



GOVERNED AUTONOMOUS INTELLIGENCE INFRASTRUCTURE

VALUEIO INFRASTRUCTURE ROADMAP

From working reference environment to deployment, adoption, and protocol expansion



The roadmap now begins from an integrated working reference environment — not from prototype conception.

ValueIO advances three coupled infrastructure layers: independent physical-state evidence, distributed multi-agent orchestration, and pre-execution decision governance. Progress is measured by proof gates, external validation, deployment repeatability, and commercial adoption.



BASELINE — WORKING REFERENCE ENVIRONMENT

CURRENT STATE | Integrated technical proof across all three layers

✓ ESTABLISHED



SMART-I-SHELF™ Physical State Engine

- Working physical reference environment with multi-channel load-cell sensing, camera/vision integration, motion telemetry, calibration tooling, and product-identity/evidence-fusion work.
- Demonstrates independent physical-state evidence as a reality anchor for downstream autonomous workflows.



HOMESPHERE AI™ Distributed Orchestration

- Distributed multi-agent environment with specialized agents, foundation-model routing, API/MQTT communication, security controls, telemetry, and containerized deployment.
- Automated unit, integration, API, and governance testing establishes repeatable engineering evidence.



R.E.T.N.A.™ Pre-Execution Governance

- Runtime governance covers authority integrity, formation legibility, evidence admissibility, policy enforcement, governed state transitions, canonical reason codes, and Decision Receipt validation/persistence.
- Governance is enforced before consequential execution rather than reconstructed afterward.



MILESTONE GATE: Integrated reference path demonstrated from observed state through governed consequence and durable Decision Receipt.

FORWARD ROADMAP

01



0–6 MONTHS

DESIGN-PARTNER
VALIDATION

02



6–12 MONTHS

PAID POCs +
HARDENING

03



12–24 MONTHS

OEM + ENTERPRISE
ADOPTION

04



24+ MONTHS

PROTOCOL +
ECOSYSTEM EXPANSION

VALIDATION & DEPLOYMENT

Near-term conversion of technical proof into external operating evidence

PHASE I — DESIGN-PARTNER VALIDATION

0–6 MONTHS | Bounded external validation and deployment readiness

CURRENT



SMART-I-SHELF™ Physical State Engine

- Lock field-ready hardware/enclosure configuration for bounded partner evaluation.
- Complete repeatability and reliability validation across representative loads, motion conditions, camera evidence, and product-identity workflows.
- Define measurable physical-state confidence and evidence-sufficiency criteria for partner use cases.



HOMESPHERE AI™ Distributed Orchestration

- Harden multi-agent routing, service contracts, authentication, observability, and deployment reliability for partner environments.
- Validate heterogeneous model routing and cross-system workflows without coupling governance to a single model provider.
- Package integration surfaces for bounded OEM/enterprise evaluation.



R.E.T.N.A.™ Pre-Execution Governance

- Exercise authority, formation, admissibility, reason-code, and governed-state-transition controls against live candidate actions.
- Validate receipt persistence, chain-of-custody metadata, negative/bypass paths, degraded conditions, and fail-closed behavior.
- Define partner-specific policy profiles and measurable governance acceptance criteria.



MILESTONE GATE: At least one qualified OEM/enterprise design-partner evaluation with a bounded use case, integration plan, and measurable technical/governance acceptance criteria.

PHASE II — PAID POCs & DEPLOYMENT HARDENING

6–12 MONTHS | Convert validation into reference deployments

NEXT



SMART-I-SHELF™ Physical State Engine

- Deploy bounded Smart-I-Shelf reference units into approved POC environments.
- Benchmark physical-state accuracy, continuity, latency, and operational reliability under real usage.
- Accumulate governed, consented operational evidence needed to improve identity continuity and evidence fusion.



HOMESPHERE AI™ Distributed Orchestration

- Run multi-device and cross-system orchestration under live workloads and partner API constraints.
- Strengthen deployment tooling, telemetry/replay, failure recovery, security, and environment configuration.
- Establish a repeatable deployment pattern that can be reproduced across sites and partners.



R.E.T.N.A.™ Pre-Execution Governance

- Generate live Decision Receipts for authorized, denied, deferred, degraded, and escalated governed outcomes as applicable.
- Stress-test authority unavailability/conflict, evidence insufficiency, persistence failure, runtime drift, and escalation loops.
- Develop audit/export surfaces and map controls to applicable enterprise and regulatory frameworks.



MILESTONE GATE: Paid or contractually committed POC evidence, repeatable deployment mechanics, documented performance baselines, and reference-grade governance artifacts.



DESIGN PARTNER
Bounded use case + acceptance criteria



TECHNICAL PROOF
Reliability + orchestration under live conditions



GOVERNANCE PROOF
Receipt-backed outcomes + negative-path evidence



COMMERCIAL PROOF
Paid/committed POC + repeatable deployment plan

ADOPTION & ECOSYSTEM EXPANSION

Scale from reference deployments into embedded infrastructure and portable governance



PHASE III — OEM & ENTERPRISE ADOPTION

12–24 MONTHS | Repeatable commercial deployments and integration depth



SMART-I-SHELF™ Physical State Engine

- Productize the physical-state reference design for repeatable partner deployment and manufacturing readiness.
- Expand OEM integration patterns, form factors, and evidence models beyond the initial shelf environment where justified.
- Turn validated physical-state evidence into a reusable enterprise integration surface.



HOMESPHERE AI™ Distributed Orchestration

- Embed orchestration within OEM/enterprise environments through stable APIs, services, and deployment tooling.
- Support multi-site, multi-device, and cross-service workflows with model/provider interoperability.
- Introduce recurring software/service economics tied to orchestration, telemetry, integration, and governance-enabled workflows.



R.E.T.N.A.™ Pre-Execution Governance

- Operationalize licensing and conformance profiles for enterprises integrating the governance boundary.
- Strengthen policy portability, audit exports, integrity controls, and deployment evidence across heterogeneous AI stacks.
- Establish R.E.T.N.A. as a horizontal governance layer separable from any single model, agent framework, or device class.

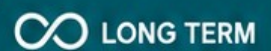


MILESTONE GATE: Initial commercial deployments with recurring economics, measurable customer value, reusable integration patterns, and expanding governance adoption.



PHASE IV — PROTOCOL & ECOSYSTEM EXPANSION

24+ MONTHS | Portable governance, interoperability, and category infrastructure



SMART-I-SHELF™ Physical State Engine

- Extend physical-state evidence concepts into additional form factors and vertical reference environments where independent ground truth is valuable.
- Support cross-manufacturer interoperability and shared evidence schemas when market demand justifies standardization.



HOMESPHERE AI™ Distributed Orchestration

- Expand cross-vertical orchestration, tool/model interoperability, and partner ecosystem integrations.
- Support portable governed workflows across physical and digital operating environments.



R.E.T.N.A.™ Pre-Execution Governance

- Advance protocol licensing, conformance tooling, compliance profiles, and independent implementation guidance.
- Pursue standards, research, OEM, enterprise, and regulatory engagement around pre-execution decision governance.
- Enable governance artifacts and reason-code semantics to travel across vendors and model stacks without lock-in.



MILESTONE GATE: Repeatable protocol adoption beyond the originating reference environment, supported by conformance tooling, licensing, interoperability, and third-party implementation pathways.

ROADMAP PRINCIPLE

**RAISE AGAINST PROOF. SCALE AGAINST
VALIDATED OPERATING EVIDENCE.**