

A Ventyx Whitepaper:

A PAS 55 Approach to Asset Management

Achieving PAS 55 Compliance with Ventyx Ellipse



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Executive Summary

A holistic, efficient and whole-life approach to the management of physical assets is vital to the operations of many organizations, especially asset intensive businesses in industries like mining, public infrastructure, transportation and defense. Known as PAS 55, the Publicly Available Specification (PAS): 55-1:2008 Asset Management standard is rapidly being accepted worldwide as “good practice” guidance for optimizing asset management systems and processes and reducing risks to people, the environment and the business.

Industry experts at the Institute of Asset Management, in collaboration with the British Standards Institution (BSI), developed PAS 55 as guidance to optimize asset management efficiency. First published in 2004 and revised in 2008, PAS 55 provides clear definitions and a requirements specification for establishing and verifying a comprehensive, optimized management system for all types of physical assets across their lifecycle. Similar in approach to the ISO 9000 series specifications, PAS 55 is non-prescriptive and outcome-based: it describes what to do, not how to do it.

Now internationally recognized, PAS 55 is proving to be an essential, objective definition of what is required to demonstrate competence, establish improvement priorities, and make clearer connections between strategic organizational plans and the day-to-day realities of asset and work management. It seems likely that it will be certified as an ISO standard for management of physical assets.

This paper provides an introduction to the PAS 55 standard, and describes how the Ventyx Ellipse enterprise asset management (EAM) solution has been developed specifically to align with PAS 55 and support a PAS 55 compliant asset management lifecycle approach for asset intensive businesses.

Asset Management Challenges and Opportunities

To manage cost and risk and align operations with business strategy, organizations must be able to answer fundamental questions about their assets, such as:

- What assets do we have, what condition are they in, what function do they perform, and what is their contribution to value?
- Do we have sufficient capacity (or under- or over-capacity) in our asset portfolio? Are some assets redundant, underutilized, unprofitable or burdensomely expensive?
- Are the risks of our assets causing harm to people and/or the environment at legally and organizationally acceptable levels?
- Can we accurately evaluate the performance, risk reduction, compliance and/or sustainability benefits of proposed work or investments; and likewise the impact of delaying or not performing the proposed actions?
- Can we confidently address these lines of inquiry and provide answers to stakeholders with a clear audit trail and reliable data?

If you answer “no” to these questions, it may be time to consider a PAS 55 approach to asset management.

Business Value of PAS 55

Asset intensive businesses are well aware of the value of best-practice asset management for reducing costs and risks, and for facilitating regulatory compliance. Nearly every asset intensive operation is under increasing pressure to control costs and maximize return on assets, while providing high service quality and continuing to protect the safety of employees and the public. “Green” initiatives are likewise growing in importance with regulators, stockholders and consumers, and will continue to do so.

In contrast to some other standards, which can sometimes be met simply by generating extensive paperwork, PAS 55 specifically requires evidence of alignment between good intentions and the actual, day-to-day activities of capital project implementation, operations, and maintenance. Thus it is a valuable mechanism to ensure confidence in results and support good governance, long-term planning and sustainable performance.

The ability to demonstrate compliance with PAS 55 requirements not only reduces operational and compliance costs and risks, but also can drive competitive advantage through improved service and greater operational proficiency.

Embracing the PAS 55 standard supports asset intensive businesses to:

- Align the asset management strategy and approach with the overall business strategy
- Improve the integration between asset management and financial management processes
- Maximize return on assets
- Maximize asset uptime
- Foster an organizational culture focused on quality, safety, and continuous improvement

Applicability of PAS 55

PAS 55 is most relevant to asset intensive businesses like mining, oil and gas, energy/utilities, and public infrastructure including roads, rail and ports. For these organizations, the optimal sustainable productivity and performance of assets is central to the business objective. Significant investment and ongoing expense and risk are associated with the acquisition/creation, utilization, maintenance, and renewal/disposal of asset portfolios in such enterprises. Strong regulatory accountability for the safe management of assets and related services is a further driver for the adoption of PAS 55.

The PAS 55 Approach

Optimal management of assets and related costs, risks and performance requires a pragmatic, lifecycle approach. You need to determine what assets to build or obtain, how best to maintain and use them, and how best to renew, recondition and/or dispose of them.

The PAS 55 approach to whole-life asset management is based on the widely used Plan-Do-Check-Act (PDCA) cycle for continuous improvement (see Figure 1).

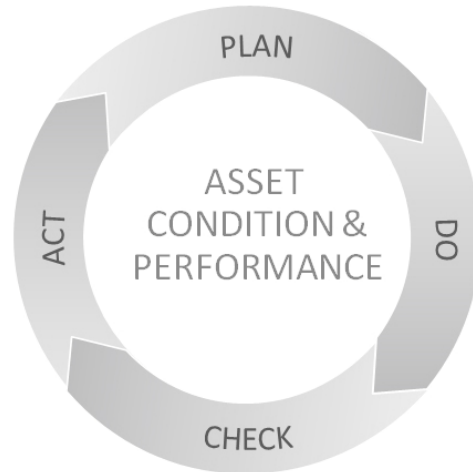


Figure 1: The Plan-Do-Check-Act cycle for continuous improvement

As applied to asset management by PAS 55, the components of the PDCA cycle are:

- Plan** Establish the asset management strategy, objective and plans needed to deliver results in alignment with the organization’s asset management policy and strategic plan.
- Do** Establish the enablers for implementing asset management (e.g., EAM software) and other essential requirements, such as regulatory requirements; and implement the asset management plan(s).
- Check** Monitor and measure results against asset management policy, strategy objectives, regulatory and other requirements; and record and report the results.
- Act** Take actions to make sure that asset management objectives are achieved, and to continuously improve the asset management system and asset management performance.

Key elements that drive the asset management PDCA cycle include:

- **Asset Management Policy.** Provides direction on how to effectively manage physical assets in line with the organization’s goals and objectives. Also serves to guide configuration of the EAM system. Most organizations have no asset management policy, and as such will have difficulty realizing the benefits of PAS 55.
- **Asset Management Strategy, Objectives and Plans.** Enable the business to detect potential defects before they escalate into incidents that might impact safety, environment or operational performance; and/or increase the cost of initiating maintenance.
- **Asset Management Enablers.** The organizational structure of roles, responsibilities and authorities that aligns with the asset management policy, strategy, etc. This is essential because accountable people, not policies, bring about sound asset management.

How Ventyx Ellipse Supports PAS 55

Ventyx Ellipse is a fully integrated EAM solution that provides complete visibility and management of enterprise-wide assets to organizations in the mining, defense, public infrastructure, energy, and oil and gas industries.

Ellipse has been designed from its inception to support good asset management practice. Since the introduction of PAS 55 in 2004, Ventyx has made alignment with this emerging standard a core development priority. Ongoing Ellipse product development since that time has focused on supplying a fully PAS 55 compliant offering, with all new or redesigned functionality being guided by PAS 55.

PAS 55 compliance starts in the “DNA” of Ellipse. It has not been achieved merely by mapping feature descriptions to the wording of the standard, but by thoughtfully engineering the product across two major releases with PAS 55 as basic design guidance.

Ellipse is aligned with PAS 55 most fundamentally in its inherent focus on proactive risk assessment and comprehensive support for corrective and preventive actions, versus the identification and remediation of after-the-fact performance failures. In particular, the Ellipse “Manage Physical Assets” process follows and embodies the PDCA process that is the guiding principle of PAS 55 (see Figure 2).

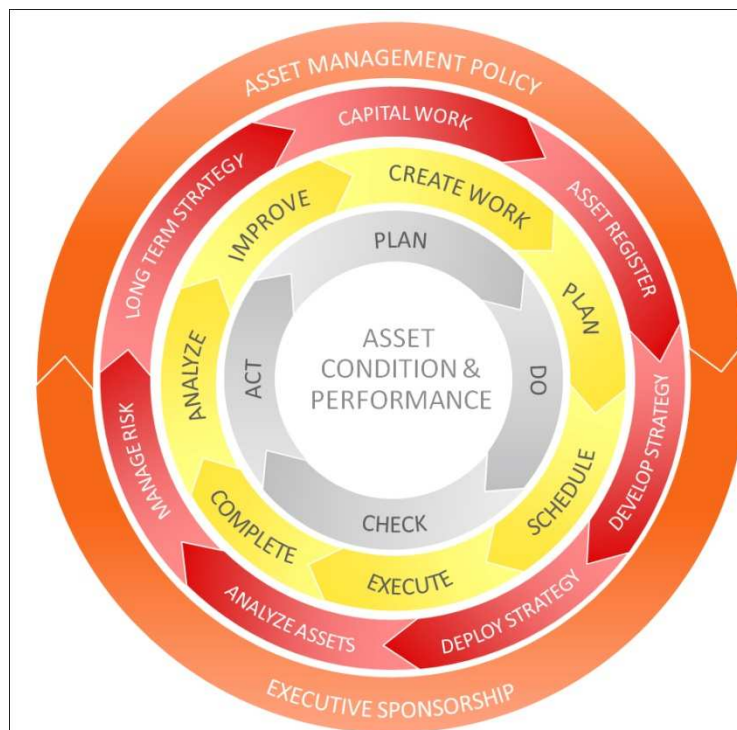


Figure 2: The Ventyx Ellipse “Manage Physical Assets” process parallels PAS 55.

The core functional capabilities of Ellipse align with PAS 55 guidance by enabling asset intensive businesses to achieve these key PAS 55 mandates:

- Manage risk before it becomes a problem
- Know the condition of every asset
- Standardize the Asset Registry business process

Manage Risk Proactively

PAS 55 mandates working out risk before it becomes a problem, versus addressing it after an event through root cause analysis. Ellipse therefore builds risk assessment and management into Alarms, Inspections and Defects, Standard Jobs, Work Requests and Work Orders. These entities prioritize work based on a risk assessment that reflects the criticality of the asset. The prioritization sets the required start and, more importantly, the required completion date. The Ellipse Inspection and Defects application can also trigger the correct secondary action when a primary task response has reached an alarm level.

The Ventyx Mobile Worker application ensures that a Personal Risk Assessment is undertaken before work commences. The application also presents the technician with the last information relating to the asset being maintained.

Ellipse can also collect and analyze failure data after the fact. Further, Ellipse can capture and analyze a complete listing of all current defects and the risks they pose to the business, across the enterprise asset base, and offers graphical tools to manage and correct defects.

Know the Condition of Every Asset

In the context of performance and condition monitoring, PAS 55 requires an Asset Manager to know the current condition of each asset. Unique among current EAM solutions, the Ellipse Inspection and Defects module can automatically calculate the current condition of each asset based on responses to inspection questions.

The Ellipse Inspections and Defects application manages both simple and complex asset inspections. Secondary actions are automatically triggered based on the responses given to the inspection questions.

Standardize the Asset Registry Business Process

Ellipse provides a uniquely simple and effective approach for registering assets in line with PAS 55 guidelines. Ellipse facilitates the collection of asset data as mandated by PAS 55, while ensuring that asset registers do not become overly cumbersome or complex.

Ventyx's Mobile Field Data Platform can be used to collect data relating to currently unregistered assets, ensuring that data quality is maintained and available in the field. From asset assemblies to components and associated equipment and systems, asset managers can be assured that costs, defects and history for all assets are collected at the correct level, and that any necessary changes to registration can be flexibly accommodated.

Assess Where Your Organization Is Today

Optimizing asset management processes takes not only technology but also people and process. Ventyx offers Ellipse customers a system review to assess how effectively Ellipse is currently deployed and used to meet PAS 55 requirements. Each review culminates in a confidential report, which includes recommendations for improvement to bring EAM processes in line with PAS 55. The goal of these engagements is to help customers understand where they are today, and to chart a course to become a top-flight maintenance management organization through alignment with PAS 55 guidelines.

Conclusion

PAS 55 provides a clear, internationally recognized definition of what “good practice” asset management means for any organization. It provides detailed guidance and examples for demonstrating competent governance of critical assets, along with a checklist of good practices in asset lifecycle planning and cost/risk optimization, and an extensive glossary of terms that provides a common language for all stakeholders.

Developed over more than six years with help from over fifty public and private organizations in ten countries and fifteen business sectors, PAS 55 has earned broad, enthusiastic acceptance and is in widespread use. It represents a huge stride forward in the consistent application of asset management techniques. Perhaps most importantly, PAS 55 is driving more realistic and risk-sensitive asset management decisions at boardroom levels.

Ventyx believes that the PAS 55 standard will rapidly achieve global acceptance and will be adopted as an ISO standard for management of physical assets. Since it was first published in 2004, Ventyx has been in the forefront of supporting its customers to align with PAS 55. Ventyx has also applied PAS 55 at the foundation of its EAM software design and development methodology, such that Ventyx Ellipse delivers comprehensive compliance with and support for PAS 55 guidelines today.

Ellipse will become a “PAS 55 compliant” application as soon as compliance can be certified. In the meantime, Ellipse makes it straightforward for asset intensive businesses to adopt PAS 55 and achieve commensurate benefits in cost and risk reduction.

About Ventyx

Ventyx, an ABB company, is the world’s leading supplier of enterprise software and services for essential industries such as energy, mining, public infrastructure and transportation. Ventyx solutions bridge the gap between information technologies (IT) and operational technologies (OT), enabling clients to make faster, better-informed decisions in both daily operations and long-term planning strategies. Some of the world’s largest private and public enterprises rely on Ventyx solutions to minimize risk, enhance operational and financial performance, and execute the right strategies for the future.

To learn more about Ventyx solutions visit www.ventyx.com or contact a Ventyx sales representative today.