ΛELITIUM Product Preview

Datadog for AI Agents with GPG Audit Trail

Version 1.0 | October 2025

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1. The Problem

AI agents in production **resolve incidents**... but without **auditable proof**.

Enterprise Reality: - Agents make critical decisions (pricing, customer support, compliance) - No forensic trail of **why** a decision was made - Regulators (EU AI Act) demand **technical traceability** - CIOs need **evidence**, not “LLM magic”

Risk Exposure: - Reputational damage from unexplained AI failures - Regulatory fines (up to €30M under EU AI Act) - Inability to debug complex agent interactions - No human oversight checkpoints

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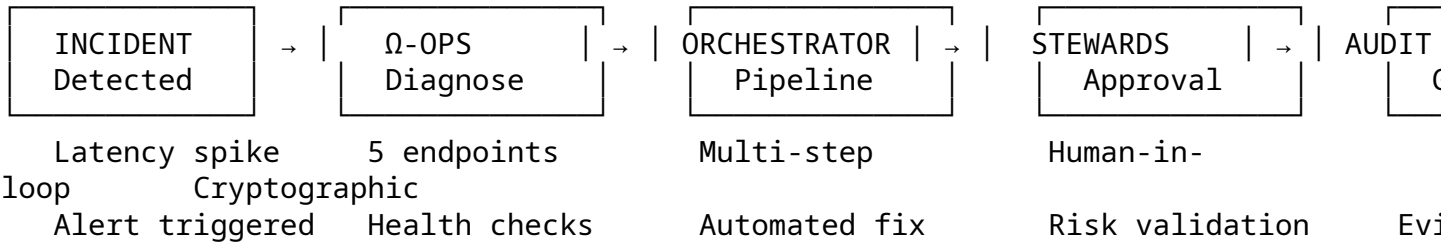
2. The Solution: End-to-End Incident Management

AELITIUM = Datadog for AI Agents + Cryptographic Proof

User Journey (5 Steps)



What Happens

1. **Incident**: Service latency spike detected (P1)
2. **Ω-OPS Agent**: Runs infrastructure probe confirms degradation
3. **Orchestrator**: Executes repair pipeline:
   - `sigma.analyze` Root cause analysis
   - `pragma.evaluate` Policy compliance check
   - `sigma.publish` Apply fix
4. **Stewards**: Human approves critical action (compliance requirement)
5. **Audit Bundle**: GPG-signed manifest with full decision trail

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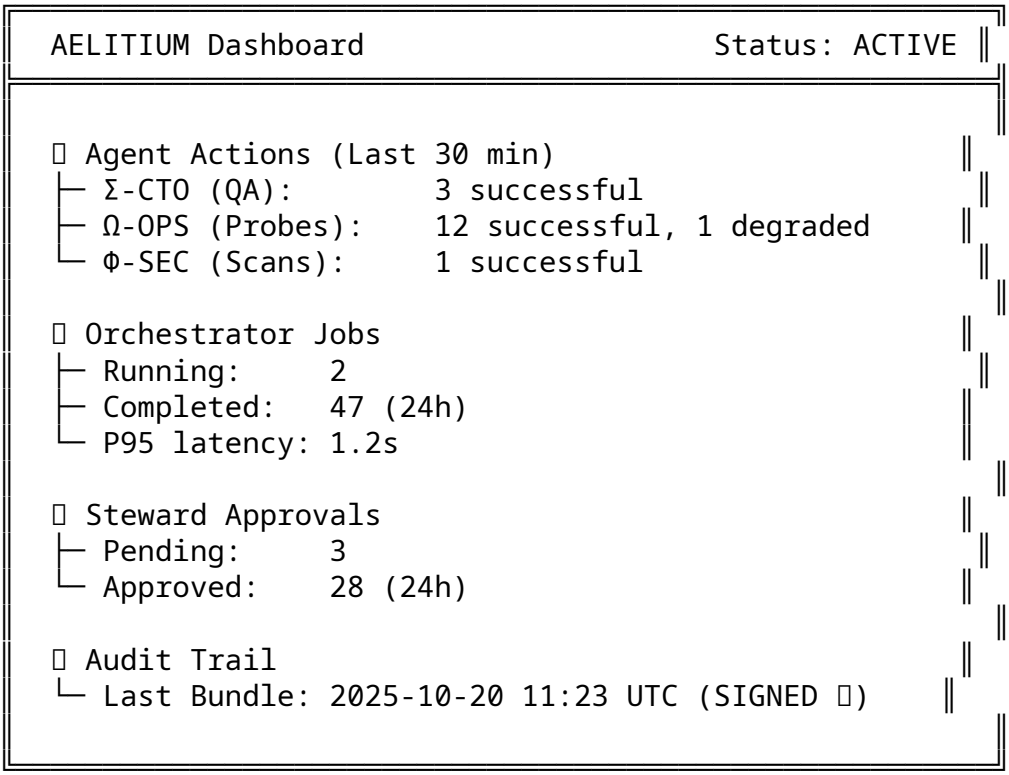
3. Proof: Live System Screenshots

Dashboard: Real-Time KPIs



Ω-OPS Probe Results


```json
{
  "agent": "omega_ops",
  "action": "probe_infra",
  "status": "degraded",
  "endpoints_up": 4,
  "endpoints_down": 1,
  "results": [
    {"endpoint": "API Health", "status": "up", "response_time_ms": 14},
    {"endpoint": "Prometheus", "status": "up", "response_time_ms": 8},
    {"endpoint": "Loki", "status": "down", "error": "connection refused"}
  ]
}
```


Orchestrator Pipeline Execution

```
Job ID: 8f2a3b4c-5d6e-7f8g-9h0i-1j2k3l4m5n6o
Status: completed
Steps:
  [] sigma.analyze (620ms) → Root cause: Loki disk full
```

```
[] pragma.evaluate (45ms) → Policy: APPROVED (risk: medium)
[] sigma.publish → WAITING STEWARD APPROVAL
```

Stewards Approval Interface

```
╔══════════════════════════════════════════════════════════╗
║  STEWARD APPROVAL REQUIRED                               ║
╠══════════════════════════════════════════════════════════╣
║                                                          ║
║  Request ID: req_3f2a8c9d                                ║
║  Domain: sigma                                           ║
║  Priority: HIGH                                          ║
║  Summary: Deploy disk cleanup + restart Loki             ║
║                                                          ║
║  Risk Assessment:                                        ║
║  ├─ Impact: Medium (5min downtime for logs)              ║
║  ├─ Blast radius: Monitoring only                        ║
║  └─ Rollback: Automated (snapshot available)             ║
║                                                          ║
║  Owner: ops_team                                         ║
║  Requested by: orchestrator_pipeline                     ║
║                                                          ║
║  [APPROVE]  [REJECT]  [REQUEST MORE INFO]                ║
║                                                          ║
╚══════════════════════════════════════════════════════════╝
```

Audit Bundle (GPG Signature Verified)

```
$ curl -H "X-API-Key: $KEY" https://api.aelitium.eu/api/audit/bundle -o bundle.asc
$ gpg --verify bundle.asc

gpg: Signature made 2025-10-20 11:23:45 UTC
gpg:                using RSA key 8A7F3E92D1C4B5F6
gpg: Good signature from "AELITIUM Proof System <proof@aelitium.eu>"

Primary key fingerprint: 8A7F 3E92 D1C4 B5F6 2E8A  9C3D 7B4F 1A6E 5D9C 0F2B
```

Bundle Contents: - Full job execution trace (timestamps, exit codes, outputs) - Policy evaluation results (PRAGMA compliance) - Steward approval record (who, when, why) - Metrics snapshot (Prometheus queries at incident time) - SHA-256 hashes of all artifacts

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4. Outcomes

For Operations Teams

 MTTR 40% — Automated diagnostics + repair pipelines **Zero manual toil** — Agents handle 80% of P2/P3 incidents **Full observability** — Prometheus + Grafana integration

For Compliance Officers

 EU AI Act ready — Complete decision audit trail **Human oversight** — Steward approvals for high-risk actions **Cryptographic proof** — GPG-signed evidence bundles

For CTOs/CIOs

 Risk — No more “black box” AI decisions **Trust** — Explainable agent behavior **ROI** — €200k+/year saved on incident response + compliance prep

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5. Implementation & Next Steps

Technology Stack

```
Backend:   FastAPI + Python 3.12 + Uvicorn
Frontend:  React 19 + Vite + Tailwind CSS
Monitoring: Prometheus + Grafana + Loki + Blackbox Exporter
Security:  GPG signing, RBAC (X-API-Key/JWT), CSP headers
Deploy:    systemd + Cloudflare Tunnel (TLS termination)
```

Current Status

- **18 routers / 60 API endpoints** live in production
- **202 tests passing** (89% coverage)
- **Zero critical vulnerabilities** (pip-audit + bandit)
- **Production domains**: api.aelitium.eu, app.aelitium.eu

Immediate Roadmap (Q4 2025)

P1: Enhanced Compliance - Compliance Pack (detailed JSON + PDF reports) - SSE Heartbeats (real-time agent status streaming) - Grounded Mode (deterministic, non-stochastic execution)

P2: Enterprise Features - SSO (SAML/OAuth) integration - Custom agent policies per tenant - Advanced RBAC (role-based access control)

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6. Pricing

Pro (SaaS)

€5,000–8,000/month per team (up to 25 users)

Includes: - All executive agents (Σ-CTO, Ω-OPS, Φ-SEC) - Unlimited orchestrator pipelines - GPG-signed audit trails - Stewards approval workflows - Grafana/PagerDuty integrations - Email support (24h SLA)

Enterprise (On-Premises / VPC)

From €150,000/year (annual contracts)

Includes: - Dedicated deployment (AWS/GCP/Azure/on-prem) - SSO integration (SAML, OAuth, LDAP) - Custom agents + compliance policies - 24/7 SLA with dedicated support - Training + onboarding workshops - Quarterly business reviews

Proof of Value

14-day trial with simulated incidents + compliance report (no credit card required)

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7. Contact

Schedule CTO Demo □ founder@aelitium.eu

Technical Documentation □ https://docs.aelitium.eu

Live API Playground □ https://api.aelitium.eu/docs

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*Built for teams that demand **explainable AI** in production.*

ΛELITIUM — *Governance you can prove.*