**Project Charter**

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# **Project Charter**

## **Project Title**

\*\*Requirements Gathering Agent\*\*

## **Project Purpose and Justification**

The \*\*Requirements Gathering Agent\*\* aims to automate and enhance the documentation of software projects by leveraging AI-powered tools for generating comprehensive, PMBOK-compliant project management artifacts. Traditional approaches to requirements gathering and project documentation are time-consuming, error-prone, and inconsistent. This tool addresses these challenges by providing a Node.js/TypeScript-based CLI solution integrated with Azure AI and other providers to streamline stakeholder collaboration, improve compliance, and enhance project management efficiency.

The project aligns with organizational goals of improving productivity, reducing documentation errors, and ensuring consistency across projects, while addressing market needs for automation and compliance assurance.

## **Project Objectives**

The primary objectives of the project are:

\*\*Automate Documentation\*\*: Develop a CLI tool to generate PMBOK-compliant project management documents, including project charters, stakeholder registers, scope management plans, and risk management plans.

\*\*Ensure Compliance\*\*: Embed PMBOK standards into the generated artifacts to ensure documentation adheres to industry best practices.

\*\*Enhance Efficiency\*\*: Reduce the time and effort required for manual documentation preparation.

\*\*Integrate AI Providers\*\*: Provide seamless integration with multiple AI providers, including Azure OpenAI, Google AI, Ollama, and GitHub AI.

\*\*Support Modular Architecture\*\*: Build a scalable, modular system to allow future functionality extensions and integration with third-party project management tools.

\*\*Deliver High-Quality Output\*\*: Validate generated documents for completeness, accuracy, and consistency across all project artifacts.

\*\*Enable Context Optimization\*\*: Implement an Enhanced Context Manager to maximize token utilization for large language models and improve the quality of AI-generated outputs.

## **High-Level Requirements**

The Requirements Gathering Agent must:

• Automatically generate PMBOK-compliant project documents (e.g., project charters, stakeholder registers, risk plans, WBS).

• Provide intelligent analysis of all markdown files in the project directory, beyond README.md, to enrich the AI-generated context.

• Validate all generated documents against PMBOK 7th Edition standards for completeness and compliance.

• Offer a CLI interface for flexible command-line execution and configuration.

• Support multiple AI providers and implement fallback mechanisms for provider failures.

• Ensure cross-document consistency and terminology alignment.

• Provide real-time analytics on context utilization during document generation.

## **Key Deliverables**

The project will deliver the following artifacts:

### **PMBOK Compliant Documentation:**

\*\*Project Charter\*\*: Formal authorization document for initiating the project.

\*\*Management Plans\*\*: Scope Management Plan, Requirements Management Plan, Risk Management Plan, and other PMBOK-compliant plans.

\*\*Stakeholder Register\*\*: Comprehensive stakeholder analysis and engagement strategies.

\*\*Planning Artifacts\*\*: Work Breakdown Structure (WBS), Activity List, Schedule Network Diagram, and Milestone List.

### **Technical Deliverables:**

\*\*CLI Tool\*\*: Fully functional Node.js/TypeScript module with detailed user documentation.

\*\*Enhanced Context Manager\*\*: A robust system for optimizing AI-generated context to improve documentation quality.

\*\*Integration Modules\*\*: APIs for connecting with Azure OpenAI, Google AI, and other providers.

\*\*Validation System\*\*: Tools for ensuring PMBOK compliance, quality scoring, and cross-document consistency.

## **Assumptions**

• The project team has access to Azure AI and other supported providers throughout the project lifecycle.

• Relevant documentation for testing, such as sample markdown files, will be available.

• Stakeholders will provide timely feedback on generated artifacts.

• The CLI tool will be used primarily by project managers, business analysts, and technical teams familiar with PMBOK standards.

## **Constraints**

• The system must operate efficiently within the CLI environment and support environments running Node.js 18.0.0 or higher.

• Documentation generation must adhere strictly to PMBOK 7th Edition standards.

• The Enhanced Context Manager must avoid exceeding token limits for supported AI models.

• The generated documentation must be interoperable with existing project management tools.

## **Risks**

### **High Risks:**

\*\*AI Provider Failure\*\*: Risk of downtime or API limitations from integrated AI providers, such as Azure OpenAI or Google AI.

- \*\*Mitigation\*\*: Implement fallback mechanisms and support multiple providers.

\*\*Compliance Gaps\*\*: Generated documents may fail to meet PMBOK standards due to incomplete project context.

- \*\*Mitigation\*\*: Enhance the context analysis process and validate outputs using quality scoring.

\*\*Performance Bottlenecks\*\*: Processing large projects with numerous markdown files may overwhelm token limits.

- \*\*Mitigation\*\*: Optimize the Enhanced Context Manager for token utilization and implement smart context pruning.

### **Medium Risks:**

\*\*Stakeholder Resistance\*\*: Users may be reluctant to adopt the AI-driven approach due to unfamiliarity or trust issues.

- \*\*Mitigation\*\*: Provide user training, tutorials, and documentation to improve onboarding.

\*\*Technical Debt\*\*: Future scalability may be impacted by rushed development decisions.

- \*\*Mitigation\*\*: Follow modular design principles and maintain code quality standards.

## **Stakeholders**

### **Key Stakeholders:**

• \*\*Project Sponsor\*\*: Provides funding and strategic direction for the project.

• \*\*Project Managers and Business Analysts\*\*: Primary users of the tool.

• \*\*Development Team\*\*: Responsible for building and maintaining the Requirements Gathering Agent.

• \*\*Compliance Officers\*\*: Ensure that generated documentation adheres to PMBOK standards and regulatory requirements.

## **Milestones**

### **Milestone 1: Project Initiation**

• Complete project charter and stakeholder register.

• Set up development environment and configure AI providers.

### **Milestone 2: Core CLI Development**

• Build CLI functionality for document generation and validation.

• Implement Enhanced Context Manager.

### **Milestone 3: PMBOK Compliance Validation**

• Enhance validation tools for ensuring compliance and consistency.

• Test generated documents against sample projects.

### **Milestone 4: Beta Release**

• Deliver pre-release version to select users for testing and feedback.

• Achieve milestone of 175 weekly downloads on npm.

### **Milestone 5: Full Release**

• Publish stable version of the Requirements Gathering Agent.

• Provide comprehensive user documentation and tutorials.

## **Budget**

### **Estimated Costs:**

• \*\*Development Costs\*\*: $50,000

- Includes salaries for developers, testers, and project managers.

• \*\*AI Provider Costs\*\*: $20,000

- Includes API usage fees for Azure OpenAI and Google AI.

• \*\*Training and Documentation\*\*: $10,000

• \*\*Marketing and Distribution\*\*: $15,000

\*\*Total Estimated Budget\*\*: $95,000

## **Approval Requirements**

This project charter must be approved by:

• \*\*Project Sponsor\*\*

• \*\*Key Stakeholders\*\*

• \*\*Compliance Officers\*\*

## **Project Roles and Responsibilities**

### **Project Manager**

• Oversee project execution and ensure alignment with PMBOK standards.

• Coordinate