Leading Petrochemical Group relies on Plant Historian AM

Increased plant safety, security and transparency due to sustainable alarm management according to ISA 18.2, EEMUA 191 and NAMUR NA 102

>> F A C T S

Since 2016 Plant Historian AM - Alarm Management - has been used in one of the most important oil refineries in the German-speaking area - since 2018 in combination with the module Plant Historian AR - Alarm Rationalization. Approx. 2000 employees work at the site.

>> Initial Situation:

A wide variety of process control systems and controllers from different manufacturers are in use - ABB Symphony and Foxboro I/A, safety-related controllers such as HIMA HiMax and Invensys Triconex. For the more than 120,000 daily messages in 3 plants, there was no operational message monitoring or the possibility of intuitively evaluating alarm frequencies or alarm duration.

>> OBJECTIVES: Alarm Management and Reduction:

A sustainable alarm management system was required - including a concept for alarm reduction and based on a manufacturer-independent platform that allows all existing systems to be centrally integrated and displayed. An integrated maintenance/support system should be part of the product, too.

>> Project Goals & Requirements in Detail:

- Alarm reduction
- Central Display of PCS and PLC
- Flexible message monitoring
- Reporting via personalized layouts
- KPI reporting according to ISA 18.2 with weekly, monthly and annual reports
- Top 20 alarm overviews
- Identification of chattering and follow-up alarms
- Evaqluation of alarm frequencies according to priorities, areas etc.
- Management of Change (MoC)

>> Technology Requirements:

- Connection of control systems and controllers from different manufacturers with more than 40 couplings to the PCS/PLC world
- Alarms and messages from more than 60.000 measuring points
- Multiuser and multi-project capability, scalability, multilingualism and process control system independence
- Standardized interfaces to the PCS/PLC world
- Robust industrial software - for security reasons no remote maintenance access via Internet—changes and adjustments to the control system and the controls only every 6 years in the turnaround phases

Fig. 1: KPI reporting according to ISA 18.2, NAMUR NA 102, EEMUA

>> Decision for Plant Historian AM/AR:

The decision was made for Plant Historian AM/AR. The solution offers sustainable alarm management while meeting all requirements. The various control systems and controls are integrated and displayed centrally. The application is intuitive and user-friendly.

Leading Petrochemical Group relies on Plant Historian AM

Increased plant safety, security and transparency due to sustainable alarm management according to ISA 18.2, EEMUA 191 and NAMUR NA 102

>> Plant Historian AM offers:

- Central alarm & event (A&E) monitoring with linked procedural instructions
- Graphical A&E frequency evaluation and distribution (e.g. top 20 evaluation, evaluation by calendar weeks, evaluation of follow-up and chattering alarms)
- Duplicate detection: displays of alarms that occur repeatedly within +/- 1 second
- Analysis/filter settings of alarms & events that can be saved for user profiles
- Automatic forwarding of alarms & events into digital data entry masks, e.g. automatic error message entry, shift book entry, SAP etc.

>> Plant Historian AR offers:

- Intuitive alarm classification
- Validation of rationalization measures (comparison of planning and actual data)
- Documentation of rationalization data
- Adhoc evaluations of alarm frequency and alarm duration
- Automatic generation of alarm master data
- Basis for the **M**anagement **o**f **C**hange process

>> Alarm Rationalization and MoC:

An intuitive decision tree is used to determine the actual alarm priority. If the priority of an alarm changes, the MOC process will be started automatically. After completion of the MOC (confirmation of the change by the dual control principle) the change will be implemented in the control system. Plant Historian AR will check whether the priority change has been executed correctly.

Fig. 3: Intuitive decision tree for priority determination

>> BENEFITS:

The use of the alarm management solution of iMes Solutions GmbH results in the following main benefits for the refinery operator::

- Increased plant security & transparency
- Optimized plant availability
- Reduced reaction time due to alarm and event forwarding
- Support for alarm reduction
- Basic reduction of false alarms
- Relief of the plant personnel

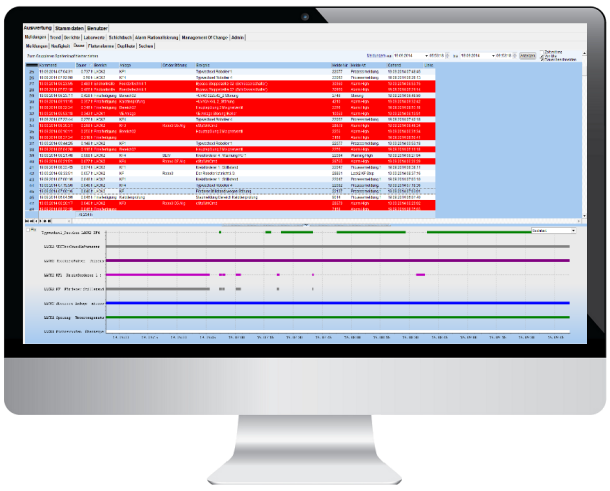

Fig. 2: Evaluation of the alarm duration of selected messages

>> CONCLUSION:

For companies in the process industry, Plant Historian AM - Alarm Management - offers an efficient, robust and transparent solution to increase plant safety and security and reduce the number of alarms.

Systematic alarm management with Plant Historian AM/ AR - Alarm Management / Rationalization - is equally suitable for small and large plants. Company-wide solutions with more than 300 servers can be implemented without any problems.