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Product Overview

Ventyx eSOMS Suite

Ensure safe, efficient, and reliable operation and maintenance of facility assets.

Managing complex plant operations demands a comprehensive, integrated software system that not only optimizes performance, but can be implemented quickly and adapted to plant-specific procedures and processes.

For over two decades, Ventyx has been at the forefront of the development and successful implementation of operations management information systems for the chemical, electric power, marine, military, petro-chemical, and pulp & paper industries. Drawing on its experience in the operations management automation area, Ventyx developed the Shift Operations Management System (eSOMS).

A mission-critical application, eSOMS users rely on the software to ensure the safe, efficient, and reliable operation and maintenance of their facility assets.

eSOMS modular advantage

eSOMS is a modular software application suite that is designed to automate and integrate the major processes involved in plant operations management.

Major modules within the application suite include:

- Equipment Data
- Configuration Control
- Clearance / Tagout / Lockout
- Operator Rounds
- Limiting Conditions for Operation (LCO) Tracking
- Narrative Logs
- Personnel Qualifications & Scheduling
- Notice of Change

Data sharing and built-in interfaces between eSOMS modules facilitates the integration of many operations related tasks while significantly reducing the amount of data entry required.

eSOMS is a proven solution that interfaces with industry-leading project scheduling, maintenance management, asset tracking, and data historian software systems, enabling a tighter integration between all of your enterprise information systems.

Benefits of using eSOMS

eSOMS is designed to provide a consistent, organized, and integrated approach to those activities which affect equipment configuration, system status, and hence plant operation. This means that your facility will benefit from:

- **Enhanced Efficiency, Productivity, and Safety** – Users have reported significant, measurable gains in efficiency and productivity in operations tasks automated by eSOMS.

  For example, using the equipment position verification tracking capabilities of the Configuration Control and Clearance modules, power plant customers were able to eliminate repetitive in-plant equipment position verifications by taking credit for electronic procedures and tagouts recently performed. And because of the decreased number of in-plant equipment manipulations required, the human error rate for such activities dropped dramatically.

- **Reduced Time & Costs of Operations Activities** - Taking advantage of electronic tag sharing in the eSOMS Clearance module, a military customer realized a 94% decrease in the total number of tags required to be processed during a 14-month major asset overhaul, saving an estimated $4-6 million in man-hours alone.

  Similarly, commercial power plant customers have shaved up to a week off the duration of major plant outages as a direct result of eSOMS implementations. Estimates of replacement power costs alone saved by bringing a major power plant back on-line a week early range from $3-5 million.

- **Consistent & Compliant Processes** – An international petrochemical manufacturer was able to create and better manage a consistent framework for operations routine duties across its fleet of production facilities using the Equipment, Operator Rounds, Narrative Logs, and Notice of Change modules.

  Nuclear power plant operators use the Personnel Qualifications & Scheduling module to implement a consistent methodology for generating and maintaining staffing requirements and schedules in compliance with complex regulatory work limits, thereby preventing costly regulatory fines.

  Limiting Conditions for Operation (LCO) Tracking ensures that equipment and systems that are unavailable or inoperable due to various operations and maintenance activities are restored within regulatory time limits.All organizations benefit from a corporate-wide standard in the areas of operations and maintenance management, particularly in those organizations that share resources among several plant locations.

- **Nuclear Fatigue Rule Compliance** - As a nuclear power plant in the United States, compliance to NRC's 10 CFR 26, Nuclear Fatigue Rule is made easy when using eSOMS. The eSOMS Personnel Qualification & Scheduling module provides a forward looking scheduling tool showing current and future infractions of the NFR rule so the scheduler can make the appropriate changes to ensure compliance.

  The eSOMS solution follows the NRC directive by not only providing nuclear power plants with the tool to help manage workers scheduled to avoid fatigue, but also providing the ability to track corrective actions and create the FFD (fitness for duty report).

- **Easier Access to Information and Record Keeping** – As an enterprise solution, critical information in each eSOMS module is just a few mouse clicks away. The eSOMS Narrative Logs module has become a fixture on the desktop of many plant managers as a tool to track the current operating status of the plant and to disseminate directives such as standing orders.

  eSOMS reports are Crystal Reports® compatible, allowing you to customize the standard reports or create your own. The eSOMS AutoPrint module generates Adobe Acrobat® files of critical operations documents (procedures, tagouts, rounds, logs) and automatically transmits them to third-party electronic document management systems eliminating much of the document control administrative burden.

Program modules at a glance

eSOMS program modules encompass the basic software tools that assist in the management of plant operations. A brief description of each module is provided below.

- **Equipment** - provides quick access to equipment data of critical importance to plant operators. In addition to nameplate data and related documents (drawings, procedures, regulatory limits, etc.), current as well as historical equipment operating status and configuration data are provided. Users see not only the current configuration of equipment, but are able to trace its path through the many operational activities (tagouts, operating procedures, rounds, etc.) that lead to its current status.

- **Configuration Control** - designed to automate and track configuration activities associated with plant procedures (alignment checklists and normal operating instructions) and equipment deviation records (temporary mods, operator aids, equipment out-of-service logs, etc.). eSOMS incorporates a "living" model for all phases of the configuration control process that provides operators with information related to equipment configuration control and status based on actual plant conditions, as opposed to static procedures. The system also provides the flexibility to model different equipment and system configuration requirements based on a plant's operational status.

- **Clearance** - designed to assist in implementing, controlling, and executing a plant's tagout/lockout procedure. The system facilitates access and linkage to equipment isolation, work status, and schedule information through interfaces to third-party work control, maintenance management, and scheduling software systems. Ventyx pioneered a revolutionary method for tag sharing which has been proven to save a significant amount of manpower resources during both normal plant operation and outages, without compromising personnel or plant safety.

- **Operator Rounds** – a data acquisition and analysis module designed to automate the tasks of collecting, storing, and analyzing equipment operating data from operator rounds. The system provides personnel responsible for plant operation with a powerful yet easy to use tool for collecting and analyzing massive amounts of equipment operating data quickly and efficiently. Operator Rounds puts the power and flexibility of complex calculations, trending, and analysis at the fingertips of operators both at the desktop and in the field where the likelihood of detecting and preventing equipment problems is greatly enhanced, thus maximizing plant reliability.

- **LCO Tracking** - designed for those industries where regulatory compliance requirements may directly affect plant operations. The system provides personnel responsible for plant operation and compliance with an easy to use tool to quickly schedule and track required regulatory and/or administrative actions with respect to plant specific limiting conditions for operation. LCO Tracking provides the flexibility to integrate a diverse spectrum of compliance requirements such as plant technical specifications, technical requirements manuals, fire protection guidelines, off-site dose calculation manuals, and administrative procedures. The likelihood of missing or incorrectly scheduling required actions with LCO Tracking is greatly reduced, thereby preventing costly regulatory fines.

- **Narrative Logs** - an electronic journal for recording and qualifying events which occur during an individual's shift watch. The system tracks shift staffing, plant operating parameters, log entries, associated qualifying data, and web/document links on an individual plant unit and/or staff position basis. In addition to on-demand log entries, Narrative Logs has the capability to accept automatic log entries from other eSOMS modules to automatically document the statusing of procedures, tagouts, operator rounds readings, regulatory action compliance, etc.

- **Personnel Qualifications & Scheduling** - a scheduling tool designed to ensure the adequacy and compliance of plant staffing. The system tracks personnel for man-hours, shift positions, qualifications, and shift details over the entire range of plant operation and shutdown. A natural complement to Narrative Logs, PQ&S has been designed to integrate shift staffing requirements, position qualifications, regulatory work constraints, crew makeup, man-hours on a per person or per shift basis, shift rotation changes (into and out of outages, changes in shift duration, etc.), overtime callouts, vacation scheduling, and a host of other information critical to maintaining a qualified plant staff.

- **Notice of Change** – a change management and messaging tool designed to manage the complete life-cycle of an organization's Notice of Change (NoC) process. NoC entities can be external to eSOMS (Required Readings, SOP's...), or created automatically by modules within the eSOMS suite (Clearance sign-on/off actions, Operator Rounds alerts). Administrative functions allow the preparation, distribution, maintenance, and acknowledgement status reporting of NoC records. An internal messaging service handles the delivery, access, and acknowledgement of NoC records by end-users.

- **Mobile eSOMS** - realizing the data entry burden that could be placed on plant operators if the processes were to remain paper-based, Mobile eSOMS has been designed to work with state-of-the-art mobile devices. Information captured in the field with mobile devices during equipment configuration activities (for example procedures, tagouts, operator rounds, narrative logs, etc.) is synchronized with the plant status database, eliminating the need to collect information on paper, and then enter it back at the desktop.

- **AutoPrint** - to eliminate much of the administrative burden associated with document management issues, the eSOMS AutoPrint module automates the process of creating, transmitting, and tracking critical operations documents from eSOMS to third party electronic document management systems.

- **System Interfaces** – to enable integration of eSOMS with other enterprise data systems, modules are available to manage the exchange of data between eSOMS and industry-leading project scheduling, maintenance management, asset tracking, and data historian software systems.

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