INTELLIGENCE BRIEFING
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Six Months of AI in the SOC: Practitioner Findings on Real-World Deployment Outcomes

SECURITY ANALYSIS | **LOW** | CVSS 5.0

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Severity	LOW
CVSS Base Score	5.0
Affected Products	AI-assisted SOC tooling (vendor-agnostic; specific products not identified in source)
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Executive Summary

A six-month practitioner study of AI tool deployments in live SOC environments found a measurable gap between vendor claims and operational reality, with AI-assisted detection and triage producing outcomes that required significant human correction and workflow adjustment. For CISOs, the findings signal that AI augmentation in security operations is not a drop-in capability: integration debt, alert quality issues, and analyst trust deficits are recurring friction points that affect return on investment. The study reinforces a broader industry pattern in which AI tooling adoption outpaces organizational readiness to absorb, validate, and operationalize machine-generated outputs.

Technical Analysis

Two practitioners embedded in live SOC environments over six months documented where AI-assisted tooling delivered on its promise and where it failed operationally. The source article, published by Dark Reading, reports practitioner-grounded findings on AI-assisted detection, alert triage, and operational integration, though specific vendor products are not identified and granular findings are not independently verifiable from the raw data provided.

The core tension the report surfaces is one familiar to SOC engineers: AI tools trained on generalized threat data often underperform against the specific telemetry profile of the environment they are deployed in. Tuning cycles that vendors characterize as short frequently extended into weeks or months in practice. Alert triage assistance, one of the primary use cases marketed to SOC buyers, reportedly required analyst review at rates that undermined the efficiency gains vendors projected.

From an operational standpoint, the findings align with patterns documented in industry literature on detection engineering. MITRE ATT&CK-aligned detection logic requires environment-specific baseline data to generate actionable signals; AI models that lack that grounding produce noise at high volume. When analysts lose confidence in automated triage recommendations, they revert to manual workflows, negating the capacity gains the tooling was procured to deliver.

The study also touches on integration friction: AI tooling inserted into existing SIEM and SOAR ecosystems introduced dependency complexity that created new operational risk rather than reducing it. This is consistent with observations from SANS and CIS guidance on SOC toolchain consolidation, which caution that tool proliferation without process alignment degrades analyst effectiveness.

The absence of specific product identification in the source material limits attribution of findings to any vendor. Security teams should treat this as a methodology signal rather than a product indictment. The practitioner framing, grounded in live environment observation rather than lab testing, gives the findings credibility that vendor-commissioned studies rarely carry, but the T3 source tier and single-publication basis warrant caution before drawing firm conclusions.

Action Checklist

1. Step 1: Assess current AI tooling deployment, inventory all AI-assisted detection, triage, and SOAR automation active in your SOC and document the original vendor performance claims made at procurement.
2. Step 2: Measure actual triage override rates, pull analyst correction and override metrics for AI-generated triage recommendations over the past 90 days; a high override rate indicates model drift or poor environment fit.
3. Step 3: Audit tuning cycle status, confirm whether AI detection models have been tuned against your environment's specific telemetry baseline or are running on vendor-default logic; untuned models are a primary source of alert noise.
4. Step 4: Review integration dependencies, map AI tooling touchpoints within your SIEM and SOAR pipeline to identify single points of failure or latency introduced by AI processing layers.
5. Step 5: Brief SOC leadership and procurement stakeholders, present actual performance data against vendor claims; use practitioner findings like this study to frame realistic expectations for ongoing AI tooling evaluation cycles.

IR / Forensic Enrichment

Triage Priority	STANDARD
Escalation Criteria	Escalate to CISO and procurement if measured override rate exceeds 50%, if AI-related tool failures cause undetected security events (identified retrospectively), or if vendor tuning support has not been responsive within 30 days of engagement.
Recovery Notes	After SOC leadership and vendor negotiations conclude, implement chosen remediation: update AI models with environment-specific baselines, integrate AI outputs into analyst workflow with explicit confidence scoring and rationale logging, establish 30-day review cadence to track override rate trending, and document new AI tooling SLAs (latency, availability, false positive thresholds) in SOC runbooks and on-call documentation.

Forensic Artifacts	SIEM alert database and metadata logs (detection rule IDs, timestamps, confidence scores, AI-assigned categories) for past 90 days | SOAR/ticketing system transaction logs (analyst actions, overrides, corrections, reasoning notes) with user and timestamp fields | AI model configuration files and version control history (vendor defaults vs. environment-specific tuning parameters) | Network traffic captures between SIEM, AI service, and SOAR showing latency, error rates, and integration failure instances | Procurement documentation, vendor performance SLAs, and email records of tuning requests and vendor responses

Per-Action IR Details

Step 1: Assess current AI tooling deployment — inventory all AI-assisted detection, triage, and SOAR automation active in your SOC and document the original vendor performance claims made at procurement.

NIST Phase: Preparation

Reference: NIST 800-61r3 §2.1 (Preparation phase: tools and resources)

Controls: NIST SI-12 (Information Handling and Retention), CIS 8.1 (Establish and maintain detailed asset inventory)

Compensating: Manually audit active detection rules and automation workflows: (1) Query your SIEM for all rules with 'AI' or 'ML' tags in metadata; (2) Export procurement documents and email chains with vendor performance claims into a spreadsheet; (3) Use grep/find to locate AI model config files in your SOAR codebase (e.g., grep -r 'model_version\|vendor_claim' /path/to/soar/configs); (4) Interview SOC leads on paper to document what tooling they believe is AI-powered vs. what actually is.

Evidence: Before inventory: (1) Capture SIEM rule repository export with timestamps (vendor baseline vs. current state); (2) Export procurement file metadata (dates, vendor claims, acceptance criteria); (3) Screenshot active SOAR playbooks and their AI integration points; (4) Preserve email chains discussing AI tool onboarding and expected performance metrics from initial vendor presentations.

Step 2: Measure actual triage override rates — pull analyst correction and override metrics for AI-generated triage recommendations over the past 90 days; a high override rate indicates model drift or poor environment fit.

NIST Phase: Detection Analysis

Reference: NIST 800-61r3 §3.2.2 (Analysis: event analysis and investigation)

Controls: NIST CA-7 (Continuous Monitoring), CIS 6.2 (Activate audit logging)

Compensating: Without a dedicated analytics platform: (1) Export SOAR ticket database (CSV or JSON) for past 90 days with fields: ticket_id, ai_recommendation, analyst_action, override_flag, resolution; (2) Use SQLite or a spreadsheet to calculate override_rate = (tickets_where_analyst_action != ai_recommendation) / total_tickets; (3) Segment by rule/detection type using text matching on ticket descriptions; (4) Cross-reference with SIEM alert volume logs to identify which detection rules have the highest override rates; (5) Document timestamps of overrides to correlate with any known environmental changes (network upgrades, log source reconfigs, etc.).

Evidence: Before measuring: (1) Export full SOAR/ticketing system transaction log for past 90 days with user_id, timestamp, action_taken, ai_recommendation fields; (2) Capture SIEM detection rule versions and modification dates to correlate rule changes with override spikes; (3) Preserve alert metadata including confidence scores assigned by AI, alert source, and analyst notes; (4) Screenshot or export any AI vendor dashboards showing model performance metrics during this period (if available); (5) Document any SOC staffing changes, tool outages, or known environment drift during the 90-day window.

Step 3: Audit tuning cycle status — confirm whether AI detection models have been tuned against your environment's specific telemetry baseline or are running on vendor-default logic; untuned models are a primary source of alert noise.

NIST Phase: Preparation

Reference: NIST 800-61r3 §2.1 (Preparation: tools configuration and tuning)

Controls: NIST SI-4(4) (System Monitoring - automated alert generation), CIS 6.5 (Define and maintain a baseline configuration)

Compensating: Without vendor tuning services: (1) Extract AI model config files from your tooling (location varies by product; check /etc/soar/ml_config or similar); (2) Compare model parameters (thresholds, weights, baseline feature sets) against vendor documentation defaults using diff tools; (3) Query your SIEM for baseline traffic patterns over 30 days pre-AI deployment vs. 30 days post-deployment; calculate alert volume increase/decrease by detection rule; (4) Manually review a random sample of 50 alerts marked as AI-triaged and document false positive rate (alert does not match analyst remediation); (5) If override rate >40%, the model is likely untuned—document this finding and begin manual threshold adjustment in test environment.

Evidence: Before auditing: (1) Capture AI model configuration files and version metadata; (2) Export SIEM baseline telemetry (normal traffic patterns, typical alert volumes by rule type) from 30 days before AI deployment; (3) Preserve SIEM alert threshold settings and any rule tuning documentation created post-deployment; (4) Screenshot vendor-provided model documentation showing default parameter values; (5) Export analyst override/correction logs with reasoning notes for correlation with specific untuned detection rules.

Step 4: Review integration dependencies — map AI tooling touchpoints within your SIEM and SOAR pipeline to identify single points of failure or latency introduced by AI processing layers.

NIST Phase: Preparation

Reference: NIST 800-61r3 §2.2 (Preparation: documentation and tools assessment)

Controls: NIST CP-2 (Contingency Planning), CIS 8.5 (Manage Lifecycle of System and Information Assets)

Compensating: Without enterprise architecture tools: (1) Manually trace data flow: start at SIEM alert generation → document each API call or webhook to AI service → trace output back to SOAR ingestion; (2) Use network monitoring (tcpdump, Wireshark) to capture SIEM-to-AI and AI-to-SOAR traffic for 1 hour during peak SOC activity; measure latency and packet loss; (3) Query SIEM/SOAR logs for error messages containing 'timeout', 'connection refused', or AI service names; calculate percentage of failed AI processing calls; (4) Create a simple dependency diagram on paper or in a text file: list each AI tooling component, its inputs (SIEM feeds), outputs (SOAR actions), and fallback behavior if it becomes unavailable; (5) Test failover manually: temporarily disable AI service and confirm SIEM and SOAR continue operating (with degraded capability).

Evidence: Before mapping: (1) Capture network traffic between SIEM and AI service and between AI service and SOAR (use tcpdump: tcpdump -i any -w siem_to_ai.pcap host); (2) Export SIEM and SOAR application logs for 24 hours to identify any errors related to AI processing; (3) Preserve API documentation and integration code (e.g., SOAR webhook payloads) that shows expected vs. actual AI response times; (4) Screenshot SIEM/SOAR configuration pages showing AI service endpoints and authentication tokens (redact sensitive values, preserve structure); (5) Document current network latency baseline between SIEM, AI service, and SOAR using ping and traceroute.

Step 5: Brief SOC leadership and procurement stakeholders — present actual performance data against vendor claims; use practitioner findings like this study to frame realistic expectations for ongoing AI tooling evaluation cycles.

NIST Phase: Post Incident

Reference: NIST 800-61r3 §4 (Post-Incident Activities: lessons learned and process improvement)

Controls: NIST IR-6 (Incident reporting), CIS 17.1 (Establish a disciplined, documented process for communication)

Compensating: No tools required—this is a governance communication task: (1) Compile metrics from Steps 1–4 into a one-page summary (AI tool inventory, override rate %, model tuning status, integration latency in ms, failures per 1000 alerts); (2) Create a simple table comparing vendor claims (from procurement docs) vs. measured results; highlight gaps >10%; (3) Draft talking points referencing this study and 2–3 peer organizations with similar findings (published case studies, vendor review sites, industry reports); (4) Schedule a 30-minute briefing with CISO, SOC manager, and procurement lead; distribute summary 24 hours before meeting; (5) Propose next steps: either vendor tuning engagement, third-party validation assessment, or tool replacement evaluation cycle.

Evidence: Before briefing: (1) Preserve all measurement data and logs from Steps 1–4 in read-only format (PDF or locked spreadsheet); (2) Collect vendor response times to any tuning requests submitted during the past 6 months (email trails, support tickets); (3) Document any incident response impacts traced to AI tool failures or false positives

(ticket references, timeline); (4) Export peer benchmark data if available (vendor reports, industry surveys) comparing AI performance across organizations; (5) Capture SOC analyst feedback on AI tooling (via survey or interview notes) to include sentiment alongside metrics.

Detection Guidance

This story does not describe an attack campaign, so traditional IOC-based detection is not applicable. The relevant audit surface is operational and architectural.

SOC managers should examine analyst workflow telemetry for signs of AI tool abandonment: a measurable increase in manual triage activity after an AI tool was deployed, rising mean time to triage despite automation investment, or analyst feedback indicating low confidence in automated recommendations. These are behavioral signals of integration failure.

For teams running AI-assisted detection, review SIEM correlation rule suppression logs to identify whether AI-generated recommendations are quietly suppressing alerts that human analysts would have escalated. False negative risk, cases where AI confidence scores caused alerts to be deprioritized or dismissed, is harder to measure than false positive volume but carries greater operational consequence.

Governance teams should audit vendor SLAs and performance benchmarks written into AI tooling contracts against documented operational outcomes. Where gaps exist, contractual remediation or re-scoping of tool use cases may be warranted.

Organizations evaluating new AI SOC tooling should require vendor proof-of-concept deployments using their own telemetry rather than vendor-supplied datasets, and should define explicit performance thresholds, false positive rate, triage accuracy, tuning timeline, as procurement conditions.

Framework Mappings

ISO-27001-2022

- **A.8.8** — Management of technical vulnerabilities
- **A.5.21** — Managing information security in the ICT supply chain

SOC2-TSC

- **CC9.2** — Manages risks associated with vendors and business partners

NIST-800-53R5

- **SI-4** — System Monitoring

CIS-V8

- **8.2** — Collect Audit Logs

NIST-CSF-2

- **DE.CM-01** — Networks and network services are monitored

Sources

Source	URL	Tier
Security News	https://www.darkreading.com/cybersecurity-operations/ai-soc-go-wrong	T3
	https://www.darkreading.com/cybersecurity-operations/ai-soc-go-wrong	T3
In the context of a CVE, what does "unspecified vectors" mean?	https://security.stackexchange.com/questions/82997/in-the-context-o...	T3
What Is a Security Vulnerability and How It Works	https://www.picussecurity.com/resource/glossary/what-is-a-security-...	T3
Vulnerability Scans: Why do both authenticated and unauthenticated ...	https://www.reddit.com/r/cybersecurity/comments/o0fdrv/vulnerabilit...	T3

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