item	Function
01	Report menu bar	**Select** a report.
02	*Report option menu bar*	**Select** required report function.
03	*Find* text box	Search for *user* name.
04	*Clear filter hyperlink*	Remove any applied filter.
05	*Source* drop-down list	**Select** the *data source.*
06	*Event type* drop-down list	**Select** the *Event type*
07	*Show all dates* checkbox	Show/Hide information from all dates.
08	*Date from/Date to* date selectors	**Select** time period to be covered.
09	*Audit log column-set*	Displays the required report data.
10	*Page browse* controls	Page through the *Returned list* or go to first, last or numbered page..

Constraints

Available only to *Top-level users on* a *Default structure*, *billing-defined structure* or *User-defined structure*.

Configurable-items

None specified.

7.5.2. Audit reports – Manage charges audit log

Available only if the optional *Manage charges module* is implemented.

Service-providers using the *Manage charges Module* will also have the *Manage charges audit log feature* – see *Section 12.3 (on page 116)*.

8. Usage tagging feature-set

8.1. Usage tagging for Administrator users

Accessible only to *Administrator users on* the *Default*, *Billing-defined* or *User-defined structure.*

Subscriber user functionality is described in *Tagging for subscriber users* – see *Section 8.2 (on page 88)*.

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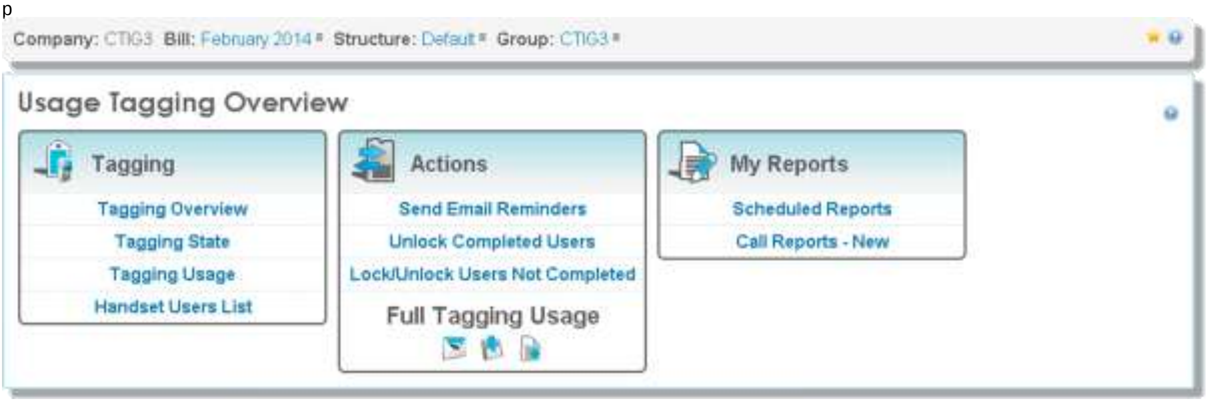


Figure 73: Usage tagging overview page – Administrator users

The goal of *Usage tagging* is to enable *Subscriber users* to identify and tag their usage as either business or personal – see *Section 8.2 (on page 88)*.

The administrative functions necessary to support this process are available only to *Administrator users* and include report and control features – see *Topic 8.1.4 (on page 85).*

Functionally the *Usage tagging overview* operates like the *Report overview, with the exception that Report overview observations* are not displayed.

Except where indicated in this chapter, *Usage tagging* reports operate in the same manner as those described for the *Reporting* feature and share many common components – see *Section 7.1 (on page 35)*.

The functional areas of *Usage tagging* are:

- Administrative functions:
  - *Tagging* – Provides a set of reports analysing the business and personal split of usage;
  - *Actions* – Lock and unlock users and send email reminders to those who have not yet submitted tagging statements;
  - {Optionally – requires Advanced usage tagging module} *Usage tagging management* – Manage public phonebook, configure tagging rules.

  For more on *Advanced usage tagging* see *Ch.13 (on page 118).*

- *Subscriber* user functions

  Tagging functionality and a tagging report;
- *My reports*

The *My reports* reporting wizard provide a means to create and manage custom usage reports;

- *Learnt tagging*

  The *Learnt tagging* feature ensures that numbers tagged in one *Billing-period* are also fully tagged when the next *Billing-period* is loaded.

Standard components

Reporting components are in line with A7 Reporting feature-set – see *Section 7.1 (on page 35)* and *7.2 (on page 42)*.

Variations for *subscriber users*

Subscriber users see a different *Usage tagging overview*, which comprises:

- Tagging functionality – see *Section 8.2 (on page 88)*:
- *Usage tagging*;
- *Tagging report*.
- *My reports* functionality:

  The *My reports* functionality operates the same for all users.

Figure 74: Usage tagging overview – subscriber users

8.1.1. Usage tagging filters

The *filters* available in *Usage tagging* are displayed in the *List of standard Usage tagging filters* – see *Table 28 (below)* and *Topic 7.1.1 (on page 36)* for more on *Report filters*.

Table 28: List of standard Usage tagging filters

Filter name	Description
Subscriber	Free text.
One line per	Available for organisational structure reports – see *Topic 7.1.1 (on page 36)* for more on *Report filters*. If Report views exist for the One line per level then they can be applied using the *Report view* filter.
Zero entries	Show or hide zero value entries – – see *Topic 7.1.1 (on page 36)* for more on *Report filters*.

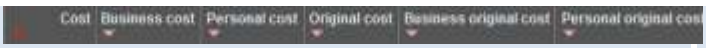
Filter name	Description
Show tagging by	*Available only if there are no Report views*, or the *Default report view* is selected. ▪ *Cost*; ▪ *Duration*; ▪ *Call volume*; ▪ *Data volume*; ▪ *Event vol*. ▪ *This filter displayed only if there are no Report views*, or if the Default Report view is selected.
Show type	*Available only if there are no Report views*, or the *Default report view* is selected. ▪ *All usage* ▪ *Business usage*; ▪ *Personal usage*.
Showing data for	See *Topic 7.1.1 (on page 36)* for more on *Report filters*.
Usage tagging state	▪ All in list; ▪ *Not viewed*; ▪ *Viewed*.
User assignment	▪ All; ▪ User assigned; ▪ No user assigned.
Work flow status	▪ Open; ▪ Locked.

8.1.2. Usage tagging column-sets

Usage tagging reports use three distinct *column-set*s and these are defined in *Table 29 (on page 45)*

Selectable column and *report views* are available for *Usage tagging* reports – see *Topic 7.1.2 (on page 38).*

Table 29: Column-sets used in Usage tagging reports.

Column-set	Columns	Used by	Data
Cost summary (extended)		*Usage tagging state* Tagging usage	*CDR*
Usage tagging costs		Tagging overview	*Charges*
Subscriber list		*Subscriber* users list	*Charges*

8.1.3. Usage tagging actions

The *Usage tagging actions* menus provides the following functionality:

Feature	Description	Constraints or Variations
Send email reminders	Lists *subscriber users* with a *Usage tagging state* of *Viewed* or *Not Viewed*. Functionality: ▪ The checkbox enables entries to be selected; ▪ The *All* hyperlink enables selection of the whole list; ▪ The email button enables sending of a reminder to all selected entries.	*Administrator and Group users* only (structure, user and read only permissions). ▪ Locked users do not appear in this list; ▪ The subscriber *Search filter* text box caters for numbers and names.
Unlock completed users	Lists *subscriber users* with a *Usage tagging state* of Submitted. Functionality: ▪ The checkbox enables entries to be selected; ▪ The *All* hyperlink enables selection of the whole list; ▪ The *Unlock button* unlocks all selected entries.	*Administrator and Group users* only (structure, user and read only permissions). ▪ Once unlocked, entries are removed from the list.
Lock/Unlock users not completed	Lists *subscriber users* whose *Usage tagging state* is not *Submitted*. *Report filters*: ▪ *Usage tagging state* ▪ *Work flow state* Functionality: ▪ The checkbox enables entries to be selected; ▪ The *All* hyperlink enables selection of the whole list; ▪ The *Lock button* locks all selected entries. ▪ The *Unlock button* unlocks all selected entries.	*Administrator and Group users* only (structure, user and read only permissions) ▪ The subscriber *Search filter* text box caters for numbers and names; ▪ The report updates as the status changes from locked to unlocked to reflect the correct entries.
Full tagging usage	Enables the downloading of a one line per subscriber breakdown of *usage cost* by *usage type*.	The report is: ▪ *Organisational structure* aware. ▪ Includes all subscribers; even those with no calls. ▪ Export only .

8.1.4. Usage tagging reports

Analyses us*age tag type* (business and personal) by organisational structure*.*

<table>
<tr><th>Feature</th><th colspan="2">Description</th><th colspan="2">Constraints or Variations</th></tr>
<tr><td rowspan="5">Usage tagging overview</td><td colspan="2">This report displays a breakdown of the business and personal Usage tagging by organisational structure

▪ Data can be viewed by: Cost, duration, call volume, data volume and events volume;
▪ Report columns dynamically change to reflect the user's selection;
▪ Filter by usage tag type (that is, Personal usage, Business usage or default).</td><td colspan="2">Administrator users only.</td></tr>
<tr><td colspan="2">Select group drill-down levels:

</td><td colspan="2">Select detail drill-down levels:

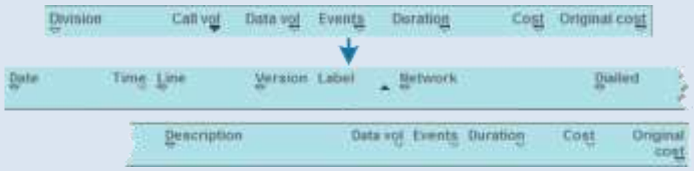
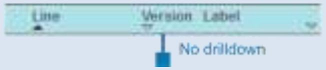
</td></tr>
<tr><td>Mandatory columns (by level)</td><td>Default view columns</td><td colspan="2">Additional selectable columns</td></tr>
<tr><td>▪ Division @ L1
▪ Subscriber @ L2 (Subscriber level)</td><td>▪ Cost
▪ Business cost
▪ Personal cost
▪ Original cost
▪ Business original cost
▪ Personal original cost</td><td>Call vol
Business vol
Personal vol
Data vol
Business data vol
Personal data vol Events</td><td>Business events
Personal events
Duration
Business duration
Personal duration</td></tr>
</table>

<table>
<tr><th>Feature</th><th colspan="3">Description</th><th>Constraints or Variations</th></tr>
<tr><td rowspan="5">Usage tagging state</td><td colspan="3">Displays the status of subscribers within the selected organisational structure.
Basis: Usage transaction details
▪ No user assigned – subscribers currently without an assigned user;
▪ Not viewed – Split Bill users who have not viewed this month’s statement;
▪ Viewed – Split Bill users who have viewed, but not submitted, this month’s statement;
▪ Viewed – Split Bill users who have submitted this month's statement (once submitted the bill is locked);
▪ Made no calls – Split Bill users who have made no calls in the selected period.</td><td>Administrator users only.</td></tr>
<tr><td colspan="3">Select group drill-down levels:

</td><td>Select detail drill-down levels:

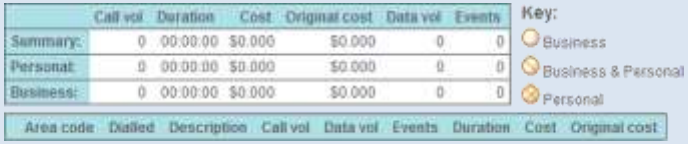
</td></tr>
<tr><td>Mandatory columns</td><td colspan="2">Default view columns</td><td>Additional selectable columns</td></tr>
<tr><td>▪ Tagging State @ L1
▪ Division @ L2
▪ Department @ L3
▪ Subscriber @ L4</td><td>▪ Call vol
▪ Data vol
▪ Events</td><td>▪ Duration
▪ Cost
▪ Original cost</td><td>None</td></tr>
<tr><td>Tagging usage</td><td colspan="3">Analyses usage tag type (business and personal) by organisational structure</td><td>Administrator users only.</td></tr>
</table>

<table>
<tr><th>Feature</th><th colspan="3">Description</th><th>Constraints or Variations</th></tr>
<tr><td></td><td colspan="3">*Select group* drill-down levels:

</td><td>Select detail drill-down levels:

</td></tr>
<tr><td></td><td>Mandatory columns</td><td colspan="2">Default view columns</td><td>Additional selectable columns</td></tr>
<tr><td></td><td>▪ Tagging State @ L1
▪ Division @ L2
▪ Department @ L3
▪ *Subscriber* @ L4</td><td>▪ Call vol
▪ Data vol
▪ Events</td><td>▪ Duration
▪ Cost
▪ Original cost</td><td></td></tr>
<tr><td>**Subscriber users list**</td><td colspan="3">Lists all subscribers indicating their assigned status; red (no user) and green (user assigned).
User assignment filter is available to select subscribers with or without a user assigned.</td><td>*Administrator user*s only.</td></tr>
<tr><td></td><td colspan="3">*Select group* drill-down levels:
Select group drill-down unavailable.
`</td><td>Select detail drill-down levels:

</td></tr>
<tr><td></td><td>**Mandatory columns**</td><td colspan="2">**Default view columns**</td><td>**Additional selectable columns**</td></tr>
<tr><td></td><td></td><td>▪ *Subscriber*
▪ Version</td><td>▪ Label</td><td>None</td></tr>
</table>

8.2. Tagging for subscriber users

Feature	Description	Constraints or Variations
Usage tagging	*Usage tagging* enables *subscriber users* to identify and tag any *Personal usage* made in the previous *Billing-period* *Usage tagging* enables users to: ▪ Apply full tagging *usage* to a particular number may be tagged as business or personal and will continue to be automatically tagged as such in subsequent months – see Usage tagging – Tagging for subscriber users (see page 88); ▪ Apply partial tagging Specific *usage* to a number can be selected and tagged using the *Select detail Icon*; such numbers are said to be *partially tagged*; ▪ Apply a personal description and/or icon to a *Dialled number*. These personal descriptions: ▪ Can be hidden on exported reports, ▪ Can be reset to the original description, ▪ Are not used in sorting; the original *Dialled number description* is always used; ▪ *Tag all future usage* as business and personal; ▪ Submit their tagging; Tags are locked (preventing further tagging changes) and can only be unlocked by an *Administrator user*; Once submitted all tagging icons show as padlocked, although personal number descriptions and icons may still be changed. ▪ Data usage is displayed in bytes.	*Subscriber users* only; ▪ *Users* with multiple subscribers can only tag them one at a time (selecting each in turn using the *Structure browser control*); ▪ Partially tagged numbers are neither learnt, nor applied in subsequent *Billing-periods*; ▪ If an *Administrator user* (*Top-level users on the* organisational structure) enters a description it is visible to the *subscriber users*; but they can override it by entering their own personal description (if required); ▪ Sorting is based on the original *Dialled number description* not the personal descriptions.

Feature	Description	Constraints or Variations
	Select group **drill-down levels:** *Select group* drill-down unavailable.	**Select detail drill-down levels:** 
Tagging report	Tagging report shows all *usage* for each of the user's subscribers The *Tagging* report combines *usage* for all a user's subscribers together. If the subscribers are billed in different currencies then the *user* can select to view in either currency. The *Usage tagging state filter* (options: All, *Business or Personal*); Although a number's tagged status cannot be changed via this report, *users* are able to: ▪ Assign or change a personal *Dialled number description* and icon; ▪ Opt to tag all future use as personal; ▪ Print, email and download the report.	Available to *subscriber users* only; ▪ Changes do not become effective until after the next data load ▪ Personal dialled number descriptions are replaced by the original *Dialled number description* If the report is emailed or downloaded.
	Select group **drill-down levels:** *Select group* drill-down unavailable.	**Select detail drill-down levels:** 

8.3. Usage tagging – My reports

Feature	Description	Constraints or Variations
Usage tagging My reports	As with *My reports*, this feature enables ▪ Reports to be scheduled; ▪ The creation of custom reports.	▪ *Report filters* for business and personal tagged statuses; ▪ *Charge reports* not available.

8.4. Learnt tagging feature

The *Learnt tagging* feature ensures that numbers tagged in one billing-period are also fully tagged when the next billing-period is loaded.

- The act of untagging a previously tagged number is remembered and the number is not tagged in subsequent billing-periods.
- Tagging is resumed only when the number is fully tagged again, or the checkbox *Tag all future usage* is selected;
- Numbers tagged using the checkbox *Tag all future usage* continue to be tagged (irrespective of any manual untagging) until this setting is switched off.

9. Administration feature-set

This section introduces the Administration feature-set which is used to manage the organisational structure of the billing data.

Features are available to *Administrator users* only.

The *Administration* feature-set comprises a number of distinct features, including:

- *Administration management*;
- *Currency conversion list management*;
- [Optionally] *Phone book management* – part of *Advanced Usage tagging,* which is covered in *Section 13.3 (on page 120)*.

9.1. Administration management feature-set

Use the *Administration management* feature-set to create, maintain and manage the organisational structures supporting the analysis of billing data.

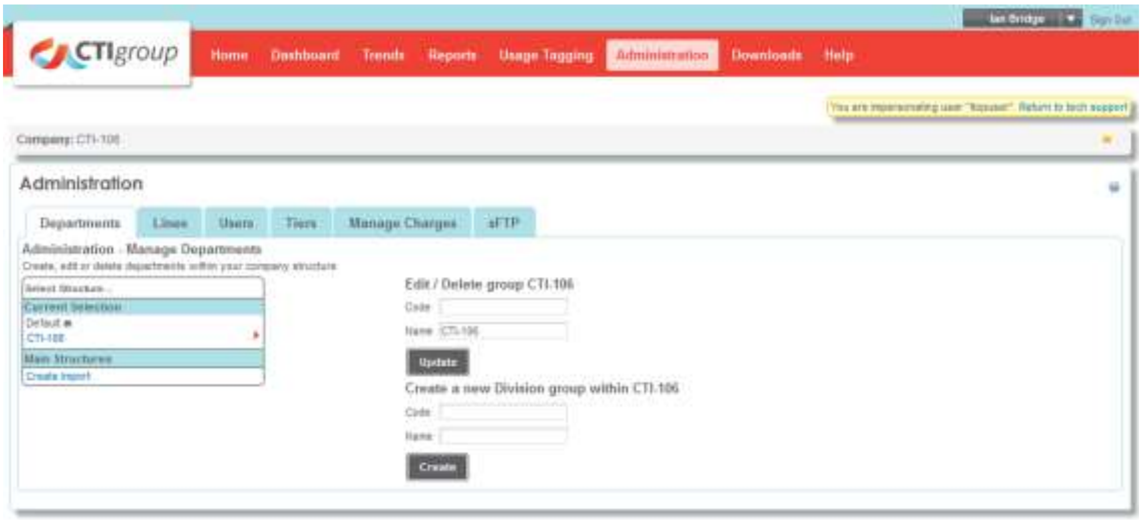


Figure 75: Administration management page

Hierarchic organisational structures enable the sub-division of organisations with multiple subscribers into more manageable units (for example, *Cost-centres* or departments).

The systems *Default*, *Billing-defined* and *Historical* structures can be supplemented by the creation of *User-defined structures* as described in *Topic 9.1.1 (on page 92)* or, for those deploying the AUDS module, in *Topic 9.1.6 (on page 96)*.

Tracking organisational change …

An audit log of organisational structure changes is maintained – see *Topic 7.5.1 (on page 79)*.

See also *Section 3.1 Concept – organisational structure (on page 11)*.

Feature specific components

- *Manage groups*

Enables the creation of *UDS* and the management of groups within organisational structures;

- *Manage users*

  Manage users enables the creation and management of system users;

- *Manage subscribers*

  Manage subscribers enables the assignment of subscribers to *Groups* within the organisational structure;

- *Manage levels*

  Manage levels enables the naming and renaming of the levels within the organisational structure's hierarchy;

- {Optional} *Manage Advanced User-defined structures*

  The *Manage Advanced User-defined structures* feature is an add-on module to *A7*, which enables the creation and maintenance of custom organisational structures.

Standard components

- *Current analysis context controls* – see *Topic 4.3.2 (on page 18)*;
- *User identifier* (only if in impersonation mode) – see *Section 4.4 (on page 22)*;
- *Language selection* menu.

Constraints

The *Administration* feature is not bill aware; it displays all subscribers irrespective of the bill they are in. As a consequence subscriber figures in this tab may not match those displayed by other features.

Use the *Subscribers in recent bill* checkbox on the subscribers tab to hide all other subscribers.

9.1.1. Manage groups and user-defined structures

The *Manage groups* tab comprises features for the creation and management of *Groups* and User-*defined structures*.

Use the embedded *Structure browser control* to:

- Navigate organisational structures;
- Create new –and manage existing – *UDS*;
- Select *Groups* within structures. Once selected the *Group* can be added to (by the creation of child *Groups*), renamed or deleted.

Related information

Groups are …

… structure positions that comprise other groups and/or subscribers – they are also sometimes referred to as departments or nodes.

Figure 76 Manage groups UI Map

Functional components

Table 30 Manage groups functional components.

Key	Item	Function
01	Admin tabs	Select required *Administration management* feature
02	Structure browser control	*Structure browser control* –navigate organisational structures
03	Update text boxes	The text in these fields can be changed to update the selected Group: ▪ Code text box – free text, 16 characters; ▪ Name text box – free text, 64 characters; ▪ Edit button – apply updates; ▪ Delete button – remove previously created groups.
04	Update button Delete button	Click to save the updated group details. Click to delete the selected group.
05	Create *UDS* hyperlink	Not available if the AUDS feature is deployed *UDS* are available to everyone irrespective of structure/user rights. *User-defined structures* (*UDS*) may be cloned from another structure or manually compiled by the user. Click *create* to launch the pop-up panel and choose either of: ▪ Blank structure A single-tier structure with no groups or subscribers is created. Use the *Manage groups* and *Manage subscribers* tabs to populate it as required. Define tier names using the *Manage tiers* tab ▪ Existing structure Cloning an existing structure copies any Groups within the structure and optionally all the subscribers. Your new *UDS* is listed under *User Defined*' heading in the *Structure browser control* pane. You can search, export, edit or delete it. Constraints ▪ Only the user who created the structure can delete it. ▪ Subscriber names cannot be changed on the *UDS*, only on the Default structure. ▪ Will not be available if AUDS is deployed.
	Import hyperlink	Click to initiate the import dialog.

Key	Item	Function
06	Create text boxes	Input the new group details ▪ Group Code text box –free text, 16 characters; ▪ Name text box –free text, 64 characters;
07	Create group button	Click to save new group details.

9.1.2. Manage subscribers

Manage subscribers enables the assignment of subscribers to *Groups* within the organisational structure.

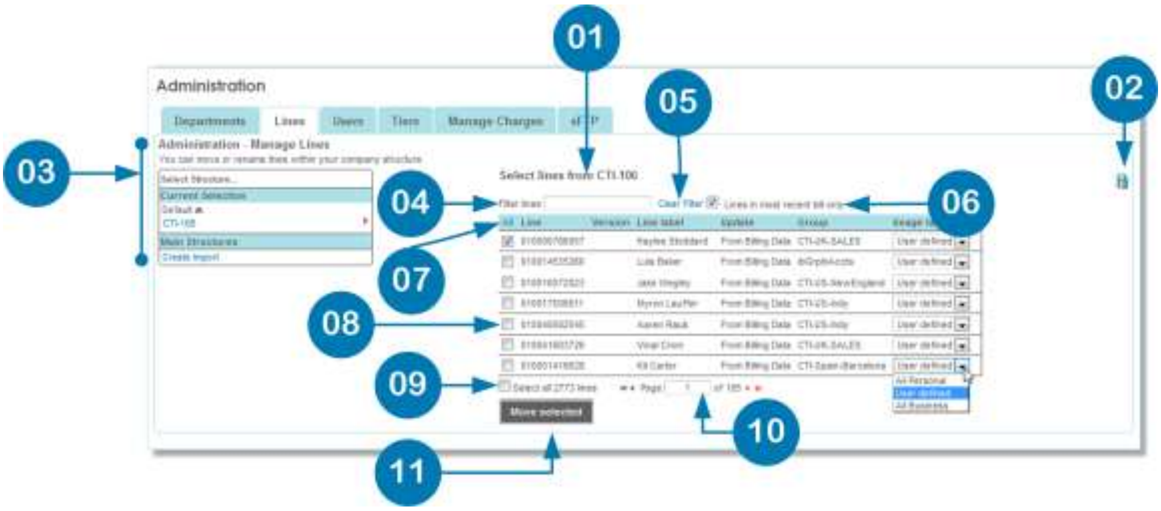


Figure 77:Manage subscribers UI map

Administrator users can rename subscribers and can move them between *Groups* (within an organisational structure). {Configurable: Using *Customer profiles*, service-providers have the flexibility to switch-off organisational structure functionality whilst retaining the ability to rename subscribers}. [7]

Table 31: Manage subscribers functional components.

Key	Item	Function
01	Source group message	Identifies the currently selected organisational structure group.
02	**Rename** hyperlink	Initiate the rename dialogue on all subscribers in the selected group.
03	*Structure browser control*	Navigate organisational structure to select the required source group.
04	*Subscribers* filter	Search subscribers and subscriber *labels*.
05	*Clear filter hyperlink*	clear applied filter.
06	*Subscribers in recent bill* checkbox	Show all subscribers in the group or only those in recent bill.
07	*All* hyperlink	Select (or deselect) the subscribers displayed on the current page.
08	*Select row* checkbox	Select the relevant row.

[7] For further details see Customer Profile section within the A7 Back Office specification.

Key	Item	Function
09	*Select all* checkbox	Select (or deselect) all subscribers currently filtered (that is, those visible on the page and those on other pages in the list).
10	*Page browse* controls	Page through the *Returned list* or go to first, last or numbered page..
11	*Move selected* button	Initiate the *Move selected* dialogue using all selected subscribers.

9.1.3. Manage users

Manage users enables the creation and management of A7 *Users*

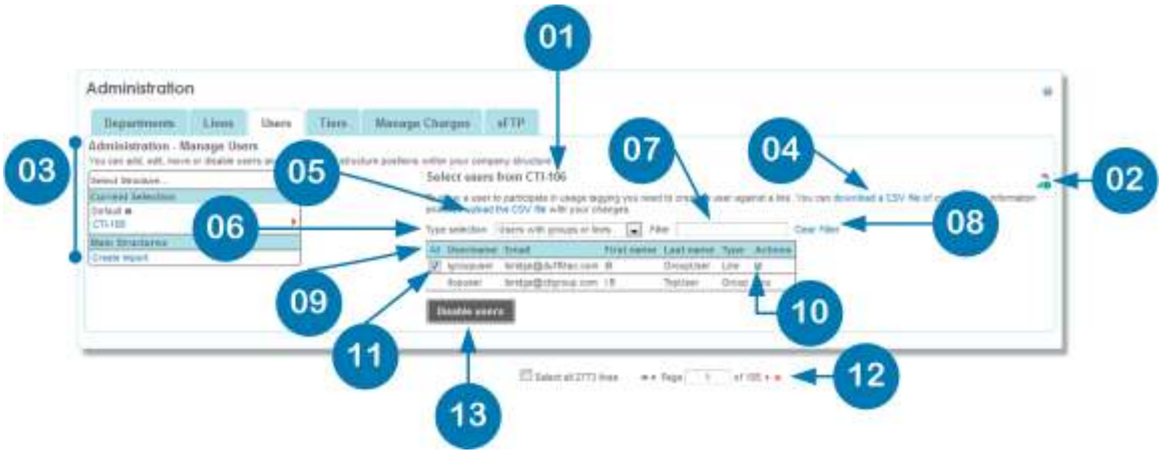


Figure 78:Manage users UI map

Table 32: Manage users functional components.

Key	Item	Function
01	Source organisational structure message	Identifies the currently selected organisational structure *group*.
02	*Add new user link>*	Initiate the *Add new user* dialogue.
03	*Structure browser control*	Navigate organisational structure.
04	*Download CSV* hyperlink	Download *CSV* file.
05	*Upload CSV hyperlink*	Upload *CSV* file.
06	*User Type drop-down list*	Select from available user types drop-down list: Configurable:{Default=All users}. Example options include: ▪ *Users* with *groups* or subscribers; ▪ *Users* with *groups*; ▪ *Users* with subscribers; ▪ *Users* with no *groups* or subscribers.
07	*Subscribers* filter	Search *users* and *user email address*.
08	*Clear filter hyperlink*	clear applied filter.
09	*All* hyperlink	Select (or deselect) the *users* displayed on the current page.
10	Edit hyperlink	Edit the selected user.
11	Select row checkbox	Select the relevant row.

Key	Item	Function
12	*Page browse* controls	Page through the *Returned list* or go to first, last or numbered page.
13	*Disable user button*	Disable selected user or users.

9.1.4. Manage levels

Manage levels enables the naming and renaming of the hierarchic *Levels (also known as Tiers)* within the organisational structure

Figure 79: Manage Levels – UI map

Organisational structure levels are dynamically created as needed when child *Groups* are added to the organisational structure by, for example, *Manage groups*.

Table 33: Manage users functional components.

Key	Item	Function
01	*Structure browser control*	Navigate organisational structure.
02	A text box per level	**Edit** the names of the organisational structure *levels*. Free text, maximum 60 characters.
03	**Update** button	Update any amended level details.

9.1.5. Manage charges

The *Manage charges* tab is displayed only if the *Manage charges Module* is deployed. It is documented in *Chapter 12 Manage charges (on page 114)*.

9.1.6. Manage advanced user-defined structures

Available only to Top-level users
Requires the optional *AUDS* feature.

Related information

The *Manage advanced user-defined structures* tab provides features to create and maintain AUDS.

AUDS are built using *Groups* and *Subscribers* from anywhere in the *Default* or *Billing-defined* structures; the process is accomplished in two phases.

Select the groups and subscribers to copy

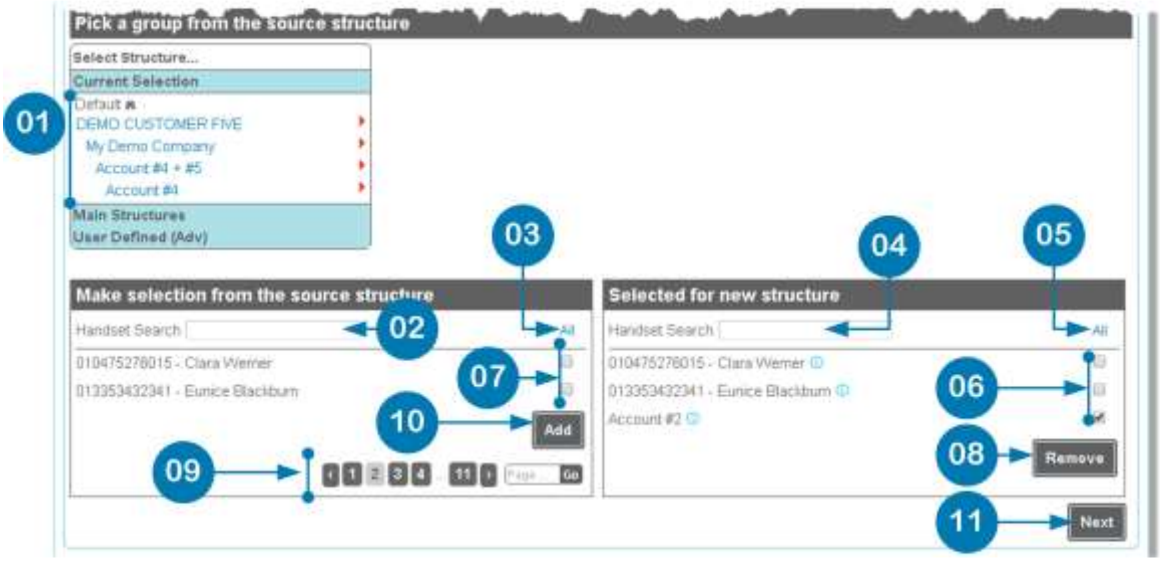


Figure 80: Manage AUDS – panel one UI map

Table 34: Manage AUDS – Panel one functional components.

Key	Item	Function
01	*Structure browser control*	Navigate organisational structure.
02	*Source structure* search filter text box	Search subscribers and subscriber *label*s in the source structure.
03	*All source rows* hyperlink	Select (or deselect) all the source structure subscribers displayed on the current page.
04	*New structure* search filter text box	Search subscribers and subscriber *label*s in the source structure.
05	*All new rows* hyperlink	Select (or deselect) all the new structure subscribers displayed on the current page.
06	*New row* checkbox	Select a row in the new structure.
07	*Source row* checkbox	Select a row in the source structure.
08	**Remove** button	**Remove** selected items from the new structure.
09	*Page browse* controls	Page through the *Returned list* or go to first, last or numbered page..
10	**Add** button	**Add** selected source structure items to the new structure.
11	**Next** button	Proceed to the next phase of the process.

Create the new structure

Use this feature to:

- select the creation method;
- name the structure;
- create the AUDS.

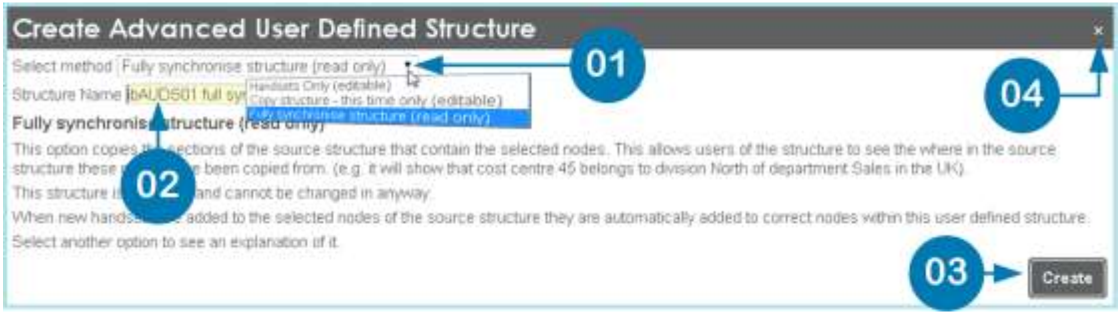


Figure 81: Manage AUDS – panel two UI Map

Table 35: Manage AUDS – Panel two functional components.

Key	Item	Function
01	*Create method drop-down list*	Select the creation method: ▪ *Subscribers* only (editable); ▪ Copy structure – this time only (editable); ▪ Fully synchronised (read-only).
02	Structure name text box	**Input** a name for the organisational structure. Free text, up to 50 characters.
03	**Create** button	Create the new organisational structure.
04	Cancel *Icon*	Return to the previous stage in the process.

9.2. Currency conversion feature-set

Available only to Top-level users .

The *Currency conversion* feature-set enables the creation and on-going maintenance of *Currency conversion lists*.

Currency conversion lists (also referred to as *Currency conversion rates*) are used to convert charges from the originally billed currency to a target (default) currency.

Multiple *Currency conversion lists* can be created, enabling conversion from multiple currencies into one standard currency – based on the selected conversion rates. *Currency conversion rates* are rounded to four decimal places.

Currency conversion lists are a part of the *Currency conversion context* tab and so are applicable to all the *A7's* reports and charts.

- *Currency conversion create*

  Create new *Currency conversion lists*;

- *Currency conversion update*

  Update or Delete *Currency conversion lists*.

9.2.1. Currency conversion create feature

Available only to Top-level users on the *Default structure*.

Create new *Currency conversion lists*.

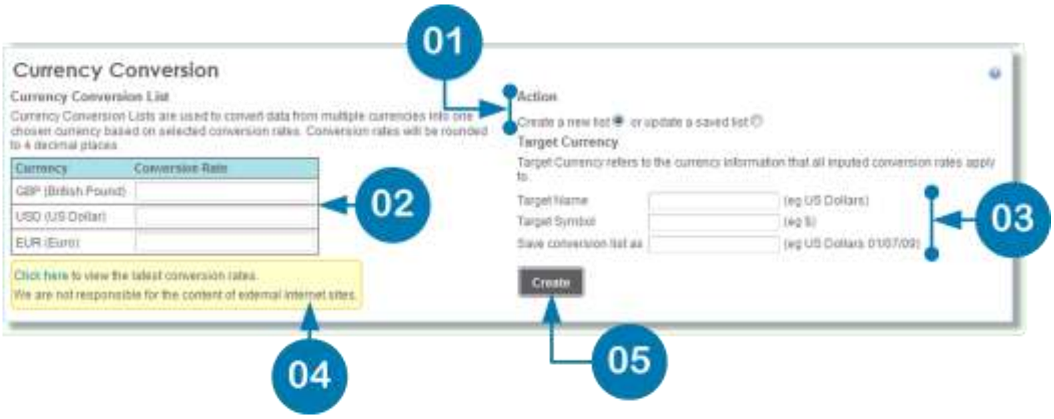


Figure 82 Currency conversion panel

Once created, *Currency conversion lists* can be selected using the *Currency conversion context* tab.

See also: *Setting Currency conversion context (on page 20)*.

Table 36: Currency conversion create functional components.

Key	Item	Function
01	*Create* or *Update* radio button	Select *Create* to Create a new list.
02	text box for conversion rates	Input the required *Currency conversion* rate; significant to four decimal places.
03	*Currency target text boxes*	The *Currency target* is the Currency to which all *Currency conversion rates* apply. Input: ▪ *Target name,* ▪ *Target symbol;* ▪ *Currency conversion list name*.
04	*Click here hyperlink*	A hyperlink to an external site containing *Currency conversion* rate information.
05	*Create* button	Click to save the *Currency conversion list*.(or create the new list).

Constraints

Caters only for:

- *Administrator users*, *Group users* and *subscriber users*;
- *Users* with more than one subscriber, where the subscribers are billed in different Currencies.

9.2.2. Currency conversion update feature

Available only to *Top-level users* on the *Default structure*.

Update or Delete *Currency conversion lists*

Figure 83 Currency conversion UI map1

Once created, *Currency conversion lists* can be selected using the *Currency conversion context* tab.

Table 37: Currency conversion update functional components.

Key	Item	Function
01	*Update saved list* radio button	Select option to update existing list.
02	*Currency conversion list* drop-down list	Select the required *Currency conversion list*.
03	*Currency conversion* rate text box	Input the required *Currency conversion* rate; significant to four decimal places.
04	*Currency target text boxes*	The *Currency target* is the Currency to which all *Currency conversion rates* apply. Input: ▪ *Target name,* ▪ *Target symbol;* ▪ *Currency conversion list name*.
05	*Click here hyperlink*	A hyperlink to an external site containing *Currency conversion* rate information.
06	**Update** button	Click to save the entered details.
07	**Delete** button	Click to delete this list.
08	**Cancel** button	Click to cancel the update; changes are not saved.

Constraints

Caters only for:

- *Administrator users*, *Group users* and *subscriber users*;
- *Users* with more than one subscriber, where the subscribers are billed in different Currencies.

9.3. Phone book management

The *Phone book management* feature-set is part of the optional *Advanced Usage tagging* module – see *Section 13.3 (on page 120)*.

10. Download feature-set

10.1. Downloads functional components

A7 provides the ability to download usage data (*Data export*), invoice data (*invoices*), raw *CDR* data (*usage*) and *Unbilled usage files* (*Analysis RT* module only).

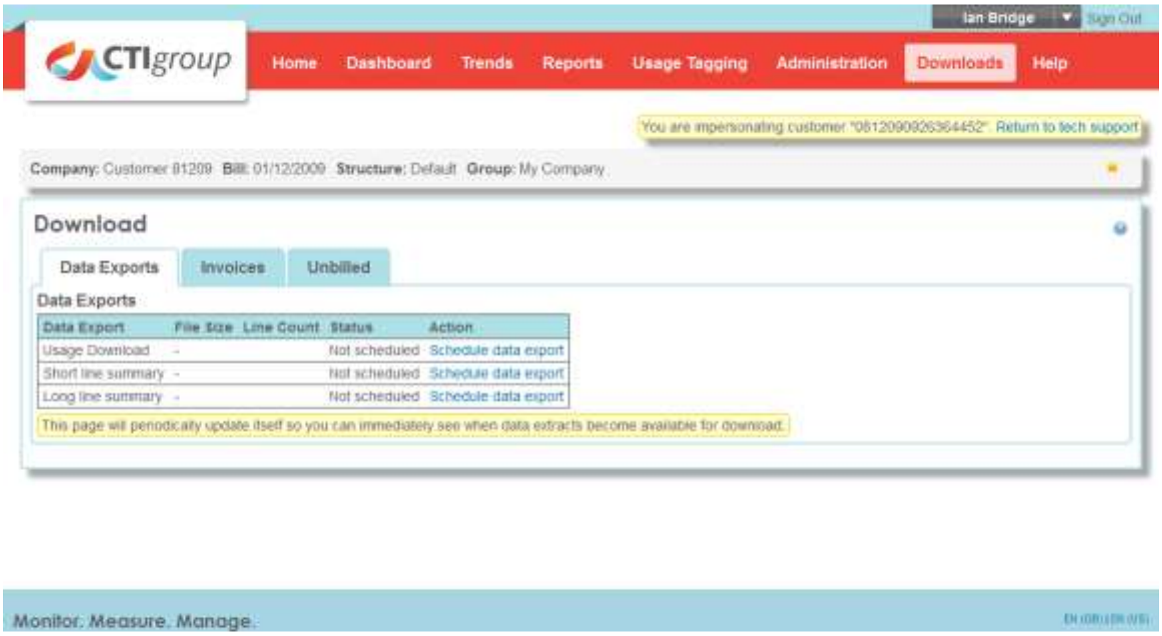


Figure 84: Downloads page

Feature specific components

- *Data export*

  Data export download outputs usage data (*Usage download*), or subscriber data (*Short subscriber summary* and a *Long subscriber summary*);
- *invoices*

  Enables the downloading of copies of *invoices*;
- *Unbilled usage files*

  The *Unbilled usage files* download enables the downloading of Unbilled files supplied by the *service-provider*
- *Usage*

  The *usage* download enables the downloading of raw data files supplied by the *service-provider*.

Constraints

All downloads are data dependant and therefore may not be applicable to all *service-providers*.

10.2. Data export

The *Data export* download tab accesses functionality that downloads usage data (*Usage download*), or subscriber data (*Short subscriber summary* and a *Long subscriber summary*)

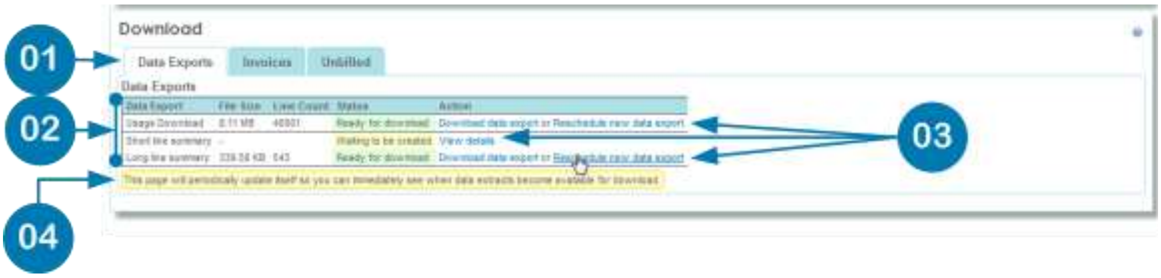


Figure 85: Download Data export – UI Map

Data export downloads are available to all users; the available columns for each download type are described in *Table 39 (on page 103)*.

On page status messages inform when a download is available to view.

Table 38: Download Data export – functional components.

Key	Item	Function
01	*Download* tab	Select *Data export* tab
02	List of downloads	
03	*Download* actions hyperlinks	*Download* actions hyperlinks comprise: ▪ *View details* hyperlink Review a scheduled download. ▪ *Schedule Download hyperlink* Initiate running of the data extract; ▪ *Reschedule download hyperlink* Initiate re-running of the data extract; ▪ *Download data hyperlink* Initiate a download of the extracted data.
04	*Page refresh message*	The page refreshes to update the status of downloads.

Constraints

Usage download does not include invoice records.

Configurable-items

Data export downloads may be output in `.zip` format.

Data export fields

Table 39: Data export fields

Download	Available fields		
Usage download *Usage* records	▪ Account/Customer Number, ▪ Cost-centre Name, ▪ Cost-centre Code, ▪ Subscriber number, ▪ Subscriber label, ▪ Dialled number, ▪ Dialled number description, ▪ Area code,	▪ Date, ▪ Time, ▪ Usage Category (destination), ▪ Transmission Type, ▪ Duration, ▪ Data Volume, ▪ Event Y/N, ▪ Cost,	▪ Original Cost, ▪ Bundle Category, ▪ Roaming Category, ▪ Country of Origin, ▪ Billed Currency Symbol ▪ MultiPlay Service Type ▪ Tax code ▪ Tax cost ▪ Tax exempt cost
Short subscriber summary *Subscriber* records (up to 20 fields)	▪ Subscriber ▪ User information - ▪ Cost-centre name, ▪ Cost-centre code, ▪ Subscriber number	▪ Subscriber label, ▪ All Charge-categories and total costs. ▪ Cost of Destination categories	
Long subscriber summary *Subscriber* records (up to 20 fields)	▪ Subscriber information, ▪ User information, ▪ Cost-centre name, ▪ Cost-centre code, ▪ Subscriber number,	▪ Subscriber label, ▪ All Charge-categories and total costs. ▪ Cost of transmission type ▪ Invoice Number	▪ Usage information for transmission type (Number/duration/events/data) ▪ Usage Information for Destination Types (Number/duration/events/data)

10.3. Download – invoices

The *Invoices* download tab accesses functionality that downloads copies of *invoices*. The individual *invoices* can be searched for, or alternatively all *invoices* can be downloaded.

Figure 86: Download invoices – UI map.

Table 40: Download invoices – functional components.

Key	Item	Function
01	*Download* tab	Select *invoices* tab

Key	Item	Function
02	*Search filter* text box	Search by *invoice number*.
03	*Clear filter hyperlink*	clear applied filter
04	*Returned list* of *invoices*	downloadable *invoices* have an associated *Download PDF invoice* hyperlink. The invoice download format is dictated by the *Service-provider*; common formats include *PDF* and *RTF*.
05	*Download PDF invoice* hyperlink	Click to download this invoice.
06	*Download PDF invoices (all)* hyperlink	Click to download all available *invoices*.
07	*Hover message*	Hovering over a download will display an estimated download time.

Constraints

This tab is available only when there are downloadable bills.

10.4. Downloads – usage

The *Usage* download tab accesses functionality that downloads raw usage data files supplied by the *service-provider*.

Figure 87: Download usage– UI map

Constraints

- *CTI* will not create any raw data files;
- Raw data files must be sent with the data loads, named in accordance with an agreed file naming convention.

Configurable-items

This *Download Usage* feature is configurable:{**OFF**; On}.

10.5. Downloads – Unbilled usage files

The *Unbilled* tab accesses functionality that downloads unbilled usage files supplied by the *service-provider*.

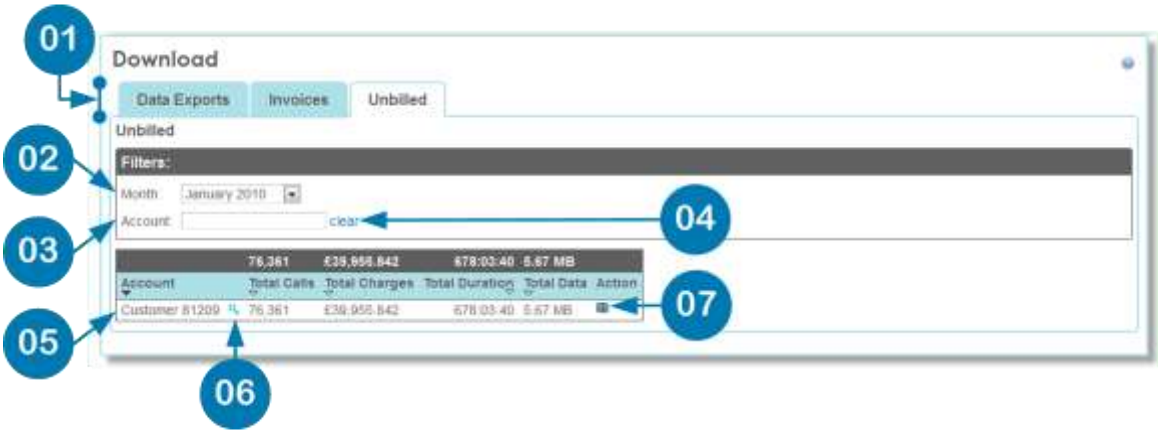


Figure 88: Download Unbilled usage – UI Map

The Unbilled usage files downloads feature enables *A7* to provide downloads of Unbilled data files, either individually or for a combination of *Billing-period* and Account.

This feature is dependent upon the *service-provider* providing files of Unbilled data for uploading to *A7*.

Batch jobs load the service-provider's data files; storing one zipped download file per uploaded *CSV* file, plus one zipped download file containing all uploaded *CSV* files per Month/Account combination.

The upload solution caters for the following scenarios:

- One file per day per *customer* at account level;
- One file per day per *customer*;
- Multiple files per day per *customer*.

Table 41: Download Unbilled usage – functional components.

Key	Item	Function
01	*Download* tab	Select *usage* tab.
02	*Specified Month and Year filter* drop-down list	Filter to select from last three months; (default is the latest month).
03	Account filter	Filter by account number or name.
04	*Clear filter hyperlink*	clear applied filter.
05	*Returned list* of *Unbilled usage files*	The list contains: ▪ A link icon per account, to download all *Unbilled usage files* for the account; ▪ A drill-down to view a list of individual *Unbilled usage files* for the month/account combination.
06	*Select detail Icon*	drill-down to a list of *Unbilled usage files* for the month/account combination, which can be downloaded individually. Click to open view details panel.
07	*Hover message*	drill-down to download a zipped file of all *Unbilled usage files* for the month/account combination.

Constraints

- *CTI* will not create any *Unbilled usage files*;
- *Unbilled usage files* must be sent with the data loads, named in accordance with an agreed file naming convention;
- *Unbilled usage files* data is retained for three months; Configurable:{MonthsRetained=**3**}.
- The feature is not currency aware and is based solely on the customer's/Account's default currency.

  If multiple currencies are supplied the core solution relies on each account being in a single currency.

  If a file contains an account with multiple currencies this file will be rejected.
- An *sFTP* solution may be needed to handle large files – see *Section 10.6 (below).*

  The maximum file size that can be downloaded before *sFTP* must be used is decided on a case-by-case basis.

Configurable-items

- When the system processes the required *Unbilled* files it will look for specific required columns:
  - CorpID_
  - Account_
  - BillDate_
  - Unique Identifier_
  - Currency

  The positions of the required columns in the file is configurable allowing the customer to provide any *CSV* file providing it contains all the required columns.
- *Unbilled usage files* retention period Configurable:{MonthsRetained=**3**}.

10.6. sFTP and Unbilled calls files

A7 provides the ability to download *Unbilled usage files* via *Secure File Transfer Protocol (sFTP)*, catering for large data files that are unsuitable for downloading from *A7* directly.

Two *sFTP* hosting options are available:

Front-office

A new *sFTP* feature accessed through the *Administration management* page (by default) and assignable to a user via their *Customer profile*.

- The *customer* must:
  - Provide their *sFTP* details;
  - Have set up the *sFTP* location;
  - Already have access to the drive;
  - Already exist as an *A7* user;
  - Have data loaded into *A7*.

- The files can be accessed using either the service-provider's *sFTP* or the download feature (depending upon size).

Back-office

- This is the same feature as the *Front-office* but it allows *Tech-support* users to enter individual *Corporate IDs* and *sFTP* configurations for each customer.
- A default configuration is provided for any *Corporate IDs* that needs configuring. These customers do not need to be in *A7*.

Constraints

- *CTI* implement and support simple *sFTP* (that is, *sFTP* requiring username/password authentication only);
- No account level grouping into a `zip` file is done for *customer* receiving the *sFTP* option only,

sFTP layout

- In *Back-office* this feature has a search text box and search button for *Corporate ID*; if the ID exists the following fields are populated:
  - Corporate ID – text box (Optional – If exists);
  - Remote host – text box for IP address;
  - Remote host port – text box;
  - RemoteFilePath;
  - Overwrite;
  - Username– text box;
  - Password – encoded text box;
  - Actions.

  If the *Corporate ID* doesn't exist, a message is displayed, and the user is prompted to create one.
- In the *Front-office* the feature displays:
  - *Corporate ID* (Optional – If exists);
  - *Remote host* – text box for IP address;
  - *Remote host port* – text box;
  - *RemoteFilePath;*
  - *Overwrite*;
  - *Username* – text box;
  - *Password* – encoded text box.

  The details are automatically populated (if they exist). Save, Update and Delete/Clear actions are available.

The following items use default values: Configurable:{Decided on a case–by–case basis}

- *RemoteFilePath*;
- *PerformChecksum*;
- *RemoteHostTimeout*;
- *AttemptsBeforeError;*

- *AttemptInterval*.

11. Support feature-set

11.1. Support functional components

The Support feature-set enables a user to quickly get assistance with the *A7* tasks they are undertaking.

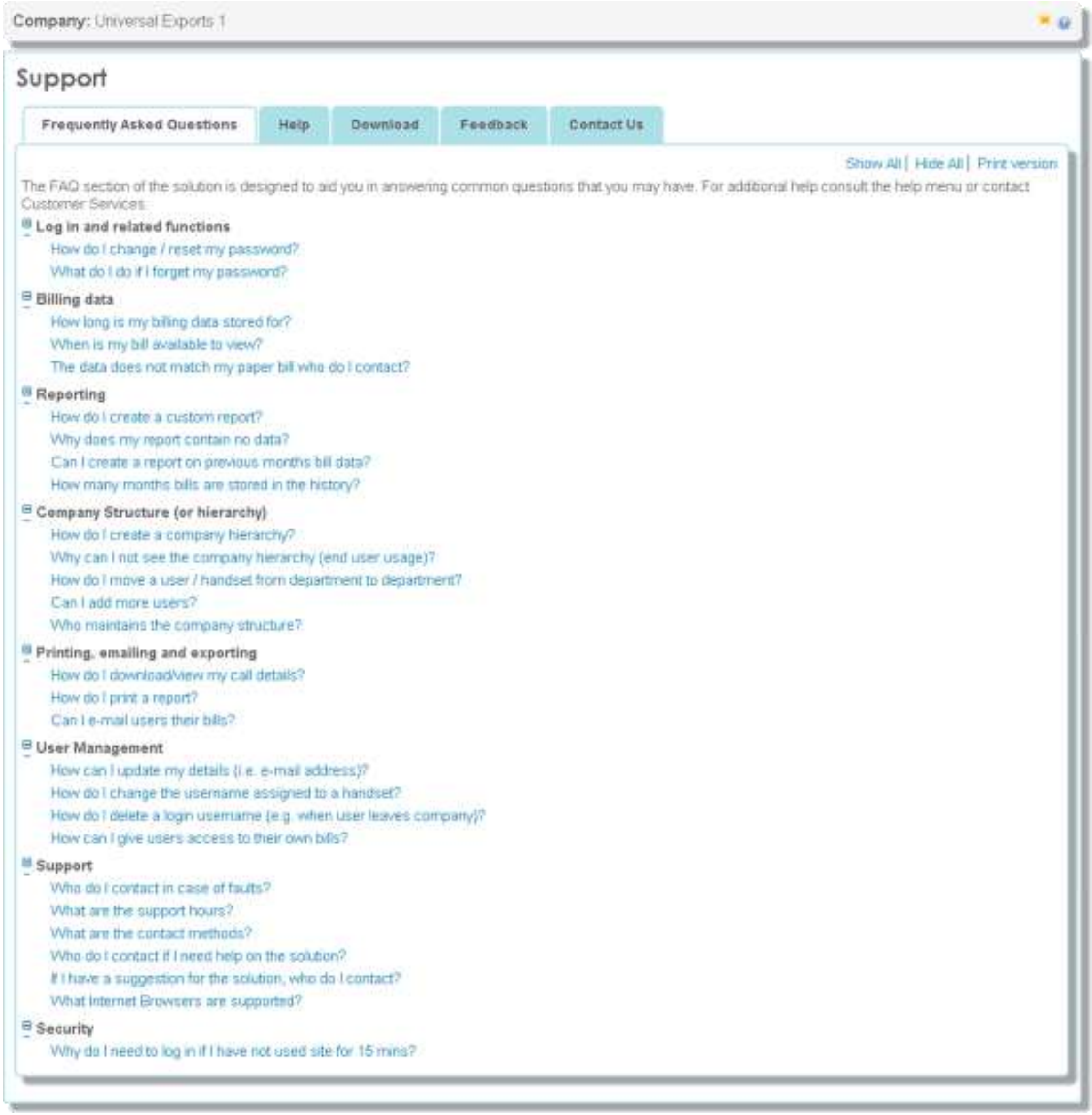


Figure 89: Support page

{Configurable} The features available from this page include: *FAQ, Help topics, Downloadable guides, Feedback* and *Contact details;* features not required can be removed easily.

By default most panels provide contextual help through the *Help Icon*, which appears in the top right-hand corner. Selecting the icon displays a pop up box containing detailed information on using the associated feature.

Features

- Frequently asked questions

  The Frequently asked questions tab provides a means to present a grouped list of questions and answers relating to *A7*;
- *Help*

  The *Help* tab provides the functionality to present a standard list of topics categorised by product area;
- *Downloads*

  The *Downloads* tab provides the functionality to present a standard list of hyperlinks enabling downloading of, for example, user guides;
- *Feedback*

  The *Feedback* tab provides functionality that enables the *Service-provider* to accept feedback from their customers;
- *Contact details*

  The *Contact details* tab provides functionality that enables the *Service-provider* to present contact details to their customers.

11.2. Frequently asked questions feature

The Frequently asked questions tab provides a means to present a grouped list of questions and answers relating to *A7*.

Figure 90: Frequently asked questions tab

The questions may be grouped by, for example,, product area to help the user find the answer they are looking for. Each groups includes an expand and contract option to show or hide the individual questions. Additional questions may be added as required.

11.3. Help feature

The *Help* tab provides the functionality to display a list of topics categorised by product area.

Figure 91: Help tab

This page provides an additional means of presenting help, supplementing the panel-based contextual help available through the *Help* icon .

The topics can be grouped by product area to help the user find the topics and answer they are looking for and may include an expand/contract option on the group.

11.4. Downloads feature

The Downloads tab provides a framework for displaying a list of hyperlinks to downloadable files – for example, user guides

Figure 92: Downloads tab

11.5. Feedback feature

The *Feedback* tab provides functionality that enables the *Service-provider* to accept feedback from their customers.

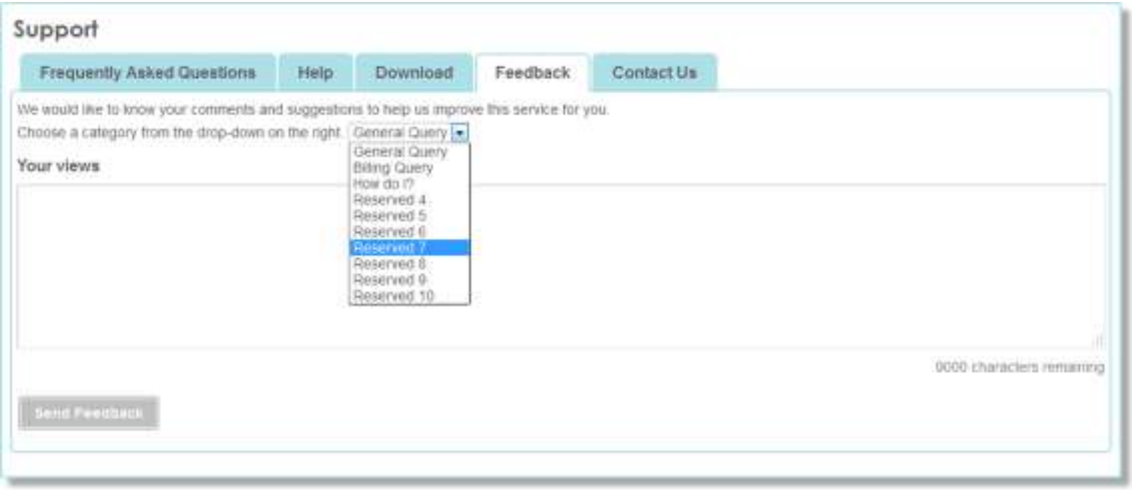


Figure 93: Feedback tab

Two configurable options are available in core:

- Option 1: Feedback to a single nominated email address:
  - The email address is configured at the point of installation;
  - The user is presented with a text box into which to enter their feedback.
- Option 2: Allows categorised feedback to be directed to specific email address(es), making sure it reaches the appropriate department.

  This add-on module differs from option one in that:
  - The user must select a feedback category for their comment;
  - Each feedback category is associated with one or more email addresses.

11.6. Contact details feature

The *Contact details* tab enables the *Service-provider* to present contact details to their customers:

Figure 94: Contact details tab

Part three

A7 Add-on Modules

Chapters in Part three ...

12. Manage charges

12.1. Manage charges functional components

The *Manage charges module* enables the manual reassignment of *Usage charges* within the *Default structure*. *Usage charges* may be moved between *Subscribers*, *Billing entities* and *Groups* by users assigned to the *Default structure* and holding structure rights.

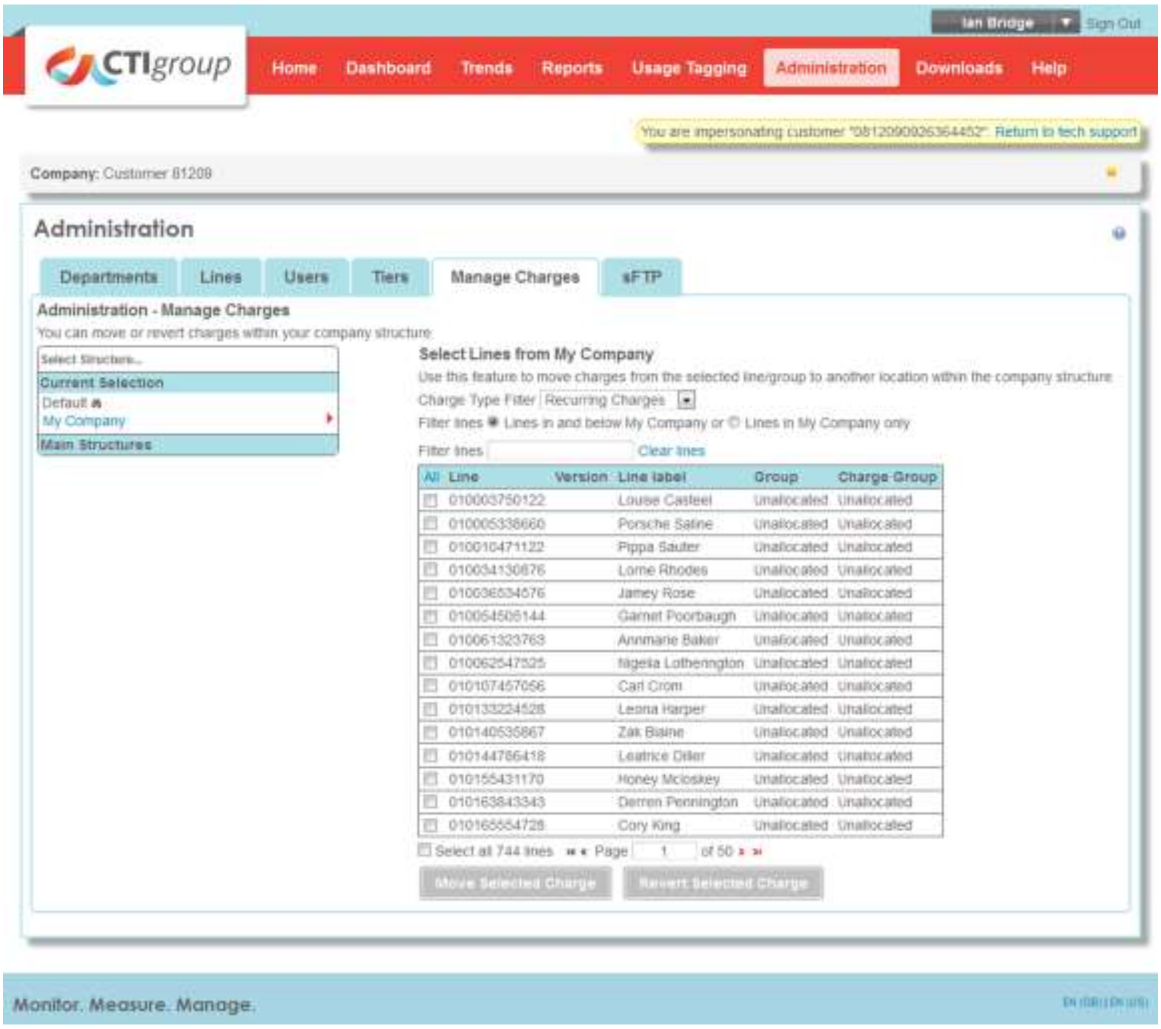


Figure 95: Manage charges panel

Feature specific components

The main functional areas of *Manage charges* Module are:

- *Manage charges*

  Manage charges enables authorised users to reassign charges between groups. charges can be filtered by charge type;

  Accessed from: *Administration»Manage charges* tab;

- *Manage charges audit log*

  The *Manage charges audit log* displays the movement of charges between groups within the organisational structure;

Accessed from: *Administration* menu > *Audit Reports*.

12.2. Manage charges feature

Manage charges enables authorised us*ers* to reassign cha*rges* between gro*ups*. cha*rges* can be filtered by charge type.

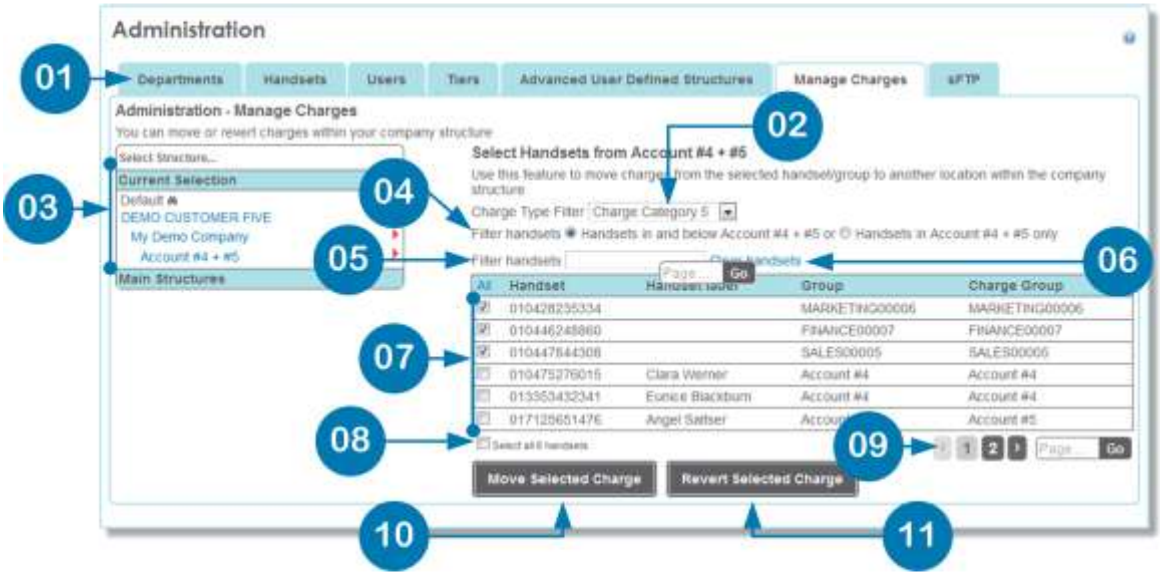


Figure 96: Manage charges – UI Map

Table 42: Manage charges functional components.

Key	Item	Function
01	*Administration* feature tabs	Select *Manage charges* tab
02	*Charge type* drop-down list	Set charge *type*.
03	*Structure browser control*	Select the gro*up* to be managed.
04	*Subscriber filter* radio button	Select to include/exclude subscriber below the gro*up*
05	*Search filter* text box	Filter list on subscriber *number* or subscriber *label*.
06	*Clear filter hyperlink*	clear applied filter.
07	*Returned list* of subscribers.	All subscribers in the selected gro*up* are listed. [Optionally]*Subscribers* below the gro*up* are listed (see: item 4).
08	*Select all* checkbox	Select all subscribers in list.
09	*Page browse* control	Browse the returned list.
10	*Move selected charges* button	Initiate *Move selected charges* process.
11	*Revert selected charges* button	Initiate *Revert selected charges* process.

Constraints

Only available on the *Default structure*;

- The re-assigning of charges is for reporting and budgeting purposes only, the cost of the bill remains unchanged;
- There is a dependency between the *Manage charges audit log* and *Manage charges*;

  If *Manage charges* is selected as a feature (in *Customer profile*) then *Manage charges audit log* is also added as a feature (it is not shown separately in the *Customer profile*);
- Manage charges are visible in all charge reports but all totals and summaries remain unchanged;
- Manage charges are visible to users outside of their group;

For example
In the case of a subscriber in cost-centre A, which has had one-off charges moved to Department X – users assigned to Department X (but not to cost-centre A) will be able to see the Manage charges.

12.3. Manage charges audit log feature

The *Manage charges audit log* displays the movement of charges between structure positions.

Figure 97: Move charges audit log UI map

Table 43: Manage charges audit log functional components.

Key	Item	Function
01	Report menu bar	Select a report.
02	*Report option menu bar*	Add favourite, Print, Download, **Schedule** and email.
03	*Search filter* text box	Filter the *Returned list* on *username*.
04	*Clear filter hyperlink*	clear applied filter.
05	*Show all dates filter* checkbox	Select to display all available data irrespective of date. – removes the *From/To date selector*.
06	*From/To date selector*	Set date range to view.
07	*Charge type* drop-down list	Select *charge type* to view.
08	*Returned list* of *Manage charges*	**View** list of *Manage charges*.

Key	Item	Function
Not shown	*Page browse* control	Page through the *Returned list* or go to first, last or numbered page.

Constraints

- The *Manage charges audit log* is retained for 30 days; records older than this are cleared down {Configurable:

  This limit – maintained separately from the *structure audit log report* limit – may be changed at system setup.

  CTI recommend this is kept at 30 days.

- If the *Manage charges* module is deployed then when *Manage charges* is selected as a feature (in *Customer profile*) the *Manage charges audit log* is also added, although this is not shown separately in the *Customer profile*.

13. Advanced usage tagging

Available to *Administrator*, Group [8] and *Subscriber users*

13.1. Functional components

Advanced Usage tagging extends the *Usage tagging* feature, adding *Phone book management*, *Manage rules* and the configuration of customer wide tagging settings

Figure 98: Tagging Management page

Feature specific components

The main functional areas of *Advanced Usage tagging* are:

- *Usage tagging configuration*

  Enables an *Administrator user* to configure *Usage tagging* throughout the site (for example, set all usage as Business by default);

- *Phone book management*

  Administrator users only

  The *Phone book management* feature extends the *Dialled number description* feature; enabling maintenance of personal and company phone books (*Administrator user*s only);

- *Manage rules*

  Administrator and *Group users* [8] only

  Enables the creation of an assignment of tagging rules to groups in the selected organisational structure;

- *Non-participating user*

  Administrator users only

  Enables creation and management of a class of user exempt from tagging usage on their subscribers. These users cannot tag calls, but are able to view and analyse them.

Constraints

- *A7's Usage tagging* and *Customer profile* features are prerequisites for *Advanced Usage tagging*';
- All feature are available as *Customer profiles*. However, where a *customer* has rules, they will automatically get the *Usage tagging configuration* page

[8] The ability to manage rules (but not configuration) can also be granted to group users by selecting the Tagging management options when they are set up.

- All rules and settings changes are applied at data load time; changes after this point are applied to the next bill rather than this bill.

> This includes all *Usage tagging configuration*, *Manage rules* and *Phone book management* settings.

- All rules are processed at data load time;
  - For the *Default structure,* rules are processed against is the latest created structure;
  - For the Billing-defined structure, the rules are processed against the existing (that is , the previous period's) *billing-defined structure* NOT the one being loaded in the data.

13.2. Usage Tagging Configuration feature

Enables an *Administrator user* to configure *Usage tagging* throughout the site, (for example, set all usage as Business by default).

Figure 99: Usage tagging configuration page

Accessible from the *Tagging Management* page.

Table 44: Usage tagging configuration functional components.

Key	Item	Function
01	Report menu bar	Select a report.
02	*tagging management* settings	▪ Set *usage tag type* default (*Personal usage*, *Business usage* or *default*; ▪ Set the required *rule tagging organisational structure* (*Default structure* or *billing-defined structure*); ▪ Set *Learnt tagging* On/Off ▪ Set *Base tagging* (business or personal). Only applicable if *Base tagging* is used by the *service-provider*.
03	*Notification management* settings	▪ Set *Usage tagging* deadline (day of month drop-down list); ▪ Set *tagging after deadline* Yes/No; ▪ Set *Send reminders* Yes/No.
04	Caution message	Changes become effective after the next data load..
05	**Save** button	Click to save changes.

Constraints

- *Usage tagging configuration* settings are applied at data load time.

  Any subsequent setting changes will take effect after the next data load; a message is displayed informing the user of this;

- Communication between *Subscriber users* and their subscriber manager is outside of the scope of *A7* and must be managed by each *customer*.
- Reminder notifications
  - If the *Customer profile* is set to use *Usage tagging configuration only* – *Notification Settings* are displayed in the *Usage tagging configuration* page;
  - If the *Customer profile* is set to use *Usage tagging configuration* and *Manage rules* *Notification Settings* are displayed in *Manage rules* but not in *Usage tagging configuration*.

13.3. Phone book management

The *Phone book management* feature adds a *Phone Book Editor,* extends the *Inline Phone Book Editor* feature to include a *Tag future usage as* option and – for *Administrator user*s only – introduces public phone books.

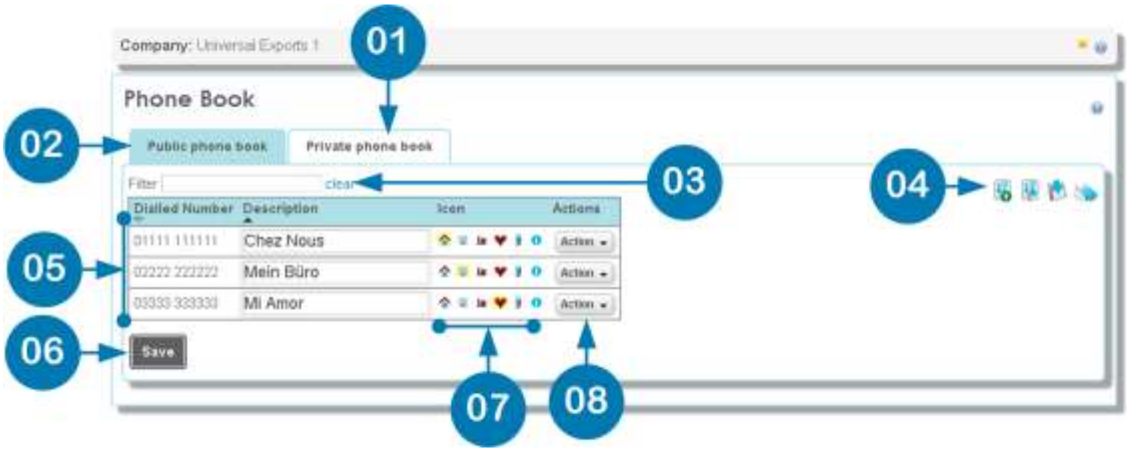


Figure 100: Phone book management – UI Map

Accessible from the *Tagging management* using the *Phone book management* Icon and also from the *Administration* menu.

The import/export *CSV* file format is:

- *Dialled number*,
- *Dialled number description*,
- *Usage tag type* (*Personal usage*, *Business usage* or *default*).

Table 45: Phone book management functional components.

Key	Item	Function
01	*Phone Book* tabs	Select the required *Phone Book*.
02	*Search filter* text box	Filter the *Dialled number* list by *Dialled number* or *Dialled number description*.

Key	Item	Function
03	*Clear filter hyperlink*	clear applied filter.
04	*Report option menu bar*	Select required function: *Add*, *Download*, *Upload*, or *Print.*
05	*Returned list* of *Phone Book entries*	List of entries in selected *Phone Book*.
06	**Save** button	Click to save changes. Changes become effective after the next data load.
07	*Usage tag Icons*	Select required *usage tag Icon*.
08	Report action menu	

Constraints

- Each potential number format must be entered in the *Phone book management* as an individual entry *A7* does not combine these together;
- Only *Administrator users* can maintain Company Phone Books.

13.4. Manage rules feature

Enables the creation of an assignment of tagging rules to groups in the selected organisational structure.

Figure 101: Manage rules – UI Map

Accessible from both the *Tagging Management* and *Customer profile* pages.

Table 46: Manage rules – functional components.

Key	Item	Function
01	Report menu bar	Select a report.
02	*List/Display* radio button	Select to see a list of rules or to see a display of the applied rule.
03	*Search filter* text box	Filter the rules list by *Dialled number* or *Dialled number description*.
04	*Clear filter hyperlink*	clear applied filter
05	**Add** *Icon*	Select to add a new rule. Visible only when no rules are applied.

Key	Item	Function
06	*Structure browser control*	Select the required group to apply rules to.
07	rules list	List of rules applicable to selected group.
08	*Report action menu*	Select required *Action Icon*: **View**, **Edit**, or **Delete**.

Constraints

Communication from a subscriber *user* to their subscriber manager is outside of the scope of A7; it must be managed internally by each customer.

13.5. Non-participating user feature

Users marked as a *Non-participating user* are able to use *A7* to view and analyse their us*age*, but not to tag calls.

This feature enables the creation and management of a class of user exempt from tagging usage on their subscribers.

Accessible via the *Customer profile*.

The *Add user* panel sets the status for each subscriber as one of:

- Participating {Default}
- Non-Participating Business
  All this subscriber's usage is classed as business and displayed as such in all reports.
- Non-Participating Personal
  All this subscriber's usage is classed as personal and displayed as such in all reports.

Constraints

Users with *Non-Participating Business* or *Non-Participating Personal subscribers* marked will have no access to the *Usage tagging* features for those subscribers.

14. Multi-instance

The *Multi-instance* module enables *A7* to account for all instances of subscriber that belongs to multiple groups within an organisational structure, reporting on the associated usage and charge costs.

Figure 102 Multi-instance page

The *Multi-instance module* caters for the real life scenario whereby a subscriber can belong to multiple groups within the organisational structure, with usage or charges assigned to each instance; where each instance may represent for example, a different cost-centre.

A7 reports on all instances of the subscriber, providing a comprehensive view of the associated costs to cost-centre managers.

This functionality is driven via a data feed; with the *service-provider* also providing an additional field against each subscriber, to denote the specific instance required. This field is referred to as an *Instance version* throughout this document)

The *Instance version* is displayed on both *Default* and *Billing-defined* structures as well as on:

- *Reports*,
- *Usage tagging*,
- *Administration* features (*Add user* and *Move subscribers*).

Constraints:

- *Multi-instance* works with the *Default* and *Billing-defined structures* but not with *Ad hoc organisational structures*;
- *Organisational structure* import/export features are not *Multi-instance* aware:
- Import and export will display a single version of the subscriber;
- On export the position of the **latest** subscriber version is exported;
- On import, changes to existing us*er* details and new us*er* sign-ins are applied to the **latest subscriber** version only;
- Inconsistent subscriber counts may be observed between summary counts (physical entities) and report counts (instances):
  - Summary counts:

This is where the physical subscribers and billing entities are tallied and any instances are ignored;

- Home,
- Dashboard,
- Reports;

- Report counts:
  This is where each instance is tallied;
  Reports consider all instances, so any multi-instance subscribers or billing entities will naturally result in a discrepancy between the totals at the top level summary of a report and the report contents.

Table 47 How multi-instance works with other features

Feature	Multi-instance variances
Billing-defined structure	The *billing-defined structure* is *Instance version* aware. So, for example, where a *customer* has two subscriber instances in different groups (that is, cost-centres), a user at the top-level sees all costs for the subscribers, but a user in one of the groups sees only those costs associated with that group's subscriber.
Watchpoints	Watchpoints are *Instance version* aware: ▪ They only display one subscriber (with the cost combined) on the *Default structure*; ▪ They display and calculate costs based on all *Instance versions* of a subscriber on the *billing-defined structure*.
Find	▪ *Find* functionality displays the *Instance version*; ▪ If multiple instances of a subscriber are found, each will be differentiated by their *Instance version*; ▪ The *Instance version* field is displayed between the number and the subscriber label {Configurable:
Reports, Dashboard and Totals	▪ Reports displaying subscribers as a single-*Subscriber* entry display an additional field, for the *Instance version*; ▪ Apparent count discrepancies: ▪ The total count of subscribers within summaries in the *Home*. *Dashboard* and Reporting pages is the number of physical subscribers and billing entities (with *Instance version* subscribers counted once only); ▪ All instances are counted and displayed within reports, which can result in apparently anomalous results where multiple instances exist..
My Reports and Presentation Criteria	▪ The subscriber *Instance version* is displayed only if the selected organisational structure supports multiple instances (that is, it is either the *billing-defined structure* or *Default structure*); ▪ It is not possible to filter by *Instance version*; ▪ It is not possible to select to sort by the *Instance version* field; However, subscribers are sorted on a combination of subscriber and subscriber *Instance version* and both columns (where applicable) appear in the report.
Add user	▪ User creation on either structure will display all *Instance versions* of the subscriber For subscribers changing ownership in mid *Billing-period*: ▪ The new user is manually assigned to an *Instance version* and sees their own usage only; ▪ The superseded user continues to see the any usage attributed to their own *Instance version* of the subscriber.
Move subscribers	When moving subscribers (on the *Default structure*) the *Instance version* number of each instance of the subscriber is displayed.
Advanced user Defined Structure	If the 'Fully synchronised' option is chosen when creating an *Advanced User-defined structure* from either the *billing-defined structure* or the *Default structure* then *A7* copies all the associated *Instance versions* over along with the subscribers and so continues to use *Instance versions*.

Feature	Multi-instance variances
Usage tagging	All *Usage tagging* reports display the *Instance version*, allowing users to view the status and tagging for each instance of the subscriber. This caters for subscribers changing ownership in mid *Billing-period* without forcing them to use the *billing-defined structures* to view this information.
Downloads	All downloads, us*age*, Short and Long Summary are *Instance version* aware.
Move charges	Split charging and Multi instance are compatible with each other, but CTIG recommend that from a usability point of view both are not selected.

15. Single sign-on

If *SSO* is implemented within an *A7* deployment, user creation is normally managed outside of *A7*; although given the bespoke nature of such implementations this is not always the case.

16. Analysis RT

Keeping subscribers apprised of their Unbilled usage and spend is a vital component of good service and helps maintain a long-term relationship; a policy that reduces churn and drives down the cost of subscriber retention.

CTI's Analysis RT (ART) module provides a feature-rich billing analytics solution for monitoring Unbilled usage, including:

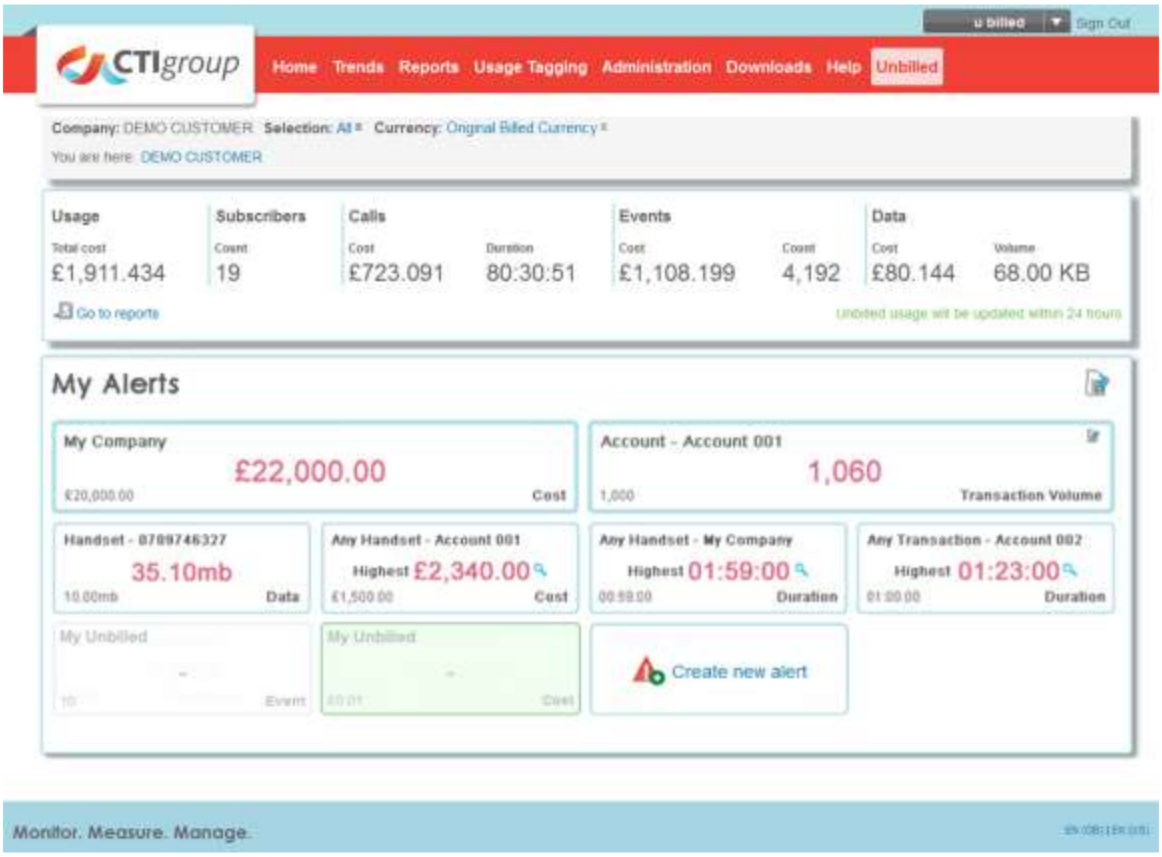
- A concise usage summary;
- Pro-active alerts;
- Analytical reports (both predefined and customisable).

Further information …

The Analysis RT solution is described in its own Product Specification document.

See: ***ART 1.00 Core Front-office Product Specification 1.00 for further information.***

When the *A7* deployment includes *ART* an *Unbilled* tab is displayed as part of the *Main menu bar*, with sub-options to access either the *Unbilled Dashboard* (illustrated below) or the *Reports overview* pages.



ART enables service-providers to deliver exactly the timely service-usage information their customers and subscribers demand; highlights include:

- Alerts that can be set to trigger at predefined thresholds, such as when:
- Individual usage cost exceeds a certain value,
- Usage consumption reaches a predefined limit,
- Usage duration is above a given threshold,

- No usage has been detected over a given time period,
- Roamed usage is detected;
- A dashboard view that enables managers to see usage and alerts across a range of subscribers;
- Predefined reports that provide details of usage and costs not yet invoiced.
- Works across voice, text and data usage;
- Available for consumer accounts and business accounts
- For business accounts: data is consolidated into a company overview, with the ability to provide restricted access to individuals to single handset data, or data across a subset of handsets.

Appendices

Contents

Appendix A Browser compatibility

A7 relies on web standards that older browsers may not fully support.

A7 supports a browser page resolution of 1280 by 1024 px.

This version of *A7* explicitly supports the browsers:

Microsoft Windows 8 ™

Support for IE 10 is applicable only when running in Desktop-style for Windows 8.

- *Microsoft Internet Explorer (IE)* ™ (versions 8, 9, 10 and 11);

  Versions prior to IE8 are no longer supported

- *Mozilla Firefox* ® and *Google Chrome* ® major releases on *Microsoft Windows* ™;
- Apple Safari ® and *Google Chrome* on iOS7.

Table 48 Browser compatibility

Browser	Windows 7	Windows 8	Windows 8.1	Android	iOS7 [9]
IE8	✓	✓	✓	✗	✗
IE9	✓	✓	✓	✗	✗
IE10	✓	✓	✗	✗	✗
IE11	✓	✗	✓	✗	✗
Metro IE 10	✗	✗	✗	✗	✗
Metro IE 11	✗	✗	✗	✗	✗
Chrome 32 [10]	✓	✓	✓	✗	✓
Firefox 30 [10]	✓	✓	✓	✗	—
Safari	✗	✗	✗	✗	✓

Key	
✓	Set up on VM and Test
✗	Don't Test

9 This is only for PDFs on iPads/iPhones
10 Only the latest *major* number releases are tested.

Appendix B Column-set definitions

Column- set name	Columns			Reports using set	Data source
Charge summary	▪ Month ▪ No of bills ▪ Charges ▪ Credits	▪ Tax ▪ Total (excl. tax) ▪ Total (incl. tax)		Monthly charge analysis	Charge-data
Charge details	▪ **Report context:** ▪ Charge start date ▪ Charge end date	▪ Charge amount ▪ Original amount ▪ Tax rate	▪ Tax description ▪ Quantity ▪ Unit price	▪ Monthly charge analysis ▪ Charge-categorisation ▪ Cost allocation ▪ *Subscriber* summary ▪ Fixed cost	Charge-data
Charge-category summary	▪ **Report context:** ▪ No records ▪ Charge amount	▪ Original charge amount		▪ Charge-categorisation ▪ Cost allocation	Charge-data
Cost allocation summary	▪ *Subscribers* ▪ Recurring charges ▪ One-off charges	▪ *Usage charges* ▪ Credits ▪ Tax	▪ Total (excl. tax) ▪ Total (incl. tax)	▪ Cost allocation	Charge-data
Cost summary (extended)	▪ **Report context:** ▪ *Call volume* ▪ *Data volume*	▪ Events ▪ Duration ▪ Cost	▪ Original cost ▪ Avg duration ▪ Avg cost ▪ Avg p/min	▪ Cost range ▪ Usage ▪ Tax exempt	*CDR*
Cost summary	▪ **Report context:** ▪ *Call volume* ▪ *Data volume*	▪ Events ▪ Duration ▪ Cost	▪ Original cost	▪ Cost range (Rpt) ▪ Usage (Rpt)	*CDR*
Costs detail	▪ Date ▪ Time ▪ *Subscriber* ▪ Label	▪ Network ▪ Dialled ▪ Description ▪ Data vol	▪ Events ▪ Duration ▪ Cost ▪ Original cost	▪ Cost range ▪ Usage	*CDRs*
Charge summary (extended)	▪ *Subscriber* ▪ Label ▪ *Call volume* ▪ *Data volume*	▪ Events ▪ Duration ▪ Recurring charges ▪ One-off charges	▪ *Usage charges* ▪ Credits ▪ Tax ▪ Total (excl. tax) ▪ Total (incl. tax)	*Subscriber* summary	*CDR*
Fixed cost summary	▪ *Subscribers/Billing entities* ▪ Label ▪ Total Recurring	▪ Total One-Off		Fixed cost	Charge-data

Column- set name	Columns			Reports using set	Data source
Fixed cost summary (report)	▪ *Subscriber* ▪ Charge vol ▪ Charge amount	▪ Original amount		Fixed cost	*CDR*
Top usage summary	▪ *Subscriber* ▪ Label ▪ Dialled ▪ Location	▪ Date ▪ Time ▪ Data vol ▪ Events	▪ Duration ▪ Cost ▪ Original cost	Most expensive	*CDR*?
Invoice charges summary	▪ **Report context:** ▪ Quantity ▪ Unit price	▪ Tax code ▪ Tax rate ▪ Cost ▪ Original cost		invoice backup	
Invoice summary	▪ Invoice Number, ▪ Invoice Total (excl. tax), ▪ Total Tax, ▪ Invoice Total (incl. tax),	▪ Previous Balance, ▪ Payment Received, ▪ Balance Outstanding		invoice details	Charge-data
Invoice charges	▪ *Subscriber*, ▪ Label, ▪ Recurring charges, ▪ *Usage charges* ,	▪ invoice Total (excl. tax)		invoice details	Charge-data

* Not in all reports

Appendix C Observation messages

Exception observations

Observation text	Associated detail report
Most expensive invoice number (including VAT)	Cost Allocation Report. Only available to users at the top of a company structure and more than one invoice is available.
Average recurring charge for a subscriber	Cost Allocation Report
Average one off charge for a subscriber	Cost Allocation Report
Average tax for a subscriber	Cost Allocation Report
Average total charge (including tax for a subscriber	Cost Allocation Report
Average usage charge for a subscriber	Cost Allocation Report
Call Spend (For Destination Type) and average usage cost	Destinations Report
Call Spend (For usage Type) and average usage cost	Usage Type report
Users' average usage spend	Subscriber Summary Report
Show Internal Call Percentage and Spend	Internal Report
Average usage duration	Duration Report
Average price per minute	Peak/Off Peak Report
Average usage cost	Cost Range Report
Show the busiest day 'March, 30 recorded the highest usage volume of 125'	Billing-period Report. This figure only includes duration based calls. Events and data are excluded.

Variance observations

Observation text	Associated detail report
Usage volume has increased/decreased	
Usage spend has increased/decreased	
Increase/Decrease in subscribers	
Users' Average usage spend has increased/decreased	

Appendix D Report availability

D.1 Matrix 1

Report Availability / Scenarios	Multinational corporation	MNCA MNC Admin user	Company structure (top-level)	Default structure	Default structure (top-level)	Billing defined structure	Billing defined structure (top level)	User defined structure	User defined structure (top-level)	Historic structure	12 character cost category	6 character cost category	Uisers assigned to a group	Users assigned to phone	Users assigned to single phone	Phone user	Currency conversion
Reports	MNC	MNCA	CSTL	DS	DSTL	BDS	BDSTL	UDS	UDSTL	Historic	12-CC	6-CC	UAG	UAP	UASP	PU	CCON
Billing period history	⊗	—	—	—	✓	—	✓	—	✓	—	—	—	—	—	—	—	—
Bundle usage	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Charge categorisation	—	—	—	—	—	—	—	—	—	—	✓		—	—	—	—	—
Cost allocation	—	—	—	—	—	—	—	—	—	—	*1	—	—	—	—	—	—
Cost range	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	⊗
Daily distribution	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Daily usage/ Billing period	⊗	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Destinations	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Duration range	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Fixed cost	—	—	—	—	—	—	—	—	—	—		✓	—	—	—	—	—
Frequently dialled	—	—	—	—	✓	—	—	—	—	—	—	—	—	—	—	—	—
Internal	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Invoice back up	—	—	—	—	✓	—	✓	—	—	—	—	—	—	—	—	—	—
Invoice details	—	—	—	✓	—	✓	—	—	—	—	*2	✓	—	—	—	—	—
Longest	—	*3	—	—	✓	—	✓	—	—	—	—	—	—	—	—	✓	—
Monthly charge analysis	⊗	—	—	—	✓	—	✓	⊗	—	⊗		✓	⊗	⊗	⊗	—	—
Monthly trend analysis	—	—	—	—	✓	—	✓	—	✓	—	—	—	—	—	—	—	—
Most expensive	—	*3	—	—	✓	—	✓	—	—	—	—	—	—	—	—	✓	—
Multiplay services	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Peak / Off peak	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Phone summary	—	—	—	—	—	—	—	—	—	—		✓	—	—	⊗	—	—
Roamed	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Transmission type	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Usage by direction	⊗		—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Usage report	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Vat exempt report	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
VPN	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Key	
✓	Available in this scenario;
⊗	Unavailable in this scenario;
–	Unaffected by this scenario;
*'n'	Some variations in this scenario, as described by note 'n'.
(blank)	This is a mutually exclusive option.

Figure 103 CHANGE

D.2 Matrix 2

Report variations

Variations	All months are shown.	Configurable number (50) of records shown.	Not company structure aware.	Zero charge usage not shown.	Zero duration calls not shown.	Zero entries not shown.	Cost category breakdown not available.	Non-phone related charges displayed.	Available only for last 3 billing periods.	Available only for last 3 billing periods.	Currency conversion precedes ranking.		Original currency view unavailable .	Cannot filter on Multiplay service type.	Company filter unavailable.	Company structure drill down unavailable.	Invoice drill-down removable.	Magnifying-glass is not available.	Multiplay '1-line per' unavailable.	Multiplay filter unavailable.	Show/Hide unavailable.	Totals unavailable.	One line per filer unavailable.	Drill-down via destination category available.	Graph unavailable.	Only category and sub category visible.	Cost adjustment arrows unavailable.		Observations unavailable.
enarios / orts							12-CC		MNC		CCON	MNC												CSTL		NLU		UAP	
eriod history			X																X		X								
usage																													X
sation																													X
ocation							X																				X		
ige																													
stribution																											X		X
age / Billing																											X		
tions																								X		X			
n range																													
ost																									X		X		X
tly dialled															X	X				X							X		X
																									X		X		
backup																									X				X
details			X														X								X		X		X
		X			X				X				X		X	X		X		X		X					X		X
charge	X																			X					X		X		X
trend			X																X		X				X				
pensive		X		X						X	X	X			X	X		X		X		X					X		X
y services																				X									X
Offpeak																													
summary						X		X								X							X		X		X		
d																													X
ssion type																													X
y direction																				X					X				X
eport																													
empt report																									X		X		X
																													X

Key: X The variation (column header) applies to the report (row header) in all scenarios or in the quoted scenario.

Figure 104 CHANGE

Appendix E Web browser cookies

With the implementation of new legislation regarding cookies in May 2011, *CTI* recommend that::

A7 cookie use.

A7 uses cookies solely to track a user's activity within a session. *CTI* do not use cookies to track web usage – or to hold information about us*ers* – outside of A7 sessions.

- Each *service-provider* includes acceptance of cookies in the *Terms and conditions* presented to their customers before they access any on subscriber services;
- *service-providers* using *SSO* to access *A7* through their own Portal should include the acceptance of cookies as part of the *Terms and conditions* for that portal.

Appendix F Deprecated features

F.1 Dashboard

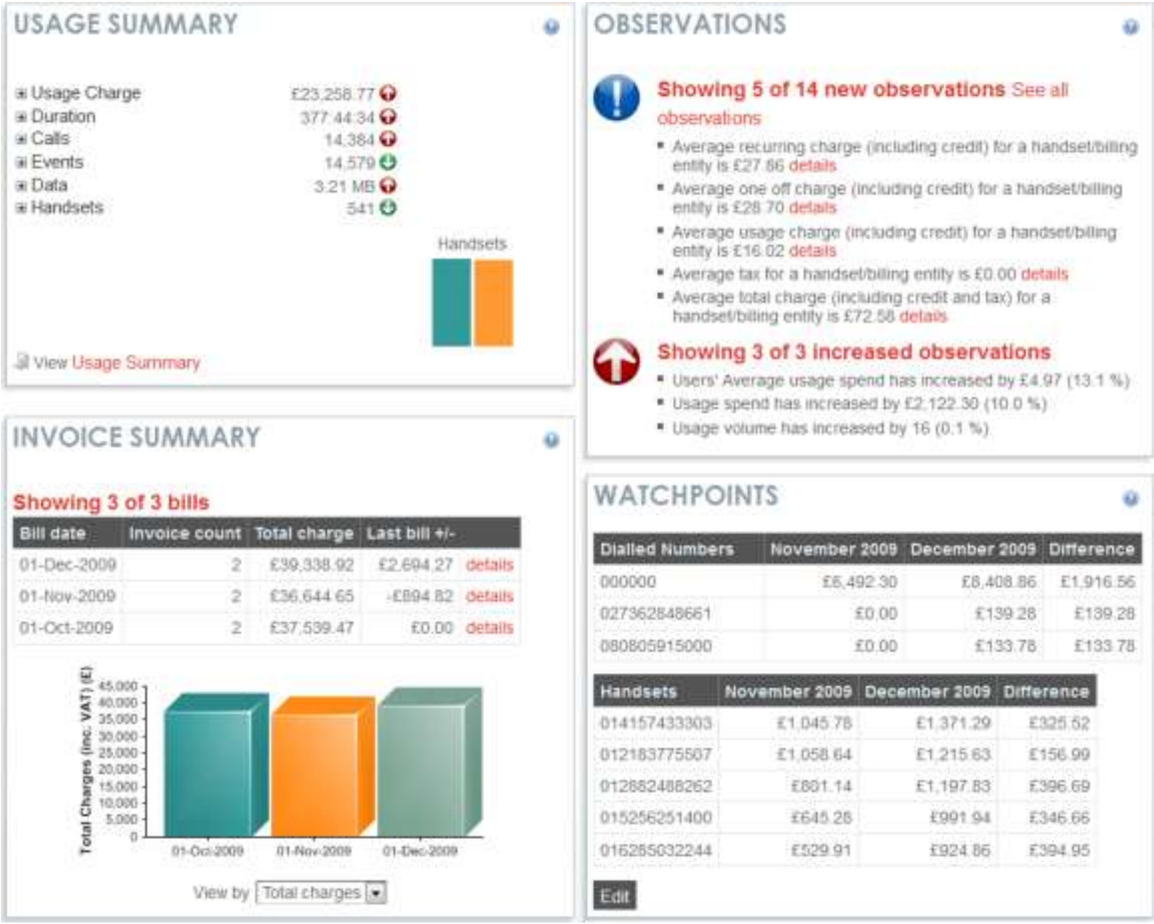


Figure 105: The Dashboard pages

Features accessible via the *Dashboard* include:

- *Usage summary*

  The *usage summary* displays *usage charges* by *usage type*, with the option to further analyse them by *Multiplay category* (where applicable);

- *Observations*

  The *Observations* panel displays observations on charges and usage for the selected billing-period;

- *invoice summary*

  The *Invoice summary* panel displays bill, invoice and charge information for each of the three most recent billing-periods;

- *Watchpoints*

  - *View Watchpoints* displays activity for tracked subscribers and/or *Dialled numbers*;
  - *Edit Watchpoints* maintains the list of subscribers and/or dialled numbers to be tracked.

A.1 Headline summary – six-category

This deprecated component is available only in deployments using six Charge-categories.

The *Headline summary* panel is part of the *A7 Home* page, its scrollable panel displays *Usage totals* for the *Current analysis context*, with click-through hyperlinks to more detailed information.

Figure 106: A7 Headline summary panel

Table 49: A7 Headline summary – functional components.

Element		Description
01	Summary data items	The *Headline summary panel* displays a maximum of 18 *Summary data items* in a pre-determined priority order. CTI will work in conjunction with the *Service-provider* during project set-up to determine the required items and their relative priority. ▪ *Total bill (incl. Tax)* , ▪ *Total bill (excl. Tax)* , ▪ *Usage (cost)* [11] , ▪ *Usage (volume)* , ▪ *Duration*, ▪ *Duration (cost)* , ▪ *Events (count)*, ▪ *Events (cost)* , ▪ *Data (volume)* ▪ *Data (cost)*, ▪ *Subscribers*, ▪ *Billing Entities*, ▪ *Usage – Actual (cost)* [12], ▪ *Usage – Original (cost)*, ▪ *Credits* , ▪ *Non-Recurring charges*, ▪ *Recurring charges*, ▪ *Tax.* The *Headline summary* does not display selected *Summary data items* when no data is available for them; it displays the next highest priority item (if any) instead.
02	Scroll controls	The *Headline summary* displays *Scroll controls* when data is available for more than four selected *Summary data items*; these controls allow the user to scroll the *Headline summary* panel (right or left) to view the off-page items.
03	Data change indicators	The *Headline summary* panel displays a *Data change indicator* for each *Summary data item* to show how the current *Billing-period*'s value differs from that of the previous *Billing-period*
04	Summary data item drill-down	Where appropriate, *Summary data items* are hyperlinked to a relevant usage or charge report – see *Table 8 (on page 29)*. Selecting the item opens and displays the report.

Table 50 Headline summary drill-downs

Headline summary data item	Report drill-down destination
Billing Entities (number of).	No drill-down available
Cost (actual),	Usage summary report
Cost (original).	Usage summary report

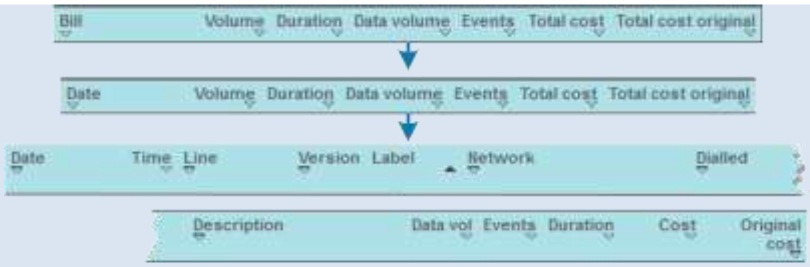
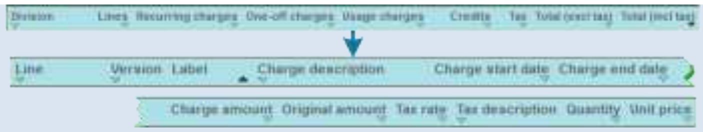
[11] Derived from *usage charges.*
[12] Derived from *CDRs*

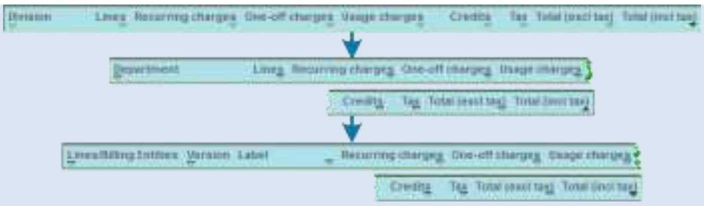
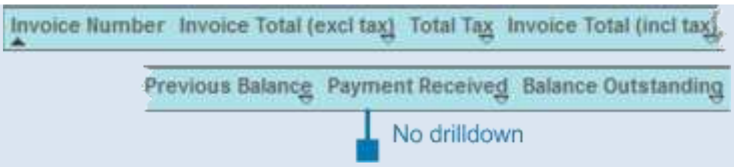
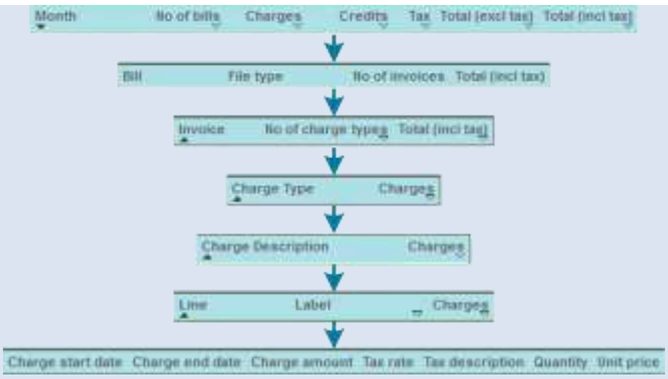
Headline summary data item	Report drill-down destination
Credits (cost of),	Cost Allocation report
Data (cost of),	No drill-down available
Data (size of),	Usage summary report
Duration (cost of),	No drill-down available
Duration (length of),	Usage summary report
Events (cost of),	No drill-down available
Events (number of),	Usage summary report
Non-Recurring charges (cost of),	Cost Allocation report
Recurring charges (cost of).	Cost Allocation report
Subscribers (number of).	Subscriber summary report
Tax (cost of).	Monthly charge analysis report
Tax (cost of).	Charge-categorisation report
Total bill Cost (excl. VAT),	Monthly charge analysis report
Total bill Cost (excl. VAT),	Charge-categorisation report
Total bill Cost (incl. VAT),	Monthly charge analysis report
Total bill Cost (incl. VAT),	Charge-categorisation report
Usage (cost of),	Cost Allocation report
usage (number of),	No drill-down available

F.2 Deprecated *Six-Charge-category* reports

These deprecated reports are available only in deployments using six Charge-categories.

Report title	Billing period (Six-cat)
Description:	Displays usage summary for each loaded bill. The report displays usage each day within the *Current analysis context's Billing-period*, revealing usage patterns and the subscribers involved.
Sequence:	Date – ascending.
Constraints:	Available only to *Top-level users on the Default structure*; ▪ Not *Organisational structure* aware; ▪ Displays all usage irrespective of the: ▪ *Bill* selected – even where multiple bills contain usage for the same day; ▪ *Current analysis context*'s *Billing-period* – so may include more than one month's data.
Variations	Unavailable report functionality: ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level); ▪ *Cost adjustment arrows*.

Report title	Billing period (Six-cat)
Select detail	
Select group	
Report title	**Billing period history (Six-cat)**
Description:	Displays usage within *Billing-period* for loaded bills up to and including the *Billing-period* set by the *Current analysis context*. The report initially displays a *Billing-period*-level summary, allowing the user to drill-down to a see usage on a selected date.
Sequence:	*Billing-period* – descending
Constraints:	Available only to *Top-level users on the Default structure*; ▪ Not organisational structure aware. ▪ Displays all usage irrespective of the bill selected – even where multiple bills contain usage for the same day
Variations	Unavailable report functionality: ▪ *One line per* filter (at top level); ▪ *Zero entries* filter (at top level); ▪ *Graph or chart*. ▪ *Cost adjustment arrows*; ▪ *Report overview Observations*.
Select detail	
Select group	N/a
Report title	**Cost allocation (Six-cat)**
Description:	Total billing costs for each element of the organisational structure
Sequence:	Cost - descending.
Constraints:	For *Service-providers* using Twelve-Charge-categories this does not break down the total cost by Charge-category at each *organisational level*.
Variations	Unavailable report functionality: *Cost adjustment arrows*.
Select detail	

Report title	Billing period (Six-cat)
Select group	
Report title	**Invoice details (Six-cat)**
Description:	Displays a summary *line per* loaded invoice
Sequence:	invoice number – ascending.
Constraints:	Available only to Top-level users on the *Billing-defined or Default* organisational structure; Not linked to organisational structure
Variations	Unavailable report functionality: ▪ *Multiplay service* filter; ▪ *Select group*; ▪ *Cost adjustment arrows*; ▪ Charts; ▪ *Report overview Observations*; ▪ Report totals
Select detail	
Select group	*Select group* drill-down unavailable.
Report title	**Monthly charge analysis (Six-cat)**
Description:	Summarises charges for each month's loaded data (up to 13 months); drill-down to view associated bills, invoices and charges. Report totals consolidate all bills received in a month.
Sequence:	Month - descending.
Constraints:	Available only to *Top-level users on* the *Default structure*. ▪ Not linked to organisational structure. ▪ Unavailable for *Group and/or Subscriber users* ▪ Unavailable in *User-defined*, *Billing-defined*, or *Historical* contexts; ▪ Displays all months loaded, ignoring the *Billing-period* set by *Current analysis context*.
Variations	Unavailable report functionality: ▪ *Multiplay service* filter; ▪ *Select group* drill-down; ▪ *Cost adjustment arrows*; ▪ *Report charts*; ▪ *Report overview Observations*..
Select detail	

Report title	Billing period (Six-cat)
Select group	N/a
Report title	**Subscriber summary (Six-cat)**
Description:	Summary of invoice related charges against each subscriber
Sequence:	charge total - descending
Constraints:	Unavailable for subscriber users Unavailable to: ▪ Service-providers using six Charge-categories; ▪ User assigned to a single subscriber
Variations	Billing entities are optionally displayed Configurable:{**OFF**; On}. **Unavailable report functionality:** ▪ Cost adjustment arrows; ▪ Charts; ▪ One line per filter - at top-level; ▪ Zero entries filter - at top-level.
Select detail	
Select group	Drill-down unavailable.

[Inside back cover page]

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