

ARIP-P3: A Portfolio, Program & Project Decision-Support & Allocation System

The ARIP Core

The **AI-Augmented Research & Insight Platform (ARIP)** converts unstructured ideas, evidence, claims, analytical judgments, contradiction reviews, scenario comparisons, decisions and outcomes into governed lifecycle records that are deterministic, auditable, reproducible and suitable for future learning.

ARIP is not simply an AI-chat interface, portfolio dashboard or scoring model. It separates and governs:

DEFINE → MEASURE → ANALYZE → IMPROVE → CONTROL/CLOSURE

AI may assist research, evidence evaluation, contradiction testing, scenario analysis, comparison and reporting, while deterministic methods perform governed analytical calculations and the **human retains decision authority**. Every accepted claim, evidence record, contradiction, analytical state, scenario, decision, override, monitoring trigger and outcome can be persisted so that the reasoning behind a decision can later be reconstructed and audited.

This domain implementation of ARIP supports organizations that must compare multiple candidates competing for scarce capital, funding, capacity or management attention. Potential applications include:

- **Project/Program/Portfolio Selection & Prioritization** — selecting, prioritizing, pausing or terminating projects; allocating capital and resources; testing alignment with strategic objectives.
- **Capital Project & Infrastructure Decisions** — comparing investment alternatives, engineering changes, design options, scope decisions, scheduling options, and risk-response strategies.
- **R&D / Innovation Portfolio Management** — selecting research ideas, comparing technology pathways, deciding whether experiments or development programs should advance, and allocating scarce R&D resources.
- **Program Funding & Grant Allocation** — evaluating competing funding proposals, testing evidence and assumptions, balancing portfolios, making decisions, and monitoring outcomes.

ARIP provides the **bridge between analytical evidence and real-world allocation decisions**. Analytical outputs would not automatically dictate action. Instead, immutable analytical states would be combined transparently with dynamic decision factors such as cost, timing, risk, reversibility, resource availability, strategic alignment, opportunity cost and competing alternatives. The system then supports transparent comparison while preserving the human’s authority to make, explain and record the final decision.

ARIP-P3 provides a controlled environment for researching and validating governed human-AI portfolio decision-making, with findings potentially applicable across research, innovation and industrial program-management contexts.

Core Function	Purpose
DEFINE	Converts an idea into a governed hypothesis, fully defined in accordance with “SMART” principles
MEASURE	Converts evidence into a structured “ C laim t o Q uestion” (CTQ) and DART evidence-strength outputs
ANALYZE	Aggregates evidence support, process reliability, structural stability, and trajectory diagnostics
IMPROVE	Performs risk & contradiction review, scenario modeling, and CTQ refinement to confirm next steps
CONTROL/CLOSURE	Records decisions, monitors outcomes, and governs next actions
CLAIM TO QUESTION	ARIP turns a User claim to support a hypothesis, into a structured object (CTQ) that AI can question.
DART	“ D iagnostics A ttestability R elevance T ime”: constructs and measures CTQ-level evidence strength.
PAM	Aggregates quality-weighted diagnostic evidence into a bounded hypothesis-support state.
SIX SIGMA	ARIP Six Sigma treats the hypothesis state as the process, evaluating evidence reliability and quality
CDIF / CDIF-T	Evaluates structural stability, collapse pressure, and temporal trajectory of the hypothesis state
RCRS	Performs structured risk and contradiction reasoning before a decision is made by the User
BCD	B ayesian C ontradiction D iagnostics evaluates whether evidence favours the claim or contradiction.
PMC	Converts analytical outputs into governed allocation, approval, reduction, closure, monitoring decisions
ULA	Preserves and compares lifecycle and decision records for learning, improving future ARIP executions

The ARIP Lifecycle in a Portfolio, Program and Project Decision-Support & Allocation System

