THE AI INSTITUTE / OPERATING INTELLIGENCE

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AI Can Find Risk Faster Than You Can Retire It

A government cyber pilot shows why discovery creates value only when validation, prioritisation and remediation can keep pace.

Boards, C-suite and senior management
Research period: April 2026 – August 2026
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PUBLICATION RECORD

An Institute thesis and decision framework

AI-assisted discovery should be governed by the organisation's capacity to validate and retire risk, because a faster stream of findings is not a security outcome until remediation closes the exposure.

WHAT LEADERS SHOULD TAKE FROM THIS PAPER

01 **Measure validated risk retired, time to remediation and backlog growth—not the volume of AI-generated findings.**

02 **Use AI as a tightly scoped component inside the existing assurance workflow, with deterministic tools and expert review around it.**

03 **Set discovery throughput against available triage and patch capacity before expanding models, repositories or business units.**

04 **Retest the complete operating path whenever the model, prompt, interface, permissions or execution environment changes.**

Research method

This case note analyses the UK Government Cyber Coordination Centre's official applied cyber-defence case and related NCSC guidance, then compares its operating lessons with Australian secure-deployment guidance, a US public-sector procurement review and three new arXiv preprints from the 14 August 2026 release batch. Confirmed case facts are separated from Institute recommendations.

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Inside this paper

How to use this brief

Start with the decision and use the framework to challenge the current plan. Figures retain their original populations and definitions. Institute analysis is labelled, and limitations are recorded before the references.

01 THE EXECUTIVE DECISION

Do not fund discovery without funding the path to closure

AI can now generate security findings faster than many organisations can investigate or fix them. That sounds like an uncomplicated advantage until the queue reaches the people who must determine whether a finding is real, how much exposure it creates and whether remediation will disrupt a critical service.

The board decision is therefore not whether to let AI find more risk. It is how much discovery throughput the organisation can responsibly absorb. If validation and remediation capacity remain fixed, a faster detector can create a larger unresolved backlog, consume scarce specialists and make the headline finding count look better while operational risk remains unchanged.

A recent UK government pilot offers a useful implementation case. Its success did not come from handing cyber defence to a model. It came from placing models inside a structured workflow, keeping consequential escalation manual and connecting confirmed findings to existing remediation processes. [1]

> **The operating rule — increase discovery only when validated risk can move through triage, ownership and remediation without creating a larger unmanaged queue.**

02 WHAT ACTUALLY HAPPENED

Nine organisations tested frontier AI against public code for one month

The UK's Government Cyber Coordination Centre, working with the National Cyber Security Centre and AI Security Institute, ran weekly in-person hackathons across nine government organisations. Teams scanned public code repositories, experimented with different model-assisted methods and reused the approaches that proved most useful. The government reports a model-token cost of £13,000 for the month. [1]

Participants reported 407 findings, including weaknesses associated with authentication bypass, data exposure and remote code execution. Some findings were already understood and protected by compensating controls; others were previously unknown. The official case says all critical weaknesses were remediated and that no evidence of exploitation was found. [1]

One reported example involved a legacy automation workflow in which a specially constructed public comment could trigger code execution and potentially expose repository credentials. The important operating result was not that a model described the issue. Specialists re-verified the exposure, assessed exploitability and moved the confirmed weakness into remediation.

EXHIBIT / THE CASE IN OPERATING TERMS

9	407	MANUAL	FIXED
Organisations	**Findings**	**Escalation**	**Critical issues**
A one-month, cross-government pilot using public repositories.	A mixture of known, mitigated and previously unknown weaknesses.	Specialists checked consequential findings and handled false positives.	The implementing bodies report that every critical weakness was remediated.
Reported scope	Discovery output	Validation control	Risk outcome

03 THE CONDITION THAT PRODUCED THE RESULT

The workflow was the control

Teams did not rely on one prompt or one autonomous agent. One approach used six stages that challenged and refined earlier findings. Another began with conventional security scanners, then used models to investigate how separate weaknesses might combine. A third converted a repeatable multi-service audit into reusable, tightly scoped skills. [1]

Human expertise stayed at the consequential boundary. Every material escalation was checked, exposure was re-verified and false positives were handled before remediation. Existing vulnerability-management frameworks determined what was prioritised and patched. The model expanded search and connected context; it did not own risk acceptance or production change.

This matters beyond cybersecurity. AI implementation performs best when the work is decomposed, the interface to existing systems is explicit, an accountable person decides at the point of consequence and the output enters a process capable of acting on it. The model may accelerate one stage, but the operating result belongs to the complete chain.

04 WHAT THE CASE DOES NOT PROVE

A finding count is not a return on security

The case is reported by the organisations that ran it. It does not publish the total number of repositories scanned, a severity distribution, false-positive rate, analyst hours, a conventional-scanner comparison or the time and cost required to remediate each class of issue. The £13,000 figure covers model tokens, not the full programme cost.

The public-code setting also matters. Code that had already passed publication review could be shared with model providers under conditions that may not apply to confidential systems, regulated data, proprietary software or markets with different disclosure laws. The planned second phase will extend to closed-source estates, so the operating and legal conditions may change. [1]

Leaders should therefore treat the case as proof that a structured trial can produce useful discoveries—not as a universal productivity ratio, a vendor comparison or evidence that autonomous remediation is ready. The relevant test is whether the organisation can reproduce the full workflow and measure net risk reduction in its own environment.

05 WHAT THE LATEST RESEARCH ADDS

The frontier is moving from final scores to operating paths

Three new arXiv preprints point in the same direction without turning this case into a technical paper digest. QuoteBench shows that an agent can generate the right command yet fail when an interface serialises and reparses it; similar headline scores can conceal very different failures along the execution path. Beyond Final Scores finds that long-running agents with similar outcomes can have different process bottlenecks, inconsistent runs and experience that sometimes harms later decisions. [56]

Practice Makes Unsafe examines systems that convert successful past behaviour into reusable procedures. In its experimental setting, unsafe success could persist into later tasks after the original trigger disappeared. The authors' proposed control governs both what is written into persistent skill state and what later work is allowed to reuse. It is a new preprint, not production evidence. [7]

The plain-language implication is consistent: evaluate the whole operating path and lifecycle. A model benchmark cannot tell a leader whether information survived an interface, whether a procedure accumulated unsafe behaviour, whether review caught the problem or whether the organisation could act on the result.

06 WHAT TRAVELS AND WHAT CHANGES

The operating principle is global; the safe boundary is local

The core pattern travels across markets: scope the discovery task, constrain access, validate consequential outputs and connect them to an owned remediation process. What changes is the code that can be shared, the legal jurisdiction of hosted models, the maturity of vulnerability disclosure, the availability of security specialists and the capacity to patch legacy estates.

Australian cyber authorities advise deployers to apply existing security governance to AI, define boundaries, use least privilege, protect data and credentials, test systems after changes and retain a human failsafe. European organisations must layer sector, data-protection, cybersecurity and AI Act duties onto the same workflow. Organisations in markets with limited specialist capacity may need a narrower discovery scope because verification—not model access—is the scarce resource. [4]

The practice to change now is simple: set an intake limit. Approve the next repository, system or business unit only when the current queue meets agreed targets for validation time, critical-finding ownership, remediation time, false-positive load and recurrence. If discovery grows faster than closure, pause expansion and strengthen the pathway that retires risk.

RESEARCH RECORD

Method and limitations

Method

This case note analyses the UK Government Cyber Coordination Centre's official applied cyber-defence case and related NCSC guidance, then compares its operating lessons with Australian secure-deployment guidance, a US public-sector procurement review and three new arXiv preprints from the 14 August 2026 release batch. Confirmed case facts are separated from Institute recommendations.

Limitations

The principal case is self-reported by the implementing public bodies and omits repository count, severity distribution, false-positive rate, full labour and remediation cost, and a controlled baseline. Public-code conditions may not transfer to closed or regulated estates. The arXiv papers are new preprints and do not establish production performance.

Sources and limitations

Source facts link to the original publication. Institute analysis reconciles definitions and turns the material into a management proposition. Frameworks are decision aids, not claims of universal causality. Read every important statistic with its population, date, definition and caveat.

Research cutoff: 15 August 2026. Review cycle: six months, or earlier after a material change in the underlying facts, standards or policy.

REFERENCES

Evidence behind the thesis

01 **UK Government, When AI Leaves the Lab: Testing Frontier Models in Government Cyber Defence**

Official DSIT and NCSC case study published 12 June 2026; self-reported programme scope, methods, costs and outcomes.

02 **NCSC, 10 questions to ask when using AI models to find vulnerabilities**

Official operational guidance published 11 May 2026; finding, verification, permissions and remediation capacity.

03 **NCSC, Supporting AI adoption for UK cyber defence**

Official NCSC analysis published 23 April 2026; applied use cases, verification and responsible-action constraints.

04 **Australian Signals Directorate, Deploying AI systems securely**

Official joint secure-deployment guidance; governance, boundaries, access, monitoring and human failsafes.

05 **arXiv, QuoteBench: How Matched Scores Can Hide Command-Path Failures**

New v1 preprint submitted 13 August 2026; 56 tasks across 14 incident-derived families, not peer reviewed.

06 **arXiv, Beyond Final Scores**

New v1 preprint submitted 13 August 2026; seven models and 36 long-horizon tasks, not production evidence.

07 **arXiv, Practice Makes Unsafe**

New v1 preprint submitted 13 August 2026; experimental persistent-skill lifecycle benchmark, not peer reviewed.

08 **US GAO, Artificial Intelligence Acquisitions**

Official audit released 13 April 2026; 13 acquisitions across four agencies and recommendations on collecting lessons learned.

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Then measure what changes.

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