Accelerating Automotive Manufacturing Innovation

How AI-Driven Insights and Workflows Boost Quality, Yield, and Uptime

ARCH SYSTEMS

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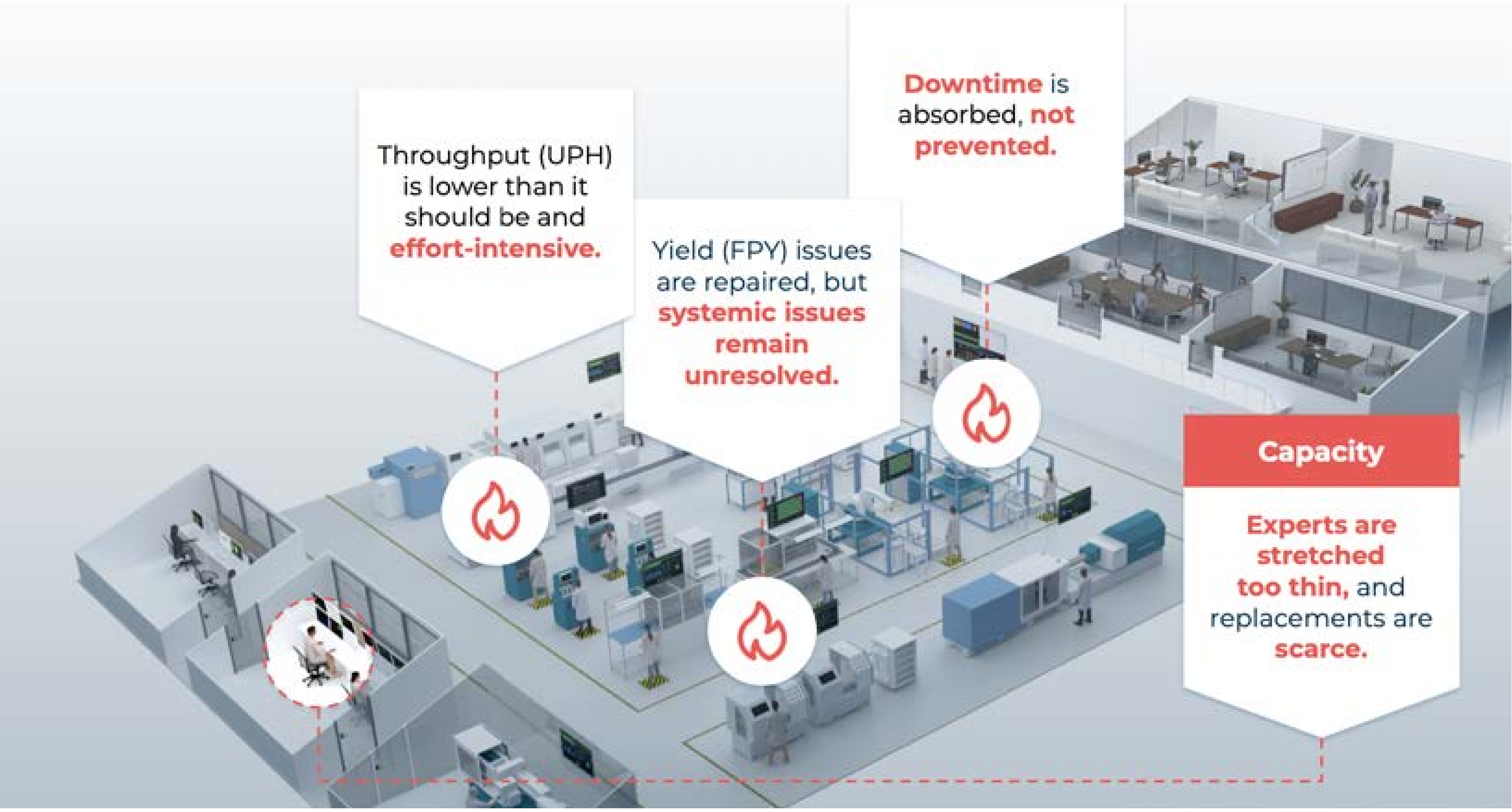
Executive Summary

Automotive manufacturing has achieved exceptional levels of efficiency, but many factories face a growing constraint: limited expert capacity. Despite heavy investments in digital systems such as Manufacturing Execution Systems (MES), Statistical Process Control (SPC), and Supervisory Control & Data Acquisition (SCADA), operations often struggle to scale core quality practices like Corrective & Preventive Actions (CAPA), Define-Measure-Analyze-Improve-Control (DMAIC), and Failure Modes & Effects Analysis (FMEA). Bandwidth limitations and workforce turnover make it difficult to maintain continuous improvement cycles. In response, engineering teams are turning to agentic AI as a solution that works alongside existing systems and data to augment expertise, embed proven methodologies, and deliver measurable return on investment (ROI) quickly.

The Knowledge Gap Threatening Lean Excellence

Manufacturing and process engineers at top-tier automotive suppliers have optimized operations to world-class levels, producing everything from Electronic Control Units (ECUs) and Advanced Driver-Assistance System (ADAS) modules to mirror controls, tire hubs, metal castings, and plastic parts. Yet beneath the high availability, solid yields, and impressive end-of-process Defects per Million Units (DPMUs) lies a critical gap: the expert capacity needed to drive and sustain continuous improvement.



Operations run at full tilt to maintain these results, constantly firefighting to achieve success each week with little margin for error. Downtime events aren't predicted and avoided; they're absorbed and planned around. First-pass yields are far from perfect. Many are repaired through a large labor force, or scrap is simply factored into the overall material plan. Throughput improvements demand significant time from experts on the floor and effort-intensive analysis, both of which are increasingly in short supply.

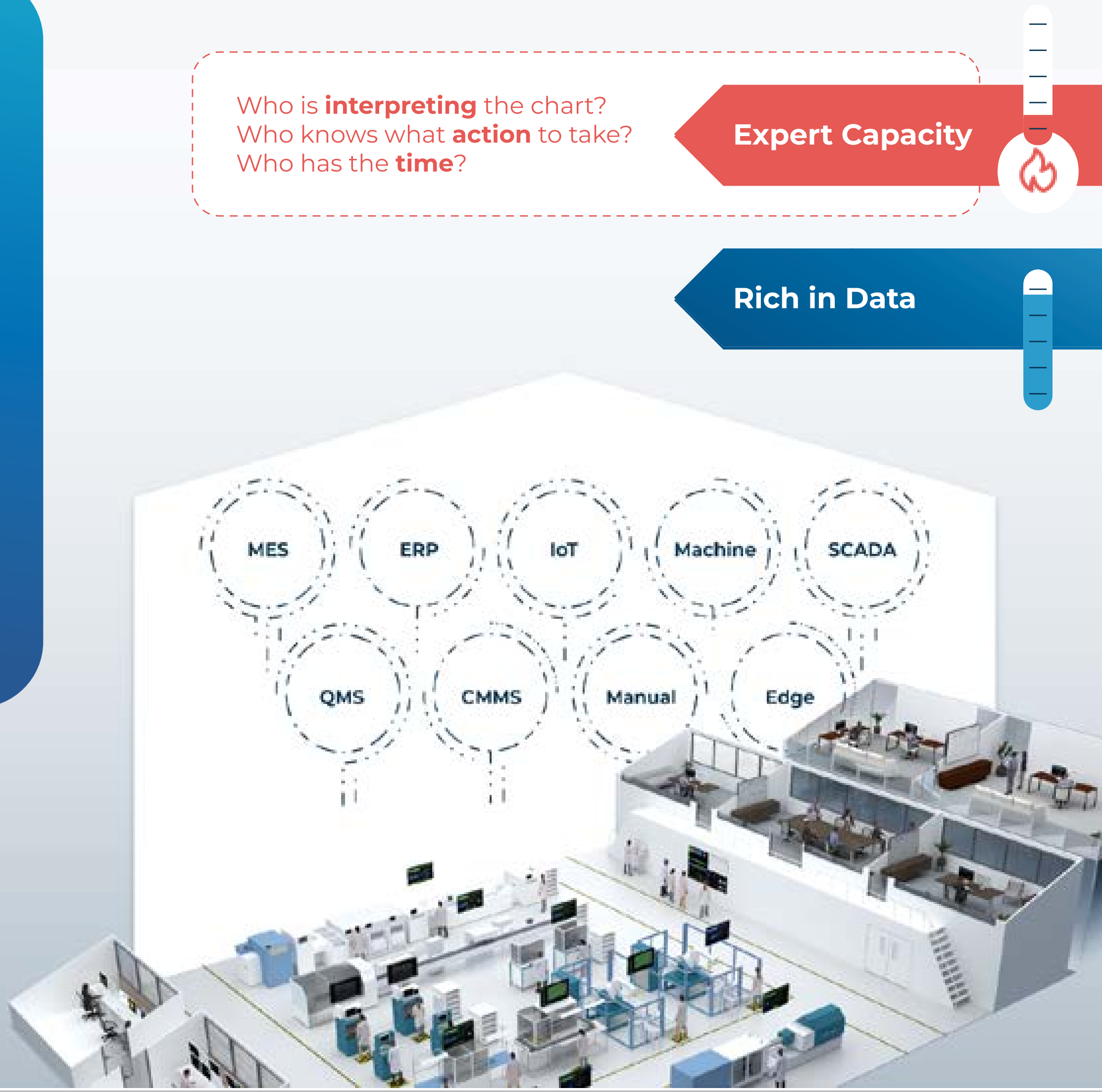
As a result, many large capital expenditure requests are made for more equipment and space. Automotive companies and engineering teams have already invested heavily in digital tools such as Manufacturing Execution Systems (MES), Factory Information Systems (FIS), Supervisory Control & Data Acquisition (SCADA) systems, Statistical Process Control (SPC) systems, vision systems, automated equipment, and smart robotics. However, expert capacity to interpret the data and act quickly remains scarce. In a world without enough experts, another dashboard and more data help no one.

Principles from Lean and the Toyota Production System (TPS), such as gemba walks to uncover issues, structured fishbone (Ishikawa) analysis, Corrective & Preventive Action (CAPA), DMAIC (Define>Measure>Analyze>Improve>Control), standardized work, and visual management, remain the cornerstone of high-performing operations. Yet most plants lack the bandwidth to execute these cycles at scale. Experienced practitioners who know these methods are disappearing, and those who remain often spend their time putting out fires to maintain key metrics instead of teaching the next generation, who increasingly prefer digital tools.

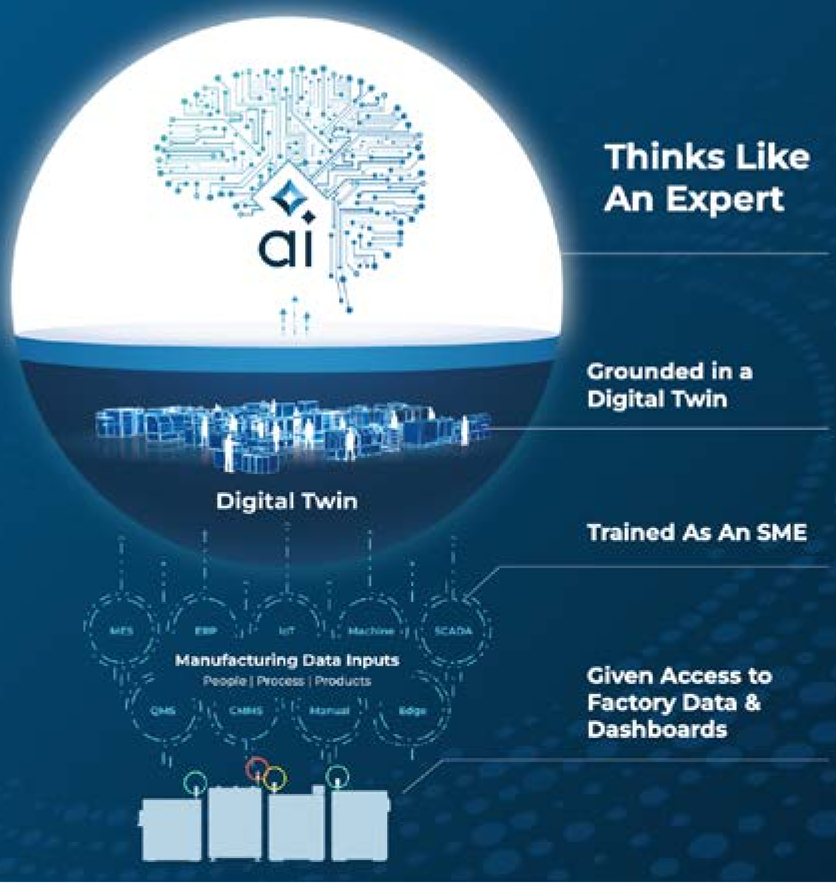
WHY DATA ALONE ISN'T ENOUGH?

Imagine your sites with an unlimited supply of 30-year experts ready to help. You wouldn't need more dashboards or additional technology.

You would simply use the data and systems you already have, paired with proven production principles.



This gap is why an increasing number of automotive engineering leaders see the promise of agentic AI, when properly harnessed, as a game changer.



These systems can work alongside humans, directly embedding production best practices. They leverage dashboards and existing tools, operate in role-based capacities, and stay “always on”; thereby reducing complexity while delivering rapid ROI within weeks.

By applying standard CAPA and DMAIC principles, analyzing the 4M+E (Man, Machine, Material, Method + Environment) on downtimes, and following FMEA (Failure Modes and Effects Analysis) best practices for every issue, the returns can be dramatic.

Example:
One automotive electronics manufacturer had been flying in experts from Europe to Mexico, China, and other locations every few months to optimize performance. A real-time, integrated, AI-based solution identified significant bottlenecks and guided corrective actions, including changes to test station management such as adjusting test times and buffer use.

The Result:
$7 million in savings and added capacity, while avoiding up to $21 million in new capital and robotic lines that would otherwise have been required to compensate for low utilization and throughput.

BEYOND CAPACITY

How a Global Electronics Manufacturer Avoided $7M in Capital Costs with Arch Systems

A global electronics manufacturer used Arch Systems to resolve hidden test station bottlenecks, unlocking capacity and avoiding $7M in planned capital spend.

The Challenge

- **Apparent P&P saturation:** Teams believed Pick & Place machines were fully utilized
- **Limited downstream visibility:** Test stations were not monitored closely, masking the real constraint
- **Risk of misallocated investment:** Leadership planned ~$7M in new

The Arch Approach

- **Automated bottleneck detection** across 150 machines on 15 lines
- **Mapped real-time flow dynamics** using AI-powered analytics
- **Guided local teams with expert validation** to resolve true root cause and rebalance capacity

THE IMPACT

$7M+	1K+	150
Capital Expenditure Avoided	**Machines** across nearly 100 lines targeted for rollout	**Machines** deployed during pilot phase

- Bottleneck detection pinpointed **test stations**, not P&P
- ROI Realized in **< 3 months**

With expert capacity in short supply, the next frontier is using AI to embed proven quality disciplines like CAPA and Six Sigma directly into automated, closed-loop workflows—so every plant can act with the speed and precision of its most seasoned practitioners.

Reinventing Quality Foundations with AI

Quality is the heartbeat of automotive manufacturing; whether making electronics, metal castings, plastic parts, or any variety of sub-assembly through body-in-white to final testing and shipping. CAPA and Six Sigma serve as the backbone for continuous improvement, with quality standards like IATF 16949 built on the foundations of ISO9001. These principles require significant overhead and are being transformed by AI and automated workflows on top of integrated data.

Automated CAPA Workflow

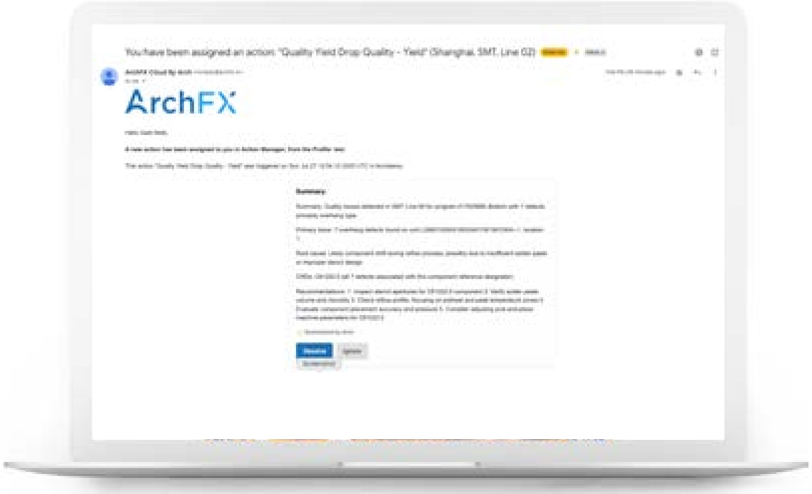
- The first principle is to capture nonconformities in real time—integrating machines, SCADA, and MES-based systems with core data, along with both reactive and preventive alarms, into Arch's Action Manager. Action Manager operates on a principle of alerts and trigger profiles. Triggers can be based on process and quality deviations as well as downtimes or delivery issues. This allows for the automation of corrective actions and the creation of predictive trigger profiles that can act as preventive actions before more significant metric impacts occur.

- The second key principle is to let agentic AI run an automated root cause analysis and create the action plan. An alert doesn't just generate another ticket; it generates a smart ticket tied to the underlying condition, open until it's resolved, and automatically closed once the issue is fixed. The ticket is never blank; it immediately initiates an AI agent to perform root cause analysis (RCA) and return structured guidance on next steps the first time it is opened. AI guidance can be expanded to integrate actions in other systems for closed loops. Every step from alert to assignment to closure is tracked, with full audit trails.

- Altogether, this process automates many key quality management principles. It expands the scope of what's possible with the teams you already have, improving labor efficiency while increasing quality coverage.

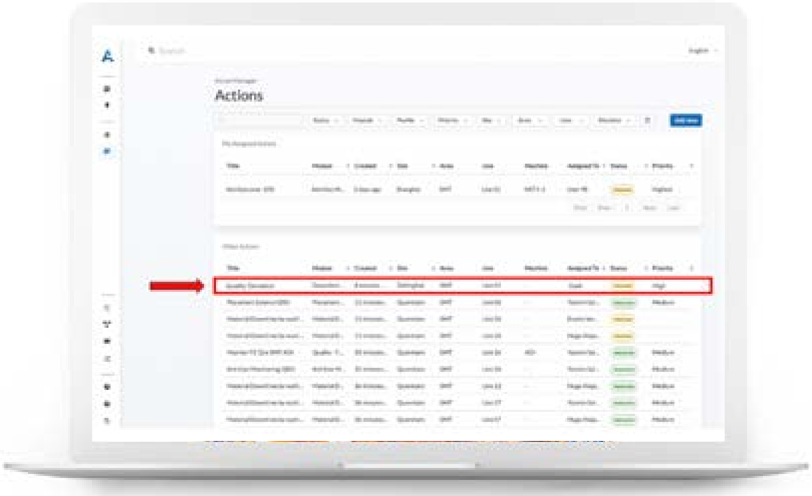
Example 1:

An email alert is sent to an engineer with the AI-generated root cause and recommended actions immediately visible.



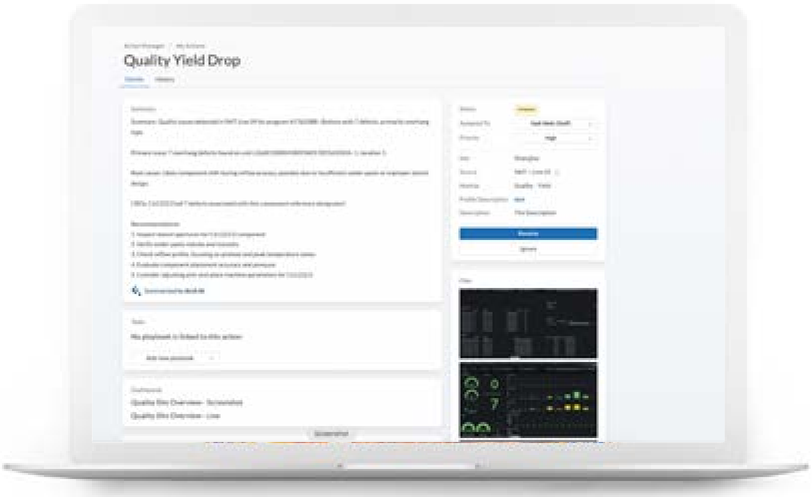
Example 2:

When an engineer views their assigned actions in the plant, they see an “intelligent action” generated due to a yield anomaly.



Example 3:

This nonconformance ticket automatically initiated an AI investigation into test machine data, including sensor readings, logs, and dashboard screenshots, enabling the AI to deliver a viable root cause and recommendations in near real time.



DMAIC in Action with Agentic AI

Define:

Map end-to-end flows, for example, from solder paste deposition through completed circuit board assembly to final test and packaging of an ADAS box.

Measure:

Ingest live Key Performance Indicators (KPIs) for areas of improvement and maintenance—yield, DPMU, downtime, and throughput—mapped via the factory, the physical assets and their utilization capacity, product routes, work order goals, and delivery capacity.

Analyze:

AI automatically runs root cause analysis to pinpoint drivers of deviations, downtimes, or delivery issues, whether caused by press parameter drift or a solder reflow problem.

Improve:

AI generates a guided action, such as reseating a feeder, calibrating a camera, changing sampling levels in test, or replacing a specific nozzle.

Use Case: Reducing Downtime from First Article Inspection (FAI)

Define – Identify Downtime Root Cause:

Using Arch's downtime root-causing capabilities, downtime Pareto charts were generated across the site. Arch AI tools revealed that the main contributor was excessive waiting time for First Article Inspection (FAI). Further analysis pinpointed the specific part numbers involved in repeated delays.

Measure – Quantify the Impact:

The system calculated the average downtime per part number caused by FAI-related delays and correlated this with production data. This allowed the manufacturer and Arch's success team to identify the top contributors where the cost of waiting was highest, especially for parts that consistently performed well in testing.

Analyze – Root Cause Verification:

Because of the potential impact, the manufacturer and Arch performed a detailed analysis to determine whether the FAI waiting time was justified. By reviewing historical quality results stored in the Arch system, they found that these specific part numbers had exceptionally high yield rates and almost zero failures. This strong correlation between quality and part number made it clear that FAI was redundant for these builds.

Improve – Eliminate Delay with Smart Quality Control:

The manufacturer removed the FAI waiting period for the identified part numbers by implementing a smart quality safeguard using Arch's Action Manager. A real-time alert was created to monitor the first units via Automated Optical Inspection (AOI). If any quality deviation was detected, the system would trigger an immediate escalation, ensuring no compromise on quality assurance. With this safeguard in place, the manufacturer could safely stop the practice of halting production for manual inspection.

Control:

The system auto-triggers alerts and CAPA hand-offs to lock in gains through closed-loop and human-in-the-loop actions.

Control – Validate Long-Term Performance:

To ensure the change was sustainable:

- They ran correlation analysis post-deployment using Arch tools to confirm no quality failures occurred in the first boards for the exempted part numbers.
- They verified a significant reduction in overall downtime related to FAI waiting, confirming the process change delivered measurable value.

Outcome:

Arch enabled an electronics component supplier to shift from static FAI rules to dynamic, data-driven controls. This resulted in a significant increase in machine availability and improved quality control: a clear example of CAPA in action, enhanced by AI.

AI-powered root cause analysis uncovered the true KPI impact of downtime. One major issue (manual inspection of first articles) was eliminated through Action Manager-triggered CAPAs, dramatically increasing line throughput without compromising quality control.

UNLEASHING EFFICIENCY

How a Leading EMS Provider Skyrocketed OEE with Arch

A global EMS provider used Arch to uncover root causes of downtime, revising inspection protocols and boosting OEE by 97% in just four months.

The Challenge

- **Low baseline performance:** SMT line availability as low as 19.6%, OEE at just 14.2%
- **Unnecessary stoppages:** Entire lines halted during first article inspections for quality checks automatable by action manager
- **Lack of visibility:** Root causes of inefficiency were not clearly understood nor capability of automated quality check

The Arch Approach

- **Monitored machine behavior in real time** across SMT lines
- **Identified excessive downtime** linked to manual inspection logic
- **Guided SOP changes** to balance quality control and throughput

THE IMPACT

140%

Improvement in machine availability
(from 19.6% to over 48%)

97%

Improvement in OEE
(from 14.2% to over 28%)

- Identified root cause of excessive downtime during first article inspections
- SOP changes reduced unnecessary line stoppages
- Insights delivered through real-time Arch Platform data

AI-Driven Cpk and Gauge R&R for Continuous Quality

In high-precision automotive manufacturing, the accuracy of measurements directly determines product quality and process control. Meeting and exceeding industry benchmarks, such as a Cpk of 1.67 or higher, requires deep visibility into critical parameters across diverse manufacturing steps.

Automotive manufacturers increasingly seek automated insights and actions that go beyond traditional SCADA and SPC systems. They want to bring AI into two critical pillars of quality engineering to answer:

Cpk

Are your processes capable and in control?

&

Gauge R&R

Are your measurements reliable and repeatable?

Traditional tools monitor thresholds and collect samples. With AI, manufacturers can move beyond that: automatically analyzing stability, diagnosing variation, and triggering actions within a single integrated loop.

Current Capability: Real-Time Cpk Monitoring with AI Context

Arch pulls live process parameters such as solder paste height, placement accuracy, and molding pressure, and automatically:

- Tracks statistical metrics (σ, mean shifts, trending)
- Detects subtle drifts and multivariate instability
- Triggers proactive alerts in Action Manager, including root cause analysis and AI-guided actions or operator-linked response playbooks

This goes far beyond SCADA alarms. Engineers no longer need to watch dashboards; Arch monitors them, interprets the data, and helps teams take action.

Emerging Capability: Live Gauge R&R from Real Production Data

By using direct shop-floor data, AI is transforming Gauge R&R from a manual, periodic lab exercise into a real-time validation layer:

- Ingests test results continuously from production lines
- Evaluates repeatability and reproducibility across shifts, stations, operators, and testers
- Automatically flags unstable instruments or inconsistent setups
- Initiates targeted CAPA tasks in Arch Action Manager for investigation or recalibration

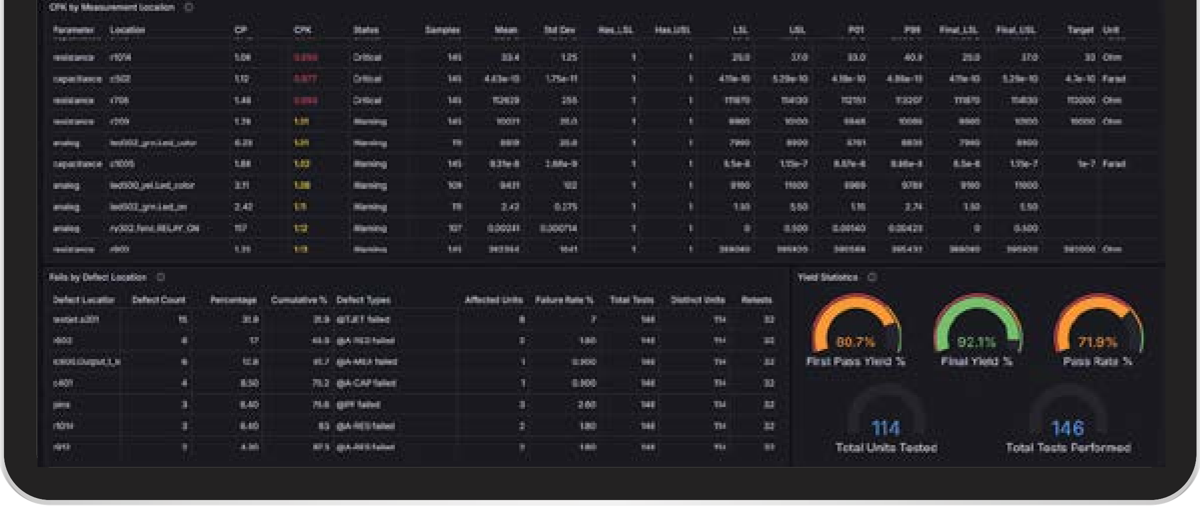
Example

In a high-volume testing station, Arch captures the same test performed by different operators or shifts. By comparing variation across testers (repeatability) and setups (reproducibility), Arch provides real-time visibility into whether measurement variation is masking true process shifts.

Strategic Value

- Reduces reliance on manual Gauge R&R events
- Increases frequency and coverage
- Enables tighter control over SPC thresholds and reduces false positives

Arch is building the modern digital quality stack for automotive engineers with real-time Cpk intelligence and continuous Gauge R&R validation, both seamlessly tied to automated actions. This enables faster issue resolution, higher yield, and greater confidence in data-driven process control, all within a single AI-enabled platform.



Cpk analysis automatically performed that can be used to trigger proactive alerts as well as be integrated into AI root cause & action plan chains.

Real-time Cpk and Gauge R&R data can now flow straight into FMEA, eliminating guesswork and turning risk management into a continuous, automated process.

From Static FMEA to a Live Risk Engine

While micro-downtimes seem insignificant in isolation, their cumulative impact can create a "death by a thousand cuts" scenario:

- **Data-Driven Risk Priority Number (RPN) Scoring –** Pull failure rates from test logs, defect codes, and downtime records, then feed them into RPN calculations in real time.
- **Guided Playbooks –** Arch reads your MES or SCADA dashboards, identifies the highest-risk failure modes, and delivers step-by-step mitigation guidance, from adjusting mold press parameters to refining SMT solder profiles.

This approach shifts FMEA from a static spreadsheet into a living guide that actively drives continuous improvement across electronics, metal, and plastic components.

Example from automotive electronics component manufacturing:

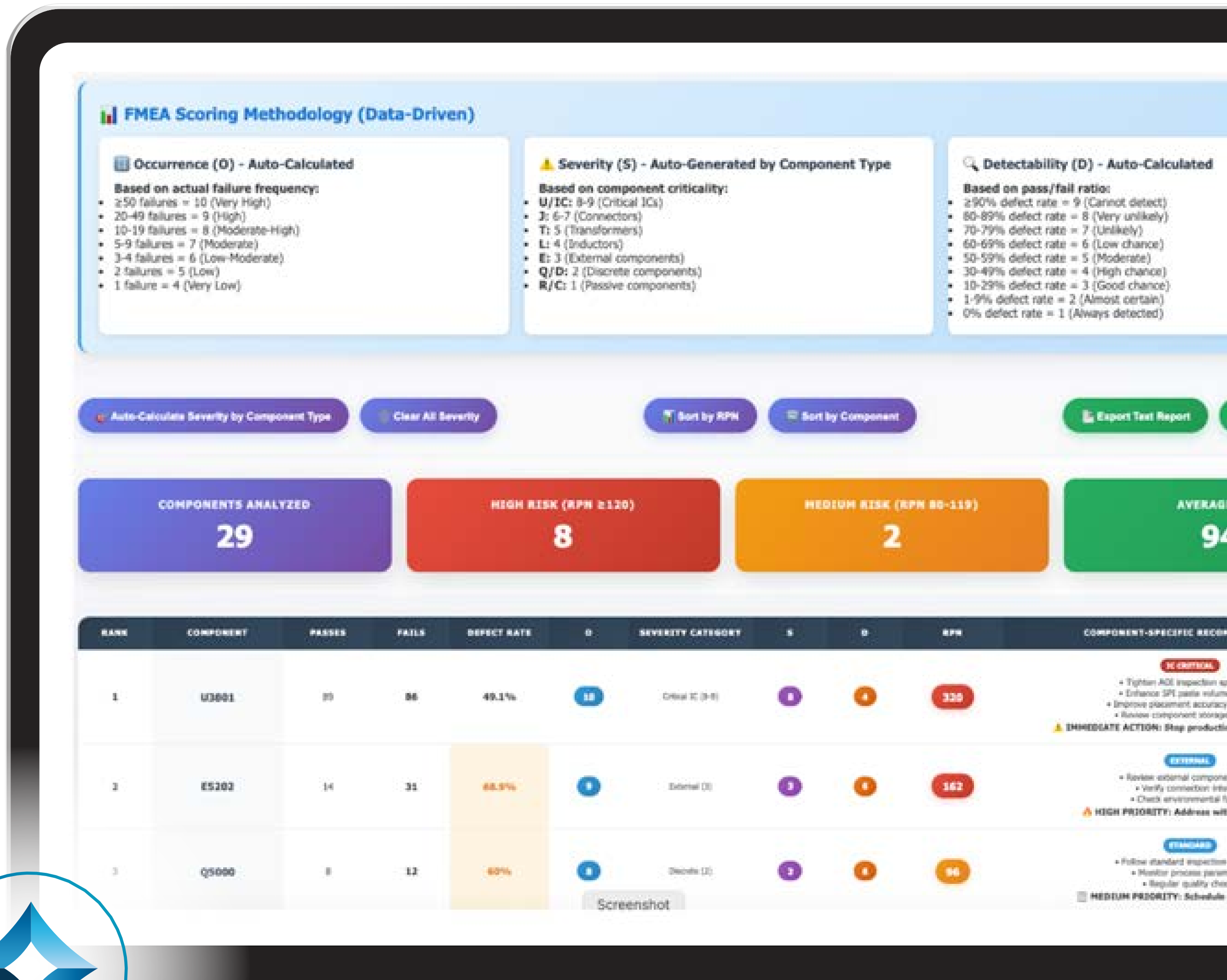
Background: Arch's Process Failure Modes and Effects Analysis (PFMEA) tool transforms real production failure data into actionable quality improvements. By using actual defect records from your production line, it automatically calculates risk priorities based on component failure frequencies and detection difficulty.

Capabilities:

- Automatically assigns severity ratings by defect type for each component
- Generates component-specific recommendations
- Flags critical issues requiring immediate attention, such as components with a 100% defect rate
- Provides tailored corrective actions for AOI, Solder Paste Inspection (SPI), and placement systems

Business Value: This data-driven approach enables better quality decisions, prioritizes engineering resources on the highest-impact issues, and provides clear action plans to reduce defect rates. It quantifies risk exposure, eliminates guesswork in process improvements, reduces warranty costs, improves customer satisfaction, and accelerates time-to-market by focusing corrective actions where they deliver maximum Return on Investment (ROI).
In short, it transforms reactive firefighting into proactive quality management.

AI-guided FMEA analysis using Arch data on a specific product



AI-generated interactive FMEA on structured product defects data

FMEA Analysis Report

Product: FE02-LAMU_LITE_256-BOT
Analysis Date: 7/20/2025, 12:56:42 PM
Data Source: Real Production Date – July 20, 2025

Executive Summary

Analysis Overview:
- Total Components Analyzed: 30
- High Risk Components (RPN ≥120): 9
- Components with 100% Defect Rate: 6
- Average RPN: 107

Critical Priority Actions

1. **J5700** - RPN: 441 | Defect Rate: 100%
2. **TRACKID** - RPN: 400 | Defect Rate: 86.3%
3. **U3801** - RPN: 320 | Defect Rate: 49.1%
4. **E8601** - RPN: 189 | Defect Rate: 100%
5. **U6600** - RPN: 189 | Defect Rate: 28.6%
6. **E5202** - RPN: 162 | Defect Rate: 68.9%
7. **E8600** - RPN: 147 | Defect Rate: 77.8%
8. **E5200** - RPN: 126 | Defect Rate: 62.5%
9. **E5602** - RPN: 126 | Defect Rate: 75%
10. **C6608** - RPN: 63 | Defect Rate: 100%

Detailed FMEA Analysis

Rank	Component	Type	Passes	Fails	Defect Rate	O	S	D	RPN	Recommendations
1	**J5700**	Connector	0	6	100%	7	7	9	441	CONNECTOR • Check placement accuracy calibration • Tighten solder paste inspection • Verify connector orientation • Enhanced pre-reflow inspection ⚠ ...
2	**TRACKID**	Transformer	22	138	86.3%	10	5	8	400	TRANSFORMER • Check orientation and polarity • Verify placement pressure • Monitor thermal profile ⚠ IMMEDIATE ACTION: Stop production for this compo...
3	**U3801**	Critical	89	86	49.1%	10	8	4	320	IC CRITICAL • Tighten AOI inspection spec limits • Enhance SPI paste volume control • Improve placement accuracy verification • Review component stora...
4	**E8601**	External	0	6	100%	7	3	9	189	EXTERNAL • Review external component specs • Verify connection integrity • Check environmental factors 🔥 HIGH PRIORITY: Address within 24-48 hours...
5	**U6600**	Critical	15	6	28.6%	7	9	3	189	IC CRITICAL • Tighten AOI inspection spec limits • Enhance SPI paste volume control • Improve placement accuracy verification • Review component stora...
6	**E5202**	External	14	31	68.9%	9	3	6	162	EXTERNAL • Review external component specs • Verify connection integrity • Check environmental factors 🔥 HIGH PRIORITY: Address within 24-48 hours...
7	**E8600**	External	2	7	77.8%	7	3	7	147	EXTERNAL • Review external component specs • Verify connection integrity • Check environmental factors 🔥 HIGH PRIORITY: Address within 24-48 hours...
8	**E5200**	External	3	5	62.5%	7	3	6	126	EXTERNAL • Review external component specs • Verify connection integrity • Check environmental factors 🔥 HIGH PRIORITY: Address within 24-48 hours...
9	**E5602**	External	1	3	75%	6	3	7	126	EXTERNAL • Review external component specs • Verify connection integrity • Check environmental factors 🔥 HIGH PRIORITY: Address within 24-48 hours...
10	**E3411**	External	2	3	60%	6	3	6	108	EXTERNAL • Review external component specs • Verify connection integrity • Check environmental factors 📋 MEDIUM PRIORITY: Schedule corrective action...
11	**Q5000**	Discrete	8	12	60%	8	2	6	96	STANDARD • Follow standard inspection protocols • Monitor process parameters • Regular quality checks 📋 MEDIUM PRIORITY: Schedule corrective action...
12	**C6608**	Passive	0	7	100%	7	1	9	63	PASSIVE • Standard process monitoring • Periodic placement verification • Component value verification...
13	**C2029**	Passive	0	5	100%	7	1	9	63	PASSIVE • Standard process monitoring • Periodic placement verification • Component value verification...

Component-Specific Action Guidelines

IC Components (U-prefixed):
- Tighten AOI inspection spec limits for placement accuracy
- Enhance SPI paste volume control and monitoring
- Implement real-time placement verification

Connectors (J-prefixed):
- Check and calibrate placement accuracy systems
- Tighten solder paste inspection parameters
- Enhanced pre-reflow connector orientation verification

Passive Components (R/C-prefixed):
- Standard process monitoring and control
- Periodic placement and value verification

Other Components:
- Component-specific inspection protocols
- Enhanced process parameter monitoring

Methodology

Occurrence (O): Auto-calculated from actual failure frequency in production data
Severity (S): Auto-assigned based on component type criticality
Detectability (D): Calculated from pass/fail ratios - higher defect rates indicate lower detectability
RPN: Risk Priority Number = Severity × Occurrence × Detectability

AI-generated FMEA report

AI delivers the most value when it's trained on your exact processes and lines, transforming from a generalist into a process-specific expert.

Making AI an Expert on Your Production Line

No two production lines are identical. AI-driven analysis and workflows allow pre-trained AI, equipped with general manufacturing skills such as downtime and scrap root cause analysis, to operate as an expert on specific processes and lines. Below are examples of high-demand use cases.

Electronics & Assembly

- Process downtime labeling and guidance informed by job and route context from MES, plus detailed data from machine protocols and operator UIs
- Material downtime tracking and part or material identification using process-specific logic for rapid Mean Time to Repair (MTTR)
- Recipe optimization and changeover analytics for high-mix environments
- Analysis across vision systems, environmental data, and functional test results for hybrid linear and batch routes to pinpoint precise quality root causes

Metal Press & Computer Numerical Control (CNC) Operations

- Press downtime labeling by parsing PLC data and logs with job context
- Machining tolerance drift detection, SPC monitoring, and Process Capability Index (Cpk) parameter analysis
- AI integration with SPC principles to enable predictive and prescriptive actions

Plastic Injection Molding

- Real-time mold pressure and temperature monitoring feeding directly into CAPA workflows
- Cushion volume, cavity-level analysis, process window monitoring, and process-specific insights
- Integrated analysis across machine PLC, SCADA, MES, and third-party expert systems like RJG CoPilot

The fastest path to AI value isn't a new data lake, it's connecting directly to the systems and dashboards you already rely on.

Fast-Tracking AI Value from Your Existing Data and Dashboards

In today's fast-paced automotive ecosystem, speed and flexibility are critical. A common question is whether a factory has the maturity for an AI-based system. In general, facilities with some level of automation (not fully manual work), either an MES or SCADA system (with mostly digitized work instructions and routes), and a Computerized Maintenance Management System (CMMS) are ready for AI.

Contrary to popular opinion, it is not necessary (and sometimes even less favorable) to have all data stored in a single enterprise data lake. In many cases, having data accessible at the machine or system level, at the "point of work," is more effective.

Library + AI-Built Connectors Ready in Minutes

- Arch uses a growing library of pre-built connectors and AI-coding agents capable of writing or adjusting connectors for new equipment. For example, a new tester can go from log output validation to a shipped connector in under 10 minutes. If your test data is already stored in a global system, that can be helpful, but only marginally more so than simply identifying and connecting all testers. If your global setup causes data loss, connecting AI directly to the source files and letting the system process them in native formats can yield better results.

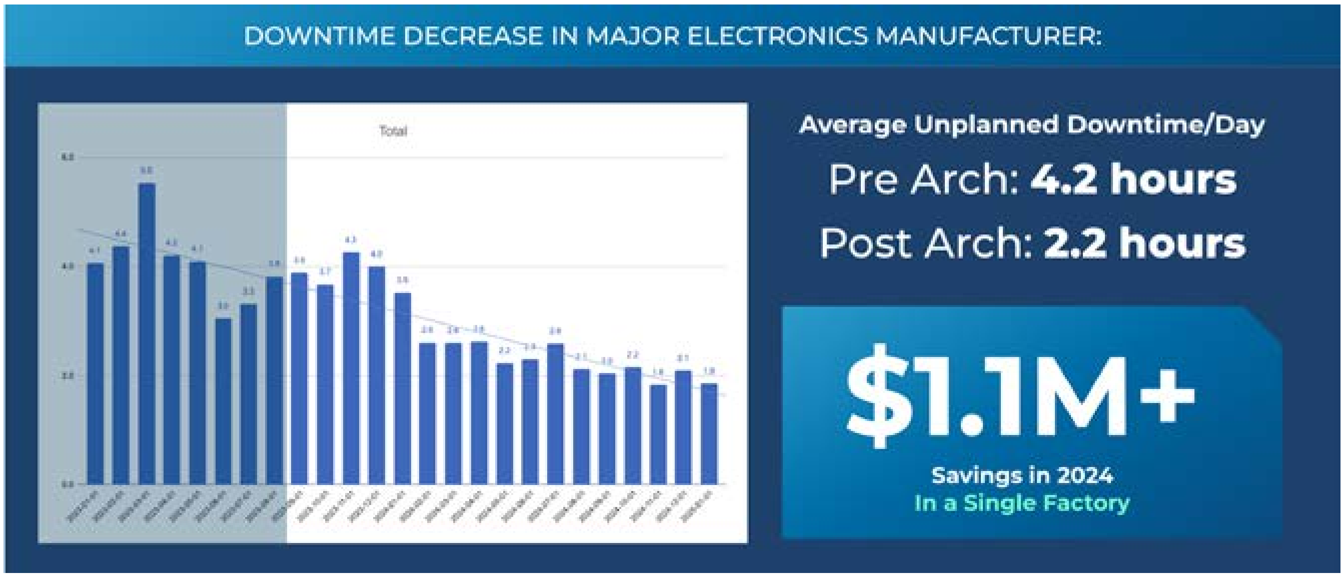
Dashboard-Reading AI

- Arch AI can directly access dashboards and Human-Machine Interfaces (HMIs) from machines, SCADA, MES, third-party, and home-built systems. It interprets these just as humans do, combining dashboard context with the data extracted. Arch AI is increasingly pre-trained to understand third-party tools and can be rapidly trained for home-built systems.

  Often, allowing AI to work directly with your equipment and system data "in context" is more effective than feeding it a partially unified dataset in a master data lake. In many cases, the original, purpose-built systems provide context that enables more accurate AI reasoning. The key is having access to these systems, not necessarily consolidating all data elsewhere.

Agentic Workflows

- Auto-trigger root cause investigations on threshold breaches
- Assign smart tickets with incident context, severity, and next-step guidance
- Enable AI to work across linked data sources and tools for deeper root cause analysis and task automation
- Close CAPA and FMEA loops, ensuring every corrective measure is verified



An automotive assembly site already had downtime detection and categorization tools in place, but staffing limitations restricted their impact. In the white-shaded area of the chart, AI-enhanced downtime root cause tools were activated. With the same team, the site was able to quickly identify additional causes, dedicate time to resolving them, and address clusters of 'micro downtimes' that previously went unlabeled. This resulted in more than $1 million in annual productivity improvements, achieved using existing staff, equipment, and dashboards—empowered by AI-driven root cause analysis.

The journey from recognizing operational challenges to delivering measurable results with AI starts with a clear, practical plan—and the tools to execute it quickly.

FROM INSIGHT TO ACTION:

Your AI Implementation Roadmap

Automotive manufacturers face common challenges in quality and production, whether producing downstream components such as electronics, metal, and plastic parts or working upstream in sub-assembly and final assembly. AI, when given direct access to shop-floor systems, can deliver outstanding results.

Your Action Plan:

1. **Baseline Critical Metrics**
   Identify all key processes that drive plant performance. Focus on those with high dependency on indirect labor for quality, DPMU, throughput, and uptime.

2. **Activate Data-Driven FMEA or Downtime Root Cause Analysis (RCA)**
   Connect Arch to your existing dashboards or data downloads.. Score your top failure or downtime modes to identify rapid ROI opportunities based on the data you already have.

3. **Pilot with In-Library or AI-Built Data Ingestion**
   Select high-impact sites and lines where data and dashboards are already available. Enable data ingestion in under a week from a significant footprint of your operation. This setup runs in a secure, private environment and is non-disruptive to the line. During the pilot, it can run in full parallel with current processes, or focus on a selected subset of production where AI suggestions and root cause findings are actively tested.

4. **Scale via Action Manager**
   Embed CAPA and smart-ticket workflows with AI root cause capabilities into your processes. Scale one workflow at a time to capture value and spread best practices across your organization.

Ready to drive automotive manufacturing excellence?

Identify all key processes that drive plant performance. Focus on those with high dependency on indirect labor for quality, DPMU, throughput, and uptime.

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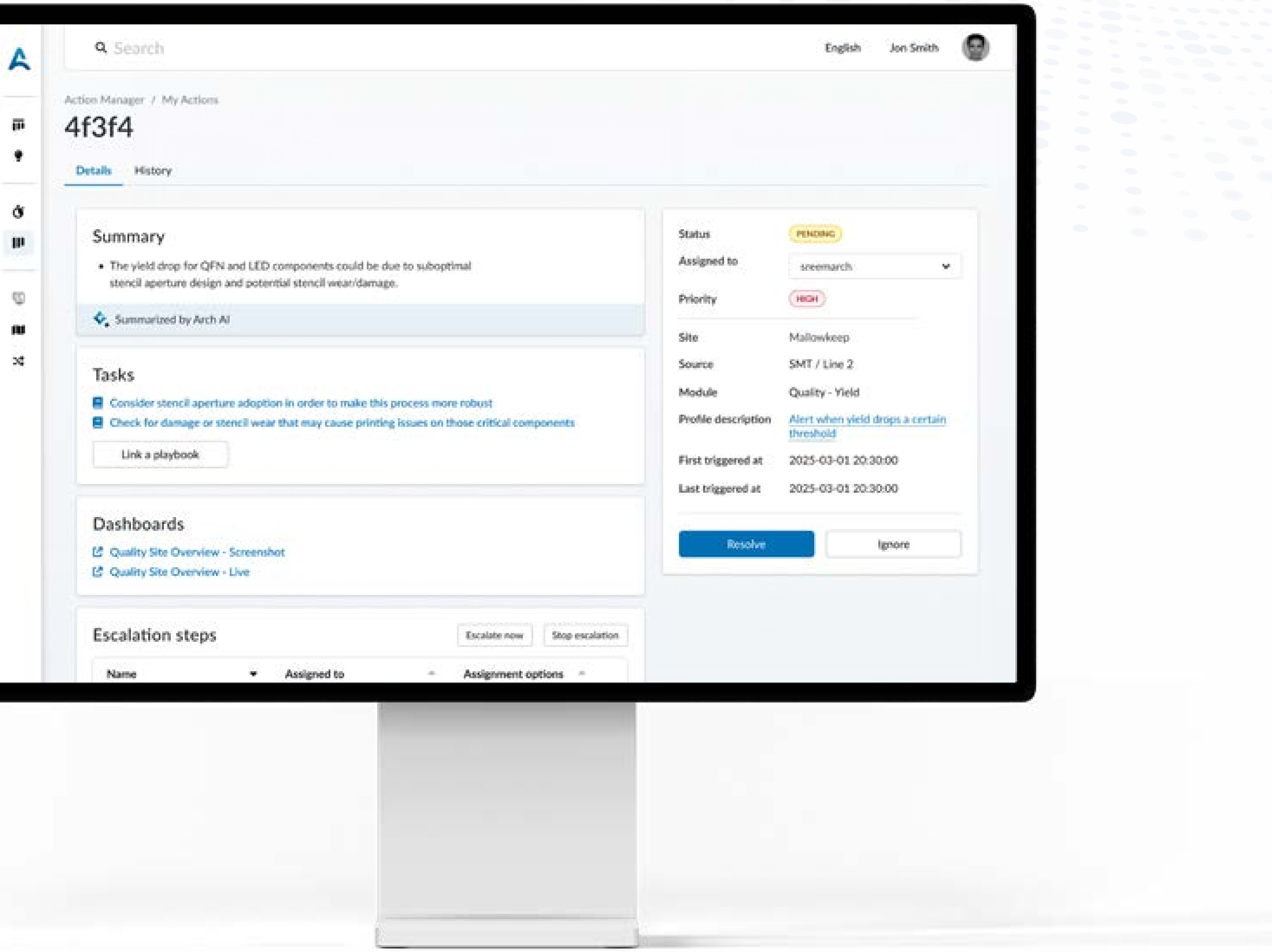

ABOUT ARCH SYSTEMS

Arch Systems transforms factory intelligence with AI-driven solutions that help manufacturers optimize operations, reduce downtime, and maximize efficiency. Purpose-built for manufacturing by manufacturing and data experts, Arch AI acts as an expert copilot—reading dashboards, synthesizing data, and delivering real-time, prescriptive guidance to operators, engineers, and executives.

Unlike traditional dashboards that require experts to interpret, Arch AI provides actionable intelligence without costly infrastructure overhauls. By leveraging AI to unlock insights from existing factory systems, Arch enables manufacturers to scale expertise, improve OEE, and drive measurable impact on the shop floor.

Book a demo with our experts today!

ABOUT THE AUTHORS

Andrew Scheuermann is working with top-tier global manufacturers to transform electronics and discrete manufacturing. Previously named Forbes 30 under 30, Andrew has published over 20 scientific papers in the fields of semiconductor electronics, electronics manufacturing, and renewable energy. He holds a Ph.D. in Materials Science from Stanford where he fabricated semiconductor machines and made record-breaking semiconductor chip designs for artificial photosynthesis.

Gadi Meik is the Senior Director of Application Strategy at Arch Systems, where he helps global manufacturers unlock real-time, predictive insights through advanced analytics and scalable AI solutions. He brings 25 years of experience driving innovation at Motorola and Flex, where he led global engineering programs and collaborated with startups to accelerate digital transformation in electronics manufacturing.

Gadi holds a BA in Mechanical Engineering and an MA in Industrial Engineering and is a Certified Lean Six Sigma Black Belt™