CIO / EXECUTIVE SUMMARY

PPE1 Platform

Forensic Code Review — the three-minute read

The high-level read for a technical decision-maker: what PPE1 is, the evidence that it is professionally built, and the one answer that decides any deal — **can our team own and extend it?** The complete file-level review runs to sixteen pages; this is the distilled version, drawn from its highest-value findings.

PREPARED FOR

Prospective acquirers & licensees — lenders and SaaS providers

SUBJECT

PPE1 — a Mortrax Corporation platform

BASIS

Independent forensic code review, June 27, 2026

1 — BOTTOM LINE UP FRONT

Hand-built, domain-true, and built to be owned.

PPE1 is a modern, professionally architected mortgage-pricing and pipeline platform — built for two kinds of owner: a mid-size or large **lender** deploying it in-house, or a **SaaS provider** taking it to market. It is the design of its **founder**, a mortgage-banking domain expert with 40 years in the industry — the fourth pricing technology he has built since his nationally-recognized first system in 1997. It is **hand-coded** software, and its depth, breadth, and internal consistency read as a **deliberately designed, domain-driven system** — coherent, disciplined, and built to be handed off.

> **The answer to the question that decides the deal** — "can our engineers take this over and extend it, *without* the original author?" — is, on the evidence of the review, **yes**. The very choices that make a codebase ownable (stored-procedure data access, soft-delete discipline, a shared-core monorepo, enforced code policies, and deep living documentation) are the choices PPE1 made.

Assessment: an enterprise-class, transferable, domain-true asset.

40 years

in mortgage banking — the founder's domain expertise, encoded directly in the platform

His 4th engine

the fourth pricing system he has designed since a nationally-recognized first in 1997

File-level

an independent forensic review of the entire codebase — evidence, not a demo

2 — WHAT IT IS

Six Products. One Platform.

One database, one JWT identity, and an **API-first** design: every piece of business logic lives behind a clean service, so nothing of consequence is trapped inside a screen. The six products are one platform — the five solutions the full review details — so users authenticate once through Identity, work in the Manager hub, and price in Loan Pricer, on the web and on a phone, from one shared core.

Loan Pricer

The pricing engine — a Program Engine for eligibility, a Pricing Engine for true best execution.

Bulk Pricer

The same engine at institutional scale — thousands of loans from a bid tape, isolated from production.

Manager

The administrative hub — clients, programs, guidelines, ratesheets, and market-data imports.

Mobile

A native mobile app — the full pricing workflow in the field, from the same shared core.

Learning Center ("eLCee")

AI living documentation, grounded in the source of truth so it can't go stale.

Identity

The single authentication authority — platform-wide SSO, two-factor, signed claims.

246K+
lines of hand-written code across 1,300+ files

493
stored procedures (the data layer, by policy)

163
tables — 96 foreign keys enforcing integrity

0
front-end dependency vulnerabilities (npm audit)

<49s
to price a 250-loan Bulk Pricer batch

<0.2s
per loan in batch (parallelized)

<2s
per loan, full-scope interactive pricing

1,700+
automated tests, CI-gated — all green

Stack: **.NET 10** server tier (ASP.NET Core MVC + Web API, Dapper/stored procedures, source-generated mapping) and a **React 18 + TypeScript + Vite** client. Counts from the platform's deterministic line-counting tool; performance measured on representative workloads and verifiable in the processing history.

---

3 — WHY IT'S OWNABLE

The evidence a CIO checks

API-FIRST & HEADLESS

Nothing welded to a screen

The pricing engine is a pure, UI-less service every client calls. A new front end, a partner system, or an embedded use case can be built on the same APIs — or run behind your own LOS — without touching the core.

MULTI-TENANT BY CONSTRUCTION

The SaaS machinery is built

One deployment hosts many independent lenders, each with its own region → branch → user hierarchy (and optional wholesale (TPO) division), with per-client data scoping enforced platform-wide. The lender-or-provider proposition rests on real machinery, not a slide.

AUDITABLE BY REPLAY

"Our code, or their data?" — answered

Any loan, even one priced months ago, can be **replayed** field by field and every outcome attributed to a specific guideline, an overlay rule (with the condition that fired), or the input data — a defensible, repeatable answer, not a guess. Nothing is hard-deleted, so history is fully browsable — observability that materially de-risks owning a calculation engine.

CONFIGURED, NOT CODED

Reshape behavior without touching source

Eligibility, guidelines, and price adjustments are authored as **data** through one visual rule system over a single field catalog, with guideline inheritance. A licensee makes the platform its own through configuration, with no deployment — the extensibility an in-house team or SaaS provider needs.

DATA DISCIPLINE & INTEGRITY

Negligible injection surface, full audit trail

Effectively all data access flows through roughly 490 parameterized stored procedures (minimal inline SQL, by policy), soft-deletes and system-versioned temporal tables preserve history, and 96 foreign keys enforce referential integrity across the schema — integrity built into the data layer, not left to application code to remember.

CURRENT, CLEAN & TESTED

Modern stack, living documentation

.NET 10, React 18, TypeScript, Vite, and source-generated mapping (no reflection-mapper CVE surface); zero front-end vulnerabilities; **over 1,700 CI-gated automated tests**, all green; and an AI Learning Center that turns the source of truth itself into self-refreshing documentation — a stack a new team can own without a long ramp.

4 — HONEST ABOUT THE TRADE-OFFS

Named, tracked, and managed — not hidden

No platform of this scope is without areas of continued investment, and a credible review names them. In PPE1's case they are known, documented, and actively managed:

- **Test coverage is broad and still widening.** Over 1,700 CI-gated tests run green across the platform — golden-master characterization on the calculation core plus unit, integration, and end-to-end layers; the end-to-end layer is the newest and is the one still being extended.
- **Technical debt is managed in the open.** An explicit, prioritized technical-debt backlog and a documentation-freshness discipline keep modernization items sequenced, not accumulating silently.

That these items are openly tracked is itself a maturity signal — a platform engineered with the long view, by a team that distinguishes shipped from in-flight.

Set against the platform's scale, these are the ordinary maintenance items of a living system, not structural gaps — none touches the architecture, the data model, or the domain logic that would be hardest and costliest to rebuild. A buyer inherits a platform whose known work is already scoped and sequenced and whose foundations are sound.

5 — CONCLUSION

A coherent, ownable, domain-true platform

PPE1 is a professionally architected, domain-driven mortgage-banking platform whose code quality, consistency, and documentation reflect a substantial, sustained engineering effort. Its data layer is governed by policy, its schema enforces integrity by design, its stack is current and clean, and every solution ships with CI-gated tests. Most importantly for any acquirer — a lender taking it in-house or a provider taking it to market — it is built to be **handed off**, while its deep domain logic is the kind that would take years, significant budget, and a scarce senior mortgage-domain expert to rebuild from scratch.

Assessment: an enterprise-class, transferable, domain-true asset.