Product Summary of XLReporter with GE Fanuc

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Executive Summary

SYTECH IS "THE REPORT COMPANY"

SyTech "TheReportCompany", Inc. specializes in the manufacture and distribution of reporting software. Starting with custom solutions over 10 years ago, SyTech quickly recognized the need for an "off-the-shelf" reporting solution and responded by manufacturing and distributing Report Manager.

The increase in Customer requirements, together with the rapid changes in technology, led to the launch of XLReporter in 2000. XLReporter is designed to take advantage of the powerful features and functionality of Microsoft Excel. The product provides The Complete Reporting Solution to suit the needs of manufacturing and industry and is designed to be readily usable by both production and management.

XLReporter's creative design was awarded the coveted Control Engineering Editor's Choice Award in 2002

Product Overview

THE COMPLETE REPORTING SOLUTION

XLREPORTER PROFESSIONAL EDITION

XLReporter Professional is a family of products consisting of XLReporter, PDF Viewer and Convertor, XLViewer, XWeb Director, XMailer and XFiler that collectively provide The Complete Reporting Solution to generate and distribute Excel reports.

Microsoft Excel has always been, and will continue to be, the most popular choice for generating reports. When used on the factory floor, the challenge is to move important process data into Excel, reliably and automatically. The XLReporter Professional Edition meets this challenge.

Creating Excel reports with the XLReporter Professional consists of four steps: **D**esign, **R**eport, **M**anage and **D**istribute.

- **Design**. In Excel, the user designs a report template and specifies data collections from Proficy Historian, FIX, iFIX or Cimplicity real-time database, the (i)FIX Classic Historian and the iFIX alarms database.

- **Report**. The user defines a schedule to generate reports from the template. Reports can be generated periodically (e.g., every day), triggered on an event (e.g., the end of a batch) or initiated from custom scripts. In addition, reports can be created on-demand, using interactive report tools.

- **Manage**. Analysis and data management are integral parts of the report generation process. The user defines filters, sorts, color codes, conditional formats, mathematical calculations and much more to turn the raw data into meaningful report information.

- **Distribute**. Finally, the user determines the format of the final report and the people who will receive it. Completed reports are stored in XLS, PDF or HTML format and may be sent automatically to printers, email, file servers and web servers.

XLREPORTER

XLReporter is the core application of the XLReporter Professional. It provides all the tools necessary to design report templates, perform all the data collections, automatically manage and create worksheet reports, apply any special analysis and publish the results. The main components of XLReporter are as follows:

Designer : The designer is seamlessly integrated into the comfortable environment of Excel and provides powerful configuration tools to design and validate report templates. Within the designer, the user specifies a report layout and data collection using features such as the connection configurator, a custom tag browser, the history group builder, management configurator and the database query builder.

Complete report template testing is provided to quickly validate the design before it is deployed into a live application.

Database Interface : The database interface makes XLReporter compatible with any relational database and is available from any workstation that has access to the database. The interface provides:

- Access to the iFIX alarm logs, with options to filter records based on tag name, time period, alarm status, alarm value and much more.
- Access to the Proficy Historian, with options to retrieve live values, raw values, and calculated values. Data can be filtered on time, value, status and much more.
- Access to the Cimplicity history logs, with options to filter records based on tag name, time period, status and much more.
- A powerful SQL (structured query language) builder that creates SQL statements without knowledge of the SQL language. The point and click environment of the builder enables the user to select the tables and columns for the report, together with time frames, filter criteria and sort conditions.
- An easy to use Layout Expert creates database reports with multi level group features (drill down reports). A versatile set of calculations is available to provide summary values that

are embedded in each group and also can summarize the complete data return. Excel charts and Excel formulas can be nested in each group level in the report.

- A powerful SQL (structured query language) builder that creates SQL statements without knowledge of the SQL language. The point and click environment of the builder enables the user to select the tables and columns for the report, together with time frames, filter criteria and sort conditions. Similar data records can be combined by the Crosstab capability in the query engine. Queries can be tested immediately, thus saving deployment time.

- Tools to build "dynamic SQL" statements, a technology exclusive to XLReporter. With this technology, fully automating a report is simply a matter of including variables like "the last 24 hours", "during the batch" or "retrieved from external variables". The Interactive Tools take full advantage of this technology allowing users to easily build and generate interactive reports.

- A data extractor built to work with almost any database currently on the market, e.g., Microsoft SQL Server (Batch Historian), Access, SyBase, Oracle as well as formatted text files such as CSV (comma separated variables).

Real-time Interface : A real-time interface is compatible with both the i32 and iFIX HMI systems and is available from any FIX/iFIX or View workstation. Alternatively, an interface to Cimplicity (via OPC) is provided. The interfaces provide:

- Tag browsing for real-time tags configured in the local or any networked FIX/iFIX or Cimplicity workstation. This greatly simplifies the design of a report template in the Designer.

- Access to current values from any local or networked workstation. In the context of reporting, current values can be reported as a "snapshot" or added incrementally to the report, e.g., every hour over a day.

Historical Interface : The historical interface, or classic interface, is compatible with both the FIX32 and iFIX HMI systems and is available from any workstation that has access to the "classic" historical archive. The interface provides:

- A history group builder designed with custom features to shorten development time and increase productivity.

- Tag browsing for the historical tags configured in the local or any networked FIX/iFIX workstation. This greatly simplifies the design of a report template in the Designer.
- Access to historical values from any local or networked workstation.
- Standard aggregate calculations, including maximums, minimums, averages, differences, accumulations, and much more.

Proficy Historian Interface : The interface is compatible with all versions of Proficy Historian and is available from any workstation that has the Historian Client interface installed. The interface is designed for fast and reliable data access using the OLE-DB provider. The interface provides:

- A history group builder designed with custom features to shorten development time and increase productivity.
- Group builder configurations can contain variables to make them fully automated from the Scheduler e.g., a time frame of “last 24 hours” would automatically generate a daily report. Group builder configurations can also contain cell references as input, allowing the user to generate ad-hoc reports by simply changing cell content.
- Tag browsing for Historian tags residing in the local or any networked Proficy Historian Server. This greatly simplifies the design of a report template in the Designer.
- Access to data from multiple Proficy Historian Servers with a single XLReporter license.
- Access to the “Live” values.
- Access to many calculations from Proficy Historian including interpolated samples, maximums, minimums, averages, and much more.
- Access to raw data from Proficy Historian over a given time frame or by record count.
- Complex queries with sophisticated filtering and sorting.

Iterator : The iterator is a unique technology, developed by SyTech to truly enhance historical reports. Its powerful features allow the user to utilize the results from one data request as input

to another. Typical uses include drill down reports and batch reports. The iterator can also be used to join information from disparate databases.

Programming Interface : The programming interface is provided for users that wish to build custom solutions in programming languages such as Visual Basic/C++ and need to have access to XLReporter's rich set of reporting commands.

Scheduler : The scheduler deploys the schedules created in the Schedule Designer. A schedule consists of a set of reporting commands, e.g., CopySheet, SaveSheetHTML, which are configured to execute periodically or on an event. When a line in the schedule is triggered, the command is sent to the Collector program for processing.

Aggregates : An aggregate database can also be used as a source of data for reporting purposes. By selecting a tag from the real-time server and setting a time frame, an array of statistics and other valuable information are calculated. The following aggregates are provided:

- **Profiles** Based on the state changes of digital values, i.e., ON or OFF. From the state change, the total number of ON states, OFF states, ON duration, OFF duration and more are calculated. This information is ideal for equipment utilization and downtime reports.

- **Difference** Based on the difference of consecutive samples of a real-time value. For example, to calculate the daily pumpage from a totalizer that represents the total gallons pumped, the difference of a totalizer from the start of the day to the end of the day is calculated.

- **Statistics** Based on the real-time values. A multitude of calculations, such as minimum, time of minimum, average and more is provided.

Interactive Report Tools : Interactive tools provide the complete environment for producing on-demand reports directly inside Excel, from FIX/iFIX/Cimplicity displays, VBA scripts and from the desktop. The user simply enters the start and end times and any other reporting parameters and a new report is generated instantly.

Collector : The collector contains the core technology that interfaces the data sources such as FIX, iFIX, Cimplicity, Proficy Historian or Relational Database to the Excel environment. The collector is command driven. Commands are typically initiated by the user specifying his or her requirement in the scheduler. For highly specialized requirements, commands can also be

initiated from custom scripts, VBA and programs. The collector processes commands as a background task and does not require Excel to be active or visible. It manages the flow of data from the data sources to Excel, creates workbooks, updates worksheets, applies built-in analysis to the report data and distributes the final result in XLS, PDF or HTML file formats to printers, file servers and web servers.

Management Functions : In many Excel reporting applications, simply getting values into a worksheet is not enough. Formatting, filtering, sorting, color coding, chart manipulation, statistics, calculations are just a few elements to make a report complete. Management Functions can be scheduled to automatically apply this final coat of polish to a report.

Web Publisher : The web publisher creates web pages from completed workbook reports. It is initiated by one simple command, and makes workbook and worksheets viewable through a web browser such as Microsoft's Internet Explorer.

PDF Converter and Viewer : The built-in PDF converter creates PDF Files from completed workbook reports. It is initiated by one simple command, and makes workbook and worksheets viewable through a secure PDF Viewer provided with XLReporter. No Adobe components are required!

XLVIEWER

XLViewer provides a secure way for viewing workbook reports (XLS format) in FIX/iFIX/Cimplicity displays without the need to access the workstation's Desktop or to open Excel. The files available for viewing are configured so that users are restricted to only see the reports they are authorized to view. The user can browse or print reports without having the ability to alter any data. The secure environment of XLViewer allows the safe sharing of reports between the plant floor, the engineering department and the front office. The main components of XLViewer are as follows:

Designer : The designer creates operator environments that determine the behavior of the XLViewer when it is deployed. Settings such as the window behavior, window style, position, size, the report directories and much more are configured in the designer.

Viewer : The viewer uses the configurations developed in the designer to display the report(s). It can be integrated into a FIX/iFIX/Cimplicity display and launched from a pushbutton press.

XWEB DIRECTOR

XWeb Director is the best way to automatically create and maintain a web site of web-enabled reports without any custom programming or learning of new technologies. This gives everyone in the organization easy access to any web enabled report.

Each time a new report is web enabled, XWeb Director updates the web site's home page and provides navigation to the report. With a wide assortment of web site styles to choose from, a configurable set of user menus and flexible directory displays, all web site requirements are easily met.

XWeb Director does not require an IIS server. The web site it creates can be generated and maintained on a file server and accessed by anybody with access to that server. However, if a more global distribution is required, a web site can be produced on a company intranet, as well as on the Internet.

The main components of XWeb Director are as follows:

Designer : The designer is used to create the directory web page layout and to define the file directories, which contain the web pages to be included.

Publisher : The publisher executes the configuration files developed in the Designer.

XMAILER

XMailer is a delivery system that automatically distributes reports by email periodically or on an event. It can also be fully integrated into a FIX/iFIX/Cimplicity display and used on-demand. The software provides all the tools needed to configure and send a complete email.

XMailer contains all the features you would expect from a good emailing program including: group mailings, address book access, carbon copies, attachments and configurable signatures.

The main components of XMailer are as follows:

Builder : The builder is used to create email templates that define recipients, messages and attachments.

Sender : The sender executes the email template developed in the Builder.

XFILER

XFiler solves the mundane tasks associated with file maintenance and archiving. With a one-time setup, XFiler performs complete file management automatically, saving precious time and resources.

XFiler offers a simple menu driven interface for defining a set of file management rules. They include:

- Archiving out-of-date files
- Transferring large files off your system to free up much needed drive space
- Cleaning out your temporary directories and other areas

Regular maintenance is now performed by XFiler periodically (like the last day of every month) or triggered on events. In any case, the file management is performed in the background, without human intervention.

The main components of XFiler are as follows:

Designer : The designer is used to create the file maintenance rules by specifying the associated file directories, files names and archival commands.

Filer : The filer executes the maintenance files developed in the Designer.