
Report Generator Technical Specification

Summary of functionality :

- Provides the capability for users to create their own text, graph or diagram reports, or allows them to use the standard reports supplied with the Isograph software products
- Reports are based on querying data contained in a Microsoft Access database. This database is generated automatically by the associated software product
- Reports use built-in queries defined by the associated software product. Text reports may also be based on SQL queries defined by the user
- Query wizard to assist in creation of custom SQL queries
- Supports all the paper sizes associated with the default printer
- Interactive layout of reports, even when in print preview mode
- Layout operations include moving, resizing and alignment. These operations may be optionally snapped to the user defined grid
- Header, footer, text boxes and pictures allow user to create sophisticated report layouts
- Macros allow user to include report generator automatically generated text in the header, footer and text boxes. Macros include the date, time, page count, page number, report name, average field value, minimum field value, maximum field value, and sum of a field value.
- All text objects (header, footer, text boxes and text report headings and data) may have the following attributes assigned: font and size, foreground, background and border colour, indents, justification, border width and position, and line spacing
- Unlimited undo and redo of all design functions
- Copy and paste of text boxes and pictures between reports
- Graph report chart types include: 2-D line, bar, area and scatter, 3-D surface, bar, pie, scatter, tape and log/log and log/linear
- Filtering and sorting on one or more fields in text reports. Filtering operations include equals, between, like, in, not equal to, less than, greater than, less than or equal to and greater than or equal to.
- The report explorer allows the user to copy and paste existing reports, and to create a folder structure to contain reports.
- Reports can be exported to the clipboard or to file in RTF textbox, RTF table, tab delimited, comma separated or user specified delimiter formats

Part Number	Reference ID	Cat Key	Failure Rate	N	N x Failure Rate	% Contribution	M
90968G	C13	MIL-CR	0.06	1	0.06	2.543e+0	0.
CQ-10NF	C8-12	MIL-CR	0.03	5	0.13	5.511e+0	0.
FP2-16264XM	R2-R7	MIL-RS	0.02	6	0.11	4.67e+0	0.
SMA0207S-40971AM	R1	MIL-RS	0.02	1	0.02	1.025e+0	0.
ZS122	D1-D4	MIL-LD	0.02	4	0.06	2.661e+0	0.
T110-91920A	C13-16	MIL-CR	0.43	4	1.72	7.154e+1	0.
TRANS. MODEL A7-3	T1	MIL-TF	0.02	1	0.02	9.797e-1	0.

Report Generator Text Report

Features Overview

Previewing Reports

To preview a report before printing it select the application *File-Print Preview...* menu option or the print preview toolbar button. This will display the *Report Explorer* dialog, which allows the user to select a report for preview.

The *Report Explorer* is divided into two main areas: on the left a tree control displaying report folders, on the right a list view control displaying the reports contained in the currently selected folder. Reports are organised into text, graph and diagram folders; these folders are then further sub-divided into folders representing categories and sub-categories of text, graph and diagram reports.

To open a report in print preview mode first open the required folder, select the required report from the list view and then finally select *Open*. The report will then request the required information from the application. When this information transfer is complete, the first page of the report will be opened in print preview mode. whilst re-pagination of the report completes.

The standard reports supplied with the application are all master reports, that is by default they can not be modified or deleted. To modify a report the user may remove the master lock using the *Properties* dialog, or (the recommended option) make a copy of it using the *Report Explorer* and modify the copy. Alternatively the user may wish to design a completely new report.

Printing Reports

To print a report select the application *File-Print...* menu option or the print toolbar button. This will display the *Report Explorer* dialog, which allows the user to select one or more reports for printing.

The *Report Explorer* is divided into two main areas: on the left a tree control displaying report folders, on the right a list view control displaying the reports contained in the currently selected folder. Reports are organised into text, graph and diagram folders; these folders are then further sub-divided into folders representing categories and sub-categories of text, graph and diagram reports.

To select a report for printing first open the required folder, select the required report from the list view and then finally select *Print*. The report will then request the required information from the application, re-paginate and print to the current default printer.

Multiple reports may be selected for printing from within an individual folder. The reports for printing are selected using the standard selection model. Selecting *Print* will print the selected reports to the current default printer in turn.

Designing Reports

Overview

To design a report select the application *File-Design...* menu option. This will display the *Report Explorer* dialog, which allows the user create a new report or modify an existing report.

The *Report Explorer* is divided into two main areas: on the left a tree control displaying report folders, on the right a list view control displaying the reports contained in the currently selected folder. Reports are organised into text, graph and diagram folders; these folders are then further sub-divided into folders representing categories and sub-categories of text, graph and diagram reports.

To modify an existing report first open the required folder, select the required report from the list view and then finally select *Open*. The report will be opened in design mode. The standard reports supplied with the application are all master reports, that is by default they can not be modified or deleted. To modify a report the user may remove the master lock using the *Properties* dialog, or (the recommended option) make a copy of it using the *Report Explorer* and modify the copy.

To create a new report the user must first select the folder that the report is to be created in, and then select the *File-New-Report* menu option. This will create a report in the selected folder with a default name of *New Text Report*, *New Graph Report* or *New Diagram Report*, depending on the top level folder category. The name will be in edit mode and the user may accept the default name or modify it, selecting RETURN to leave edit mode. The user must now select *Open* to open the new report in design mode.

Text Reports

The first step in designing a text report is to select a text report to modify or create a new text report (see Overview of Designing Reports).

In designing a text report it is important to understand the format of data used to generate the text reports and how the data is accessed. The data is stored in a temporary database and updated by the application whenever a text report is printed, exported or opened in print preview mode. A number of standard database queries are defined for an application, or the user can create their own SQL query. A single query must be defined as the source of data for the body of each text report, although additional queries may be defined in headers, footers or text boxes. Whenever the report is printed, exported or opened in print preview mode this query is executed, returning a set of records for use as the data source.

Text reports display data in a row/column format. The columns are mapped to the fields of the database query, with the rows being equivalent to successive query records. The number of pages in a text report is determined by either setting the number of rows per page explicitly, or by allowing the report generator to determine each row height in turn and create new pages as required.

A text report always comprises a header, a footer, a query, and a number of selected fields (or columns) from the query and their associated field (or column) headings. A user may optionally add text boxes and pictures to a text report if they want to create more complex headers and footers.

The following steps are required to create a text report:

- Select the *Select-Query* menu option to display the *Select Query* dialog. Select one of the application standard queries or construct a custom SQL query using the SQL query builder. Details of the application tables and field names will be found in the *Database Tables* appendix of the application manual or help file.
- Select the *Select-Query Fields* menu option to display the *Select Fields* dialog. Select the fields from the query that will appear as the report columns.
- Select the *Layout-Header* menu option to display the *Header* dialog. Select the *Text* tab to enter the header text. Other tabs allow the user to modify the appearance of the header.
- Select the *Layout-Footer* menu option to display the *Footer* dialog. Select the *Text* tab to enter the footer text. Other tabs allow the user to modify the appearance of the footer.
- Select the *Layout-Field Headings* menu option to display the *Field Headings* dialog. Select the *Text* tab to enter alternate field headings. Other tabs allow the user to modify the appearance of individual field headings.
- Select the *Layout-Fields* menu option to display the *Fields* dialog. The appearance of individual fields may be modified, and the sort order and/or filters set for these fields.

optionally :

- Select the *Layout-Text Boxes* menu option to display the *Text Boxes* dialog. Any number of text boxes may be added to a report. Typical uses for text boxes are displaying the page number, number of pages, current date, report name or the result of an SQL query.
- Select the *Layout-Pictures* menu option to display the *Pictures* dialog. Any number of pictures may be added to a report. A typical use for a picture is to display a company logo.

Graph Reports

The first step in designing a graph report is to select a graph report to modify or create a new graph report (see Overview of Designing Reports).

In designing a graph report it is important to understand the format of data used to generate the graph information and how the data is accessed. The data is stored in a temporary database and updated by the application whenever a graph report is printed, exported or opened in print preview mode. A number of standard database queries are defined for an application. A single query must be defined as the source of data for an individual graph, although additional queries may be defined in headers, footers or text boxes. Whenever the report is printed, exported or opened in print preview mode this query is executed, returning a set of records for use as the data source for the graph.

Graph reports display data in one or more graph pages. An individual graph page may comprise one or two graphs. Graphs may represent data in three ways : 2-D, 3-D or 4-D. In a 2-D data format graph the x- and y- axes are mapped to selected query fields, with successive query records representing points along the x-axis. 3-D data format graphs additionally map the z- axis to a selected query field, the query being filtered and then plotted for selected z-axis values in turn. 4-D data format graphs additionally map the (conceptual) w-axis to a selected query field, the query being further filtered for a selected w-axis value before being plotted as 3-D data.

A graph report always comprises a header, a footer, one or more graph pages and one or more graphs per graph page. A user may optionally add text boxes and pictures to a graph report if they want to create more complex headers and footers.

The following steps are required to create a graph report:

- Select the *Layout-Header* menu option to display the *Header* dialog. Select the *Text* tab to enter the header text. Other tabs allow the user to modify the appearance of the header.
- Select the *Layout-Footer* menu option to display the *Footer* dialog. Select the *Text* tab to enter the footer text. Other tabs allow the user to modify the appearance of the footer.
- Select the *Layout-Graph Pages* menu option to display the *Graph Pages* dialog. Any number of graph pages may be added to the report. The user should select the graph page graphs to.
- Select the *Layout-Graphs* menu option to display the *Graphs* dialog. Up to two graphs may be added to the current graph page. Select the *Data* tab and then select the required data format. Depending on the data format chosen, select the x-, y-, z- and w- variables and the associated y- and z- values as required. Other tabs allow the user to modify the appearance of the report.

optionally :

- Select the *Layout-Text Boxes* menu option to display the *Text Boxes* dialog. Any number of text boxes may be added to a report. Typical uses for text boxes are displaying the page number, number of pages, current date, report name or the result of an SQL query.
- Select the *Layout-Pictures* menu option to display the *Pictures* dialog. Any number of pictures may be added to a report. A typical use for a picture is to display a company logo.

Diagram Reports

The first step in designing a diagram report is to select a diagram report to modify or create a new diagram report (see Overview of Designing Reports).

In designing a diagram report it is important to understand the format of data used to generate the diagram reports and how the data is accessed. The data is stored in a special table in a temporary database, and updated by the application whenever a diagram report is printed, exported or opened in print preview mode. Each diagram in an application is represented by a single record in this database table.

Each diagram record is assigned a category by the application. The user may choose to display diagrams for all categories or for a single selected category. The number of pages in a diagram report depends on the number of diagram records and the selected category.

A diagram report always comprises a header, a footer and a diagram area. A user may optionally add text boxes and pictures to a diagram report if they want to create more complex headers and footers.

The following steps are required to create a diagram report :

- Select the *Layout-Header* menu option to display the *Header* dialog. Select the *Text* tab to enter the header text. Other tabs allow the user to modify the appearance of the header.
- Select the *Layout-Footer* menu option to display the *Footer* dialog. Select the *Text* tab to enter the footer text. Other tabs allow the user to modify the appearance of the footer.
- Select the *Layout-Diagram* menu option to display the *Diagram* dialog. Select the required diagram category. Other options allow the user to modify the diagram layout.

optionally :

- Select the *Layout-Text Boxes* menu option to display the *Text Boxes* dialog. Any number of text boxes may be added to a report. Typical uses for text boxes are displaying the page number, number of pages, current date, report name or the result of an SQL query.
- Select the *Layout-Pictures* menu option to display the *Pictures* dialog. Any number of pictures may be added to a report. A typical use for a picture is to display a company logo.

Exporting Reports

Any open report may be exported to Rich Text Format (RTF), regardless of whether it is opened in print preview mode or design mode. Depending on the type of report two RTF formats may be chosen. The first, RTF text box format, applies to all report types (text, graph and diagram). Using this format all report text items are exported as RTF grouped text boxes. Graphs and diagrams are exported as Windows metafiles. The second, RTF table format, applies to just text reports. Using this format the header, field headings, fields and footer are exported as RTF tables. The report text boxes are exported as RTF grouped text boxes overlaid on top of the tables.

To export a report select the application *File-Print Preview...* menu option or the print preview toolbar button. This will display the *Report Explorer* dialog, which allows the user to select a report for preview.

The *Report Explorer* is divided into two main areas: on the left a tree control displaying report folders, on the right a list view control displaying the reports contained in the currently selected folder. Reports are organised into text, graph and diagram folders; these folders are then further sub-divided into folders representing categories and sub-categories of text, graph and diagram reports.

To open a report in print preview mode first open the required folder, select the required report from the list view and then finally select *Open*. The report will then request the required information from the application. When this information transfer is complete, the first page of the report will be opened in print preview mode. whilst repagination of the report completes.

Now select the *File-Export Report-RTF Textbox Format* menu option to export in RTF text box format or the *File-Export Report-RTF Table Format* menu option to export in RTF table format. Both these options display the *Save To RTF File* dialog. Select the required path and filename and then select *OK*. The *Export Settings* dialog will be displayed. Select the required pages to export, whether to include page and section breaks (text box format only), the report objects to export, and then select *OK* to start the export process. This will display the *Print Status* dialog, which shows the current page being exported and allows the user to cancel the export process.