NOTI HAIM
SYSTEM ENGINEERING AND PROJECT MANAGEMENT

Noti Haim

Systemic Documents: Engineering the Baseline

Strategic alignment, risk reduction, and requirements management for complex engineering projects.

The Strategic Imperative (Why We Write)

Contractual Fulfillment

Translating broad contractual obligations into concrete, actionable engineering tasks.

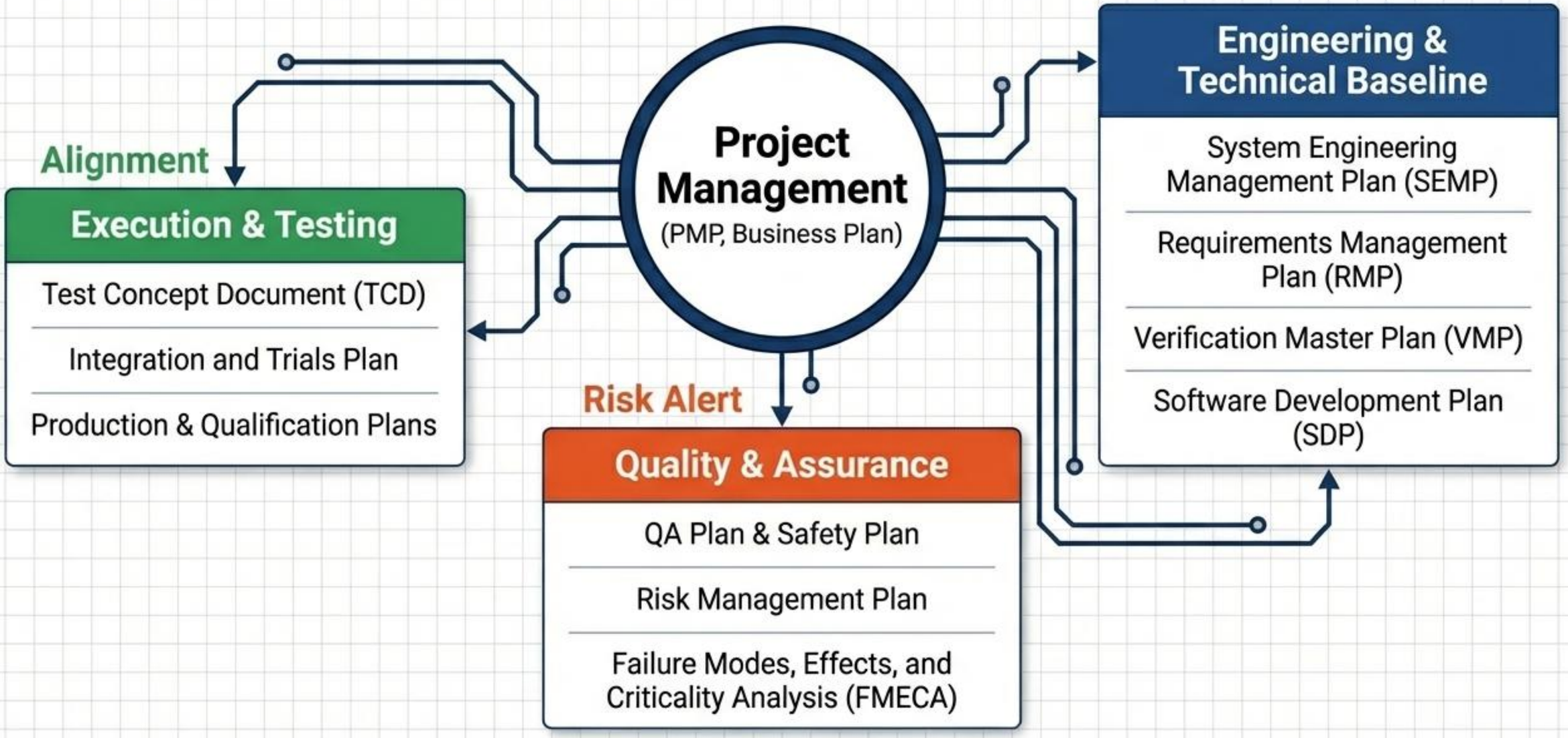
Organizing the Architecture

Forcing latent systemic issues, project constraints, and integration challenges to the surface during the authoring process.

Leveraging the Customer

Forcing early alignment on system requirements, design approval processes, and integration planning.

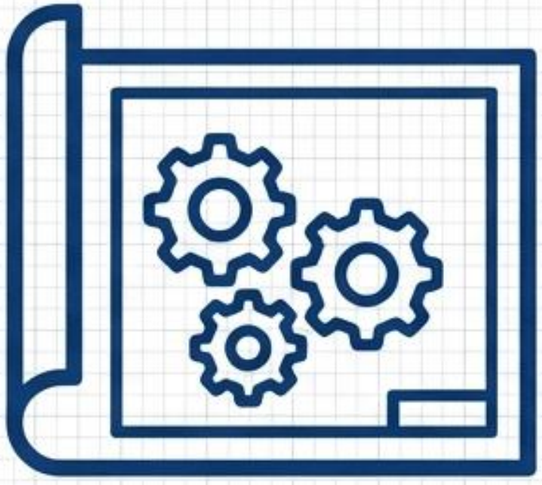
The Systemic Document Ecosystem



Comparing the Core Four: The Strategic Matrix

Document	Primary Purpose	Key Milestone	Primary Author	Main Risk Mitigated
SEMP	Technical management methodology	Planning	Systems Engineer	Process chaos and procedural misalignment
RMP	Cascading and tracing requirements	Planning / SRR	Systems Engineer	Scope creep and unaccountable technical deliverables
VMP	Product approval and verification	Baselined at PDR	Systems Engineer	Downstream customer disputes over final acceptance
TCD	Balancing test coverage vs. cost	Early Development	Testability Engineer	Late-stage discovery of untestable or unsafe components

The SEMP defines the technical heart of project management.



SEMP

Box 1 The Definition

Derived from the Program Management Plan (PMP), the System Engineering Management Plan (SEMP) explicitly defines how the project will be executed from a systems engineering perspective.

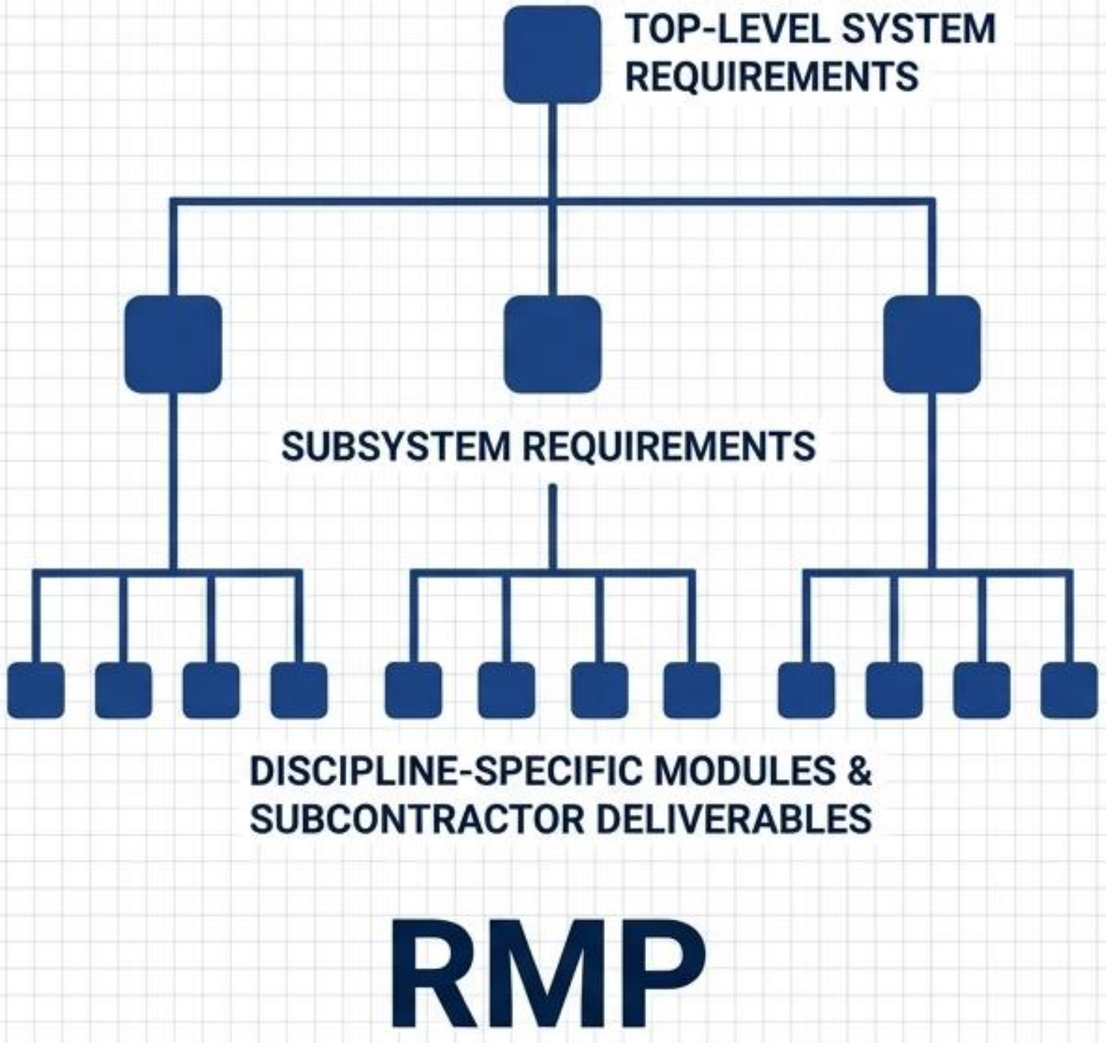
Box 2 Strategic Tailoring

It is a unique bridging document. It adapts broad organizational procedures to the highly specific technical constraints and contractual realities of the current project.

Box 3 Core Outputs

Establishes the precise methods, tools, and technical workflows that all engineering disciplines will utilize throughout the lifecycle.

The RMP manages the cascade of technical obligations.



Process & Traceability

Governs the strict tracing and cascading of requirements from the top-level System, down to Subsystems, across specific disciplines, and out to Subcontractors.

Extreme Accountability

Ensures absolute ownership by assigning a specific, responsible party to every single requirement module.

Integration & Risk

Mandates how requirements are linked into the project's chosen management software. It works in tandem with the **Risk Management Plan** to actively mitigate execution risks.

The VMP is the critical blueprint for final product approval.

VMP

The Foundation

Built directly upon the contractual Verification Matrix and the resulting Verification and Validation (V&V) architecture.

Strategic Leverage

Must be coordinated with the customer as early as the Preliminary Design Review (PDR). This aligns expectations on the most critical project issue: how the product is ultimately approved.

Dispute Mitigation

By detailing the exact approval processes and reference scenarios early, it proactively neutralizes fatal downstream disagreements during final delivery and acceptance testing.

Verification planning cannot wait for production.

Requirements Development Phase

Verification planning begins early in the project life cycle during the requirements development phase.

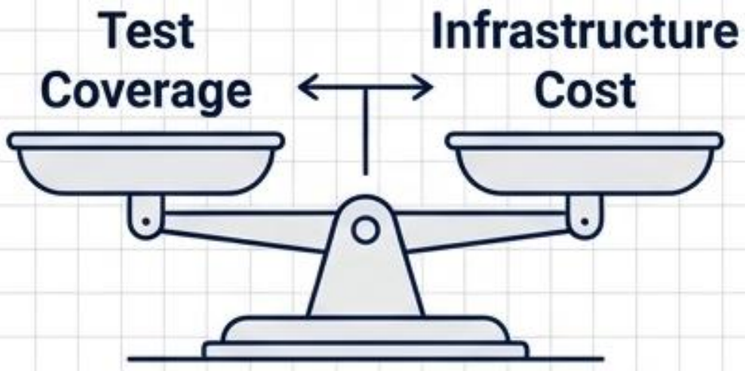
PDR (Preliminary Design Review)

The verification plan is baselined at PDR.

Logical Decomposition & Design

Updates continue as simulations shed light on testability, but the core verification baseline remains strictly frozen.

The TCD balances test quality against infrastructure reality.



TCD

Ownership

Authored by the Testability Engineer, working as an integrated component of the core Systems Engineering team.

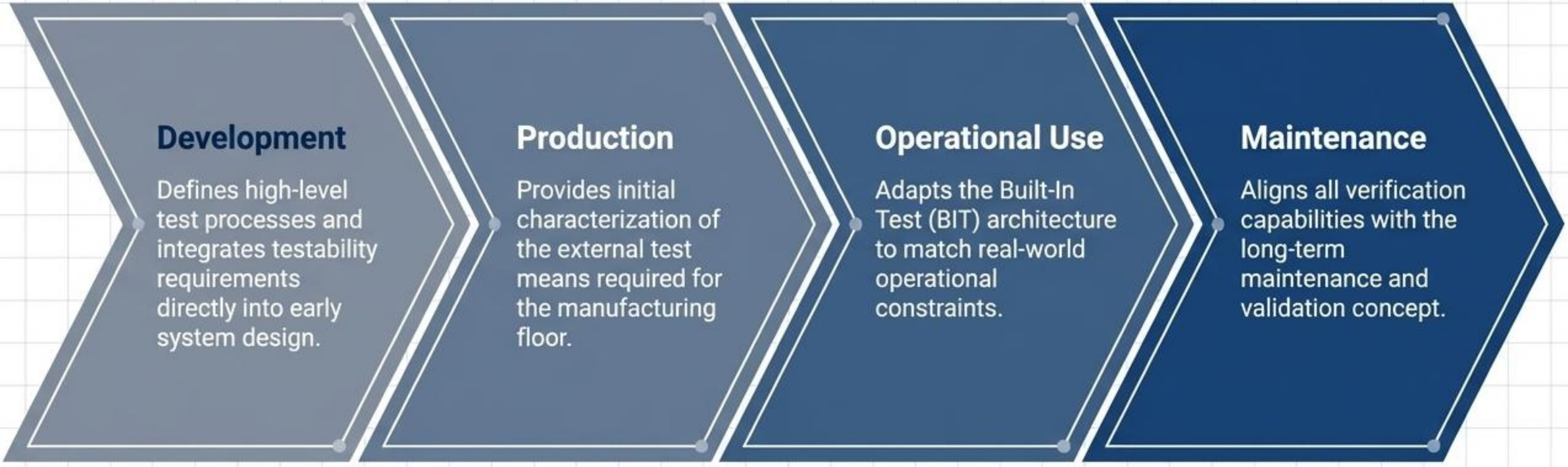
The Core Trade-Off

Deliberately balances the requirement for high test coverage against the realistic costs and reliability of test infrastructure, weighing Built-In Test (BIT) capabilities against external testing equipment.

Strategic Goal

Forces early updates to system requirements to permanently improve testability, safety, and manufacturability before designs are locked.

Test concepts dictate the product's entire operational lifecycle.



The Golden Rules of Customer Negotiation

1	**Eliminate the Void** Actively leverage systemic documents to clarify any and all contractual ambiguities. If the contract is vague, the document must be precise.
2	**Ambiguity is a Liability** Assume that any undefined parameter or “gray area” will ultimately be leveraged to the customer's benefit and the supplier's detriment.
3	**Force the Issue Early** Surface and resolve problematic technical disputes during SRR and PDR. Delaying conflict only amplifies cost and risk.
4	**Quarantine TBDs** Never leave a “To Be Determined” open-ended. TBDs must be quarantined in a dedicated tracker with strict resolution deadlines and named owners.

Engineering the Baseline: Strategic Summary

Purpose Beyond Paperwork

Systemic documents are offensive strategic assets used to align customer expectations, not mere administrative chores.

Eliminating the Gray Area

Early technical alignment (SRR/PDR) is the primary mechanism for eliminating the contractual ambiguities that cause project failure.

The Baseline

The Core Framework

SEMP dictates how we manage.
RMP dictates what we build.
VMP dictates how we prove it.
TCD dictates how we test it.

Configuration is Control

Strict information governance and version freezing ensures that both supplier and customer are constantly evaluating the exact same reality.