



Eptesicus Laboratories

Business Manuscript

Company-first investment memo with product wedge (Lumis-1) as the initial commercialization proof point.

Confidential - for discussion purposes

Executive Summary

Eptesicus Laboratories builds the software layer that makes on-device AI deployments more predictable in practice: a governance and evaluation runtime that packages models with validators, calibration, policy controls, and trace artifacts. The goal is not 'perfect AI' but measurable reliability deltas, deployment discipline, and cost control under real constraints (latency budgets, privacy, and offline operation).

The first commercialization wedge is Lumis-1: a packaged on-device assistant model plus a lightweight Validator Council and a steering loop. Lumis-1 functions as a proof point and a vehicle to ship the runtime, evaluation harness, and governance assets into early enterprise pilots.

Funding request: €50,000 to harden the runtime, build reliability datasets and acceptance tests, and deliver a pilot-ready package with trace artifacts and evaluation reporting suitable for enterprise procurement.

Problem: reliability, governance, and economics block real adoption

Enterprises increasingly want AI closer to the endpoint for privacy, latency, and cost predictability. However, deployments stall when the system cannot be governed and verified in a way that satisfies engineering and procurement.

- **Reliability risk:** Small models can be inconsistent and overconfident on edge prompts, especially under partial context or noisy inputs.
- **Governance gap:** Many teams lack auditable artifacts (policies, traces, evaluations) that support reviews, approvals, and versioned releases.
- **Economics:** Cloud dependency introduces variable per-token costs and uncertain margins; on-device shifts cost to predictable compute but requires deployment discipline.
- **Constraint reality:** Field and regulated environments often impose offline or low-connectivity operation and strict data handling requirements.

Company solution: a platform for predictable on-device AI

Eptesicus Laboratories' core product is the runtime and governance layer that sits between a model and a real deployment. It is designed to be model-agnostic and to produce measurable deltas against a baseline model using an evaluation harness and acceptance criteria.

Platform components (core IP)

- **Runtime orchestration:** draft -> score -> steer -> retry (bounded) -> finalize, with policy configuration and versioning.
- **Validator models:** lightweight scorers (e.g., Safety, Consistency, Accuracy/Support) that gate or steer outputs rather than replacing the base model.

- **Evaluation harness:** regression suites focused on failure modes (contradictions, unknowns, refusal classes, near-misses) and measurable deltas.
- **Trace artifacts:** structured output logs and decision traces to support auditability and internal review.
- **Calibration and gating:** thresholds and abstention behavior tuned to reduce unsupported claims while preserving usefulness.

This is software and process, not prompt configuration. The system is designed to be shipped, versioned, and evaluated like any other production component.

Lumis-1 as the wedge: the first packaged proof point

Lumis-1 is the first commercial instance of the platform: a small on-device assistant model packaged with a Validator Council and a steering loop. It is optimized for efficiency, size, and bounded reliability behavior.

High-level architecture

- **Speaker model:** the core assistant model (fine-tuned for the target workflow).
- **Validator Council:** three lightweight scorers that evaluate drafts (Safety, Consistency, Accuracy/Support).
- **Steering loop:** the runtime uses validator feedback to retry a bounded number of times and emits a final answer plus trace.

Claims discipline

Eptesicus Laboratories does not claim elimination of hallucinations or guaranteed correctness. The objective is measurable reductions in unsupported claims versus a baseline, improved self-correction on flagged drafts, and consistent low-confidence behavior under defined acceptance tests.

Target customers and initial use cases

Primary buyers are enterprise teams that need on-device capability with control: product leads, engineering managers, and security or compliance stakeholders who require predictable deployment behavior and auditable artifacts.

Representative workflows

- **Field service:** offline-first troubleshooting guidance, step verification, and structured checklists on rugged devices.
- **Healthcare operations:** on-device assistance for documentation support or workflow guidance where data sensitivity and connectivity constraints exist.
- **Regulated enterprise:** device-embedded copilots that require policy controls, version pinning, and evaluation evidence for release approvals.

- **OEM/ISV bundling:** packaging into devices or vertical software products where vendor lock-in is a concern.

Market opportunity: on-device shift plus governance spend

Selected analyst forecasts (including Gartner, IDC, MarketsandMarkets, and Grand View Research) describe rapid growth in edge AI software and parallel growth in AI governance tooling. A practical takeaway for Eptesicus Laboratories is that governance and evaluation spend grows with adoption, because enterprises pay for predictable behavior, audit artifacts, and reduced operational risk.

Examples from aggregated public forecasts include: Edge AI software growing from roughly \$11.8B (2024) to about \$56.8B (2029), and AI governance software reaching approximately \$15.8B by 2030. These figures are directional signals; the company's wedge focuses on early enterprise deployments where governance is a purchase driver.

Business model

- **Annual enterprise licenses:** runtime plus evaluation harness, packaged with model-specific validators and update rights.
- **Support and SLA tiers:** production deployment support, calibration assistance, and release management.
- **OEM/ISV partnerships:** licensing for bundling into devices and vertical software products.
- **Productized pilots:** paid onboarding engagements with fixed scope, designed to convert into licenses (not open-ended services).

Go-to-market

- **Entry:** productized pilot focused on one workflow with clear acceptance tests and trace artifacts.
- **Conversion:** expand coverage (more workflows, more tests) and convert to annual license with support.
- **Distribution:** OEM/ISV bundling for embedded deployments where procurement prefers packaged components.
- **Positioning:** model-agnostic governance that reduces vendor lock-in across Apple, Android, and Windows deployments.

Competition and differentiation

Eptesicus Laboratories competes in a category that includes OS-native on-device stacks and major incumbents, as well as model vendors and tooling providers. The strategy is not to outspend platforms, but to provide a model-agnostic governance layer and evaluation discipline that enterprises can carry across environments.

- **OS-native stacks:** Apple, Google/Android, Microsoft/Windows - strong distribution, but enterprises often face lock-in and limited cross-platform governance consistency.
- **Cloud model platforms:** strong capability, but variable costs, data/control constraints, and dependence on network availability.
- **Traditional MLOps / monitoring:** valuable for observability, but often insufficient for on-device gating logic and trace artifacts tied to runtime decisions.
- **Eptesicus differentiation:** on-device runtime plus validators plus acceptance tests plus trace artifacts as a coherent package; measurable deltas and deployment discipline.

Roadmap

Near-term (0-6 months): pilot-ready package

- Harden the runtime orchestration, configuration, and versioning.
- Build and curate reliability datasets focused on failure modes (contradictions, unknowns, refusal classes).
- Define acceptance criteria and publish evaluation reports for pilot workflows.
- Deliver a packaged Lumis-1 release with traces and an evaluation harness suitable for enterprise review.

Mid-term (6-18 months): repeatable deployments

- Expand validator calibration and reduce over-refusal while preserving usefulness.
- Add tooling for policy bundles, regression gating, and release discipline.
- Land OEM/ISV integration pathways for embedded distribution.

Long-term R&D; direction (measured)

In parallel with commercialization, the team intends to explore architecture experimentation as a research direction (for example, ideas related to spiking or world-model approaches). This is framed as exploratory R&D;,, not a near-term commercial deliverable.

Team

Founder-led team operating pre-incorporation:

- **Deyan Todorov** - Founder
- **Iliyan Bozhanov** - Co-founder

Funding ask: €50,000

Eptesicus Laboratories is raising **€50,000** to reach a pilot-ready release with measurable reliability deltas, a hardened runtime, and enterprise-grade evaluation artifacts.

Use of funds (totals €50,000):

- **€18,000** - Reliability datasets (failure-mode corpora, labeling, synthesis)
- **€9,000** - Runtime engineering (orchestration, configuration, trace artifacts)
- **€7,000** - Evaluation harness and regression suites (acceptance tests, reporting)
- **€6,000** - Pilot packaging and integration (deployable builds, documentation)
- **€5,000** - Compute and tooling (training runs, device testing, CI)
- **€3,000** - Legal and incorporation setup (entity formation, basic counsel)
- **€2,000** - Contingency and operational buffer

Expected deliverables

- Runnable on-device demo with a packaged Lumis-1 instance.
- Evaluation harness with acceptance tests and regression reporting.
- Trace artifacts and policy configuration suitable for enterprise review.
- Pilot onboarding playbook that converts to annual licenses.

Appendix

Glossary (selected)

- **Validator Council:** a set of lightweight scoring models that assess drafts for safety, consistency, and support/accuracy signals.
- **Steering loop:** bounded retry logic that uses validator feedback to improve or abstain.
- **Trace artifacts:** structured logs that record decisions, thresholds, and outcomes for auditability.
- **Acceptance tests:** regression prompts and checks used to validate measurable deltas versus baseline.

Status and notice

Eptesicus Laboratories is a brand operated by Deyan Todorov and Iliyan Bozhanov. It is not currently a registered legal entity. The team intends to incorporate prior to signing institutional investment documents. This material is provided for discussion purposes only and is not a product specification or legal advice. It is not intended for medical, legal, or safety-critical decision-making.