

Asset information management

Ensuring regulatory compliance



Courtesy: Emerson Process Management

While organisations look at ways for optimum utilisation of physical and human assets, they often do not give due importance to virtual assets (information data). However, this casual attitude towards information management can have a staggering impact on performance throughout the lifecycle and across every stakeholder in the asset management value chain. **Rakesh Rao** finds out how Asset Information Management (AIM) system can be of help in overcoming an issue.

The safe, reliable and productive use of physical assets is a paramount objective of asset-intensive industries like chemicals, power, etc. Operators use a variety of methods including well-established Enterprise Asset Management (EAM) systems for the management of data and maintenance scheduling. "Users of these systems rely on validated and auditable asset documentation to perform their tasks and ensure regulations are being met. Many companies rely on the storage of documentation in file systems and better still in a document management system. The drawback of these approaches is the need to rely on complex customisations to meet intricate business processes required to ensure as-built documentation that can be easily validated for planned & unplanned plant shutdowns and to satisfy regulators," informs Tim Taylor, Chief Business Development Officer, McLaren Software Ltd.

In many companies, the information surrounding their physical assets is stored in many different systems of record, which is the responsibility of different departments within the organisation. "For example, the Engineering

Data Warehouse (EDW) is the system of record for engineering data and is the responsibility of the engineering organisation. The Reliability Centred Maintenance (RCM) data is in a separate system and is in the domain of reliability engineers. For maintenance data, the Computerised Maintenance Management System (CMMS) or Enterprise Asset Management (EAM) system is the system of record, which is managed within the maintenance organisation. Maintenance, Repair and Operations (MRO) are in the materials management system, and is the responsibility of the supply chain organisation. Manuals and other documents may be hardcopies or managed within a document management system. For data that does not fit anywhere else, spreadsheets are utilised," opines Richard Neidert, Senior Vice President - Global Sales, Services & Marketing, NRX Global Inc.

The challenge is to keep these different systems of record across different functional organisations synchronised, as changes occur to the equipment throughout its life. Hence, there is a need to have an overarching governance process to ensure that a physical change to equipment is

accurately reflected in each system of record.

Neidert explains, "Without good governance of asset data, companies are exposing themselves to enormous operational risk. Anytime a company is operating and maintaining assets without being absolutely sure that the right data is being used, the risk of safety incidents, environmental disasters and large financial losses rises significantly."

Many organisations are now realising that their IT landscapes lack an overall information architecture that supports execution of their enterprise asset management strategies. That is where Asset Information Management (AIM) has a role to play.

Managing asset data

AIM is a management discipline that can be defined as a set of policies, procedures and tools for defining, collecting, transforming, deploying and sustaining accurate & complete information related to the design, build, operate & maintain, and decommissioning & disposal lifecycle stages of physical assets.

Taylor says, "There are a number of definitions of AIM, most of which cover the management of asset, tag data and related processes. Control of documentation and related



Tim Taylor
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business processes are important to the operators in chemical and similar asset-intensive industries. The challenge related to the documentation has a material effect on the efficiency of operations. It helps minimise planned and unplanned plant shutdowns by ensuring that the documentation has followed both consistent & auditable processes to provide engineers of all disciplines with the traceable evidence and confidence that the information they are using is current and validated for the purpose. Regulators are not only concerned whether asset documentation is correct and up to date, but also the processes used are compliant to help operators avoid fines, suspensions or enforced shutdowns."

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For organisations with high demands on uptime for production assets, like 24x7 operations, an asset lifecycle perspective is crucial for profitability. Lifecycle management of physical assets provides continuous information on assets, from design or redesign through operations and maintenance to decommissioning. The key challenge in this case is to drive interoperability across all AIM silos and across all asset lifecycle stages.

Neidert informs, "At NRX, we have moved from the use of AIM to Asset Lifecycle Information Management (ALIM) to highlight the need to consider the information associated with an asset over its entire life from design through to disposal. Information is defined as data & documents, and



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Accurate information about the installed state of the equipment allows maintenance tasks to be planned and co-ordinated accurately and efficiently. Well-planned maintenance work results in more efficient execution of the task.

includes everything from engineering design documents to bills of material & maintenance plans. A core component of ALIM is Asset Data Governance (ADG). This ensures all systems of record remain synchronised, and all changes are subject to the organisations' approval processes. This auditable process provides the transparency to show why each piece of information is what it is (ie, who changed and/or approved it, when and why)."

Transformation phase

The biggest challenge facing the companies that wish to get started with AIM is the poor quality of the legacy data. "The best solution is to avoid this by employing ADG during the capital project data collection phase. In a brownfield situation, this means a data remediation project. The issue is that several Lean organisations, which barely have the resources to keep the plant running never mind to staff a data remediation project. By installing a modern ALIM system with ADG, the data from the legacy system can be extracted as it is, and cleansed & enriched over time. EAM system upgrades or migrations are opportunities to introduce ALIM and ADG. These projects have service teams in place, and introducing ALIM at this time is only a minor increase in the overall scope," avers Neidert.



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While many operators place emphasis on data and maintenance management system, control of documentation receives less attention. Taylor says, "Often they rely on general document management systems and basic file systems, some with extensive customisations. McLaren Enterprise Engineer is an example of specialist asset information suite of applications designed to meet documentation and business process requirements through an asset lifecycle built on industry-leading document management platforms."

'Aim' for high efficiency

If an engineer or maintenance team uses incorrect documentation, it can result in project overruns, engineering rework and increased waste; all contributing to plant downtime. "The ability to manage documentation between one or more active projects enables maintenance to be carried out parallelly. Also, validated and auditable documentation help ensure regulations are being adhered to consistently," observes Taylor.

ALIM is critical for plant maintenance, states Neidert. He further adds, "Accurate information about the installed state of the equipment allows maintenance tasks to be planned & co-ordinated accurately and efficiently. Well-planned maintenance work results in more efficient execution of the task. Having access to the history of the equipment allows analysis that feeds continuous improvement of the preventative maintenance processes."

By using AIM and ADG, one can ensure availability of accurate asset information to maintenance employees for ensuring that the work is being conducted in accordance with the latest safe-work processes. Since maintenance is often responsible for performing periodic inspections in accordance with regulatory requirements, AIM is essential in ensuring this.

"The latest development in AIM is the recognition of the need for ADG. Solutions to ensure accountability for the accuracy of critical asset information will improve the environmental and safety compliance of asset-intensive industries," points out Neidert.

Long-term investment and long asset lifecycle can lead to considerable lifetime costs for maintenance, human resources & spare parts, not least for the continuous modifications that are required to optimise asset availability and operations. A comprehensive AIM strategy can help companies in asset-optimisation generating conditions for continuous enhancement of lifecycle profit, ie, lower costs, greater availability, and increased workforce efficiency. ■