🔒SYSTEM CONTEXT LOCK — Infrastructure Cost & Revenue Sustainability

Agile AI University

STATUS

FINAL · LOCKED · GOVERNANCE-APPROVED

RECORD ID

SCL-INFRA-COST-2026-01

DATE LOCKED

January 2026

CHANGE AUTHORITY

❌**NONE** (unless explicitly unlocked by new governance record)

✂️PURPOSE (LOCKED)

This record formally defines the **infrastructure cost governance decision** taken to ensure:

- Revenue-first sustainability for a bootstrapped, solo-founder organization
- Zero-cost operation prior to user payments
- Preservation of all architectural, entitlement, and credential governance

This decision is **structural, not tactical**.

🖋️CONTEXT (LOCKED)

Agile AI University operates as:

- An independent academic & professional body
- A bootstrapped, solo-founder organization
- A resolver-led, governance-first system

During production validation, Firebase Cloud Functions were identified as introducing:

- Invocation-based billing before revenue realization
- Unpredictable cost exposure

• Operational risk disproportionate to early-stage scale

This risk is **financially unacceptable** for the current phase.

🛏️GOVERNANCE CONSTRAINTS (NON-NEGOTIABLE)

The following principles **MUST remain unchanged**:

- Resolver-led architecture is authoritative
- `resolvePortalEntitlements.js` remains pure and deterministic
- UI layers remain read-only and non-inferential
- Credential issuance, validity, and rendering remain unchanged
- Executive Insight remains advisory, interpretive, non-evaluative

❌No changes permitted to: - Credential semantics - Entitlement precedence rules - Access control logic - User-facing representations

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🌂DECISION (LOCKED)

🔗APPROVED DECISION

Reduce Firebase Cloud Functions usage and replace payment-related execution paths with Google Cloud Run services.

Firebase remains in use for: - Authentication - Firestore - Hosting - Client-side entitlement resolution

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🌡️ RATIONALE (LOCKED)

Firebase Cloud Functions — Limitations

- Invocation-based billing
- Cold-start amplification
- Cost incurred before revenue
- Poor predictability for solo founders

Google Cloud Run — Advantages

- ₹0 cost under free tier
- Pay-only-on-request execution
- Ideal for webhook-driven workflows
- Deterministic cost model
- No architectural coupling to UI or resolver

This choice optimizes for **sustainability without governance compromise**.

🎒SCOPE OF CHANGE (STRICTLY LIMITED)

🕐REDUCED

- Firebase Cloud Functions for:
- Razorpay order creation
- Razorpay webhook handling
- Payment confirmation glue logic

🔗RETAINED

- Firebase Auth
- Firestore
- Hosting
- Resolver logic
- Dashboard gating
- Credential registry & rendering

ADDED

- Google Cloud Run service (stateless):
- Payment → entitlement signal only
- No UI logic
- No resolver logic

🎓COST GOVERNANCE OUTCOME

Metric	Before	After
Minimum monthly cost	Unpredictable	**₹0**
Cost before revenue	Yes	**No**
Billing transparency	Low	**High**
Solo-founder viability	At risk	**Protected**

🎩MANUAL INTERVENTION POLICY (TEMPORARY · GOVERNED)

Allowed (Initial Phase)

- Manual entitlement correction
- Used only for:
- First paying users
- Payment system stabilization

Disallowed

- Manual credential issuance

• Manual entitlement inference

All manual actions must be: - Logged - Auditable - Reversible

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🏖️ TARGET STEADY STATE (LOCKED)

Fully automated flow:

```
User Payment → Cloud Run → Firestore → Resolver → UI
```

No manual intervention required.

🕐 RISK ASSESSMENT

Risk	Mitigation
Payment webhook failure	Cloud Run retries + logs
Entitlement mismatch	Resolver remains authoritative
Governance drift	This record is LOCKED
Vendor dependency	Cloud Run is portable

✂️ GOVERNANCE VERDICT

✅Governance-compliant ✅Financially necessary ✅Architecturally safe

This record is **FINAL and LOCKED**.

✂️🖋️ RECORD CUSTODIAN

Agile AI University — System Governance