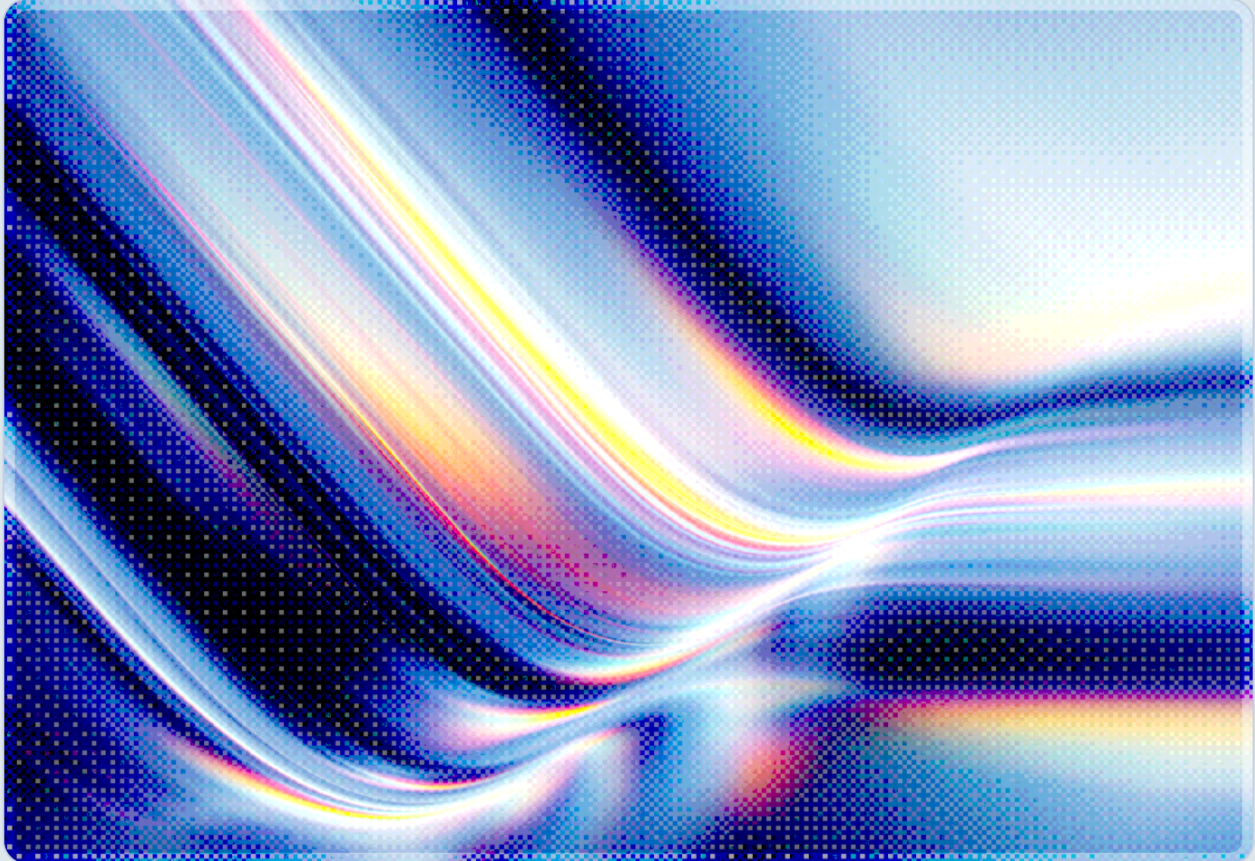


Open-Weight Cyber Diffusion: CAISI's GLM-5.3 Assessment

Security Implications and Guidance for Policy and Enterprise Risk

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 AI-assisted Rapid Research



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Key Takeaways

NIST's Center for AI Standards and Innovation (CAISI) describes Z.ai's GLM-5.3 as the most cyber-capable open-weight model released to date, while finding it significantly below current U.S. frontier models and roughly four months behind them [1]. Anthropic's own evaluation, which has not been replicated by CAISI or AISI, reports exploit-development results on two benchmarks that it describes as comparable to its Claude Mythos Preview [2]. That framing sits in tension with CAISI's "significantly lower" assessment, and the difference depends heavily on which benchmark and which U.S. comparator is used [1][2].

Anthropic's data also suggest that vendor safeguards offer limited protection once the weights are in an attacker's hands. Engagement with malicious requests rose from 0% for direct requests to 64% with a cover story, 92% with prefilled reasoning tokens, and 100% after ablation, which Anthropic prices at roughly \$4,400, or about \$1,200 for experienced teams [2]. Anthropic also reports a reliable N-day exploit chain built with GLM-5.3-Flash for \$20.40 in model time at Zhipu's API pricing, plus about 20 minutes of human attention [2]. CSA assesses that enterprises should plan on exploit-development capability approaching that of frontier models from roughly four months earlier being accessible to well-resourced and moderately resourced actors on narrow tasks, and should shorten patch and detection timelines accordingly.

Background

CAISI, the NIST office that evaluates frontier and foreign AI systems, has now assessed two successive releases from the Chinese developer Z.ai (Zhipu). GLM-5.2 was released on June 16, 2026, and CAISI published its assessment on July 17, 2026 [3]. That assessment judged GLM-5.2's overall capabilities comparable to OpenAI's GPT-5.2 from December 2025 and its cyber capabilities comparable to Anthropic's Opus 4.6 from February 2026. It also found that the model's safeguards allowed assistance with agentic cyber exploit development, and it cautioned that safeguards on open-weight models can be circumvented when the model is self-hosted [3].

GLM-5.3 was released on August 14, 2026, and CAISI published its assessment on September 17, 2026 [1]. CAISI reports that the model is the most cyber-capable open-weight model released to date, and that its cyber capabilities remain significantly lower than those of current U.S. frontier models, with a lag

of approximately four months [1]. The CAISI page presents benchmark results but, in the version reviewed for this note, offers no pricing data and no policy recommendations [1]. Those elements come instead from Anthropic, which published its own analysis on September 29, 2026, roughly five months after announcing Claude Mythos Preview [2]. Because Anthropic is both a frontier developer and a provider of the defender access it recommends broadening, its figures warrant the same scrutiny as any interested party's, and CAISI and AISI have not replicated them.

This note sits within a sequence of CSA analyses tracking the same trend. The UK AI Security Institute (AISI) reported in July 2026 that leading open-weight models trailed closed frontier models on offensive cyber tasks by four to seven months, down from a six-to-ten-month lag through most of 2025 [4]. CSA's analysis of that finding highlighted the cost asymmetry and the compressing window for defenders [5]. The CAISI GLM-5.3 assessment extends the picture with a second government evaluator, a newer model generation, and a more detailed look at what the model can do against real targets. AISI reports a four-to-seven-month lag across leading open-weight models, while CAISI estimates approximately four months for GLM-5.3 [1][4]. The estimates are broadly consistent, though the methodologies differ and the two evaluators measured different things, so the agreement is suggestive rather than conclusive.

Security Analysis

What CAISI Measured

CAISI evaluated GLM-5.3 on four cybersecurity benchmarks and compared it with the best-performing U.S. frontier model and with the previous best PRC model on each [1]. The results are summarized below.

Benchmark	GLM-5.3	U.S. Frontier	Prior Best PRC Model
SEC-Bench Pro	40.4%	90.2%	27.3%
ExploitBench	61.1%	100.0%	32.2%
ExploitGym	9.4%	44.4%	2.6%
OSS-Fuzz	7.7%	23.2%	2.4%

Source: CAISI [1].

Two patterns stand out. First, GLM-5.3 improves substantially on the prior best PRC model on every benchmark. On ExploitBench the score roughly doubles, and on ExploitGym it more than triples, although from a low base [1]. Second, the gap to the U.S. frontier remains large. The absolute gap is largest on SEC-Bench Pro, at about 50 percentage points, and the proportional gap is largest on ExploitGym, at about 4.7 times. The 100% frontier score on ExploitBench indicates that benchmark may be saturated, which would understate the real gap. CSA considers a model scoring 9.4% on ExploitGym against a 44.4% frontier score not to be a peer, and defenders should not read the "most capable open-weight model" label as parity.

Where the Assessments Diverge

Anthropic's evaluation reaches a more concerning headline. It reports that GLM-5.3 produced end-to-end exploits in 50 of 410 attempts on ExploitBench, a 12% success rate, and achieved full control-flow hijacks in 4% of trials on Anthropic's internal Binary Exploitation benchmark. Anthropic describes these results as comparable to Claude Mythos Preview on those evaluations, although the comparator scores are not reproduced here [2]. The 12% figure is not directly comparable with CAISI's 61.1% ExploitBench score, which suggests the two evaluators are using different scoring criteria, task subsets, or success definitions. The source documents reviewed for this note do not explain the difference, and the two figures should not be compared directly.

The divergence is better understood as a matter of comparators than of contradiction. CAISI measures against current U.S. frontier models, which by its account are far ahead. Anthropic compares against a model it announced five months earlier, and on narrow exploit-development tasks the open-weight model has reached what Anthropic describes as a comparable level [2]. This is consistent with the roughly four-month lag CAISI reports and with AISI's earlier four-to-seven-month range [1][4]. The practical implication is that a lag measured in months converts a "frontier" capability into a commodity capability on a short, predictable schedule. An organization that treats today's restricted frontier capability as a threat only for tightly controlled actors is implicitly assuming the lag will widen, and none of the three evaluations reviewed here reports a widening lag.

Real-World Capability and Cost

Anthropic also reports results outside benchmark settings. It states that GLM-5.3 discovered previously unknown vulnerabilities in a popular web browser's JavaScript engine and produced a working exploit for a malicious webpage that reads arbitrary files from a visitor's computer [2]. In a separate test, GLM-5.3-Flash developed reliable N-day exploit chains with about 20 minutes of human attention and 8 hours of model time, at a cost of \$20.40 at Zhipu's API pricing [2]. These are vendor-reported results that have not been independently reproduced, and the underlying vulnerabilities are not identified in the material

reviewed here. They are nonetheless relevant because N-day exploitation, the weaponization of already-disclosed flaws, is where a modest-capability model delivers the most value to an attacker. The window between patch release and exploitation is the defender's principal margin, and a twenty-dollar exploit chain, even with the human time added, compresses it.

Cost compounds the effect. AISI's July analysis found open-weight models completing comparable tasks at a small fraction of the per-task cost of closed models [4][5]. Combined with Anthropic's pricing figure, this suggests a threat model in which exploit development is limited less by expense than by attacker attention.

Safeguards Appear Not to Survive Self-Hosting

The most consequential finding for governance, in CSA's assessment, concerns safeguards. Anthropic measured GLM-5.3's engagement with malicious cyber-attack requests under escalating conditions: 0% with direct requests, 64% with a deceptive cover story, 92% with prefilled reasoning tokens, and 100% once the model was ablated, a technique that removes refusal behavior from the weights [2]. Ablation costs roughly \$4,400 for the standard model and about \$1,200 for experienced teams, according to the same report [2]. Direct requests drew no engagement, so the other conditions require deliberate effort or technical skill. CAISI's GLM-5.2 assessment had already warned that safeguards can be circumvented when open-weight models are self-hosted [3]. The GLM-5.3 data puts a price on that statement.

These results, for one model, are consistent with the view that vendor-applied safeguards offer limited protection once weights are self-hosted, and CSA infers that the pattern extends to open-weight systems generally. This changes what pre-release safety testing can accomplish. Testing that evaluates a model's refusal behavior through its official interface measures the vendor's default posture, not the capability available to an adversary who downloads the weights. For open-weight releases, the relevant measurement is therefore the model's underlying capability, because refusal can be removed for a modest sum. Enterprises should not treat a model provider's safeguards as a primary control against misuse by others when the system is open-weight, and enterprises that deploy open-weight models internally should recognize that the same property applies to their own copies if the weights are exfiltrated.

Policy Implications

Anthropic's analysis offers three policy recommendations: that governments conduct safety testing on sufficiently capable AI models, that vetted access to advanced frontier models be broadened for cyber defenders, and that developers be encouraged to safeguard open-weight models appropriately [2]. The

second is the most directly actionable for the private sector, since it addresses the asymmetry that open-weight attackers face no access gate while defenders using frontier models often do, although it also favors the category of product Anthropic sells. CSA considers the third the weakest in light of the ablation data, because developer-applied safeguards are removable by design.

CAISI's role is itself part of the story. Its published assessments of PRC models provide a recurring, government-backed measurement of the lag, which enterprises can use as a planning input. CSA has previously examined the shift toward voluntary pre-release testing of U.S. frontier models, and the GLM-5.3 results appear to illustrate the limit of that approach, since the models posing the least controllable risk may be those released outside any cooperative testing arrangement. This is an inference from the available evidence rather than a finding of the assessments themselves, and Zhipu's participation in testing is not established.

Recommendations

Immediate Actions

Organizations should shorten their time-to-patch targets for internet-facing and widely deployed software, giving priority to flaws with public advisories. CSA assesses that if a reliable exploit chain can be built in hours for tens of dollars, the practical exploitation window after disclosure may be shorter than historical norms assume; Anthropic reports the cost and time for one test but does not compare them with historical exploitation windows [2]. Security teams should also confirm that detection coverage for common post-exploitation behavior does not depend on attacker tooling being unsophisticated, since CSA expects AI-generated exploitation to lower the skill needed to reach that stage.

Teams that run open-weight models internally should inventory them and treat model weights as sensitive assets. Where those models have been given tool access or agentic privileges, the access should be reviewed on the assumption that refusal-based safeguards will not hold under adversarial prompting [2].

Short-Term Mitigations

Within the next quarter, vulnerability management programs should incorporate AI-assisted discovery of flaws in their own code, using the best defender-accessible frontier models available. Anthropic's recommendation for broader vetted defender access indicates that such access is not yet universal, and organizations should enroll in any vetted-access program for which they qualify [2]. Threat models should be updated to treat a "frontier minus four months" attacker as the baseline for any actor with

modest resources, and tabletop exercises should test response to multiple concurrent exploitation attempts against newly disclosed vulnerabilities. Procurement and third-party risk reviews should add questions about suppliers' patch timelines and about their use of AI in secure development, since suppliers' response speed now bears directly on the customer's exposure.

Strategic Considerations

CSA considers capability-based governance, in which controls scale with what a model can do rather than who built it or how it was licensed, better matched to this threat than release-based controls, because refusal behavior can be removed after release. Enterprises should track CAISI, AISI, and vendor evaluations as a standing intelligence feed and re-baseline their assumptions each time a new open-weight generation is assessed. Over the longer term, the central planning question is how defensive automation can keep pace with a lag that AISI reports has shrunk from six-to-ten months in 2025 to four to seven months, with CAISI estimating roughly four months for GLM-5.3 [1][4]. Organizations that invest in automated triage, patching, and detection engineering are positioned to absorb each new capability increment, while those that rely on manual cycles are likely to find the gap widening in the attacker's favor.

CSA Resource Alignment

CSA's most directly relevant prior work is its analysis of the AISI findings on open-weight cyber capability, *AISI: Open-Weight Models Close Cyber Capability Gap* [5]. That analysis reported AISI's finding of a four-to-seven-month lag and the cost asymmetry between open-weight and closed models. The CAISI GLM-5.3 assessment is a second, independent data point on the same trend and a newer model generation, and the safeguard-bypass data adds the missing explanation of why the lag matters for governance: the controls that apply to closed models do not transfer. The earlier CSA research note, *The Open-Weight Cyber Gap Is Closing Faster Than Expected*, makes the same case from the trend perspective and should be read alongside this document [6].

For control mapping, the AI Controls Matrix (AICM) v1.1 offers the most useful structure [7]. Its Threat and Vulnerability Management (TVM) domain applies to the shortened patch-window recommendations above, and its Application and Interface Security (AIS) domain applies to the review of agentic privileges granted to internally hosted open-weight models. Organizations that already map their AI controls to AICM can use this note's findings to justify tightening TVM timelines and adding open-weight model weights to their asset inventory.

References

- [1] NIST CAISI. "[CAISI Assessment of Z.ai's GLM-5.3 Cyber Capabilities](#)." NIST, September 17, 2026.
- [2] Anthropic. "[GLM-5.3 and the Spread of Advanced Cyber Capabilities](#)." Anthropic, September 29, 2026.
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- [4] UK AI Security Institute. "[How far behind the frontier are leading open-weight models on cyber?](#)." AISI, July 2026.
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