Prepared for

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Smarter Automation Through Observability

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Executive Summary

Enterprise IT has embraced observability for infrastructure, networks, applications, and data pipelines, but one critical domain remains largely invisible: automation itself. As workload automation orchestrates mission-critical business processes across hybrid environments, this blind spot has become a strategic liability.

Most organizations run multiple automation platforms—mainframe schedulers, cloud native orchestration, RPA, CI/CD pipelines—yet lack unified visibility into how these automations interact, when they'll breach SLAs, or which business services are at risk when jobs fail. Traditional monitoring tools report what happened; they don't predict what's coming or connect automation health to business outcomes.

This gap explains why IT teams react to SLA breaches rather than preventing them, why root-cause analysis spans days instead of minutes, and why executives question whether further automation investments will create value or just more complexity. The illusion of automation progress masks a deeper truth: IT is reacting, not orchestrating.

The solution requires a new approach: automation observability. Unlike infrastructure or application monitoring, automation observability provides unified visibility across heterogeneous schedulers, predicts SLA impact before violations occur, correlates job failures across domains, and translates execution data into business impact. It elevates workload automation from determining when jobs execute and monitoring outcomes to delivering business assurance.

Broadcom's Automation Analytics & Intelligence (AAI) platform pioneered this category and continues to lead it. AAI provides real-time insight across workload automation platforms, including legacy schedulers, mainframe, cloud native orchestration, and Broadcom's own solutions. By centralizing telemetry and applying predictive modeling to forecast SLA violations, identify bottlenecks, and recommend action, AAI transforms workload automation from a reactive operations function into a proactive business enabler.

This paper examines why automation observability has become essential for enterprises managing complex, distributed workflows. It explores the automation chaos and strategic blind spots IT organizations face, demonstrates how automation observability addresses these challenges through practical business scenarios, and shows how AAI delivers the intelligence layer modern enterprises need to orchestrate outcomes—not just jobs.

Automation Chaos in Today's Hybrid Enterprise

Enterprise IT is more automated than ever, yet also more at risk of collapsing under its own complexity. Over the past decade, IT teams have deployed automation across every layer of the stack: workload automation (WLA), robotic process automation (RPA), infrastructure as code (IaC), release automation, ITSM automation, and cloud orchestration. Each tool promised efficiency, speed, and consistency, but few were implemented with end-to-end coordination in mind.

The result is a brittle patchwork of isolated automations. Job schedulers coordinate many data pipelines, but much automation still runs outside WLA. Some schedulers wrap external processes, while others remain disconnected—extending delays when dependencies are broken or data is not ready. Cloud resources spin up automatically, even when dependencies are broken or data is not ready...and when something fails, no one has a single view into what happened—or why.

As automation expands across cloud, legacy systems, and distributed environments, a new layer of intelligence is required: one that sits above execution engines to unify visibility, detect cross-system risks, and align automation with business outcomes.

Modern IT Operations Face Blind Spots Between Platforms and Automation Silos

This is not just a visibility problem; it is an orchestration challenge. IT teams must deliver seamless digital services across mainframes, hybrid cloud, containers, and SaaS, yet their automation landscape remains fragmented. Most organizations lack a unifying layer of intelligence that can understand, predict, and govern how automated activities interact across systems.

In this fractured environment, even minor delays can cascade into major disruptions. A late upstream data transfer can derail downstream analytics. A failed job in one scheduler may go unnoticed until an entire business process grinds to a halt. Executives often receive reports only after IT breaches SLAs—when it is already too late to act.

Tool proliferation compounds the problem. EMA's February 2025 "Future of Workload Automation and Orchestration" research found that 84% of enterprises are expanding orchestration to manage workflows across environments, with nearly half (44%) orchestrating cloud and multi-cloud resources directly through WLA. On average, enterprises operate three to four schedulers, while DevOps teams add CI/CD pipelines, data teams schedule ETL workflows in separate platforms, and cloud teams automate infrastructure through Terraform or Kubernetes. None of these systems share a common language, and none were designed to provide predictive insight across the broader orchestration fabric.

The illusion of automation progress masks a deeper truth: IT is reacting, not orchestrating. Staff are often left to chase root causes when processes span automation tools or when subtle dependencies are lost in the gaps. Root-cause analysis becomes guesswork. Confidence erodes, and business leaders lose trust in IT's ability to deliver—delaying further automation initiatives. What was supposed to create speed and scale now introduces fragility.

To move forward, enterprises must tame this automation chaos. That means elevating from disconnected execution to intelligent orchestration—seeing across all job types, engines, and environments, not just reacting after failures. It requires embracing operational intelligence that delivers the situational awareness needed to turn fragmented automation into predictable, resilient business outcomes.

This is where AAI enters—not as another scheduler, but as the unifying brain that sits above them all.

The Strategic Blind Spot: Lack of Automation Observability

While enterprises invest heavily in observability across applications, infrastructure, and networks, one domain remains conspicuously absent: automation. With the right WLA platform, teams may have reasonable visibility into jobs within a given scheduler, but most organizations run multiple WLAs alongside other forms of automation in DevOps, data, and cloud tools. As a result, visibility is fragmented and rarely provides a full end-to-end view of a business process. This blind spot is more than a technical oversight; it is a strategic liability.

At its core, observability is about understanding system behavior from the outside in. Metrics, logs, and traces explain what is happening under the hood—enabling teams to detect anomalies, resolve incidents, and improve performance. In workload automation, visibility often stops at the boundaries of a single scheduler. IT leaders may know a server is healthy or that a job completed, but miss the failed dependency that delays an overnight report or stalls a downstream pipeline. The result is a reactive posture: SLAs are breached without warning, and teams scramble with siloed tools and no contextual understanding of impact.

Traditional monitoring compounds the problem. Job schedulers generate logs, dashboards, and alerts, but these tools are narrow and reactive. When a job fails, the system generates a notification—often with little insight into why it failed or what else is at risk. Operators are left to sift through logs, trace dependencies manually, and assess which business services are threatened. The limitations of this approach include:

- **Siloed visibility.** Each platform—mainframe, distributed, or cloud—has its own views. There is no single source of truth for job state, dependencies, or failures.
- **Lack of contextual correlation**. A delayed data pipeline may derail a financial dashboard, but traditional tools do not connect those dots.
- **No business mapping.** Operations teams know a job failed, but cannot tie it to the services or KPIs it supports. Business users often feel the impact before IT understands it.
- **Minimal predictive insight.** Legacy systems report what happened, not what is likely to happen. They lack trend detection or anomaly spotting to prevent failures before they occur.
- **Noise overload.** A single failure can trigger a cascade of alerts across tools, leaving operators to triage redundant signals.

EMA's February 2025 "Future of Workload Automation and Orchestration" research underscores the scale of the challenge. Over 60% of enterprises operate multiple schedulers without unified visibility, yet only 18% of enterprises maintain a consolidated view of job execution across platforms. Even fewer implement predictive capabilities or business impact mapping. As automation grows more distributed and mission-critical, this disconnect becomes existential.

Observability is the Fuel for Smarter Orchestration

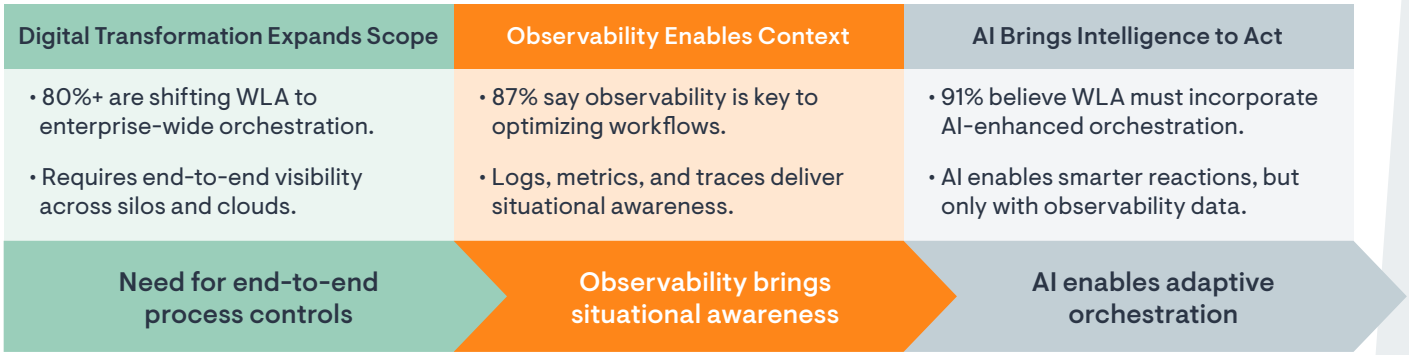

Figure 1: Observability is the foundation for smarter orchestration.

The Gap in Current Observability Tools

AAI differentiates itself from traditional job monitoring tools by moving beyond passive status reporting into active intelligence. Where legacy schedulers provide dashboards showing whether jobs completed, AAI delivers end-to-end lineage mapping, predictive SLA modeling, and cross-scheduler correlation—enabling enterprises to see not only whether jobs ran, but also whether business services remain protected.

AAI also occupies distinct territory from application performance monitoring (APM) and data observability platforms. Those tools excel at tracing application performance or data pipeline quality, but they lack visibility into workload automation dependencies. A delayed ETL job may degrade a dashboard or ML model, but without job-level insight into scheduler dependencies, the root cause remains hidden. AAI closes this gap by connecting automation execution to downstream services and business outcomes, transforming automation data into actionable observability rather than surface-level metrics.

Automation Observability in Practice: How AAI Adds Automation Intelligence Across Use Cases

The value of Broadcom's Automation Analytics & Intelligence platform becomes clearest through practical business scenarios. Three examples illustrate how AAI delivers automation intelligence in enterprises where multiple schedulers, job types, and SLAs intersect—and where business outcomes depend on seamless orchestration.

Preventing SLA Breaches Before Business Impact

A global financial services firm processes end-of-day settlements across mainframe batch jobs, distributed ETL pipelines, and cloud native analytics workflows. These processes must complete by 6 AM to meet regulatory reporting deadlines and enable morning trading operations.

The Challenge Without Observability: Traditional monitoring reports job completion status, but provides no warning when jobs trend late. When an upstream data feed is delayed by 15 minutes, operations teams don't discover the problem until downstream analytics jobs miss their window—triggering an SLA breach that delays market opening and incurs regulatory penalties.

The Outcome With Automation Observability: AAI tracks job execution in real time across all three platforms and compares performance against historical baselines. When the data feed begins trending late, AAI forecasts the downstream impact on the analytics workflow and alerts operations 45 minutes before the SLA deadline. The team reroutes workload to accelerate processing, allocates additional compute resources, and meets the 6 AM commitment.

Business Value: SLA breaches are prevented before business impact occurs. Operations moves from reactive firefighting to proactive orchestration. Regulatory risk is eliminated through predictive visibility. IT demonstrates measurable contribution to business continuity.

Accelerating Root-Cause Analysis Across Platforms

A health care organization orchestrates patient data pipelines across multiple schedulers: mainframe systems for claims processing, Kubernetes jobs for EMR analytics, and Airflow workflows for population health reporting. When the morning patient dashboard fails to refresh, clinical staff lose visibility into bed availability and treatment schedules.

The Challenge Without Observability: The failure manifests in the Airflow workflow, but the root cause lies in a mainframe batch job that processed overnight claims data. Because each scheduler has its own monitoring system with no cross-platform visibility, the operations team spends two hours manually tracing dependencies across three separate tools, examining logs, and correlating timestamps. Clinical operations are disrupted and patient care workflows degrade.

The Outcome With Automation Observability: AAI provides unified dependency tracking across all three schedulers. When the Airflow workflow fails, AAI immediately correlates the failure back to the delayed mainframe claims job, identifies the specific batch process that was bottlenecked, and surfaces the resource contention that caused the delay. Root-cause analysis that previously took hours now completes in minutes.

Business Value: Mean time to resolution (MTTR) is reduced from hours to minutes. Clinical operations maintain visibility into patient data. Operations teams eliminate tool-switching and manual correlation. IT can demonstrate direct impact on patient care quality.

De-Risking Transformation and Platform Migration

A retail organization plans to migrate its inventory management workflows from a legacy scheduler to a cloud native platform. The migration will touch 200+ jobs that orchestrate supply chain processes, point-of-sale reconciliation, and demand forecasting. Any disruption risks stockouts, overstock, or failed promotions during peak shopping season.

The Challenge Without Observability: Without visibility into how jobs depend on one another across platforms, the migration team must manually document dependencies, guess at downstream impacts, and hope testing catches edge cases. Previous migrations caused three SLA breaches when undocumented dependencies broke, eroding executive confidence in IT's ability to modernize safely.

The Outcome With Automation Observability: AAI models the complete dependency graph across both the legacy and target platforms. As the migration proceeds in phases, AAI simulates the impact of each change, identifies which business processes will be affected, and forecasts SLA risk. The team sequences the migration to minimize disruption, validates each phase against SLA commitments, and completes the modernization with zero business impact.

Business Value: Complex automation changes are de-risked through impact simulation. Zero SLA breaches occur during platform migration. Executive confidence is restored in IT's transformation capability. Business modernization accelerates without operational disruption.

Integration, Scalability, and Strategic Fit in Enterprise Environments

Broadcom's Automation Analytics & Intelligence platform is purpose-built for the demands of largescale, heterogeneous enterprise environments. Its value multiplies as complexity increases—whether due to hybrid infrastructure, decentralized automation tools, or expanding digital service expectations. AAI serves as a unified intelligence layer across all workload automation domains, regardless of vendor or platform.

Vendor-Agnostic Integration and Multi-Scheduler Support

AAI distinguishes itself with native integration capabilities that span workload automation engines.

This vendor-agnostic stance positions AAI as the connective tissue between legacy and modern systems. As enterprises undergo consolidation, modernization, or managing multiple schedulers running in parallel—each with siloed views of job status and SLAs—AAI overlays these environments and provides consistent monitoring, alerting, and analytics. A global manufacturer running SAP batch processes, Kubernetes-native workflows, and legacy mainframe jobs can unify observability and SLA monitoring across all platforms with AAI, eliminating blind spots during system handoffs.

The platform scales to support multiple concurrent schedulers, real-time ingestion and analysis across time zones, and concurrent users from IT operations, DevOps, and business teams. For organizations in regulated industries, such as finance or health care, AAI preserves historical job data, SLA performance, and root-cause analysis for compliance teams and post-incident reviews.

AAI is also evolving beyond operational observability toward a broader governance and financial accountability layer. The platform's trajectory incorporates deeper FinOps alignment, audit and compliance controls, and cost transparency capabilities designed to strengthen enterprise oversight of automation at scale. On the AI front, AAI already applies intelligence through AI-powered assistance and AI-driven signal filtering that accelerates data interpretation for operations teams. Broadcom's roadmap extends these capabilities with AI-enabled data exploration, deeper automated root-cause analysis driven by orchestrated agents, and remediation automation that links predictive insights to closed-loop corrective action. Collectively, these enhancements position AAI as a unified control plane delivering observability, governance, and AI-powered operational intelligence.

Strategic Fit: Aligning Automation Intelligence with ITSM, AIOps, and Business Goals

AAI integrates with broader IT service management and AIOps ecosystems. By feeding SLA performance data into ITSM tools or correlating job slowdowns with incident management platforms, AAI helps establish closed-loop operations. When integrated with AIOps systems, AAI contributes job execution trends and anomalies as part of the broader signal set—improving root-cause analysis and proactive remediation.

EMA Perspective

Automation has reached a tipping point. Enterprises can no longer treat schedulers, pipelines, and automation engines as isolated systems. As digital services scale, the orchestration layer has become a strategic control point, and observability is the missing link that ensures automation delivers business value rather than operational risk.

AAI illustrates this convergence. By embedding predictive analytics, SLA modeling, and dependency awareness into a multi-platform control plane, AAI elevates workload automation from determining when jobs execute to delivering business assurance. Its ability to correlate across heterogeneous schedulers, forecast SLA impact, and surface actionable insights gives enterprises the intelligence required to manage complexity with confidence.

AAI pioneered the automation intelligence category as the first product to apply predictive analytics and business impact modeling to job execution data. Its innovation—enabling enterprises to view automation both from execution detail up to business impact, and from business outcomes down to the jobs that produce them—established outcome-based reporting practices now common across the industry.

Today, AAI integrates with a wide range of workload automation platforms and can deploy independently of Broadcom's other automation solutions. Broadcom's roadmap for AAI embraces cloud native evolution and deeper AI enablement, building on proven agentic AI capabilities to position AAI for the next generation of automation intelligence. This evolution points toward a broader industry shift: the convergence of automation, observability, and AI into self-aware, self-healing operations (Figure 2).

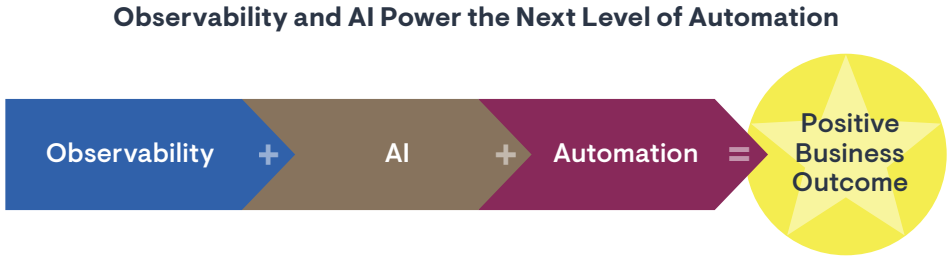

Figure 2: The ingredients for resilient, self-healing automations.

For enterprises, the message is clear: automation without observability risks failure, while observability without automation leaves value untapped. Together, they form the foundation of resilient IT operations.

About Enterprise Management Associates, Inc.

Founded in 1996, Enterprise Management Associates (EMA) is a leading IT research and consulting firm dedicated to delivering actionable insights across the evolving technology landscape. Through independent research, market analysis, and vendor evaluations, we empower organizations to make well-informed technology decisions. Our team of analysts combines practical experience with a deep understanding of industry best practices and emerging vendor solutions to help clients achieve their strategic objectives. Learn more about EMA research, analysis, and consulting services at **www.enterprisemanagement.com** or follow EMA on **X** or **LinkedIn**.

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