ISA 18.2 and Dream Report

from GE Digital

Introduction

In 2009, ANSI/ISA released a standard called ISA 18.2, covering the Management of Alarm Systems for the Process Industries. Alarm Management is critical to efficient operations and reducing risk. Without proper alarm management, issues can range from chattering alarms to alarm bursts that present too much information – all affecting operator performance.

Unlike other standards that define rigid guidelines, ISA 18.2 is a solution to identify and promote alarm management as a "Recognized and Generally Accepted Good Engineering Practice" (RAGAGEP). Regulatory bodies in various industries are adopting ISA 18.2.

ISA 18.2 presents guidelines for developing and managing an alarm solution. There are many aspects to the development of a proper alarm system:

- Alarm Philosophy – The documentation of the alarm system and the work processes to achieve that outcome
- Identification – Work processes to identify what alarms are necessary
- Rationalization – Evaluating that the alarm meets the requirements set forth in the alarm philosophy
- Detailed Design – The process of designing the alarms so that they meet the requirements listed under Rationalization and in the Alarm Philosophy
- Implementation – The alarm design, brought into operation
- Operation – Includes training
- Maintenance – Review and management of alarms
- Monitoring and Assessment – Alarm System monitoring to see that it meets the goals of the Alarm Philosophy
- Management of Change – The process and documentation of the change process
- Audit – The periodic review of the entire alarm solution to maintain and improve its operation and outcome

Dream Report and ISA 18-2 Capabilities

Dream Report is designed to perform alarm reporting and analysis functions. In fact, it is an easy-to-use and cost-effective solution for the Operation, Maintenance and Monitoring phases of your ISA 18.2 strategy.

With purpose-built drivers for alarm HMI/SCADA alarm repositories, Dream Report is designed to:

- Filter Alarms by various criteria such as Source, Operator, Priority, Status, and more
- Count Alarms – Generate alarm statistics such as counts based on filter criteria
- Document and Display Alarms – Generate Alarm Reports for archiving and distribution and provide an interactive interface to your alarms for real-time review and analysis. This functionality can be scheduled for automation, i.e. a monthly report of worst offender alarms, alarm response times, total number of alarms by site or piece of equipment, alarms by operator, etc. Documenting alarm Setpoints and Status – Active/Shelved/etc.
- Automatically Deliver Results – Email Reports, FTP Files, Automatically Populate a Browser based Portal.
- Perform Document Management – Delete old files, Delete after X files, Move Old Files, etc.

There are several specific features built into Dream Report for alarm management.

- Alarm Source Drivers – In general, alarm drivers access alarms from various repositories and enable filters of those sources. This enables the user to create many alarm channels to access the data they desire in a known context (All Alarms, High Priority Alarms, Alarms by Site/Equipment/Source, etc.)

- Alarm Statistics – Count of Alarms, Time of First, Time of Last. Count of Alarms generates the number of alarms over any specified Time Interval or Batch. An analysis of Alarms will often benefit from knowing other variables over that time and recalling Alarm Timestamps and performing Time math such as adding an hour or subtracting an hour would enable the generation of Charts to show other variables around the alarm. These statistics can be used in the Step Table for example, to break down alarm activity for example a monthly report of daily summaries, or an analysis of alarm counts in a specified period to identify alarm floods.

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⊟ Alarm Analysis Functions
      Counter of alarms
      Timestamp of First alarm
      Timestamp of Last alarm
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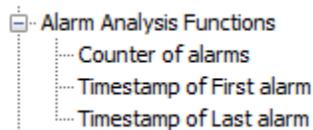
- Alarm Table Object – A Table that displays any range of alarms and organizes them as necessary for analysis. The Alarm Table is a very flexible object that can also perform alarm analysis such as alarm instance counts, duration and response time calculations. The table results can be organized as desired, sorting and filtering by various columns and color coding of various statistics.
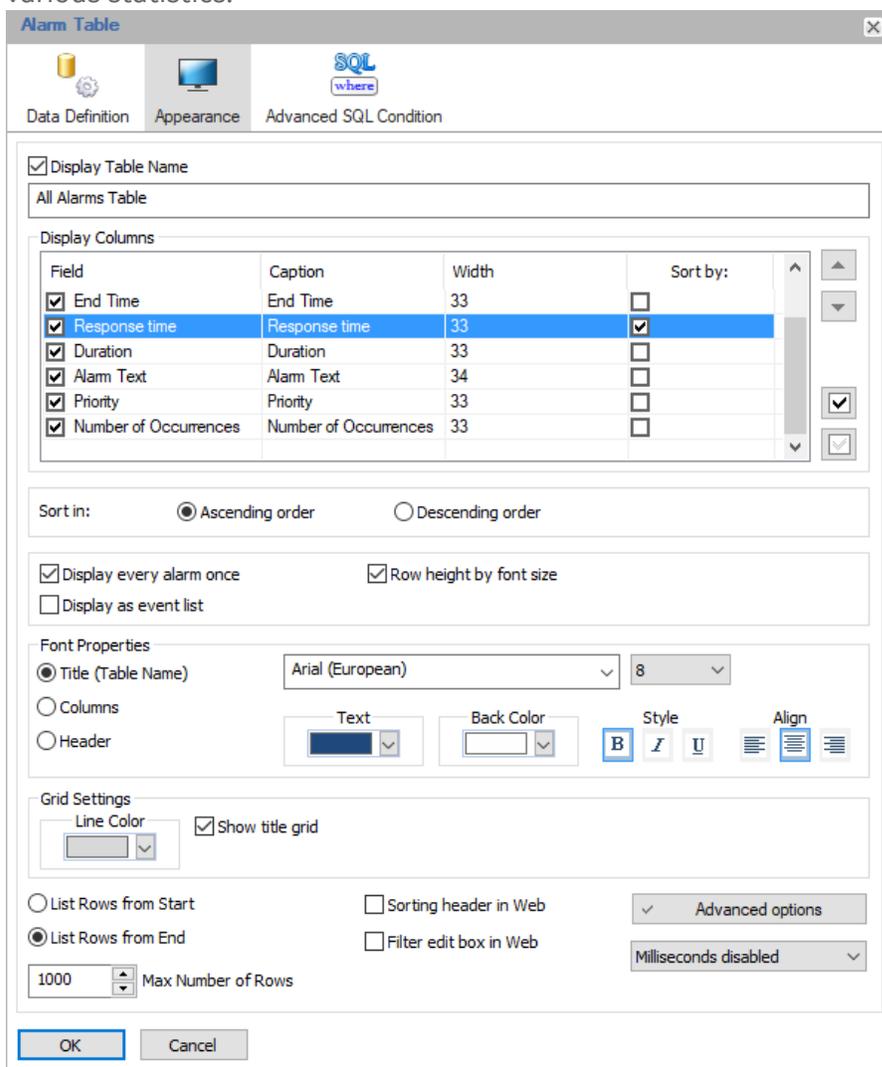
Color Coding your results with Advanced Visualization:

- Some applications will benefit from Dynamic Alarm Setpoints, those that are calculated through a combination of other variables. Dream Report offers the unique ability to generate a report that accesses variables, performs statistics and can then Write Back to your automation system. Reports can be treated as a Recipe Download, retrieving alarms from a database and then downloading them to an HMI/SCADA/DCS, and Dream Report can perform statistics periodically, dynamically writing alarms as necessary. The core benefit of course, documenting your alarm management in the process.
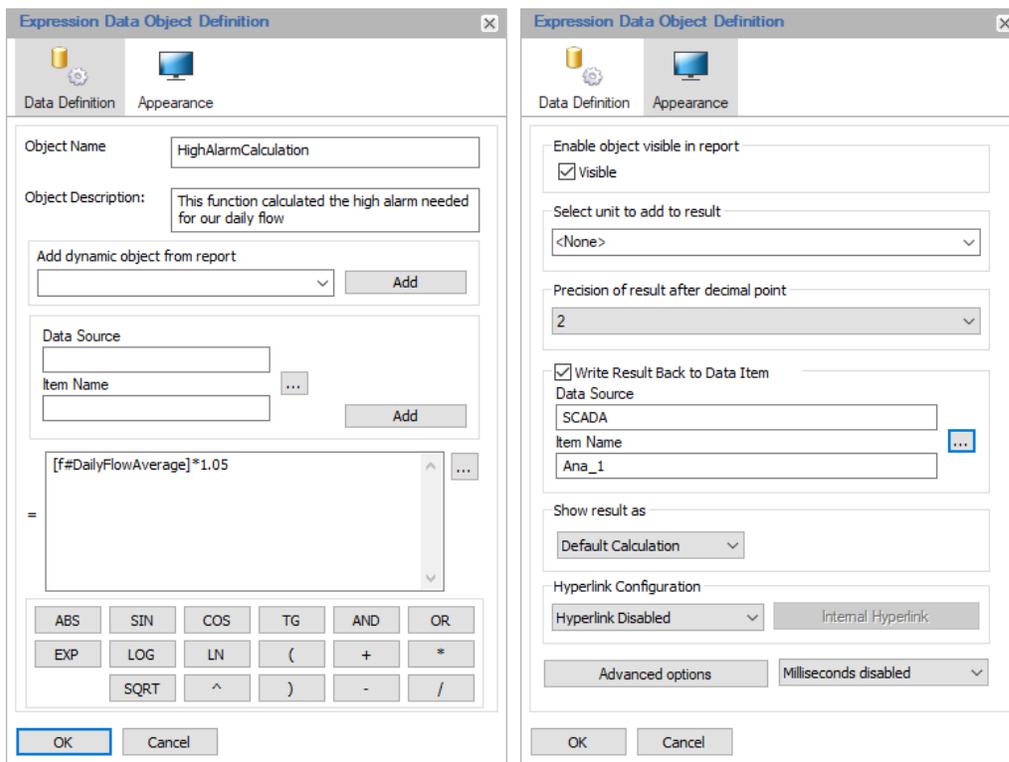
All resulting documents should be available to users through an easy-to-use interface such as any approved Browser and Mobile Device on your network. Reports can automatically be emailed to recipients, and those documents can include links to the Browser-based portal to simplify next steps in analysis.

Browser-based Reports can be fully interactive to let the user select Sites/Equipment, specify periods of interest, filter on column properties and export for analysis in other products like Excel.

Conclusion

Alarm management features and benefits are just one area of excellence in Dream Report. In addition to your alarm management, Dream Report supports compliance reports, performance reports and dashboards for your entire organization. Justification of any solution comes from results, ease of use, flexibility, and cost. Dream Report excels in all these areas. If you are considering an ISA 18.2 solution, Dream Report provides an excellent addition for automating the Operating, Maintenance and Monitoring portion of the strategy.

About GE

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