

AlarmInsight® - Alarm Rationalization Tool

Enabling continuous alarm lifecycle management

ABB has been at the forefront of alarm management thinking for over 20 years. The methodology developed has culminated in the development of the current AlarmInsight® Alarm Rationalization Tool – ART. It supports both standalone alarm rationalization projects as well as onsite integration, providing a best in class foundation for continuous alarm lifecycle management.

The screenshot displays the ABB Alarm Rationalization Tool (ART) interface. At the top, there's a search and filter section with fields for tag name, tag description, alarm, and status. Below this, the main content area shows details for a specific alarm: '20PST0003 : H Prod gas test Sep'. The interface includes sections for 'Alarm details', 'Table of consequences', and 'Priority determination matrix'. The 'Table of consequences' is a grid with columns for Health, Environmental, and Financial, and rows for various alarm types like 'Loss of life', 'DNFVVC', 'First aid case', and 'Unlikely to cause injury'. The 'Priority determination matrix' is a color-coded grid with columns for 'Immediate 0 - 3 min', 'Prompt 3 - 10 min', and 'Soon 10 - 30 min', and rows for 'Emergency', 'High', and 'Low'. The interface also includes a 'Review comment' section and a 'Preview approved version in Alarm Helper' button.

Main ART Rationalization window

The core benefit of ART is efficiency and simplicity.

The tool allows the user to safely and effectively manage large amount of tags and alarms. The tool has a “rule” and “copy” feature, which allows for both quickly replicating alarm settings across similar alarms and for keeping these alarms synchronized over time. Large rationalization projects see time savings in the order of 30- 50% utilizing this methodology.

ART is a master alarm database aligned with IEC62682 and ISA18.2 lifecycle recommendations. It incorporates audit tracking, which ensures full traceability of changes made during alarm rationalization. Alarm records can easily be imported and exported using Excel.

ART can be used to rationalize alarms from multiple types of control systems.

Typical Use cases:

Implement

ART can be used to review all alarms in the control system in a systematic and efficient manner. ABB consultants use the standalone “ART Desktop” version as the basis for implementing alarm rationalization projects, which can include advanced alarming functions such as grouping, suppression and batch processes.

In the design phase of a new plant, ART can be used to gather alarm and tags and hence rationalize and align alarms across the plant before implementation in the control system.

Sustain

ART enables continuous alarm lifecycle management processes. When installed on-site as a web application, ART acts as a permanent master alarm database. Built in management of change functionality like To-Do lists can be used to guide everyday work between teams. For example, you can create To-Do lists based on the top-10 bad actor alarms.

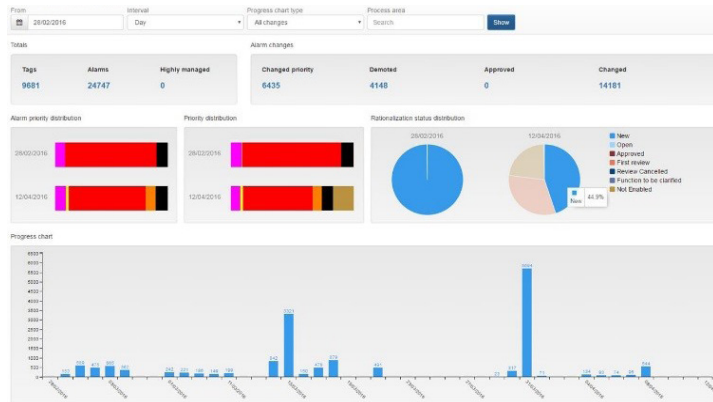
Some customers have external systems to capture work permits or plant design information. ART can easily integrate with these through the exporting of alarms into Excel sheets, which then can be stored in relevant systems.

ABB customers can integrate ART with 800xA control systems. This allows for direct coupling between the 800xA AlarmInsight Alarm Helper window and operator response text found in ART. Not only can ART operator response text be displayed in a context sensitive manner on the 800xA operator console, but comments from operators (as entered into the 800xA Alarm Helper screen) can be directly reviewed in ART.

ART can also integrate with AlarmInsight® Alarm Change Recorder and create “Difference Reports” which compare actual 800xA alarm attribute values with those documented in ART. From the report the user can import alarms missing in ART



and create To-Do lists to manage ad-hoc alarm review processes. This greatly eases the effort of keeping documentation up-to date and synchronized with the actual alarm implementation.



Main ART Rationalization window

Features in short:

- Based on alarm consultants' experience and developed over 10+ years
- Specialist solution for alarm rationalization exercises
- Independent of DCS system
- It is a Master Alarm Database.
- Easy to configure to suit the clients' standards or alarm philosophy
- Excel spreadsheet output
- Replication tools aid time savings in excess of 30% compared to Access or Excel variants
- Can be integrated onsite with ABB 800xA control systems and AlarmInsight® Alarm Helper and Alarm Change Recorder.
- Microsoft SQL database based
- Ease of data import and export
- Proven in use

Alarm Rationalization is the process of applying the requirements for an alarm and generating the supporting documentation such as the basis for the alarm set point, the consequence and the corrective action that can be taken by the operator. Defining the correct alarm priority for each alarm is one of the important deliveries.

ABB Consulting, UK has been at the forefront of alarm management thinking for over 20 years, advising and assisting customers to improve or design their alarm systems in a safe and effective fashion. We have been involved in authoring key industry guidance including EEMUA 191 where we had representation on the authoring committee and were also substantial contributors to ISA 18.2, and IEC 62682.

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