



HIBILTER · HUMAEL — WHITE PAPER

Humael Pulse

Closing the loop in the NOC: agentic AIOps across OSS and BSS

Most AIOps tools just turn down the volume on alarm noise. Closing the loop — detect, correlate, explain, predict, act — is a different game entirely.

Ankesh Tiwari · 16 Jun 2026 · 14 min read · hibilter.com

EXECUTIVE SUMMARY

A large network operations centre can ingest more than 12,000 alarms in a single day. The first wave of AIOps usefully suppressed noise, but a quieter dashboard is still a dashboard someone has to read, interpret and act on. This paper describes agentic AIOps that closes the loop across OSS and BSS: autonomous analyst agents that detect, correlate against live topology, find explainable root cause, predict failures before they breach SLA, and act — with humans commanding the high-risk decisions. It is an overlay on what you already run, not a rip-and-replace.

Drowning in data, starved of decisions

On the night a core link degrades, a network operations centre does not lack data — it drowns in it. More than 12,000 alarms can arrive in a day, and a single fault can light up hundreds of them. By the time a human analyst correlates the flood by hand and works out what is actually wrong, customers have already felt the outage and the contact centre is already lighting up.

The bottleneck in the modern NOC is not telemetry; it is the human capacity to turn telemetry into a decision fast enough to matter.

Noise reduction is necessary, not sufficient

The first generation of AIOps did something genuinely useful: it suppressed duplicate and low-value alarms. But noise reduction only changes the volume, not the nature, of the work. A quieter dashboard is still a dashboard a human must read, interpret and act on. The bottleneck moved; it did not disappear.

Humael Pulse treats the NOC as a loop to be closed, not a feed to be filtered. The goal is not a calmer screen but a network that tells you what is wrong, what is coming, and what it has already done about it.

The closed loop

Pulse runs autonomous analyst agents across the operational and business support stack. Each stage of the loop is owned by agents and supervised by humans where the stakes require it.

1. **Detect.** Ingest every signal across the estate, not a filtered subset.
2. **Correlate.** Map alarms onto the live topology so related symptoms collapse into one event.
3. **Root cause.** Rank explainable hypotheses with the supporting evidence attached.

4. **Predict.** Flag failures before they breach SLA, with false positives kept low enough to trust.
5. **Notify and act.** Generate the customer-ready incident report and remediate, with humans commanding high-risk actions.

From 412 alarms to one explained incident

Correlation against live topology is what turns a storm into a story. A single fibre cut that lights up 412 alarms is presented as one incident — with the evidence — rather than 412 things to triage. Across a full day, roughly 12,847 alarms collapse to 31 real incidents: close to a 99.8% reduction in what a human actually has to look at.

~11 min

earlier warning before an SLA breach

38 sec

to explainable root cause

-99.8%

noise: 12,847 alarms to 31 incidents

0-touch

provisioning and auto-drafted RFO/RCA

Explainability is the unlock

Engineers will not act on a black box, and they are right not to. The difference between an interesting model and an operational one is whether the on-call lead can trust the call and move. Pulse ranks root-cause hypotheses with the evidence behind each, so the human in command can act with confidence — and the customer-ready incident report writes itself instead of costing an analyst an hour drafting an RFO.

The goal was never a calmer dashboard. It was a network that explains itself.

One brain across OSS and BSS

Because the same agentic layer spans assurance, capacity and the business side — charging, revenue assurance, fraud — the network stops being a wall of red and becomes a system that reasons about itself end to end. Faults, capacity and revenue are not three disconnected views but one.

An overlay, not a rip-and-replace

Pulse is vendor- and topology-agnostic and sits on top of what you already run. It does not require replacing your OSS/BSS estate; it adds a governed, explainable, agentic layer over it. It deploys in the

cloud or on-premise, which for most carriers and regulated operators is a requirement rather than a preference.

Conclusion

Turning down alarm noise was a useful first step and a final destination for no one. The opportunity is to close the loop: detect, correlate, explain, predict and act, autonomously, with humans on the decisions that carry real risk. That is the difference between a NOC that drowns in data and one that turns data into decisions before the customer ever notices.