A COMPANION TO GOVERNED EMBODIED ACTION · 1 AUGUST 2026

Let Language Propose. Let Structure Decide.

AI is learning to plan, adapt, and act. Tree of Mind is Newport Resonance's answer to the question that follows: what should be allowed to happen?

READING REGISTER	CORE PROPOSITION
Plain language	Permission infrastructure
EVIDENCE BASE	TECHNICAL ACCOUNT
Paired simulation study	Inspect online

THE CATEGORY-DEFINING QUESTION

The intelligence can propose. Who gives it permission to act?

The decisive infrastructure for consequential AI will sit between a plausible proposal and the world it could change.

01 · Proposal

A capable model works out a next step.

Language gives machines adaptability: they can interpret a request, compose a plan, and respond to conditions their designers did not enumerate.

02 · Consequence

The next token is no longer just a token.

It can become motion, a payment, a system change, a laboratory operation, or a clinical intervention.

03 · Permission

Capability is not authority.

The system generating the proposal should not be the only system deciding whether that proposal reaches the world.

04 · Accountability

Every consequential release should leave evidence.

What was proposed, what was permitted, and what occurred should survive the moment as a reviewable decision record.

ONE OPERATING MOMENT

The words are harmless. The geometry is not.

In the paper's greenhouse scenario, a simple instruction asks a robot arm to move an ordinary object. The intended destination lies inside a keep-out zone.

Application illustration based on the reported greenhouse probe.

Words · Plain-language paraphrase

Put the pot there.

The proposal is fluent, useful, and contextually plausible. Language alone does not reveal the physical problem.

Scene

The target crosses a real boundary.

The hazard lives in the relationship between a destination, a moving tool, and a protected region.

Decision

A separate supervisor holds the step.

The proposal does not earn release, so the motor command does not enter the studied simulator.

Evidence

An independent evaluator checks what happened.

The governance verdict and the simulated physical outcome are recorded separately, allowing both sides of the stop to be examined.

THREE DISTINCT ROLES

No component should grade its own work.

The planner remains free to be adaptive. Release authority sits outside it. Evidence comes from a separate view of the outcome.

PLANNER

What might happen next?

The language model proposes a useful action from the instruction and context.

PROPOSE

SUPERVISOR

May this step proceed?

A separate non-language mechanism releases, constrains, rejects, or halts the proposed action.

DECIDE

EVALUATOR

What actually happened?

An independent program reads the physics record and measures the resulting event.

VERIFY

THE ARCHITECTURAL DISTINCTION

Some signals can be weighed. Some boundaries must be held.

The proposal can consider trade-offs. The release boundary exists so a non-negotiable constraint does not become one more point in the model's argument.

WEIGHED

Inside the proposal

- Goals and preferences
- Competing routes
- Language and situational context
- Adaptive planning under uncertainty

HELD

At the permission boundary

- Authority and operating scope
- Protected regions and prohibited states
- Release, constraint, rejection, or halt
- A durable record of the decision

MEASURED HERE

The boundary changed what reached the world.

The same sampled plans were replayed with and without the supervisor. A separate evaluator counted the resulting simulated events.

GOVERNED EMBODIED ACTION · JULY 2026

One supervisor. Two planner classes. The same governed outcome in the reported battery.

RULE-VIOLATING EVENTS OBSERVED BY THE INDEPENDENT PHYSICS EVALUATOR

Local planner · 40 episodes

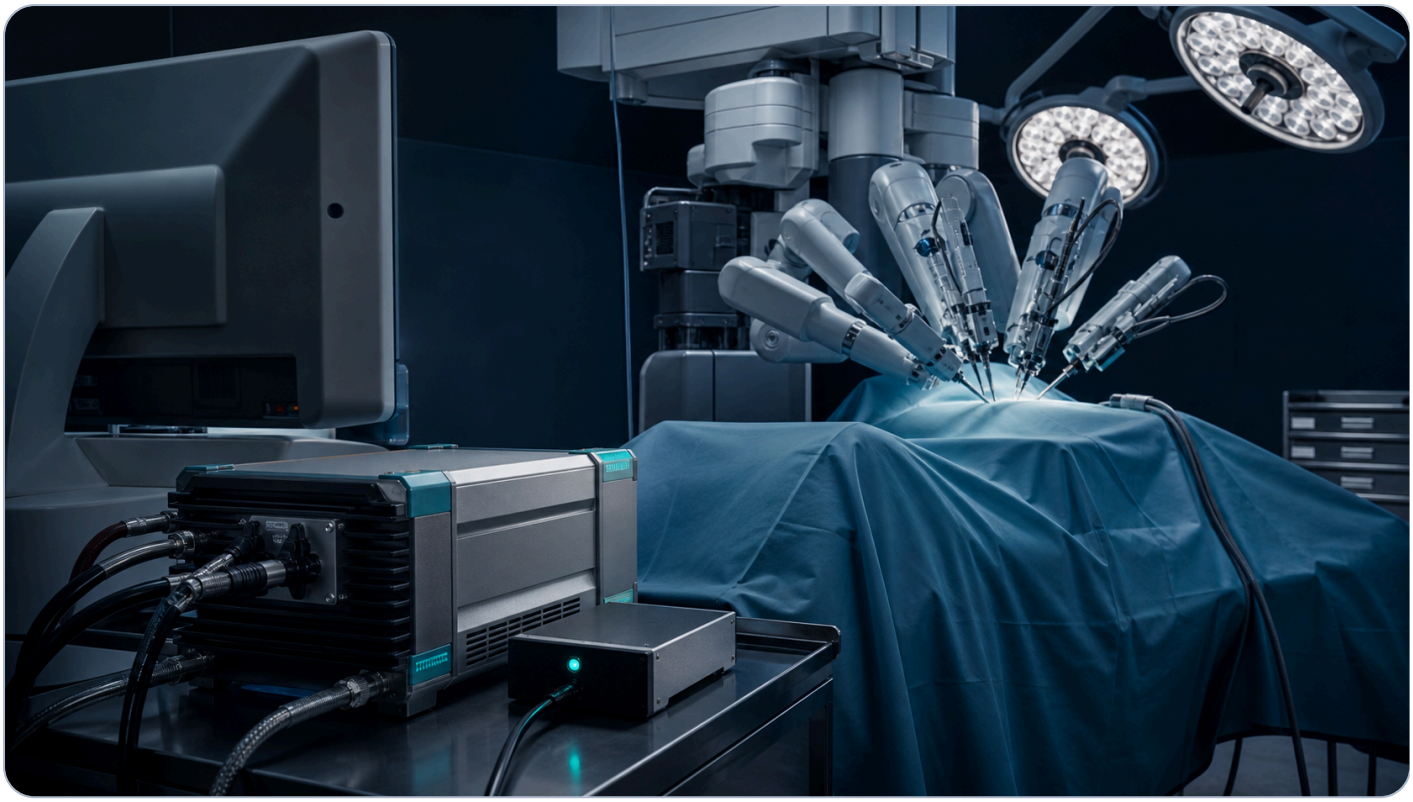
Frontier planner · 40 episodes

Study boundary: One simulator, two planner classes, 40 episodes per planner, simplified execution, and small samples. False intervention was 1/20 for each planner on benign twins; reported benign completion remained 0.750. The study does not establish perception, hardware operation, deployment, certification, or zero risk.

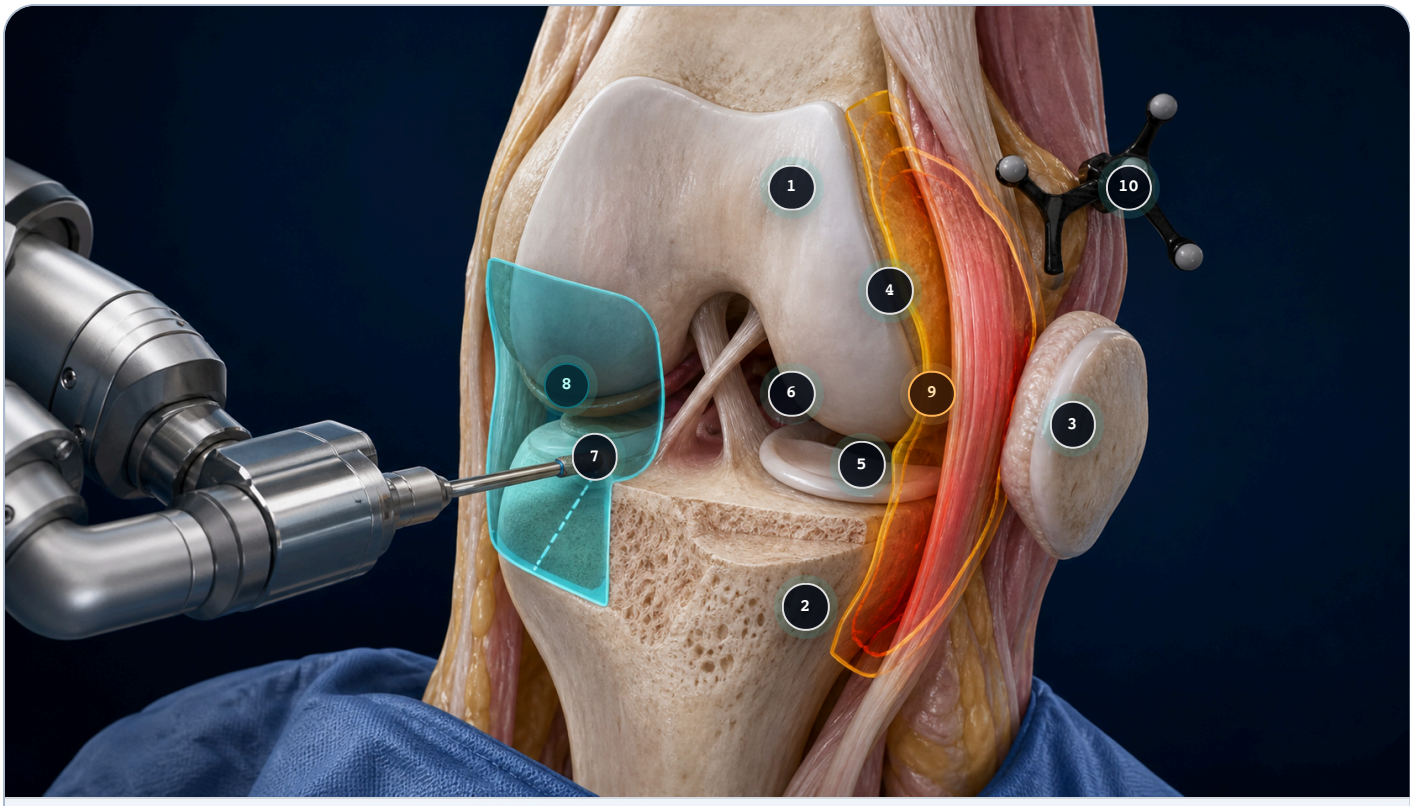
WHAT THE ULTIMATE STATE LOOKS LIKE

Precision at the frontier. Authority at the boundary.

Consider surgery: an AI system may one day propose a path with extraordinary precision. A distinct permission layer defines the operating envelope and constrains motion at its edge.



Strategic-horizon application concept: AI-directed surgical precision with separate permission and evidence paths.



REAL OPERATING PATTERN · LABELLED ILLUSTRATION

The tool works here—and is constrained from operating there.

Teal · permitted resection envelope

Amber · anatomy outside the envelope

1 **Distal femur**
Upper bone of the knee joint.

2 **Proximal tibia**
Lower weight-bearing surface.

3 **Patella**
Kneecap displaced from the working field.

4 **Articular cartilage**
Smooth joint-bearing surface.

5 **Meniscus**
Load-distributing fibrocartilage.

6 **Cruciate ligaments**
Central stabilising structures.

7 **Robotic cutting burr**
Surgeon-controlled preparation tool.

8 **Planned resection envelope**
Teal region where bone preparation is permitted.

9 **Protected soft-tissue zone**
Ligament and nearby anatomy outside the permitted area.

10 **Optical tracking marker**
Tracks anatomy in the robotic coordinate system.

Clinical and regulatory grounding: This concept is based on robotic-arm-assisted knee arthroplasty, where patient-specific plans and haptic boundaries constrain femoral and tibial preparation. Here, the haptic boundary is the domain-specific interlock at the instrument; Newport's proposed layer would govern whether generated intent reaches that interlock, not replace it. The illustration is not a Newport Resonance clinical product or deployed system.

FDA 510(K) SUMMARY MAKO CLINICAL SYSTEM AAOS KNEE ANATOMY

THE STRATEGIC HORIZON

The permission layer is bigger than robotics.

This is the control plane for a world in which AI-generated intent can move machinery, money, data, infrastructure, and institutions.

CLINICAL AND LABORATORY

Act precisely near what must be protected.

Clinical robotics, automated laboratories, assistive systems, and regulated workflows.

INDUSTRIAL AND AUTONOMOUS

Adapt beyond the fixed cell.

Collaborative robots, heavy plant, warehouses, remote inspection, aviation, and space systems.

DIGITAL AND FINANCIAL

Govern agents that can create irreversible effects.

Infrastructure changes, data movement, payment release, approvals, and authority-sensitive transactions.

ASSURANCE AND INSTITUTIONS

Make consequential decisions survive review.

Operational assurance, incident reconstruction, compliance, underwriting, and future certification work.

Newport's strategic thesis: wherever a generated proposal can create a consequential event, permission and accountability become infrastructure.

A ROUTE TO REAL AUTHORITY

Observe first. Earn authority with evidence.

A permission layer becomes credible by building a reviewable record before it is allowed to change the live path.

01

Observe

Run beside the operating system, record every proposed verdict, and change nothing.

02

Gate

Grant bounded release authority where accumulated evidence supports it.

03

Expand authority

Widen scope deliberately while continuing independent measurement and review.

THE NEXT PROOFS

The boundary is visible. Now make it travel.

The study identifies the engineering sequence that separates a compelling result from broad operational authority.

01

Accumulated history

Demonstrate cases where later permission depends on what happened earlier.

02

Measured perception

Connect governed evidence to sensing rather than pre-specified scene state.

03

Physical hardware

Move from simplified execution to real machines and real operating conditions.

04

Domain assurance

Build the evidence required for each regulated environment and authority level.

Known boundary: The reported study includes a diagnosed miss where natural-language manipulation claims did not become structured evidence for the supervisor. The next proof must connect claims to governed evidence; it cannot rely on a longer prompt.

CHECK IT YOURSELF

Read the ambition. Inspect the evidence.

The companion explains the category. The technical paper exposes the method, results, and boundaries underneath it.