Multilin G500™ Substation Gateway Analog Reports

User Guide

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Contents

About this Document

Purpose

This document describes how to set up Analog Reports in a Multilin G500 HMI.

Intended Audience

This document provides a reference for systems integrators who wish to set up Analog Reports on the G500.

Additional Documentation

For further information about Analog Reports, refer to the following documents:
- G500 Substation Gateway, Software Configuration Guide SWM0101
- G500 HMI Online Help
- iReport Ultimate Guide (Updated DDMMYYYY)
  http://community.jaspersoft.com//system/files/documentation/ireport-ultimate-guide.pdf

NOTICE   It is highly recommended that the iReport Designer tool distributed with the G500 is not to be subjected to a software upgrade. The iReports Designer Software is customized and optimized specifically for the use with the G500.

Manual Layout

This document outlines and details the procedures regarding:
- Creating a customized report template using iReport Designer
- Importing templates
- Configuring Archived (Offline) Reports
- Configuring Current (Online) Reports
- Report Viewer

Document Conventions

The software-related procedures in this guide are based on using a computer running Windows® XP. Some steps and dialog boxes may vary slightly if you are using another version of Windows.

Safety words and definitions

Before attempting to install or use the device, review all safety indicators in this document to help prevent injury, equipment damage or downtime.

The following safety and equipment symbols are used in this document:

⚠ DANGER   **Indicates a hazardous situation which, if not avoided, will result in death or serious injury.**

⚠ WARNING   **Indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

⚠ CAUTION   **Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.**

NOTICE   **Indicates practices that are not related to personal injury.**

Product Support

If you need help with any aspect of your GE Grid Solutions product, you can:
- Access the GE Grid Solutions Web site
- Search the GE Technical Support library
- Contact Technical Support

GE Grid Solutions Web Site

The GE Grid Solutions Web site provides fast access to technical information, such as manuals, release notes and knowledge base topics.
Visit us on the Web at: http://www.gegridsolutions.com

GE Technical Support Library

This site serves as a document repository for post-sales requests. To *get* access to the Technical Support Web site, go to: http://sc.ge.com/*SASTechSupport

Contact Technical Support

The GE Grid Solutions Technical Support is open 24 hours a day, seven days a week for you to talk directly to a GE representative.

In the U.S. and Canada, call toll-free: 1 800 547 8629

International customers, please call: +1 905 927 7070

or email to multilin.tech@ge.com

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Creating Template Using iReport Designer

1.1   iReport Designer

The G500 has implemented some standard report templates. You can also design a customized report template and upload it to the G500. You can:

- Access your data through XML, CSV.
- Export your reports as HTML, Excel or PDF.

1.2   Report Template Creation Procedure

» **To create a report template using iReport Designer:**

1.   Install iReport Designer 5.5.0, download all related sample templates and sample data xml/csv files. They are available on the GE Grid Solutions Technical Support Website:

http://site.ge-energy.com/prod_serv/products/substation_automation/en/tech_support_login.htm

Login and navigate to the following folders:

Substation Automation Products > G500 > Firmware > Firmware v1.00 > Analog Reports Templates

NOTICE   Not all features of the standard iReport Designer are supported in the G500-customized version of iReport Designer. Do not upgrade the iReport Designer as it may not be compatible with the G500.

Result: You can now run iReport Designer.

2.   Create a customized:
- Offline Report Template; see page 8.
- Online Report Template; see page 39.

1.3   Create a Customized Offline Report Template

» **To create a customized offline report template:**

1. Create an XML DataSource.

    This action is only required once. Skip this step if it has already been done. The Offline report uses the xml file as the datasource.

    a) Click the **Report Data Sources** button.
        Result: The Connections/Datasources window appears.

    b) Click the **New** button.
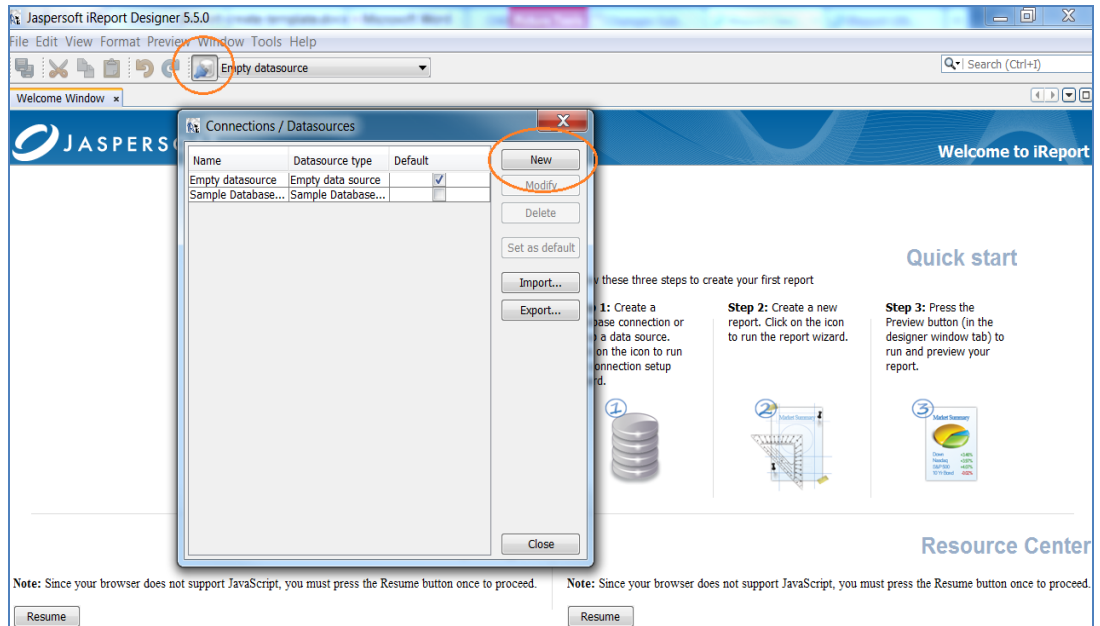
c) Select the database type: **xml file datasource** and click **Next**.
Result: You will be able to preview the file datasource.
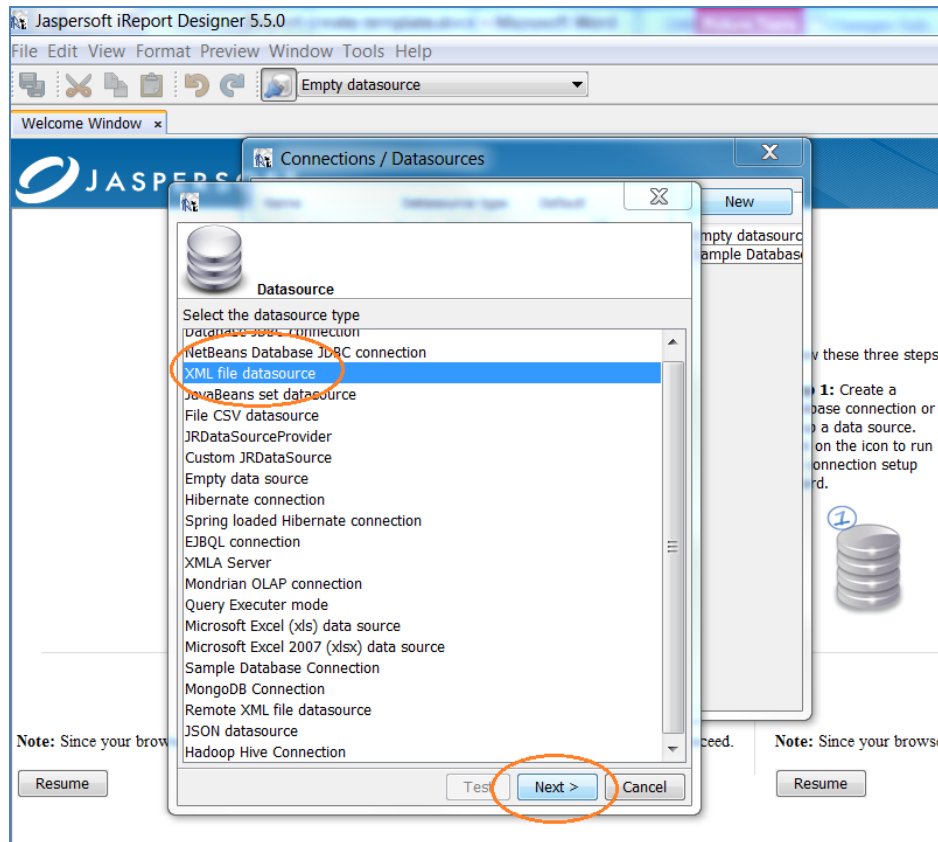
d) Type the desired name in the **Name** field (for example, New_Xml_DS).

e) Select the **Use the report XPath expression.**

f) Click on **Browse** to **Choose Sample_OfflineData.xml** from the location in local PC.
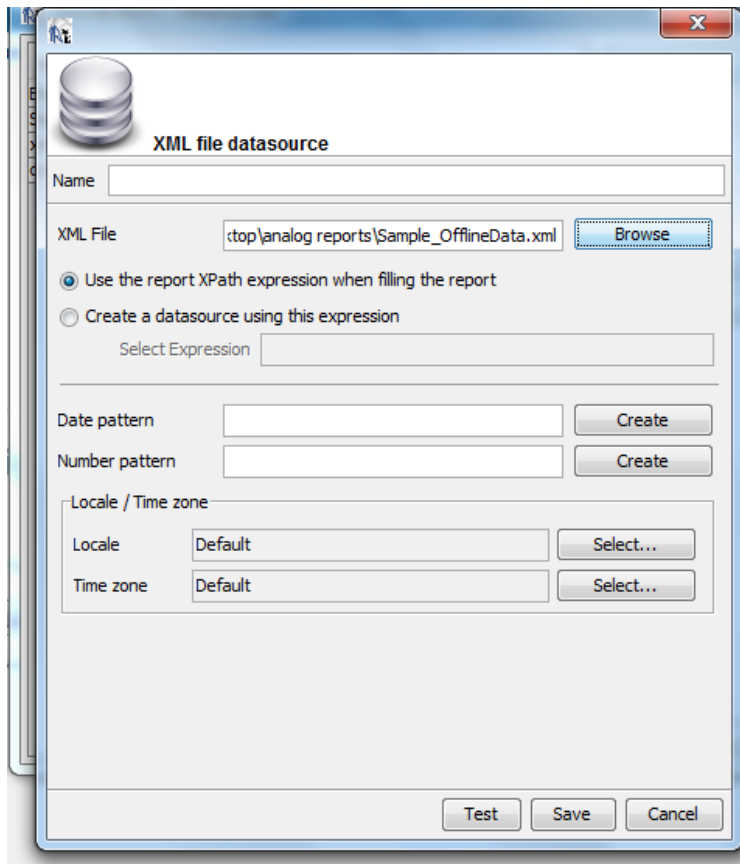
Note: The sample file "Sample_OfflineData.xml" can be found on the GE Grid Solutions Technical support website.

g) Click **Test** to check if the correct file is chosen and click **Save**.

h)   Set the default DataSource to **New_Xml_DS** and click **Close**.
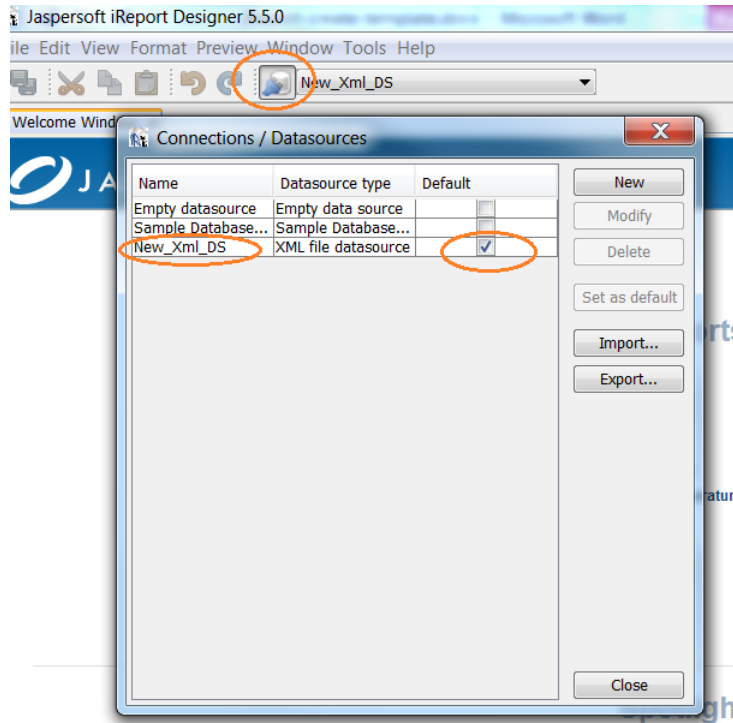
2.   Create offline template.

      a)   Click on **File,** select **Open,** navigate to the sample template provided on the GE Grid Solutions Technical Support website.

         Or select **New** to start a new Template (Additional steps required).
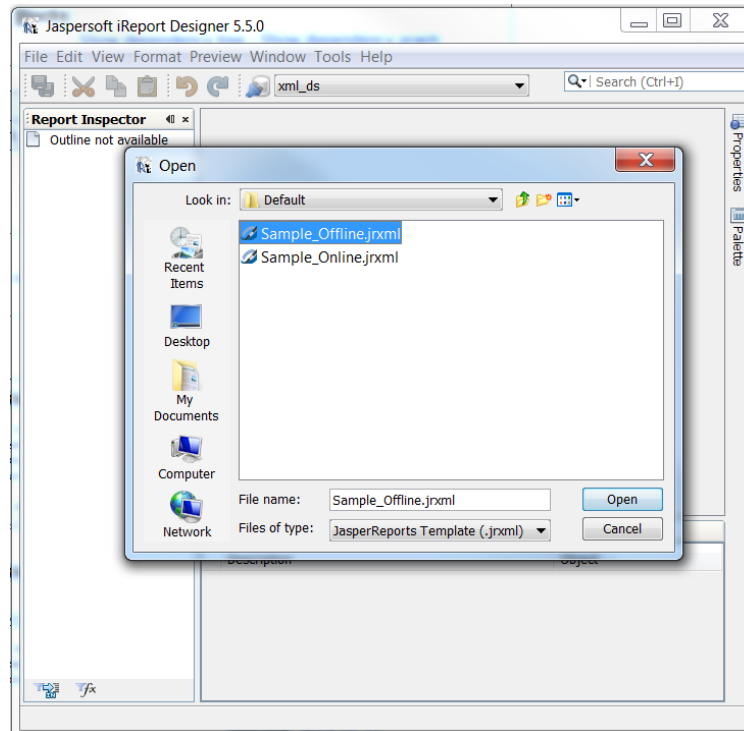
Note: It is strongly recommended that using the sample template to create your customized offline template. The sample template 'Sample_Offline.jrxml' is provided on the GE Grid Solutions Technical support website.

If you choose to create a new template without using the sample template, additional steps are required as below.

i)   Click the **Report Query** button, located on the right side of **Preview** button.

ii) Select **XPath** as query language on the first tab.

iii) Type **/** in the xpath expression textfield.

iv) Click **OK**.
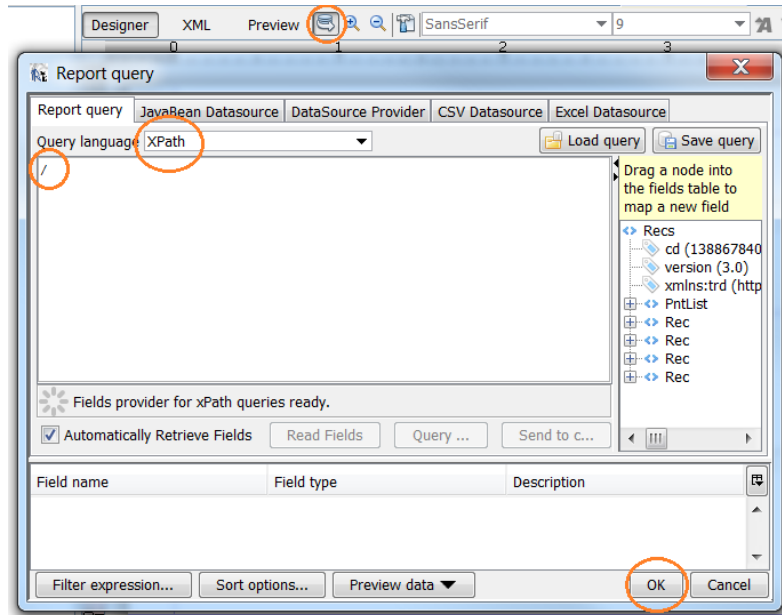
b) Rename the Template by Clicking **File** and select **Save_As** sample template as a new file.
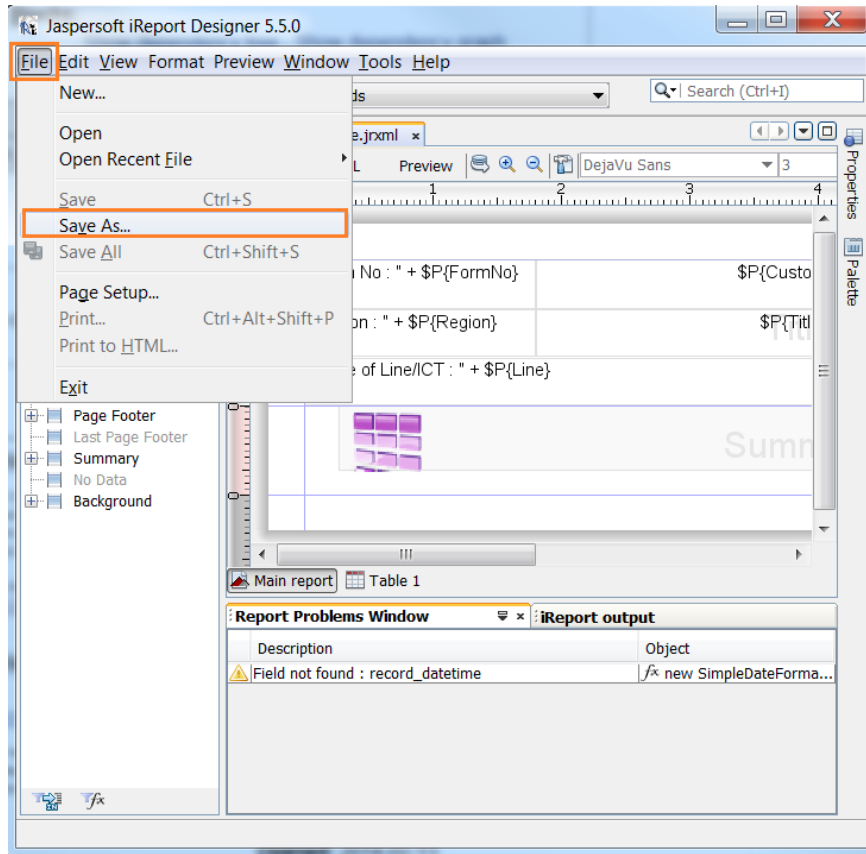
The below report is created in this procedure as a demonstration. You can modify the sample report according to your report requirements.

CORPORATION								

Form No:
Region: **Substation:**
Daily Log Sheet for EHV Lines

Date	Month	Year

Time	Line……………**				Weather Condition *	…………kV *** Bus No……		Remarks
Hrs	**MW**	**MVAR**	**Line Reactor MVAR**	**FSC/TCSC IN/OUT of Service**		**kV**	**Hz**	
0100								
:								
:								
1200								
:								
:								
2400								

* Weather Conditions: Dry/ Cloudy/ Stormy/ Rainy/ Windy – To be recorded once in a shift.
** This format block is to be repeated for each line on the same sheet.
*** This format block is to be repeated for each Bus on the same sheet.
Note: 1. Column spacing to be adjusted as per requirement. Line Reactor & FSC/TCSC IN/OUT of service column to be deleted wherever not applicable.

	Shift	Tech./ JE	Shift I/C
	C		
	A		
	B		
	C		

3. Change the **Report Name** as required.
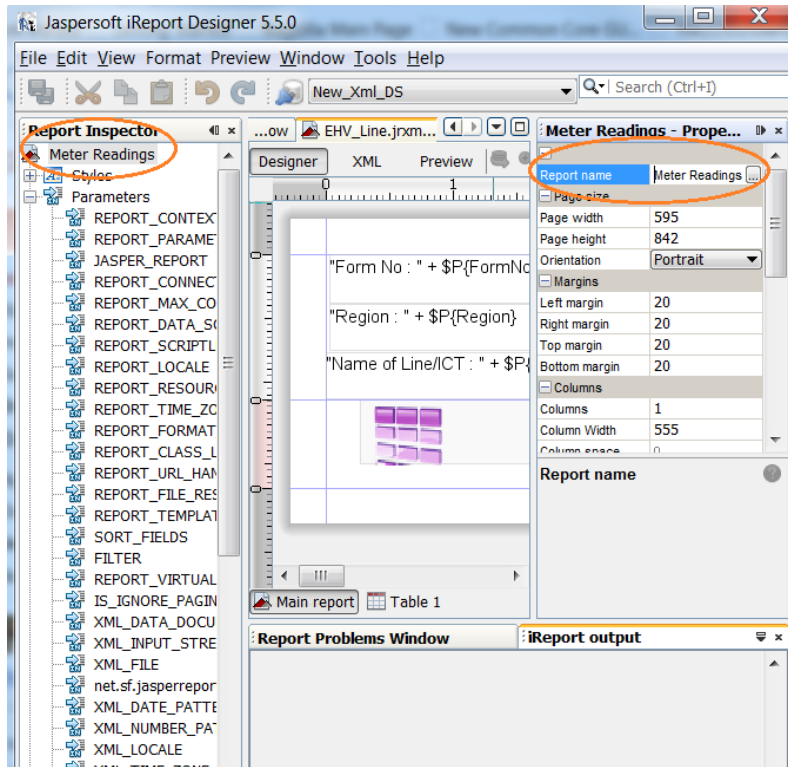
4. Create the report parameters.

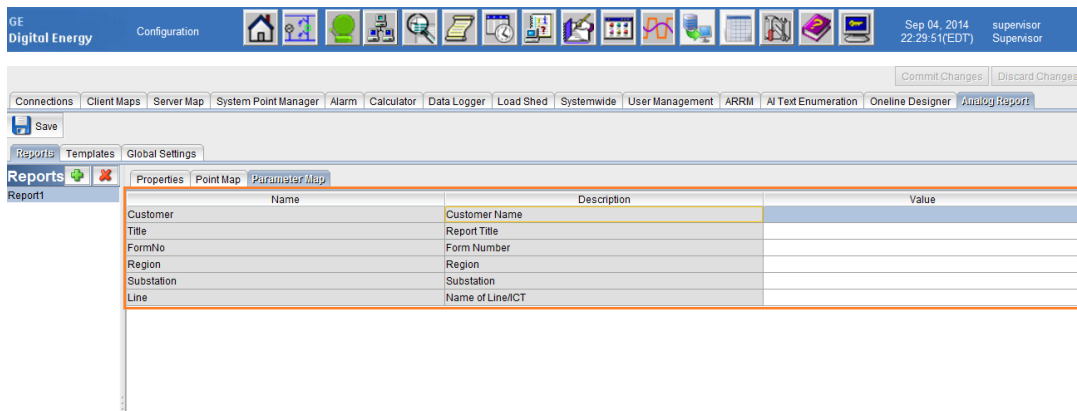Report parameters defined in the template are used by the G500 Configuration Tool. The below G500 HMI image shows how parameters would appear after creation and importing the template.

You can specify values for these parameters using the Analog Report Configuration Tool.

Predefined Parameters (Mandatory steps for new templates)

There are three predefined parameters for which values are always transferred.

*   Datetime(java.util.Date) – This parameter identifies the starting datetime of current report file logged.
*   ReportType (java.lang.String) – This parameter specifies the Report type that you specified in Analog Report Configuration Tool. Possible values are: SHIFT, DAILY, WEEKLY and MONTHLY.
*   ReportName(java.lang.String) – This parameter specifies the Report Report name you specified in Analog Report Configuration Tool.

Note: For predefined parameters the **Use as prompt** property must be unchecked. If a new template is not created based upon a sample template, creating predefined parameters is mandatory.

Parameters in Sample Template

The sample template has six parameters in addition to the predefined parameters; for example: Customer, Title, etc.
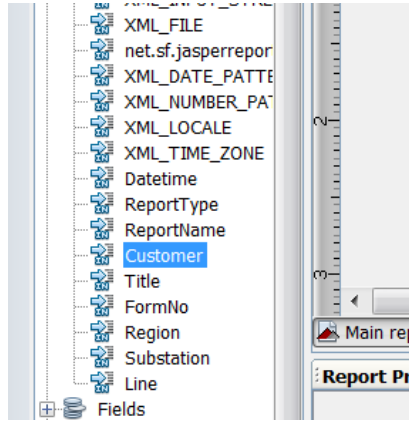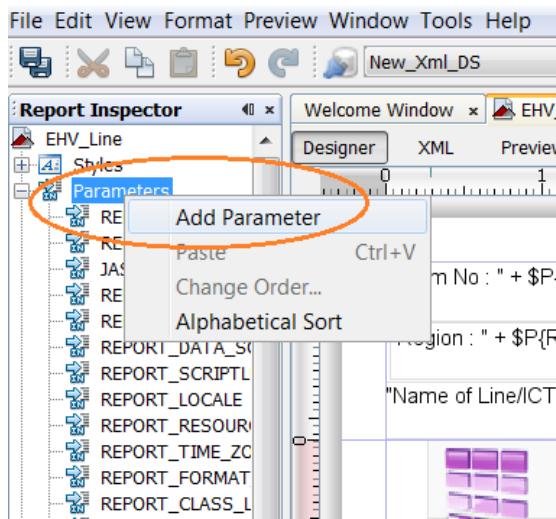

» **To add a new Parameter**:

The sample template does not have two other parameters which are required by the report (ignore if already present):

- VoltageLevel (java.lang.String) – Voltage Level is presented in the table column
- BusNo (java.lang.String) – Bus.No is presented in the table column

Note: All parameters must be of type: java.lang.String, except the three predefined parameters. You specify the parameter value in the G500. Text can be used to present values in various types.

5. Use the **Add Parameter** command to add and rename the following paramters:
   - VoltageLevel
   - BusNo
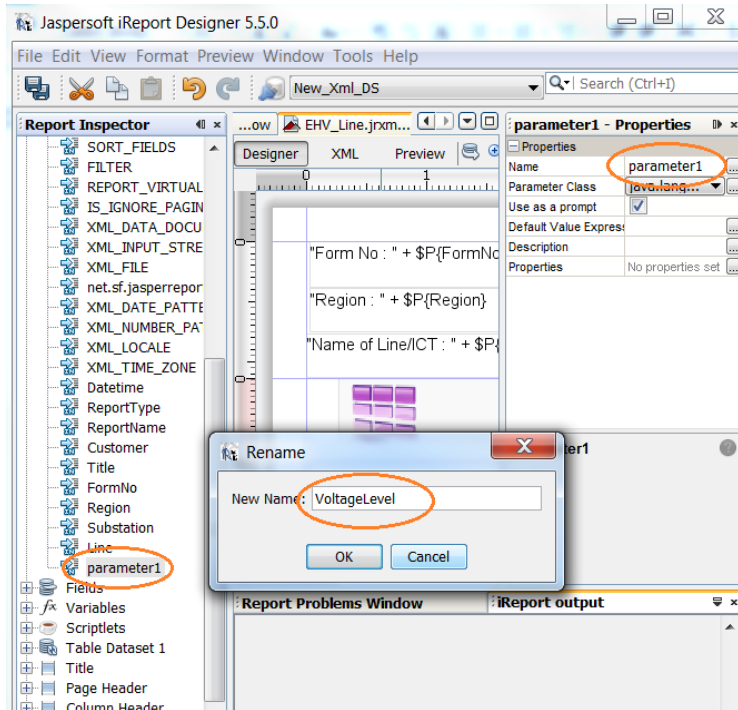

6. Configure the parameters which are to appear in the G500 Analog Report Configuration Tool.

   - The **Use as a prompt** checkbox is used to hide/show the parameters in G500 Analog Report Configuration Tool.

     If this checkbox is selected, the current parameter appears in G500 Analog Report Configuration Tool.

     If this checkbox is not selected, the current parameter does not appear in G500 Analog Report Configuration Tool.

     The predefined parameters are unchecked.

   - The text specified in the **Default Value Expression** field appears by default in the Multilin G500 Substation Gateway - Analog Reports. You can override the default value in the G500.

   - The text specified in the **Description** field appears in the parameter map of the Multilin G500 Substation Gateway - Analog Reports. Provide any details in the description which will help the user understand the function of the parameter.
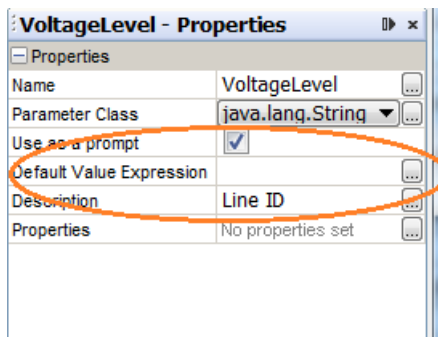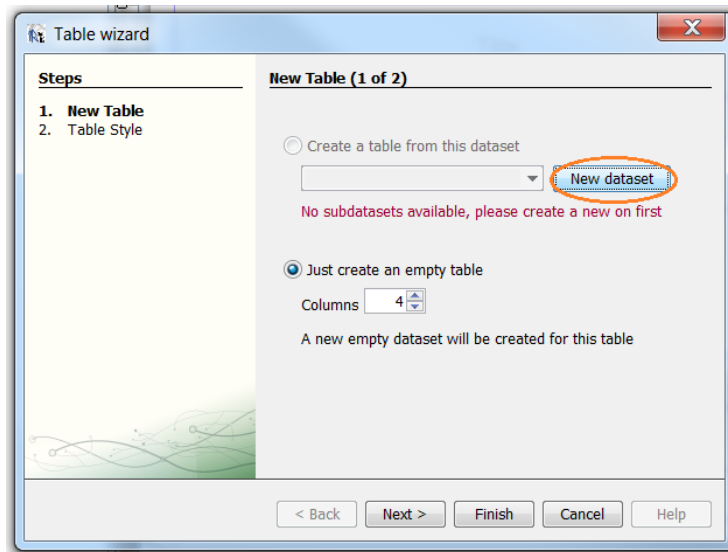
7. Create a table and set the Table DataSource.

    Skip this step if using the sample template.

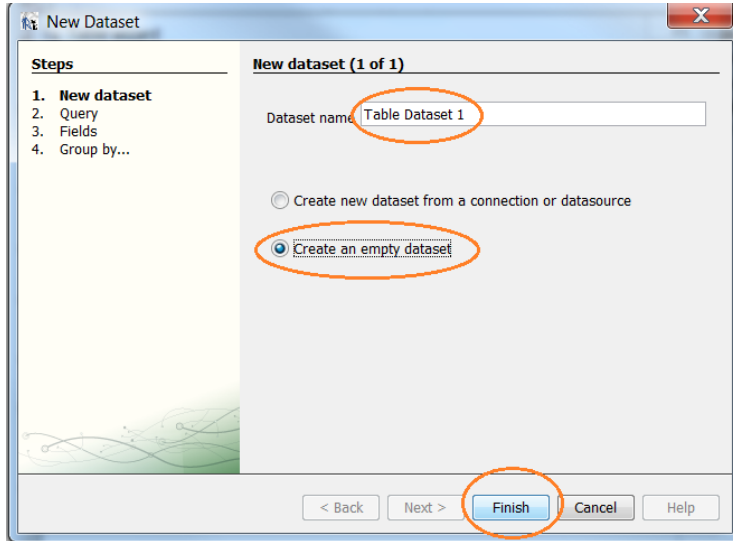   a) Drag-and-drop a table from the palette into Designer.
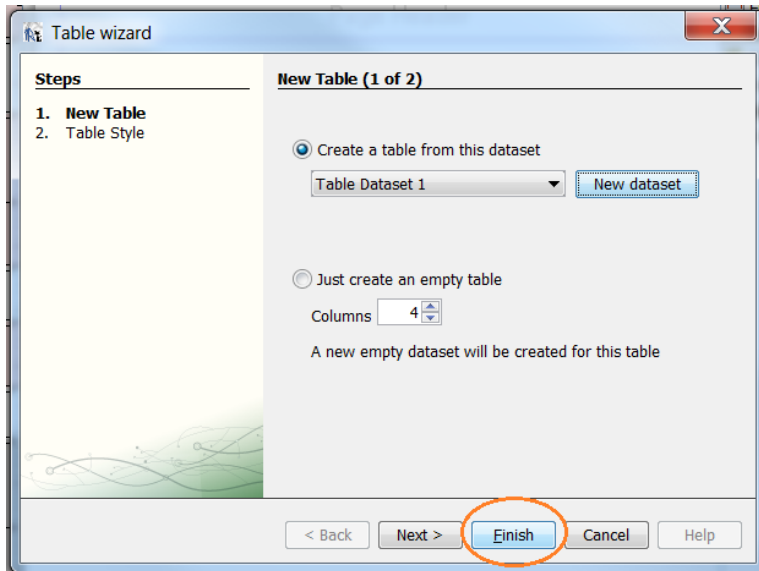   Result: A Table wizard appears.
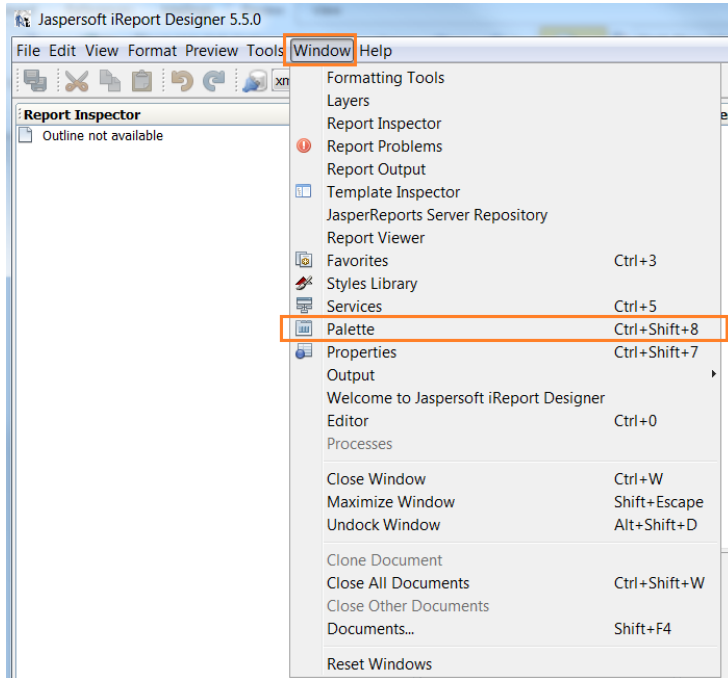
    b) Click **New dataset**.
        Result: The New Dataset wizard appears.

c)   Type in a **Dataset name**.

d)   Select the **Create an empty dataset** option.

e)   Click **Finish**.
Result: The New Dataset wizard closes.

f)   Click **Finish**.
Result: The Table wizard closes.

g) Right-click the Table name and select **Edit table datasource**.
   Result: The Dataset Run window appears.
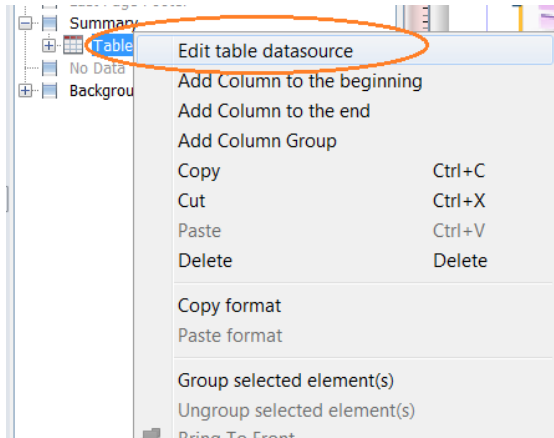
h) Copy and paste the query:

**((net.sf.jasperreports.engine.data.JRXmlDataSource)\$P{REPORT_DATA_SOURCE}).dataSource("
/Recs/Rec")**

to the Connection/Datasource Expression – **Use datasource expression**.
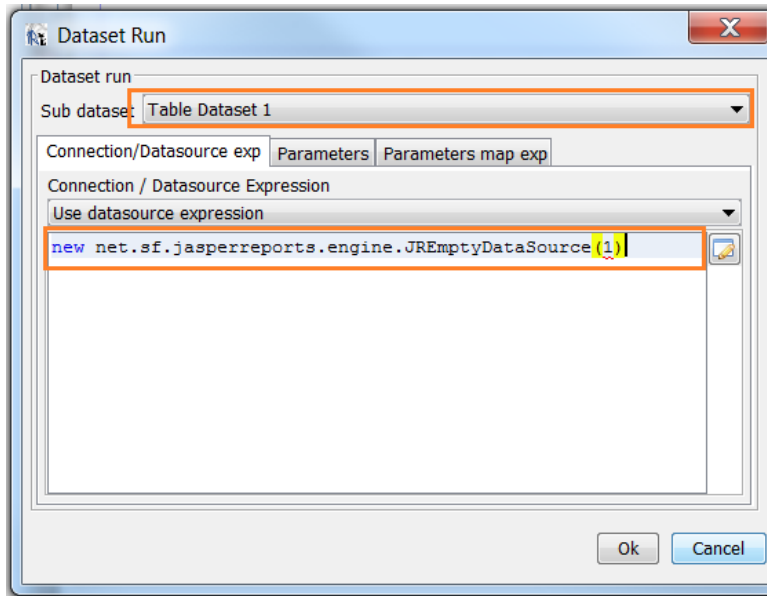
i)   Right-click on **Table Dataset 1** and select **Edit Query**.

j)   Change the Report query to **XPath**, with expression is **/Recs/rec**.
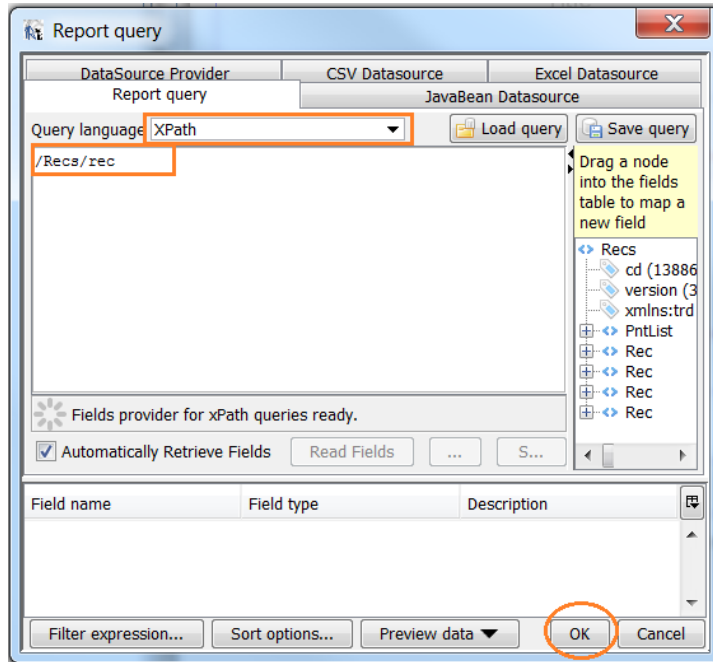
k)   Right-click **Fields** and select **Add Field**.
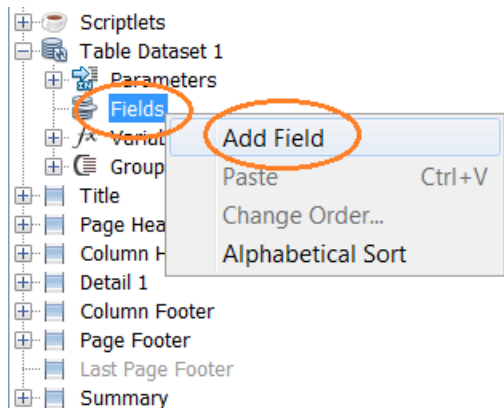
l) Add field **p1**: **AI Point**
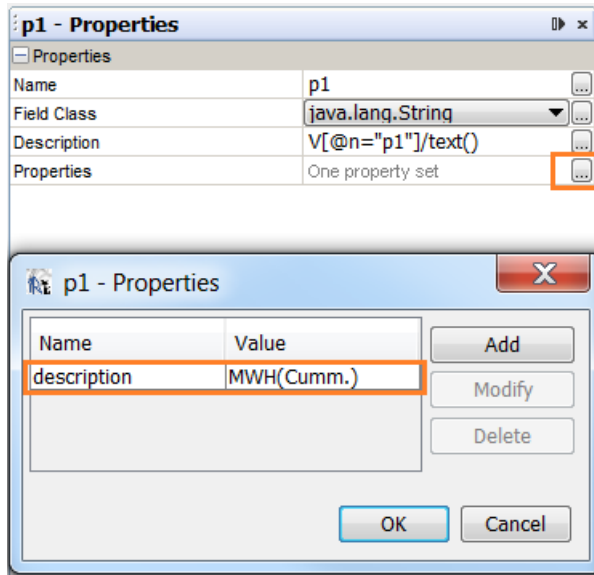
Give XPath expression 'V[@n="p1"]/text()' to p1 shown upon.

An additional **description property** is required, which will appear on HMI Analog Report Configuration Tool. User should know which AI Point to be mapped accordingly.
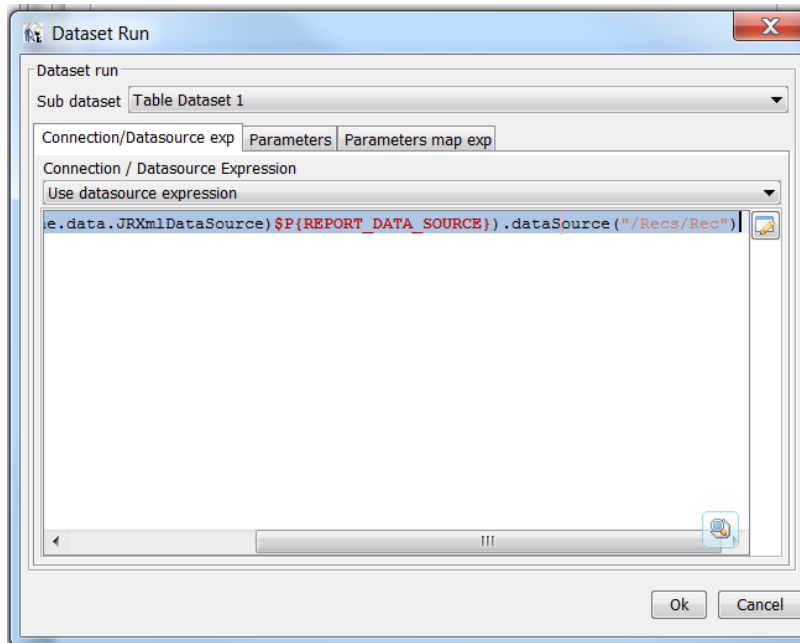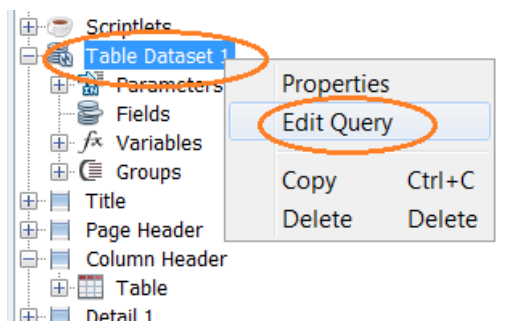
m) Add field **q1: AI Point Quality**.
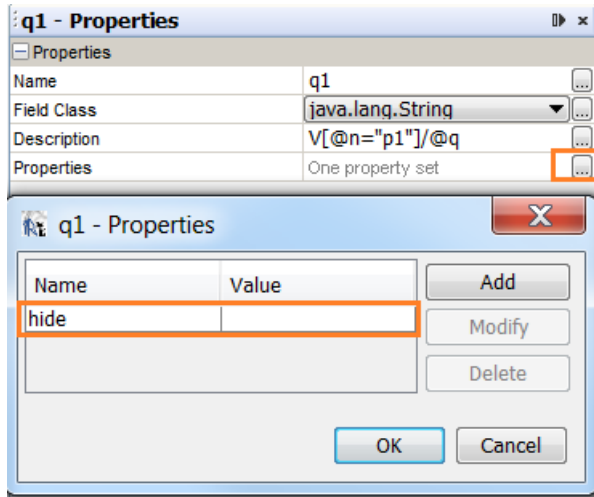
An additional **hide** property is required, which indicates this is an invisible field in HMI Analog Report Configuration Tool. This field is used to show AI point's quality at runtime.

if multiple analog points are required in the report, repeat sub-steps k) to m)and to create fields for the other analog points.

n) Add the **rectime** field: **recording date/time for each logging record**.
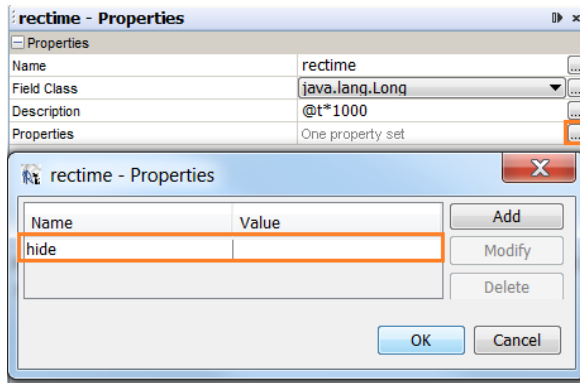
Note: The **rectime** field is the Epoch time in millinsecond. It is not configurable in Analog Report Configuration Tool and should be hidden by adding 'hide' property.

8. Add/Remove Table Column.
Result: if you are using the provided sample template, a table name appears in the Designer summary pane.

a) Click **Table1**.
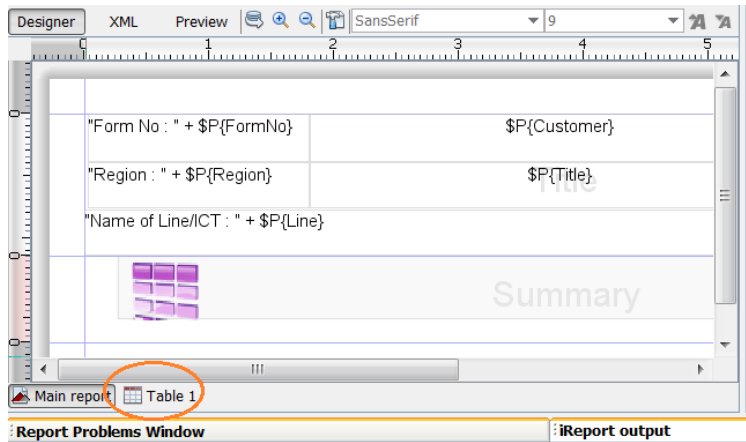
Result: A sample template table appears with 7 columns.

Date	MWH (Cumm.)	Multipling Factor	Net MWH in last 24 Hrs	MVARH		Signature
				High	Low	
new SimpleDateFormat	($F{q1}==null) ? $F	($F{q2}==null) ? $F	($F{q3}==null) ? $F	($F{q4}==	($F{q5}==	
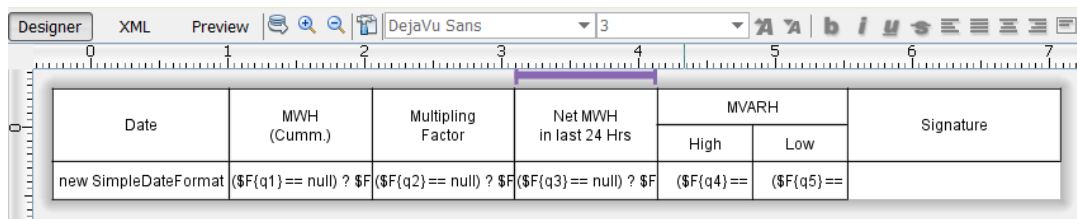
b)   Add two additional columns.

Right-click on the fourth column and select **Table** > **Add Column After**.
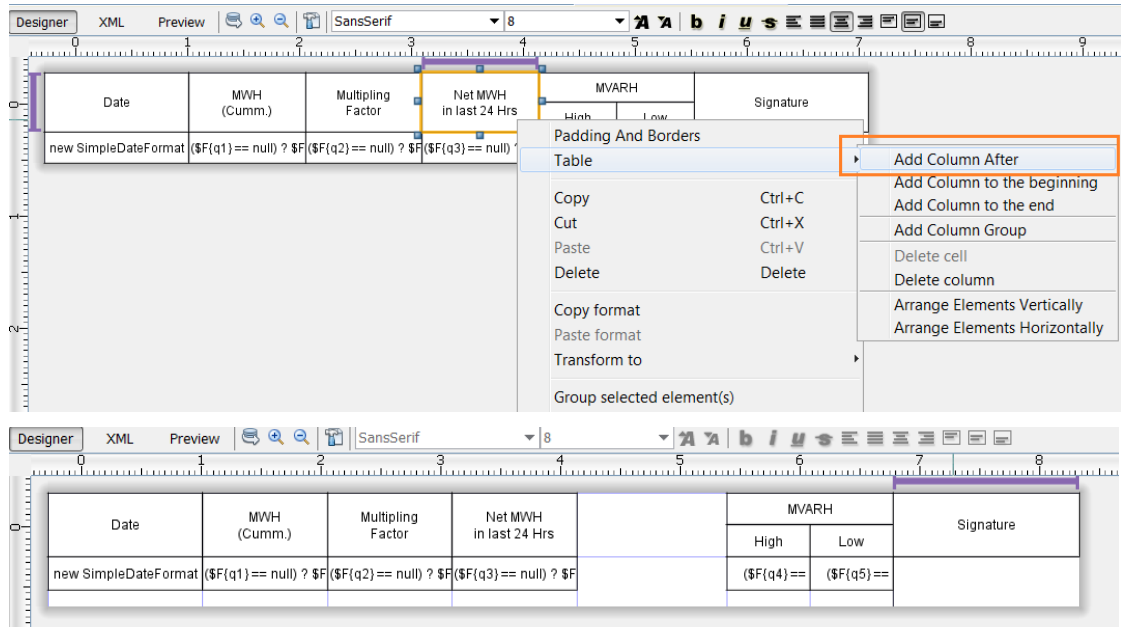
c)   Repeat the previous step to add another table column.
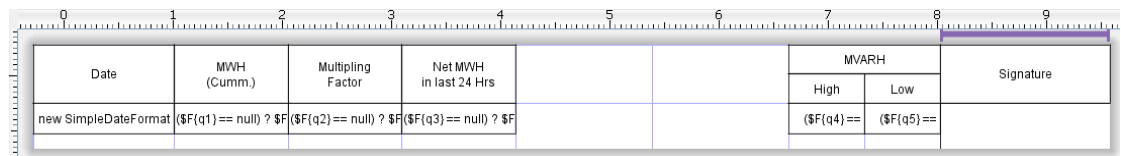
d) Group the table/column header.

Press and hold the Shift key and select column2 to 5, then right-click and select **Group Selected Columns**.
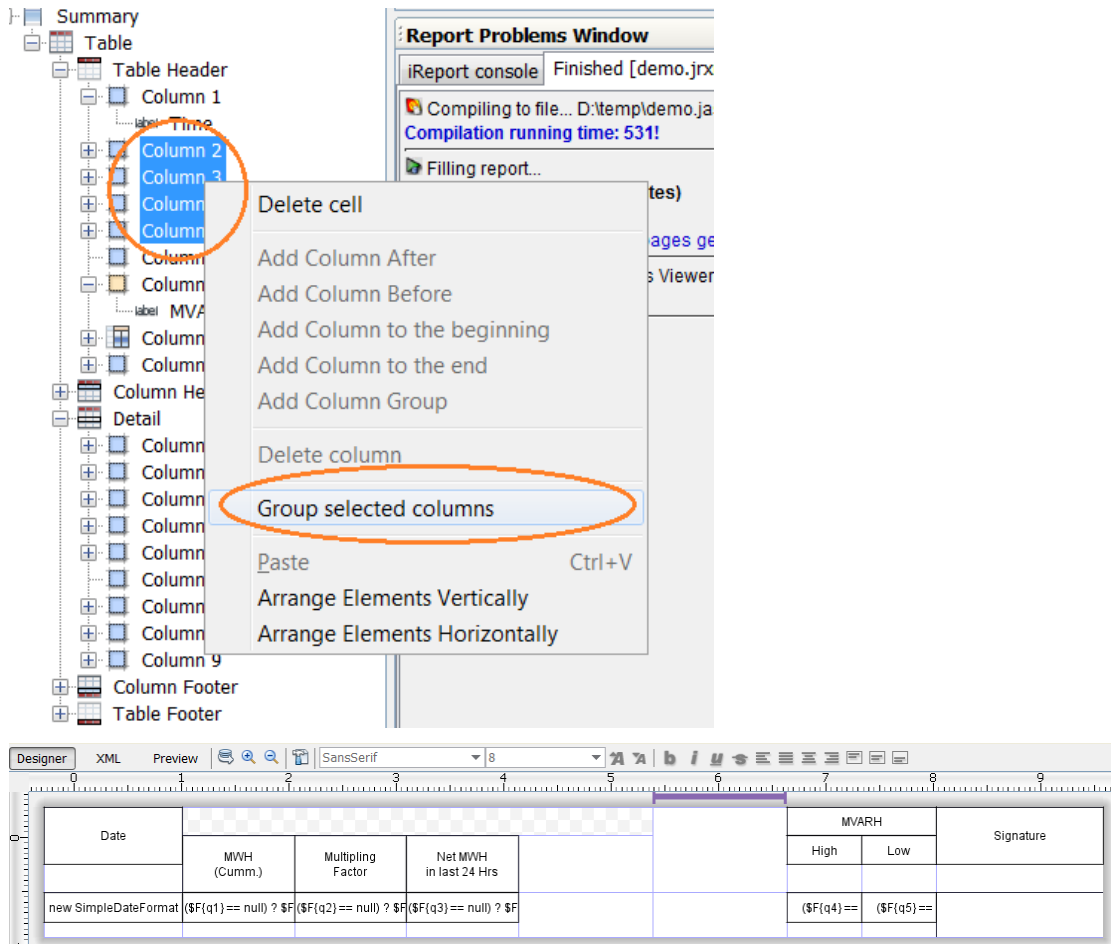
e) Add a cell to the new grouped column.
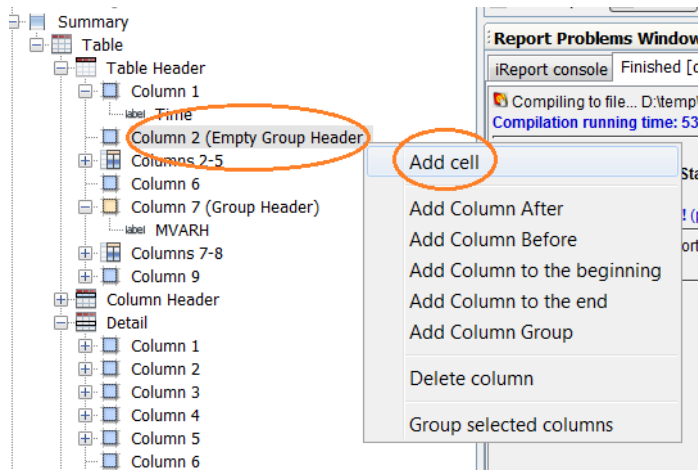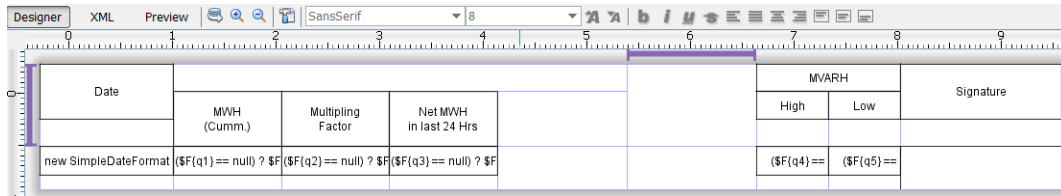
f) Drag-and-drop the Static Text to new grouped column.
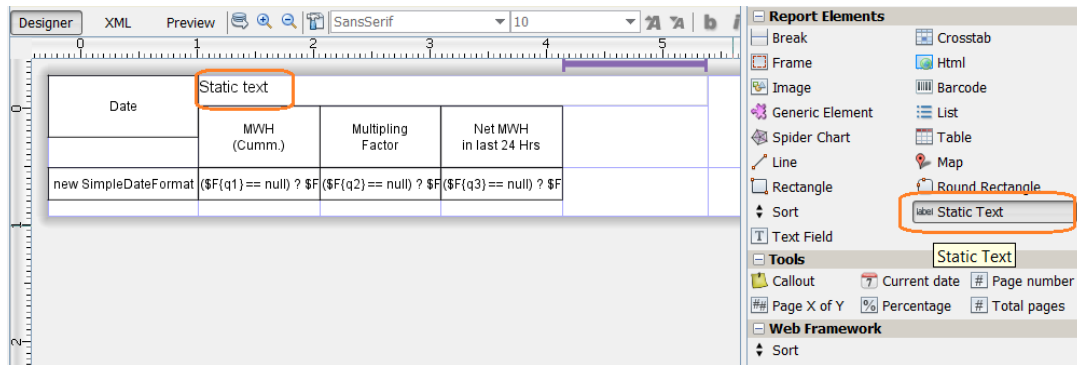
g) Change the static text in table header.
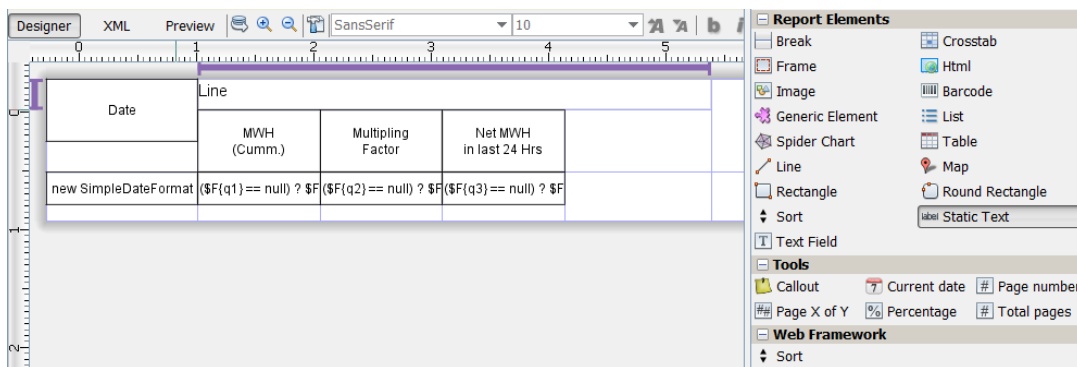
h) Add more static text for **Weather Condition** in the same way.

i) Add a column header to the new columns and adjust the column width and height.

You can change the common properties for multiple objects by selecting multiple text fields (by pressing and holding the Ctrl Key).
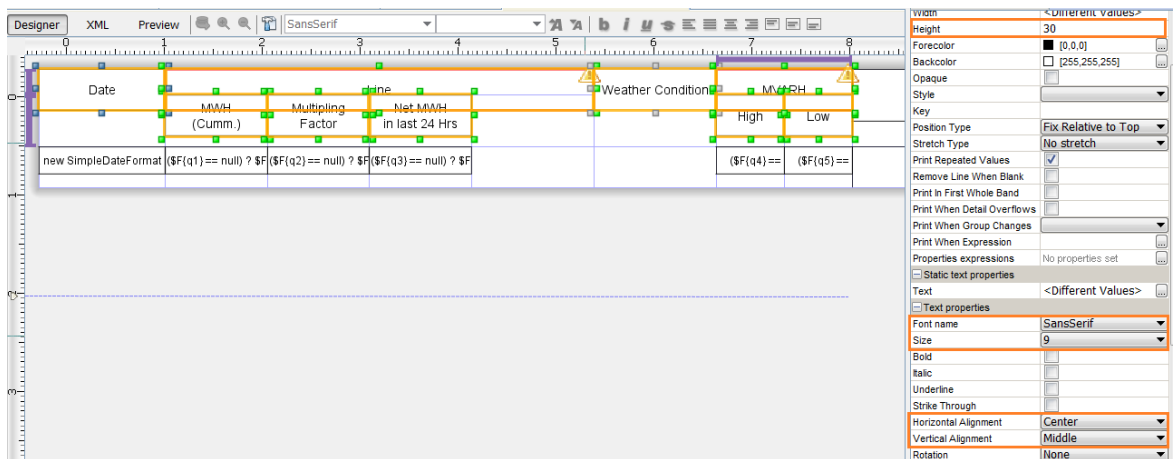
j) Adjust the height of the **Line** and **MVARH** static text cells. This static text can overflow to its cell height.

k) Add a column header for each new column, adjust the column width and height, and change static texts to fit the new report.
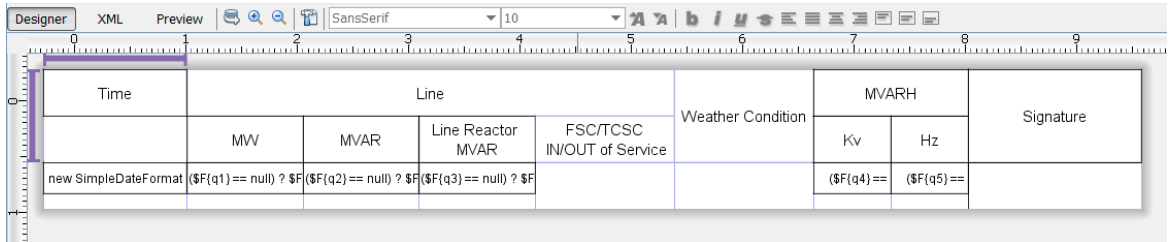
Note: In some cases, column height cannot be decreated after added a new column. To fix this, usually deleting cells from columns in the Table/Column Header/footer is required. This is because a cell is invisible in designer, but it takes space in the table. The height of a red column cannot be decreased since the column footer and table footer have columns with cells.

Result: Column 5 and column 6 have cells in column footer and table footer.

l) Delete these footer cells from columns 5 and 6.
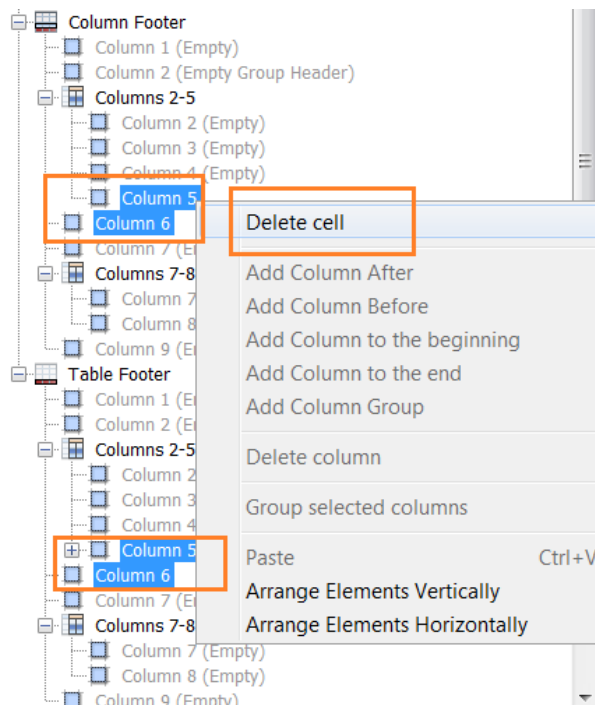
m) Decrease the column height.
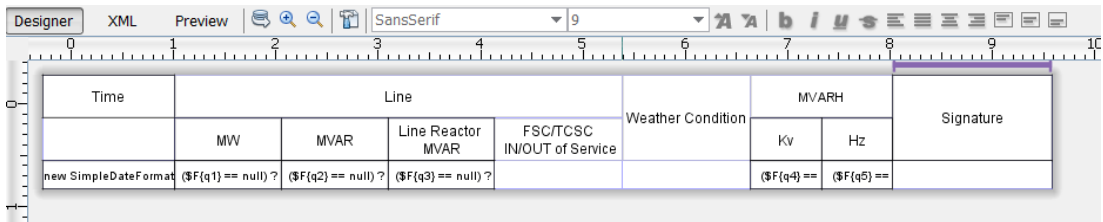
In this sample, the report has a column header and does not have a table header.

If you need both a table header and a column header, refer to the "ireport-ultimate-guide.pdf" , Chapter "13.2.2 Table Structure".

Notes:

- The Table Header is only printed one time; that is, at the beginning of the table. The Table Footer is also only printed one time; that is, at the end of the table.

- The Column Header is only printed one time; that is, at the beginning of each page for the table. The Column Footer is only printed one time; that is, at the end of each page of the table.
  The Table Header and Column Header are typically used to display static text.

Remove all cells from columns which are not required; otherwise these columns are printed, with unwanted blank spaces. This is also applicable to Table Header, Column Header, Detail, Column Footer and Table Footer.

If your table does not contain a Column Footer, do not put text into any Column Footer cell.

9. Configure the parameter to appear in the table.

   Skip this step if no parameter is required to be displayed on table. In this demo template, parameters 'VoltageLevel' and 'BusNo' are required in the table header.

   a) Rightt-click **Parameters** and select **Add Parameter** to add new parameters to the Table Dataset and pass parameter values.
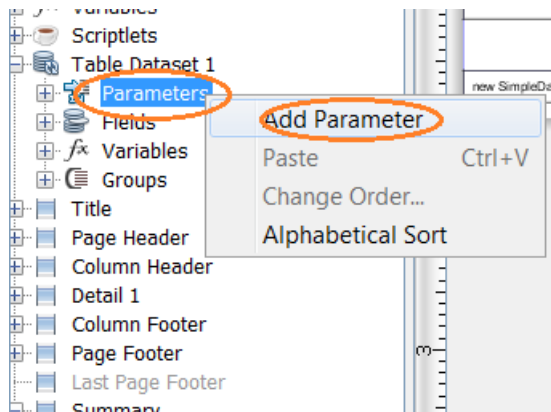
   b) Right-click the paramter name and select **Rename**.

   For example, the parameter name **VoltageLevel**, can be renamed for the report. The parameter name can be any legal name. Do not confuse parameter names between the Table Dataset and Report.
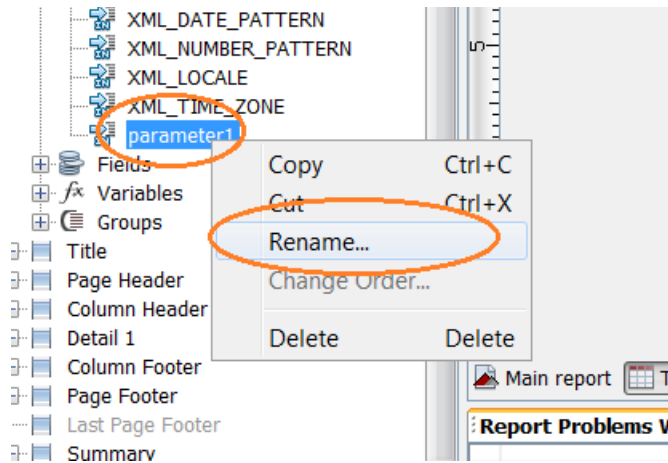
c) Transfer the value of the VoltageLevel parameter into the Report to VoltageLevel parameter in the Table Dataset 1.

d) Set the parameter properties:
   - Set Parameter Class to **java.lang.String**.
   - Do Not select the checkbox: **Use as a prompt**.
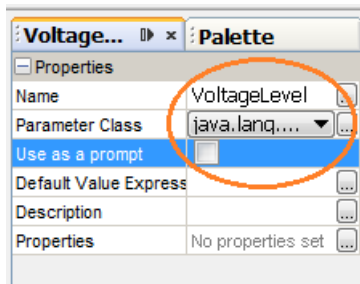
e) Right-click on the table and select **Edit table datasource**.
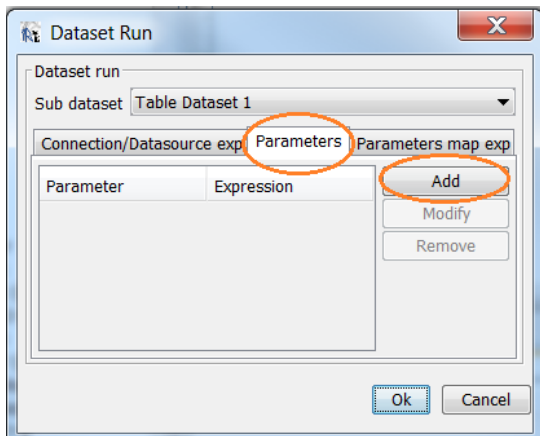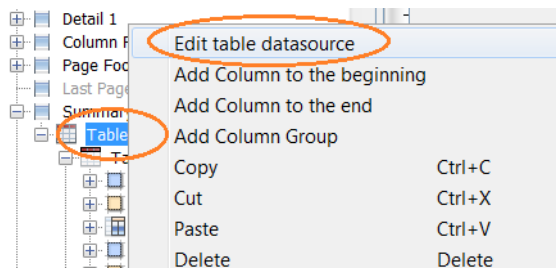
f)   Select the **VoltageLevel** parameter from the Datatset parameter name list.

g)   Type or select the Value expression: the **$P{**VoltageLevel**}**.
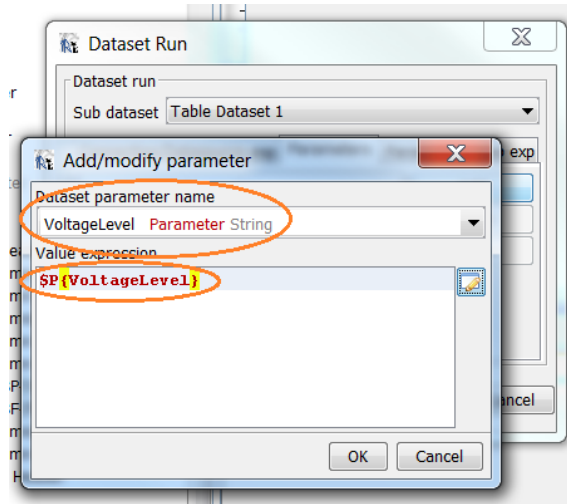
h)   Drag-and-drop the **Text Field** element to the table header for Voltage Level and Bus No.

i)   Delete the static **MVARH** text.
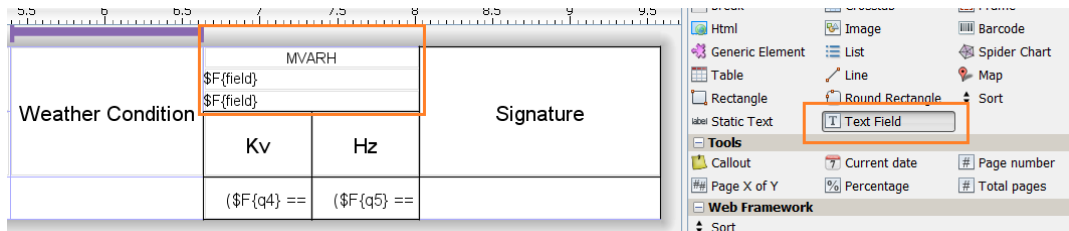
j)   Right-click on the text field and select **Edit expression**.
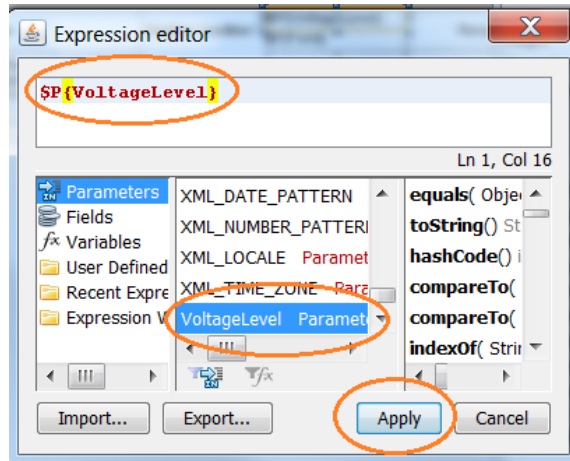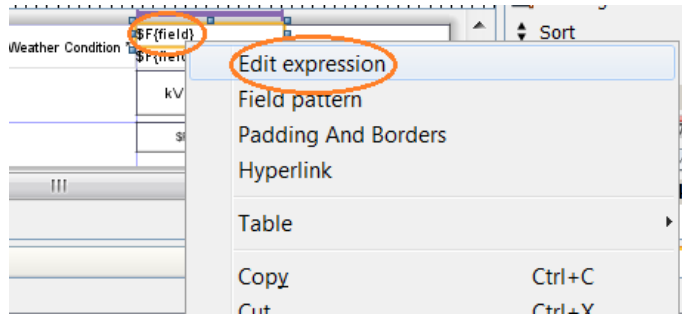
k)   Repeat the previous step to create the **BusNo** parameter.

10. Add and move the following fields:
    - Field p4 is to be moved to column 5
    - Field p5 is to be moved to column 6.
    - Two new fields are to be added to the columns where p5 and p6 are located, before moving.

a)   Drag-and-drop field p4 to Column 5. Repeat for field p5.

b)   Add new fields: **p6**, **q6**, **p7** and **q7**.

c)   Add field **p6** for the AI Point value.

d)   Rename the field to specify **XPath V[@n="p6"]/text()** and add properties.
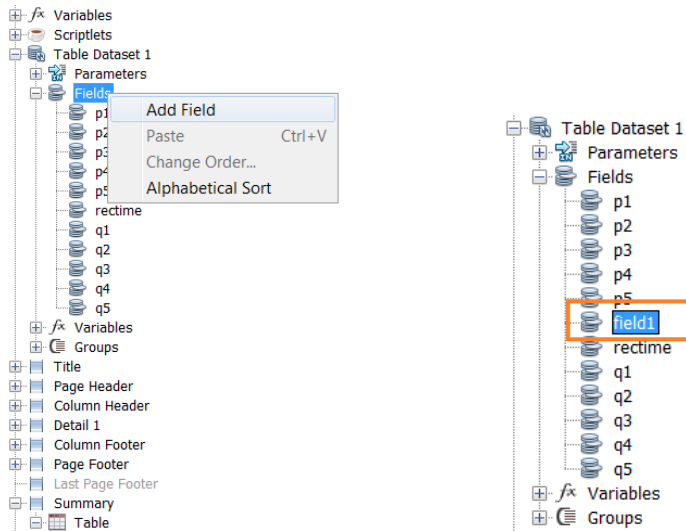
The **Description** property is used to store **XPath V[@n="p6"]/text()**.
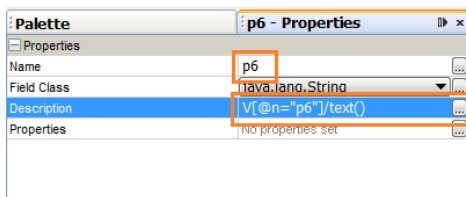
e) Add a **Description** property to be shown on the HMI Analog Report Configuration tool, It is helpful for the HMI user to understand which AI point should be mapped to this field.
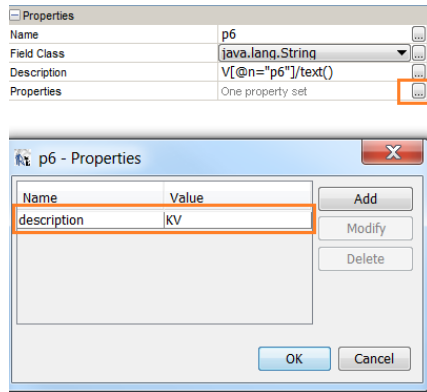
f) Add properties for the **q6** field for the:
- Quality of the AI Point value
- Rename field
- Specify **XPath V[@n="p6"]/@q**
- Add the **hide** property
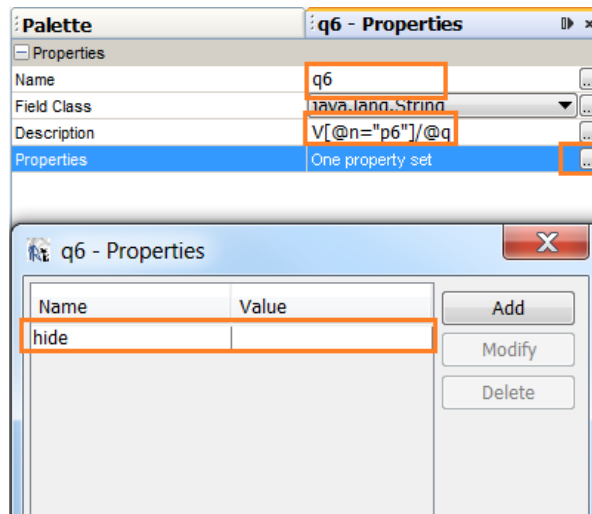
Notes:

- The field name length cannot exceed 8 characters. The names p[n] and q[n] are recommended, where n is an incremental number, The sample xml file uses field name p[n].

- There are two predefined properties:
  - If specified with a predefined **description** property, this parameter value appears in the G500 Configuration Tool. This description helps the G500 HMI user understand which AI Point should be mapped.
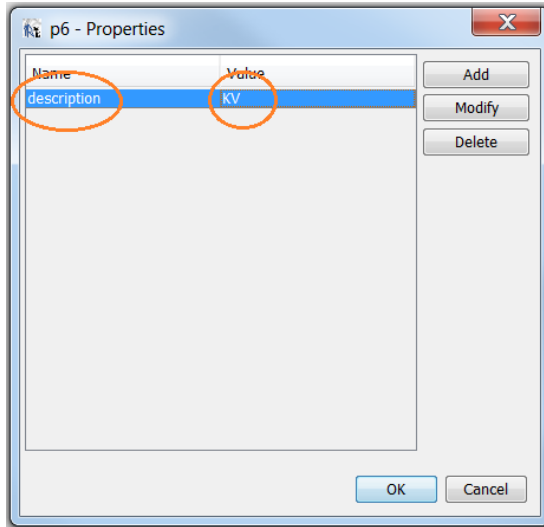
  - The predefined **hide** property is not required to the AI point field. The value in a hidden field does not appear in the G500 Analog Report Configuration Tool. It is very important to **record time** field and **quality** field. For sample : the **rectime** field is the Epoch time in millinseconds, it is not configrable and should be hidden in the G500 Analog Report Configuration Tool.
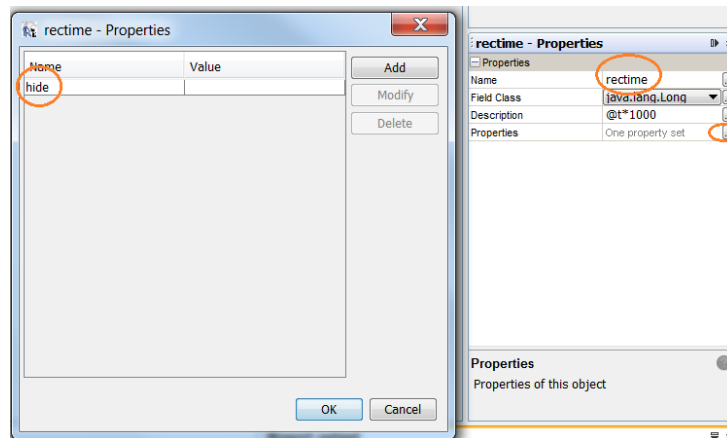
g) Add a field; drag-and-drop a **Text Field** to the table.
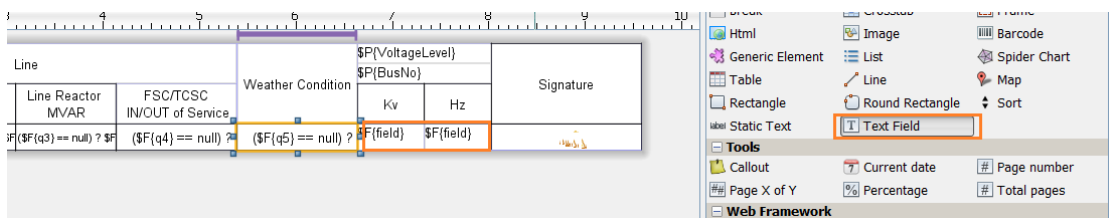
h) Right-click **$F{field}** and select **Edit expression**.
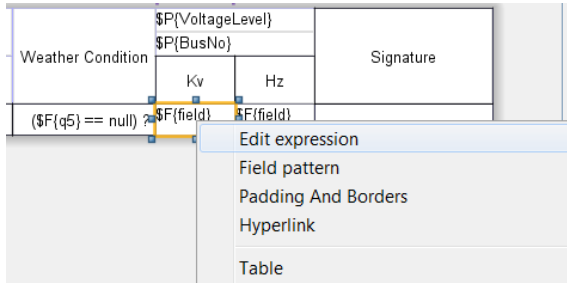
The following expression shows a point value with a quality letter.
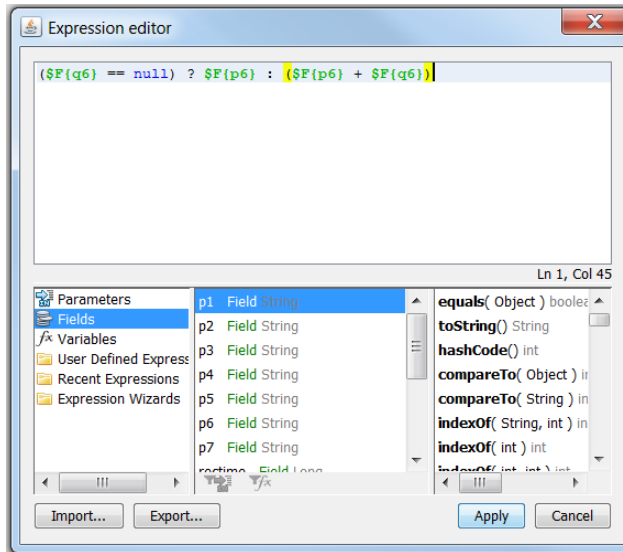
i) Repeat the previous step to add the p7 field.
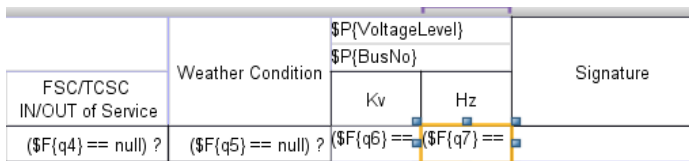
11. Finalize the table.

a) Add a table border. Select all text boxes, right-click and select **Padding And Borders**.
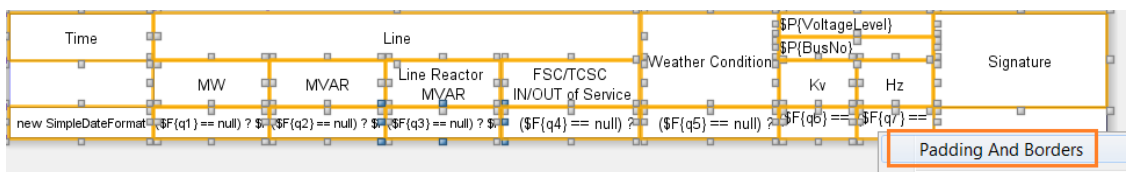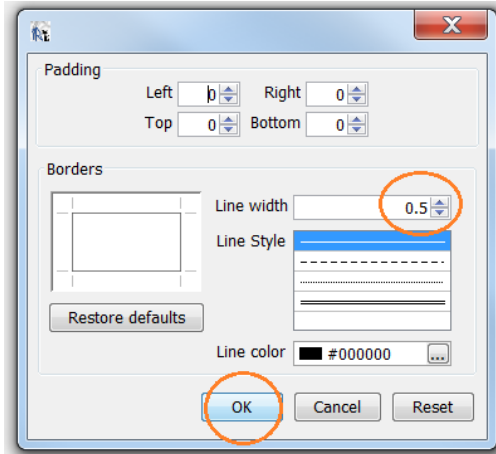
b)   Adjust the width and height for column and text field: Zoom-In/Zoom Out
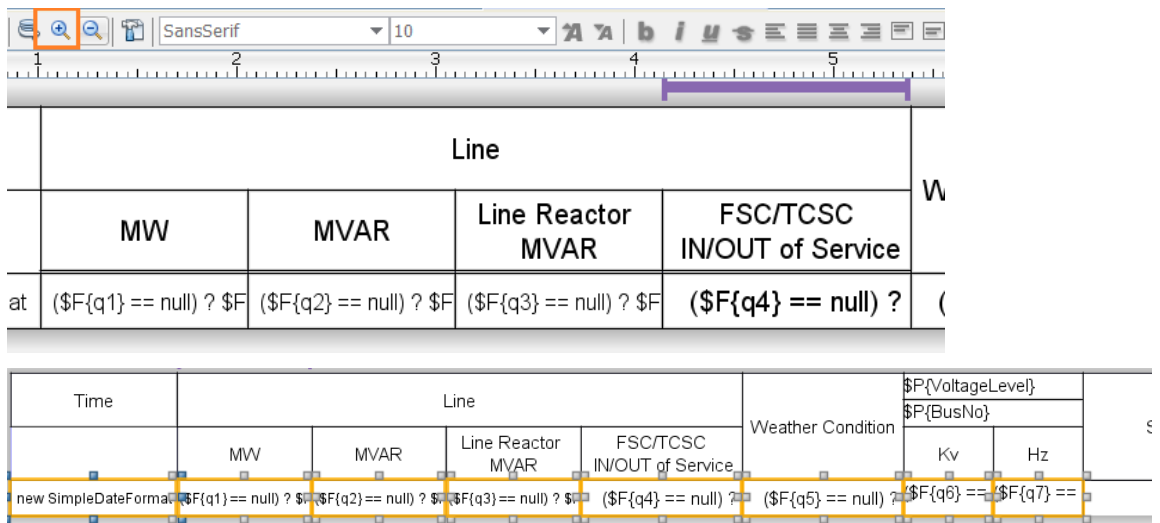
c)   Select the **Blank When Null** and **Stretch With Overflow** option, and set the alignment and font size

12. Add the report footer.

   a) Drag-and-drop the **Frame** to the Designer.
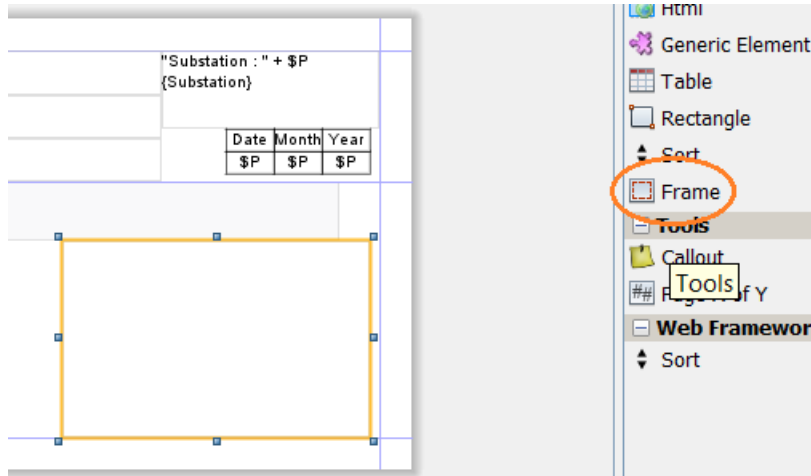
   b) Drag-and-drop **Static texts** to the Frame, and set the border parameters.
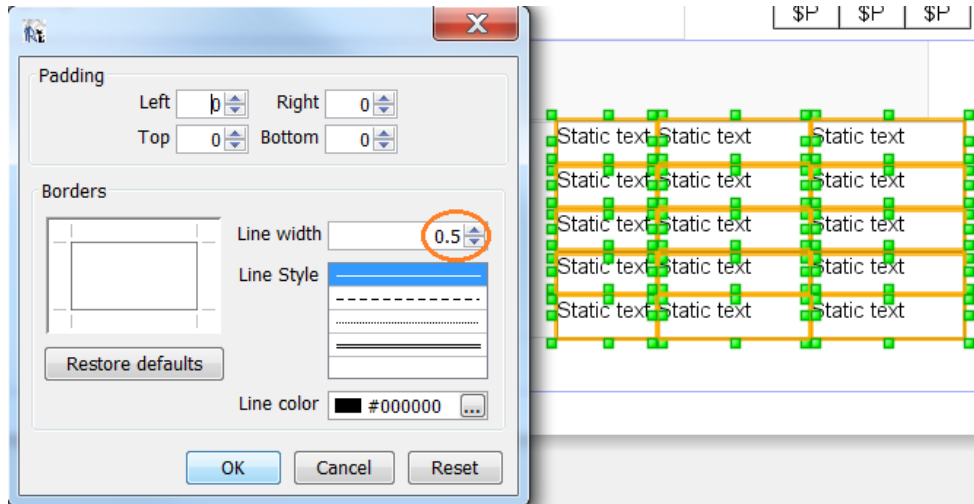
   c) Change the text and set the text properties (font size, alignment etc).

Shift	Tech./JE	Shift I/C
C		
A		
B		
C		

d) Add static text on the bottom-left.

e) Preview the report.

1.4   Create a Customized Online Report Template

The Online Report Template differs from the offline Report template where:
- The online Report Uses a CSV file as the datasource.
- In the online Report the user selects AI Points from 1 to 8 in runtime; that is, the number of AI point is not fixed;

» **To create a customized online report template:**

1. Create the CSV DataSource.

    a) Click on **NEW.**
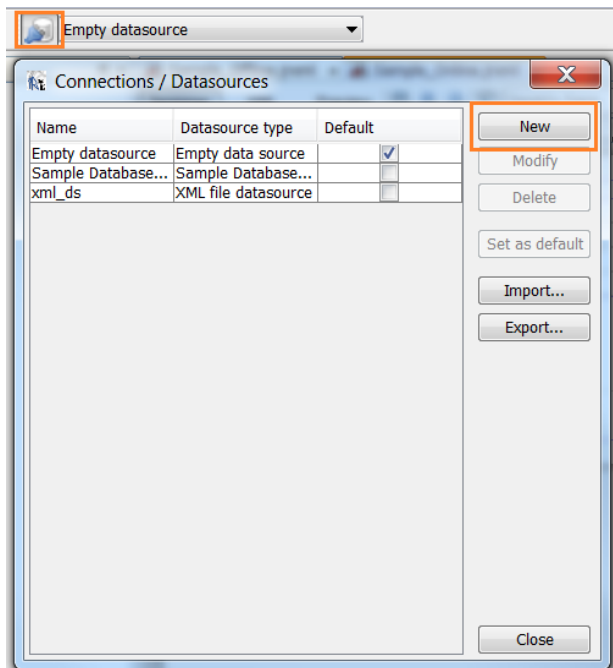
b)   Select **File CSV datasource.**
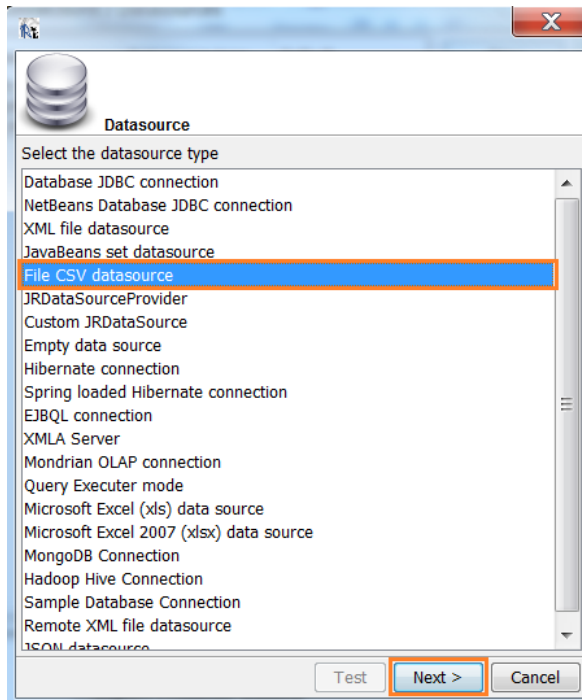
c)   Click on **Next.**
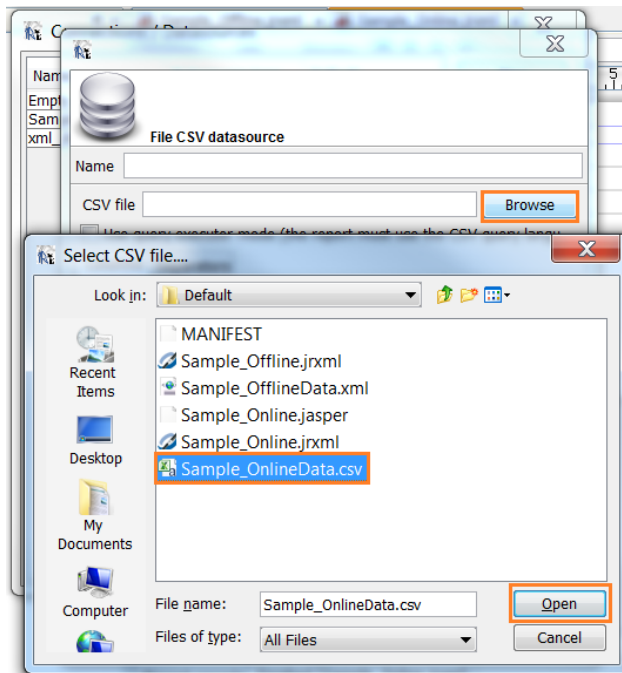
d)   Use the GE provided online template named "**Sample_OnlineData.csv**".

e)   Navigate to the source file and click **Open**.

f)   Add the required Column name; for example, **Datetime**.

g)   Click **OK** and **Save**.
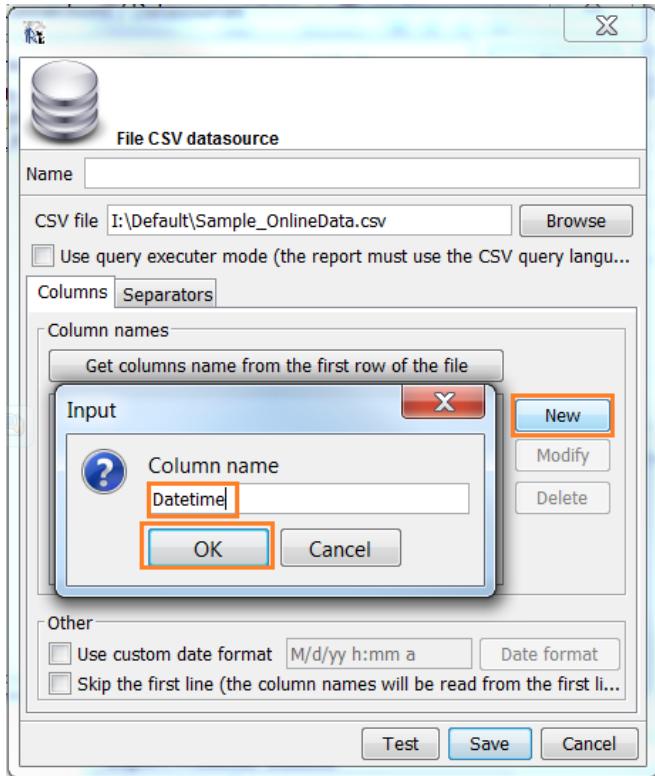
h)   Repeat the previous step to add the other four columns: LoggerId, PointRef, Value, Quality.

Note: All of these columns are sequenced as they appear in the CSV file; subsequently, keep the same order.
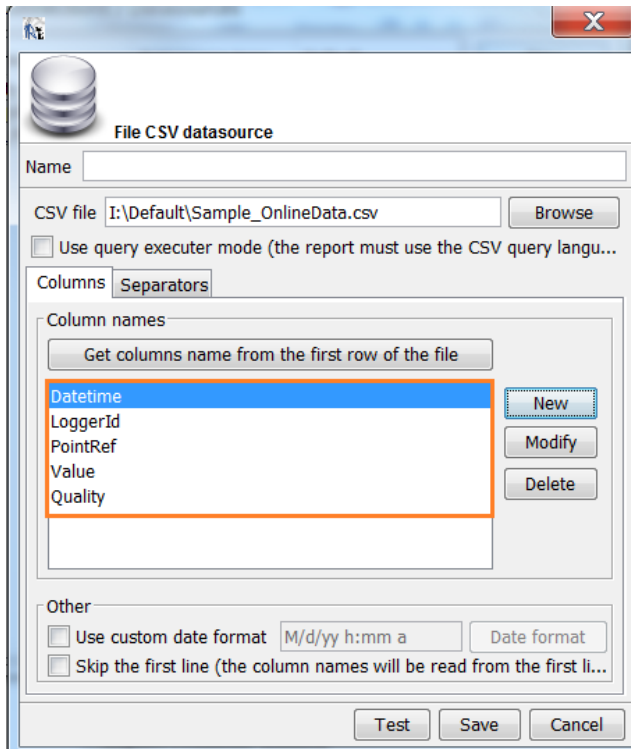
i)   Specify the column Separators.

Click the **Separators** tab.

Specify the name of the datasource.

Select a **Semicolon** field separator.

Select a **New line (Unix)** row separator.
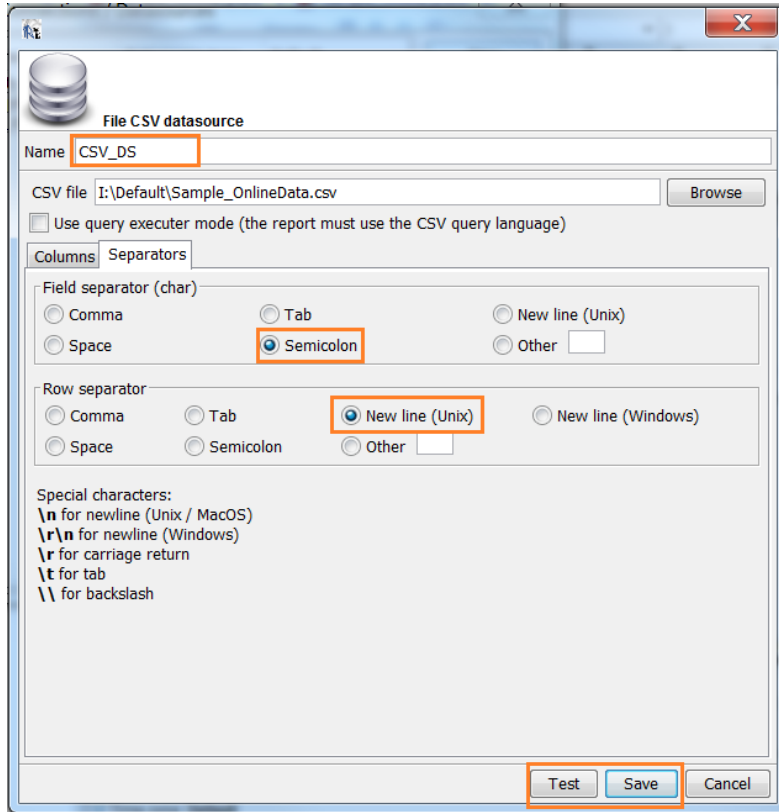
2. Create the Online Report Template using **Sample_Online.jrxml**.

It is strongly recommended that you use the sample Online Report Template to create your customized template. The sample template can be found at the GE Grid Solutions Technical Support website.
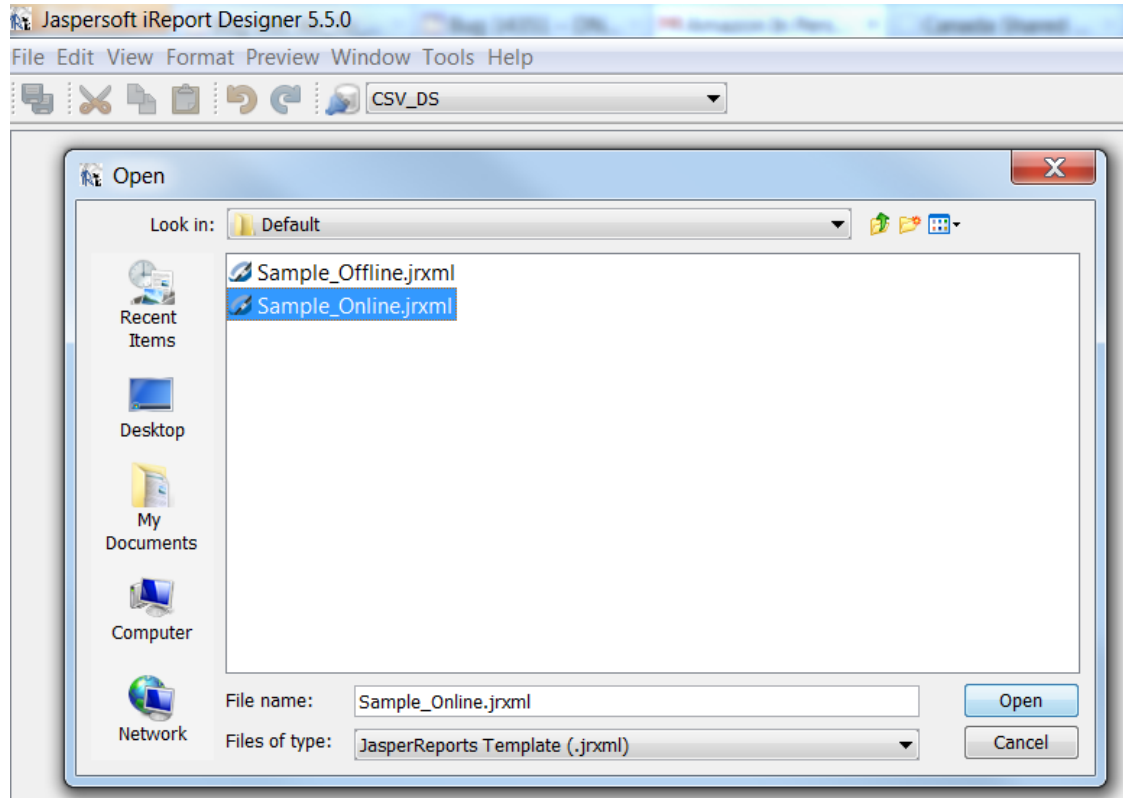
3. All fields are exactly the same as those defined for the **Columns** in the CSV Datasource.
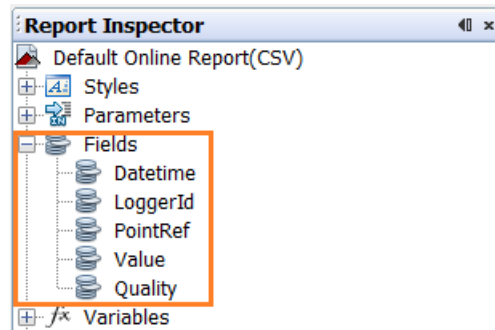
Notes:
- The field Name cannot exceed 8 characters.
- The Field Class for **Datetime** is **java.lang.Long**.
- The Field Class for **Value** is **java.lang.Double**.
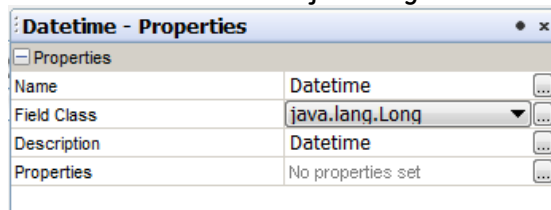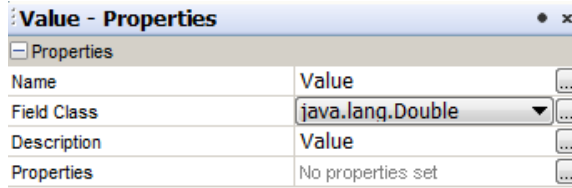
- You can specify the text for the **Description** property, this text appears in Online Report Viewer.
  A field using the CSV Datasource is different from a field using XML Datasource; the **Description** property is used to store XPath in Offline Report Template which is using XML Datasource.

4. Use the **Crosstab** for the Online Report Template.

The Crosstab component can group records by rows and columns. This is particularly useful when the online report is not aware of the number of AI Points that the user has selected.

In this sample template the groupings are:
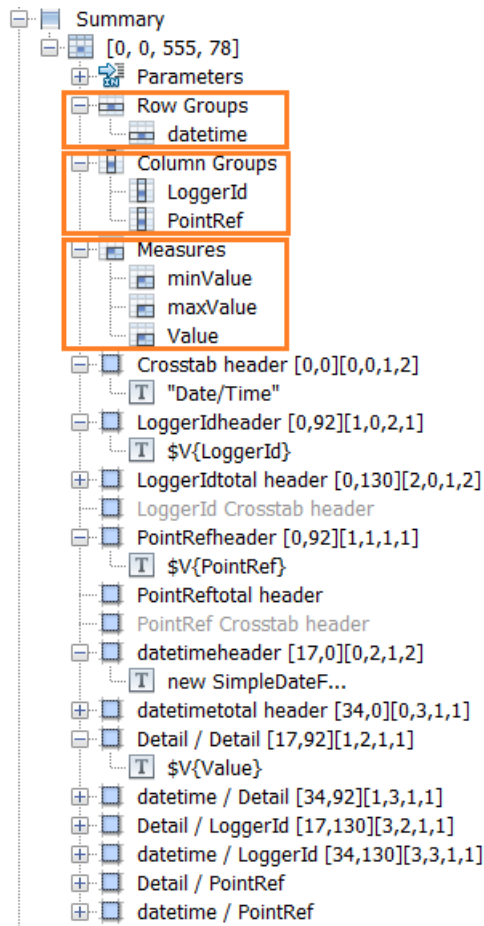
Row Groups: This grouping contains records which have the same value(s) in the field(s); records added to the Row Groups will stay in the same row. The order is specified as, so that newer records always appear below older records.
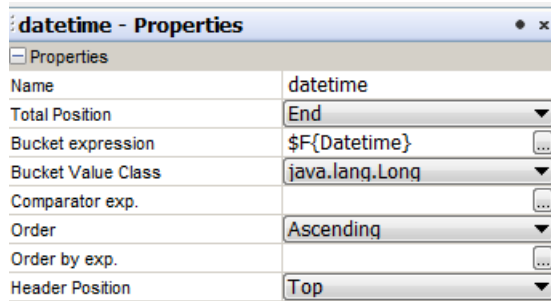
Column Groups: This grouping contains records with different value(s) in the field(s); records added to Column Groups will stay in a different column. The value of LoggerId is unique for each AI Point.

Measures: Measure labels appear in the crosstab based on their status as a row or column.
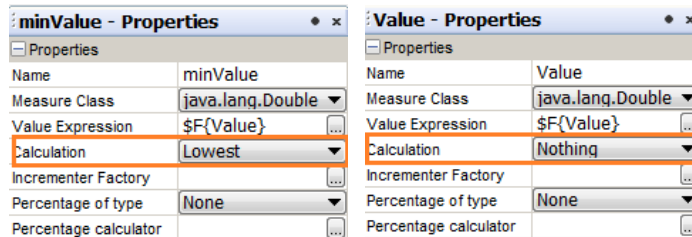
The crosstab component is similar to the Table component, but more complex. Refer to the ireport-ultimate-guide.pdf document for more details.

2

Importing Templates

» To import a Report Template into the G500 HMI:

1. Create the MANIFEST file.

2. Create an RZ compressed file.

3. Upload the report template to the G500 by using DS Agile Studio MCP Online Editor or Offline Editor.

4. View the imported report template on the G500.

2.1 Create MANIFEST file

» To create a MANIFEST file:

1. Navigate to:

   /Sample/MANIFEST

   A sample MANIFEST file is available on the GE Grid Solutions Technical support website.

2. Create a new text file or open the sample MANIFEST file using Windows Notepad or another text editor. The sample content is:

   # template creation datetime in million seconds since 1970-01-01 00:00:00
   creation=1379600831000

   # template's type can be online or any other value. If value is not online, it will be treated as offline. If not specified, default type is offline.

   # template.type=online

   # template description which will be displayed in the report template configration tool.
   description=This template is a sample, created by GE Grid Solutions.

   # jasper filename
   file.jasper=demo.jasper

   # jrxml filename
   file.jrxml=demo.jrxml

3. Change the file.jasper and file.jrxml file names to expected jasper filename and jrxml filename.

4. Save the MANIFEST file to a template directory.

5. Ensure that the both the jasper file, jrxml file and MANIFEST file are saved under the same directory. The jasper file is a binary file compiled by iReport Designer. If you do not have a jasper file:

    a) Run iReport Designer.

    b) Open the jrxml file.

    c) Click Preview.
        Result: iReport Designer creates the jasper file at the same location as the jrxml file by.

2.2   Create RZ file

» To create a RZ File:

1. Compress the jrxml file, jasper file and MANIFEST into a zip format file.

    Note: A zip compressing tool is required, i.g. 7zip

2. Change the "zip" file extension to "rz". Only files with an "rz" extension can be uploaded to the G500. This allows the G500 to distinguish the compressed report template file from other zip files.

    Note: Ensure that the compressed files are located at the top level of the compressed file; therefore, they have no parent folder inside the compressed file. If they are not located at the top level of the compressed file, you will get an "Invalid Template File." error message.
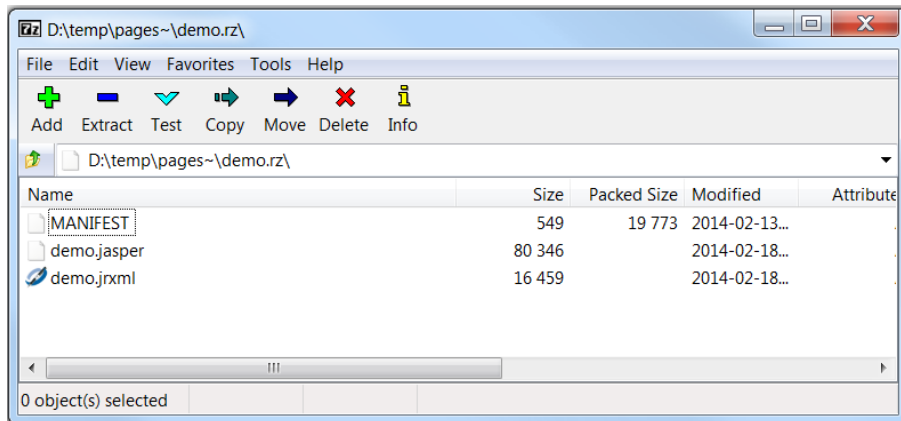
2.3   Upload Template

» To update a template:

1.   Launching MCP Offline Editor or MCP Online Editor from DS Agile Studio and the Configuration needs to be synced to the G500 device later if using offline editor

2.   Select Analog Report tab > Templates.

3.   Select an existing template to be changed.

4.   If creating a new template, click the ![plus] button.

5.   Click Upload Template and select the "rz" file.

6.   If uploading an existing template for a report, you might need to reconfigure the report for the mapped points and parameters. Reformatting is only necessary if the parameter list or point list has changed in the new template; for example, a parameter or point field is added or removed.

    Note: If overwritten template is being used by some reports, all archived offline xml files configured by using this template on G500 might be deleted.

7.   Click Preview to ensure proper operation of the new template is providing the expected report.

8.   Save and Commit.
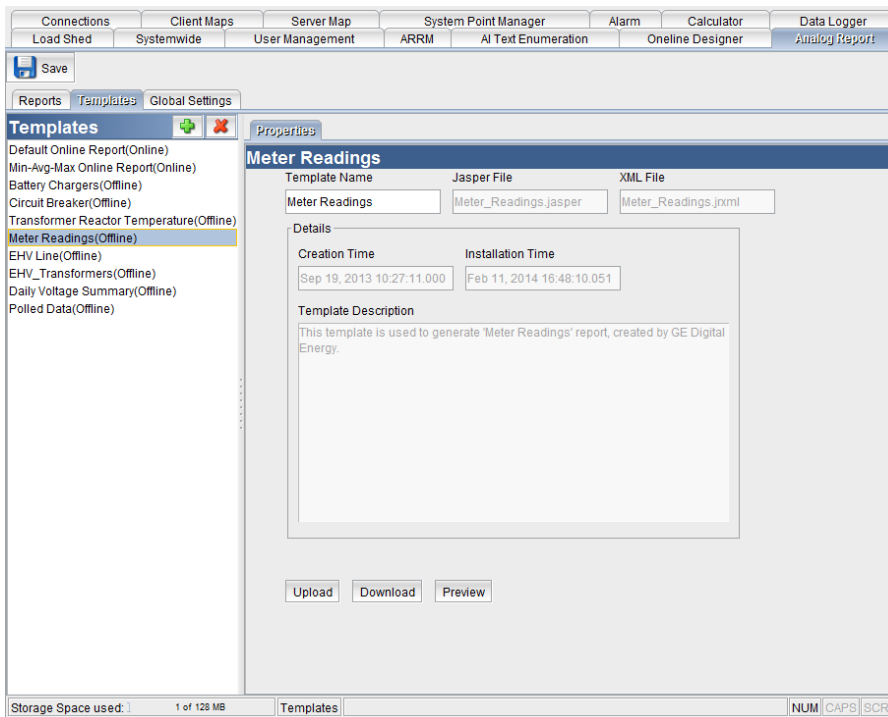
3
Offline Report Viewer

The offline Reports generated are viewable in the Reports Powerbar Tab in the G500 HMI. The Reports (also known as Offline Report Viewer) allows you to view and download the Analog Reports generated over a period in any of the available file formats like .html, .pdf, .xls.

Refer to G500 Online Help to configure the Analog Report Generation and Data Logger application to generate Offline and Online reports respectively.
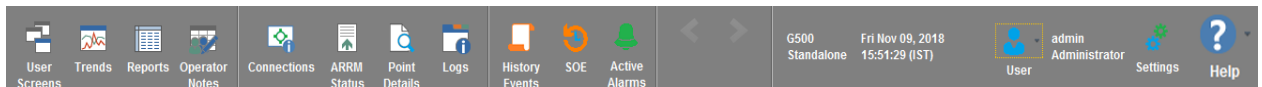
All available reports are listed in the file tree structure in the left pane.

Report names with:

- Suffix **In Progress**: indicates that the report is still in the process of being logged.

- Prefix **Archived <N>:** indicates that the report is archived on the **G500** to avoid logging records having the same record time on the same offline report file before and after the system date/time changed.   <N> is sequence number.

Records having the same record time might be found in archived offline report and regular offline report.

3.1   Report Controls

Report controls allow you save and delete Reports.

Control	Description
check-box	Use the check-box to select and de-select the Reports • Check-box to Select a Report • Clear the check-box to de-select a Report
File Type	Select the file format of the periodic data logger reports to be viewed: • html • pdf • xls

Control	Description
Save [button]	To save one or more reports: 1. Select the report(s) in the file tree structure in the left pane. Use check-box to select and de-select reports. 2. Click **Save**.
Delete [button]	To delete one or more reports: 1. Select the report(s) in the file tree structure in the left pane. Use check-box to select and de-select reports. 2. Click **Delete**.
Filter [button]	Click the **Filter** down-arrow to view the filter options. Result: The Select Filter window appears. You can either: • Type in a specific Report Name, or • Choose a set of Analog Reports that were generated between the Start and End Dates. Click the **Apply** button to list the reports that match the specified filter conditions. Click the **Show All** button to list all available reports. Click **X** (top-right) to close the Select Filter window.

3.2   Offline Report Fields

Field1	Description
Disk Usage	Indicates disk usage in percent against total disk size configured.
Estimated Days of Disk Full	Estimated number of days that the disk will be full. This approximation is based on the various parameters such as the Number of configured Reports, Size of each Report and the Available Disk Space.
Total Reports	Indicates the total number of reports currently available on disk.
Total Shift Reports	Indicates the total number of shift type reports currently available on disk.
Total Daily Reports	Indicates the total number of daily type reports currently available on disk
Total Weekly Reports	Indicates the total number of weekly type reports currently available on disk
Total Monthly Reports	Indicates the total number of monthly type reports currently available on disk

4

Online Report Viewer

The Online Report Viewer is used to show AI Points configured for the Data Logger Periodic Report. To view the Periodic Report, the Periodic Report must be configured properly in the Data Logger.

Two online templates are provided on the GE Grid Solutions Customer Service website:
- The default online template
- The min avg max template

You can overwrite the default online template with another online template.

At any time, one online template should be present in the G500 HMI Analog Report Configuration Tool.

A maximum of 50000 updated data values can be viewed in a report at one time with a maximum socket timeout of 30 seconds.

» **To access the Current (Online) Report Viewer:**
- Click the G500 HMI **Reports** powerbar button.
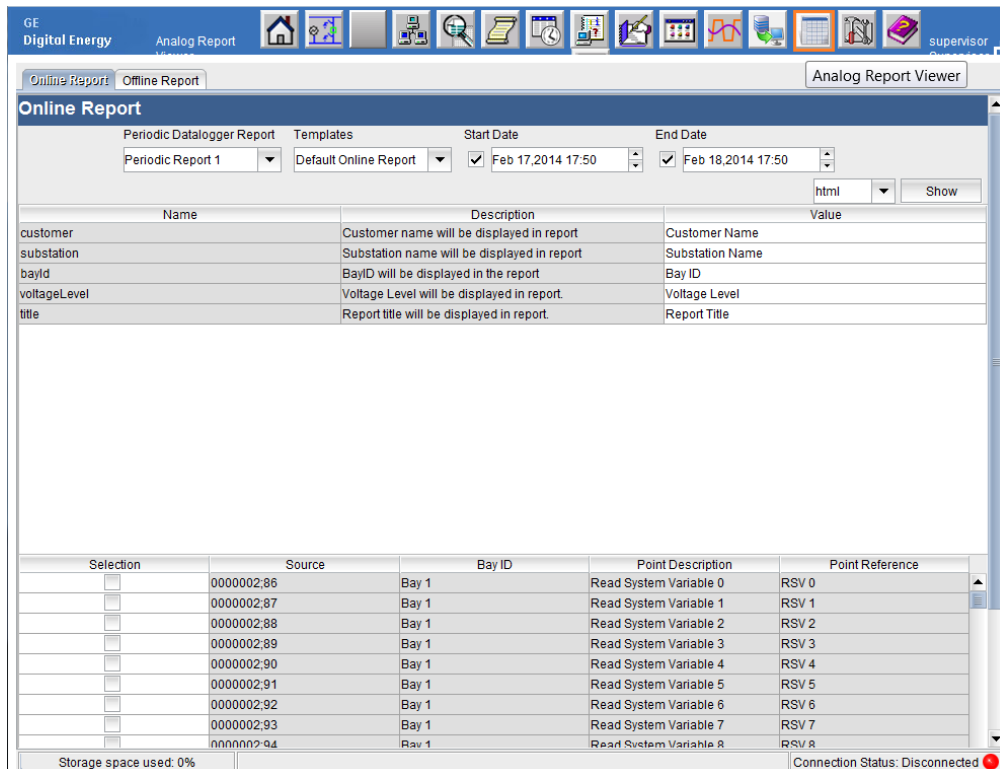
4.1   Use Filter

The Use Filter affects the following:

- Generated report only has records which match the selected query criteria
- Generated report output format (HTML, PDF or MS Excel)

The Use Filter contains the followings:

- Periodic Datalogger Report: Periodic Reports configured in Data Logger
- Templates: Current (Online) Report Templates configured
- Start Date: If selected, showing records which records' time are newer than specified date/time
- End Date: If selected, showing records which records' time are older than specified date/time
- Output Format: The output format can be html, pdf or MS Excel.
  Note: If both the Start Date and End Date checkboxes are not selected, all records are selected.

4.2   Set Report Parameters

Report parameters are defined in the report template. These parameters will appear in the output report. You can override the default values for these parameters.

4.3   Select AI Points

You can select a maximum of eight AI Points. The created report will show records for the selected AI Points.

Selection	Source	Bay ID	Point Description	Point Reference
☑	0000002;86	Bay 1	Read System Variable 0	RSV 0
☑	0000002;87	Bay 1	Read System Variable 1	RSV 1
☑	0000002;88	Bay 1	Read System Variable 2	RSV 2
☐	0000002;89	Bay 1	Read System Variable 3	RSV 3
☑	0000002;90	Bay 1	Read System Variable 4	RSV 4
☑	0000002;91	Bay 1	Read System Variable 5	RSV 5
☑	0000002;92	Bay 1	Read System Variable 6	RSV 6
☑	0000002;93	Bay 1	Read System Variable 7	RSV 7
☐	0000002;94	Bay 1	Read System Variable 8	RSV 8
☑	0000002;95	Bay 1	Read System Variable 9	RSV 9
☐	0000002;96	Bay 1	Read System Variable 10	RSV 10
☐	0000002;97	Bay 1	Read System Variable 11	RSV 11
☐	0000002;98	Bay 1	Read System Variable 12	RSV 12
☐	0000002;99	Bay 1	Read System Variable 13	RSV 13
☐	0000002;100	Bay 1	Read System Variable 14	RSV 14
☐	0000002;101	Bay 1	Read System Variable 15	RSV 15

5

Analog Report Generation - Configuration

The configuration page provides three tabs:
- Reports
- Templates
- Global Settings

5.1   Reports Tab

The Reports tab of the Analog Reports Generation configuration window allows you to configure different sets of reports in the system.

» **To create a new Analog Report:**

1. Launching MCP Offline Editor or MCP Online Editor from DS Agile Studio

    Note : Configuration needs to be synced to the G500 device if using offline editor

2. Click the **Analog Report** tab.

3. Click the ⊞ button to initiate the creation of a new Analog Report.
    Result: A default report name appears in the Reports pane on the left.
    Result: The **Reports** > **Properties** tab fields appear.

4. Enter values in the **Properties** fields.
    Result: The entered **Report Name** appears in the Reports pane.

5. Click the **Reports** > **Points Map** tab.
    Result: A report parameter list appears in a Point Map table. The list of report parameters is determined by which Template Name was selected in the previous step.

6. Click on a report parameter.
    Result: The selected table row appears with a light-blue background.

7. Map a point to the point parameter by double-clicking a point in the file tree structure.
    Result: The mapped point details appear.

8. Click the **Save** icon.
   Result: A confirmation window appears.
   Result: The created report is saved in the HMI.

9. Click **Commit Changes** to apply the changes to the G500.

NOTICE **Known Issue**	The current Offline Analog Report is created with incorrect start time and end time if the G500 time is manually changed when DST is enabled (Daylight Saving Time). Note that the DST is enabled automatically based on the Time zone configured.
	If an Offline Analog Report is in the process of gathering data records when DST is enabled: • The first Offline Analog Report will contain an extra 1 hour of records; this additional 1-hour of records should have been included with the next report. • The next report will not contain the first 1 hour of records.

	For example:
	 1. A 4-hour duration shift report starts at 00:00 and is to end at 03:45.
	 2. DST is enabled at 2 am.
	 3. The reports are created:
	   • The first report contains records gathered from 00:00 to 03:45 and 04:00 to 04:45.
	   • The next report contains records gathered from 05:00 to 07:45; that is, it does not contain the 04:00 to 04:45 records.

	Subsequent reports are created and logged correctly.

» **To delete an Analog Report:**

1. Launching MCP Offline Editor or MCP Online Editor from DS Agile Studio

   Note : Configuration needs to be synced to the G500 device if using offline editor

2. Click the **Analog Report** tab.

3. Select a report name in the Reports pane.

4. Click the button.
   Result: The Delete Report confirmation window appears.

5. Click **Yes** to delete the report.

6. Click the **Save** icon.
   Result: A confirmation window appears.
   Result: The report is removed from the HMI.

7. Click **Commit Changes** to apply the changes to the G500.

Reports > Properties Sub-tab Fields

Field	Description
Report ID	Auto-generated unique report identifier number.
Report Name	Type the report name.
Template Name	Select the template: • Battery Chargers • Circuit Breaker • Transformer Reactor Temperature • Meter Readings • EHV Line • EHV_Transformers • Daily Voltage Summary • Polled Data **Note**: The G500 Analog Report Generation Application also allows you to add additional (user-configurable) templates. Refer to the Jasper iReport Configuration Manual.
Report Type	Select the type of report: • Shift • Daily • Weekly • Monthly
Enable Logging	Check this box to enable logging of the configured analog data.
Report Duration	Select the duration period in which data is to be logged before a report is generated: • 4 Hours • 6 Hours • 8 Hours • 12 Hours
Log Interval	Select the interval at which a new record is to be logged for the report: • 15 Minutes • 30 Minutes • 60 Minutes
Start Time Alignment (Hour of Day)	Select the hour of the day (on a 24-hour clock) at which a new report will start to log data. The range is 0 to 23 hours.
Logging Alignment (Minute of Hour)	Select the minute of the hour at which every record will be aligned in a report: • xx:00 • xx:15 • xx:30 • xx:45

Reports > Point Map Sub-tab

Point Map Table		
Column	**Description**	**Value determined by …**
Name	Report parameter ID.	… the **Template** selected in the Properties fields.
Description	Report parameter description	
Home Dir	Home Directory of the source Analog Point Mapped for logging	… which point has been mapped to this report parameter.
Point ID	Point ID of the source Analog Point Mapped for logging	
Point Description	Point Description of the source Analog Point Mapped for logging	
Point Reference	Point Reference of the source Analog Point Mapped for logging	

Reports > Parameters Map Sub-tab

Parameter Map Table		
Column	**Description**	**Value determined by …**
Name	Name of Parameter Map.	… the Template selected in the Properties fields.
Description	Description of Parameter Map.	
Value	Type the suitable text for each row. The entered text appears as the header and footer of the generated reports. The position of the header and footer in the layout of the generated report can be pre-defined in the Template	… the Template selected in the Properties fields. This field can be edited

5.2   Templates Tab

The Templates tab allows you to:
- Upload a user-configured Template to the G500
- Download available Templates from the G500
- Preview the available user-configured Templates.

Upload a Template to a G500

Only use this procedure if you have created Templates using Jasper iReports Software. For more details, refer to the iReport Designer manual. This manual is available on the GE Grid Solutions Technical Support website at:
   http://site.ge-energy.com/prod_serv/products/substation_automation/en/tech_support_login.htm

For example, to locate the manuals, login and navigate to:
   Substation Automation > G500 > Manuals > English

For example, to locate the template files, login and navigate to:
   Substation Automation Products > G500 > Firmware > Firmware v1.00 > Analog Reports Templates

» **To upload a template to the G500:**

1. Launching MCP Offline Editor or Online Editor from DS Agile Studio from the PC where the **Templates** are available.

2. Click the **Analog Report** tab.

3. Click the **Templates** sub-tab

4. Either:
   - Select an existing template from the Templates pane.
     or
   - Create a new template by clicking the [+] button.

6. Click the **Upload** button.
   Result: The Open window appears.

7. Navigate to select the required **.rz** file.

8. Click **Open**.
   Result: The .rz file is opened and the Open window closes.

9. Click the **Save** icon.
   Result: A confirmation window appears.
   Result: The created template is saved.

10. Click **Commit Changes** to apply the changes to the G500.

    Note:
    - If a template is uploaded onto an existing template which is being used by a report, you might need to reconfigure the report for mapped points and parameters. This occurs only if parameter list or point list changed in new template; that is, a parameter or point field has been added or removed.
    - To ensure that a new template is working well, it is recommended that you preview the report before saving and committing the report.

» **To download a report template from the G500:**

1. Launching MCP Offline Editor or Online Editor from DS Agile Studio.

2. Click the **Analog Report** tab.

3. Click the **Templates** sub-tab.

4. Select an existing report template from the Templates pane.

5. Ensure that the report template has been saved and committed.

6. Click the **Download** button.
   Result: The Save window appears.

7. Navigate to the folder which is to contain the .rz file.

8. Click **Save**.
   Result: The Save window closes and the Download Template confirmation window appears.

9. Click **OK**.
   Result: The Download Template confirmation window closes.

10. Click the **Save** icon.
    Result: A confirmation window appears.
    Result: The created template is saved in the HMI.

11. Click **Commit Changes** to apply the changes to the G500.

» **To preview a report template:**

1. Launching MCP Offline Editor or Online Editor from DS Agile Studio.

2.   Click the **Analog Report** tab.

3.   Click the **Templates** sub-tab.

4.   Select an existing report template from the Templates pane.

5.   Click the **Preview** button.
     Result: A preview of the report appears.

Templates Tab Fields

Field	Description
Template Name	Type the template name.
Jasper File	Displays the name of the Jasper file.
XML File	Displays the name of the .Jrxml file.
Details	
Creation Time	The time that this template was created.
Installation Time	The time that this template was uploaded to this G500.
Template Description	The description of the template file provided by the Template.

Templates Tab Buttons

Button	Description
Upload	Upload a report template to the G500. For example, the uploaded report template could have been created using Jasper iReports Software.
Download	Download a report template from the G500.
Preview	Preview a report template.

Global Settings Tab

The Global Settings tab allows you to configure global settings which affect all reports.

Field	Description
Storage Full Action	Select an action to occur when the configured Analog Report Generation storage space is full. The options are: • Delete Oldest Reports • Stop New Reports
Threshold (%) for Storage Full	Set the percentage of storage space at which a warning message appears. The valid range is 50% to 95%.
Time Zone	Select a time zone from the list provided. This parameter affects the Start Time Alignment and Logging Alignment of the report.

Modification Record

Version	Revision	Date	Change Description
1.00	0	29th November, 2018	Document Draft created.