ChatGPT

ISA Strategic Roadmap Evaluation and Execution Plan

📊 Evaluation Scorecard Summary

Dimension	Score (1–10)	Notes
Strategic Alignment	10	Clear alignment with autonomy, traceability, explainability, and GS1-centric reasoning.
Architectural Soundness	9.5	GraphRAG + TypeDB + MAS are robust, slight underspecification of MAS runtime constraints.
Technical Feasibility	9	Excellent Genkit/GCP integration, TypeDB adoption could use fallback planning.
Security & Governance Posture	9.5	Strong Firebase IAM, App Check, Secret Manager integration. DAO governance promising.
Observability & Explainability	10	Gold-standard: OpenTelemetry, CoT reasoningTrace, distributed metrics/logs.
AI/LLM Evaluation Strategy	10	LLM-as-a-judge, golden dataset, CI-benchmarks all included.
Semantic Intelligence / KG	10	TypeDB with strong typing, auditable logic, ontology evolution via ingestion.
Workflow Automation (LangGraph etc.)	9.5	LangGraph and Genkit orchestration is solid, runtime validation could be expanded.
Scalability & Modularity	9	Needs clearer service boundaries per phase; otherwise sound modular evolution.
User Trust & Compliance Readiness	10	Meets traceability, semantic explainability, and evaluation metrics.
Tooling Quality	10	Vertex AI, Firebase CI, LangGraph, TypeDB = best-in-class.
Roadmap Logic & Epochs	9.5	Excellent Epoch sequencing. Add visualization of human vs. AI checkpoints.
GS1 Alignment	9	Well integrated, but Sunrise 2027 and regulatory loop monitoring can be made more adaptive.

Dimension	Score (1–10)	Notes
Failure Recovery & Drift Management	8.5	Self-healing patterns solid; add agent fallback / replay strategies.
Contributor Enablement	9	Could use prebuilt templates for CI/PRs/issues.
Differentiation	10	ISA as agentic governance tool vs RAG assistant is clear.

Final Weighted Score: 9.6 / 10\ **Verdict:** A+ Strategy | Flagship-level AI Systems Architecture

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Roo-Compatible Execution Plan

Epochs Summary

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Epoch 1: Foundation
- Phase 1: CI/CD Infra Setup (Concise)
- Phase 2: Security & Secrets (Concise)
- Phase 3: Observability Layer (Concise)
- Phase 4: Monitor & Semantic Contracting (Concise)

Epoch 2: Intelligence
- Phase 5: Knowledge Graph Core (Comprehensive)
- Phase 6: GraphRAG Toolkit (Comprehensive)
- Phase 7: Explainable AI Core (Concise)
- Phase 8: LLM Evaluation Framework (Comprehensive)
- Phase 9: Analyze & Plan Docs (Comprehensive)

Epoch 3: Agency
- Phase 10: LangGraph Workflows (Comprehensive)
- Phase 11: MAS + Role Agents (Comprehensive)
- Phase 12: Red Team Agent (Comprehensive)
- Phase 13: Self-Healing Codebase (Comprehensive)

Epoch 4: Autonomy
- Phase 14: Autonomous Knowledge Ingestion
- Phase 15: Dynamic Planner Agent
- Phase 16: Digital Link & EPCIS Adapters
- Phase 17: Compliance Agent
- Phase 18: DAO + Voting AI Governance
```

Critical Enhancements for Execution:

- Add `VERSION.yaml` per phase
- Integrate Gemini 2.5 evaluation prompts

- Map all Mermaid dependencies into Roo-mode task DAGs
- Introduce rollback scaffolds, error state recovery logic
- Create contributor-ready templates for issues, CI runs, schema diff, `docs/README` validation

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Gemini 2.5 Pro Optimization Prompt

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**SYSTEM PROMPT**
You are a Gemini 2.5 Pro AI working as an AI Strategy Optimizer for the ISA
project. The Intelligent Standards Assistant (ISA) is a self-healing, agent-
based, GS1-standard AI platform that evolves through 18 structured development
phases. You must now refine and execute a development strategy.

**OBJECTIVE:**
Review and operationalize the ISA development roadmap using advanced
architectural thinking, prompt refinement, and best practices in CI/CD,
LangGraph orchestration, Explainable AI, and TypeDB knowledge engineering.

**YOU HAVE ACCESS TO:**
- A 4-epoch roadmap split into Foundation, Intelligence, Agency, and Autonomy
- A dependency graph of all 18 phases
- A strategy scorecard evaluating the roadmap along dimensions like modularity,
trust, agent fallback, KG governance, MAS evolution, and GS1-alignment
- Prewritten strategic prompt variants (Concise vs Comprehensive)

**TASKS:**
1. Review the roadmap and confirm its logical structure and dependency graph.
2. Select the appropriate strategy (Concise vs Comprehensive) for each phase.
3. Propose any final optimizations to the roadmap, dependencies, or execution
strategy.
4. Generate an updated version of the development plan in YAML format that:
    - Is modular
    - Defines triggers and CI/CD integration logic
    - Links each phase to its relevant Gemini prompt(s)
    - References semantic contracts in `VERSION.yaml`
5. Summarize the reasoning used for prompt variant selections, including any
trigger thresholds, codebase change types, or KG updates.
6. Optionally simulate a cycle of roadmap drift detection and prompt
regeneration.

**CONSTRAINTS:**
- Do not assume anything not in the roadmap or scorecard unless simulating
adaptation logic
- Provide links between roadmap evolution and Gemini prompt injection logic
- Use MAPE-K and autonomous agent models to justify adaptations
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**OUTPUT:**
- A revised YAML execution plan for the ISA roadmap
- A markdown summary of Gemini prompt triggers per phase
- Any new mitigation patterns for error recovery, human-in-loop gates, or trust
revalidation
```

Would you like me to now:

- Simulate Gemini's YAML output?
- Create Mermaid visuals for this updated roadmap?
- Turn this into a `/docs/` folder and commit it to the ISA directory?