## Collect Requirements Process

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### 1. Process Overview

**1.1 Purpose and Objectives:** This process defines how to systematically collect, analyze, document, and validate requirements for the Requirements Gathering Agent project. The objective is to ensure that all stakeholder needs are understood, documented accurately, and consistently traceable throughout the project lifecycle. This aligns with the PMBOK Guide’s Planning process group and the Requirements Management knowledge area.

**1.2 Process Scope and Boundaries:** This process encompasses all activities related to gathering, analyzing, and documenting requirements for the Requirements Gathering Agent. It begins with the initiation of the project and concludes with the approval of the finalized requirements documentation. The process excludes the subsequent activities of requirements management (e.g., requirements prioritization, change management), which are addressed in separate processes.

**1.3 Integration with Other Project Processes:** This process directly interacts with the following processes:

* **Develop Project Charter:** Inputs from the project charter define the high-level scope and objectives, guiding requirements collection.
* **Develop Project Management Plan:** The requirements management plan, a component of the overall project management plan, provides the framework for this process.
* **Define Scope:** The collected requirements form the basis for defining the project scope.
* **Manage Stakeholder Engagement:** This process heavily relies on effective stakeholder engagement to gather comprehensive requirements.
* **Manage Quality:** This process utilizes quality control methods to ensure the accuracy and completeness of the collected requirements.

**1.4 PMBOK Process Group and Knowledge Area Alignment:** This process is primarily aligned with the **Planning** process group and the **Requirements Management** knowledge area within the PMBOK Guide.

### 2. Process Inputs

* **Project Charter:** Defines the high-level objectives, constraints, and stakeholders of the project.
* **Requirements Management Plan:** Outlines the approach, methods, and tools for requirements management. (See 02\_REQUIREMENTS\_MANAGEMENT\_PLAN.MD)
* **Stakeholder Register:** Identifies all stakeholders and their roles, interests, and influence.
* **Business Case:** Provides justification for the project and highlights key business needs. (See 03\_PROJECT\_SCOPE\_STATEMENT.MD)
* **Relevant Project Documents:** Existing documentation such as architecture documents, design specifications, and user stories (See ARCHITECTURE.MD, 01\_PROJECT\_CONTEXT\_FROM\_README.MD)

### 3. Tools and Techniques

* **Data Gathering Techniques:**
  + **Interviews:** Structured and unstructured interviews with stakeholders to elicit requirements.
  + **Focus Groups:** Facilitated discussions with groups of stakeholders to gather diverse perspectives.
  + **Surveys:** Distributed questionnaires to collect data from a large number of stakeholders.
  + **Document Analysis:** Review of existing documentation to identify implicit and explicit requirements.
  + **Benchmarking:** Comparing the project to similar projects to identify best practices and potential requirements.
* **Data Analysis Techniques:**
  + **Requirements Prioritization:** Using techniques like MoSCoW (Must have, Should have, Could have, Won’t have) to prioritize requirements.
  + **Use Case Modeling:** Creating use cases to illustrate how users will interact with the system.
  + **Data Modeling:** Defining data structures and relationships to represent the system’s data.
* **Decision-Making Techniques:**
  + **Voting:** Using voting methods to reach consensus on requirements.
  + **Prioritization Matrix:** Combining prioritization criteria to rank requirements.
* **Data Representation Techniques:**
  + **Prototyping:** Creating mock-ups or prototypes to visualize requirements.
  + **Storyboarding:** Using storyboards to illustrate user flows and scenarios.
* **Interpersonal and Team Skills:**
  + **Facilitation:** Guiding meetings and discussions effectively.
  + **Negotiation:** Resolving conflicts and reaching compromises among stakeholders.

### 4. Process Outputs

* **Requirements Documentation:** A comprehensive document detailing all collected, analyzed, and validated requirements. This includes functional and non-functional requirements, use cases, and acceptance criteria.
* **Requirements Traceability Matrix (RTM):** A matrix linking requirements to design elements, test cases, and other project artifacts.
* **Process Updates and Refinements:** Any updates or improvements to the requirements collection process based on lessons learned.

### 5. Requirements Collection Activities

**5.1 Stakeholder Identification and Engagement:** Identify all stakeholders involved in the project and establish communication channels. This includes understanding their needs, expectations, and level of influence. (See Stakeholder Register)

**5.2 Requirements Elicitation Sessions:** Conduct workshops, interviews, and focus groups to gather requirements from stakeholders. Use appropriate elicitation techniques based on stakeholder availability and the complexity of the requirements.

**5.3 Requirements Analysis and Validation:** Analyze collected requirements to identify inconsistencies, conflicts, and ambiguities. Validate requirements with stakeholders to ensure accuracy and completeness. This includes techniques like prototyping and use case modeling.

**5.4 Requirements Documentation and Approval:** Document the validated requirements in a clear and concise manner. Obtain formal approval from key stakeholders to finalize the requirements document.

### 6. Quality Considerations

* **Requirements Quality Criteria:** Define criteria for evaluating the quality of requirements, such as completeness, consistency, accuracy, feasibility, and traceability.
* **Validation and Verification Methods:** Employ techniques such as reviews, walkthroughs, and inspections to validate and verify requirements.
* **Review and Approval Processes:** Establish a formal review and approval process for requirements documentation.
* **Continuous Improvement Approaches:** Regularly review and refine the requirements collection process to improve efficiency and effectiveness.

### 7. Process Metrics

* **Requirements Collection Metrics:** Track the number of requirements collected, the number of changes made, and the time spent on requirements gathering.
* **Quality Measurements:** Measure the quality of requirements using defined quality criteria.
* **Progress Tracking Methods:** Track progress against the requirements collection plan using tools like Gantt charts or Kanban boards.
* **Performance Indicators:** Monitor key performance indicators (KPIs) such as requirement completion rate, defect rate, and stakeholder satisfaction.

### 8. Risk Management

* **Requirements-Related Risks:** Identify potential risks related to requirements gathering, such as incomplete requirements, conflicting requirements, and unrealistic deadlines. (See Risk Management Plan)
* **Risk Mitigation Strategies:** Develop strategies to mitigate identified risks, such as conducting thorough stakeholder analysis, using prototyping to validate requirements, and establishing clear communication channels.
* **Contingency Planning:** Develop contingency plans to address unexpected events or changes.
* **Risk Monitoring Procedures:** Regularly monitor and track risks to ensure timely response.

### 9. Communication Management

* **Stakeholder Communication Plan:** Develop a plan outlining how to communicate with stakeholders throughout the requirements collection process. (See Communications Management Plan)
* **Requirements Communication Methods:** Use various communication methods, such as emails, meetings, and presentations, to share requirements information.
* **Feedback and Collaboration Processes:** Establish processes for gathering feedback from stakeholders and collaborating on requirements.
* **Status Reporting Procedures:** Regularly report on the progress of requirements collection to stakeholders.

### 10. Process Integration

* **Integration with Scope Management:** The collected requirements form the basis for defining the project scope. Changes to requirements should follow the change management process.
* **Connection to Design and Development:** Requirements provide input for design and development activities. Traceability between requirements and design artifacts is crucial.
* **Alignment with Testing and Validation:** Requirements define the acceptance criteria for testing and validation activities.
* **Relationship to Change Management:** A formal change management process should be in place to handle changes to requirements after they are approved.

This document provides a framework for the requirements collection process. Specific details and methods may be adapted based on the project’s needs and context. Regular review and updates to this document are recommended.