Location Intelligence
Infrastructure Asset Management

Confirm®

Reporting
v21.10a.AM

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March 16, 2021

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Reporting

The Reporting folder contains the saved Data Queries and Reports, and the lookups required to create and store the data sources, data qualifications and Report templates.

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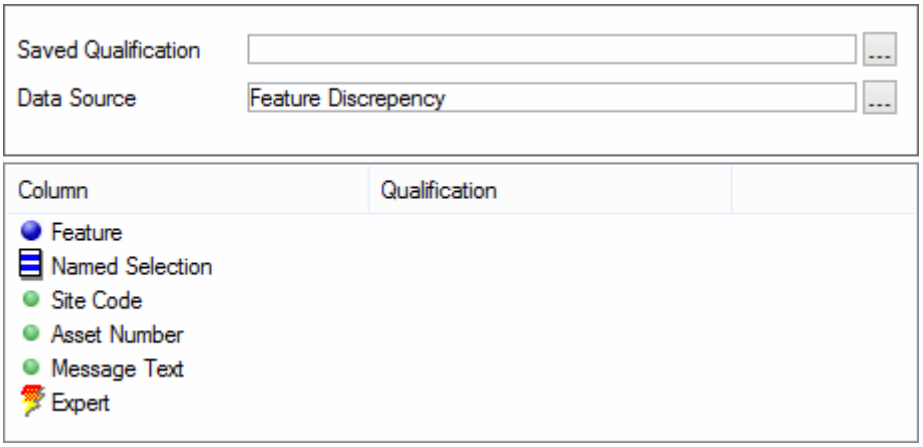
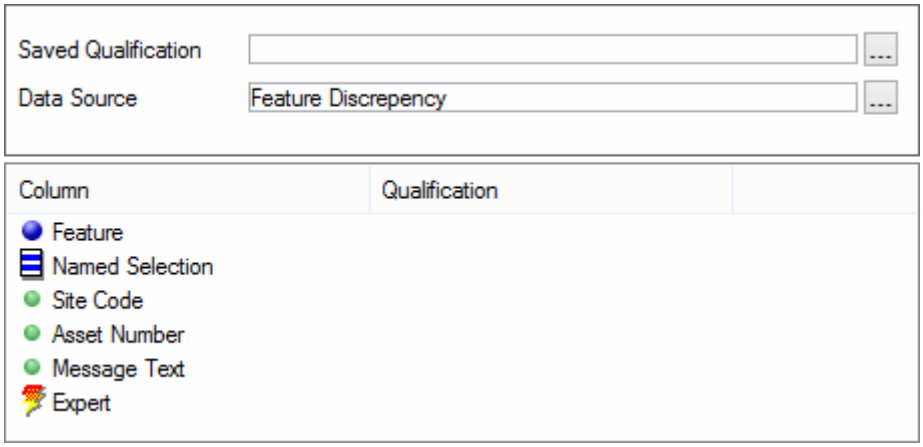
Data Queries

Data Queries combine a **Data Sources** on page 51 with an optional Qualification, to extract data from Confirm.



Saved Qualification:	You may optionally select a Saved Qualification from the pick list. The Pick list references the Saved Qualification Lookup. **Saved Qualifications** on page 49 Selecting a Qualification will automatically populate the Data Source field with the Data Source that the Qualification is linked to.
Data Source:	Select a data source from the pick list. The pick list references the Data Source Lookup **Data Sources** on page 51

Applying Qualifications



Named Selection

Where the filter has a link (via the 'linked table' tab when opened from a Data Source) to the Feature table, the query qualification column list will include a Named Selection item.

Double clicking on a Named Selection item in the Data Query Qualification column list will launch the Named Selection Qualification filter:

Only the Code field is available. Enter a code or select from the pick list to select a Named Selection. The pick list references the Named Selection lookup.

Features\Feature Lookups

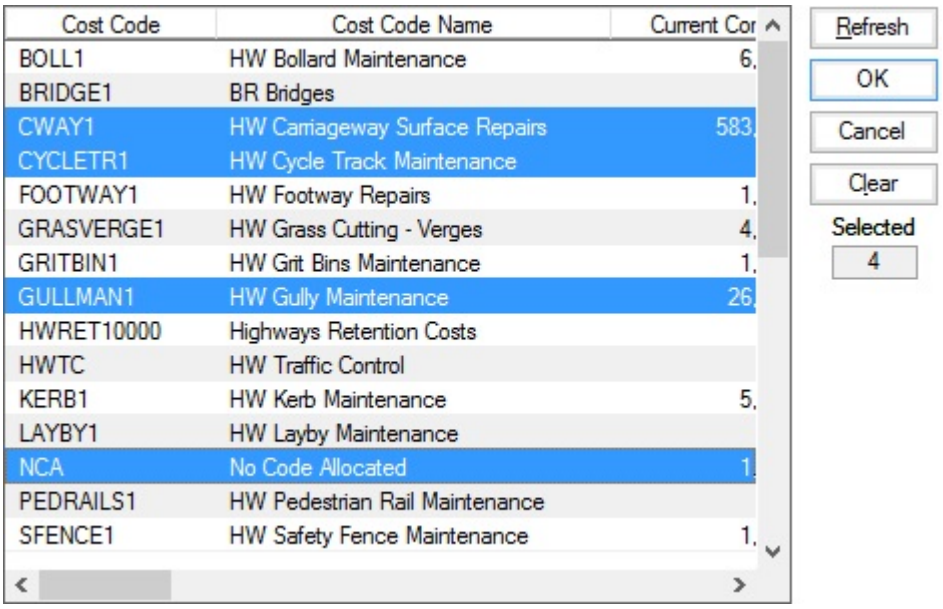
You may apply a Qualification to any column listed in the lower portion of the form. To apply a Qualification, double click on a column name.

Note: If this has been opened from one of the 'More' button filters, the top part of this form will not be displayed.

Blue bullets - Linked columns

Blue bullets are used in the Data Query Qualification screen to show 'Linked' columns. These are options which allow further filtering or selection. Double click on the column name to display a selection window

Note: In some cases a further Data Query Qualification screen appears, allowing you to qualify the table you have selected. You may enter a parameter, or simply click on OK to display all possible values in the table.



Select a value by clicking on it. You may select a block of values by SHIFT-clicking on the second and subsequent rows. Use CTRL-click to select specific records. Click on 'OK' to enter the qualification parameters against the column name in the Data Query Qualification form.

Green bullets - Unlinked columns

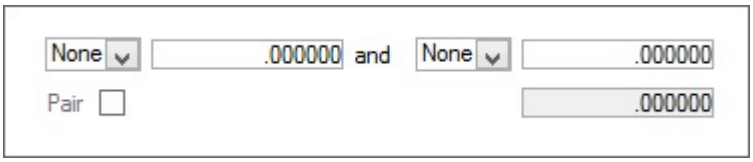
Green bullets in the Data Query Qualification screen are simple arithmetic or character based filter options. These options are known as 'Unlinked' columns. Double click on a green bullet to display the Qualifications window. The Qualifications window will vary according to the data type of the selected column:

Qualifications on text fields:

Select the type of restriction to perform (i.e. Like, Not Like, Contains or Does Not Contain) and enter a text string. Wildcard characters can be used where appropriate. Click on OK to enter the Qualification against the column in the Data Query Qualification form.

Qualifications on Number fields

Select operators from the drop down field and enter values, either on both sides of 'and'; or on one side only to create an open statement.



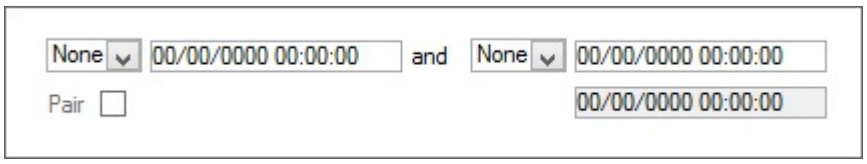
Pair: The check box will only be available if columns have been paired in the **Data Source.**

Where the selected column is paired, you may query based on an Effective Value rather than a Start or End Value. Tick the Pair tick box and enter the value in the adjacent field.

Click on OK to enter the Qualification against the column in the Data Query Qualification form.

Qualifications on Date fields

Select operators from the drop down field and enter values, either on both sides of 'and'; or on one side only to create an open statement.



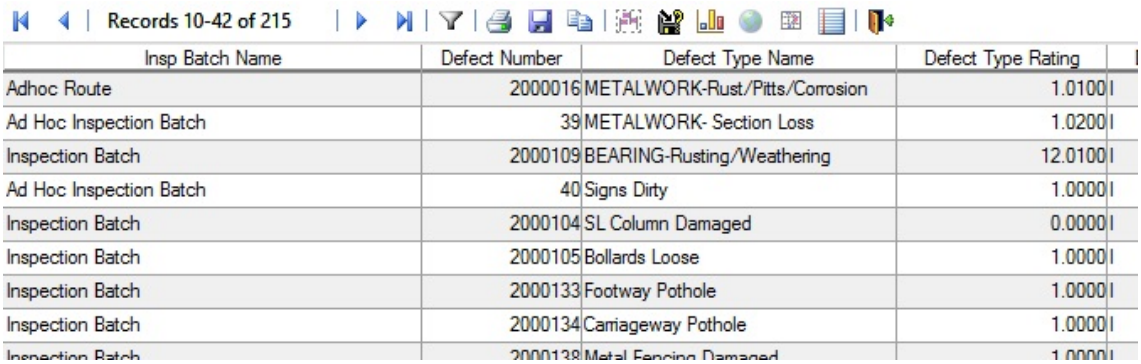
Pair: The check box will only be available if columns have been paired in the **Data Source.**

Where the selected column is paired, you may query based on an Effective Value rather than a Start or End Value. Tick the Pair tick box and enter the value in the adjacent field.

Click on OK to enter the Qualification against the column in the Data Query Qualification form.

Query Results

Click on OK in the Data Query Qualification form to run the query and display the results:



Insp Batch Name	Defect Number	Defect Type Name	Defect Type Rating
Adhoc Route	2000016	METALWORK-Rust/Pitts/Corrosion	1.0100
Ad Hoc Inspection Batch	39	METALWORK- Section Loss	1.0200
Inspection Batch	2000109	BEARING-Rusting/Weathering	12.0100
Ad Hoc Inspection Batch	40	Signs Dirty	1.0000
Inspection Batch	2000104	SL Column Damaged	0.0000
Inspection Batch	2000105	Bollards Loose	1.0000
Inspection Batch	2000133	Footway Pothole	1.0000
Inspection Batch	2000134	Carriageway Pothole	1.0000
Inspection Batch	2000138	Metal Fencing Damaged	1.0000

Named Selection

The Data Query Preview screen will show a Named Selection button for a **Data Source** that has a link (via the 'Linked Table' tab) to the Feature Table. Click on the Named Selection button to save the currently displayed data as a Named Selection.

Saving Qualifications

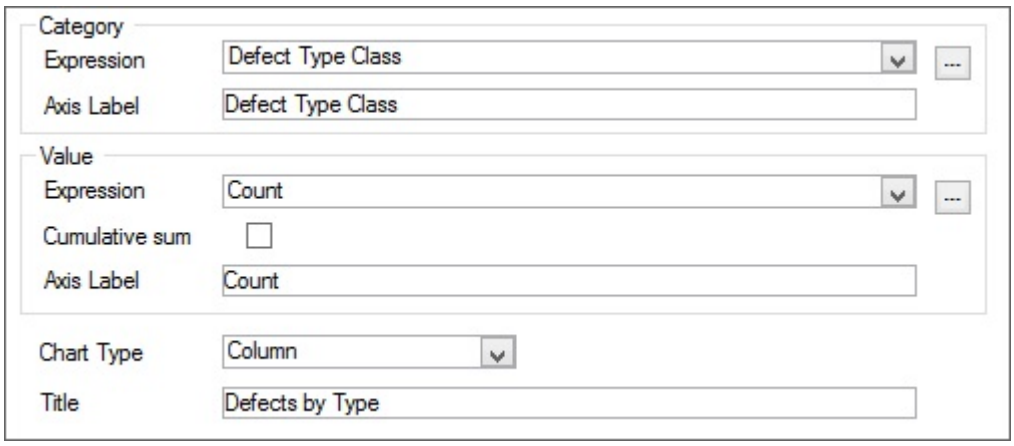
The qualification imposed in the Data Query Qualification form may be saved by clicking on the 'Save Qualification' button in the Data Query Preview window. The Save Data Query Qualification form is displayed. Enter a name for the Saved Qualification, and optional notes. Click on OK to save the qualification. Saved Qualification may be viewed, edited and deleted in the **Saved Qualifications** Lookup.

Expert

The Expert facility allows complex qualification of a query which is not possible with the standard qualification options. An expression can be manually constructed and Columns and Functions can be used. The expression must be valid before the Ok button can be pressed.

Creating Charts

Click on the Charting button in the Data Query Preview window to display the Chart Wizard:

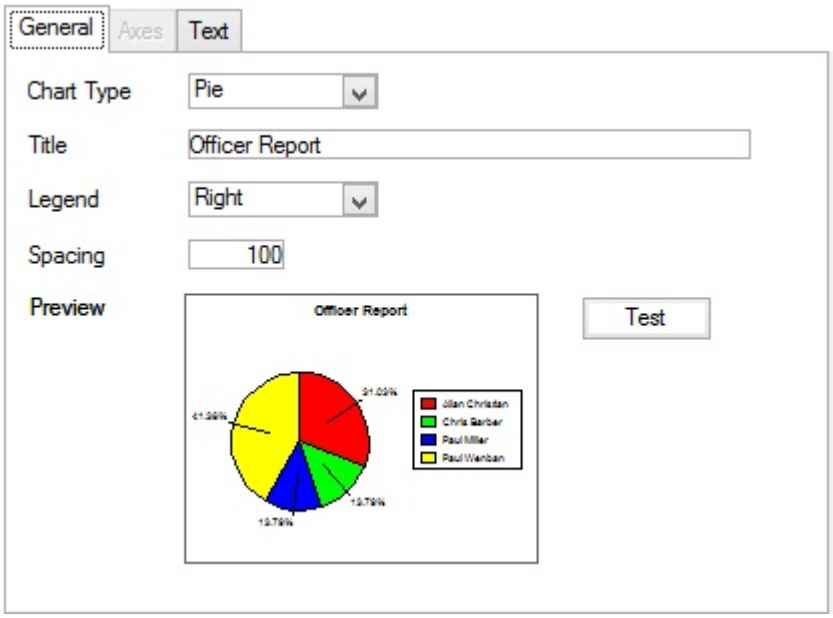


Expression:	Select from the Drop-down list the column you want your chart grouped by. If the column you want is not in this list then click on the pick button and select it from the full column list. All the viewable columns selected in the Data Source are available
Axis Label:	Enter the Axis Label you want displayed on the Chart.
Expression:	Select from the Drop-down list the operation you want performed on each category to obtain a value, i.e. sum/count. If the operation you want is not in the list then click on the pick button and create the expression from the full list of functions.
Cumulative sum:	Check this to chart the cumulative sum.
Axis Label:	Enter the Axis Label you want displayed on the Chart.
Chart Type:	Select from: Bar (3D) - Compares Values (Y-axis) across Categories (X-axis). Three Dimensional Option available. Column (3D) - Compares Values (X-axis) across Categories (Y-axis). Three Dimensional Option available. Line - Markers displayed at each Category Value. Pie - Displays the contribution of each Category Value to a total.
Title:	Enter the text that will be displyed as the Chart Title

Click on OK to display the selected data in the selected chart format.

The following Options are available from the Chart Form Toolbar:

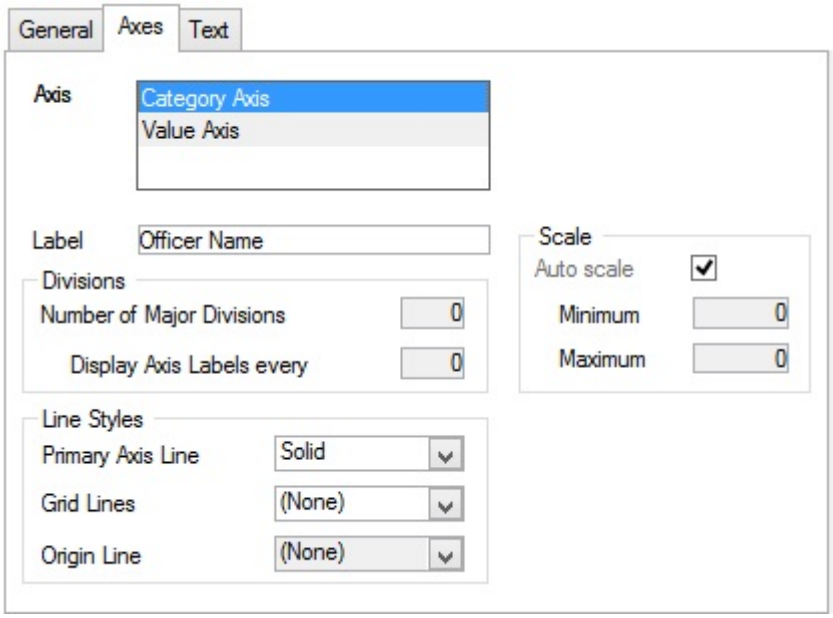
Chart Properties



The current values will be displayed in each field and may be edited to change the appearance of the chart:

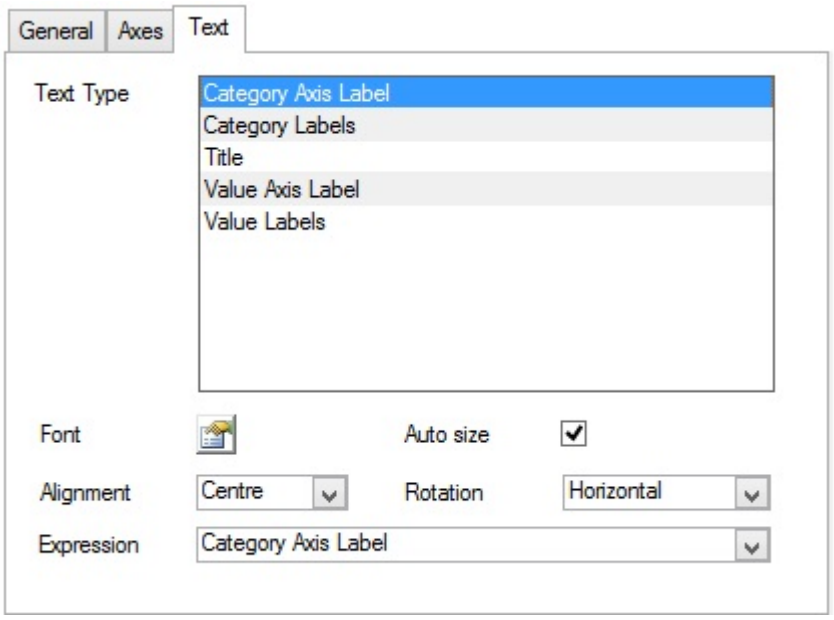
Chart Type:	You may change the chart type by selecting another chart type from the drop down list.
Title:	You may edit the chart Title
Legend:	You may change the Legend position by selection from the drop down list.
Spacing:	(not pie charts) You may change the Spacing between the categories.

Any updates made in the above fields can be previewed in the preview box on the left by clicking on the Test button.



The Axes tab will be available for editing where a bar, or Column chart has been selected. The current values will be displayed in each field and may be edited to change the appearance of the chart:

Axis:	Highlight the axis you want to update.
Label:	Modify the Axis Label
Scale:	Applicable for Value Axis only. Auto Scale Box: Checkbox ticked will scale the axis based on the minimum and maximum data value found. Checkbox un-ticked will enter default minimum and maximum value based on the current data query results. You may then amend either value to restrict the values being charted to a narrower range.
Divisions:	Applicable to Value Axis only. Number of Maximum Divisions (n) - Displays 'n' evenly spaced tick marks along the axis bar Display Axis Labels every (n) - will display the data value on every 'n'th tick mark
Line Styles:	Primary Axis Line - The format of the Main Axis Line. Select the visual line style from the drop-down list. Grid Line - The format of the line displayed at each tick mark division. Select the visual line style from the drop-down list. Origin Line - The format of the line displayed at the origin (0). Select the visual line style from the drop-down list.



The current values will be displayed in each field and may be edited to change the appearance of the chart:

Text Type	Highlight the Text Type you want to update.
Font:	To change the font format of the Text Type, click on the Font Properties Box. The font palette window will open, select the combination required and click on the OK button in the Font window.

Auto size:	Auto Size Box: Checkbox ticked will scale the text proportional to the chart
Alignment:	Aligns the Text Type. Valid Values are Left/Right/Centre/Justified.
Rotation:	Rotates the Text by the selected Angle and Direction.
Expression:	States how the data is displayed, Valid values are dependent on Text Type. E.g. Percent OR Value.

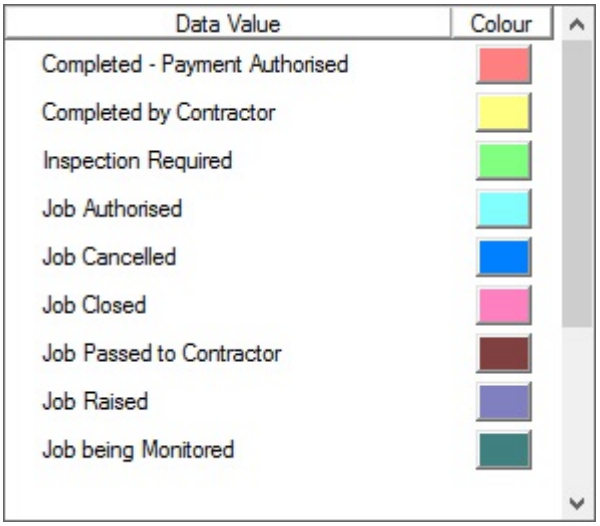
To save the changes, click on the OK button in the Chart Properties form. Otherwise, click on the Cancel button.

To view/edit the properties of the chart, click on the Properties button.

There are three areas of Chart Properties: General, Axes and Text

Legend Button

Click on the Legend Button to display the Legend Properties dialog:



You may change the colour assigned to any value by clicking on its current Colour Box. The colour palette window will open, click on a new colour and click on the OK button.

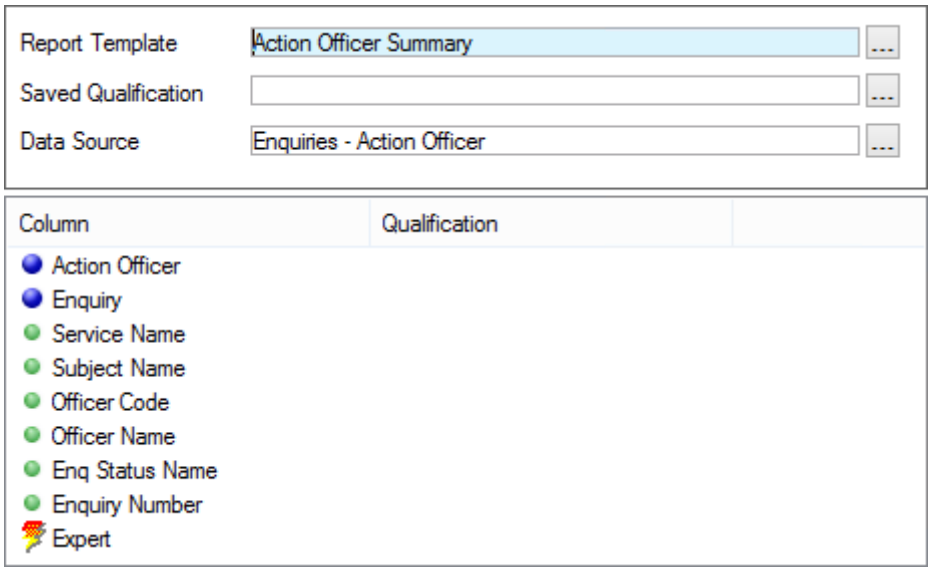
To save the changes, click on the OK button in the Legend Properties form. Otherwise, click on the Cancel button.

Creating Reports

Use the Create Report button to design a report format for the data query results. See **Creating a Report Template** on page 17.

Reports

The Reports library stores previously created reports and may be used to create new Reports



Report Template:	Select an existing Report from the pick list. The pick list references the Reports library. When an existing report is selected, the related Saved Qualification (if one is associated with the Report), and the Data Source will be entered into the following fields. Existing Report may have further Qualifications imposed using the Qualification pane below. Where a new Report Template is to be created, this field should be left blank.
Saved Qualifications:	IF a Report Template is selected in the field above, the related Saved Qualification (if any) will be entered. If no Report Template is selected, then a Saved Qualification may be entered to select the data on which to base a new Report format. The pick list references the **Saved Qualification Lookups.**
Data Source:	If a Report and / or a Saved Qualification are entered in the fields above, the related Data Source will be automatically entered in this field. If no Data Source has been auto-entered then a Data Source may be entered to select the data on which to base a new Report format. The pick list references the **Data Source Lookup.**

Where an existing Report Template is selected, you may qualify the data in the Qualification pane, then click on Ok to run the report and view the preview.

Where no Report Template is entered, the Specify Report Sort dialog will be displayed when you click on 'OK', to begin creating a Report Template.

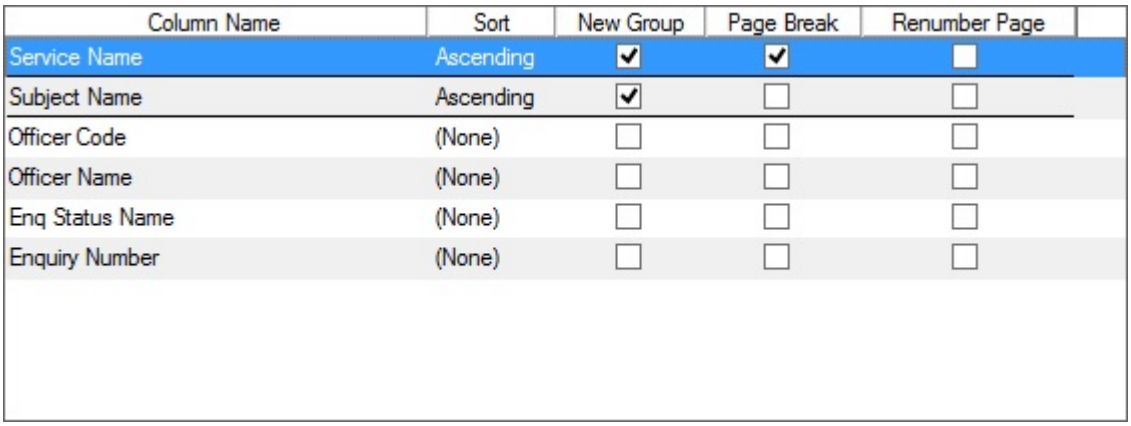
Creating a Report Template

Reports are created from the Create Report button in the Data Query Preview window, and from the Report window where no Report Template is specified.

- To create a report from the Data Query Preview window, click on the Create Report button.
- To create a report from Report Qualification window, enter a Saved Qualification if required (in which case the associated Data Source will be auto entered), or enter a Data Source. Click on OK.

In either case the Specify Report Sort dialog will be displayed.

Specifying a Report Sort



Column Name	Sort	New Group	Page Break	Renumber Page
Service Name	Ascending	☑	☑	☐
Subject Name	Ascending	☑	☐	☐
Officer Code	(None)	☐	☐	☐
Officer Name	(None)	☐	☐	☐
Enq Status Name	(None)	☐	☐	☐
Enquiry Number	(None)	☐	☐	☐

Use the dialog to specify how data should be grouped, and a data sort for the columns that will be sorted.

Column Name:	Each viewable column in the Data Query will be listed in the dialog. The columns may be selected by clicking on the relevant row. The columns may be moved up and down the list by clicking and dragging to move them up or down.
Sort:	All columns will default to (None). You may select Ascending or Descending by clicking on the required column and selecting from the drop-down. **Note:** Columns included in a Group, but not assigned a sort, will default to ascending
New Group:	You may group the data by the selected column by clicking the check box. Where data is grouped, all the columns that appear above the selected column in the list will also be checked as 'New Group'. You should therefore re-sort the grouping columns to the top of the list in the order in which you want the grouping to be carried out.
Page Break:	You may specify a page break by ticking the column at which the report will break onto a new page. **Note:** Page Break may only be selected where 'New Group' is ticked for the column
Renumber Page:	Check this to re-start the page numbering from 1 each time this Group is encountered in the report.

Note: Renumber Page may only be selected where 'New Group' is ticked for the column

In the above example, the data will be grouped first by Service Name, and within each group of Service Name, will be grouped by Site Name. Within each Service and Site, the data will be displayed with the latest logged date first in the list, descending to the earliest logged date. The report will break onto a new page for each new Service Name included in the report.

Click on OK to display the Report Template Design form

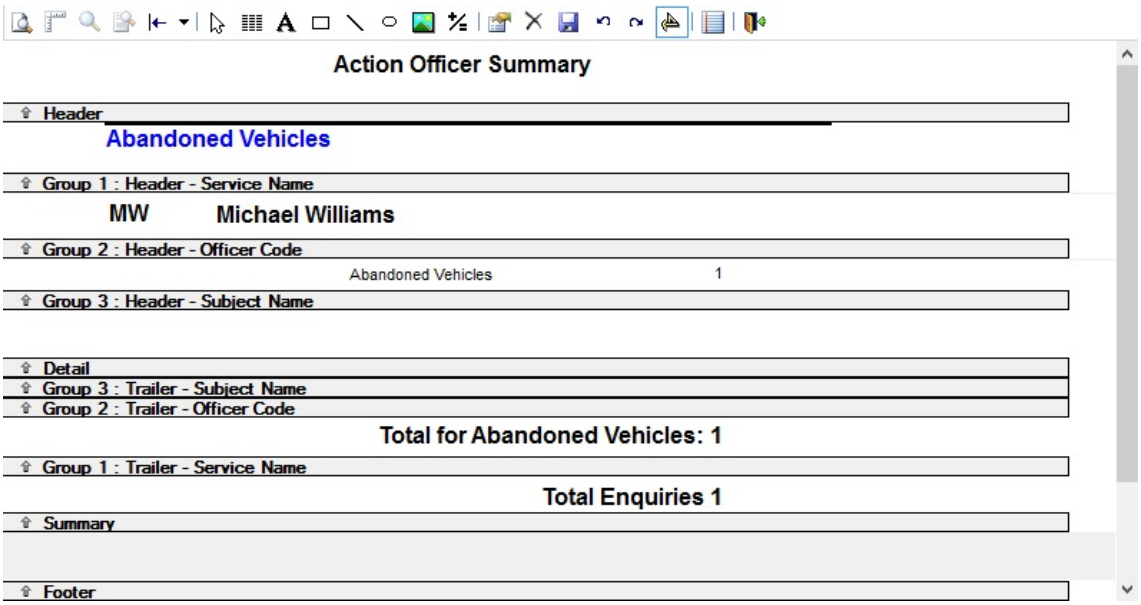
Re-displaying the Specify Report Sort dialog:

You may re-display the Specify Report Sort dialog by clicking on the list button in the Design Mode window.

Designing the Report Template

The Report Template Design form is toggled with the Report preview form using the Design Mode button:

The Report window is usually first displayed in Design mode, i.e. with the Design Mode button active or 'pushed in'. To switch from Design mode to Preview Mode (or Preview Mode to Design Mode), click on the Design Mode button.



The Report window in Design Mode allows the placement of Data Columns, text, expressions and graphics into the white areas of the design window. Each of these placement areas is described in the grey row underneath.

Placement Areas:

Header:	Any object placed here will appear at the top of each page of the report.
Group n: Header:	There will be as many groups shown in the design window as were selected in the Specify Report Sort window. The first (top) group in the Specify Report Sort window will be numbered 1, the next 2 and so on. Any object placed in the Group Header will appear in the report every time a new group of that level is begun.
Detail:	Any object placed in this area will form the body of the report, and will be displayed for each available record
Group n: Trailer:	Group Trailers correspond to Group Headers. Any object placed in the Group Trailer will appear in the report every time a new group of that level is ended.
Summary:	Any object placed in the Summary area will appear once at the end of the report.
Footer:	Any object placed in the Footer area will appear at the foot of each page.

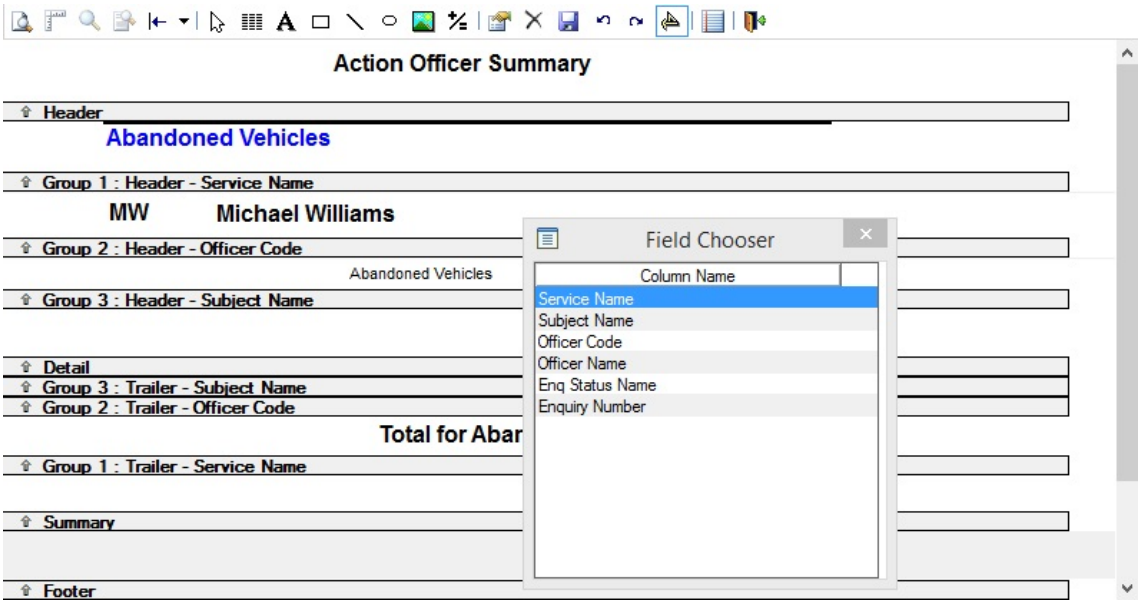
You may increase, of decrease the space available between one placement row and another by clicking and dragging the grey description bars.

You may hide placement areas, either because they contain no objects (so that you do not get blank rows in the finished report), or because you wish to hide the objects contained in the placement area in this Report Template. To hide placement areas move the grey description bar up to close the placement area.

Objects are placed using the tool buttons in the report window. These are:

Data Columns

Click on the data columns button to display the Field Chooser:

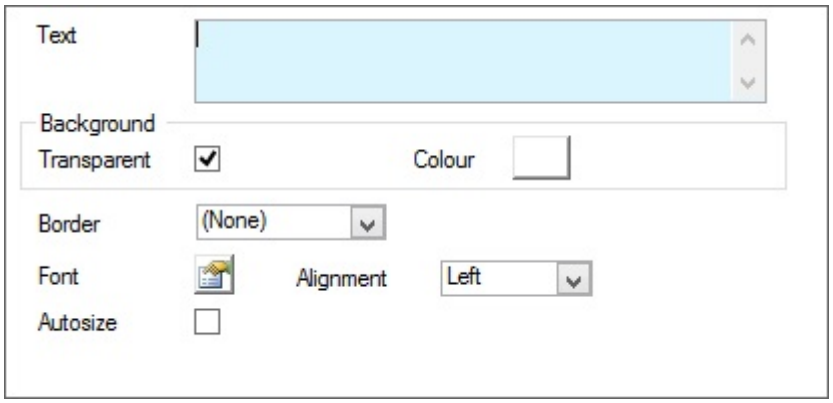


The Field Chooser will list every column marked as viewable in the Data Source. To place a column in the Report, click and drag the column's name. The columns when placed in the design window will display the data relating to the first record in the Query result.

Fields may be formatted by clicking on them in the Report window to display the 'handles'. They may be moved and re-sized by dragging the object or the selection handles; and formatted using the Object Properties dialog.

Text

Click on the text button and click and drag in the required placement area of the report design template to define the text area. The Object Properties dialog will be displayed:



The proposed text is entered in the 'Text' field.

Transparent:	Check to set a transparent background in the area dragged to accommodate the text.
Colour:	If Transparent is not checked, you may select a background colour for the Text box, by clicking on the colour box and selecting a colour from the palette.

Border:	The Text area may be bordered in any of the way listed in the drop-down menu.
Font:	Click on the font button to display the font dialog and set the font properties.
Alignment:	Text alignment is set by selection from the drop-down menu.
Autosize:	Check this to have the text box automatically wrap text and resize ahould the text extend beyond the box. **Note:** You may autosize the 'Detail' band so that this will also resize to accommodate the resized text box.

Click on OK to place the text in the design window. Text may be formatted by clicking on it in the Report window to display the 'handles'. It may be moved and re-sized, and formatted using the Object Properties dialog.

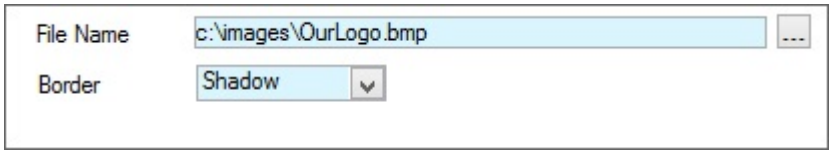
Drawing Shapes

You may draw rectangles, lines or ovals by clicking on the relevant button, and clicking and dragging in a placement area of the report window.

Shapes may be formatted by clicking on a shape in the Report window to display the 'handles'. It may be moved and re-sized by dragging the object or the selection handles; and formatted using the Object Properties dialog.

Graphics

Click on the Graphics button and click and drag in the required placement area of the report design template to define the Graphics box. The Object Properties dialog will be displayed:



File Name:	Enter a path and filename for the graphic. Graphics may be Windows Metafiles (WMF), or Windows Bitmaps (BMP)
Border:	The graphic may be bordered in any of the way listed in the drop-down menu.

Click on OK to place the graphic in the design window. A graphic may be formatted by clicking on it in the Report window to display the 'handles'. It may be moved and re-sized, and formatted using the Object Properties dialog.

Alignment

The Alignment tool will align and resize all the currently selected objects in the following ways:

Align Objects :	Select Left, Right, Top or Bottom, to align all the currently selected objects on left, right, top or bottom with the first one selected.
Align Horizontal /Vertical:	Select Horizontal or Vertical, to align all the currently selected objects with the horizontal or vertical axis of first object selected.
Size Height /Width	Select Height or Width, to resize all the currently selected objects to the height or width of first object selected.
Space Horizontally /Vertically	Select Horizontally or Vertically, to apply the spacing between the first two selected objects to the horizontal or vertical spacing between all the other objects currently selected.

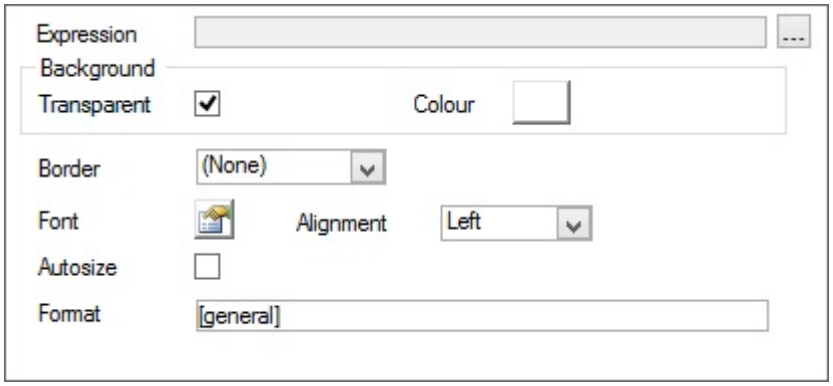
Note: You may select more than one object by clicking on the first object, and then holding down the shift key while clicking on the second and subsequent objects.

Send to Front / Back

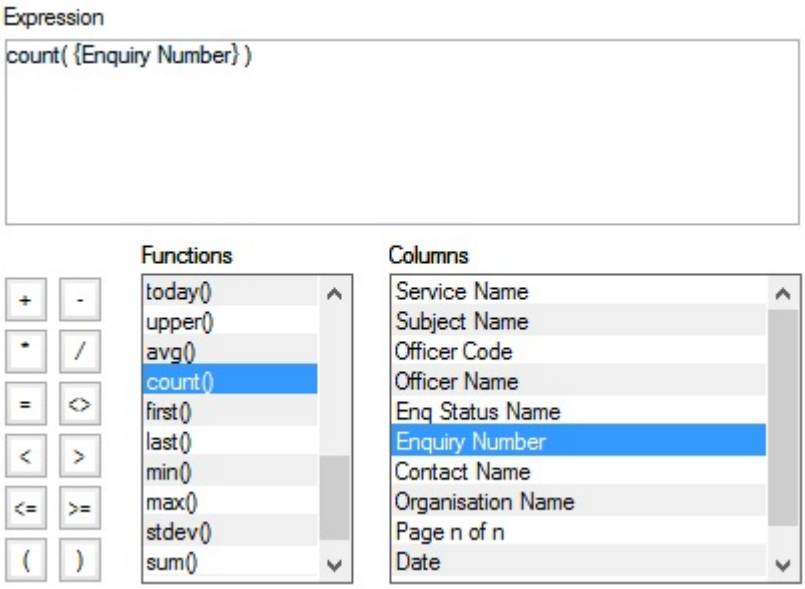
You may change the order of a selected object by clicking on it with the right mouse button to display the fly-out menu. Select from 'Bring to Front', or 'Send to Back'.

Expressions

Click on the Expressions button and click and drag in the required placement area of the report design template to define the expression area. The Object Properties dialog will be displayed:



You may enter an expression, or click on the pick button to display the Expression dialog where an expression may be built:



Double click on Functions in the Function list, and Columns in the Columns list, to build up an Expression in the Expression field. You may also directly edit the Expression, and add operators from the buttons on the right hand side.

Click on Ok to return the Expression to the Expression field of the Object Properties dialog

Transparent:	Check to set a transparent background in the area dragged to accommodate the text.
Colour:	If Transparent is not checked, you may select a background colour for the Text, by clicking on the colour box and selecting a colour from the palette.
Border:	The Text area may be bordered in any of the way listed in the drop-down menu.
Font:	Click on the font button to display the font dialog and set the font properties.
Alignment:	Text alignment is set by selection from the drop-down menu.
Format:	Enter a format for the result of the expression. The illustrated example (#,##0.00) will return the result to two decimal places.

Object Properties

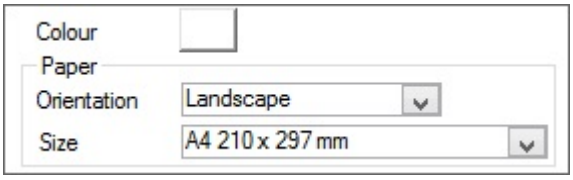
Select the object you wish to edit and click on the Object Properties button to display the Object Properties dialog.

The Object Properties dialog will vary in appearance according to the object that has been selected. So if text is selected, the Object Properties dialog will contain the fields relevant to text format.

Multiple objects (of the same type) may be selected by SHIFT+clicking on the second and sub-sequent objects, and formatting applied to all selected objects at once.

Each mode of the Object Properties dialog is explained in the sections above relating to placing Objects.

If no objects are selected, clicking on the Object Properties button will display the following dialog:



Setting DataWindow Properties

The Datawindow Properties dialog sets the defaults for the datawindow and page orientation for printing:

Colour:	Select a colour from the palette to set the window background colour.
Orientation:	Select the page orientation for the printed report. Choosing Landscape or Portrait will override the printer defaults for page orientation. Choose 'Default' to use the printer default.
Size:	Select the page size for the printed report. Choose 'Default to use the printer default.

Setting DataWindow Properties for the Band

Use the right-mouse button to click in a group band. This will display the object Properties dialog for the band

Border:	The Text area may be bordered in any of the way listed in the drop-down menu.
Font:	Click on the font button to display the font dialog and set the font properties.
Alignment:	Text alignment is set by selection from the drop-down menu.
Autosize:	'Detail' Gourp band only: Check this to have the group band automatically resize to accommodate resized text boxes
Format:	

Undo and Redo

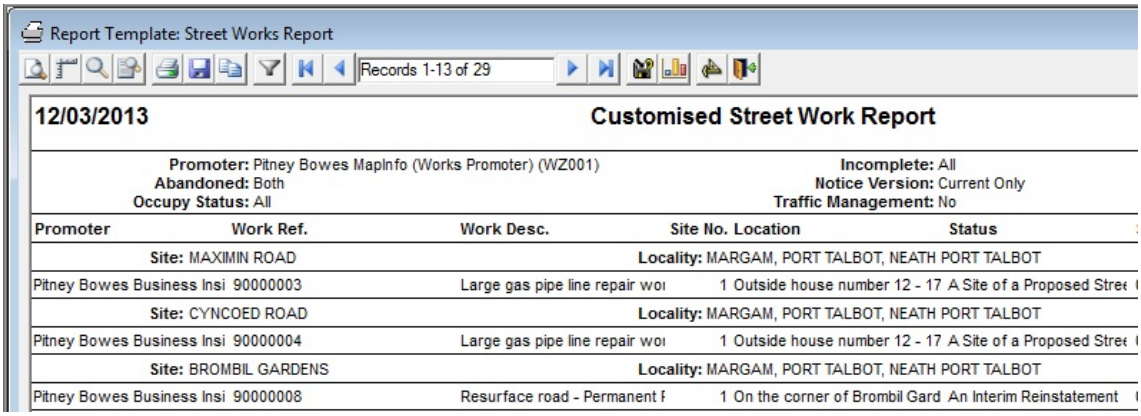
Click on the 'Undo' button to undo the last action (up to the last 10 actions).

Click on the 'Redo' button to repeal the 'undo' command (up to the last 10 'Undo' actions).

Previewing Reports

Click on the design mode button to switch to Preview mode

The preview mode displays the data resulting from the Data Source and saved Qualification, in the format set out in the report Template design



The Report Name is shown on the Report Preview when there is no Saved Qualification against it. If a Saved Qualification exists then the Qualification name will be shown on Report Preview instead.

You may switch back and forth between design mode and preview mode until the report layout is correct.

In Preview mode you may click on the following buttons:

- to save the Qualification used in the Data Query.
- to create and save a Chart.

It is also possible to view report data on the map. The **Viewing Data Sources on the Map** section provides more information on this.

Saving a Report Template

Saving may only be done in the Design mode view. To save the report template, click on the 'Save' button. The Save Report Template Dialog is displayed.

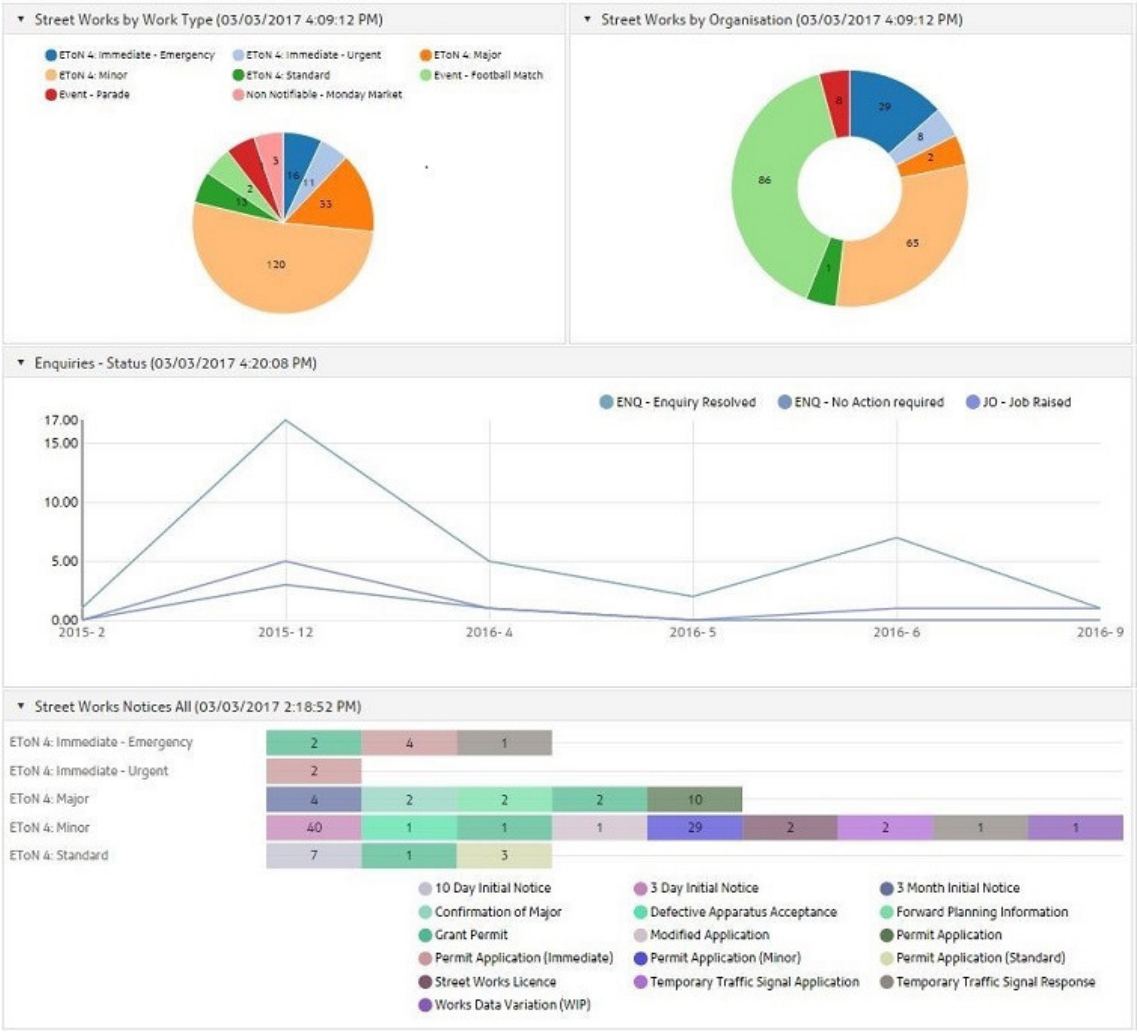
Enter a name for the report Template, and optionally, explanatory notes. Click on OK to save the template.

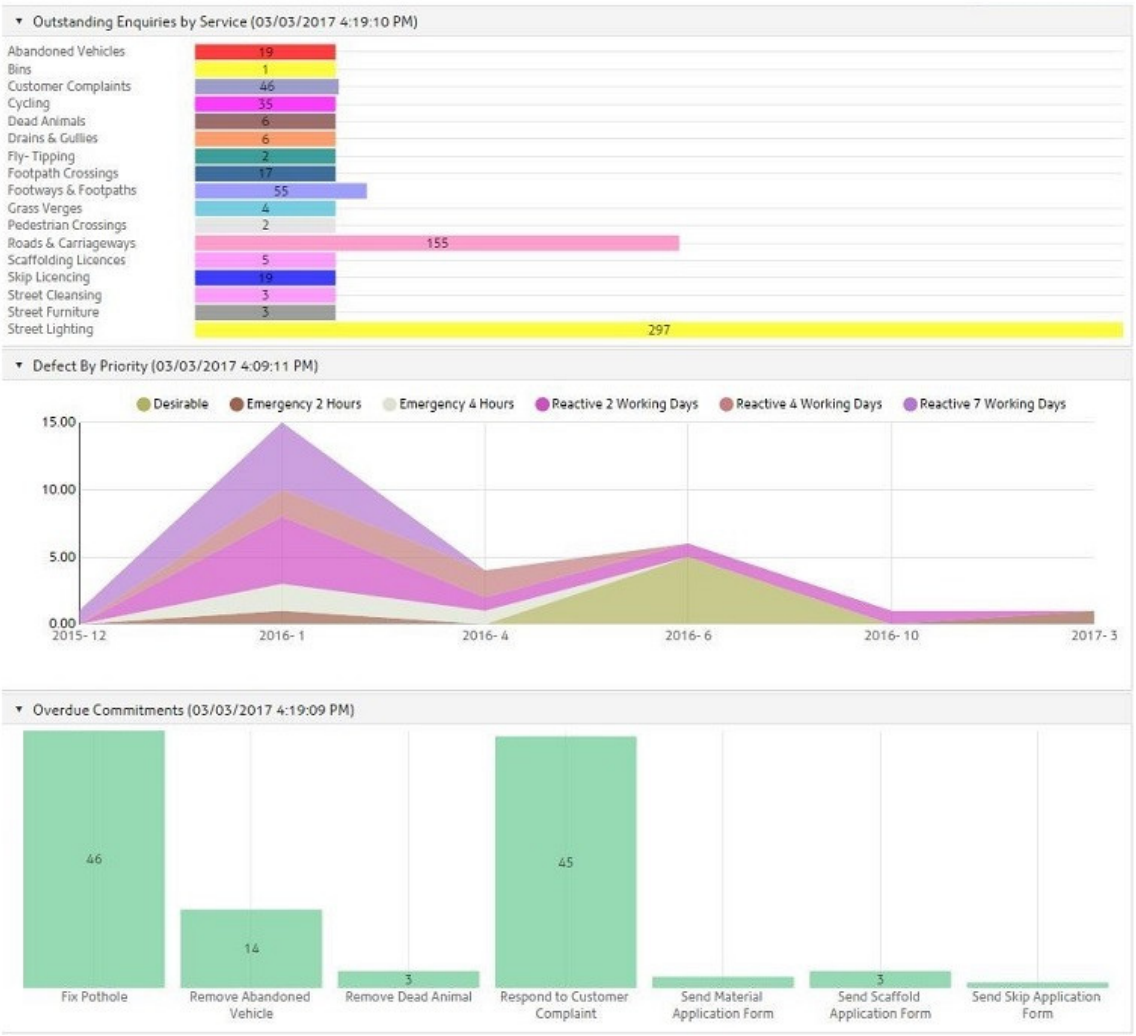
Note: Closing the report window will not prompt you to save your changes.

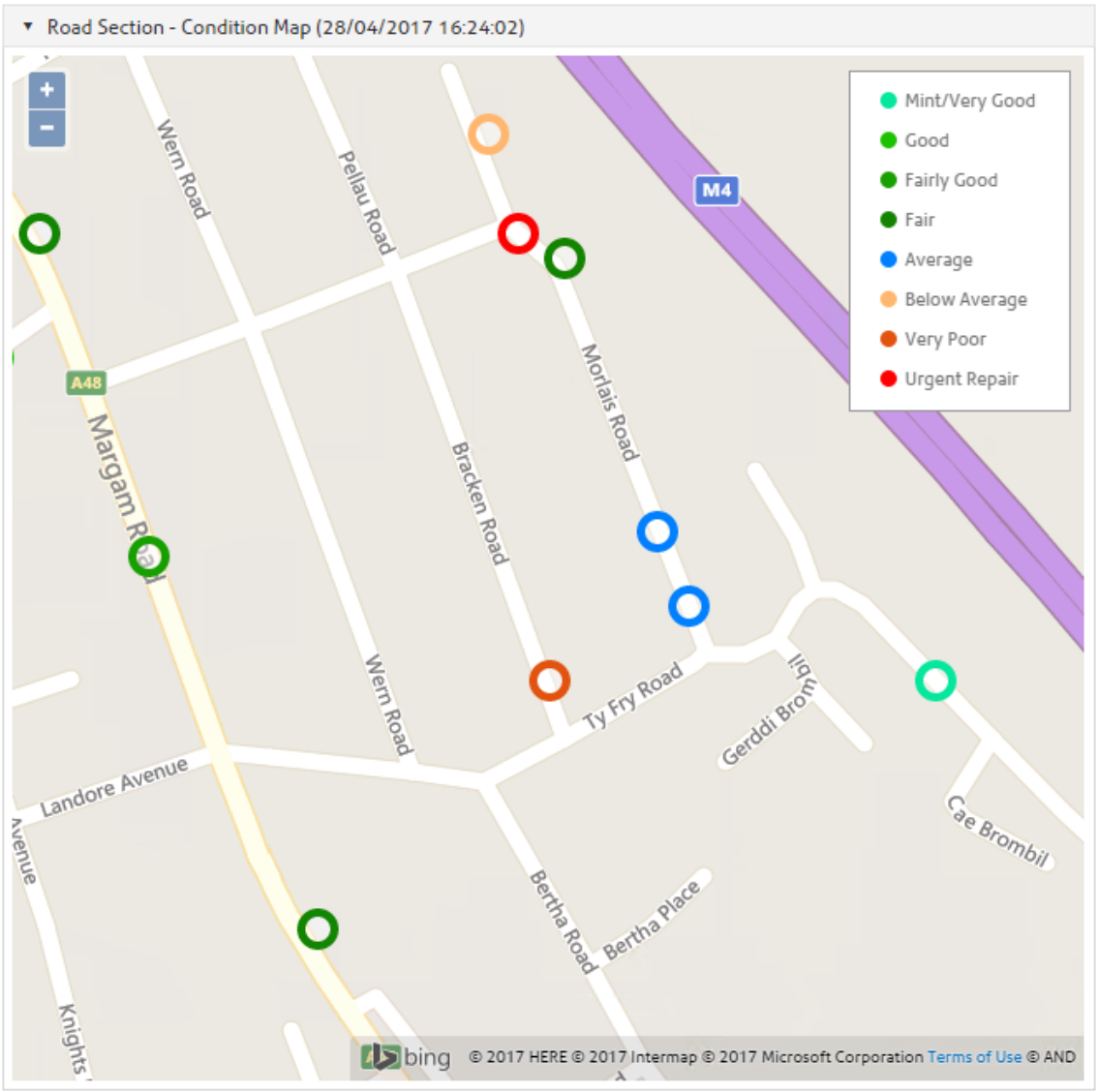
The Dashboard

The Dashboard provides a graphic display of information from Confirm. This information is derived from Data Sources, which are transmitted to the Dashboard, using the Scheduled Reports functionality and the Task Processor, at user-defined intervals.

Sample Dashboards:




Outstanding Enquiries by Service (03/03/2017 4:19:10 PM)
Abandoned Vehicles 19
Bins 1
Customer Complaints 46
Cycling 35
Dead Animals 6
Drains & Gullies 6
Fly- Tipping 2
Footpath Crossings 17
Footways & Footpaths 55
Grass Verges 4
Pedestrian Crossings 2
Roads & Carriageways 155
Scaffolding Licences 5
Skip Licencing 19
Street Cleansing 3
Street Furniture 3
Street Lighting 297
Defect By Priority (03/03/2017 4:09:11 PM)
Desirable
Emergency 2 Hours
Emergency 4 Hours
Reactive 2 Working Days
Reactive 4 Working Days
Reactive 7 Working Days
15.00
10.00
5.00
0.00
2015- 12
2016- 1
2016- 4
2016- 6
2016- 10
2017- 3
Overdue Commitments (03/03/2017 4:19:09 PM)
46
14
3
45
3
Fix Pothole
Remove Abandoned Vehicle
Remove Dead Animal
Respond to Customer Complaint
Send Material Application Form
Send Scaffold Application Form
Send Skip Application Form



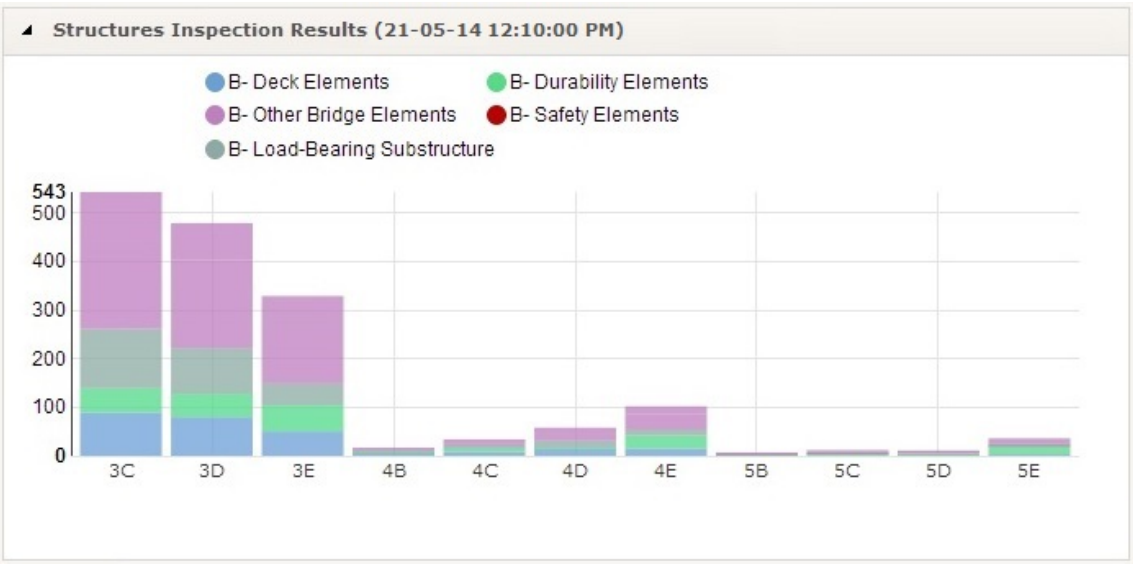
The data being displayed on the Dashboard can be viewed by clicking on the Category Text, on the Bar or data objects on the Map to drill down. The data will be displayed in either a grid format, or (if a Report Template has been linked to the Scheduled Report) in the specified Report format.

When drilling down into the Dashboard the results can be viewed on the Map. The **Viewing Data Sources on the Map** section provides more information on this.

The Dashboard has its own window in Confirm, and if a User has a Dashboard defined, it will launch automatically when Confirm is opened by that User. If the Dashboard is the top-most (active) window in Confirm then it will refresh at intervals defined by the 'Refresh Dashboard After' setting on **Dashboard User Settings** on page 90. If a different window is active then the Dashboard will not refresh unless the 'Refresh Dashboard while Inactive' setting is ticked on the Dashboard User Settings screen.

The Dashboard button can be used to launch the Dashboard (if it has been closed).

Widgets



The Dashboard is made up of sections, each containing a graph, counter, pie chart or map. These components of the Dashboard are known as **Dashboard Widgets** on page 74, and each one is user-configurable to show particular information (as defined by a Scheduled Report and Data Source), in a particular way (as defined by the display options selected for the Widget), in a particular position on the Dashboard (as defined in the Dashboard set-up).

Dashboard

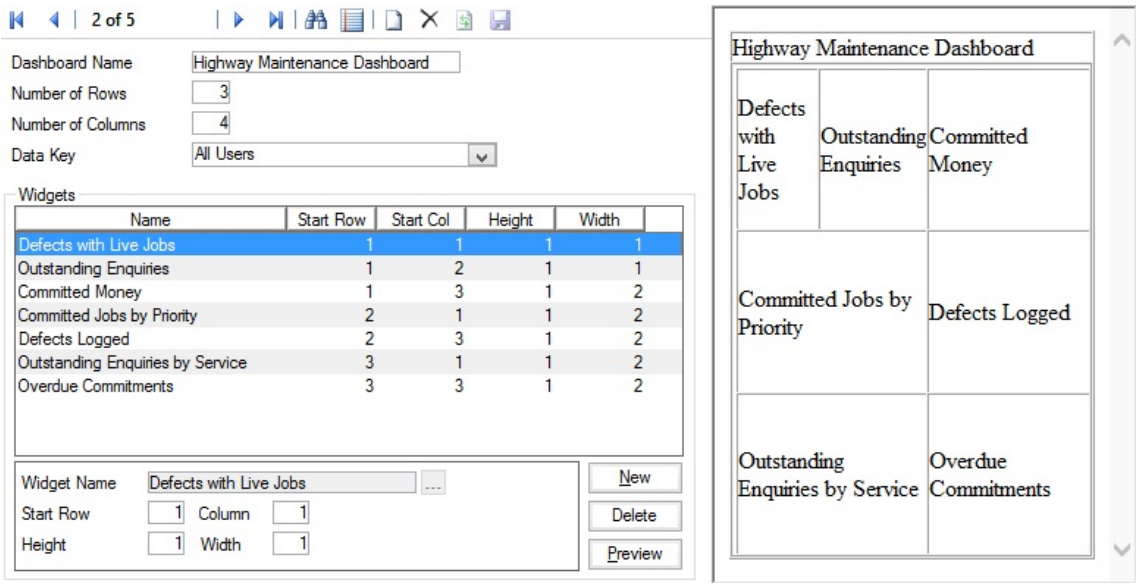
Overview

There are 4 steps required to configure a Dashboard to display data and each of these are required before the next can be completed.

1. A **Data Source** is required to retrieve the information from Confirm.
2. A **Scheduled Report** is required to set which data source to use and to determine when and how often the data should be updated.
3. One or more **Dashboard Widgets** to determine the Presentation Style to be used for the data. Each widget will need a scheduled report.
4. **Creating the Dashboard** detailed below. Determines which widgets the dashboard is going to show.

Creating the Dashboard

The dashboard screen is used to set how the grid will look based on the number of rows and columns chosen. You can then add one or more widgets to be displayed and where in the grid you wish each to appear. The 'Preview' button can be used to show how the grid will look to ensure the layout of widgets will be shown on the dashboard as desired.



Dashboard Name:	An unique name
Number of Rows:	The number of rows on the Dashboard. This may be subsequently amended providing you do not try to remove rows that have a Widget, or part of a Widget, in them
Number of Columns:	The number of columns on the Dashboard. This may be subsequently amended providing you do not try to remove columns that have a widget, or part of a Widget, in them
Data key:	Enter a data key to restrict the Access to this Dashboard

Widgets are added by selection in the 'Widget Name' field below. Each Widget may span a number of rows and columns, but they may not overlap.

Dashboards may be subsequently edited to add, remove, or re-arrange Widgets.

Data Sources

Data Sources and Qualifications provide the raw data for the Dashboard - so the required Data Source must be created - with any qualifications that are required. The same data source may be used in several different ways - both by qualifying it, and by changing the Widget Type and data selection.

Configuring Data Sources to restrict by User/Action Officer

Where a Dashboard will need to restrict data to entities allocated to the logged-in User/Action Officer the Data Source must include Login details in the following way:

1. The Data source must contain the column: action_officer.login_name.
2. A Linked Table must be established with the table: User Login, linking through the login_name.
3. The column Login Name should have 'Must be Qualified' checked.

Configuring Data Sources to Restrict by Data Key

Where a Dashboard is required to restrict data by Work Group - this may be done in the following way:

1. The Data Source must contain the appropriate data_key column, this might be: contract_area.data_key for Jobs, or enquiry_subject.data_key for Enquiries.
2. The column Data Key must have the Column Role: Data Security Key set.

Please refer to the **Data Sources** on page 51 section for further details on creating Data Sources and details on how to configure the **Drill-down** feature.

Configuring Attribute Types for Dashboard Widgets

Feature **Attribute Types** are used to assign the colours and display orders to the Bars, Columns, Maps and Counter Traffic Lights in the Widgets

Where the colour is to be assigned based on a Category Expression (for Column, Bar, and Map presentation styles), or a Series Expression (Gauge, Column - Stacked, and Bar - Stacked presentation styles), the Attribute Type must be 'Pick List' and the Attribute Values must carry the same name as the values resulting from the Expression.

If no colours are specified for the data then a random colour will be selected when the Dashboard window is opened. This colour will remain the same until the window is closed and reopened.

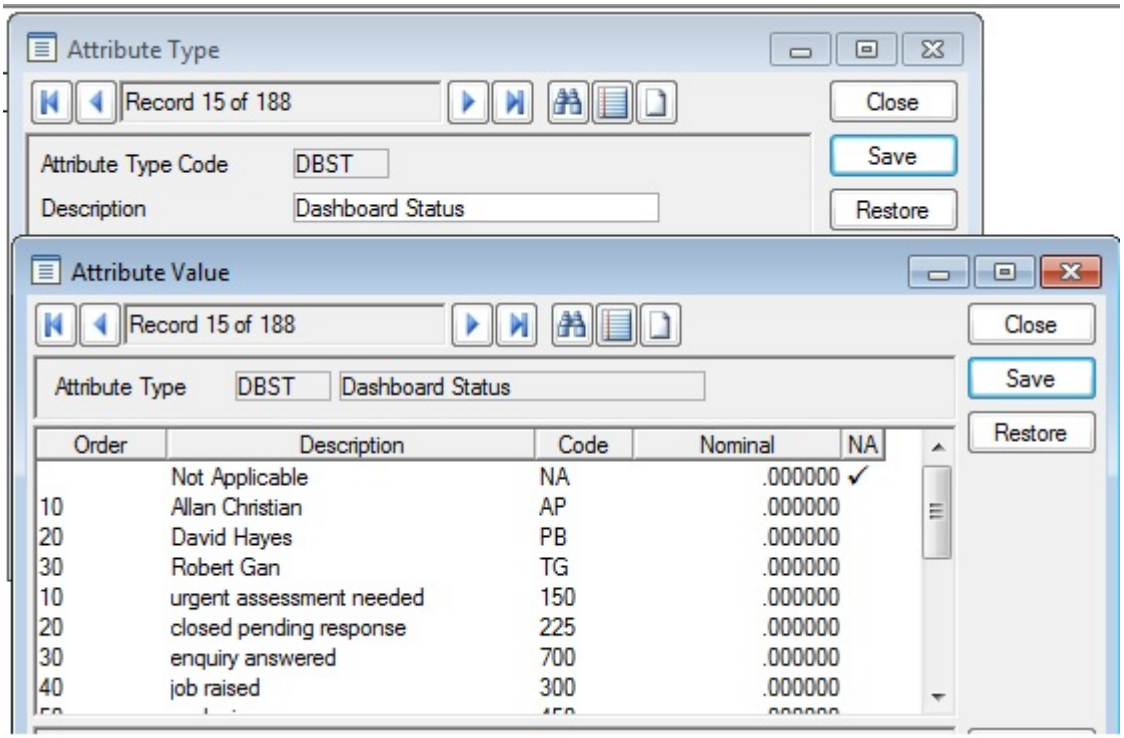
The following explains how the Attribute Types works for the different presentation styles:

For 'Bar' , 'Column' and 'Pie' the Category values are matched against the Attribute Value Descriptions to determine a colour. e.g. for a bar graph of outstanding Enquiries by Subject, where you want to use a different Colour for each Subject - the Category Expression would be Subject Name and the Attribute would need to have Values which match the Description with the Subject Names.

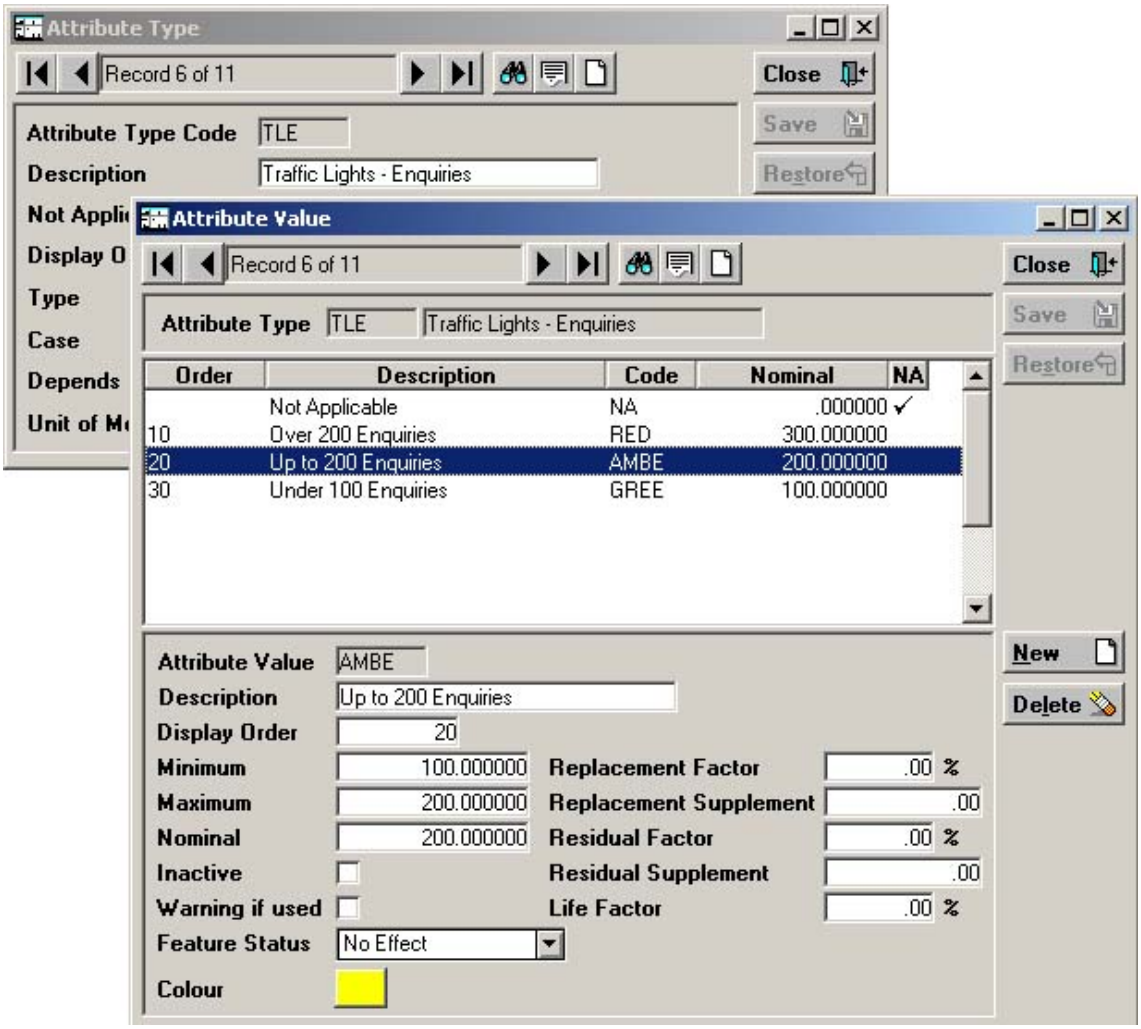
Similarly, Display Order specified on the Attribute Value will be used to determine order to display the bars. For example, Jobs Raised with Display Order as 10 would be displayed before Jobs Committed with Display Order as 20.

For 'Bar - Stacked', 'Column - Stacked' , 'Gauge' , 'Line' and 'Stacked Area' presentation styles the Series values are matched against the Attribute Value Descriptions to determine a colour. e.g. for a stacked bar graph of outstanding Enquiries by Officer you could colour based on the Status of the Enquiries. The Series Expression would be the Enquiry Status Code, then the Attribute would need to have Values with Descriptions matching those codes. The display would then show a bar for each Officer where the bar was split into coloured stripes depending on how many Enquiries at each Status the Officer had.

Display Order can be used to define the order for Officer and the order of Enquiries in each Status. In the below screenshot, Allan Christian will be displayed before David Hayes and Enquires with Status as 'urgent assessment needed' will be stacked below 'closed pending response'.



The presentation style 'Counter' will assign colours based on number ranges, and in this case the Attribute Type must be 'Number', and each value must have a number range defined as well as a colour. In this case a count of all Outstanding Enquiries can be set up to be green if there are less than 100, amber up to 200, and red if more than 200.



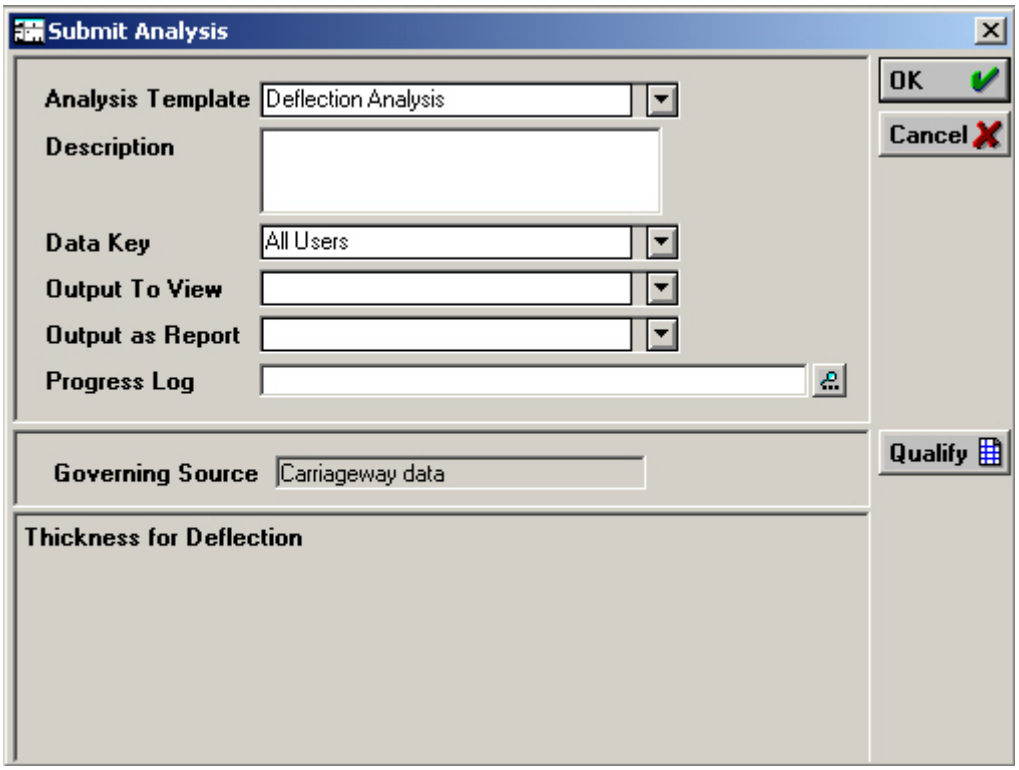
The 'Map' presentation style can assign colours based on values shown in the Category Expression. Where the Category Expression will contain numeric values, specify a 'Number' Attribute Type. For text or pick values, specify a 'Pick' Attribute Type. If the 'Use Pie Chart Icons for Clusters' Widget option is set to 'No', the colour of any map clusters will be determined by that of the Attribute Value with the highest Display Order contained within it.

Submit Analysis

(Universal Analyser module)

The Submit Analysis utility is used to submit data for analyses into Confirm with the ability to specify the analysis stage results for output.

An **Analysis Template** must be in place in order to use the Submit Analysis uility.



This is the top part of the Submit Analysis form and defines what Analysis is to be run, and what output, if any, to view afterward..

Analysis Template:	The Template that defines what data is to be analysed, how it will be analysed and what the Analysis output will be. The drop down list references the **Analysis Templates library** **Note:** When a Template is specified, the Data Query Qualification window will automatically open. This window is the same window outlined under the Qualify button below.
Description:	The description of the Analysis you are about to run
Output To View:	The Output Data to be previewed after the Analysis has finished running.
Output as Report:	The Report Design the Output Data is to be previewed in
Progress log:	Windows save as to pick or create

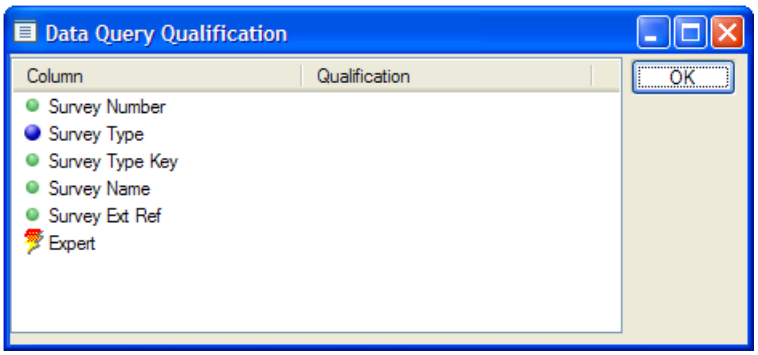
This is the middle part of the Submit Analysis form and defines what the Governing Source for this Analysis will be. This will be entered automatically from the Analysis Template selected above and may not be edited.

The lower part of the Submit Analysis form lists the Parameter Types that have been associated with the Analysis Template entered above.

Each Parameter Type will show the name it carries in this Analysis Template, and allow the entry or selection of a value. The type of value which may be entered is defined by the settings and values for the selected Parameter Type.

Qualify Button

To open the Data Query Qualification form to specify any column qualifications for this current Analysis, click on the Qualify button.



Column: The Columns specified in the Governing Queries Data Source to be retrieved (SELECT part of the SQL Statement), plus a GIS and Expert Column.

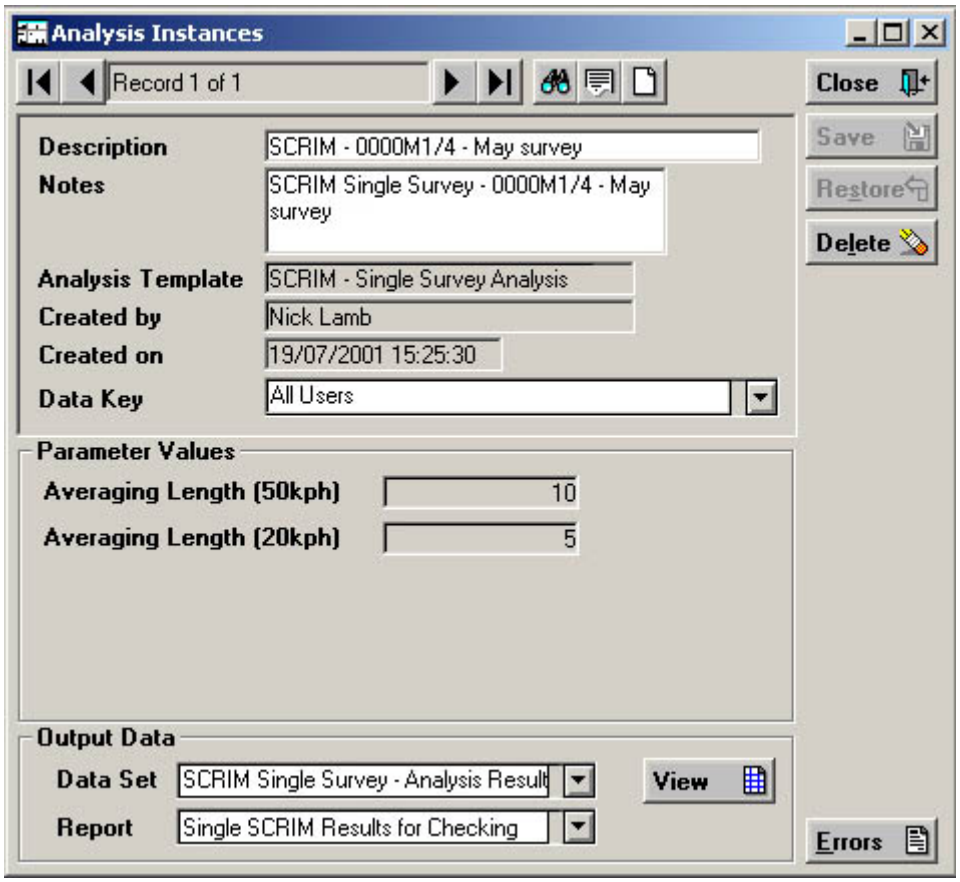
Qualifications: The retrieval criteria specified for the Column.

Analysis Instances

(Universal Analyser module)

The Analysis Instances form is used to view the stored analysis data-set results in Confirm in the Data Query Preview screen and to go on and produce the results in reports and/or Diagrams.

A record in this table is created each time a user invokes an analysis.



The top part of the Analysis Instances form contains the Analysis information such as the Name, the Template it was created from and who and when it was created.

Description:	(50) A short description to uniquely identify the Analysis Instance
Notes:	A long description of the Analysis Instance
Analysis Template:	The Template that this Analysis was created from
Created by:	The user who submitted the Analysis
Created On:	The Date Time when the Analysis was run.

The middle section of the Analysis Instances form lists the Parameter Values that were specified when the Analysis was invoked

The bottom part of the Analysis Instances form is used to select the Data-Set stage results for viewing.

Data Set:	The Data Set results to be viewed.

Report:	The Report Design the analysis results are to be previewed in

View Button

To view the Data Set results defined in the Data Set field, click on the View button

These results will be displayed in the Data Source Preview screen.

Errors Button

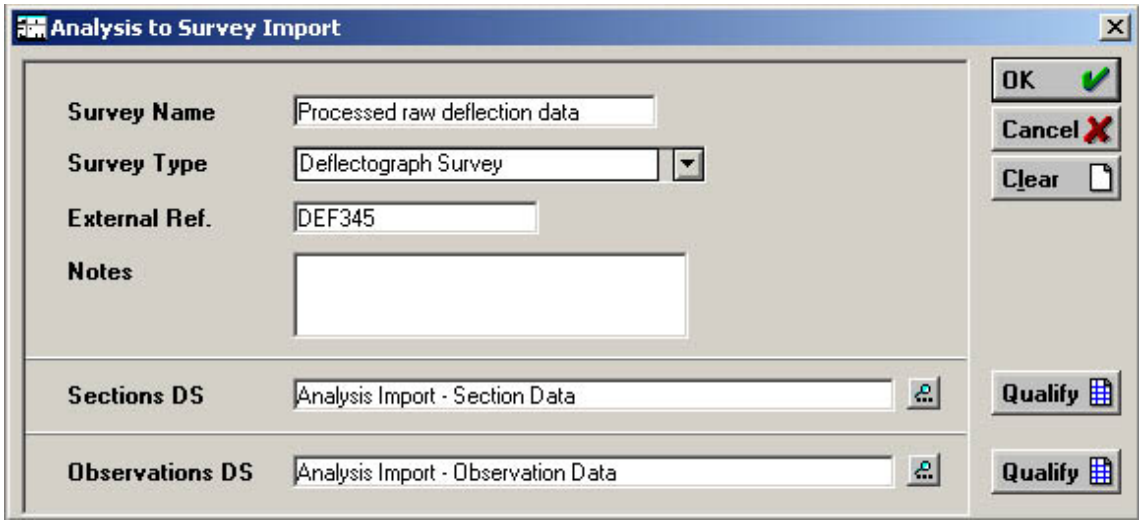
Click on the 'Errors' button to view the Errors and Warnings Analysis report which was generated at the time the Analysis was submitted. If no Errors or Warnings were recorded the Report preview will simply show: 'No Errors of Warnings recorded'

Where Warnings are recorded these will be shown prefixed by 'War-'.

Import Survey Analysis Data

(Universal Analyser module)

The Import Survey Analysis Data will copy the results of the universal analyser to the PMS tables for PANDEF and SKID calculations



Survey Name:	Enter a name to be assigned to the Survey that will be created.
Survey Type:	Select the appropriate Survey Type from the drop down list. The drop down list references the Survey Type Lookup.
	Network Manager\Survey Data Lookups
External Ref:	A free text field for an external reference
Notes:	An optional free text field.
Section DS:	Select the Data Source containing the section data for the survey.
Observation DS:	Select the Data Source containing the observation data for the survey.

Note: Columns names in the selected data sources must match the header names as specified in the import specification for surveys.

Qualify buttons

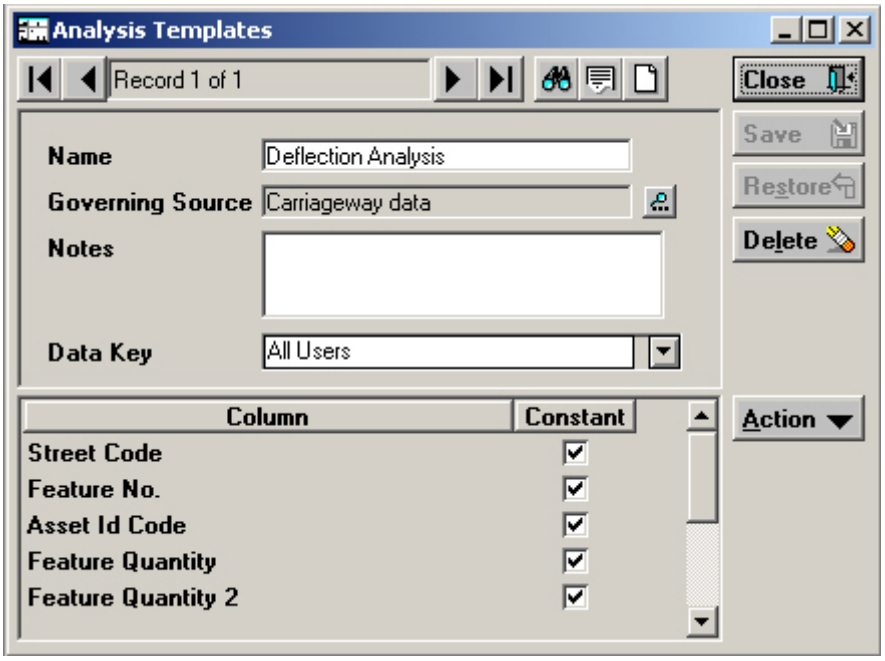
Use the qualify button to qualify each data source for the data to be retrieved and imported into the new PMS Survey.

Analysis Templates

(Universal Analyser module)

The Analysis Template utility is used to define all aspects of the analysis. This includes the queries, algorithms and the output data sets.

An Analysis Template has a single 'Governing' Data Source which is used to determine the scope of the Analysis. This would typically be Sections or Sections that occur on Surveys.



The top part of the Analysis Template form defines the Analysis Templates Name, the Data Source which governs the analysis and any notes.

Name:	A short description to uniquely identify the Analysis Template
Governing Source:	The Data Source that governs the analysis. Select from the pick list. The pick list references the **Data Source Lookup**
Notes:	An optional field for a long description of the Analysis Template

The bottom part of the Data Sources form is used to list the Table Columns specified in the Governing Source SQL Statement.

Column:	The Columns specified in the SELECT part of the SQL Statement of this Analysis Templates Governing Source
Constant:	Check to define the column in the Governing Source as a Constant. Uncheck if the Column is required for Qualifying in another area of the Analysis. **Note:** When the analysis runs it looks for the next unique combination of the columns that are ticked.

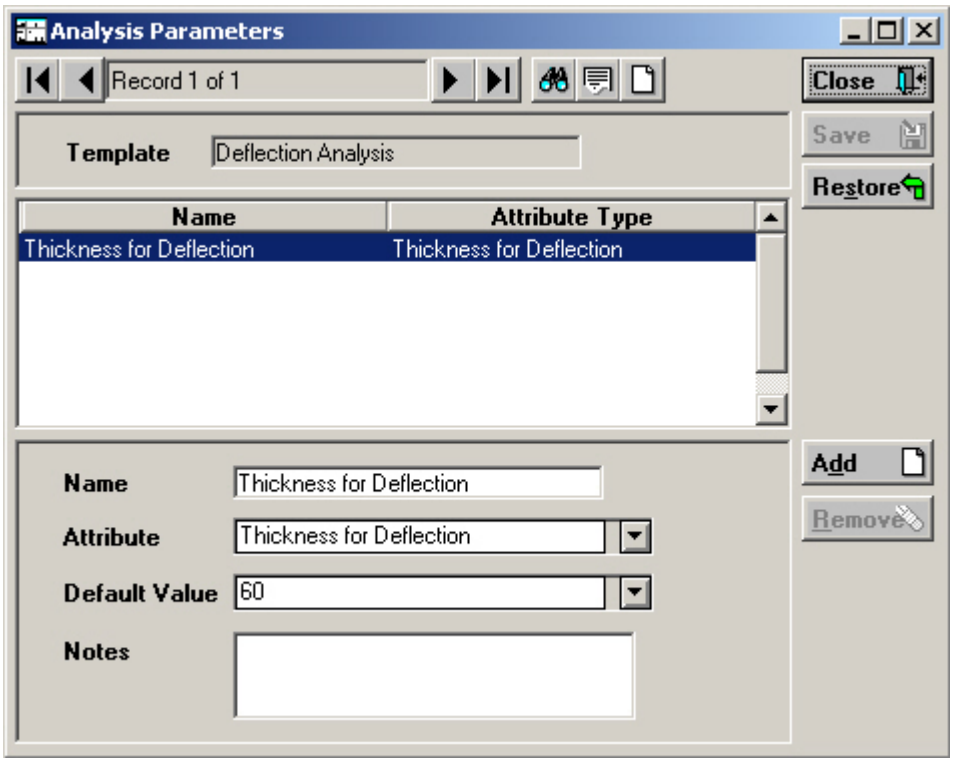
Action button - Edit Params

The Analysis Parameters form specifies additional parameter(s) that can be used in this analysis template.

This allows for:

- Qualifications to be specified against these additional parameters
- The option to specify the value that the algorithm requires on submittal of the Analysis.

To display the Analysis Parameters form, select the Edit Params Option from the Analysis Templates Action button drop-down list.



The Analysis Parameters form is divided into 3 parts:

The top part of the Analysis Parameters form displays the currently selected Template

The middle part of the Analysis Parameters form lists the Parameters defined for the current Analysis Template.

The bottom part of the Analysis Parameters form is used to add new Analysis Parameters and to view or update an existing Analysis Parameter, selected in the Analysis Parameter List.

Name:	(50) Enter the name the parameter takes on for this analysis.
Attribute:	Select an Attribute Type for this Analysis. The pick list references the Attribute Type Lookup. **Asset Register\Feature Lookup**
Default Value:	Select a Default Attribute Value that the analysis algorithm will take on, if no value is specified on submittal. The field is defined by the Attribute Type Values for the Attribute Type specified above.
Notes:	A free text field.

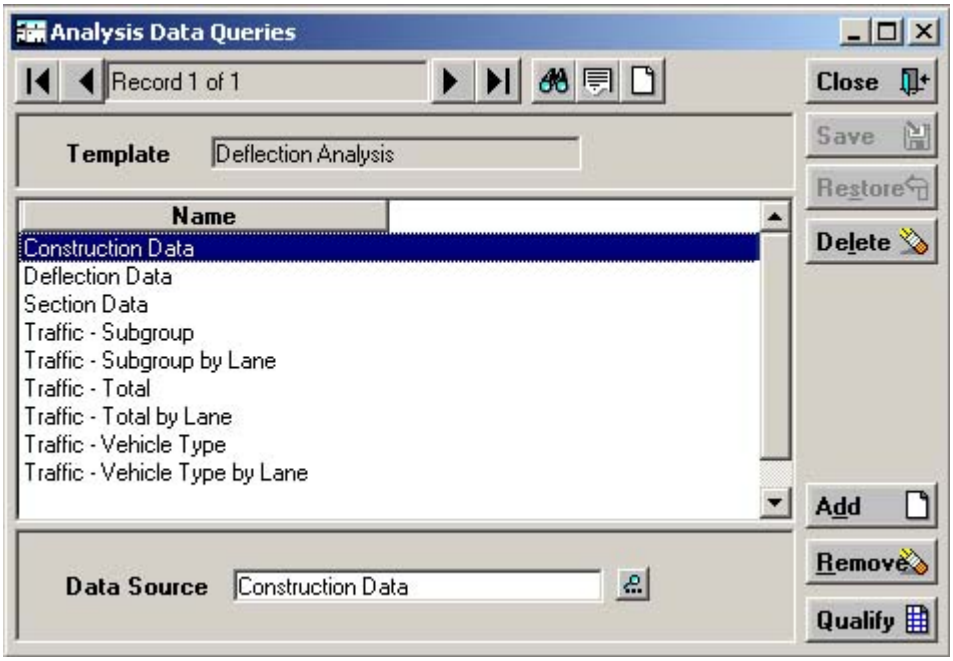
To add a new Analysis Parameter, click on the Add Button

To remove a newly added Parameter, select the Analysis Parameter from the list and click on the Remove Button. You may not remove Parameters after the record has been saved.

Action button - Edit Queries

The Analysis Data Queries form allows one to specify the stored Data Sources used in this analysis template and how these Data Sources link to the governing source.

To display the Analysis Data Queries form select the Edit Queries option from the Analysis Templates Action button drop-down list.



The Analysis Data Queries form is divided into 3 parts:

The top part of the Analysis Data Queries form displays the currently selected Template

The middle part of the Analysis Data Queries form lists the Data Sources defined for the current Analysis Template.

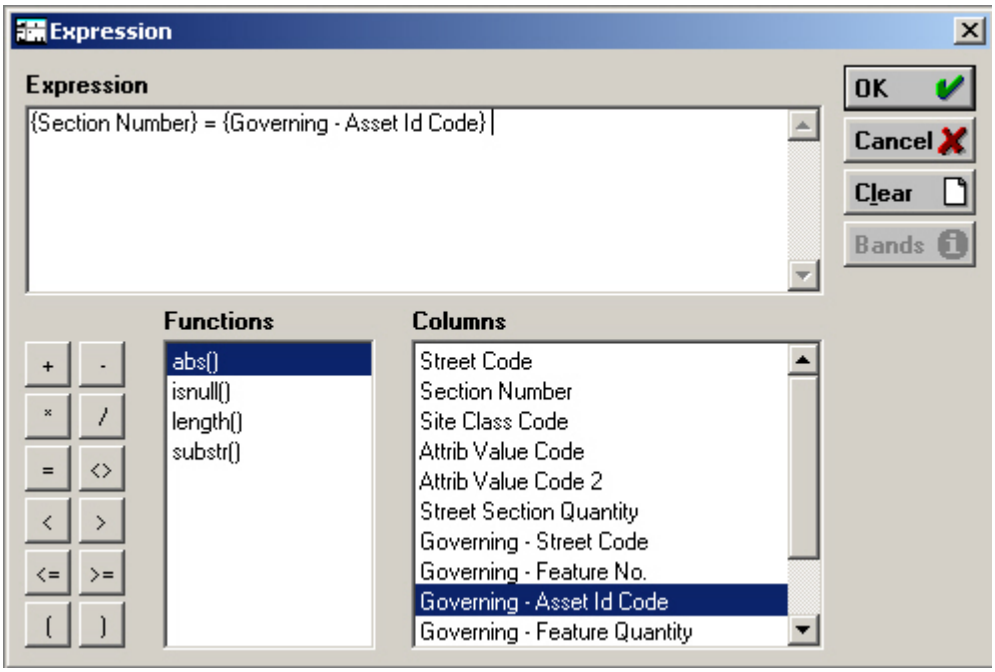
The bottom part of the Analysis Data Queries form is used to add new Data Sources, state how they link to the Governing Source or Remove a Data Source.

Use the Data Source field to select a Data Source. The pick list references the **Data Source lookup.**

To add a new Data Source, click on the Add Button.

To remove a Data Source, select the Data Source from the list and click on the Remove Button.

Use the Qualify Button to open the Expression Window to create, view or update the expression which states how the selected Data Source, in the Data Query List, links to the Analysis Governing Source:



The Data Source Columns will be titled with its Column Name

The Governing Data Source Columns will be titled with its Column Name prefixed with 'Governing'.

Note: If you don't have any Pass Constants then the Analysis Query Qualify Expression screen gives you the option to use 'column lists' which, for each column, will just list out all unique values found in the Governing Query, separated by commas. The idea is that you will use these within the 'In' function in the Qualification expression - for this example the expression should be as follows...

{Operational Area} = IN({Governing List - Operational Area}) and {Road} = In({Governing List - Road}) and {Section Function} = In({Governing List - Section Function})

Action button - Stages

Analysis Stages are executed according to the defined sequence. All stages are executed for each Analysis 'Pass', before any data is saved back to the database.

Each Analysis Stage has a Primary Analysis Data Query. This is analogous to the Qualifying Data Source for the Analysis as a whole, but in this case the Analysis Algorithm will be executed for each change in the Analysis Stage Constants

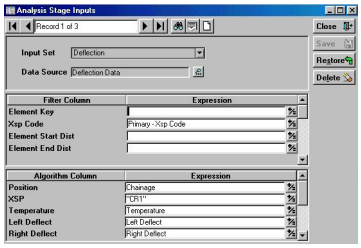
The Analysis Stages form allows one to specify and define:

- the different stages of the analysis
- the stages primary query
- the algorithm applied to the stage
- input requirements
- output
- output data to be saved
- the operative data that exists
- the values the algorithm will be populated with

To display the Analysis Stages form select the Stages option from the Analysis Templates Action button drop-down list.

Stages Action button- Map Input

Use the Analysis Stages Inputs form to view/define the Input Queries that are required for the current Analysis Stage.

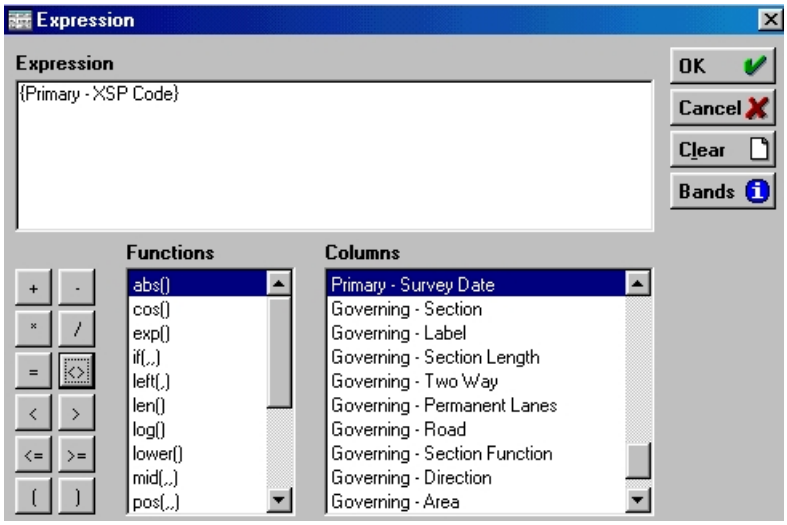


The Analysis Stage Inputs form is divided into 3 parts:

The top part of the Analysis Stage Inputs form defines what Data Queries are required in which Algorithm Data Set for the current Analysis Stage.

Input Set:	The Algorithm Data Set this Input Data is required for. The Input Set is dependent on how the Algorithm has been structured, i.e. how many Data Sets have been specified.
Data Source:	The Data Query required for this Analysis Stage Algorithms Data Set.

The middle part of the Analysis Stage Inputs form the column links in the Input Data Query to the current Analysis Stage Primary Query column. Each field carries an 'Expression' button, which displays the Expression form to create, view or update the Primary Query column that links to this current Stage Input Data Query column.



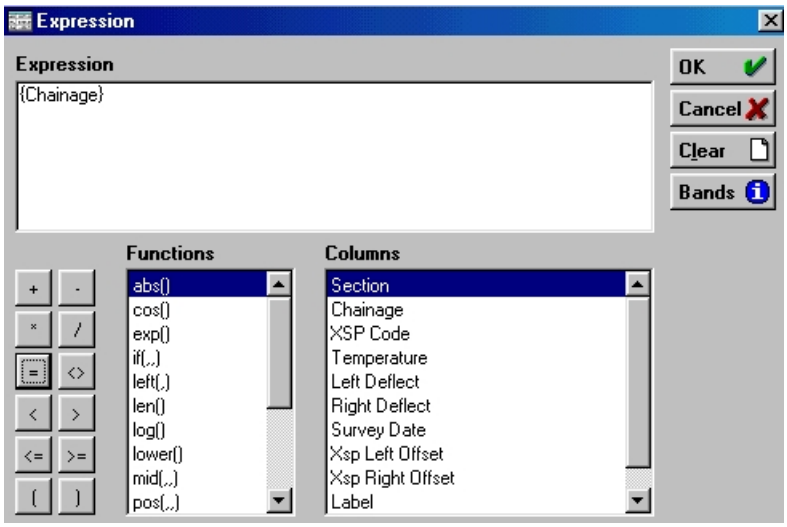
Note: The Primary Data Query Columns will be titled with their Column Name prefixed with 'Primary'

The Governing Data Query Columns will be titled with their Column Name prefixed with 'Governing'

Parameters defined in the Edit Params section will be titled with their Analysis Parameter Name prefixed with 'Param'

The bottom part of the Analysis Stages Inputs form and is used to list the Parameters that this Stages Algorithm Data Set requires, with their associated columns/values that will be populated into the Algorithm when Analysis is run. Each field carries an 'Expression' button, which displays

the Expression form to create, view or update the columns/ values that the algorithm will be populated with.



Note: The Input Data Query Columns will be titled with their Column Name

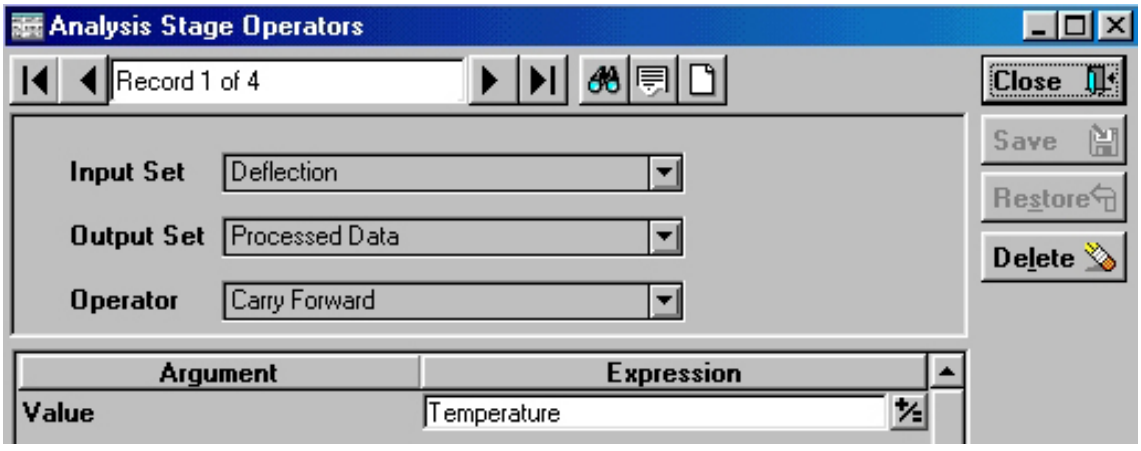
Parameters defined in the Edit Params section will be titled with their Analysis Parameter Name prefixed with 'Param'

Stages Action button - Operators

The Analysis Stage Operators form is used to define:

- The additional columns, not currently being outputted through the analysis, that require to be outputted via the carry forward operation (where the algorithm allows the carry forward operation).
- The columns that require operations to be applied, i.e. mean, average

Open the Analysis Stage Operators form to add/view the Operators that are required for this Analysis Stage by selecting the Operators Option from the Analysis Stages Action drop-down list.



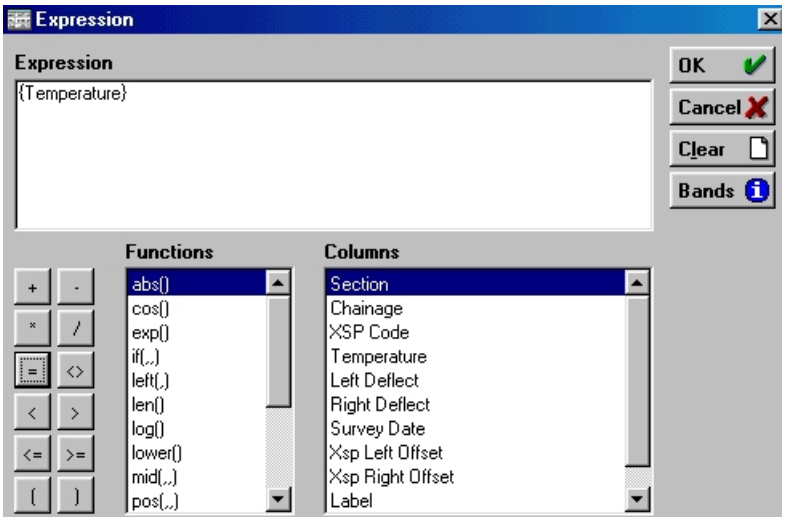
The Analysis Stage Operators form is divided into 2 parts:

The top part of the Analysis Stage Operators form defines what Input Query contains the column of interest, what output set the column will be stored in and what operation will be applied to the column.

Input Set: The Input Data Query of the current Stage that contains the column of interest.

Output Set:	The Output Set that will contain the column data
Operator:	The operation that will be applied to the column

The bottom part of the Analysis Stage Operators form and is used to define the Column that is to have the operation applied to. Each field carries an 'Expression' button, which displays the Expression form to create, view or update the Value Argument.



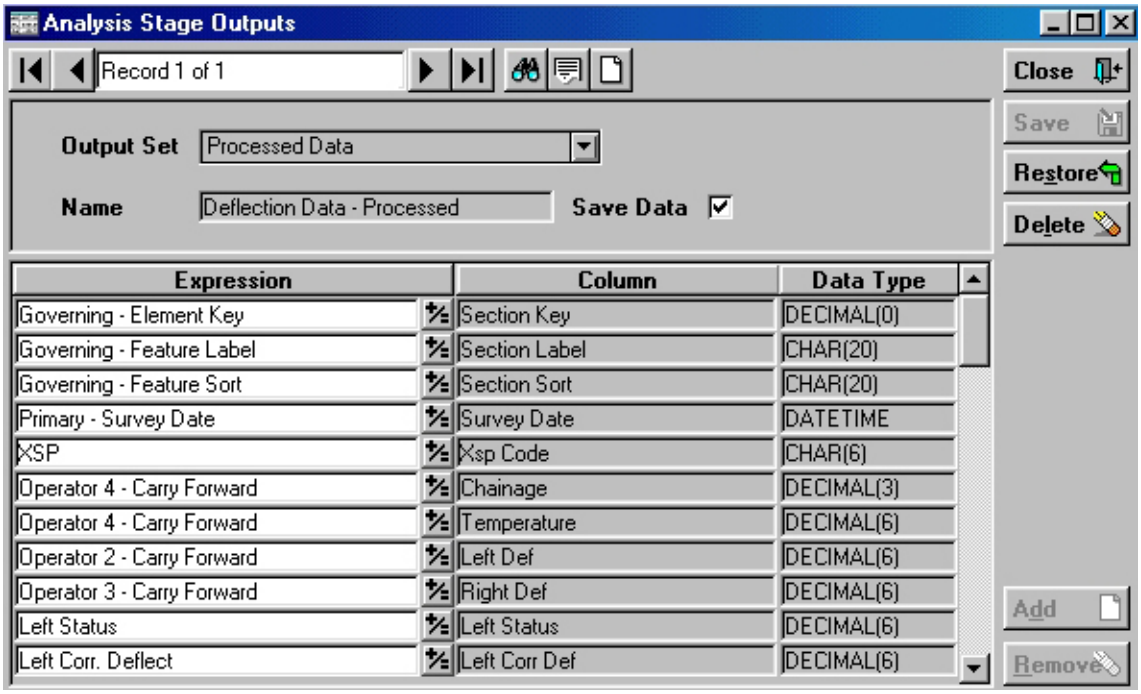
Note: The Input Data Query Columns will be titled with their Column Name

Parameters defined in the Edit Params section will be titled with their Analysis Parameter Name prefixed with 'Param'.

Stages Action button- Map Output

The Analysis Stages Outputs form allows one to specify what is contained in the output data set for the current Analysis Stage.

Open the Analysis Stage Outputs form to view/define the Output Format of the current Analysis Stage by selecting the Map Output Option from the Analysis Stages Action drop-down list.



The Analysis Stage Inputs form is divided into 2 parts:

The top part of the Analysis Stage Outputs form defines the type of output and how it will be stored for the current Analysis Stage.

Output Set:	The type of Output data this Data Set contains
Name:	A name for this Output Data Set which is unique within the data source.
Save Data:	Determines whether the Data contained in this Output Set is saved to a unique Analysis Output Table.

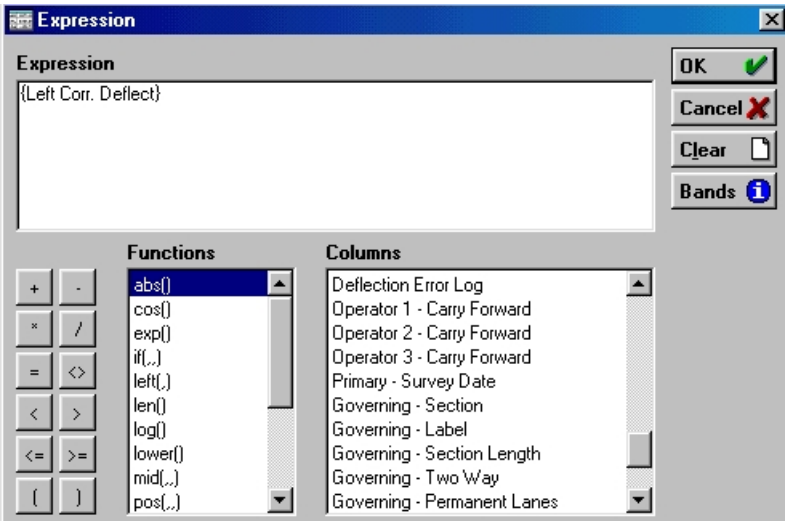
The bottom part of the Analysis Stage Outputs form lists what columns will be outputted and the format of this output data.

Expression:	The Output Column that will be stored under the Column Title.
Column:	User Defined Column Title that describes the Output Column
Data Type:	The Data Type format of the Output Column. You may type in a value or select from the drop down list which contains commonly used values. **Note:** If the output data is too big for the columns in this output table column then the Analysis Engine will truncate the output data to the specified length the table can hold and save as normal.

To add a new Output Column, click on the Add Button.

To remove an Output Column, click in the Columns Expression field that requires deleting and click on the Remove Button

Each Expression field carries an 'Expression' button to create, view or update the output column that will be stored under the defined Column Title.



The columns that were as a result of the analysis will be titled with their Column Name

The Primary Data Query Columns that were ticked will be titled with their Column Name prefixed with 'Primary -'

The Governing Data Query Columns that were ticked will be titled with their Column Name prefixed with 'Governing -'

Parameters defined in the Edit Params section will be titled with their Analysis Parameter Name prefixed with 'Param'

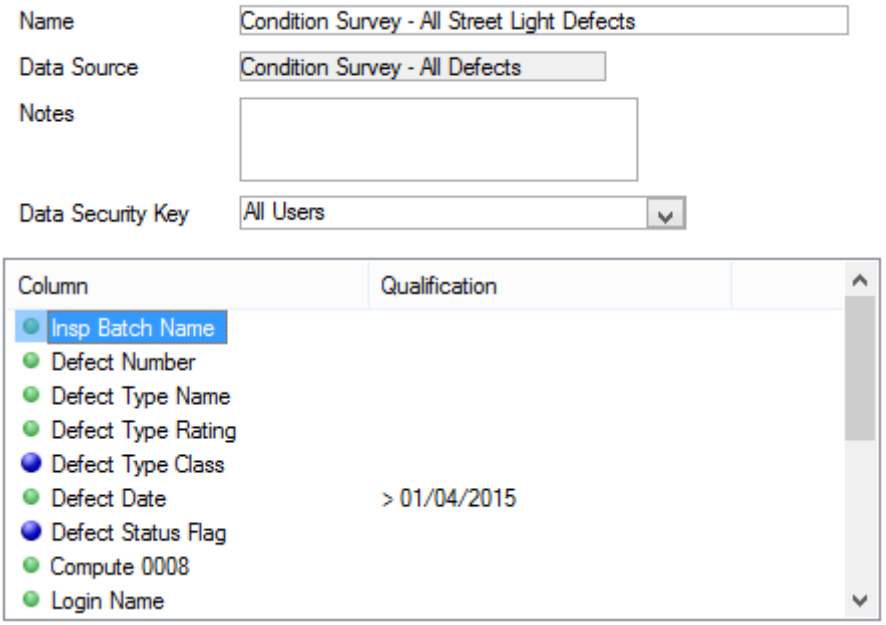
The Analysis Stage Operators will be titled with the Operator Type that was applied prefixed with 'Operator -' and its sequential operator record number.

Reporting Lookups

The Reporting Lookups contain the stored Data Sources, Data Qualification and Report templates, as well as providing an utility for importing existing Powersoft reports.

Saved Qualifications

Qualifications are saved from the Data Query Preview window, and the Report preview window, after carrying out a query, and are stored in the Saved Qualifications Lookup, where they may be viewed and managed:



Name:	The name which was assigned to the Qualification when it was saved is displayed. This may be edited.
Data Source:	The Data Source from which the Qualification was saved is displayed. This may not be edited.
Notes:	An optional free text field
Data Security Key:	This field is only visible to those users with rights to assign Data keys (I.e. whose User Security record has 'Assign Data key Manually' checked), and defines the User groups who may use this Saved Qualification **System Administration\Security**

The lower portion of the window displays the columns in the original Data Source, and the qualifications that are present in this Saved Qualification.

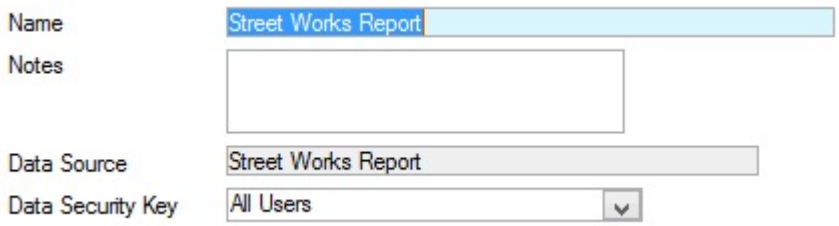
You may edit the qualification by double clicking a column name and applying, or re-applying a qualification.

The record which will result form this Qualification in conjunction with its data Source may be viewed by clicking on the 'View' button.

Note: Using the View button will prompt you to save if you have made changes to the Qualification. If you reject the option to save then the view will be based on the original Saved Qualification.

Report Templates

Report Templates are saved from the Report (design) window and are stored in the Report Templates Lookup, where they may be viewed and managed:

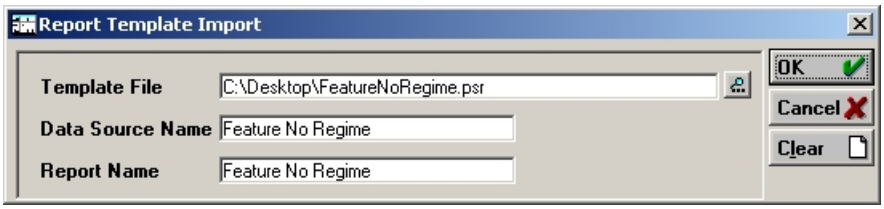


Name:	The name which was assigned to the Report Template when it was saved is displayed. This may be edited.
Notes:	An optional free text field
Data Source:	The Data Source from which Report Template was saved is displayed. This may not be edited.
Data Security Key:	This field is only visible to those users with rights to assign Data keys (i.e. whose User Security record has 'Assign Data key Manually' checked), and defines the User groups who may use this Report Template. **System Administration\Security**

To view the associated Data Source columns, apply a Qualification, and view the report in either Preview, or design mode, click on the 'View' button.

Import Report Templates

Reports, together with their data sources, may be imported through the Import Report Templates utility:



Template File:	Enter the path to, and name of, the file to be imported. Only Powersoft report may be imported - these will be in .psr format. See 'Using existing Confirm reports' below for information on exporting Confirm reports in Powersoft format.
Data Source Name:	Enter the name to be applied to the Data Source that will be created by the import utility from the Powersoft file.

Report Name:	Enter the name to be applied to the Report Template that will be created by the import utility from the Powersoft file.

Click on OK to carry out the import. There will be no preview, the data will simply be imported, and a Data Source and a Report Template will be created in the names entered into the Report Template Import form. These may be viewed in the Data Sources Lookup, and the Report Template window, respectively.

Using existing Confirm reports

Existing reports in Confirm may be used to form the basis of further reports, by exporting the original report in Powersoft format, and then using the Import Report Templates utility to import the report, and create a data source which may be amended for use in other Reports.

To export an existing Confirm Report

To export an existing Confirm report in Powersoft format:

1. Select the Report Template and complete the filter options to run the report (filter criteria are not stored in the Data Source)
2. Run the report, and select the Save As button. The Windows 'Save As' dialog is displayed.
3. Select a folder, enter a file name, and select 'Powersoft Report' from the 'Save as Type' drop down list.
4. Click on 'Save to save the file in .psr format to the selected location

Reports exported in this way may be directly re-imported using the Import Report Templates utility. This will create a Data Source (and a Report), which may be viewed, and whose SQL may be used as the basis for new reports.

Data Sources

Data Sources are custom database queries that can be used within Confirm to:

- Generate Reports and Dashboards
- Provide customizable validation
- **Viewing Data Sources on the Map** on page 67

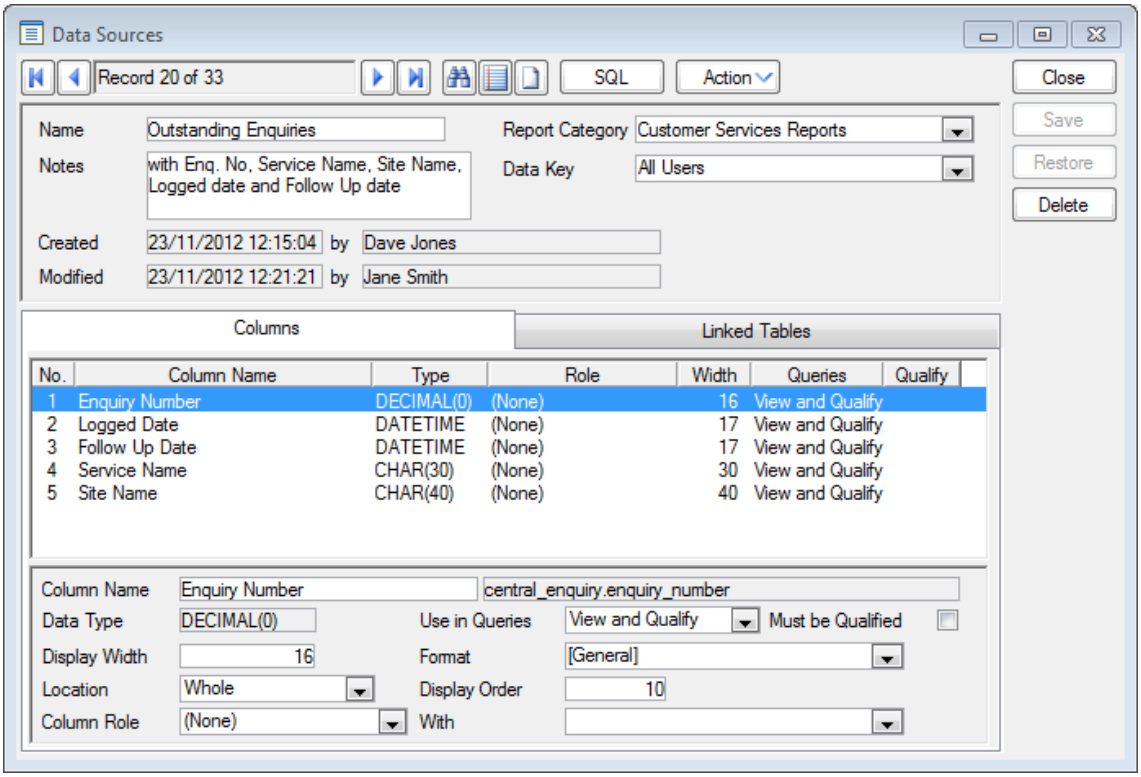
Note: Contractor Users are not able to Add or Update Data Sources, regardless of User Security.

Creating a Data Source requires knowledge of the database tables and table relationships within Confirm. This information is available in the Confirm Data Dictionary and Schema.

Reports and **Dashboard** on page 30 are constructed from Data Sources which define the columns to be used, the tables in Confirm which contain those columns, and the relationships between the tables, as well as specifying any other factors restricting the choice of data. Confirm provides **Data Drill-Down** on page 64 capability so related Entities can be opened from items in the report.

Data Sources that provide customizable validation allow Confirm to check processes such as Payment Batches and Order committals against Administrator defined constraints and reject items that fail to meet the criteria. These Data Sources require a more rigid format and need to contain specific fields and tables to work correctly. These requirements can be found in documentation for the data sources on the corresponding system settings screens.

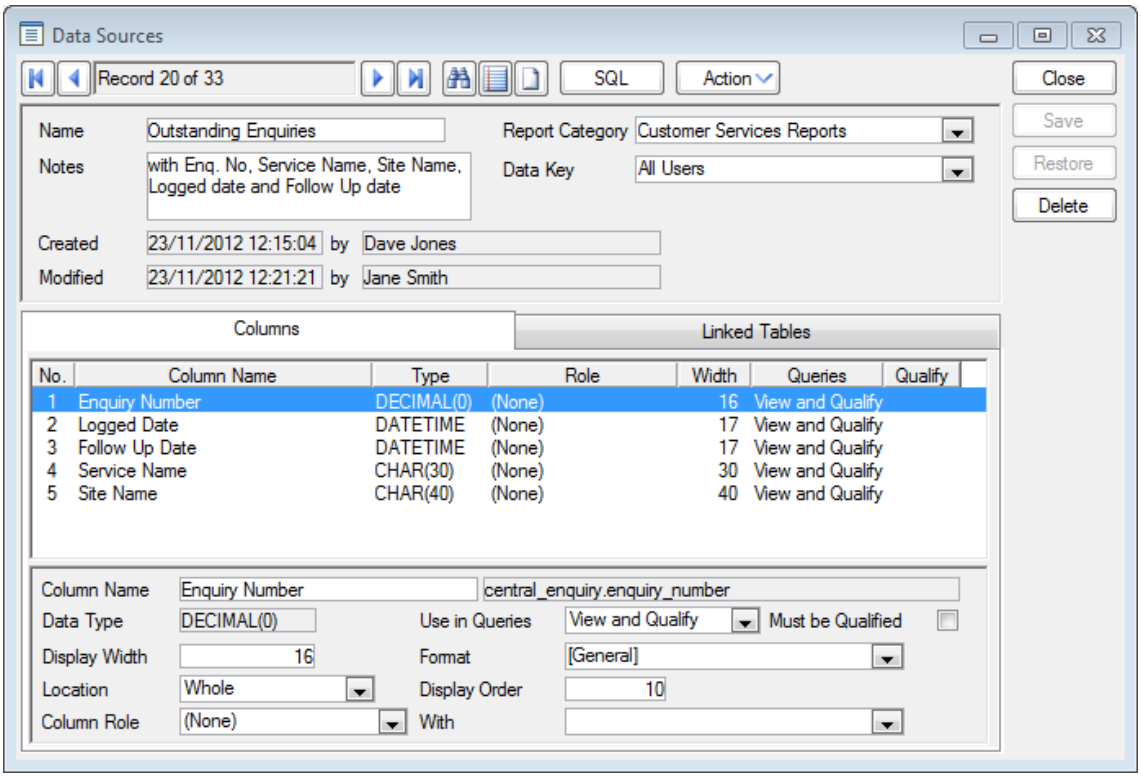
The Data Sources screen allows the user to view and add Data Sources. To find Existing Data Sources, use the 'find' button. To edit the columns of the Data Source click the **Data Sources - SQL** on page 55 which will open the SQL editor. Once a Data Source has been configured, the result can be viewed with the **Action Button - View Data** on page 61 Action button.



Name	The name of the Data Source will be displayed. This may be edited.
Report Category	A **Report Category** on page 70 can be chosen to help with searching for Data Sources.
Notes	An optional free text field to describe the Data Source.
Data Key	This field is only visible to those users with rights to assign Data keys (i.e. whose User Security record has 'Assign Data key Manually' checked), and defines the User groups who may use this Data Source. **System Administration\Security**
Created	The date and time the Data Source was created, and the User who created it. This can be used to search for Data Sources. **Note:** Data Sources created in Confirm V12.00a.AM or earlier versions will show a Created date of 01/01/1900 and no User name.
Modified	The date and time the Data Source was last modified, and the User who modified it. This can be used to search for Data Sources.

The central pane in the form carries two tabs: **Data Sources - Columns tab** on page 52 and **Data Sources - Linked tables tab** on page 54

Data Sources - Columns tab



The Columns tab lists the fields (columns) in the database from which you are retrieving data. These are the columns that will appear in your output when the Data Source is run. The columns are defined using SQL, and you must use the **Data Sources - SQL** on page 55 to edit them.

The fields below the column list contain the information relating to the currently selected Column Name:

Column Name: The first part of this field is an appropriate readable name that will be used as the Column header on the report. It defaults to be the database column name taken from the SQL, but it may subsequently be edited by the user.

Note: that if the SQL 'SELECT' statement is subsequently altered for this column or any preceding it, the column name is returned to the default name. You can avoid this by ensuring that additions to the 'SELECT' statement are always made to the end of the statement.

The second part of the field contains the table and column name (table_name.column_name) as it appears in the SQL statement, using the Database Schema names for the tables and columns. This part of the field is not editable.

Data Type: Defines the data type and may not be edited. Values are:

CHAR()

Contains AlphaNumeric characters. The number in the brackets specifies the number of characters that the field can hold.

DECIMAL()

Contains Numeric characters. The number in the brackets specifies the number of decimal places that the field contains.

DATETIME

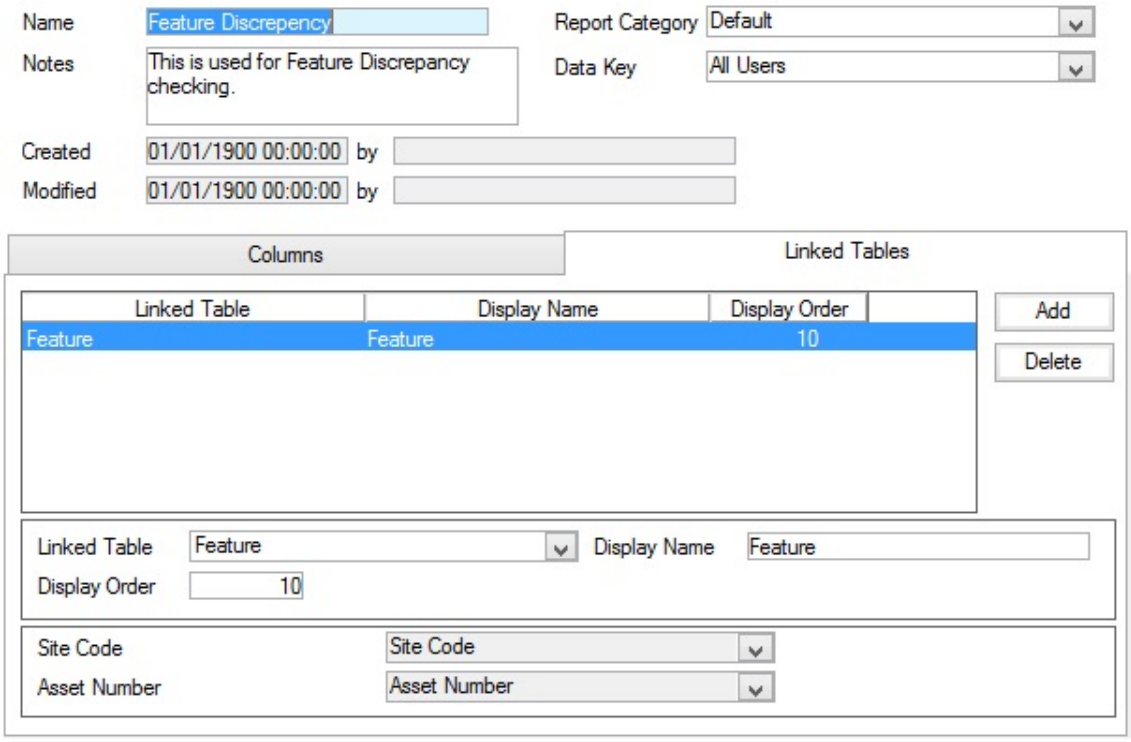
Contains Date Values.

Format:	A Format option may be selected from the drop down, where options are available (for numbers or dates for instance). This will define the appearance of the data in the finished report.
Display Width:	This field specifies the visible width (in text characters) of the column in the report result. A default entry is derived from the Column in the database. If the actual data retrieved is wider that the Display Width then it will be clipped on screen. This field only affects how the data is presented in the report, it has no effect on the actual sizing of data in the database.
Display Order:	A default entry is made which orders the columns in the order in which they appear in the pane. This order may be altered by changing the order number. The smaller the number the closer to the top/right the data in this column will appear in the finished report.
Location:	Specifies whether the currently selected column is paired with another column in the data source. Select from: 'Whole' - The column contains all of the data (no pairing). 'Start' - The column contains the start data of the combined columns (the 'End' Column is specified in the 'With' field - see below). 'End' - The column contains the end data of the combined columns (the 'Start' Column is specified in the 'With' field - see below)..
With:	If 'Start' or 'End' has been selected in the 'Location' field above, then the opposite mode column is specified here. Select from the drop down list, which contains all the columns present in this Data Source. This pairing up of columns comes into effect when you are creating column qualifications.
Use in Queries:	Select from the drop down list: 'View and Qualify' - the column will be displayed in the query preview/report and can have criteria (Qualifications) specified against it. 'Qualify Only' - the column may have criteria (Qualifications) specified against it, but will no appear in a preview or report. 'None' - the column will not be displayed and no ability to have criteria (Qualifications) specified against it.
Must be qualified:	If this box is ticked then the query will not run unless this column has a qualification specified.

Data Sources - Linked tables tab

Tables may be linked to provide values for selection when qualifying against this column or to provide Drill-down capability for appropriate columns when viewing the data on the report or **Action Button - View Data** on page 61.

Linked Columns will appear marked on Qualification screens with a blue bullet.



The Linked Tables tab displays the linked tables that have already been defined (by the SQL statement for instance) and allows tables to be linked. Only tables that have their primary key column specified in the SQL may be linked. The fields below the pane contain the information relating to the currently selected Linked Table:

Linked Table:	Select from the Drop down list of all available Tables within Confirm. **Note:** You may pick any table in the list - but be aware that a link can only be successfully established through a common field, that is, a field which exists in the table you select, and in one of the tables/columns listed on the Columns tab.
Display Name:	As defined in the database. May be edited.
Display Order:	Enter a number to define the order in which linked columns will be displayed in the Data Query or Report Query. The lower the number, the nearer the top of the list the column will appear. This field must be entered each time a Linked Table is added

The lower portion of the form lists the Primary keys field(s). The associated drop down list(s) will display all the fields present in the Data Source.

Select from the drop down list the field in the Data Source, which contains the same data as the field(s) listed from the linked table, to establish the link. If the link cannot be made because the required field is not present in the drop down, you may add it to Data Source by amending the SQL statement to include it.

Data Sources - SQL

SQL Button

The SQL button is used to enter SQL for a new Data Source, and to view/edit the SQL for an existing Data Source.

Data Source SQL

Data Sources are created from a Structured Query Language (SQL) statement, which determines the columns that will be included. Simple scripts may be seen in the screen shots and these are representative of the format that should be used.

The SQL Statement is broken up into three parts

- SELECT - Defines the Table Columns to retrieve from the database
- FROM - Defines the Tables that the Table Columns belong to
- WHERE - Defines how the Tables are linked, and applies any other selection parameters that are required in the data source (as distinct from selection of data which will be made in the Qualification)

There are several features in the software to assist with creating SQL statements based on Confirm data.

- Schema Diagrams in the Reporting section of the Confirm Help show the tables and relationships between them for each area of Confirm.
- The 'Copy SQL' option on the Edit menu allows the SQL underlying most Confirm screens and reports to be copied to the clipboard.
- A 'Schema Report' is available in the Reporting folder of the Confirm Explorer menu.

Click on the SQL button on the Data Source screen to display the SQL window and begin entering/editing SQL.

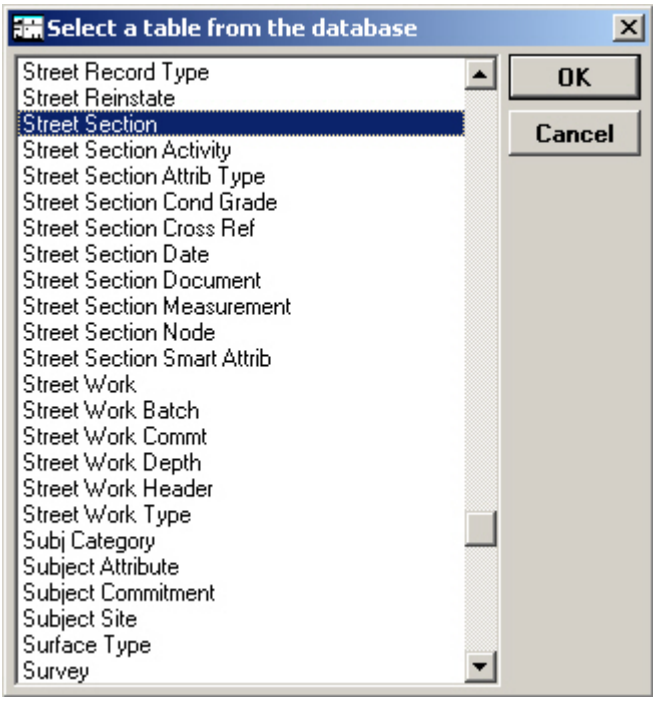
To create a Data Source using the Wizard

The Wizard allows SQL to be quickly and easily written by double clicking on tables and columns in a list to include them in the query. In the SQL window, click on the 'Wizard' button.

Where a SQL statement that was created using the Wizard is already entered in the SQL window, the Data Source Wizard window is displayed showing the selections that were made the last time the Wizard was used.

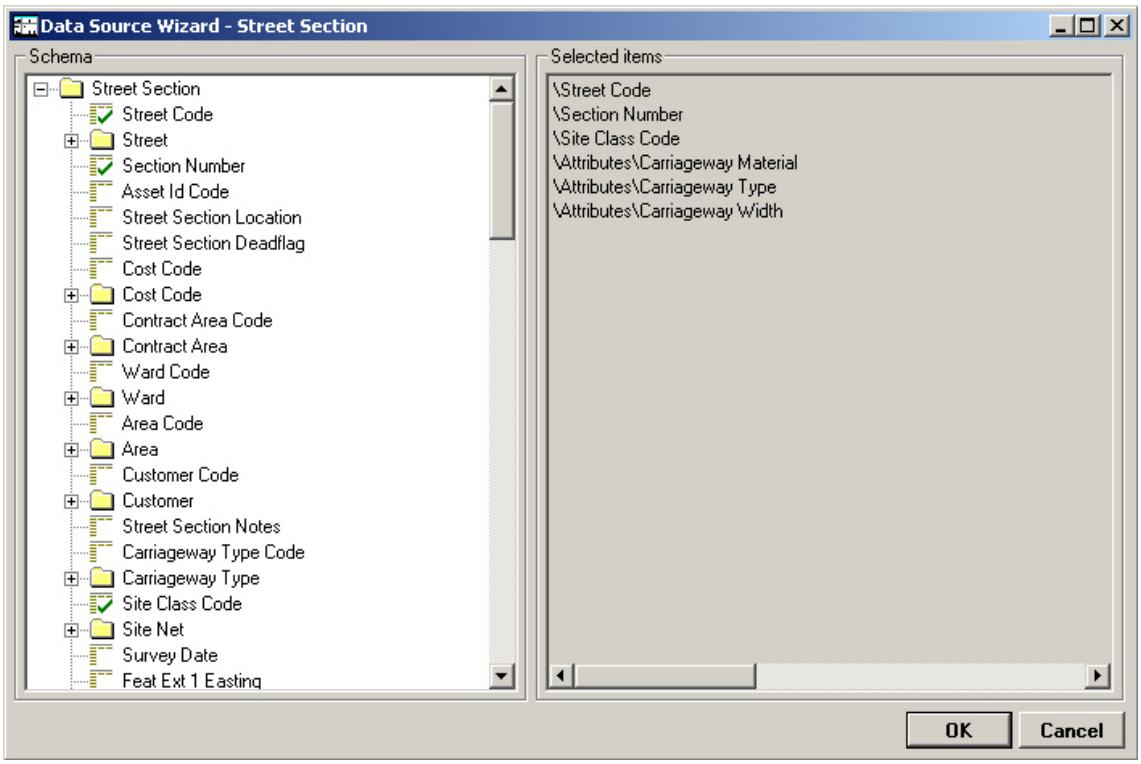
Note: Where a directly entered SQL data source exists, running the Wizard will overwrite the original data source with the results of the Wizard selection. You will be warned on clicking the Wizard button that this will happen if you continue, and you may exit the Wizard at that point without compromising the existing Data Source.

Where the SQL window is blank the 'Select a Table' window is displayed first:



The dialogue lists all the available tables in Confirm (all labelled with their asset specific names - so if you are using Environmental you will see the Feature table labelled 'Feature', if you are using Confirm Highways, you will see the Feature table labelled 'Street Section' as in the above example). Select a table by clicking on it.

Click on OK to display the Data Source Wizard:



The Data Source Wizard displays all the tables related to the selected table as a tree. You may select the related tables to be used by clicking in the tree. Each related table, as it is selected, is displayed in the right-hand window of the Wizard. You may remove tables by clicking on a previously selected table.

Note: Where the 'Feature' table is selected, attributes (Measurements, Date Types and Text Attributes) may be selected and are all found in the 'Attributes' folder at the end of the list.

Click on 'OK' to return to the SQL window, where the statement derived from the selections will be displayed.

The SQL statement may be further edited directly in the SQL window if required.

To create a Data Source by entering SQL directly

Enter the SQL statement into the window by typing, or pasting a previously copied statement.

You may break onto a new line in the window using CTRL+ENTER.

You may click on OK at any time to return to the Data Source Window, where you may use the Action button to view the results of the SQL statement.

Note: You cannot return to the Data Source window if the SQL statement entered so far is not valid. An error message will be displayed pinpointing the section of the statement that is not valid.

Altering the SQL of a Data Source already in use

Altering the SQL of an existing Data Source may have an impact if it is in use by any of the following:

- Saved Qualifications
- Report Templates
- Dashboard Widgets
- Enquiry Alert Types (as the Message Data Source)
- Job Alert Types(as the Message Data Sources)

If this is the case, and the user makes changes to Data Source SQL which alter the order or data type of the existing columns, the user will be warned about this and prompted to confirm which column in the new SQL corresponds to each column in the original SQL.

The user must specify a new column for each existing column, i.e. it is not permitted to remove a column from a Data Source that is in use.

This information is then used to modify any Saved Qualifications, Report Templates and Dashboard Widgets to work correctly with the new SQL.

Note: Changes that do not affect the order and data type of existing columns, such as adding new columns on the end or altering the WHERE part of the SQL, can be made without this happening.

Confirm Data Source functions

Data Source SQL can contain a number of special functions which are particular to Confirm. Each of these is described below:

Function	Description
EffectiveDate()	The current date (with no time component). When a Data Source containing this is run interactively by a user, they may specify a date to be used instead. When a Data Source containing this is run by a Scheduled Report, the scheduled run date is substituted rather than the current date.
EffectiveDateTime()	The current date and time. When a Data Source containing this is run interactively by a user, they may specify a date and time to be used instead. When a Data Source containing this is run by a Scheduled Report, the scheduled run date and time is substituted rather than the current date.
DefaultDate()	A default date and time used in Confirm (1st January 1900).
CurrentConfirmUser()	The Login Name of the User currently logged in to Confirm. Note this is the internal Login Name used to refer to Users in other tables, not necessarily the same as the Username entered on the Login Screen.
CurrentConfirmUser-Name()	The User Id of the User currently logged in to Confirm. Note this is the Username entered on the Login Screen.
CurrentConfirmUserFull-Name()	The full name (i.e. First Name and Surname) of the User currently logged in to Confirm.
CurrentConfirmWork-Group()	The Work Group Code for the User currently logged in to Confirm.
StartDistanceWithinPar-ent()	Returns the distance along the Parent entity that the start of the Child entity is located. Parent must be a line geometry. Uses primary measurement of the Parent to determine the length of the line, if available. If there's no primary measurement then the actual length of the line geometry is used. Data Source must have Parent and Child Column Roles present.
EndDistanceWithinParent()	Returns the distance along the Parent entity that the end of the Child entity is located. Parent must be a line geometry. Uses primary measurement of the Parent to determine the length of the line, if available. If there's no primary measurement then the actual length

Function	Description
	of the line geometry is used.Data Source must have Parent and Child Column Roles present.
ChildContainedInParent()	Returns Y if the geometry of the Child entity is located wholly within the geometry of the Parent entity. Otherwise it returns N. Data Source must have Parent and Child Column Roles present.
ChildIntersectsParent()	Returns Y if the geometry of the Child entity is intersects the geometry of the Parent entity. Otherwise it returns N. Data Source must have Parent and Child Column Roles present.
GeometryMatchesParent()	Returns Y if the geometry of the Child entity exactly matches the geometry of the Parent entity. Otherwise it returns N. Data Source must have Parent and Child Column Roles present.
DistanceFromParent()	Returns the shortest distance between the geometry of the Child entity and the geometry of the Parent entity. Data Source must have Parent and Child Column Roles present.

For example, the following SQL could be used to create a Data Source returning a list of all Enquiries assigned to the currently logged in User's Action Officer:

```
SELECT
   central_enquiry.enquiry_number,
   central_enquiry.enquiry_desc,
   enquiry_subject.subject_name,
   enquiry_status.enq_status_name
FROM
   central_enquiry,
   enquiry_status,
   enquiry_subject,
   action_officer
WHERE
   enquiry_subject.service_code = central_enquiry.service_code AND
   enquiry_subject.subject_code = central_enquiry.subject_code AND
   enquiry_status.enq_status_code = central_enquiry.enq_status_code AND
   enquiry_status.enq_status_code = central_enquiry.enq_status_code AND
   central_enquiry.officer_code = action_officer.officer_code AND
   action_officer.login_name = CurrentConfirmUser()
```

Second example using the parent and child relationship between Features joined through Inventory.

```
SELECT
   inventory_item.feature_key,
   inventory_item.inv_link_feature,
   inventory_feature.site_code,
   inventory_feature.plot_number,
   linked_feature.site_code,
   linked_feature.plot_number,
   ChildContainedInParent(),
   ChildIntersectsParent()
FROM
   inventory_item
   JOIN feature as inventory_feature ON (inventory_item.feature_key = inventory_feature.feature_key)
   JOIN feature as linked_feature ON (inventory_item.inv_link_feature = linked_feature .feature_key)
```

Note: Oracle SQL for the second example does not require **'as'** on the JOIN lines, use the below instead.

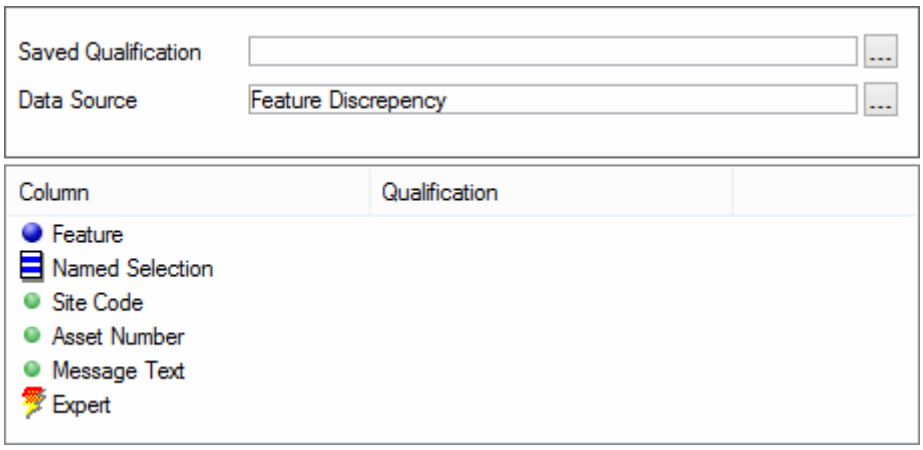
```
JOIN feature inventory_feature ON (inventory_item.feature_key = inventory_feature.feature_key)
JOIN feature linked_feature ON (inventory_item.inv_link_feature = linked_feature .feature_key)
```

Note: For the spatial functions to work Linked Tables will need to be added for both the Inventory Feature and the Linked Feature, also the Parent and Child column roles will need to be configured. This is simpler if using Defect or Job as the child table, since the Linked Tables can be derived automatically, however for Inventory joins this is a manual process.

Action Button - View Data

You may view the data (and qualify it) by clicking on the Action button, and selecting 'View Data' in the drop down menu.

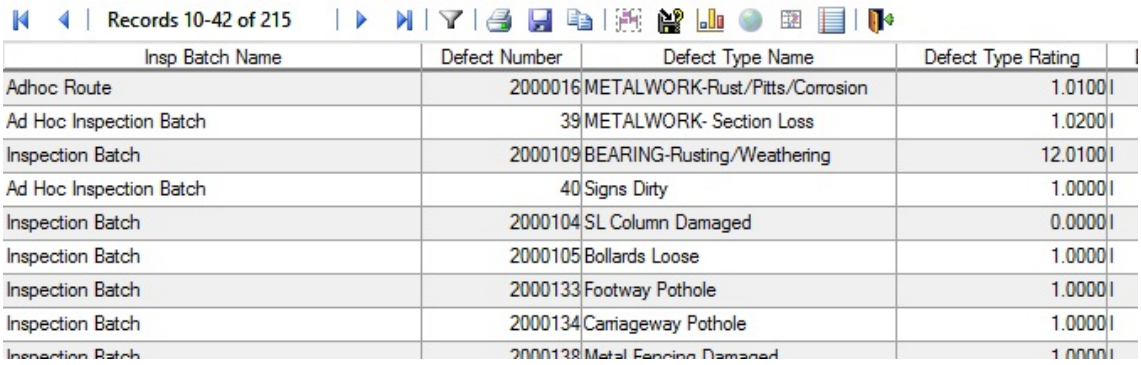
The Data Query Qualification form is displayed:



You may use the Data Query qualification form to apply a previously saved qualification, by selecting from the Qualification field pick list.

You may also apply direct Qualifications by double clicking on the column you wish to qualify, and entering the qualification parameter in the Qualifications dialog.

Click 'OK' to display the Data Query Preview.



Insp Batch Name	Defect Number	Defect Type Name	Defect Type Rating
Adhoc Route	2000016	METALWORK-Rust/Pitts/Corrosion	1.0100
Ad Hoc Inspection Batch	39	METALWORK- Section Loss	1.0200
Inspection Batch	2000109	BEARING-Rusting/Weathering	12.0100
Ad Hoc Inspection Batch	40	Signs Dirty	1.0000
Inspection Batch	2000104	SL Column Damaged	0.0000
Inspection Batch	2000105	Bollards Loose	1.0000
Inspection Batch	2000133	Footway Pothole	1.0000
Inspection Batch	2000134	Carriageway Pothole	1.0000
Inspection Batch	2000138	Metal Fencing Damaged	1.0000

The Data Source Name is shown on the Data Source Preview when there is no Saved Qualification. If a Saved Qualification exists then the Qualification name will be shown on Data Source Preview instead.

See **Data Queries** on page 8 for more information on the Data Query Preview window

Validation Data Sources

A Validation Data Source is used to apply custom validation rules in addition to the standard Confirm validation. The Data Source SQL can be written to query any table or combination of tables and return appropriate validation messages, with the validation message text displayed to the user also configurable within the Data Source.

Validation Data Sources are used in the following places:

- Validation messages when Features are updated using a 'Feature Discrepancy' Data Source (See **Feature Group**).
- Validation of Features with the 'Asset Validation' module (See **Batch Validate Features**).
- Validation of creation and update of Jobs (See **Job System Settings**).
- Works Order Commit checks using a 'Works Order Discrepancy' Data Source (See **Contract Management System Settings**).

The validation can use two types of Data Source. The simplest type is a ‘Message Data Source’ configured to return messages in a ‘Message Text’ column.

Alternatively a ‘Delegating Data Source’ can be configured which returns a list of Data Sources, delegating the checking to them. This avoids the need for one complex Data Source doing a large number of validation checks, and also can be used to limit which checks are carried out for a Feature/Job.

See **Data Sources** for general information on configuring Data Sources.

Configuring a Message Data Source

A Data Source to be used as a ‘Message Data Source’ is configured as follows:

- It must have a character column called ‘Message Text’
- It may optionally have a character column called ‘IsError’ (note that this is ignored for Feature Discrepancy Data Sources)
- It must have a Linked Table to Feature/Job/Order, so it can be retrieved for a particular record

A value of ‘Y’ in the IsError column indicates that a message is an error. Any other value means the message is treated as a warning. In the absence of the column all messages are treated as warnings.

The example below is intended as a Feature Validation Data Source to ensure that meaningful Location information has been entered against Features. It will return an error for a Feature if the Location is null, and a warning if it is not at least 20 characters long.

```
SELECT
  feature.site_code,
  feature.plot_number,
  'Location must be populated' as message_text,
  'Y' as IsError
FROM
  feature
WHERE
  feature.feature_location IS NULL
UNION
SELECT
  feature.site_code,
```

```
  feature.plot_number,
  'Warning - Location should be at least 20 characters long' as message_text,
  'N' as IsError
FROM
  feature
WHERE
  LEN( feature.feature_location) < 20
```

Note: For Oracle databases use LENGTH instead of LEN

The example Works Order Discrepancy Data Source below checks the Order Jobs on a Works Order and detects if any have a Cost Code set to 'CWAY1'. The IsError field is set to 'Y', thereby signalling an error and preventing the Commit if this is the case.

```
SELECT
  order_job.contract_code,
  order_job.order_number,
  order_job.site_code,
  order_job.plot_number,
  order_job.cost_code,
  feature.feature_id,
  order_job.job_number,
 'Cost Code on '+CONVERT(VARCHAR,order_job.job_number)+' is CWAY1' as message_text,

  'Y' as IsError
FROM
  order_job, feature
WHERE
  order_job.site_code = feature.site_code AND
  order_job.plot_number = feature.plot_number AND
  order_job.cost_code = 'CWAY1'
```

Configuring a Delegating Data Source

A Data Source to be used as a ‘Delegating Data Source’ is configured as follows:

- It must have a numeric column called ‘Data Source Key’
- It may optionally have a Linked Table to Feature/Job/Order, so it can be retrieved for a particular record

When a Delegating Data Source is run, it returns a list of Data Source keys. Each of those Data Sources is then run in turn and the resulting messages from all of them combined together.

The Data Sources returned will usually be Message Data Sources. However, it is possible for one or more of them to be Delegating Data Source, delegating checking a stage further.

In the simple example below, the Data Source returns the Data Source keys of all Data Sources configured in the system having ‘validate’ as part of their name.

```
SELECT
  data_source.data_source_key,
  data_source.data_source_name
FROM
  data_source
WHERE
  data_source.data_source_name LIKE '%validate%'
```

The more complex example Data Source below could be used as a Feature Validation Data Source for a Road Section Feature Group.

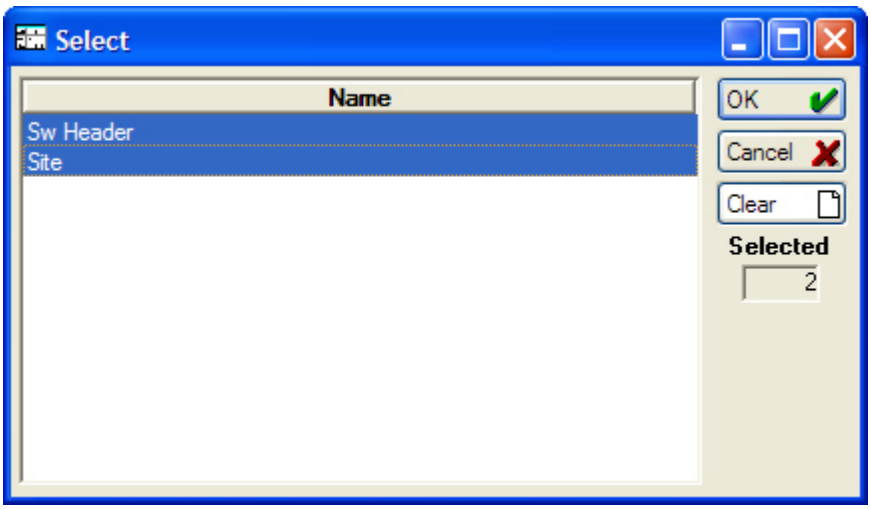
It would apply the checks in the 'Feature Validation - All Sections' Data Source to ALL Road Section Features. For those Features with a length more than 1km, it would also apply the checks in 'Feature Validation - Long Sections' and for those with an ‘Urban or Rural’ attribute of ‘Urban’ it will also apply those in 'Feature Validation - Urban Sections' .

```
SELECT
  data_source.data_source_key,
  data_source.data_source_name,
  feature.site_code,
  feature.plot_number,
  feature.feature_type_code,
  feat_measurement.feature_quantity,
  feat_attrib_type.attrib_value_code
FROM
  data_source,
  feat_attrib_type,
  feat_measurement,
  feature
WHERE
  feature.site_code = feat_measurement.site_code AND
  feature.plot_number = feat_measurement.plot_number AND
  feat_measurement.measurement_code = 'SELN' AND
  feature.site_code = feat_attrib_type.site_code AND
  feature.plot_number = feat_attrib_type.plot_number AND
  feat_attrib_type.attrib_type_code = 'URBN' AND (
  ( data_source.data_source_name = 'Feature Validation - All Sections') OR
  ( data_source.data_source_name = 'Feature Validation - Long Sections' AND feat_measure-
ment.feature_quantity > 1000) OR
  ( data_source.data_source_name = 'Feature Validation - Urban Sections' AND feat_at-
trib_type.attrib_value_code = 'U'))
```

Data Drill-Down

It is possible to open most Confirm Entities such as Street Works Notices, Enquiries or Jobs from rows in a report. To enable this feature, the Data Source's Columns and Linked Tables must be set correctly.

When a User then double clicks a row in the report or grid, Confirm will open the Select window listing all Entity windows corresponding to linked tables for the row that was selected. The user can select the Entity windows they wish to load then click OK. If there is only one linked table then it will be opened directly without the Select window appearing.



It is also possible to multi-select many rows in the Data Query Preview and open all the Entities associated with all Linked Tables by right-clicking and selecting 'Drill-Down' from the pop-up menu.

To Drill-down to any particular Entity, it is necessary to add a Column to the Data Source that will fetch the Primary Key for the appropriate Entity type (e.g. the Works Reference for Street Works Notices), then a Linked Table should be added referencing the Entity table and the Linked Table Primary Key set to be the Data Source Column.

If your Linked Tables and Primary Keys are set incorrectly then Confirm will fail to fetch the correct data, or fetch no data at all, in which case the Drill-down feature will not work. Confirm will display messages to the User if it cannot open Entity windows because of incorrectly configured Linked Tables.

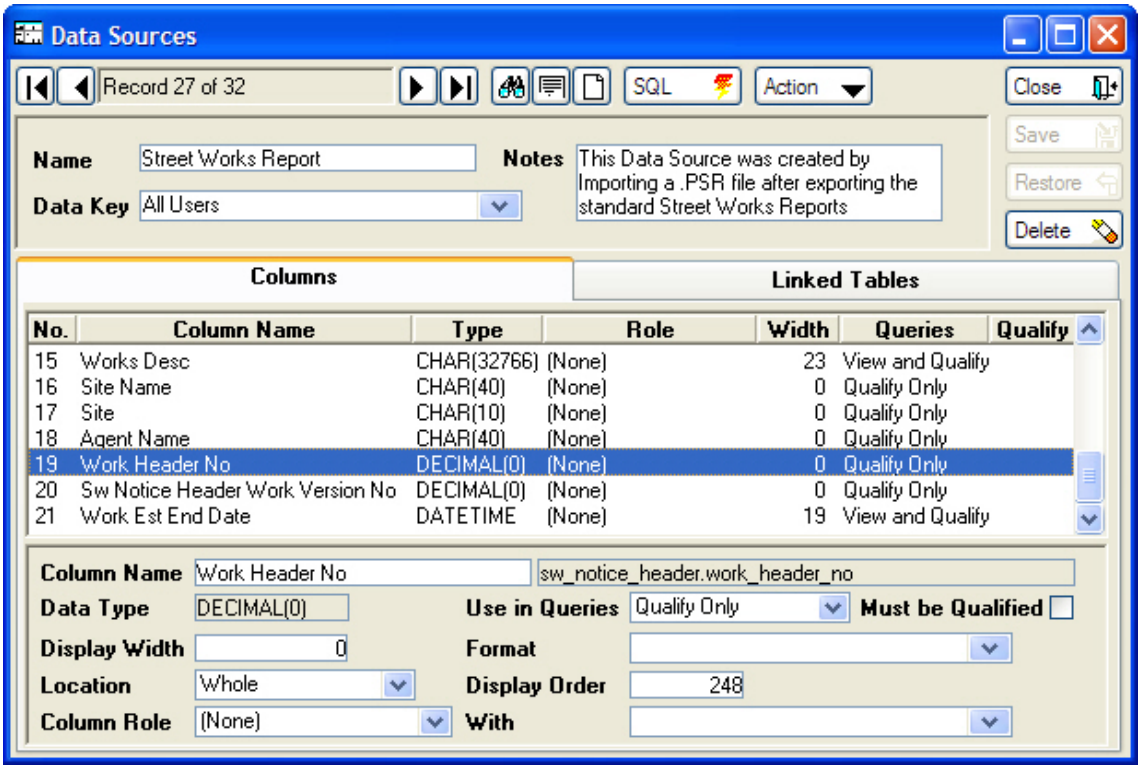
A list of commonly used Entities and their required Linked Table settings is shown below:

Confirm Entity	Linked Table	Window
Defects	Defect	Defects
Customer Enquiries	Enquiry Customer	Fast Entry Enquiry
	Enquiry Cust Link	
Enquiries	Enquiry	Fast Entry Issue
	Central Enquiry	
Jobs	Job	Job
Payment Requests	Payment Request Header	Request for Payment
Street Works Notices	Street Works	Street Works
Street Works Inspections	Actual Inspection	Inspections

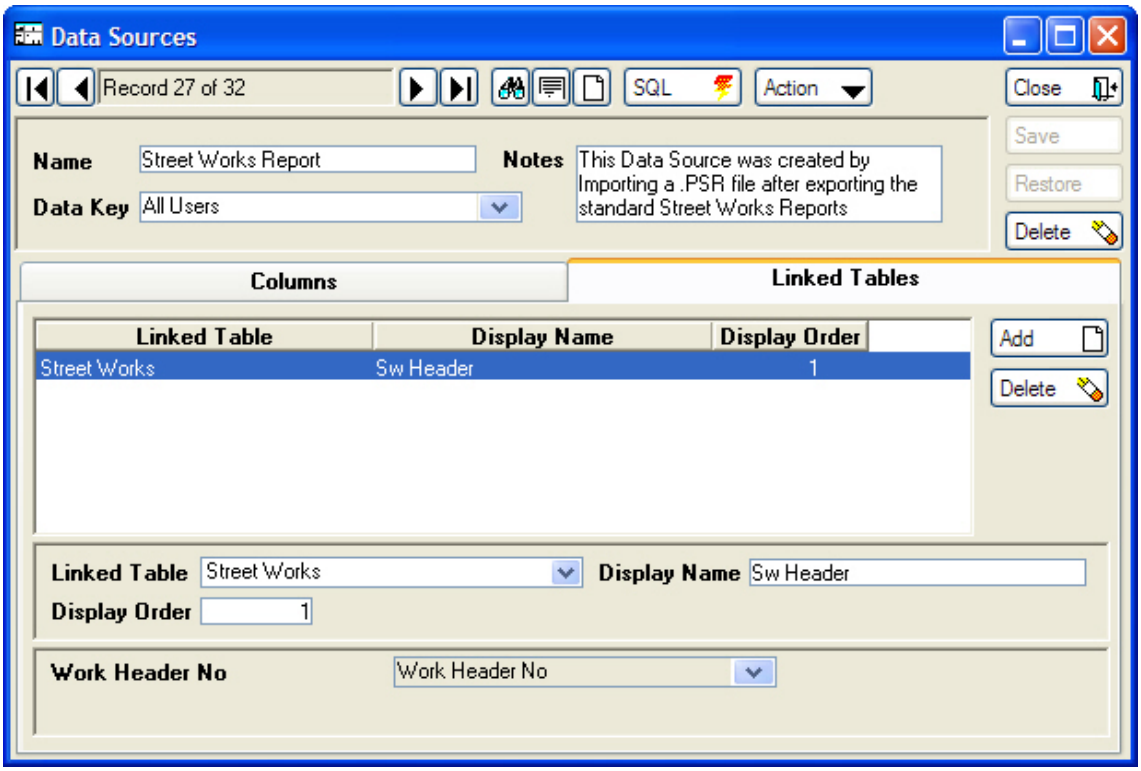
Note: It is not possible to link to Entity windows that are not listed on the Confirm Explorer, for example Street Works Designations. Only parent windows can be opened using the Drill-down feature - child windows cannot be opened e.g. Inspection Item.

Example - Opening Street Works

After creating a Data Source, in this case called 'Street Works Report', a Column entitled Work Header No has been added that references a field in the database containing the Street Works Reference (sw_notice_header.work_header_no)



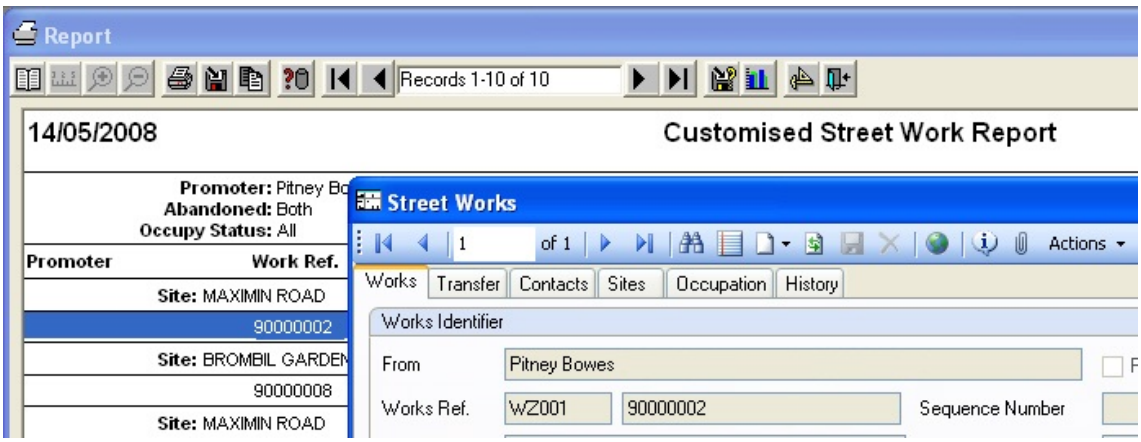
The Data Source then links to the Street Works Notice screen via a Linked Table as follows:



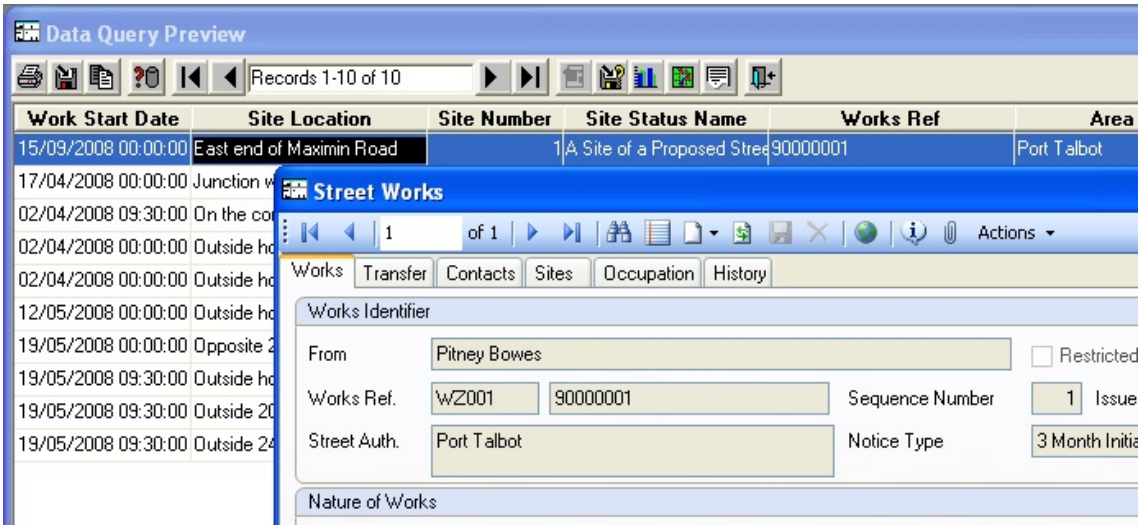
In this Data Source, the Primary Key is shown as the column 'Work Header No' which references the database field sw_notice_header.work_header_no. This field is the primary key which enables Confirm to find the correct Notice and launch the Notice screen when a report is double-clicked on. For your own custom Drill-down link to work you will need to identify a database field that happens to hold the Primary Key for the Entity you want to Drill-down to. Once you have established that, add a column for it to the Data Source and add a Linked Table referencing the appropriate

Entity table and set its Primary Key set to be that Column. Refer to the Confirm Data Dictionary and Schema for the Confirm database structure.

The following image shows a Report Template that has been run and a specific Street Works Notice has been double clicked to open the Notice.



The following image shows the same as above, although in this example the User has double clicked a Notice in the Data Source grid view to open the Notice.



Viewing Data Sources on the Map

There are buttons that can be used to display data source information on the Map as follows:

Select Features on Map

This button is displayed if the selected Data Source has Feature columns and a linked Feature table. It behaves the same as the existing 'Feature Lookup' map button and includes the ability to map new features on the map and view existing features.

Show Report Results on Map

This button is displayed when any of the following conditions are true on the Data Source:

1. The Data Source has Easting and Northing columns. Clicking the button creates a Map Layer based on the Easting's and Northing's in either MapInfo Tab format or an ESRI Shapefile format and adds the layer to the map.
2. The Data Source has Feature columns and a Feature linked table. Clicking the button creates a Map Layer by their Central Asset ID in either MapInfo Tab format or an ESRI Shapefile format and adds the layer to the Map.
3. The Data Source has Feature, Distance and XSP Offset columns. Clicking the button performs Dynamic Segmentation on the data and creates a Map Layer based on the results on the map in either MapInfo Tab format or an ESRI Shapefile format and adds the layer to the map.

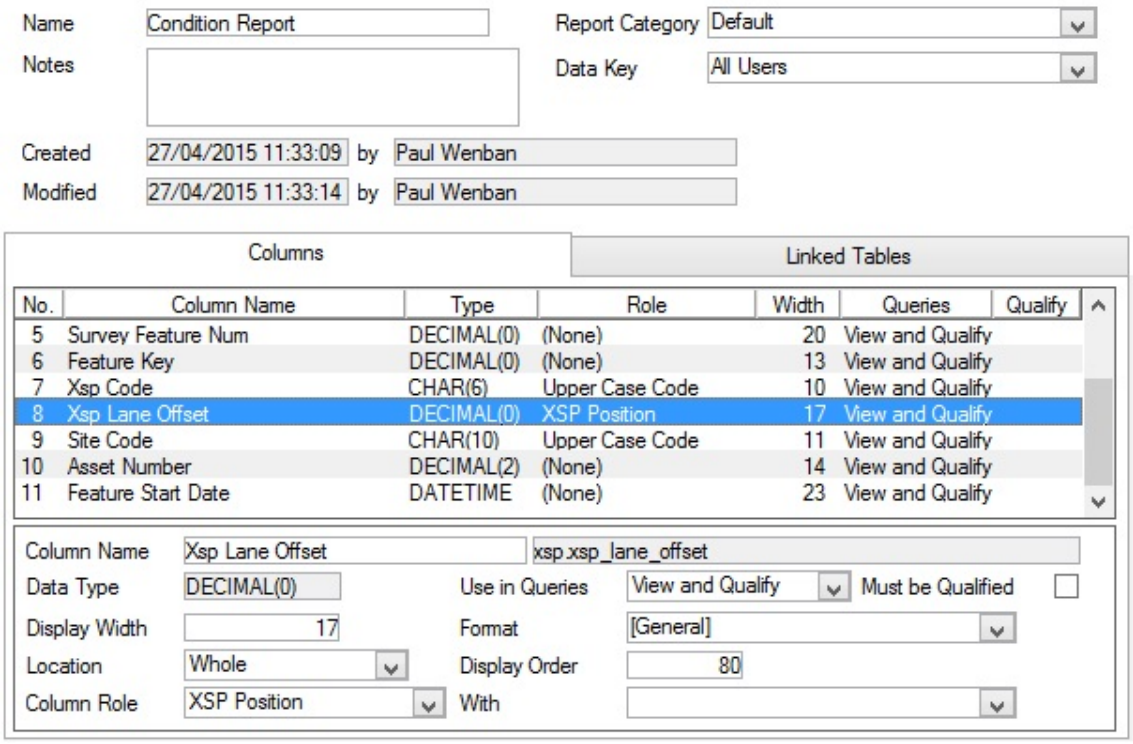
Note: The source geometry for Features comes from the mapping options on the Feature Group. The Confirm Database Map Layer will be used if configured, else the configured Referential Integrity layer will be used. If the Data Source has a link to the Feature table and Easting and Northing columns then the values in the Easting and Northing will be used (if valid) in preference to the Feature's geometry.

Note: As the ESRI Shapefile format only supports one geometry type, if the outputted geometries are of more than one type then multiple shapefiles will be created, one for each geometry type. These will have the same name as the originally selected file name except that "_points", "_lines" and "_polygons" will be appended to the name of each file.

Note: The following roles for Dynamic Segmentation also have an effect on how data is viewed on the map:

- A column whose Role is designated as 'XSP Position', as shown below, will determine which side of the road data is displayed or offset.
- Chainage columns restrict the data to part of Feature on the Map:

1. A start column, defined by setting a column's Location to 'Start' and its Role as 'Distance'
2. An end column, defined by setting a column's Location to 'End' and its Role to 'Distance'
3. A link between the start and end column, by setting the With field of the start column to point to the end column, and the With field of the end column to point to the start column



Action Button - View Data

When the View Data action is selected, a Data Query Preview window will be displayed. Clicking the View On Map button will display a prompt asking to select a file name and location for the new map layer. This layer can be either MapInfo Tab format or an ESRI Shapefile format. The layer will then be displayed on the map.

For ArcMap Mapping Link users only Dynamic Segmentation data can be viewed. Using ArcMap tools Version 10.00c.AM or above there are no column restrictions, all data is transferred to the map layer. For previous versions of the tools only columns with the following names were exported to ArcMap:

- Feature Group
- Lane
- Treatment Type
- Ranking
- Estimated Cost
- Cost Code
- Funded Status
- Feature Type
- Measurement
- Inv Asset Id
- Observation Type
- Numeric Value

Data Source Examples

Survey Example

```
SELECT
   central_site.site_name,
   feature.site_code,
   feature.plot_number,
   feature.central_asset_id,
   feature.feature_location,
   feature.feature_start_date,
   feature.feature_end_date,
   survey.survey_type_key,
   survey_type.survey_type_name,
   survey.survey_number,
   survey_feature.survey_feat_end,
   survey_observation.xsp_code,
   xsp.xsp_name,
   xsp.xsp_lane_offset as xsp_position,
   survey_observation.survey_obs_start as start_distance,
   survey_observation.survey_obs_end as end_distance,
   survey_observation.observe_type_key,
   observe_type.observe_type_name,
   survey_observation.survey_obs_value,
   observe_parm_opt.obs_parm_opt_name

FROM
   central_site, feature, survey_type, survey, survey_feature, xsp, observe_type, survey_obser-
vation, observe_parm_opt

WHERE
   feature.site_code = central_site.site_code AND
```

```
  survey_type.survey_type_key = survey.survey_type_key AND
  survey.survey_number = survey_feature.survey_number AND
  feature.feature_key = survey_feature.feature_key AND
  survey_observation.survey_feature_num = survey_feature.survey_feature_num AND
  survey_observation.xsp_code = xsp.xsp_code AND
  survey_observation.observe_type_key = observe_type.observe_type_key AND
  survey_observation.obs_parm_code = observe_parm_opt.obs_parm_code AND
  survey_observation.obs_parm_opt_code = observe_parm_opt.obs_parm_opt_code
```

Inventory Example

```
SELECT central_site.site_name,
  feature.site_code,
  feature.plot_number,
  feature.feature_key,
  feature.feature_id,
  feature.central_asset_id,
  feature.feature_location,
  feature.feature_start_date,
  feature.feature_end_date,
  inventory_item.inv_start_date,
  inventory_item.inv_end_date,
  inventory_item.feature_type_code,
  feature_type.feature_type_name,
  xsp.xsp_name,
  xsp.xsp_lane_offset as xsp_position,
  inventory_item.inv_start_chainage as start_distance,
  inventory_item.inv_end_chainage as end_distance,
  inventory_item.inv_start_width,
  inventory_item.inv_end_width

FROM
  central_site, feature, xsp, feature_type, inventory_item

WHERE
  feature.site_code = central_site.site_code AND
  inventory_item.feature_key = feature.feature_key AND
  inventory_item.xsp_code = xsp.xsp_code AND
  inventory_item.feature_type_code = feature_type.feature_type_code
```

Note: After copying the SQL to the new Data Sources you will need to manually add the column roles in the set order as per the instructions in the first section of this page.

Report Category

The Report Category lookup can be used to categorise the library of Data Sources according to the nature of the data they return, their purpose, or in any way desired. These Report Categories can then be used when searching for Data Sources.

Note: There is a 'Default' Report Category automatically created by the system and used as the default for any new Data Sources created. It is not possible to delete this record, although its name can be changed.

Follow Ups

The Follow Up library contains a list of time-scales which will be used to calculate dates for the progression and completion of various items in Confirm e.g. Jobs, Street Works and Enquiries.

Confirm, by default contains one Follow Up 'D1 - One Day', which is used in the Routine Maintenance Priority, and in System Settings where a Follow Up is required.

Follow Up Code:	Up to 4 alphanumeric characters.
Name:	Up to 30 characters.
Number of Months:	Up to 4 numbers. Supply the number of calendar months to calculate the date. This will take into account where the literal date would be incorrect i.e. a one month follow up from 30th January would become 28th February and not 30th February. **Note:** If the Follow Up is in use by a Condition Survey Inspection Type then it will not be possible to alter the months, days or hours fields. **Condition Survey\Condition Survey**
Number of Days:	Up to 4 numbers. Number of days will be counted sequentially, including weekends and Non Working Days, unless 'Working Days' is checked
Number of Hours:	Up to 2 numbers, to 2 decimal places. Minutes are represented as decimal fractions of an hour. So 30 minutes should be entered as 0.50. Hours will be counted sequentially through 24 hours per day, unless the start and end times for the working day have been set in the General System Settings.
Working Days:	Check this to show that the 'Number of Days' excludes weekends and dates entered in the Non Working Days lookup. This field is disabled if a 'Number of Months' is supplied.

Non Working Days

The Non Working Days lookup lists the dates that should be excluded from a follow up calculation based on Working days. Weekends are automatically excluded from 'Working Days'.

To complete the Non Working Days form:

Non Working Date:	Enter the date.
Name:	Up to 30 characters

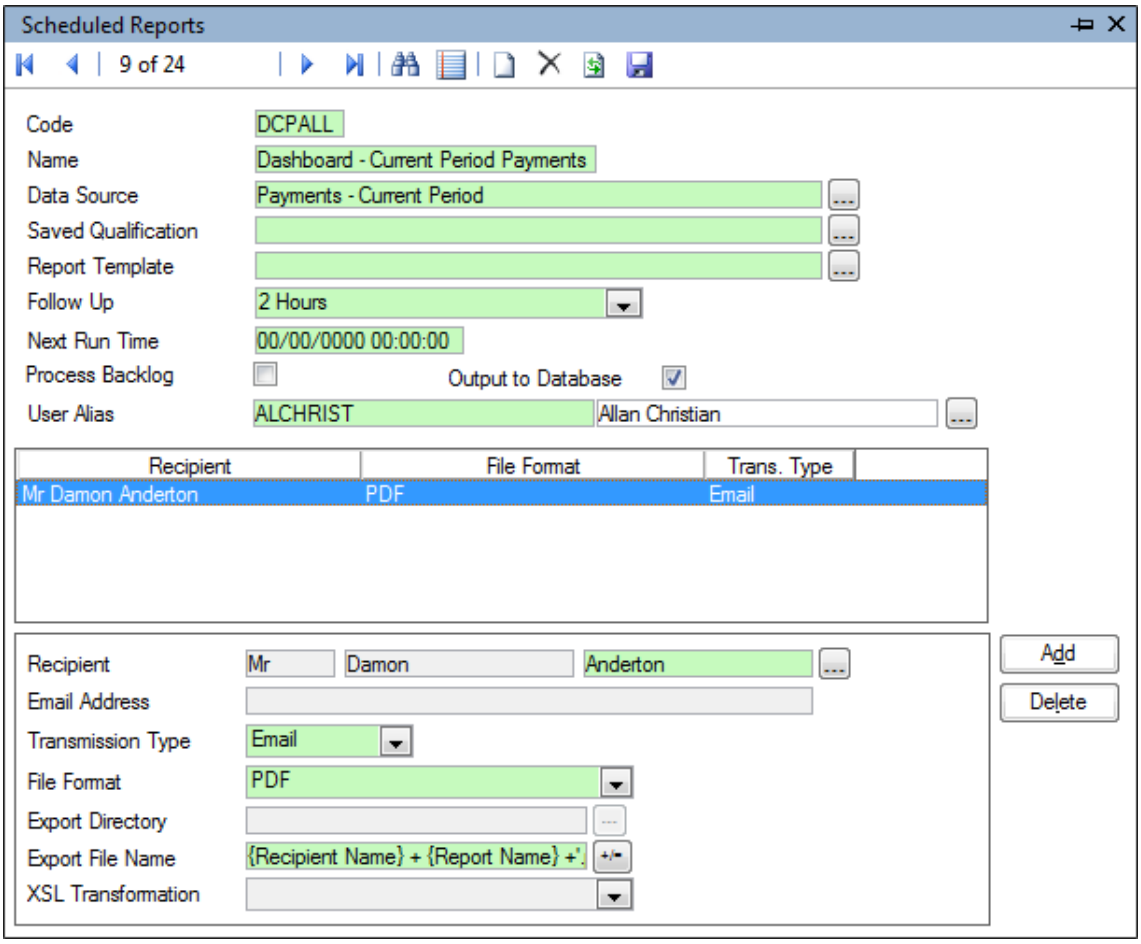
Scheduled Reports

(Data Miner - Scheduled Reports)

The Scheduled Reports is used to specify where the report should be sent using Email or FTP. It uses the Scheduled Tasks Screen to schedule reports .

(Dashboard module)

A cut-down Scheduled reports functionality is provided with the Dashboard module in order to make data available to the Dashboard at user-configured intervals. Where the Scheduled Reports module is not also present, the Scheduled Reports lookup contains no recipient information - the only option being to output data to the Database.



The Scheduled Reports library contains the details of all the reports that have been scheduled in this way. The following must be in place before a report can be scheduled:

- A suitable Data Source needs to be configured.
- If reports are to be distributed by email, at least one Contact must be configured with a valid email address.

Asset Maintenance\Maintenance Lookups

- An appropriate Follow Up must be created in the Follow Ups Lookup.

Code:	Up to six characters.
Name:	Up to 50 characters. Each Scheduled Report must have an unique Name.
Saved Qualification:	You may optionally select a Saved Qualification. The pick list references the **Saved Qualifications Lookup**
Report Template:	You may optionally select a Report Template. The pick list references the **Report Templates Lookup.**
Follow Up:	Select a Follow Up to define the length of time before the report should run again.

Next Run Time: This field must be populated with the date and time for the first run. After that it will automatically append the Follow Up time to define the next due Scheduled Report.

Last Run Start / Finish / Duration: These fields show the Start and Finish time of the last run of this Scheduled Report, and the Duration of that run. This allows slow running Reports to be easily identified.

Note: These fields will be reset whenever changes are made to the Data Source on which the Scheduled Report is based.

Process Backlog: This field controls the behaviour of the Task Processor when it finds that a Scheduled Report is due to be run and that several runs have been missed (for example because the Task Processor has been inactive for some time).

If Process Backlog is ticked, each missing intermediate run will be carried out in turn. Otherwise, the Scheduled Report will only be run once.

Note: Process Backlog should not be ticked for Scheduled Reports used purely to populate a Dashboard. In this case only the data from the latest run is relevant. Processing the backlog unnecessarily, especially for a Report set to run frequently, can have a detrimental impact on performance.

Output to Database: (Dashboard Module)

Check this to indicate that this Scheduled Report is to be available in the database for use by the Dashboard.

User Alias: The report will be run under this User's login, and the data retrieved will be limited by their Work Group rights.

Recipient: Select a Contact to whom the report will be sent. The pick list references the Contact Lookup

Asset Maintenance\Maintenance Lookups

Email Address: Automatically populated from the Contact details and may not be edited.

Note: Where an email address needs to be added or edited, this must be done in the Contact Lookup. The Contact may then be re-selected in the Recipient field to populate the email address.

Transmission Type: Select from:

Email: will send the report to the Recipient via email provided they have a valid email address.

File: will create the report in a file, which will be stored in the location provided in the Export Directory.

File Format: Select an appropriate file format from the drop down list. See **File Format - Map Layers** below for further details.

Note: This does not append the file extension onto the Export File Name.

Export Directory: This field is only available if 'File' is chosen as the 'Transmission Type'. Use the pick button to browse for the required location.

Note: The location selected in this field must be a valid and accessible location for the server running Confirm Task Processor.

Export File Name: Enter a file name, or use the Expression window to formulate a file name. The file name will be used for file transmission.

Note: If a file already exists in the Export Directory with this name, the new file will overwrite the existing one. If the overwrite fails for existing file in use or any other reason, agent supervisor will be notified via email.

XSL Transformation: This field is only available if XML -XSL has been chosen as the 'File Format'. Select from the drop down list to apply an XSL Stylesheet. The drop down list references the Scheduled Reports Export Transformations Lookup, and displays only those XML Transformations using the same Data Source as that specified for this **Scheduled Report.**

File Format - Map Layers

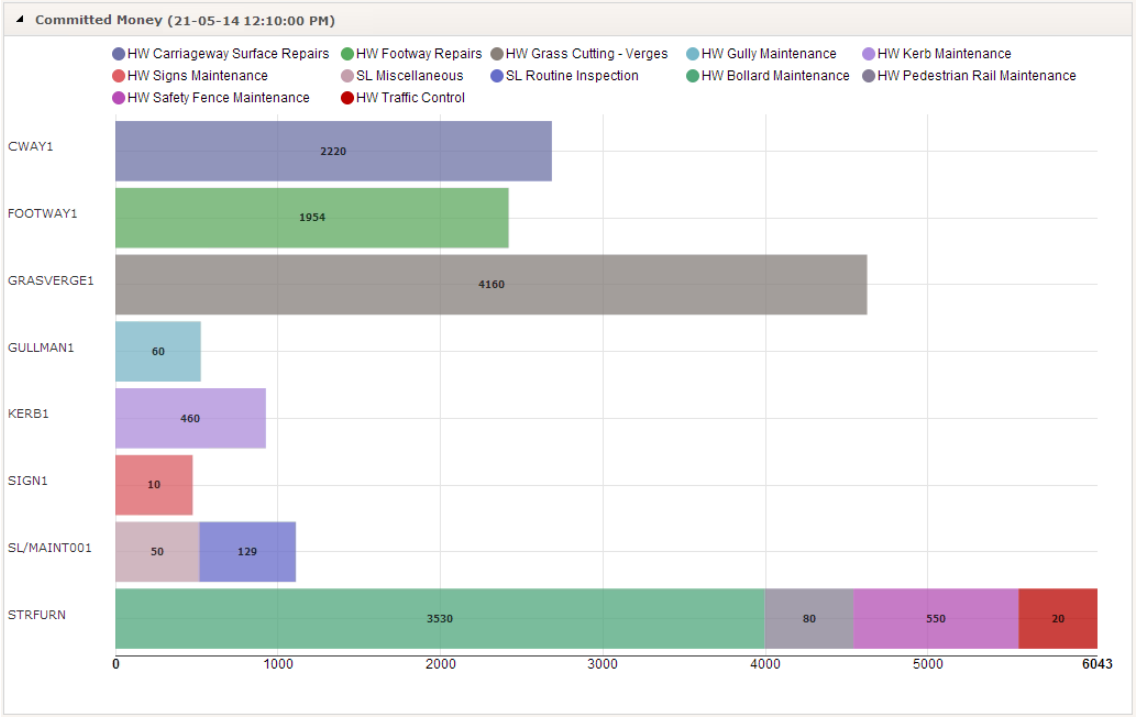
Where a Map Layer file format is selected the appropriate geometry will be included for each record in the results in the same way as if the **Show Report Results on Map** button were clicked when viewing the results of the Data Source or Report interactively.

Map Layer formats generate more than one file, all of which will be included in the Email or Files generated. The companion file names will be the same as that specified on the Export File Name with the file extension changed as appropriate.

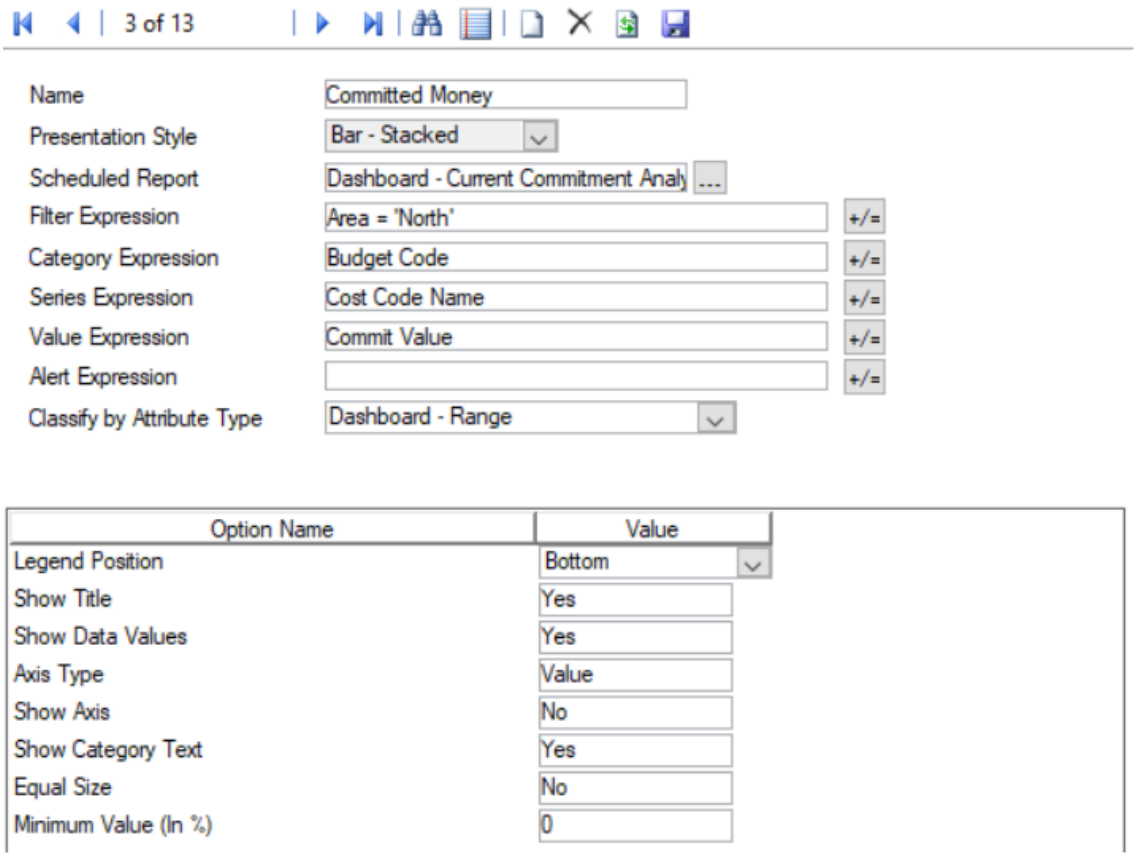
Note: Only the MapInfo TAB file Map Layer format is currently available for use with Scheduled Reporting.

Dashboard Widgets

A Dashboard Widget is a Dashboard component that specifies the Scheduled Report (and therefore Data Source and Qualification) that will be used, and defines the presentation of the data.



Widgets are placed in a grid to make up the Dashboard, and Widgets may be moved and replaced by others at any time.



Name	The name entered here will appear in the title bar of the Widget in the Dashboard along with the last time that the Widget was refreshed. This may be disabled for a particular Widget if desired using the Show Title Option.
Presentation Style	Select an appropriate Presentation Style according to how data should be displayed. The available Presentation Styles are listed and described in the table below, and each one is explained in detail on a separate page. It is possible to change the Presentation Style of an existing Dashboard Widget. Howeverif a user has a Dashboard open in the Confirm web interface when this change is made, the change will not reflect automatically. The user will need to reload the page (F5) or switch Dashboard in order to see it.
Scheduled Report	Select from the pick list. The pick list references the **Scheduled Reports lookup.**
Filter Expression	This is a conditional expression used to filter a Scheduled Report and should be evaluated to either True or False. For example, create a single Scheduled Report of all Enquiries, but then filter it on different Dashboard Widgets based on different regions like North, South, East and West.

Sample expression -

```
{Area} = 'North'
```

Note: A Dashboard Widget can also be configured to filter data according to the current User. Please refer to page **Dashboard Data Sources** for more information on how to do this.

Category Expression	Defines data according to categories used in Bar and Column Presentation Styles. The category expression must evaluate to a string. In the examples above the category expression of Budget Code contains values of 'CWAY1', 'FOOTWAY1', etc.
Series Expression	Defines data according to series, which are used to split categories in Stacked Widgets (Bar - Stacked and Column Stacked) and Gauge Presentation Styles. The series expression must be a string. In the examples above the series expression of Cost Code Name contains values of 'HW Carriageway Surface Repairs', 'HW Footway Repairs', etc.
Value Expression	This expression returns the numerical values assigned to the chart or counter for each row on the Data Source. This must be a number. In the example above the values are determined not by count, but the Commit Value of the returned rows.

Note: For Heat Maps the resulting value can be between 0 and 100 which represents a weighting, where 100 is 'hot' and 0 is 'cold'.

It is also possible to set the weighting by using a value range from a Condition or Attribute type by supplying an expression. For example:

if(Survey Obs Value >= 9, 100, if(Survey Obs Value >= 7, 60, if(Survey Obs Value >= 4, 25, if(Survey Obs Value >= 0, 10, 1))))

Alert Expression

If the Widget ever needs to alert the User based on its contents then an appropriate expression should be entered here. The expression will be evaluated for each row of data retrieved, and if the list of results contains new items then an alert will be triggered.

For example if an Alert Expression of "{Enquiry Number}" is entered for a Customer Services Dashboard Widget showing newly raised Enquiries, then each time the Dashboard refreshes and finds a new Enquiry, it will alert the User. Changing the expression to "If({Subject Name} = 'Emergency', String({Enquiry Number}), ")" will restrict this so the User is only alerted about the arrival of a new Enquiry of this particular Subject, even though the Widget may show others.

If a Dashboard alert is triggered then:

- If the Dashboard is open and currently active, nothing will happen other than the display being refreshed.
- If the Dashboard is open, but another Confirm window is active, the Confirm toolbar will update the Dashboard icon to show a warning symbol

  Clicking the icon or selecting the Dashboard removes the warning symbol.

- If Confirm is not the currently active application, Confirm will flash on the Windows Taskbar and when the User clicks it, Confirm will open with the Dashboard at the front.

Note: In order for this functionality to be effective, the Dashboard must be open in Confirm, and the **Dashboard User Settings** on page 90 'Refresh Dashboard while Inactive' must be ticked.

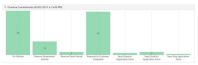
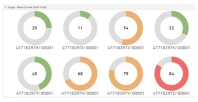
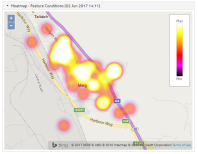
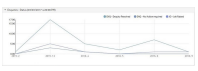
Classify by Attribute Type	Colours can be defined from the chosen Attribute Type. This will assign the colour and display order to the Categories, Series, or number ranges in a Counter presentation style or the colour and display order for a Map presentation style. Please refer to the **Configuring Attribute Types for Dashboard Widgets** on page 32 page for further details.
Data Key	To control access to the Widget, and the ability to add this Widget to a Dashboard.

Options

The lower portion of the form allows the definition of options for the Widget. The available Options will vary depending on the Presentation Style selected.

Presentation Styles

The available Presentation Styles are listed and described in the table below, and each one is explained in detail on a separate page.

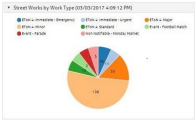
Bar Column		To represent each of the Category expression results as a coloured horizontal or vertical bar. See **Dashboard Widget - Bar / Column** for details.
Bar - Stacked Column - Stacked		To represent each of the Category expression results as a horizontal or vertical bar. The bar is subdivided by reference to Series Expression results. See **Dashboard Widget - Bar Stacked / Column Stacked** for details.
Counter		To count or sum the records based on the Value expression. See **Dashboard Widget - Counter** for details.
Gauge		Represents the data as arcs of a circle showing the proportion of a defined Maximum Value for each Category. See **Dashboard Widget - Gauge** for details.
Heat Map		Visualise point data on a map, with Value expression values represented as colours. Points close together contribute to the display so that areas where points are concentrated appear 'hotter' than areas with few points. See **Dashboard Widget - Heat Map** for details.
Line		Shows a line or number of lines, for example to visualise a trend in data over time. See **Dashboard Widget - Line** for details.

Map

Visualise point data on a map, with each point coloured based on the Value expression.

See **Dashboard Widget - Map** for details.

Pie



Shows a filled circle divided into slices, with each slice representing a category and sized according to the proportion of the total represented by that category.

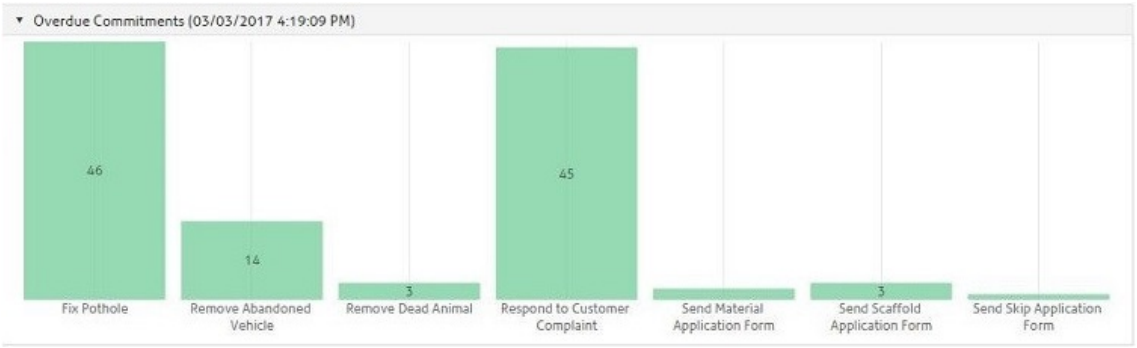
See **Dashboard Widget - Pie** for details.

Stacked Area

Used for displaying multiple data series which contribute to an overall total, for example to visualise a trend in such data over time.

See **Dashboard Widget - Stacked Area** for details.

Dashboard Widget - Bar / Column

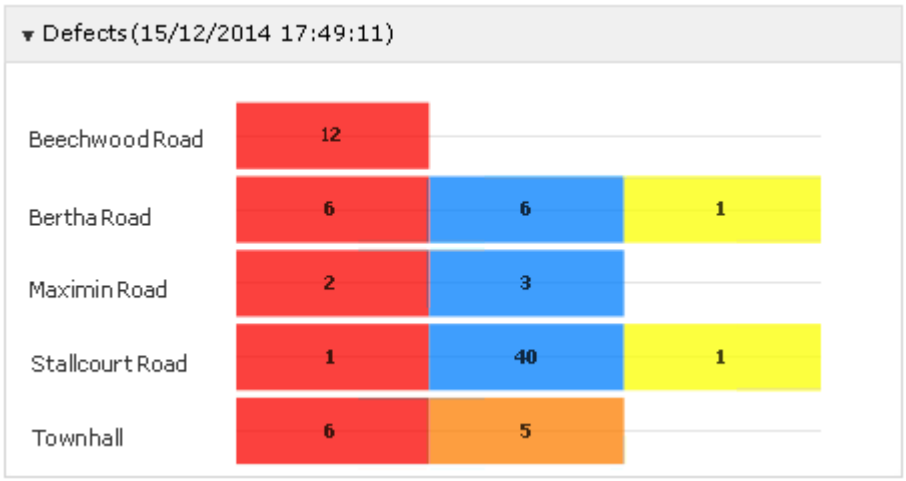
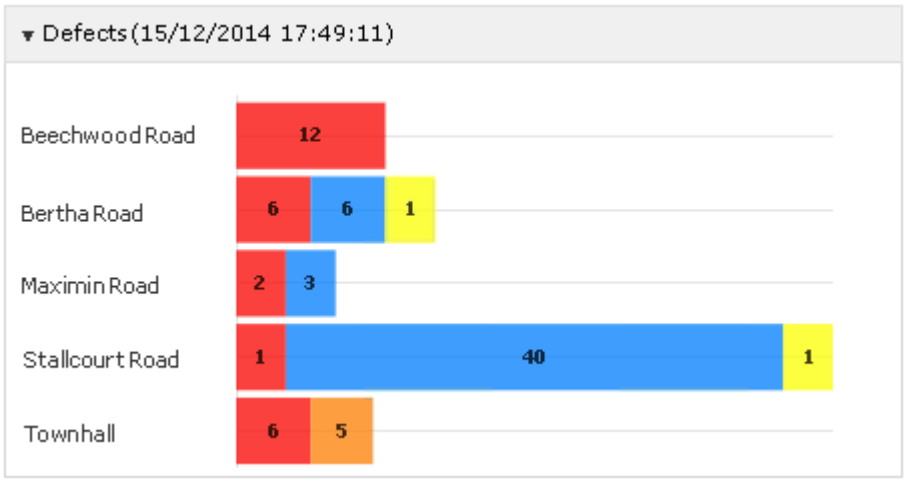


A Bar Widget represents each of the Category expression results as a coloured horizontal bar.

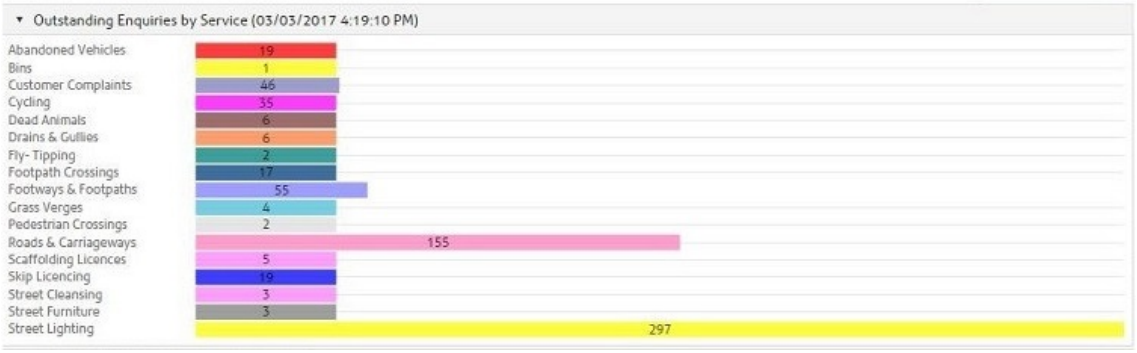
A Column Widget works the same way, except that the bars run vertically.

Options

Show Title	Select 'Yes' to display the Widget name as a Title of the Dashboard.
Show Data Values	Select 'Yes' to display the numerical Data Values in the Chart. **Note:** Value will only be displayed if the width of the Bar is wide enough to fit the value. Width of the Bar will set according to value specified for Minimum Size setting.
Show Axis	Select 'Yes' to display an Axis on the Bottom of the Widget, or 'No' to hide the Axis. **Note:** If set to 'Yes', then Equal Size and Minimum Width settings are ignored.

Show Category Text	Select 'Yes' to display the Category labels on the bar, column charts, Line or Stacked Area charts, or select 'No' to hide them.
Equal Size	Select 'Yes' to set the size of the values on Bar, Column, Bar - Stacked and Column - Stacked widgets equally. For example:  **Note:** This setting can only take effect if Axis Type is set to 'Value' and Show Axis is set to 'No'. If this setting is set to 'Yes' then the Minimum Value setting will be ignored.
Minimum Value (In %)	Select an option from drop down to give small values a minimum width on Bar, Column, Bar - Stacked, Column - Stacked and Pie widgets. For example, with a minimum width of 10%:  **Note:** This setting can only take effect if Axis Type is set to 'Value', Show Axis is set to 'No', and Equal Size is set to 'No'.

Dashboard Widget - Bar Stacked / Column Stacked

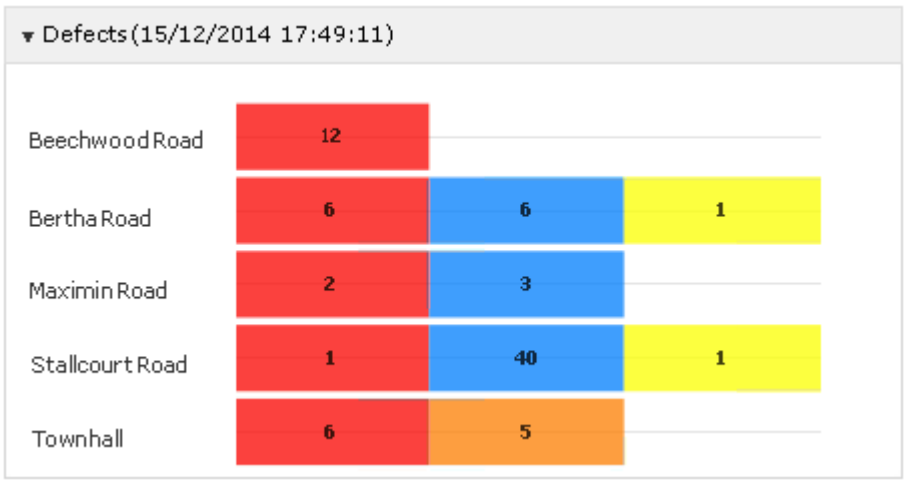


A Stacked Bar Widget represents each of the Category expression results as a coloured horizontal bar. The bar is subdivided by reference to Series expression results.

A Stacked Column Widget works the same way, except that the bars run vertically.

Options

Legend Position	You may select 'None' to omit a legend, or select where it will appear within the Widget (Top or Bottom).
Show Title	Select 'Yes' to display the Widget name as a Title of the Dashboard.
Show Data Values	Select 'Yes' to display the numerical Data Values in the Chart. **Note:** Value will only be displayed if the width of the Bar is wide enough to fit the value. Width of the Bar will set according to value specified for Minimum Size setting.
Axis Type	Select from: 'Value' - To size the bar or column relative to the total value and represent the series as scaled portions of the stacked bar or column. 'Percent' - To show the stacked bar or column across the full width of the Widget, and to represent the Series values as percentages of that width. **Note:** If set to 'Percent', then Equal Size and Minimum Width settings are ignored.
Show Axis	Select 'Yes' to display an Axis on the Bottom of the Widget, or 'No' to hide the Axis. **Note:** If set to 'Yes', then Equal Size and Minimum Width settings are ignored.
Show Category Text	Select 'Yes' to display the Category labels on the bar, column charts, Line or Stacked Area charts, or select 'No' to hide them.
Equal Size	Select 'Yes' to set the size of the values on Bar, Column, Bar - Stacked and Column - Stacked widgets equally. For example:

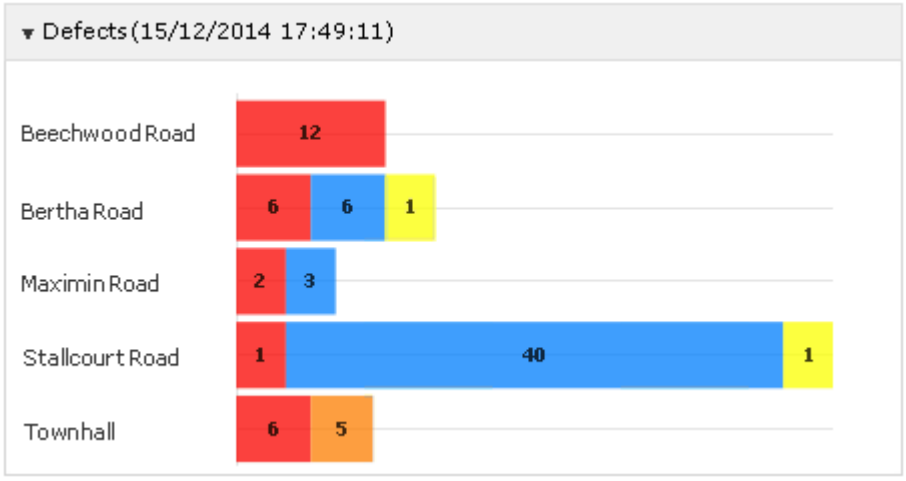


Note: This setting can only take effect if Axis Type is set to 'Value' and Show Axis is set to 'No'. If this setting is set to 'Yes' then the Minimum Value setting will be ignored.

Minimum Value (In %)

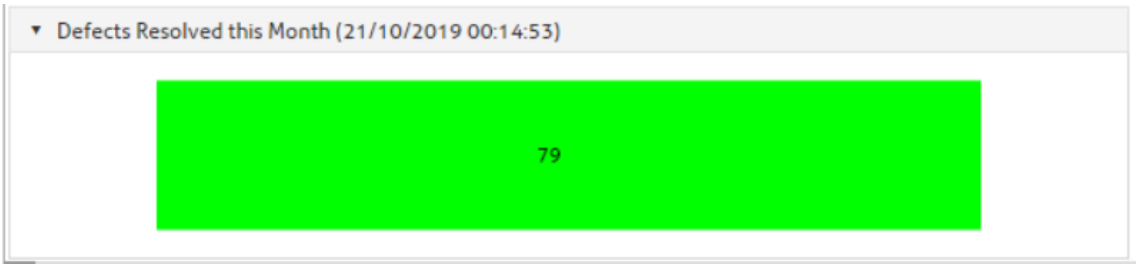
Select an option from drop down to give small values a minimum width on Bar, Column, Bar - Stacked, Column - Stacked and Pie widgets.

For example, with a minimum width of 10%:



Note: This setting can only take effect if Axis Type is set to 'Value', Show Axis is set to 'No', and Equal Size is set to 'No'.

Dashboard Widget - Counter

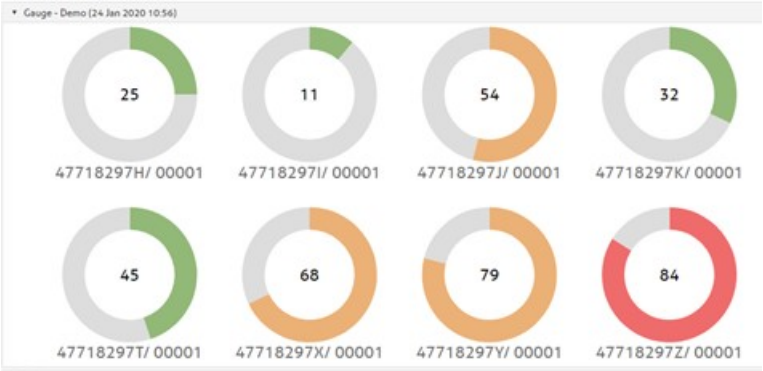


A Counter Widget counts or sums records based on the Value expression.

Options

Legend Position	You may select 'None' to omit a legend, or select where it will appear within the Widget (Top or Bottom).

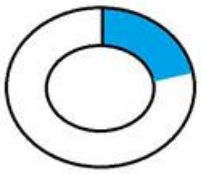
Dashboard Widget - Gauge



A Gauge Widget represents the data as arcs of a circle showing the proportion of a defined Maximum Value for each Category.

A separate Gauge will be displayed within the Widget for each Category. The Series expression may be used to sub-divide the arc and/or to determine the display colour.

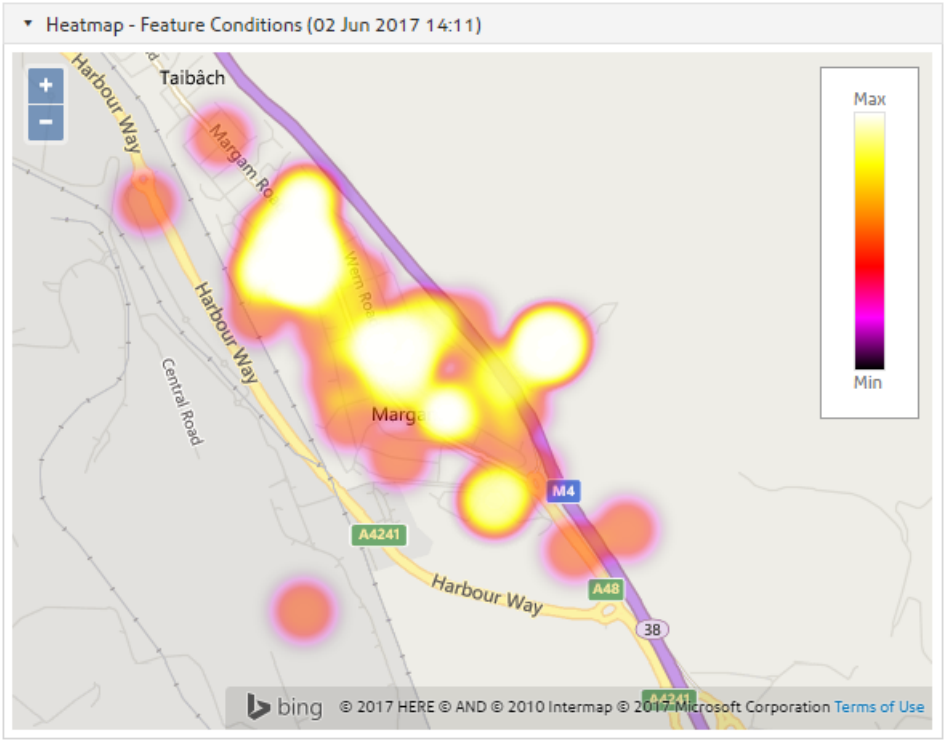
Options

Legend Position	You may select 'None' to omit a legend, or select where it will appear within the Widget (Top or Bottom).
Show Title	Select 'Yes' to display the Widget name as a Title of the Dashboard.
Axis Type	Select whether the value in the centre of each Gauge should be the absolute value or the percentage of the Maximum Value.
Show Category Text	Select 'Yes' to display the Category labels underneath each Gauge.
Maximum Value	Select the Maximum Value for the data to be shown, for example if displaying percentage data, select 100.
Display Style	Select from one of the following display styles. Dial:  Speedometer:

Semi-Circle:

Voltmeter:

Dashboard Widget - Heat Map



A Heat Map Widget visualises data on a map, with Value expression values represented as colours.

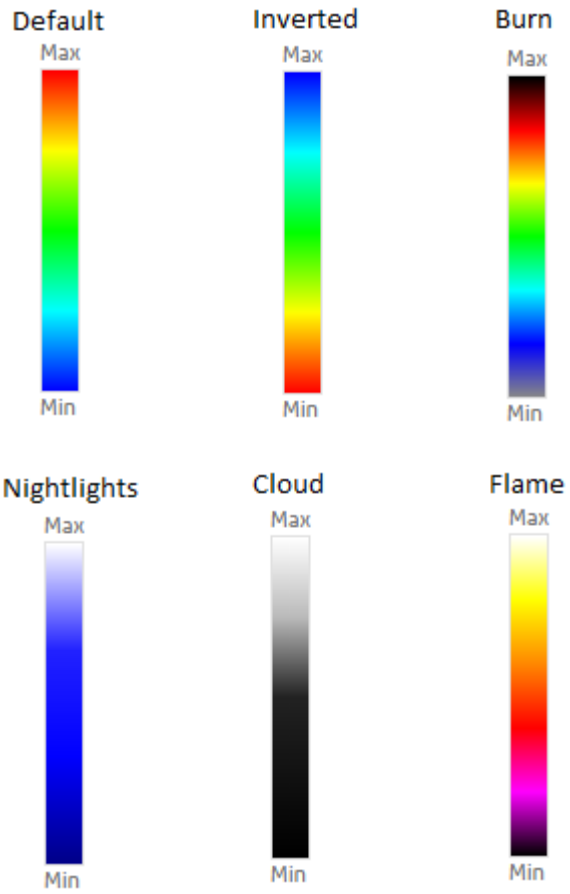
Points close together contribute to the display so that areas where points are concentrated appear 'hotter' than areas with few points.

Note: Requires the associated Scheduled Report to contain a Data Source that retrieves Eastings and Northings.

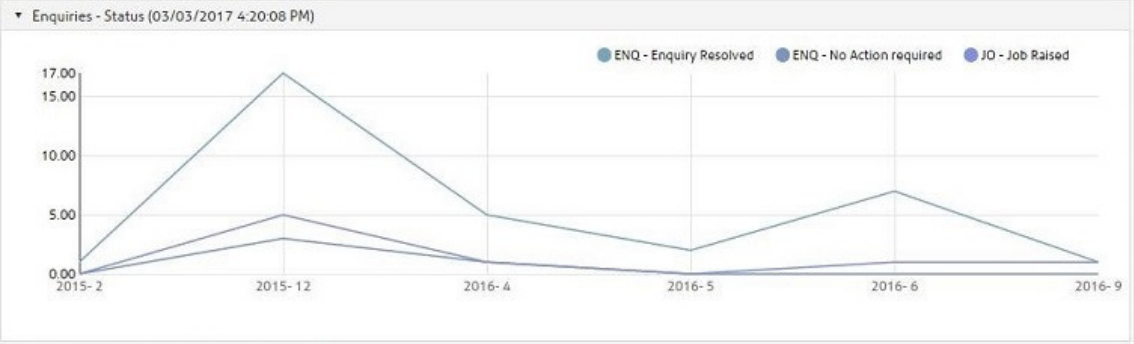
Options

Show Legend	Select whether to display a Legend on the Widget.

Show Title	Select 'Yes' to display the Widget name as a Title of the Dashboard.
Radius	Sets the radius of the individual data items that appear on the Heat Map widget, which affects whether items overlap to appear 'hotter' on the map. A smaller radius will provide a more granular heat map and is better for heat maps with dense areas of data. A large radius is better for looking at heat maps with sparse data.
Opacity	Set the opacity of data shown on Heat Map widgets. This will affect whether the background map is visible through the heat map data. The opacity has a cumulative affect, meaning that areas of high density data will be more opaque than areas of low density data. Setting the opacity to 1 will cause the heat map data to be completely opaque, but setting the opacity to 0 will make the data completely transparent.
Colour Scheme	Select from one of the following colour schemes for Heat Map widgets.



Dashboard Widget - Line



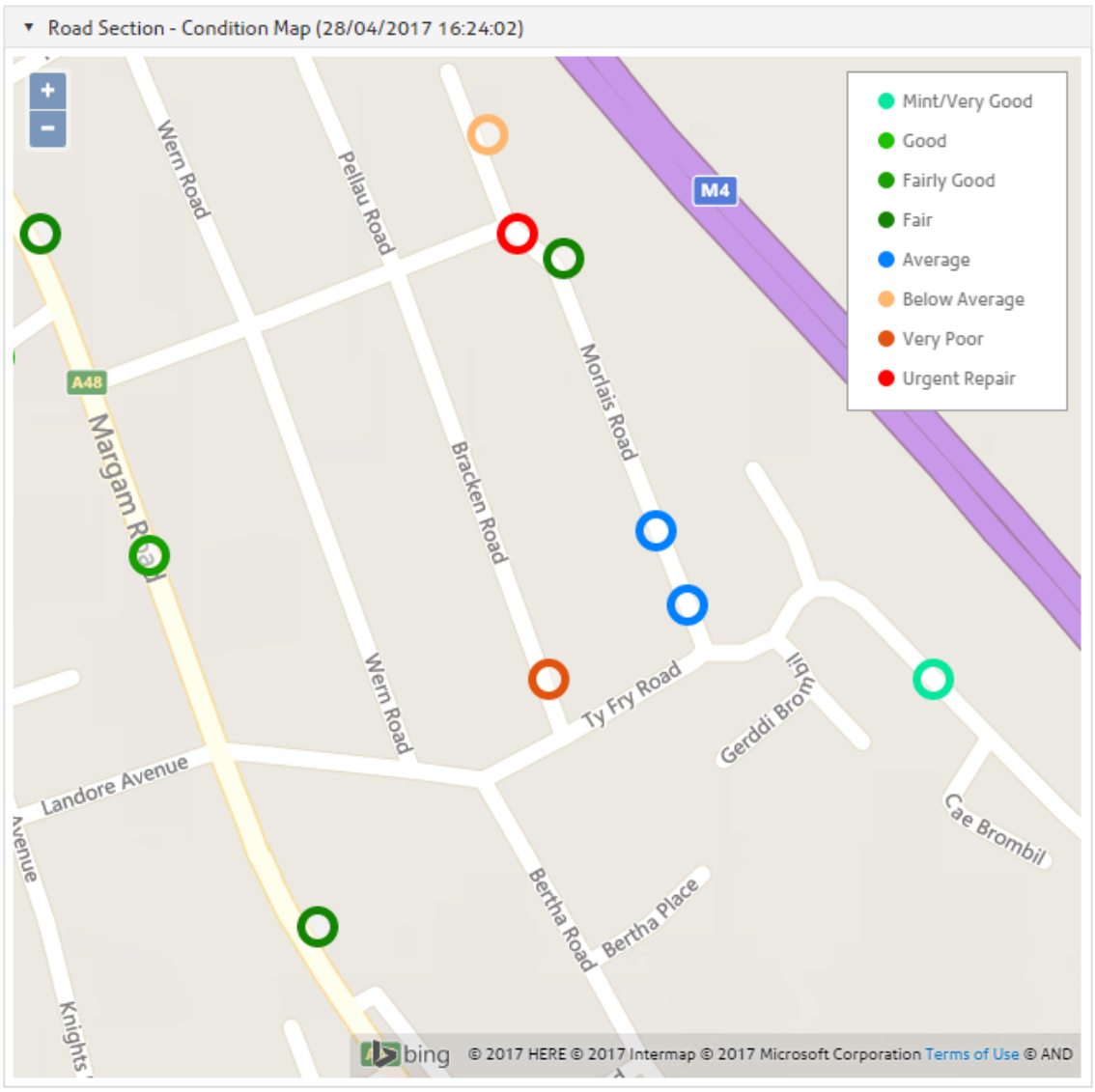
A Line Widget shows a line or number of lines, for example to visualise a trend in data over time.

The Category expression is used to define the horizontal axis. Multiple lines will be shown according to the Series expression.

Options

Legend Position	You may select 'None' to omit a legend, or select where it will appear within the Widget (Top or Bottom).
Show Title	Select 'Yes' to display the Widget name as a Title of the Dashboard.
Show Axis	Select 'Yes' to display an Axis on the bottom of the Widget, or 'No' to hide the Axis.
Show Category Text	Select 'Yes' to display the Category labels on the bar, column charts, Line or Stacked Area charts, or select 'No' to hide them.

Dashboard Widget - Map



A Map Widget visualises data as points on a map, coloured based on the Value expression.

Note: Requires the associated Scheduled Report to contain a Data Source that retrieves Eastings and Northings. Only point data can be shown on the map at this time.

Options

Show Legend	Select whether to display a Legend on the Widget.
Show Title	Select 'Yes' to display the Widget name as a Title of the Dashboard.
Use Pie Chart Icons for Clusters	For Map widgets, set this option to 'Yes' to show any clustered data as a pie chart icon, where the icon is divided into coloured sections representing the content of the cluster.:- Setting this option to 'No' will display a cluster icon coloured only by the Attribute Value with the highest Display Order. See **Configuring Attribute Types for Dashboard Widgets** on page 32 for more details:-

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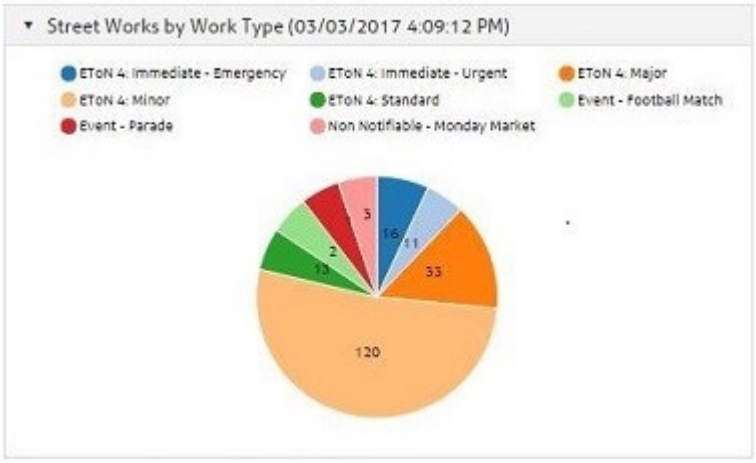
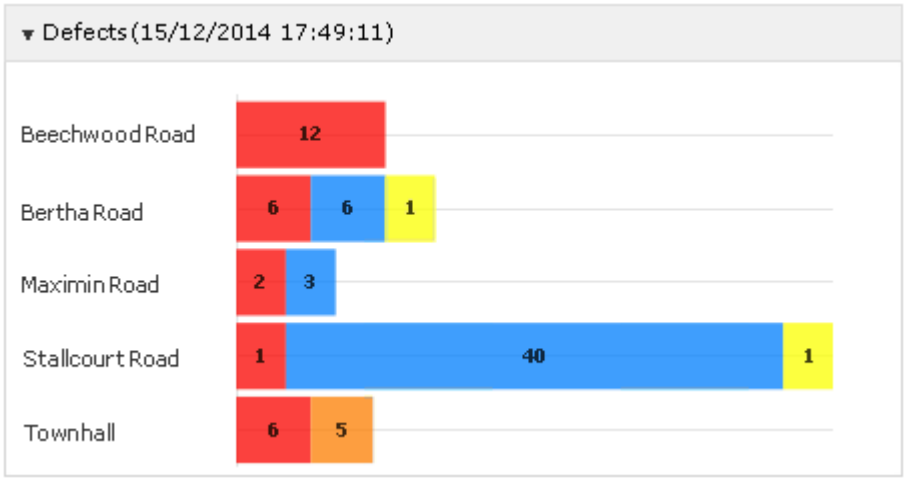
Dashboard Widget - Pie



A Pie Widget shows a filled circle divided into slices, with each slice representing a category and sized according to the proportion of the total represented by that category.

Options

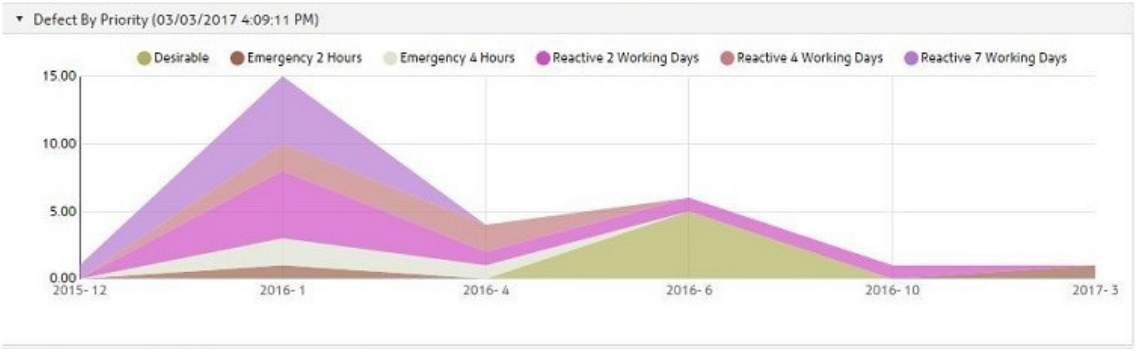
Legend Position	You may select 'None' to omit a legend, or select where it will appear within the Widget (Top or Bottom).
Show Title	Select 'Yes' to display the Widget name as a Title of the Dashboard.
Show Data Values	Select 'Yes' to display the numerical data values in the Chart. **Note:** A value will only be displayed if the width is enough for the value to fit. Width of the Bar will set according to value specified for Minimum Size setting.
Minimum Value (In %)	Select an option to give small values a minimum width, to avoid them being displayed so small as to be indistinguishable. For example, with a minimum width of 10%:



Note: This setting can only take effect if Axis Type is set to 'Value', Show Axis is set to 'No', and Equal Size is set to 'No'.

Data Value Type	Select whether to display data values as Value or Percent.
Mode	Select whether the Widget will display data in a Pie or Donut style.

Dashboard Widget - Stacked Area



A Stacked Area Widget is used for displaying multiple data series which contribute to an overall total, for example to visualise a trend in such data over time.

The Category expression is used to define the horizontal axis. The area shown will be sub-divided according to the Series expression.

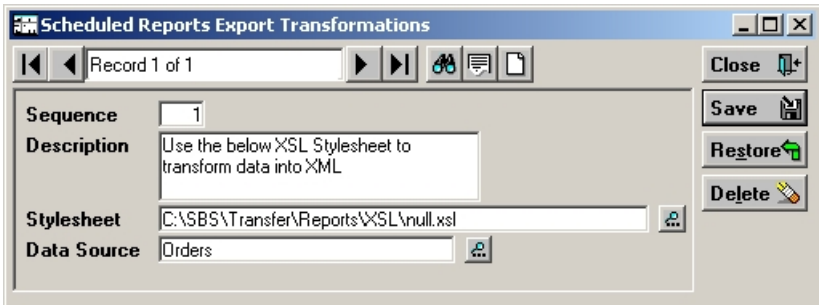
Options

Legend Position	You may select 'None' to omit a legend, or select where it will appear within the Widget (Top or Bottom).
Show Title	Select 'Yes' to display the Widget name as a Title of the Dashboard.
Show Axis	Select 'Yes' to display an Axis on the bottom of the Widget, or 'No' to hide the Axis.
Show Category Text	Select 'Yes' to display the Category labels on the bar, column charts, Line or Stacked Area charts, or select 'No' to hide them.
Mode	Select from the following two options: • Stacked - to display the height as absolute value, in order to see how the total value changes, as well as the value represented by each Series. • Expanded - to expand the height to the same level at each point, to more clearly see how the percentage represented by each Series changes.

Scheduled Reports Export Transformations

(Data Miner - Scheduled Reports)

The Scheduled Reports Export Transformations Lookup stores XML Stylesheet information for use in the Scheduled Reports Lookup.



Sequence: This field will be automatically populated with the next available number in the sequence. Enter a number to recall an existing transformation.

Description: A free text field, which may be used to describe the Style sheet.

Stylesheet: Enter the directory and file name for the Stylesheet. You may use the pick button to browse for the file.

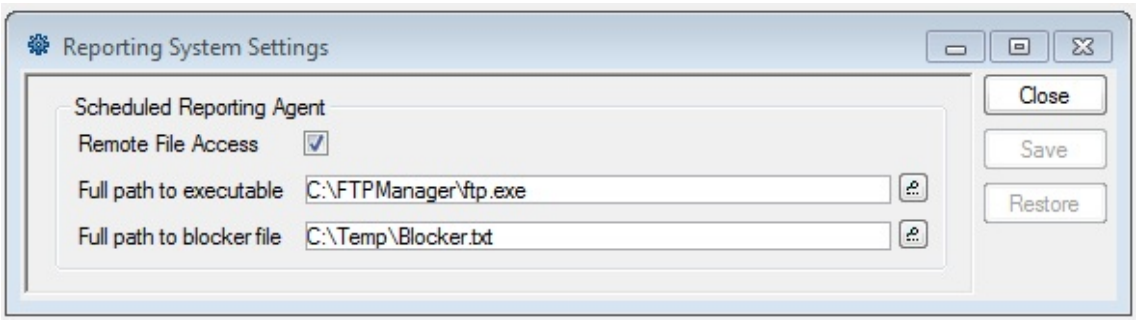
Note: The Stylesheet selected in this field must be accessible to the server running Confirm Task Processor.

Data Source: Select a relevant Data Source to use. This Data Source must be the same as the one specified for the Scheduled Reports that will use this Transformation. The pick list references the **Data Source lookup.**

Reporting System Settings

The remote file access functionality for the Scheduled Reporting Agent can be configured from this screen.

When a scheduled report is saved to file via the agent an executable, for example an FTP manager, can be automatically launched and a blocker file created.



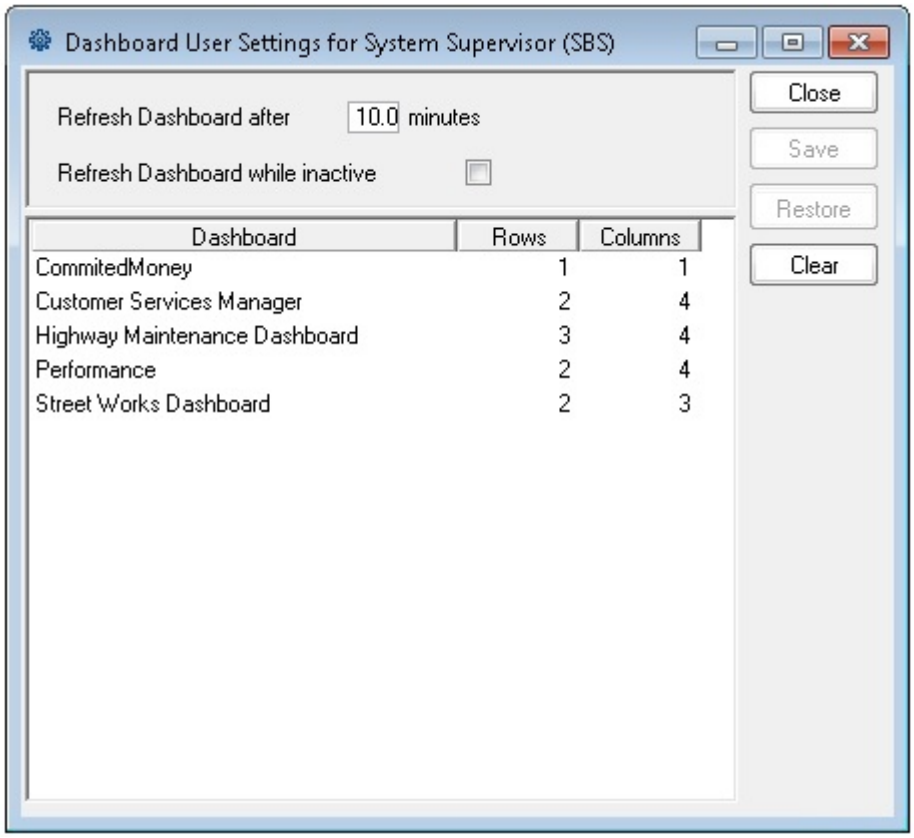
Remote File Access: Check to enable the remote file access functionality

Full Path to Executable: Enter the path and name of the executable to be automatically started when a scheduled report is saved to file

Full Path to Blocker File: Enter the full path and name of the blocker file to be automatically started when a scheduled report is saved to file

Dashboard User Settings

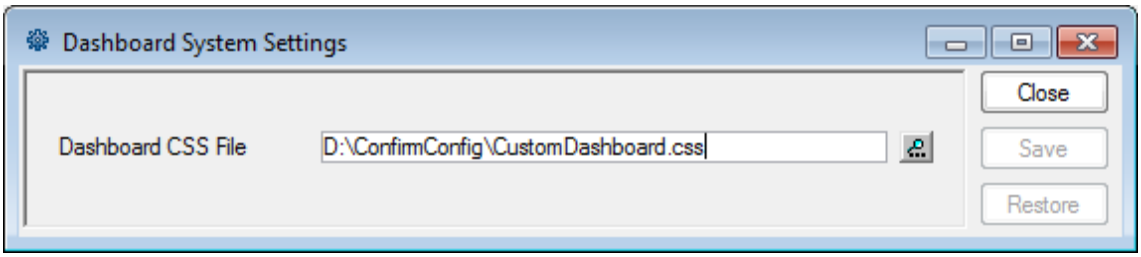
Each Dashboard that a user creates in the Dashboard window is automatically added to the Dashboard User Settings. The currently highlighted Dashboard is the one that will appear by default when Confirm is launched. The selection may be cleared using the Clear button to prevent the Dashboard from launching with Confirm. Clicking the 'Dashboard' button on the toolbar will then launch the Dashboard User Settings for selection of the Dashboard to be launched.



Refresh Dashboard After:	The interval, in minutes, after which the Dashboard will refresh the information it displays from the Scheduled Report results linked to the Widgets on the Dashboard. **Note:** The **Scheduled Reports** on page 71 will update in accordance with the follow-ups assigned to them. For the Dashboard refresh to provide meaningful updates, one would usually set the Dashboard to refresh at least as often as the most frequent Scheduled report.
Refresh Dashboard while inactive:	If this box is ticked then the User's Dashboard will continue to refresh at the specified interval even if it is not the top-most (active) window in Confirm.

Dashboard System Settings

Confirm uses a Cascading Style Sheet (CSS) to define the overall appearance of the Dashboard (fonts, borders, background). You may optionally use a custom CSS to change the Dashboard appearance by specifying its location in the Dashboard System Settings screen.



If no Dashboard CSS File is specified, Confirm uses the file 'dashboard.css' in the Confirm install folder. This file can be used as a starting point to create a custom CSS, but should not be modified itself, as any changes will be overwritten the next time a new Confirm version is installed.

Note: It is possible to right click on an existing Dashboard and select 'View Source' to see the HTML behind it, to assist with creating a CSS.

Creating Reports - step-by-step

1. Data Sources - All reports use a data Source to specify the Data that will be included in the Report. Sub-set of data may be defined by a subsequent Qualification of the data - but all tables (or columns) which supply the required data must be present in the Data Source. Data Sources are created and stored in the **Data Source Lookup.**

1. Data Qualifications - You may optionally qualify the data extracted with a Data Source, and save the Qualification for use with that Data Source. Saved Qualifications are stored in the **Saved Qualification Lookup** and associated with the Data Source for which they were created.

1. Report Template - Finally, the Data Source and (optionally) the Saved Qualification are put together with a Report Template which governs what the report will look like, what other elements (text and graphics) will be included, and defines any calculations that are to be carried out (a count of records for instance, or a sum of measurements). See "**Creating a Report Template** on page 17" for information on creating and formatting the Report Template. Report Templates may be saved and saved Report Templates are stored in the **Report Template lookup**

Using Confirm Reports

You may also use existing report Data Sources and Report Templates.

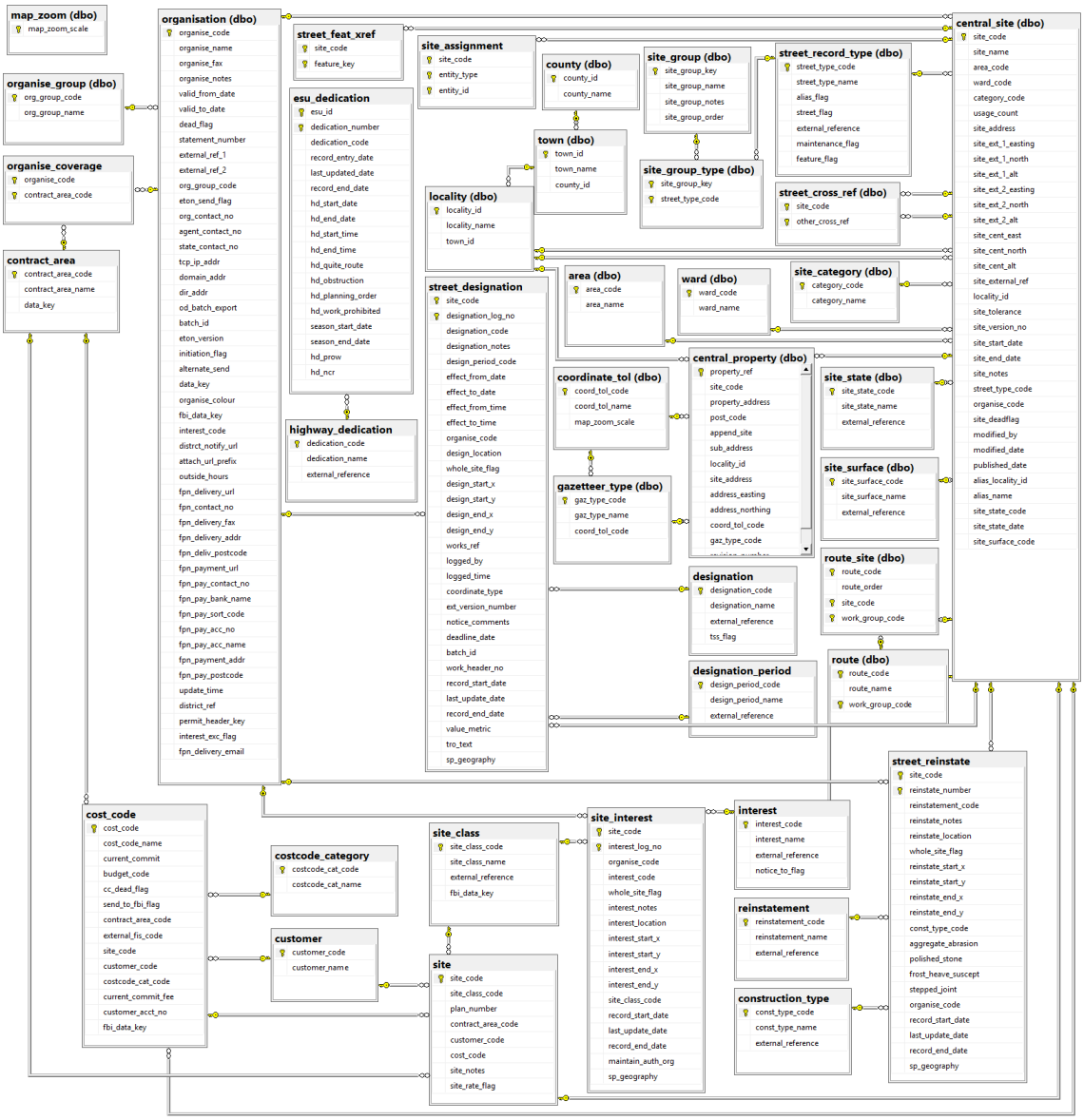
Creating Charts

Create charts from either the Data Query Preview window, or the Report preview window using the Charts button:

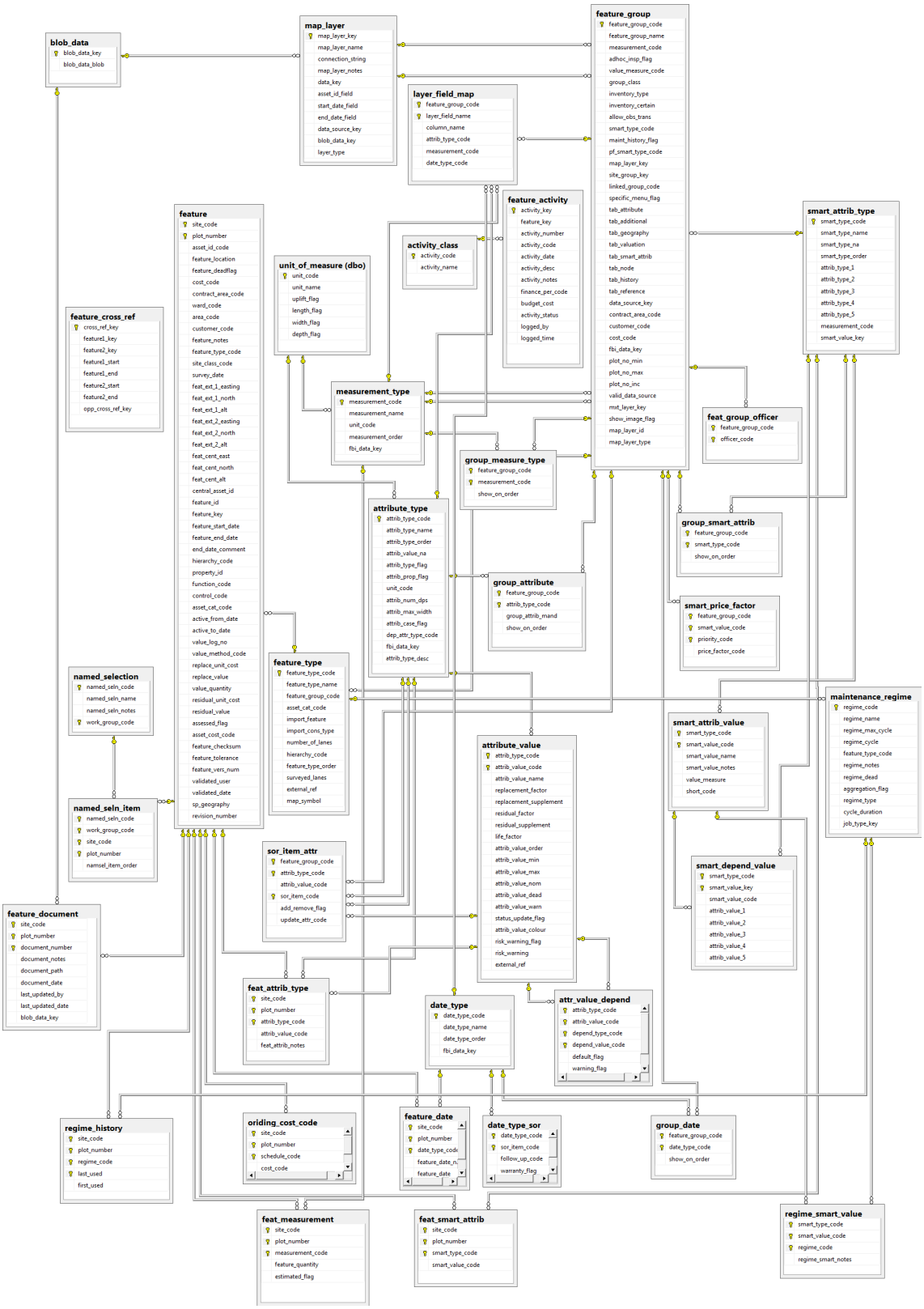
Schema Diagrams

This section contains database schema diagrams for all areas of the Confirm database to assist in creating Data Sources and Reports.

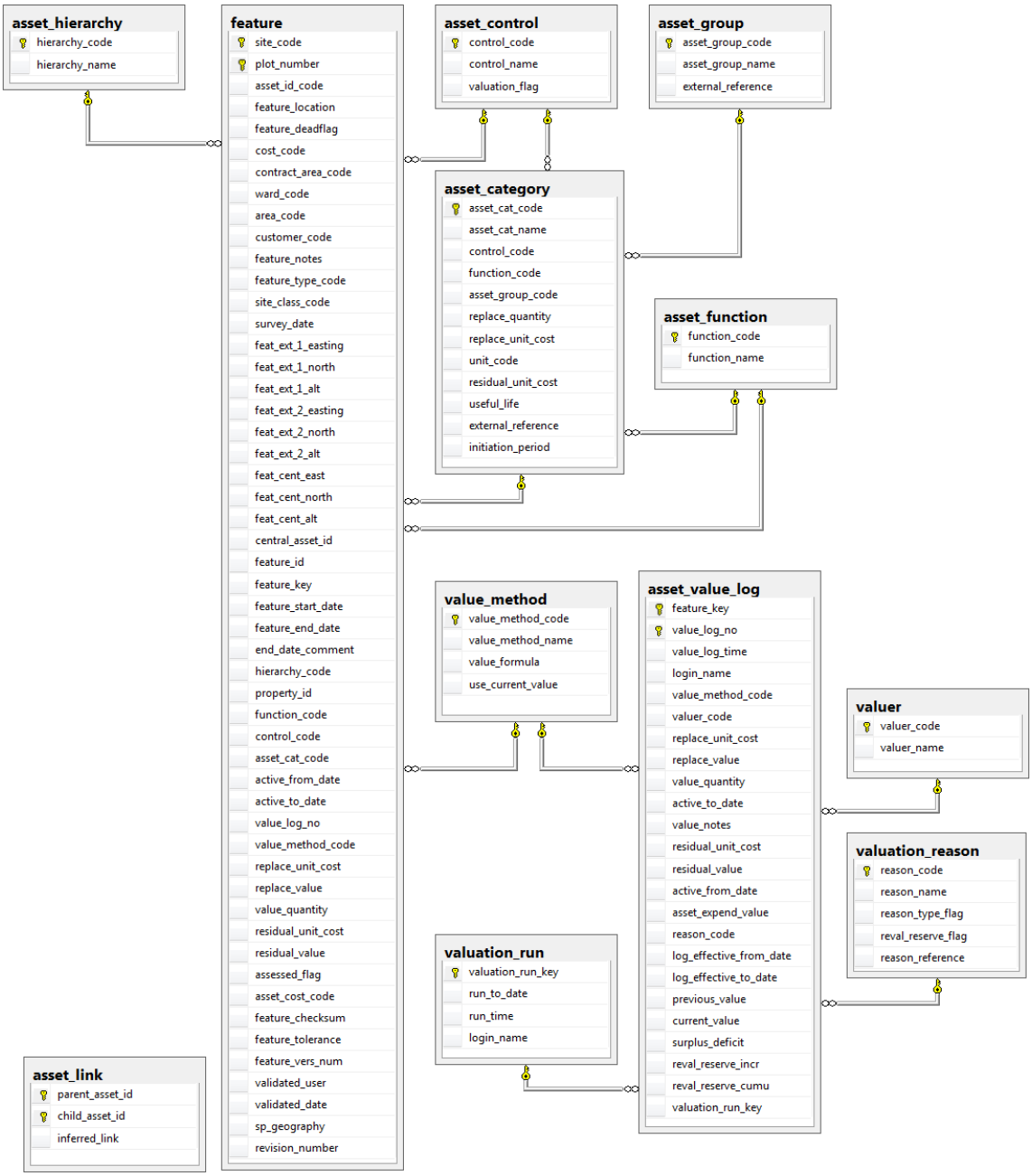
Site Register



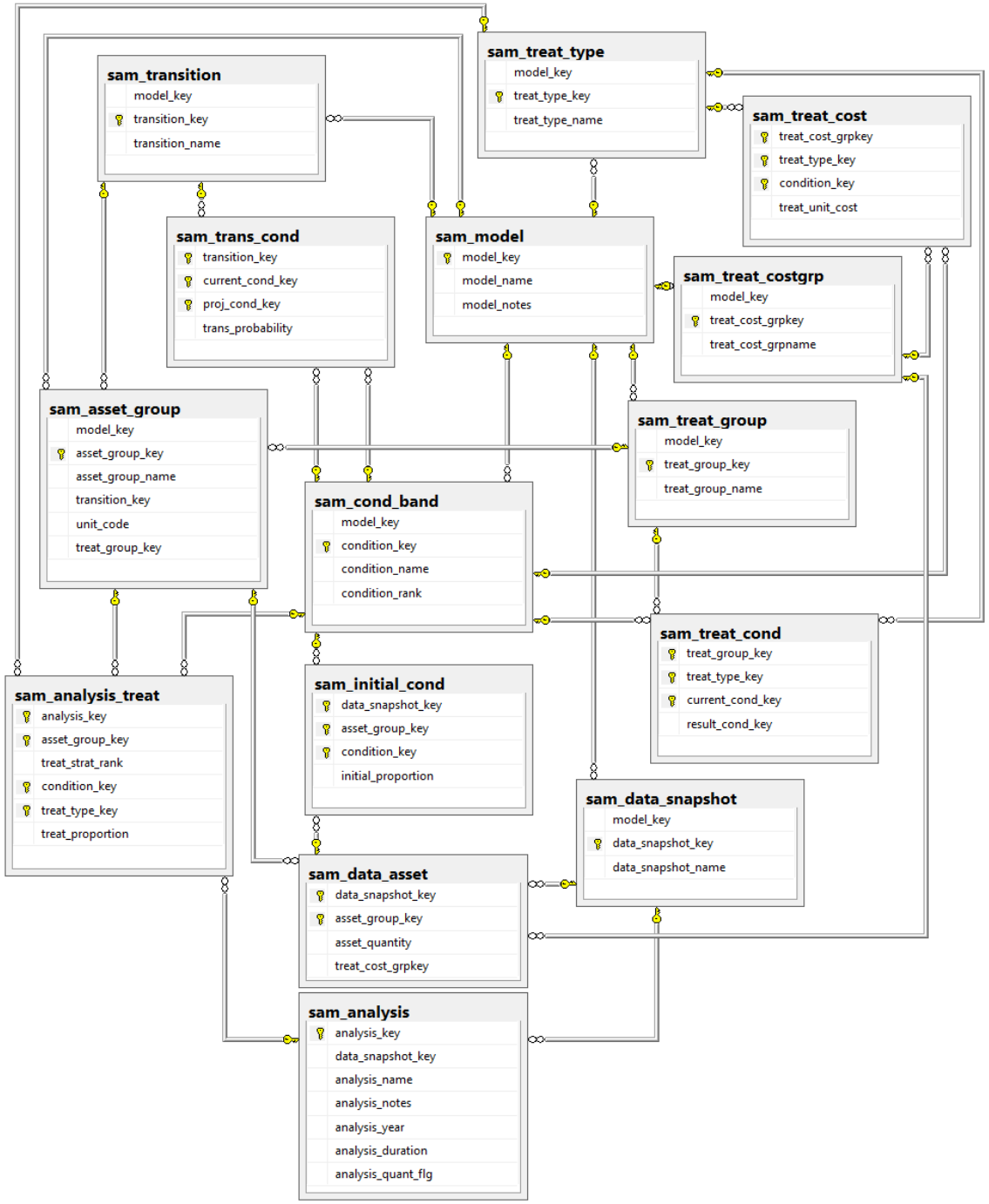
Asset Register



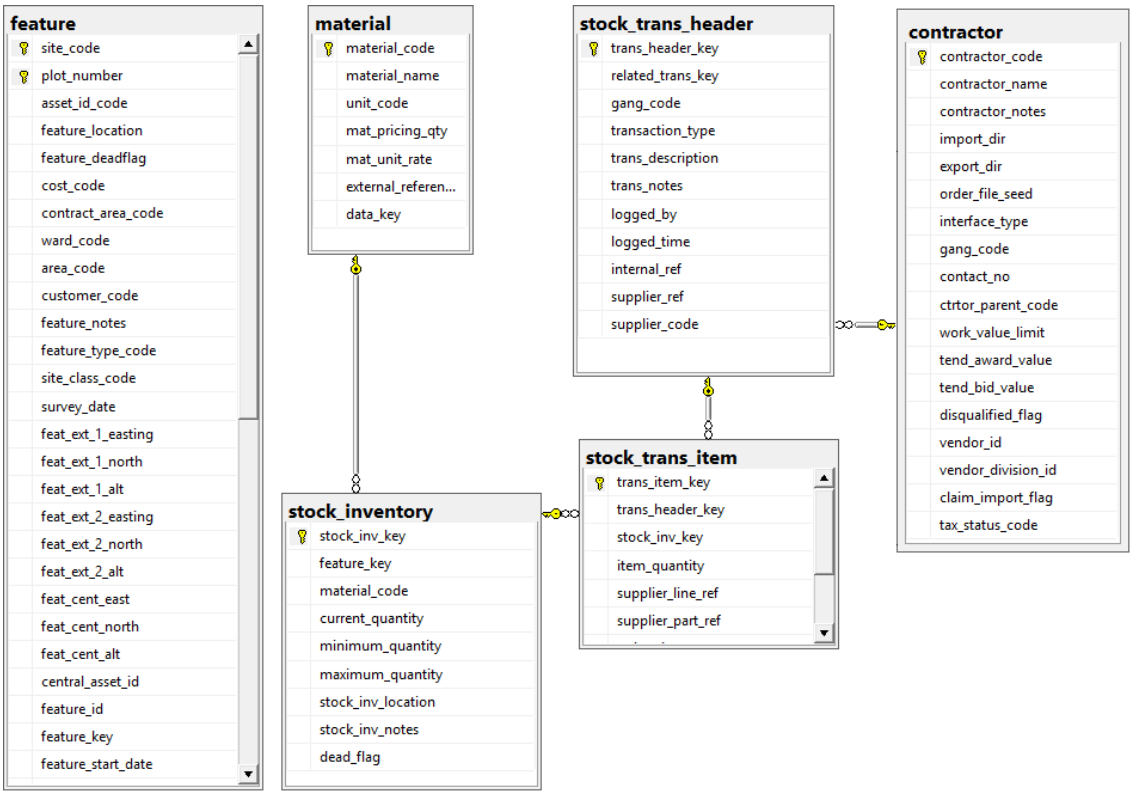
Asset Valuation and Depreciation



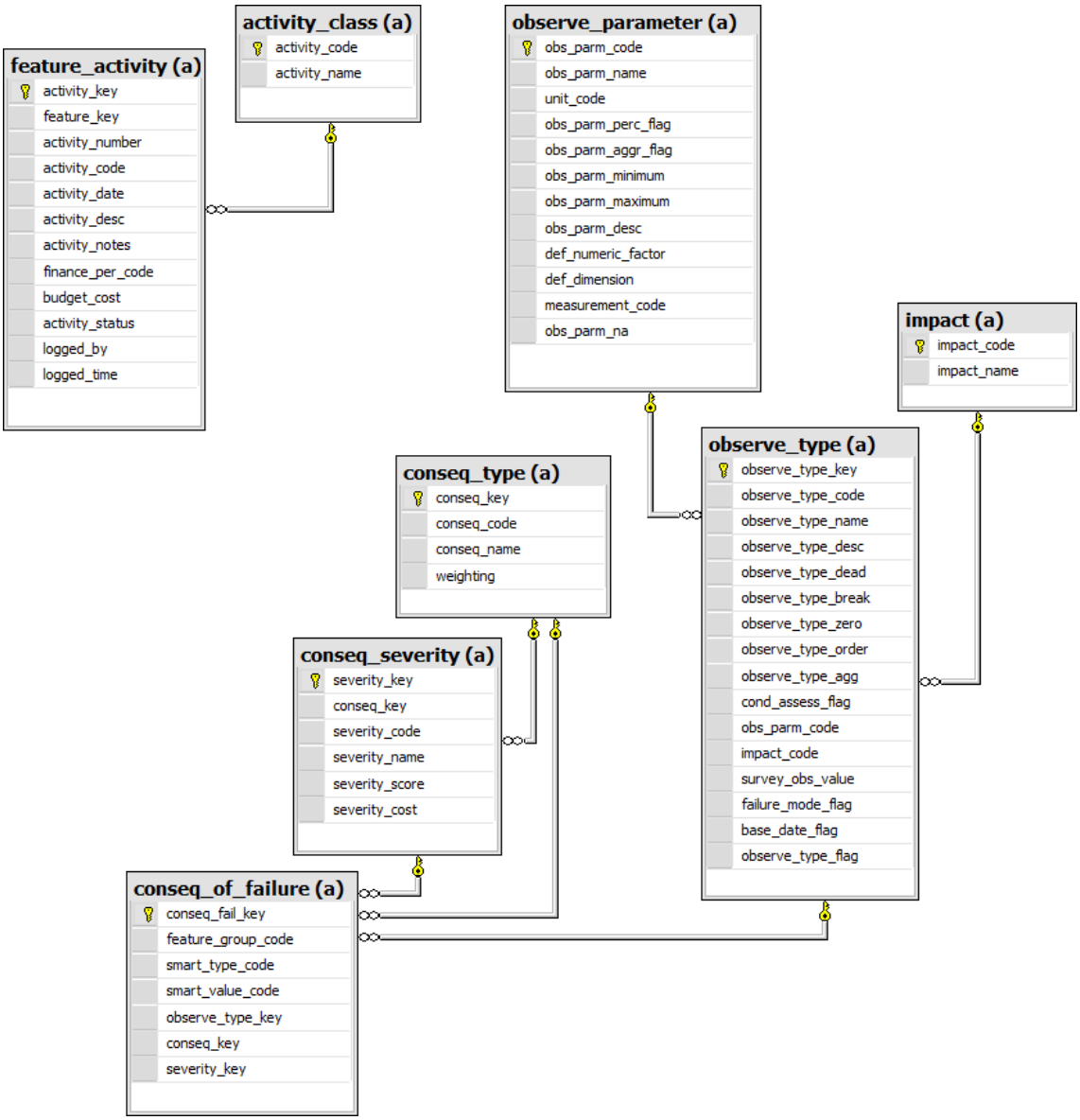
Confirm Strategic Asset Management



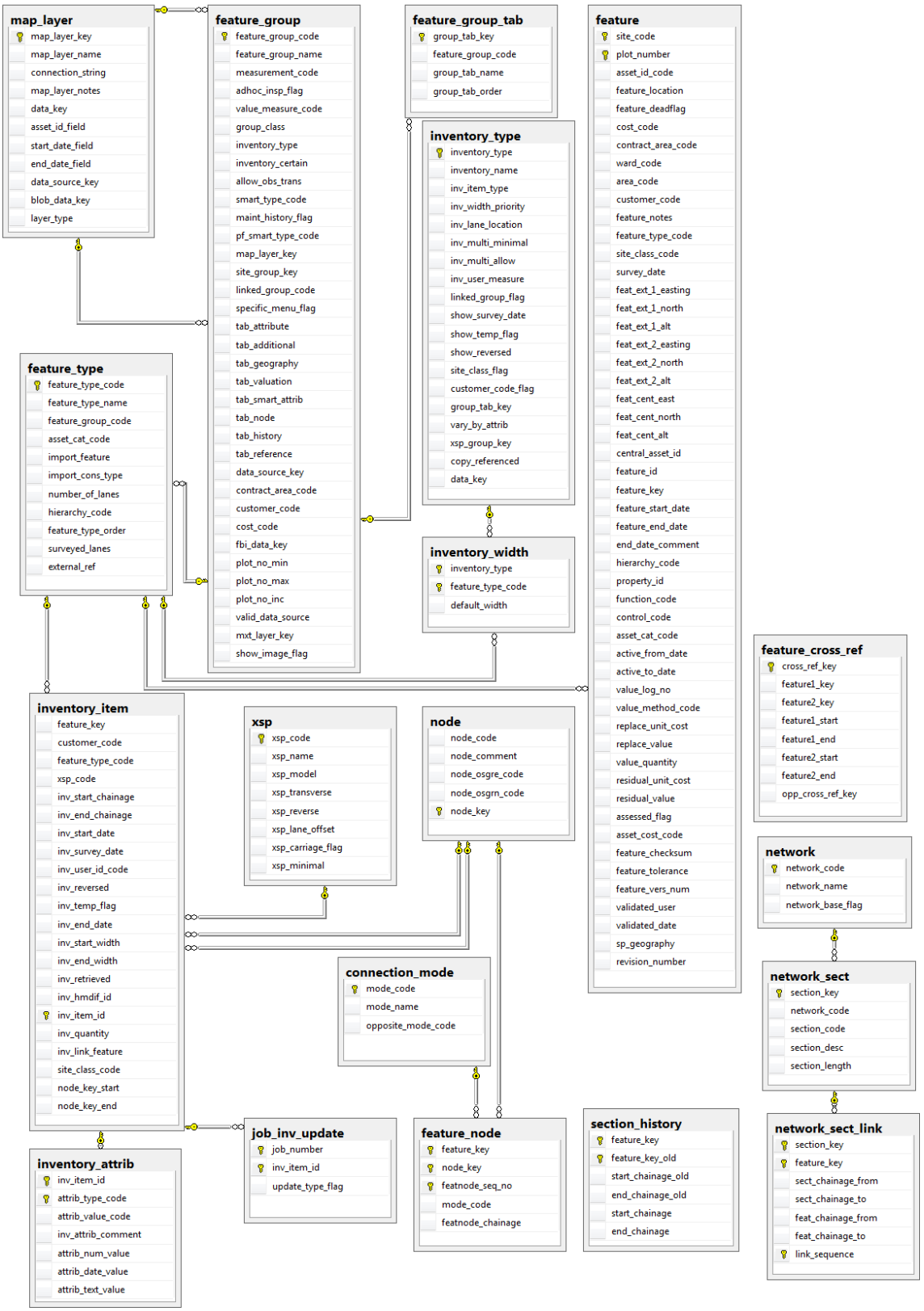
Stock Management



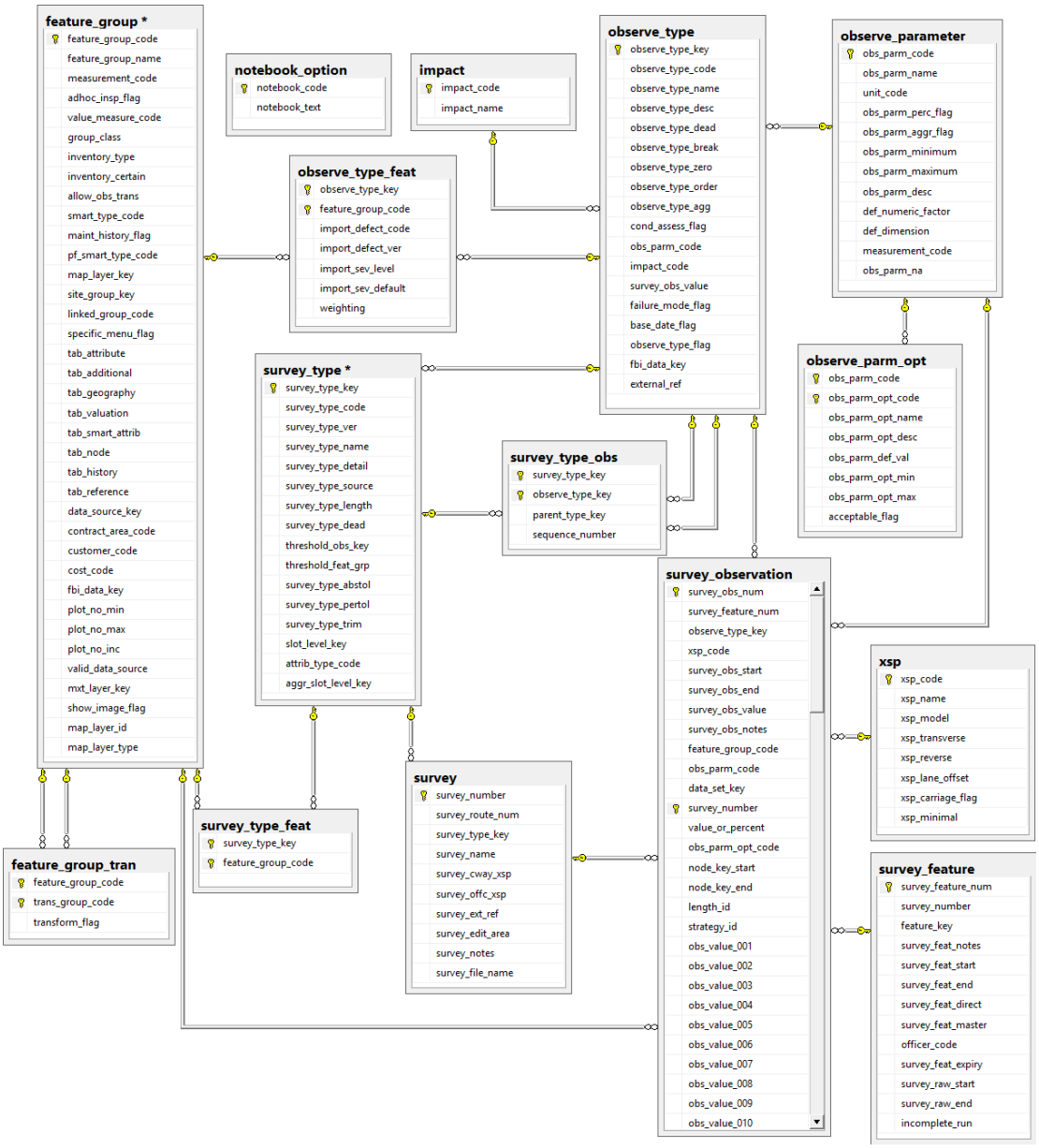
Risk Management



Network Manager - Network

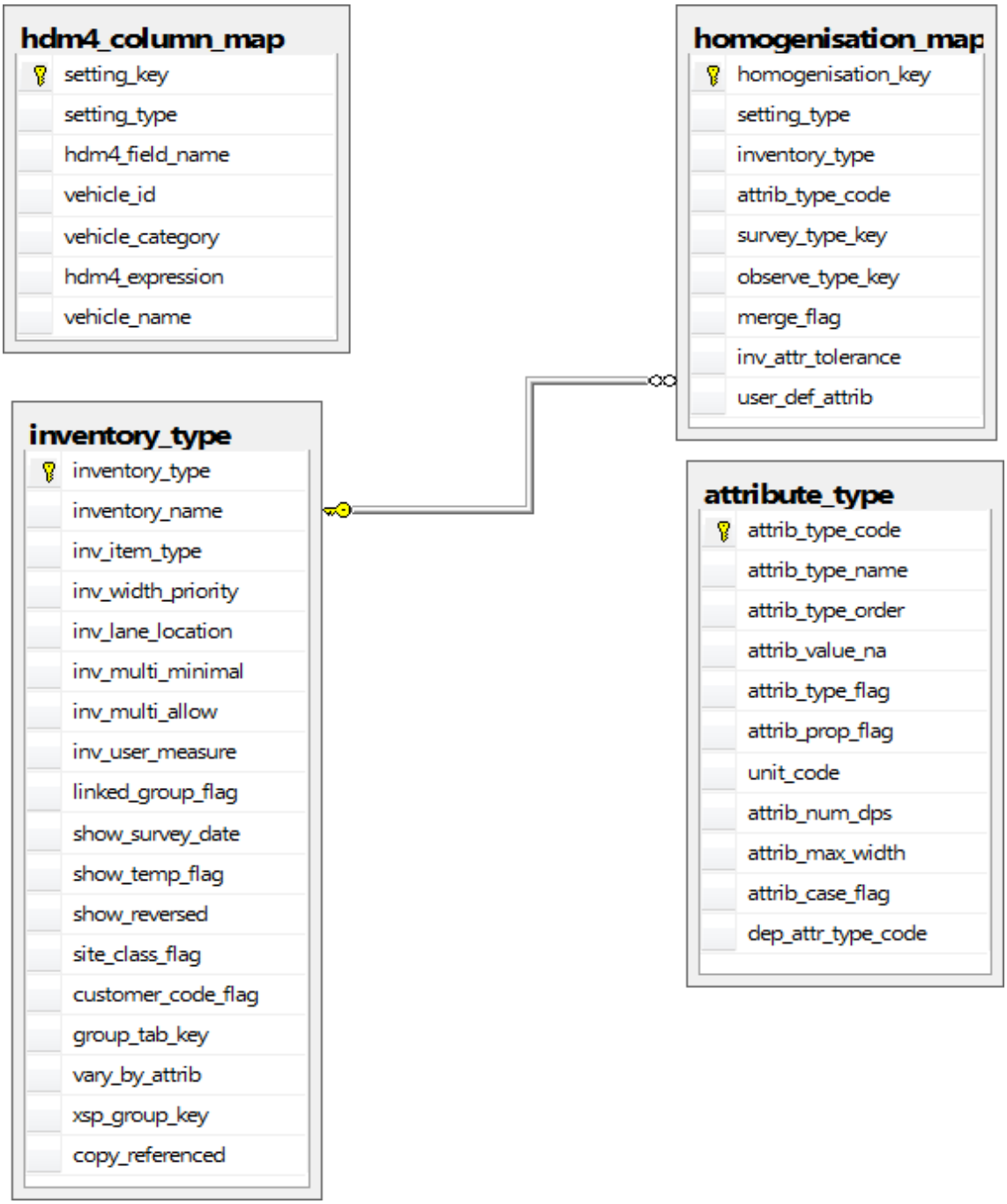


Network Manager - Condition Data

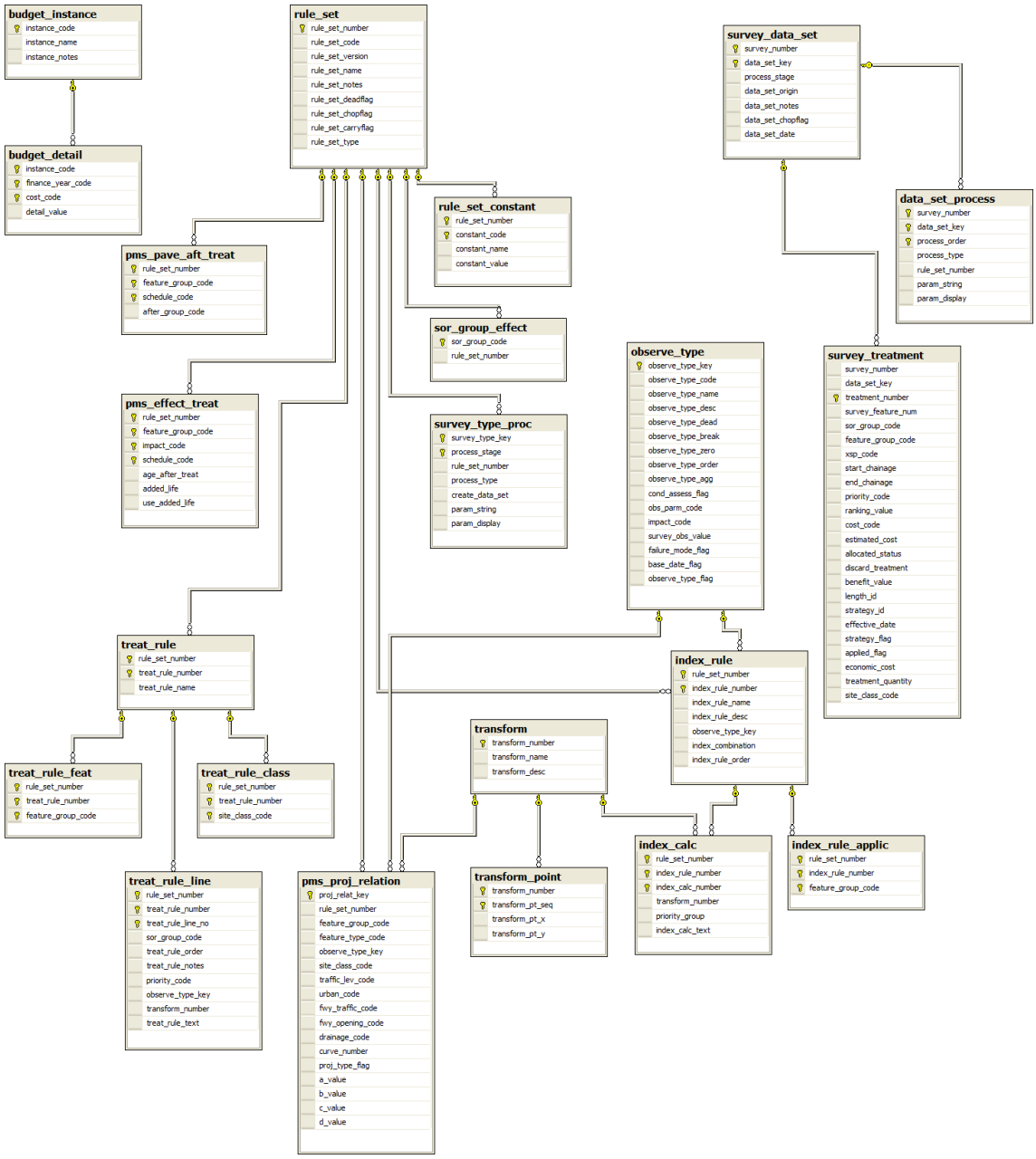


Note: In the above image the table for survey_observation has few columns truncated at the end. These column names run from '*obs_value_001*', '*obs_value_002*' until '*obs_value_100*'.

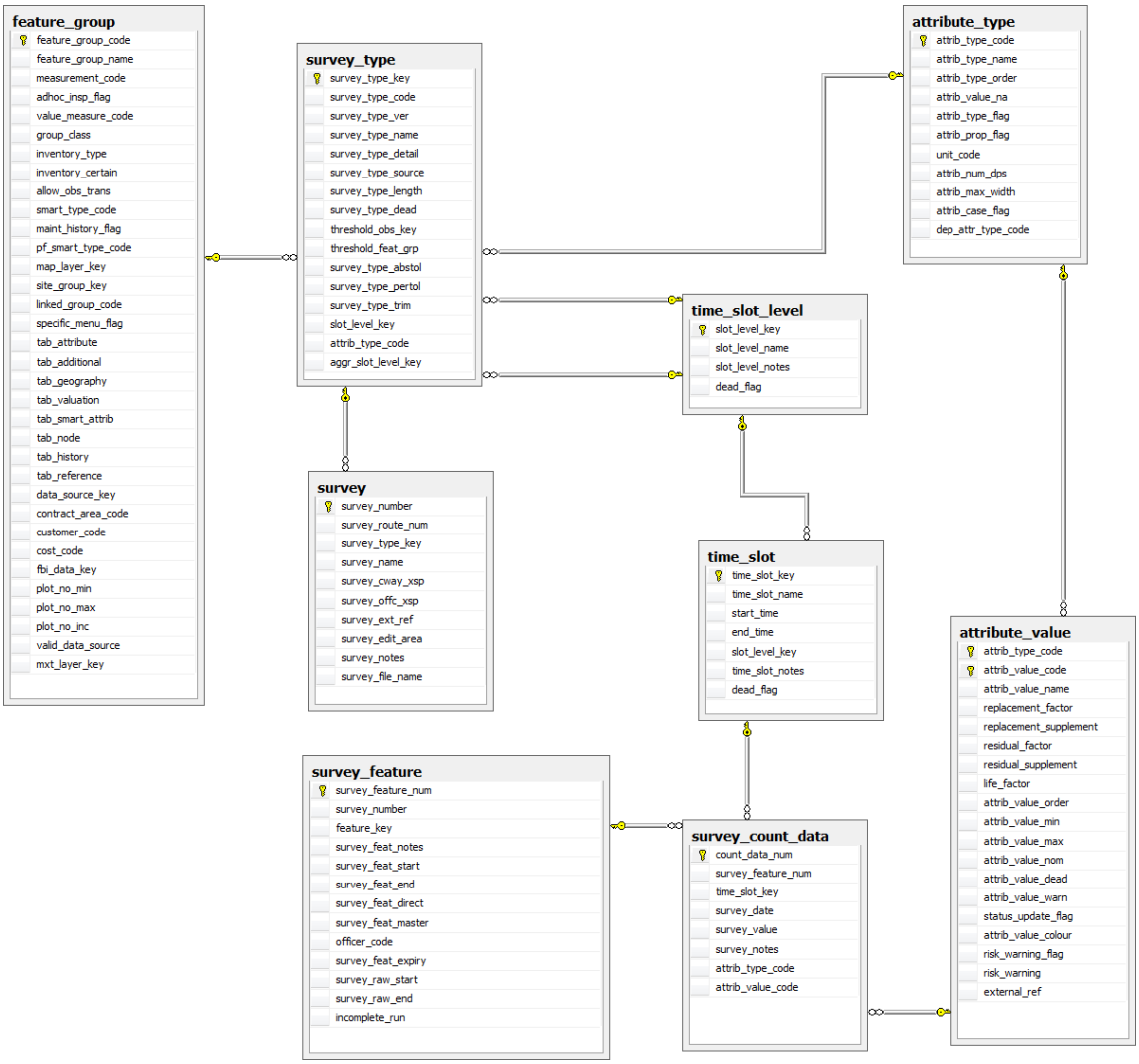
Network Manager - HDM4 Interface



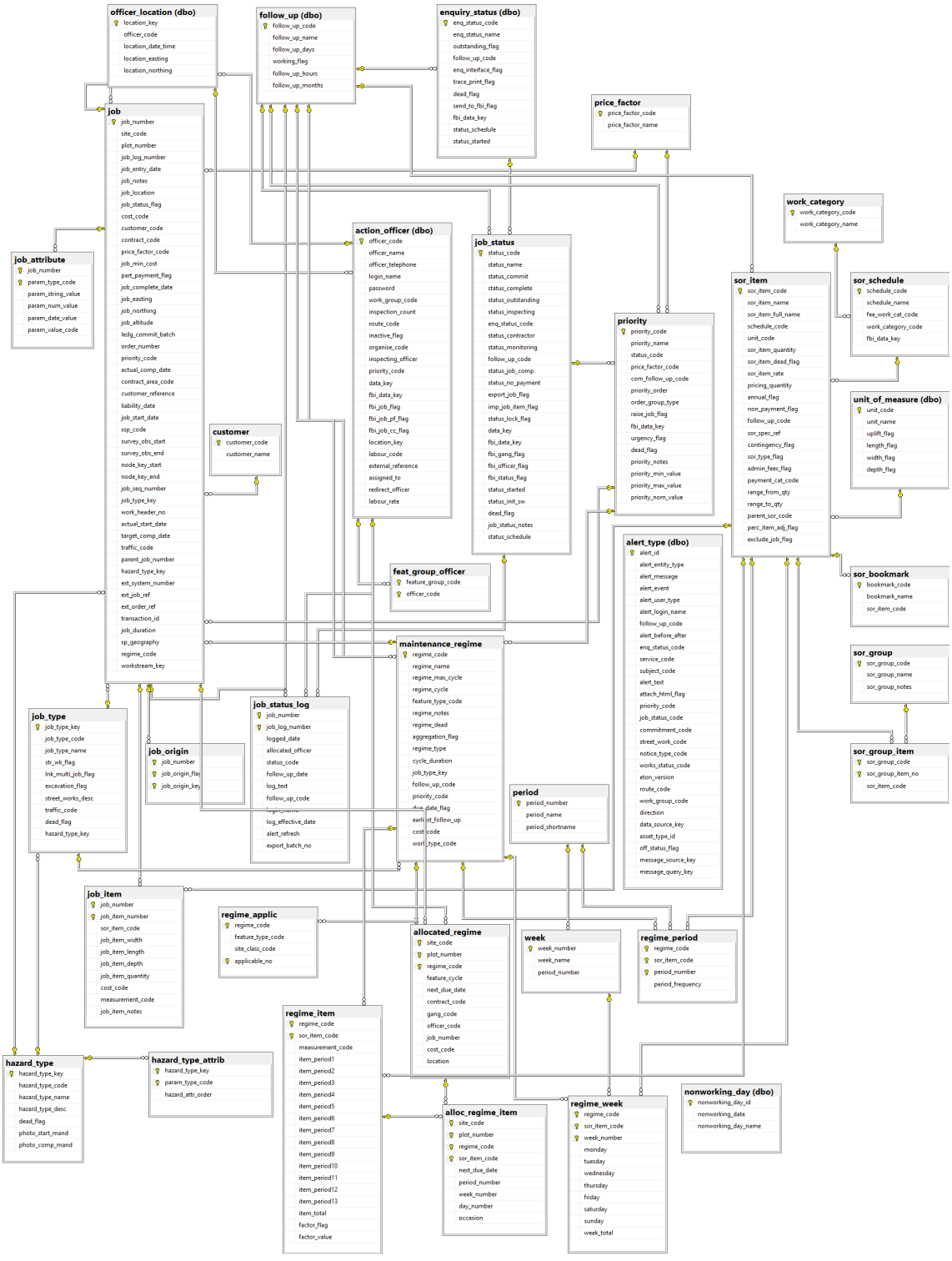
Data Analyser



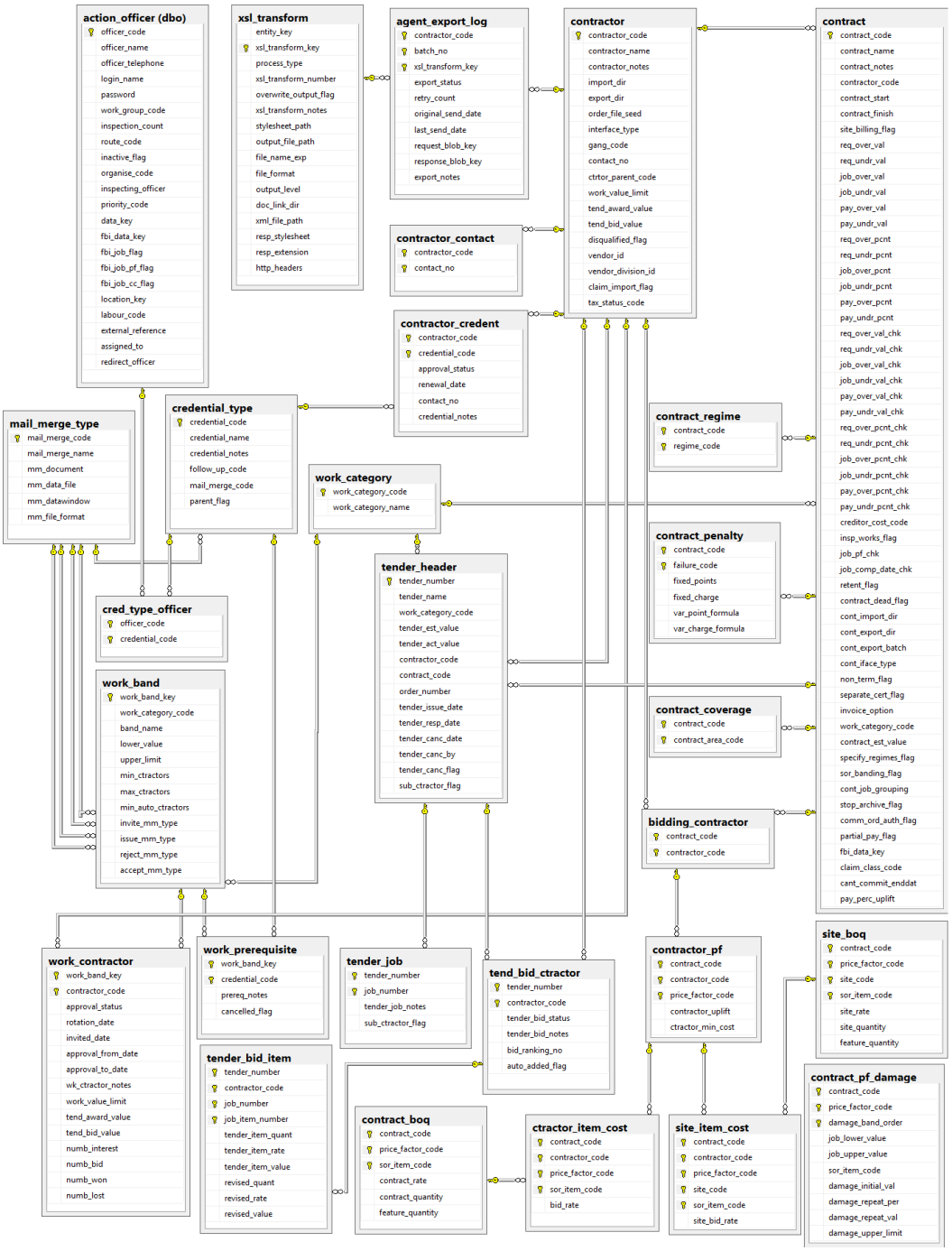
Traffic Count



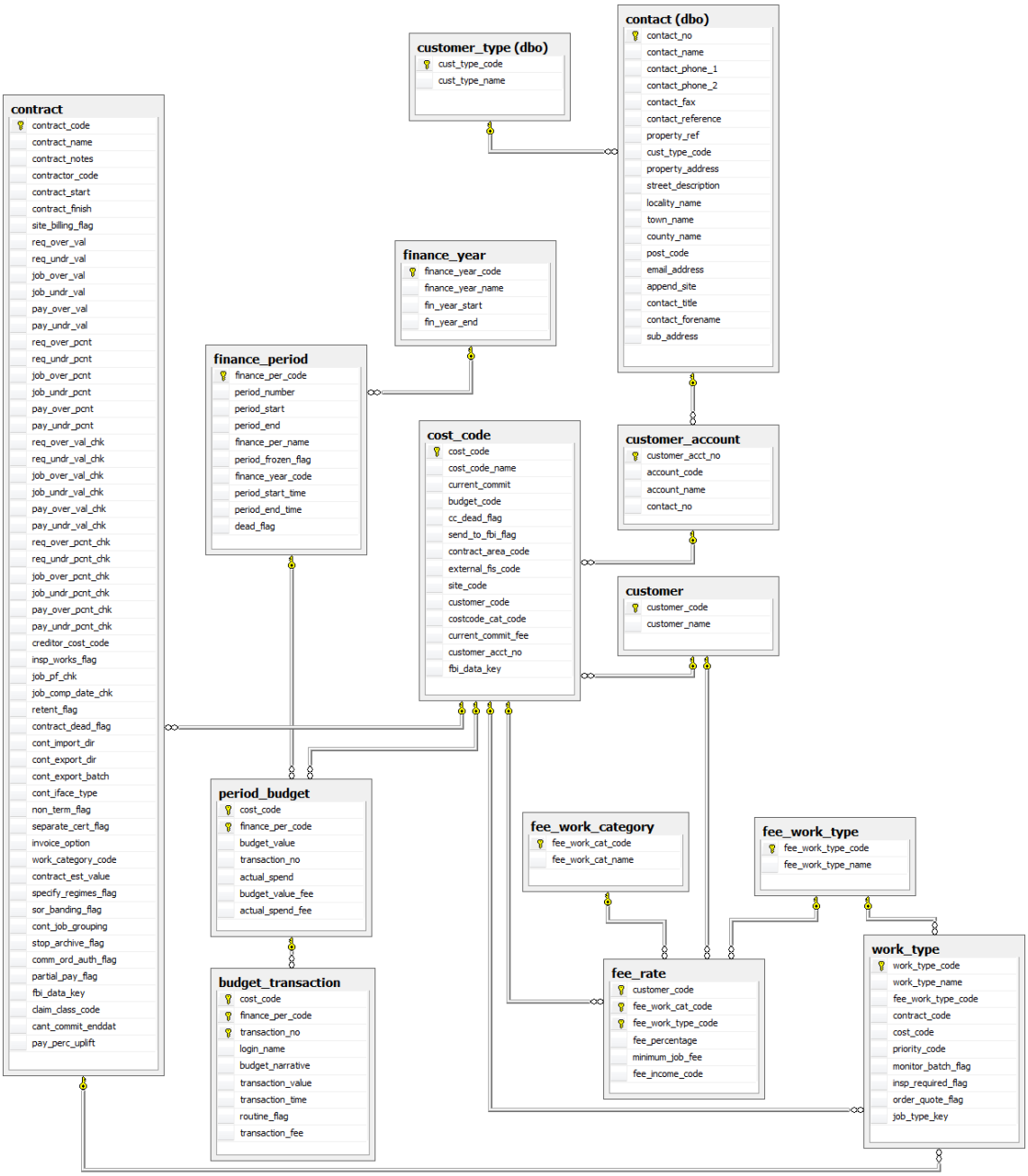
Asset Maintenance



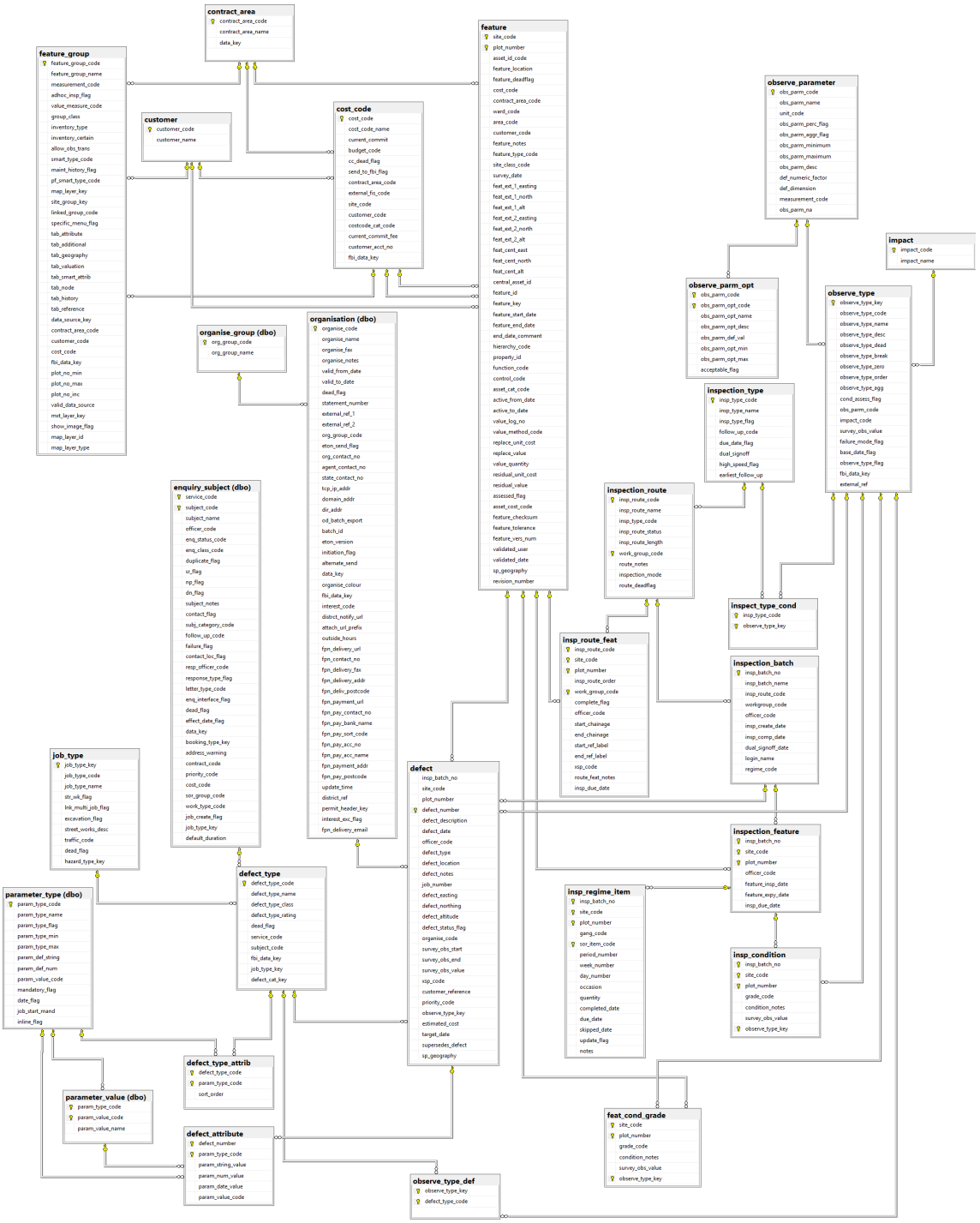
Contract Preparation



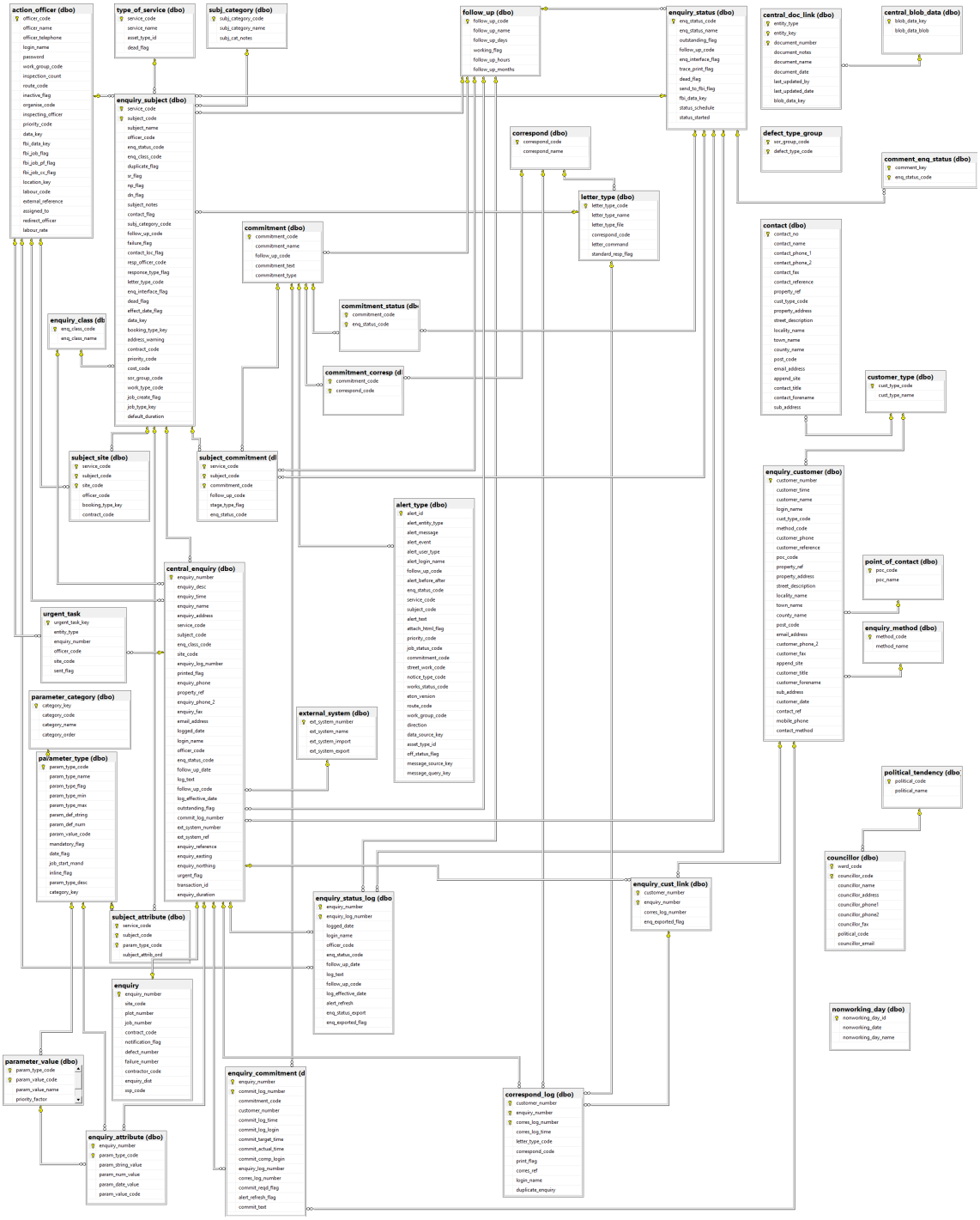
Finance and Budgets



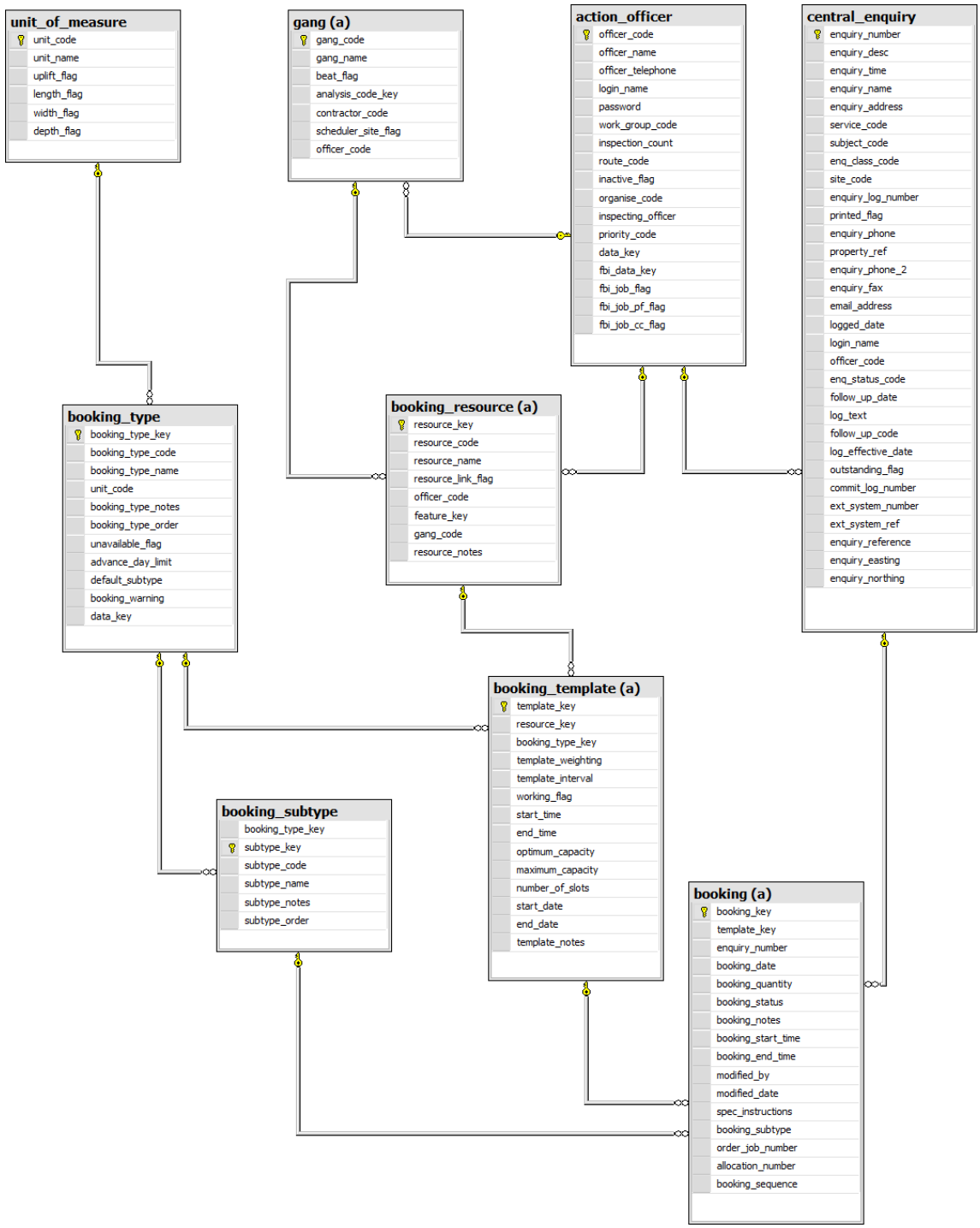
Condition Survey



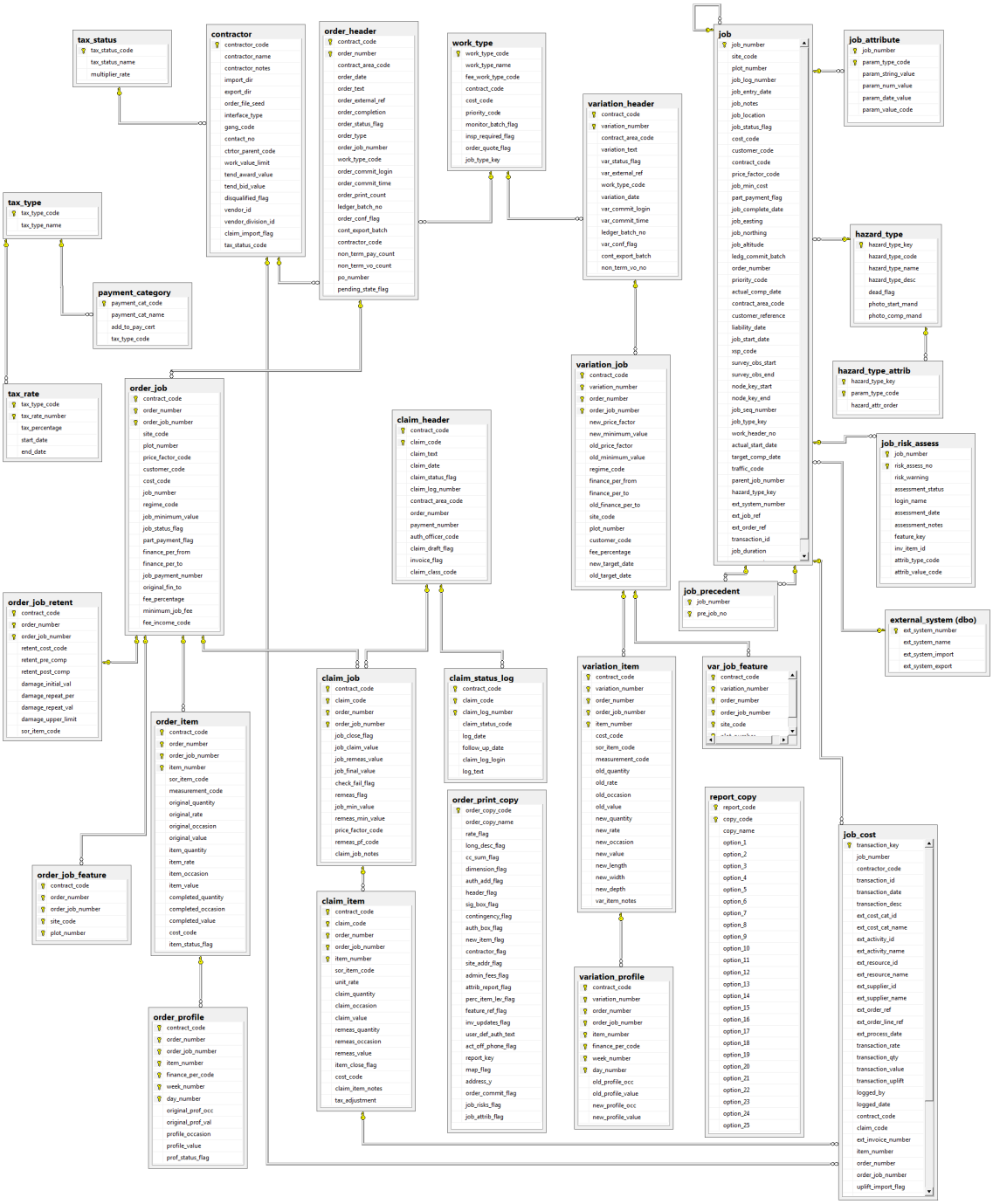
Customer Services - Enquiries



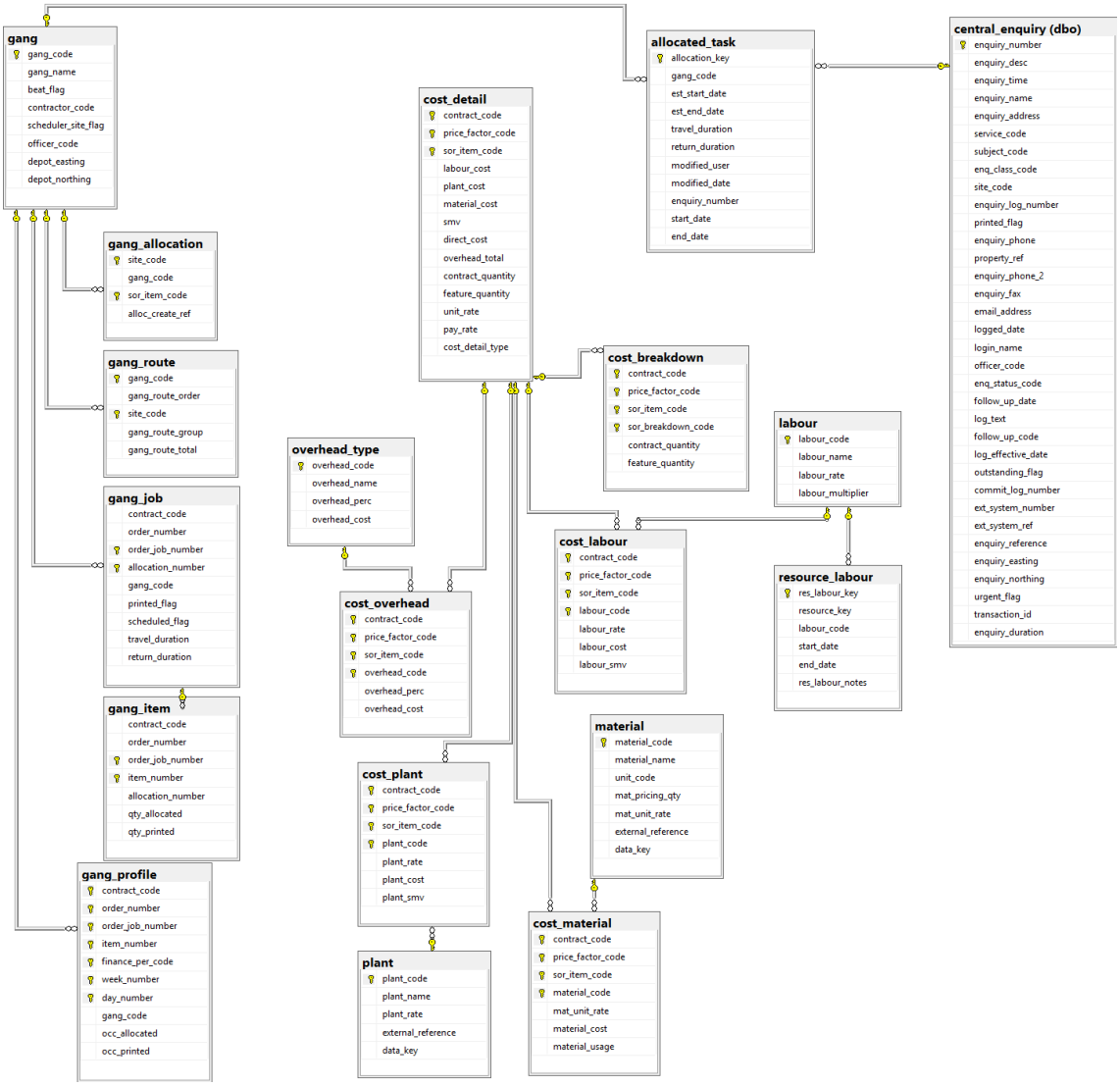
Customer Services - Bookings



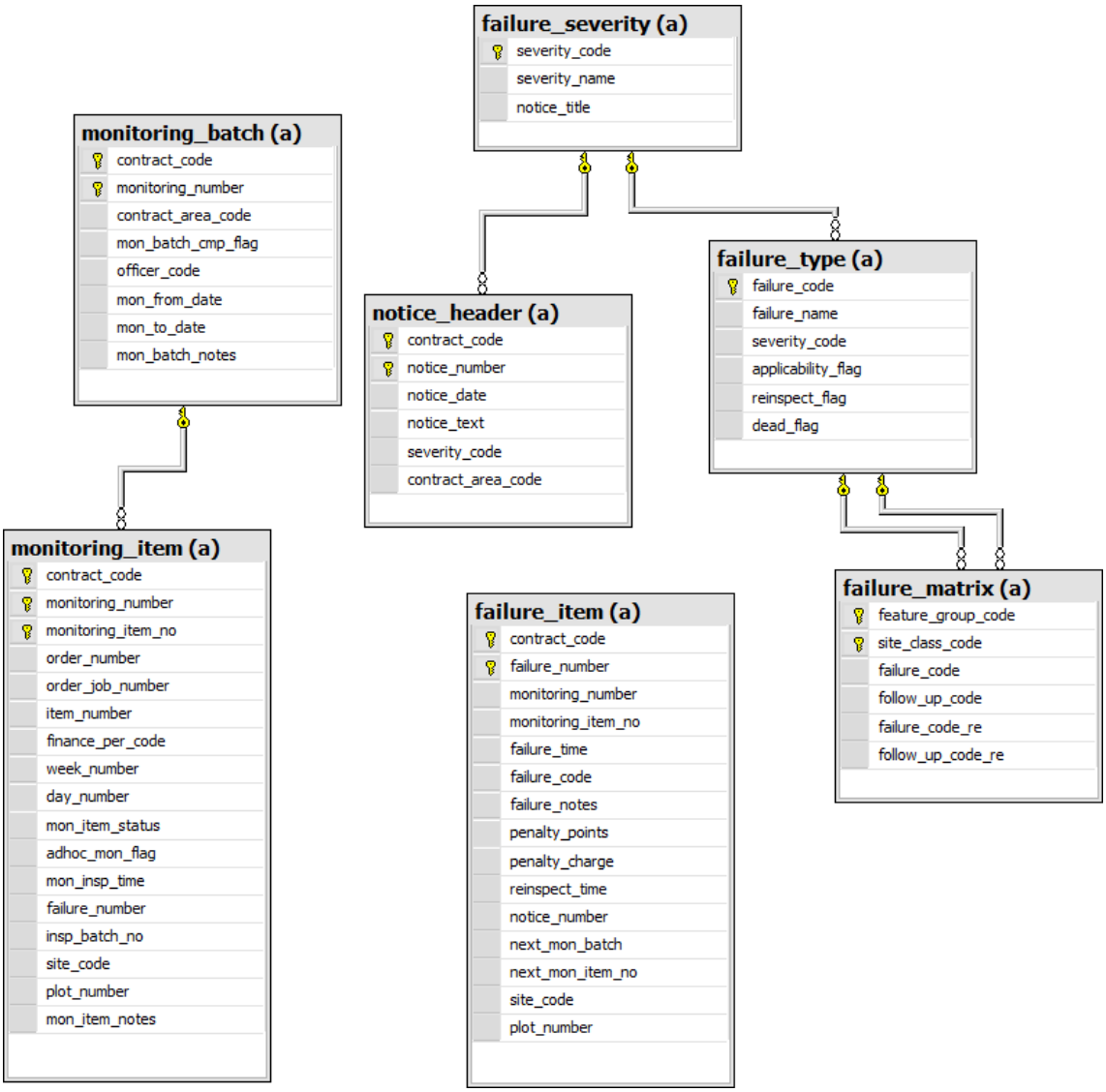
Maintenance Management



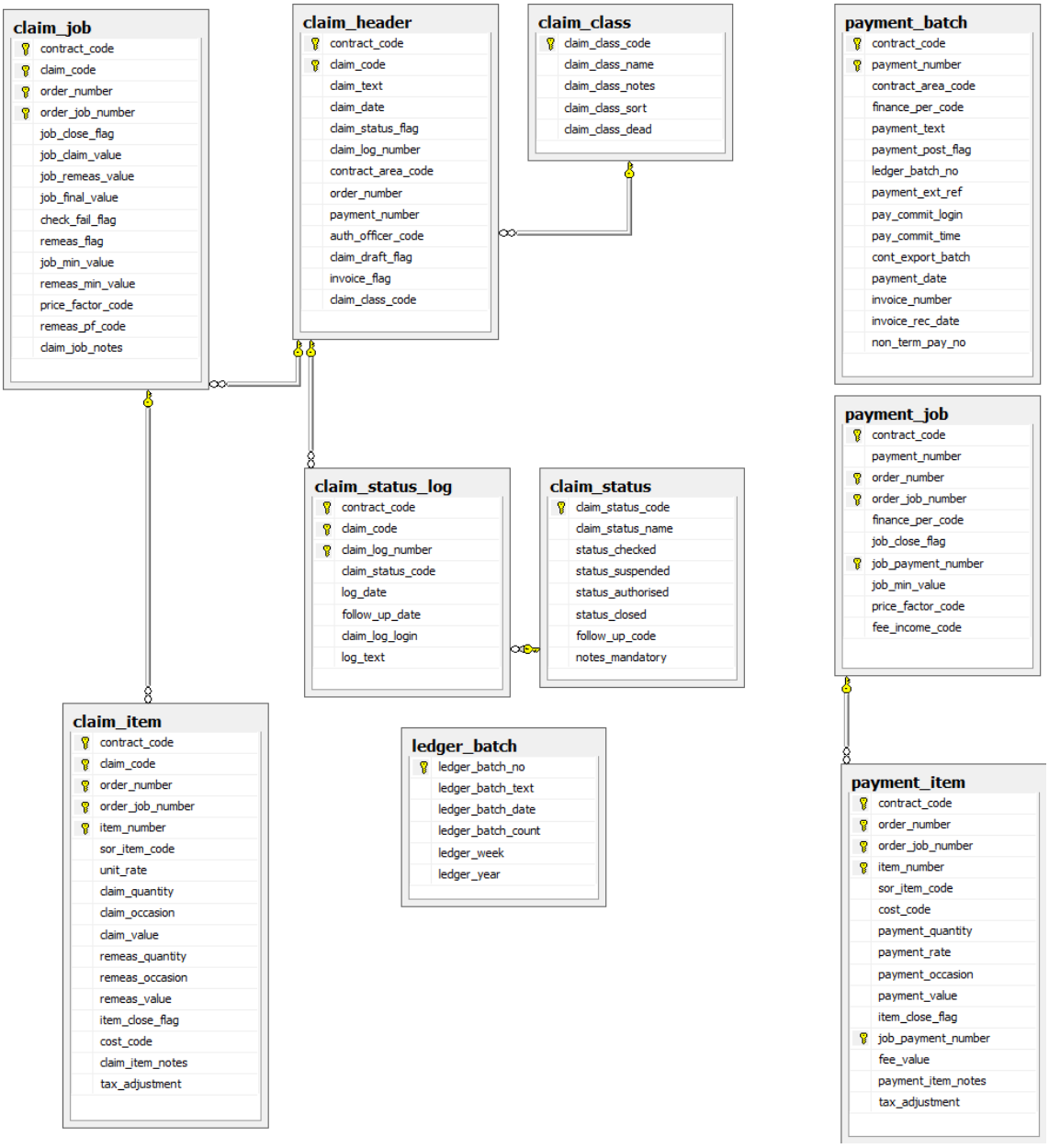
Works Management



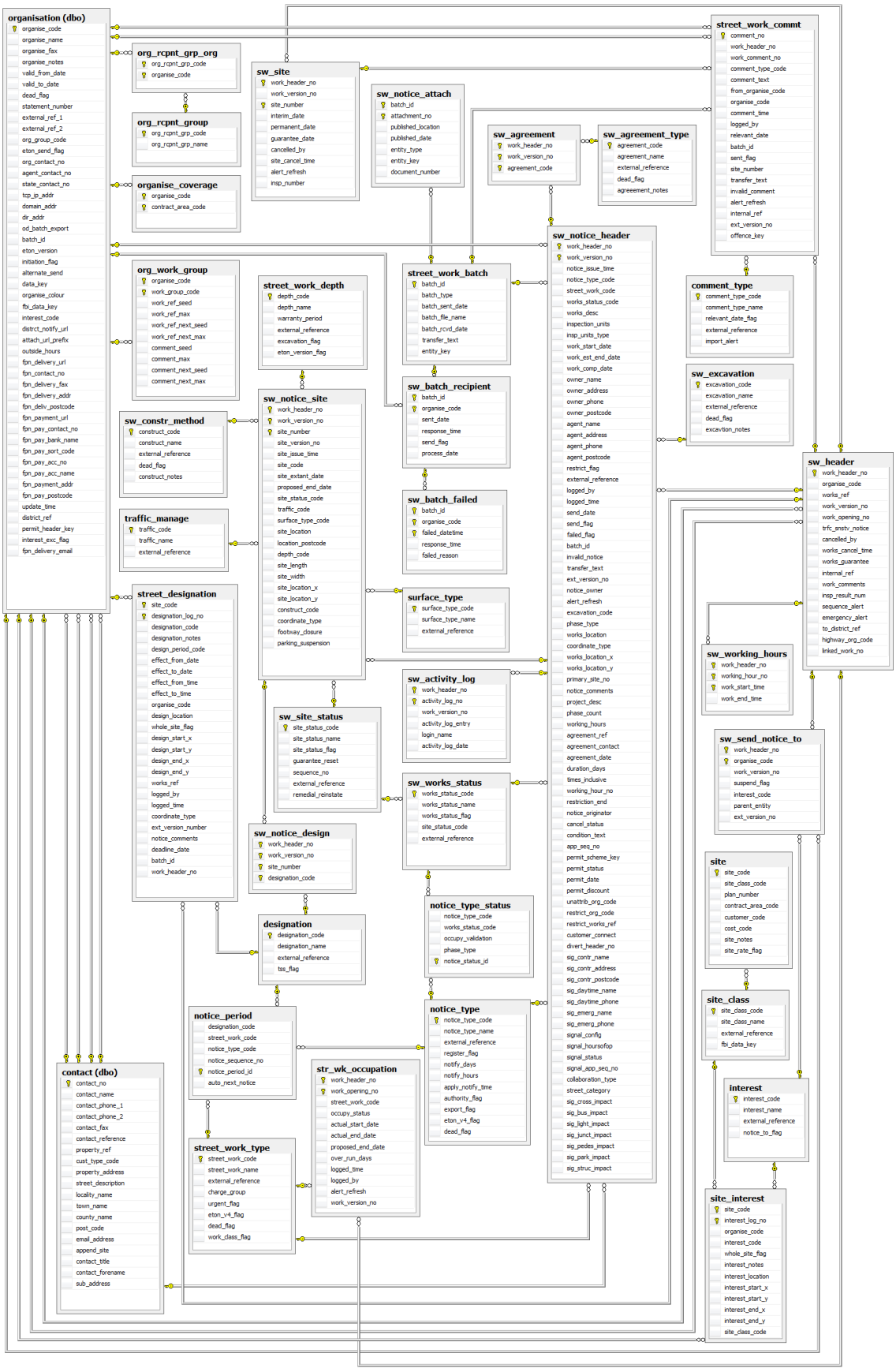
Performance Monitoring



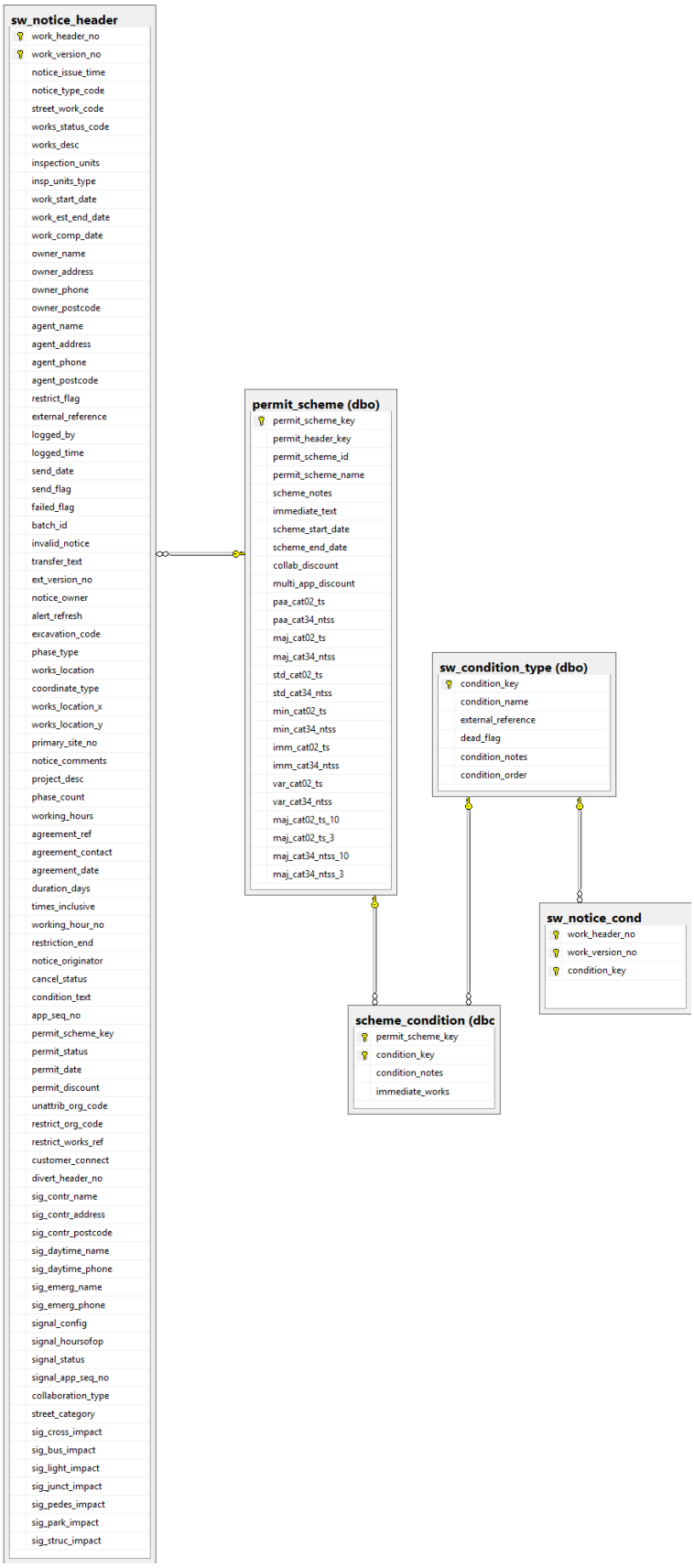
Payment Processing



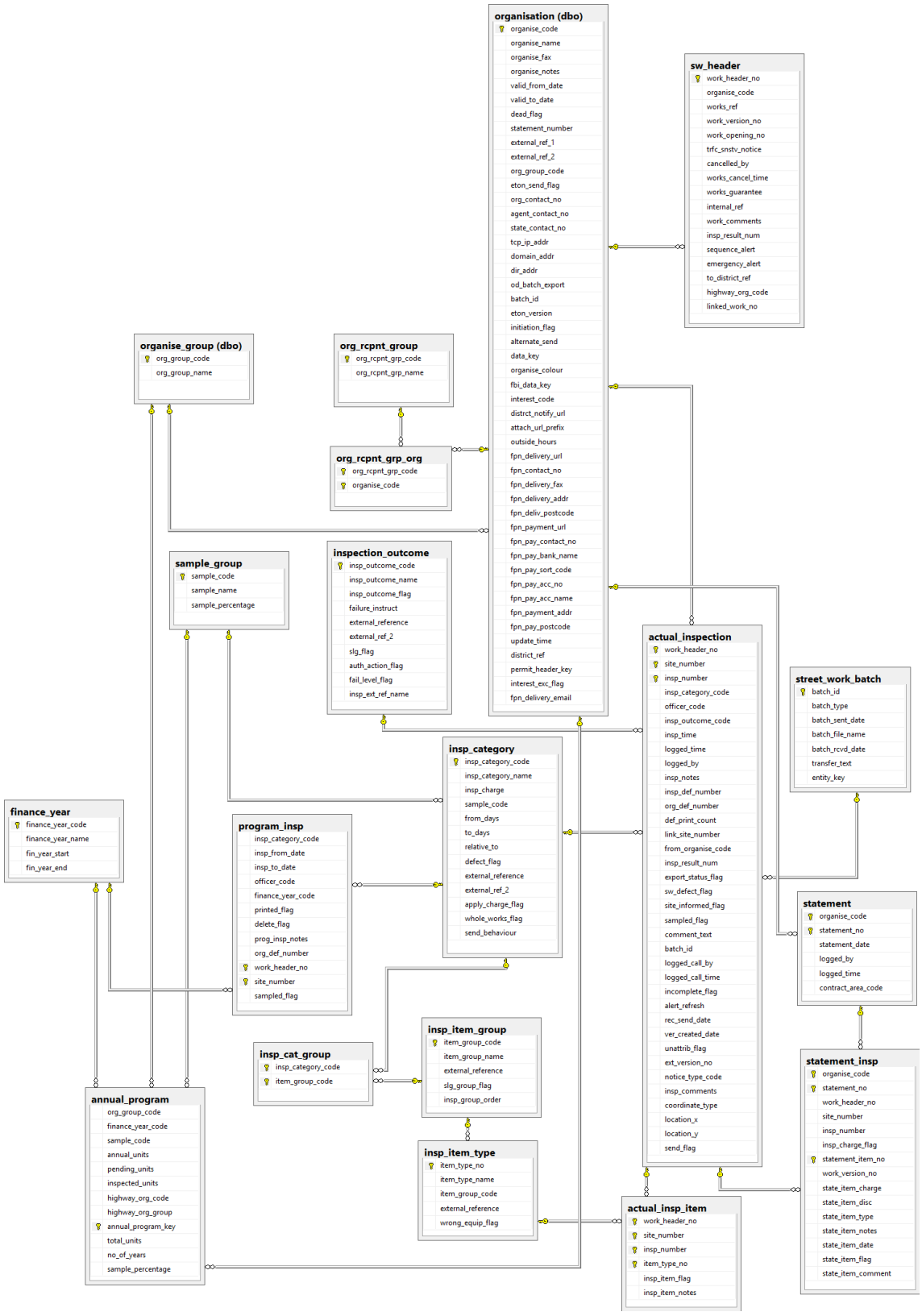
Street Works - Notices



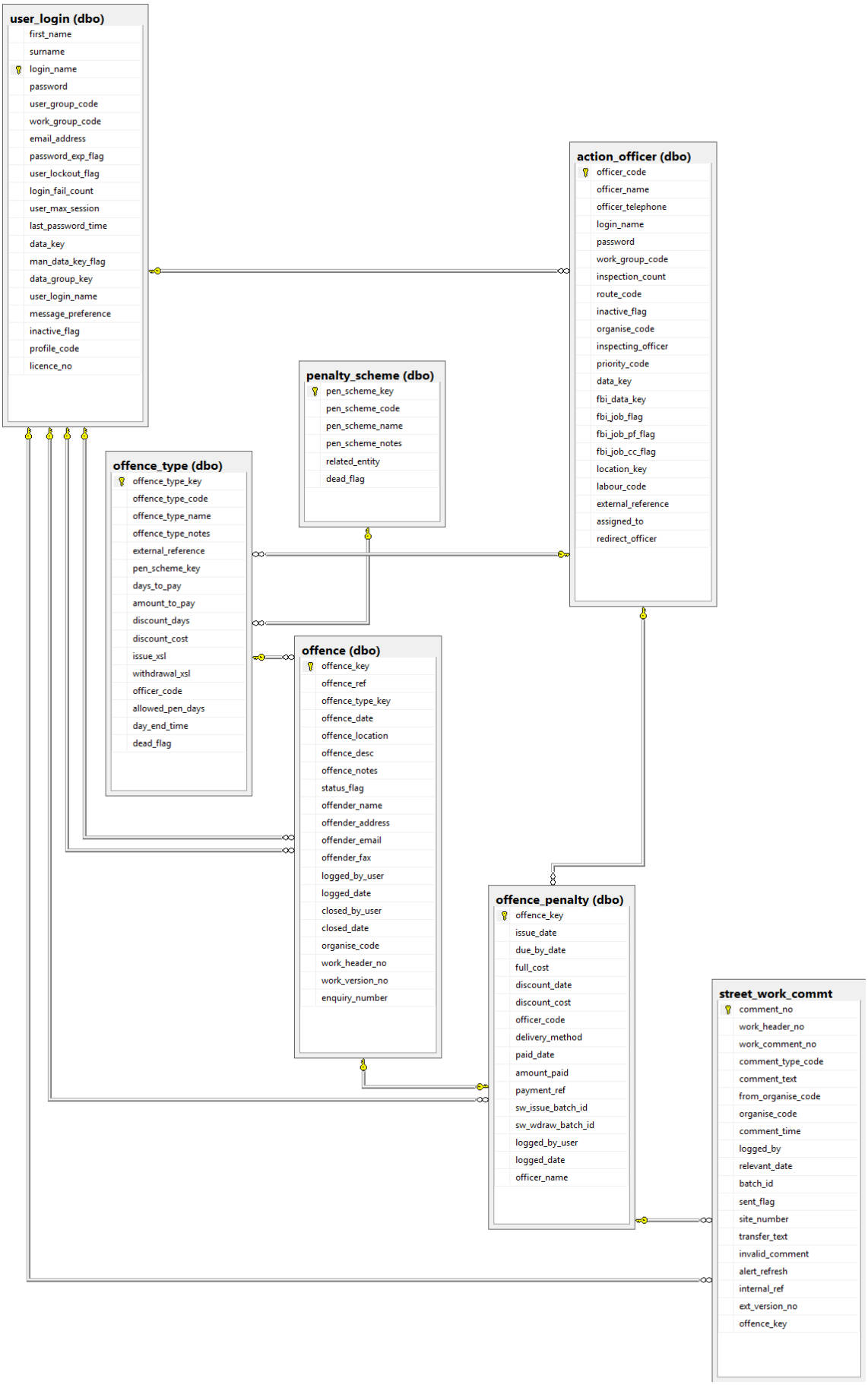
Street Works - Permits



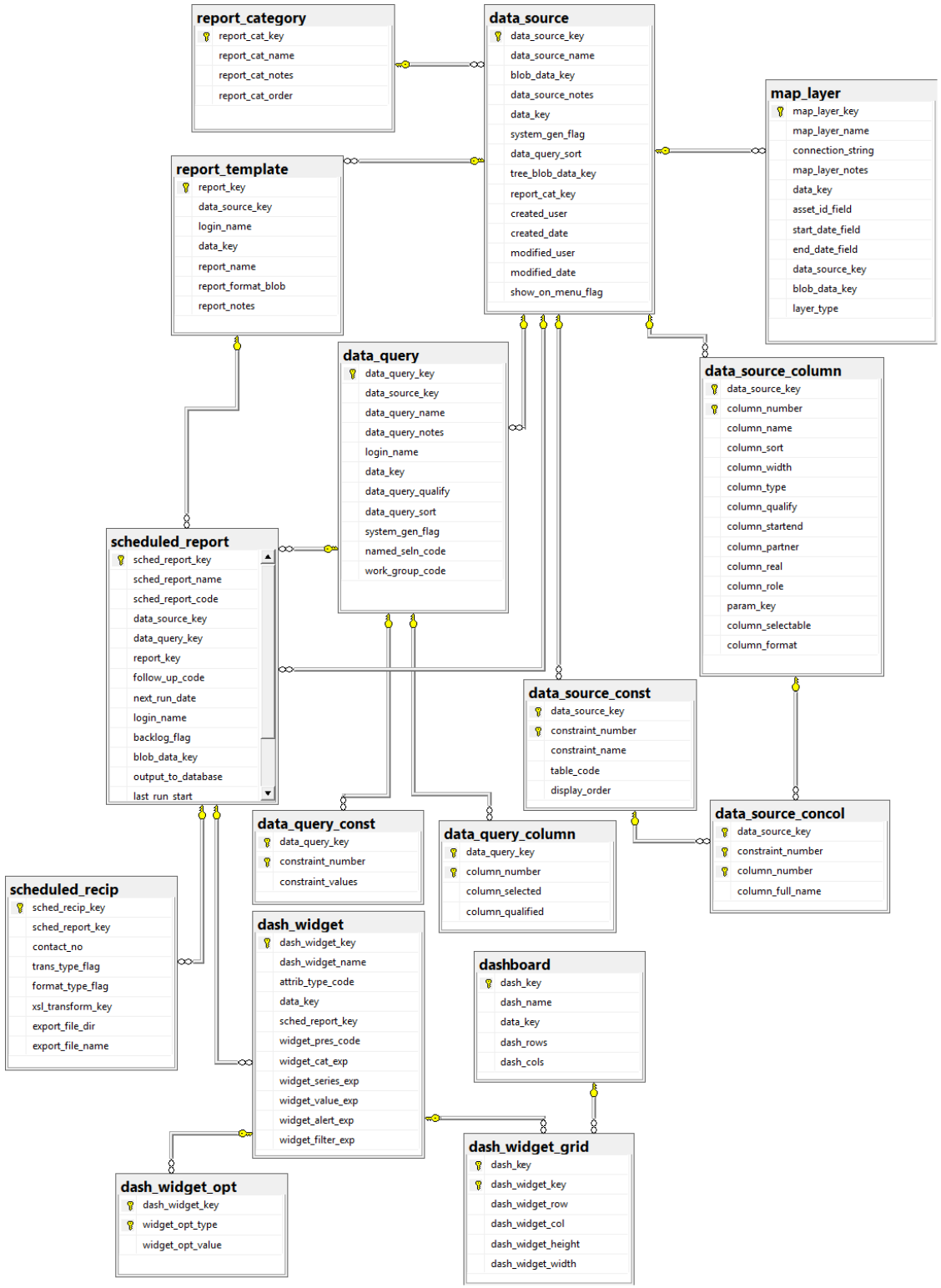
Street Works - Inspections & Statements



Fixed Penalty Notices



Reporting


report_category
report_cat_key
report_cat_name
report_cat_notes
report_cat_order
data_source
data_source_key
data_source_name
blob_data_key
data_source_notes
data_key
system_gen_flag
data_query_sort
tree_blob_data_key
report_cat_key
created_user
created_date
modified_user
modified_date
show_on_menu_flag
map_layer
map_layer_key
map_layer_name
connection_string
map_layer_notes
data_key
asset_id_field
start_date_field
end_date_field
data_source_key
blob_data_key
layer_type
report_template
report_key
data_source_key
login_name
data_key
report_name
report_format_blob
report_notes
data_query
data_query_key
data_source_key
data_query_name
data_query_notes
login_name
data_key
data_query_qualify
data_query_sort
system_gen_flag
named_seln_code
work_group_code
data_source_column
data_source_key
column_number
column_name
column_sort
column_width
column_type
column_qualify
column_startend
column_partner
column_real
column_role
param_key
column_selectable
column_format
scheduled_report
sched_report_key
sched_report_name
sched_report_code
data_source_key
data_query_key
report_key
follow_up_code
next_run_date
login_name
backlog_flag
blob_data_key
output_to_database
last_run_start
data_source_const
data_source_key
constraint_number
constraint_name
table_code
display_order
data_source_concol
data_source_key
constraint_number
column_number
column_full_name
data_query_const
data_query_key
constraint_number
constraint_values
data_query_column
data_query_key
column_number
column_selected
column_qualified
scheduled_recip
sched_recip_key
sched_report_key
contact_no
trans_type_flag
format_type_flag
xsl_transform_key
export_file_dir
export_file_name
dash_widget
dash_widget_key
dash_widget_name
attrib_type_code
data_key
sched_report_key
widget_pres_code
widget_cat_exp
widget_series_exp
widget_value_exp
widget_alert_exp
widget_filter_exp
dashboard
dash_key
dash_name
data_key
dash_rows
dash_cols
dash_widget_grid
dash_key
dash_widget_key
dash_widget_row
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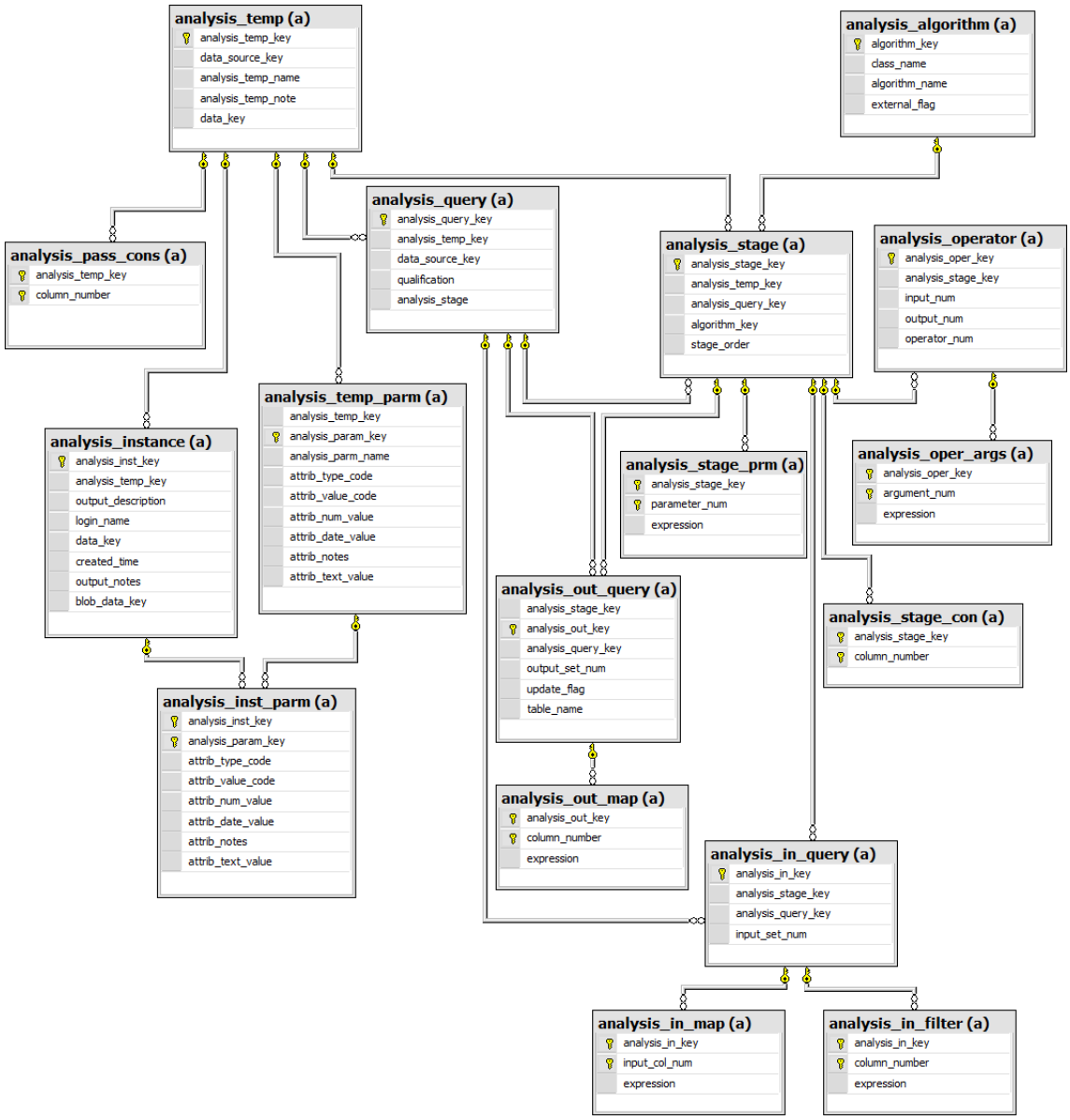
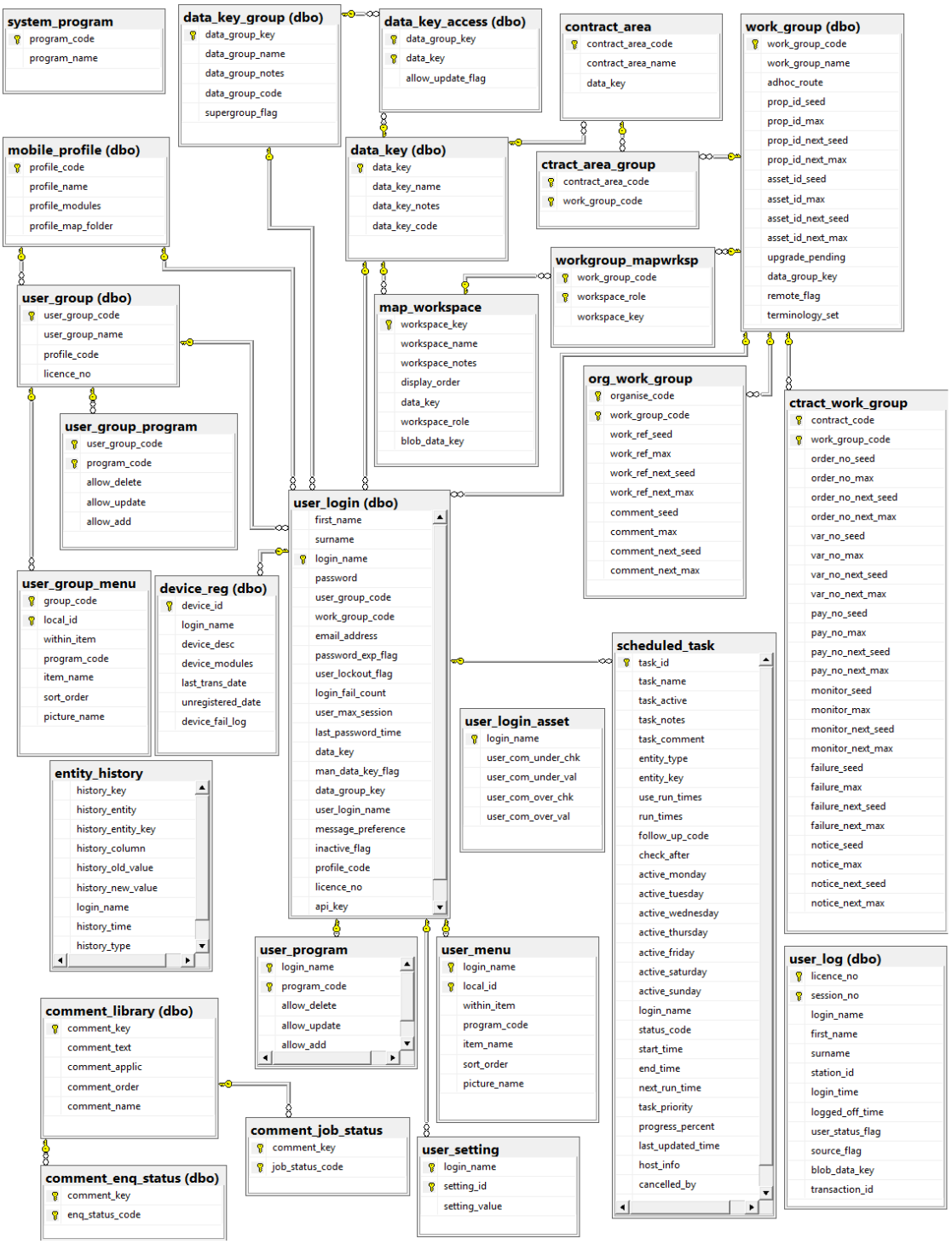
dash_widget_height
dash_widget_width
dash_widget_opt
dash_widget_key
widget_opt_type
widget_opt_value

Reporting - Analysis



System Administration