PROCESS DESIGN DOCUMENT

Assignment 1 – Phase 2: Process Proposal & Tailoring

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1.0 Introduction

PMBOK 7th edition, PRINCE2, and ISO 21500-21502 are some examples of project management standards that give you a way to manage projects well that is recognized all over the world. But many companies have trouble choosing and customizing these standards to fit the size, type, and complexity of their projects.

The goal of this project is to create a digital platform that combines these standards into a searchable database, lets you compare important principles and processes, and helps you create custom project processes for different project situations.

2.0 Objectives

The main goals of this project are:

- To come up with and put into action a digital solution that:
- Allows you to search for PMBOK 7, PRINCE2, and ISO standards.
- Let's us compare and cross-reference different standards.
- Makes project management processes that are specific to each project's needs.

3.0 Scope

3.1 Phase 1: Standard Repository and Comparison

3.1.1 Standards Library

Make a digital library with PMBOK 7, PRINCE2, and ISO 21500/21502 in it.
Let users:

- You can search by chapter or keyword.
- Mark and save important parts.
- You can easily switch between topics (EPUB, PDF, and HTML formats).

3.1.2 Engine for Comparison

Let users choose topics, like Risk Management or Stakeholder Engagement.

Show comparisons next to each other that show:
- Principles that overlap.
- Different ways of doing things and using words.
- Each standard has its own coverage.

Support deep linking, which lets users click on comparison points to go straight to the right part of the standard.

3.1.3 Dashboard of Insights

Put together the results under:
- Similarities (shared advice, best practices)
- Differences (different methods, different words)
- Unique Points (special features or rules)
- Use tables or graphs to show insights visually so people can easily understand them.

3.2 Phase 2 – Process Proposal & Tailoring

This stage focuses on creating tailored project management procedures for three distinct project types using the knowledge gained from the first phase.

Every process design comprises:
- The suggested procedure (phases and activities)
- Phase/Workflow Diagram
- Deliverables and Roles
- Gates of Decision
- Rationale and Standards References

4.0 Phase 2: Detailed Process Designs

4.1 Custom Software Development Project

4.1.1 Context:

- Team size: <7 members
- Duration: <6 months
- Well-defined requirements

4.1.2 Objective:

The goal is to develop a lightweight, adaptable procedure that prioritizes speed, flexibility, and ongoing feedback.

4.1.3 Workflow Diagram Example

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┌─────────────┐
│  Initiation │
│    Stage    │
└─────────────┘
       │
       ▼
┌─────────────┐
│   Planning  │
│    Stage    │
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│  Execution  │
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│  Monitoring │
│     and     │
│   Control   │
│    Stage    │
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│   Closure   │
│    Stage    │
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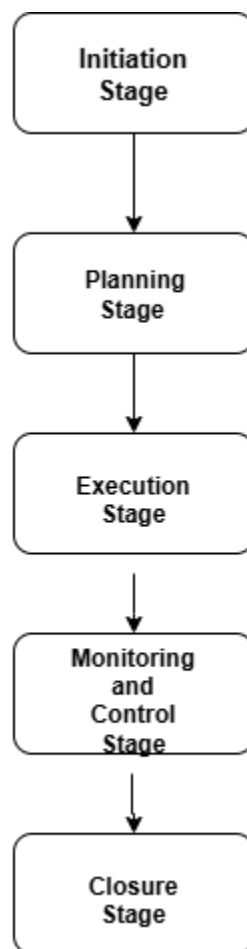
4.1.4 Phases and Key Activities

4.1.4.1 Initiation Stage (Approx. 2–3 Weeks)

Purpose & Activities
 The initiation stage establishes the foundation for the project by defining objectives, governance, and feasibility.
 The compact team structure encourages faster decision-making and reduces communication delays, aligning with **PMBOK's tailoring to context** and **systems thinking** (pg. 64).

Key Activities

- Appointment of core roles: Project Manager, Developer, Client Representative, QA Lead.

- Definition of project objectives, scope, and success criteria aligned with **organizational value delivery** (PMBOK pg. 40).

- Formalization of a **Business Case** and feasibility assessment based on **ISO 21502** (pg. 17).

- Establishment of governance roles following **PRINCE2's layered model** (Business, User, Supplier) for accountability and decision-making (pg. 43).

Justification
 This stage merges PRINCE2's governance clarity with PMBOK's contextual flexibility. ISO 21502 strengthens the foundation by enforcing sponsor accountability and formal feasibility checks. Together, they ensure clarity and alignment before execution begins.

Key Deliverables

- Project Charter / Business Case

- Governance Structure

- Stakeholder Register

- Initial Risk and Feasibility Report

4.1.4.2 Planning Stage (Approx. 4–5 Weeks)

Purpose & Activities
This phase converts initial ideas into a structured yet adaptive plan. It promotes rolling-wave planning and iterative scheduling to accommodate evolving needs.

Key Activities

- Refinement of scope and deliverables through a **Product Backlog** (PMBOK pg. 241).

- Establishment of **iteration cycles/timeboxes** for incremental value delivery (ISO 21502 pg. 36).

- Definition of "**Definition of Done (DoD)**" to clarify completion and quality expectations (PMBOK pg. 150).

- Development of **Project Initiation Documentation (PID)** to define cost, time, and quality baselines (PRINCE2 pg. 174).

Justification
This stage fuses PMBOK's adaptive planning with PRINCE2's formal documentation. ISO 21502 adds iterative lifecycle guidance. Together, they create a balanced plan that adapts to change without losing control.

Key Deliverables

- Product Backlog and Iteration Plan

- Definition of Done (DoD)

- Risk Register and Quality Plan

- Project Initiation Documentation (PID)

4.1.4.3 Execution Stage (Approx. 10–12 Weeks)

Purpose & Activities
This phase delivers the product incrementally using time-boxed sprints. The focus is on producing working software and engaging stakeholders continuously.

Key Activities

- Develop and test prioritized backlog items in short iterations.

- Apply **PRINCE2's "Manage by Exception"** principle (pg. 44) — fixing time and cost while allowing flexible scope.

- Conduct ongoing **validation and verification** for quality control (ISO 21502 pg. 46).

- Maintain collaboration and communication as per **PMBOK's Team Performance Domain** (pg. 94).

Justification

Combining PMBOK's performance domains with PRINCE2's governance control ensures consistent delivery, accountability, and transparency. ISO 21502 further embeds progress monitoring and feedback-driven improvements.

Key Deliverables

- Completed Iteration Increments

- Sprint Review Reports

- Updated Product Backlog

- Quality Verification Logs

4.1.4.4 Monitoring & Control Stage (Approx. 4 Weeks – Parallel)

Purpose & Activities

Monitoring ensures that progress stays aligned with plans. It operates concurrently with execution to manage performance and handle change dynamically.

Key Activities

- Visualize progress via **Kanban or Task Boards** (PMBOK pg. 174).

- Manage changes using **PRINCE2's Issue and Change Control** (pg. 53).

- Conduct retrospectives for adaptive improvements (PMBOK Uncertainty Domain, pg. 318).

Justification
 PMBOK supports continuous adaptation, PRINCE2 enforces structured control, and ISO 21502 ensures traceable monitoring. This combination delivers agile transparency within formal oversight boundaries.

Key Deliverables

- Progress Reports / Kanban Boards

- Issue & Change Logs

- Retrospective Summaries

- Updated Risk and Quality Registers

4.1.4.5 Closure Stage (Approx. 2 Weeks)

Purpose & Activities
 The closure phase formally ends the project, ensuring deliverable acceptance, knowledge capture, and benefits evaluation.

Key Activities

- Conduct performance evaluation against Business Case and PID (PRINCE2 pg. 227).

- Capture and share **lessons learned** (ISO 21500 pg. 13).

- Perform post-project evaluation for sustainability and outcomes (ISO 21502 pg. 235).

Justification
 PRINCE2's review process confirms performance outcomes, PMBOK ensures continuous improvement, and ISO guarantees traceability of learning and benefits realization.

Key Deliverables

- Final Handover Document

- Lessons Learned Report

- Project Performance Report

- Benefits Realization Summary

Phase	Activities	Deliverables	Roles
Initiation	Define goals, constraints, stakeholders	Project Charter	Project Manager
Planning	Create task plan, schedule, sprint backlog	Project Plan, Sprint Plan	PM, Developer
Development	Coding, daily stand-ups	Working Software	Developers
Testing	Unit & Integration testing	Test Reports	QA Engineer
Delivery	Client review and feedback	Final Product	PM, Client Rep
Closure	Documentation & lessons learned	Closure Report	PM

4.2 Innovative Product Development Project

4.2.1 Context:

- R&D intensive
- Duration: ~1 year
- Uncertain outcomes and iterative design cycles

4.2.2 Objective:

To develop a **hybrid/adaptive process** that balances innovation, iteration, and structured management.

4.2.3 Workflow Diagram Example
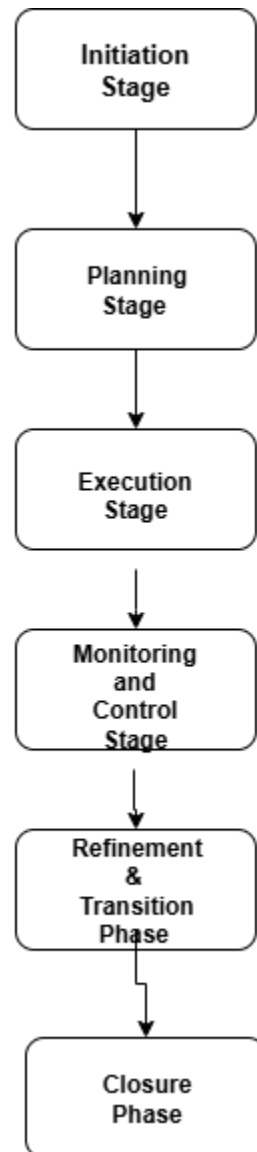
4.2.4 Phases and Key Activities

4.2.4.1 Initiation & Vision Phase (Approx. 1 Month)

Purpose & Activities
To define governance, establish vision, and set direction under uncertainty.

Key Activities

- Appoint Project Executive and Manager (PRINCE2 pg. 96).

- Define initial justification via **Outline Business Case** (pg. 77).

- Establish scope via **Project Product Description** (pg. 323).

- Select an **adaptive/hybrid development approach** (PMBOK pg. 127).

- Prepare initial Risk and Quality Approaches (ISO 21500 pg. 7).

Justification
 PMBOK's emphasis on tailoring supports flexibility, PRINCE2 ensures governance, and ISO validates feasibility and accountability from the start.

Decision Gate 1: Authorize project initiation and resource allocation.

4.2.4.2 Iterative Planning Phase (Approx. 2 Months)

Purpose & Activities
 This phase develops detailed yet adaptive plans, refining requirements as learning evolves through iteration.

Key Activities (Including Artifacts/Methods):

1. **Rolling Wave Planning:** Prepare detailed **Stage Plans** using **Rolling Wave Planning (PMBOK pg 123)**. Refine R&D requirements into a **Product Backlog** and **User Stories**, progressively elaborated as uncertainty reduces (ISO 21502 7.2.2).

2. **Risk Budget & Estimation:** Estimate work using uncertainty-based estimation techniques and update the **Full Business Case (PRINCE2 pg 240)** to confirm continued viability and resource justification.

Justification
 Planning must remain flexible and iterative. **Rolling Wave Planning** (ISO 21502 7.2.2) supports progressive detailing of scope, while updating the **Business Case** ensures financial and strategic feasibility as the project evolves.

Decision Gate 2 – Authorize Next Stage:
 At the **Stage Boundary Review**, the **Project Board** evaluates the **End Stage Report**

(PRINCE2 18.4.5) and confirms that the project remains desirable, viable, and achievable (PRINCE2 5).

4.2.4.3 Execution Phase (P2: Iterative Delivery) – Approx. 4 Months

Purpose & Activities
Execution focuses on developing and validating product prototypes through short, time-boxed iterations that encourage experimentation and stakeholder feedback.

Key Activities (Including Artifacts/Methods):

1. **Delivery in Sprints:** Execute work in **Timeboxes/Sprints** (PRINCE2
2. 285PDF), authorized as **Work Packages**. Deliver incremental outputs and a **Minimum Viable Product (MVP)** to test functionality and feasibility.

3. **R&D Techniques:** Apply **Prototyping and Modeling (PMBOK 2.8.3** P272, P211, P264**)** to reduce technological uncertainty and complexity, enabling stakeholders to validate assumptions through tangible results.

Justification
Iterative delivery balances innovation with control. Timeboxing fixes time and cost while allowing scope flexibility (PMBOK S2.1), essential in R&D environments where requirements evolve through discovery and testing.

4.2.4.4 Monitoring & Control Phase (P2: Iterative M&C) – Continuous

Purpose & Activities
Continuous monitoring ensures adaptability, transparency, and quality control during experimentation cycles.

Key Activities (Including Artifacts/Methods):

1. **Progress Monitoring:** Track progress using **Kanban Boards** and **Checkpoint Reports (PRINCE2 A2 pg 209, 309)**. Apply **Velocity Charts** for performance measurement and adaptive planning.

2. **Quality Control & Learning:** Conduct ongoing **Quality Control (ISO 21502 pg 46)** and **Iteration Reviews (PMBOK p. 171)**. Capture insights in the **Lessons Log** for

continuous improvement.

Justification
 Visual and adaptive controls (PRINCE2) enhance responsiveness, while PMBOK's quality and measurement principles ensure informed decision-making. ISO 21502 supports continuous improvement and learning throughout the lifecycle.

4.2.4.5 Refinement & Transition Phase (P3) – Approx. 3 Months

Purpose & Activities
 This phase finalizes the product for operational readiness and ensures benefits realization after handover.

Key Activities (Including Artifacts/Methods):

1. **Final Acceptance:** Perform formal acceptance and quality control (PRINCE2 8.3.1 pg 154) against the defined acceptance criteria. Update the **Project Plan** and confirm readiness for delivery.

2. **Transition Planning:** Prepare transition to Business-as-Usual (BAU), updating the **Benefits Management Approach (PRINCE2 pg 36)** to define post-project reviews and sustain value realization. (ISO pg 36)

Justification
 PRINCE2's structured acceptance confirms quality standards (PMBOK 2.6), while ISO 21502 (6.8, 7.3) ensures proper handover planning and benefit tracking for long-term impact.

Decision Gate 3 – Authorize Final Transition:
 The Project Board reviews **End Stage Reports (PRINCE2 18.4.5)** and approves transition to closure based on verified outcomes and sustained viability.

4.2.4.6 Closure Phase (P4: Closure & Handover) – Approx. 1 Month

Purpose & Activities
 This phase finalizes the product for operational readiness and ensures benefits realization after handover.

Key Activities (Including Artifacts/Methods):

3. **Final Acceptance:** Perform formal acceptance and quality control (PRINCE2 8.3.1 pg 154) against the defined acceptance criteria. Update the **Project Plan** and confirm

readiness for delivery.

4. **Transition Planning:** Prepare transition to Business-as-Usual (BAU), updating the **Benefits Management Approach (PRINCE2 pg 36)** to define post-project reviews and sustain value realization. (ISO pg 36)

Justification
PRINCE2's structured acceptance confirms quality standards (PMBOK 2.6), while ISO 21502 (6.8, 7.3) ensures proper handover planning and benefit tracking for long-term impact.

Decision Gate 3 – Authorize Final Transition:
The Project Board reviews **End Stage Reports (PRINCE2 18.4.5)** and approves transition to closure based on verified outcomes and sustained viability.

Phase	Activities	Deliverables	Roles
Concept	Ideation, feasibility analysis	Project Charter	Project Manager
Prototype	Design and build MVPs	Project Plan, Sprint Plan	PM, Developer
Validation	Test prototypes with stakeholders	Working Software	Developers
Pilot	Unit & Integration testing	Test Reports	QA Engineer
Launch	Client review and feedback	Final Product	PM, Client Rep

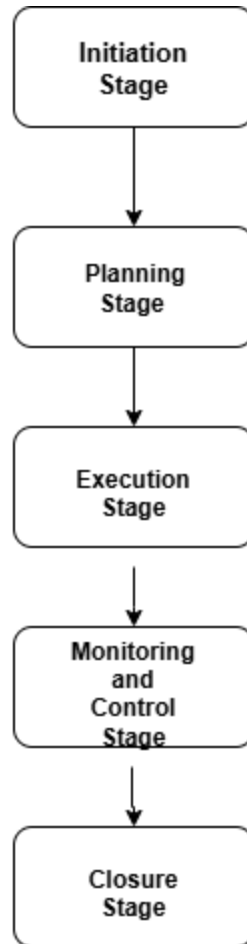## *4.3 Large Government Project Process*

4.3.1 Context:

- R&D intensive
- Duration: ~1 year
- Uncertain outcomes and iterative design cycles

4.3.2 Objective:

To develop a **hybrid/adaptive process** that balances innovation, iteration, and structured management.

4.3.3 Workflow Diagram Example

4.3.4 Phases and Key Activities

4.3.4.1 Initiation Phase (4–6 weeks)

Purpose: Establish governance structure, strategic alignment, and feasibility for a regulated public project.

Key Activities:

- Identify project sponsors, steering committee, and key stakeholders (PMBOK Stakeholder Domain pg 87).

- Develop a **Project Brief / Business Case** (ISO 21502 pg 17).

- Appoint the **Project Board** (Executive, Senior User, Senior Supplier) for formal oversight.

- Conduct initial feasibility, environmental, and regulatory assessments.

- Draft the high-level budget, procurement approach, and risk register.

Roles: Executive Sponsor, Project Manager, Project Board, Procurement Lead, Compliance Officer.

Artifacts / Deliverables:

- Business Case (PMBOK Value Delivery System)

- Project Charter / Brief

- Stakeholder Register

- Initial Risk and Feasibility Report

Decision Gate 1: Business Case Approval by Project Board and Sponsor → proceed to Planning.

Tailoring Justification: PRINCE2's explicit governance roles are retained for accountability; PMBOK's principle-based initiation adds flexibility across civil, electrical, and IT domains; ISO guidance ensures alignment to statutory obligations.

4.3.4.2 Planning Phase (8–10 weeks)

Purpose: Define scope, budget, schedule, and compliance controls before mobilization.

Key Activities:

- Develop **Product-Based Plans** and **Work Breakdown Structures** (PRINCE2 Plans Practice pg 143).

- Produce an integrated **Master Schedule** linking design, procurement, and construction.

- Create **Procurement Management Plan** (PMBOK Procurement Domain pg 138).

- Establish **Risk and Quality Management Plans** (PRINCE2 Quality Practice pg 147).

- Prepare **Communication and Reporting Framework** for stakeholders.

Roles: Project Manager (lead), Planning Engineer, Procurement Manager, Quality Manager, Finance Officer.

Artifacts / Deliverables:

- Project Initiation Document (PID)

- Master Schedule and Cost Baseline

- Risk & Quality Plans

- Procurement Strategy and Compliance Checklist

- Communication Plan

Decision Gate 2: PID Approval & Baseline Sign-off by Project Board.

Tailoring Justification: PRINCE2's formal PID adds rigor for government audits; PMBOK supports detailed domain integration (civil/electrical/IT); ISO's procurement clauses embed mandatory tender and compliance checks.

4.3.4.3 Execution Phase (Year 1 – Year 2)

Purpose: Deliver physical and digital outputs in controlled stages ensuring quality, safety, and contractual compliance.

Key Activities:

- Manage design, construction, and IT integration workstreams (PMBOK Delivery Performance Domain pg 150).

- Conduct procurement and contract administration (ISO pg 51).

- Perform quality inspections and system tests (PRINCE2 Quality Register; PMBOK Quality Domain).

- Monitor site safety, environment, and compliance.

- Manage stakeholder engagement and communication cycles.

Roles: Project Manager, Work Package Leads (Civil/Electrical/IT), Contract Administrators, Quality & Safety Engineers, Auditors.

Artifacts / Deliverables:

- Stage Plans & Progress Reports

- Approved Design Drawings / Test Reports

- Procurement Contracts & Change Logs

- Quality Inspection Records

- Monthly Performance Reports

Decision Gate 3: Stage Completion & Board Review — deliverables accepted, next stage authorized.

Tailoring Justification: PRINCE2's stage management suits multi-discipline oversight; PMBOK's performance domains guide integration and delivery quality; ISO's reporting and audit clauses satisfy public accountability.

4.3.4.4 Monitoring & Control Phase (Ongoing)

Purpose: Track performance, manage risk, ensure compliance, and control change across project life cycle.

Key Activities:

- Maintain dashboards for cost, schedule, and risk (PMBOK Measurement Domain pg 160).

- Conduct periodic **Stage Gate Reviews** (PRINCE2 Controlling Stage Process).

- Implement formal **Change Control Board** decisions (ISO pg 44).

- Update risk register and compliance reports.

Roles: Project Manager, Control Account Managers, Risk Manager, Project Board.

Artifacts / Deliverables:

- Performance Reports (EVM or Milestone Tracking)

- Updated Risk Register

- Change Requests and Decision Records

- Compliance Audit Reports

Decision Gate 4: Change Control and Stage Approval — authorize modifications or proceed to next milestone.

Tailoring Justification: PRINCE2's tolerances and issue registers provide traceability; PMBOK's quantitative controls support technical monitoring; ISO ensures audit documentation.

4.3.4.5 Closure Phase (Final 2 months)

Purpose: Formalize acceptance, transition to operations, and evaluate benefits realization.

Key Activities:

- Verify deliverables and regulatory compliance (ISO pg 32).

- Conduct post-implementation review and lessons learned (PMBOK Closing pg 227).

- Confirm Business Case outcomes (PRINCE2 Benefits Management Practice pg 88).

- Archive documentation and release contracts/resources.

Roles: Project Manager, Board, Audit Team, Operations Representatives.

Artifacts / Deliverables:

- Handover Report / Acceptance Certificate

- Benefits Realization Report

- Lessons Learned Register

- Project Closure Report

Decision Gate 5: Final Acceptance & Benefits Sign-off by Project Board and Sponsor.

Tailoring Justification: Closure structured around PRINCE2's benefit verification ensures accountability; PMBOK's lessons learned process supports organizational learning; ISO provides auditable closure records required by government agencies.