BerryDunn

Enterprise Objective Monitoring and Control Services

Requirements Management Plan Aid

V1.0

GOVERNMENT OF PUERTO RICO

Department of Health
Medicaid Program

Submitted by:

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Revision History

The Puerto Rico Medicaid Program's (PRMP's) Program Management Office (PgMO) will store the approved Requirements Management Plan Aid and any approved revisions on the PgMO SharePoint site. PRMP and the PRMP PgMO will make the plan available to project stakeholders as needed. Currently, BerryDunn provides PRMP PgMO services.

Table 1 presents the revision history for this document. When changes occur, the PRMP PgMO will increment the version number and the date. The PRMP PgMO will record the name of the person or entity making the change and a description of the change in the revision history.

Table 1: Revision History

Date	Document Version	Description	Author(s)
6/22/2022	V1.0	Initial delivery	BerryDunn PgMO Team

1.0 Introduction

The PRMP is committed to successful projects for the residents of Puerto Rico and has established a Puerto Rico Medicaid Enterprise Systems (PRMES) PgMO to provide guidance, support, and oversight for vendor projects within the Medicaid Enterprise.[1] The PRMP PgMO has created plan aids to assist in effectively and efficiently accomplishing executed projects. Project management involves applying best practice processes, tools, and techniques. The PRMP PgMO aids provide guidance for more predictable and consistent plans, processes, and practices, which will result in meeting the goals and objectives of PRMP and vendor partners, and meeting stakeholder expectations.

The Requirements Management Plan Aid is a living document intended to provide PRMP vendors with guidance on PRMP's expectations regarding management of project requirements. PRMP expects vendors to develop and submit a Requirements Management Plan for the project(s) for which they are providing services. Vendors should reference this document when creating their Requirements Management Plans to help ensure PRMP's expectations are met and that there is a common understanding between PRMP and the vendor regarding requirements management. The PRMP PgMO will update this Requirements Management Plan Aid when new applicable standards (or versions of a standard) are released or when there are changes to PRMP policies that affect requirements management.

If a vendor finds a contractual conflict with guidance provided in this plan aid, vendors should defer to their contract and/or any updated PRMP guidance.

The Introduction section of this document provides information on the Requirements Management Plan Aid's purpose and objectives, scope, approach, assumptions, constraints, dependencies, and standards and references. To help ensure an understanding of project requirements, Table 2 provides definitions for requirements, requirements documentation, Requirements Management Plan, and Requirements Traceability Matrix (RTM).

Table 2: Definitions Relating to Requirements Management

Term	Definition
Architectural Requirement	A specification that PRMP, vendors or other entities require of a system, system hardware, software, interfaces, environments, layers, etc. This could include adding new components, removing outdated ones, replacing or improving components, or changing the way in which they are organized and how they work together.
Business Requirement	A statement of goals, objectives, and outcomes that describe why a change has been initiated. They can apply to the whole of an enterprise, a business area, or a specific initiative.

[1] In this aid, "vendor" refers to solution vendors that implement and maintain systems within the PRMES, as well as contractors and other entities that provide non-solution-related PRMES services to PRMP.

Term	Definition
Functional Requirement	A requirement that defines what a system or its component must and must not do.
Non-Functional Requirement	Define system attributes such as security, reliability, performance, maintainability, scalability, and usability. They serve as constraints or restrictions on the design of the system across the different backlogs.
Requirement	A condition or capability that is necessary to be present in a product, service, or result to satisfy a business need.
Requirement Documentation	A description of how individual requirements meet the business needs for the project.
Requirements Management Plan	A component of the Project Management Plan (PMP) that describes how requirements will be analyzed, documented, and managed.
RTM	A grid (i.e. spreadsheet) that links requirements from their origin to the deliverables that satisfy them.
Technical Requirement	A requirement that pertains to the technical aspects that a system must fulfill, such as performance-related issues, reliability issues, and availability issues.

1.1 Purpose and Objectives

The purpose of the Requirements Management Plan Aid is to:

- Provide processes and standards for the management of requirements throughout PRMP projects.

The objectives of the PRMP PgMO Requirements Management Plan Aid are to provide vendors with guidance on PRMP's expectations regarding:

- Requirements management
- RTM

1.2 Scope

The scope statement defines both the work included and not included in the scope of a project. For purposes of this Requirements Management Plan Aid, this section addresses what is in and out of scope for an anticipated plan. The plan provides guidance to the vendors to also address processes and procedures related to managing and controlling requirements for PRMP projects.

1.2.1 In Scope

The Requirements Management Plan addresses procedures and standards for managing and tracing project product requirements for each phase of the requirement life cycle. Vendors shall identify all items subject to requirements management as part of the overall project. The Requirements Management plan covers what is entailed at a detailed level where the Scope management plan addresses high level changes.

Components of the Requirements Management Plan can include, but are not limited to:

- How requirements activities will be planned, tracked, and reported
- Configuration management activities such as: how changes will be initiated; how impacts will be analyzed; how they will be traced, tracked, and reported; and the authorization levels required to approve these changes
- Requirements prioritization process
- Metrics that will be used and the rationale for using them
- Traceability structure that reflects the requirement attributes captured on the traceability matrix

1.2.2 Out of Scope

The Requirements Management Plan Aid is a companion plan to the Scope Management Plan, and therefore, does not include the following:

- Processes for defining the work required to complete the project successfully. The Scope Management Plan addresses this.
- Processes for creating a Work Breakdown Structure. The Scope Management Plan addresses this.
- Processes to validate and control scope. The Scope Management Plan addresses this.
- Processes to manage the project life cycle, including federal certification. The Scope Management Plan addresses this.
- Processes to manage the project schedule. The Schedule Management Plan addresses these processes.

Vendors shall list the items considered out of scope. Any scope exclusions must be in alignment with the Request for Proposals (RFP), vendor's proposal, and the final signed contract as necessary.

1.3 Approach

This section describes assumptions, constraints, dependencies, standards, and references. The Requirements Management Plan takes into consideration the assumptions, dependencies, and constraints for projects as described in this section.

1.3.1 Assumptions

Per *A Guide to the Project Management Body of Knowledge* (*PMBOK® Guide*), an assumption is a factor expected to be in place or to be in evidence. The following are assumptions considered in the development of a vendor's Requirements Management Plan and are applicable to all PRMP projects:

- The roles and responsibilities for requirements management will be based on a stakeholder analysis for each project and are included in a Responsible, Accountable, Consulted, and Informed (RACI) Matrix for each project.
- An agreed-upon methodology will be used for managing the requirement life cycle.
- The project will use an approved tool for the management and traceability of requirements.
- The RTM structure will contain attributes and tracing features to support the current version of the Centers for Medicare & Medicaid Services (CMS) certification process, where required.
- The vendor will baseline the Requirement Analysis Document (RAD) immediately following approval.
- The vendor will re-baseline the RAD immediately following approval of a change request that in any way impacts a requirement (i.e., scope).

The vendor should describe its assumptions related to requirements management.

1.3.2 Constraints

Per the *PMBOK® Guide*, a constraint is a limiting factor that affects the execution of a project or process. The following constraint should be considered in the development of a vendor's Requirements Management Plan and is applicable to all PRMP projects:

- The system development life cycle (SDLC) entrance and exit criteria shall be satisfied prior to a requirement advancing through its life cycle.

The vendor should list constraints related to requirements management.

1.3.3 Dependencies

Per the *PMBOK® Guide*, a dependency is a logical relationship between two activities, or between an activity and a milestone. For example, an activity that cannot begin until another activity has been finished has a dependency. The following dependencies should be considered in the development of a vendor's Requirements Management Plan:

- **Certification Management Plan:** This plan defines the approach to implementing the Medicaid Enterprise Certification processes as required to obtain CMS certification. This plan is applicable to all PRMP projects that require support, administration, or oversight of federal certification activities.
- **Deliverable Management Plan:** This plan defines the processes for receipt and management of the deliverables and required deliverables vendors submit to PRMP.
- **Change Management Plan:** This plan defines the processes for all change control activities, including changes to configuration item baselines.

- **Quality Management Plan:** This plan documents the information required to effectively manage project quality from project planning to delivery. It defines a project's quality policies; procedures; criteria for and areas of application; and roles, responsibilities, and authorities.
- **Schedule Management Plan:** This plan includes the processes required to manage timely completion of project work.
- **Stakeholder Engagement Plan:** This plan includes the processes and activities to identify project stakeholders to effectively engage those stakeholders in a project.
- **Test Plan:** This plan includes the processes and procedures to verify and validate the requirements are accurately tested and defects are eliminated through various stages of the project life cycle.

1.3.4 Standards and References

Vendors shall develop a Scope Management Plan, along with a Work Breakdown Structure (WBS) and entrance and exit criteria, based on this PMP Aid and using the following industry standards:

- *PMBOK® Guide*, Sixth Edition, Project Management Institute® (PMI®), Chapter 5 – Project Scope Management
- *PMBOK® Guide*, Sixth Edition, PMI®, Chapter 2 – Organizational Influences and Project Life Cycle
- Institute of Electrical and Electronics Engineers (IEEE®) Standard 830 – Requirement Specification, IEEE®
- CMS Medicaid Information Technology Architecture (MITA) 3.0 Framework

2.0 Roles and Responsibilities

This section describes the primary roles and responsibilities of the groups that consist of the project staff, sponsors, and stakeholders as they relate to requirements management. Table 3 illustrates which stakeholders are responsible (R), accountable (A), consulted (C), and informed (I) (RACI), defined as:

- **Responsible:** This stakeholder does the work to complete the task area. This stakeholder may also serve as an Accountable stakeholder for some task areas.
- **Accountable:** This stakeholder delegates work and is the last one to review the task area before it is deemed complete. According to best practice, one stakeholder (or the lowest number possible) should be deemed accountable.
- **Consulted:** This stakeholder provides input based on how the task area will impact the future work of the project and the stakeholder's expertise.
- **Informed:** This stakeholder should be aware of the progress associated with the task area.

Table 3 aims to provide insight into how PRMP and the PgMO will interact with project requirements management processes and responsibilities. The vendor should propose its own stakeholder groups and RACI matrix according to its team's organizational structure. Table 3 provides vendors with the RACI matrix for PRMP and/or PgMO responsibilities. This matrix can be edited from this baseline if deviations are discussed with PRMP and the PgMO to determine what is appropriate for the project.

Table 3: RACI Matrix for Project Requirements Management

Task Area	PRMP Leadership	PRMP Program Director	PRMP Project Lead	PRMP PgMO	PRMP Subject Matter Experts (SMEs)	Vendor
Identify Requirements	C	C	A	C	C	R
Validate Requirements	C	C	A	C	C	R
Design Requirements	I	I	A	I	C	R
Verify Requirements	I	I	A	I	C	R
Implement Requirements	I	C	A	I	C	R
Control Requirements	I	C	A	I	I	R
Report Requirements	I	C	A	I	I	R
Trace Requirements	I	C	A	I	I	R

The following subsections provide a description of each stakeholder group.

2.1 PRMP Leadership

PRMP is the Medicaid agency responsible for administering the Medicaid Program in Puerto Rico, including the Children's Health Insurance Program (CHIP), and a waiver-based section 1915(a) program. PRMP is an agency within the Puerto Rico Department of Health (PRDoH). While leadership roles might vary between projects, in general, the PRMP Leadership stakeholder group refers to the PRDoH Secretary, PRMP Executive Director, and the PRMP Executive Steering Committee.

2.2 PRMP Program Director

The PRMP Program Director is a member of the PRMP PgMO.

An important aspect of the PRMP Program Director's role is to set the expectations for requirements management among the PRMES projects.

2.3 PRMP Project Lead

PRMP appoints a Project Lead to oversee each of the PRMES projects under PRMP programs utilizing the defined PRMP PgMO processes. The PRMP Project Lead collaborates with the vendor's Project Lead to help ensure the project execution and implementation are in accordance with the approved schedule and processes defined by the PRMP PgMO.

The PRMP Project Lead and the vendors shall be the initial implementers of the requirements management processes defined in this plan.

The PRMP Project Lead will collaborate with the vendor Project Manager to analyze and confirm project requirements and verify the management and documentation of requirements by the vendor.

2.4 PRMP PgMO

PRMP has designated the PgMO to provide program management guidance and collaborative oversight for its information technology initiatives. As part of this responsibility, the PRMP PgMO has developed this Requirements Management Plan Aid as a guide for project-specific Requirements Management Plans.

In addition to providing guidance to vendors, the PRMP PgMO shall be responsible for first line review of major PMPs and the subsidiary plans as submitted by the vendors. Each vendor shall create an individual Requirements Management Plan to manage project requirements and shall collaborate with the PRMP PgMO to gain PRMP approval of its process.

2.5 Vendors

The vendors implementing one or more information technology projects or supporting other PRMP activities are responsible for developing a project-specific Requirements Management

Plan, obtaining PRMP and PRMP PgMO approval of the plan, and managing requirements in accordance with that plan.

In accordance with the assumptions described in this document, PRMP anticipates that the vendors will manage project requirements according to their PRMP-approved Requirements Management Plan. The vendor project manager will have responsibility for analyzing, documenting, and managing requirements for the PRMP projects under the vendor's contract.

2.6 PRMP SMEs

PRMP will select SMEs who will aid the project and provide insight into areas of business operations and processes about which the vendor may not have knowledge or expertise. These SMEs will be consulted during various aspects of the project life cycle as well as identify, validate, and verify requirements. PRMP SMEs will contribute their specialized knowledge and help verify that any processes or business changes are correct in relation to the requirements for the project.

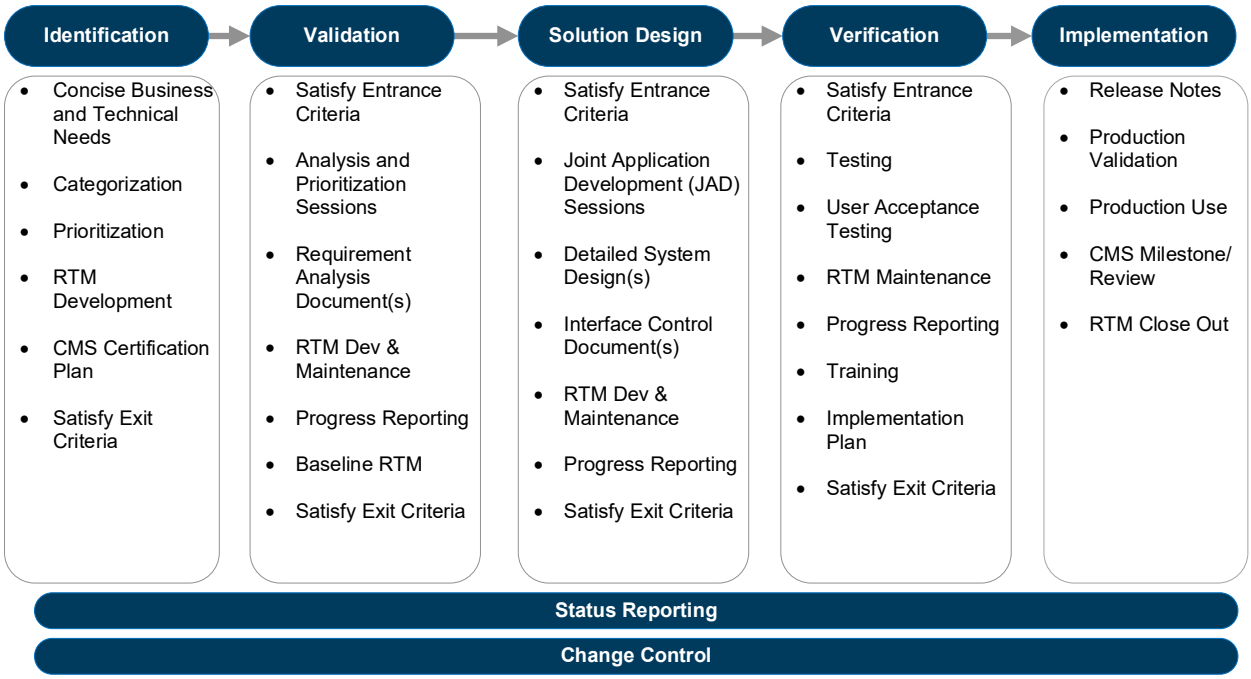
3.0 Requirements Management

The PRMP PgMO Requirements Management Plan Aid sets expectations and provides guidance to vendors and project stakeholders for documenting, analyzing, tracking, and reporting on requirements progress throughout the requirements life cycle.

Requirements management must include a bi-directional RTM that supports standardized requirement categorization and the ability to link key project information and project deliverables to a requirement. The categorization includes necessary MITA Framework components that support CMS certification processes. Visibility into a requirement and its attributes should be supported at all times. For more information about standardized categorization, refer to the section of this document titled Requirement Traceability Categorization.

Figure 1 depicts the requirement life cycle and key activities for each phase.

Figure 1: Requirement Life Cycle



3.1 Requirement Identification

Requirement identification and definition is the activity of identifying and categorizing specific business and technical needs in a clear and concise manner. The resulting requirements are assigned a requirement identifier and requirement definition.

Additional categorization is applied to the identifier on an ongoing basis as the requirement progresses through its life cycle. Further information about requirement categorization can be found in the Requirement Traceability section of this document.

This activity is accomplished by the PRMP business and technical staff compiling a business case or through requirement-gathering sessions conducted by a vendor both during the

procurement process and subsequent to procurement and contract award. The vendor's Requirements Management Plan should establish responsibility for this activity based on the specific project type and status.

Table 4 outlines characteristics of a requirement.

Table 4: Requirement Characteristics

Characteristic	Definition
Unitary	The requirement addresses one and only one thing. The requirement does not contain any conjunctions.
Complete	The requirement is fully stated in one place with no missing information.
Consistent	The requirement does not contradict any other requirement and is fully consistent with all authoritative external documentation.
Traceable	The requirement meets all or part of a specific need as stated by stakeholders and is authoritatively documented. The requirement can be traced forward from need identification and certification, analysis, design, verification, and implementation deliverables such as test plans and test cases as applicable. The traceability is bi-directional.
Current	The requirement has not been made obsolete by the passage of time.
Unambiguous	The requirement is concisely stated without recourse to technical jargon, acronyms (unless defined elsewhere in the requirements document), or other esoteric verbiage. It expresses objective facts, not subjective opinions. It is subject to one and only one interpretation. Vague subjects, adjectives, prepositions, verbs, and subjective phrases are avoided. Negative statements and compound statements are avoided.
Verifiable	The implementation of the requirement can be determined through basic possible methods: inspection, demonstration, test (instrumented), or analysis (to include validated modeling and simulation).

3.2 Requirement Validation

The requirement validation phase begins when project initiation Software Development Life Cycle (SDLC) entrance and exit criteria are met and includes multiple activities and close collaboration between the vendor, PRMP, PRMP SMEs, the PRMP PgMO, the PRMP Project Lead, and other project stakeholders.

Entry criteria are the conditions that are required to begin the processing of the current stage and exit criteria are the conditions which sets the stage as completed so that the next stage comes into action. In general, the exit criteria of the current stage acts as entry criteria to the next stage.

The activities are carried out through analysis and/or validation sessions as well as various supportive communication and tracking methods such as workgroup meetings and meeting minutes, action item and decision logs, and the RTM software. The needs of the project

determine the number and type of interactions, how the requirements are defined, how the requirements are prioritized, and the clarity and completeness of the resulting RAD. Project stakeholders should reference the vendor's approved project Schedule Management Plan for more information related to the entrance and exit criteria processes.

Vendors are expected to produce project deliverables in adherence to deliverables outlined in the project solicitation document. The document approval process is outlined in the vendor's approved project Deliverable Management Plan document.

Below are typical project deliverables related to requirement validation:

- **Deliverable Expectation Document (DED):** The vendor shall prepare a DED for the project deliverables that outlines and describes expected content.
- **RAD:** The vendor shall prepare a RAD for the project that aligns with the expectations and requirements defined in the solicitation document of PRMP. Upon approval of the RAD and RTM, project requirements are considered baselined. Reference Appendix B for a sample RAD outline.
- **RTM:** The vendor shall prepare a project RTM that satisfies categorization and mapping expectations. The baseline shall occur immediately following RAD and RTM approval. Reference the Requirement Traceability section for RTM guidance.

The approved RAD and RTM become the project anchor to measure requirement progress and to assess and manage changes. Figure 2 illustrates typical requirement management tasks completed during the requirement validation phase for a design, development, and implementation (DDI) project. The vendor may chose the processes that best support the PRMES PRMP project, and the Requirements Management Plan must document the strategy, processes, and how the requirement management tasks will be addressed during the requirement validation phase.

Figure 2: Requirement Validation Process Sample

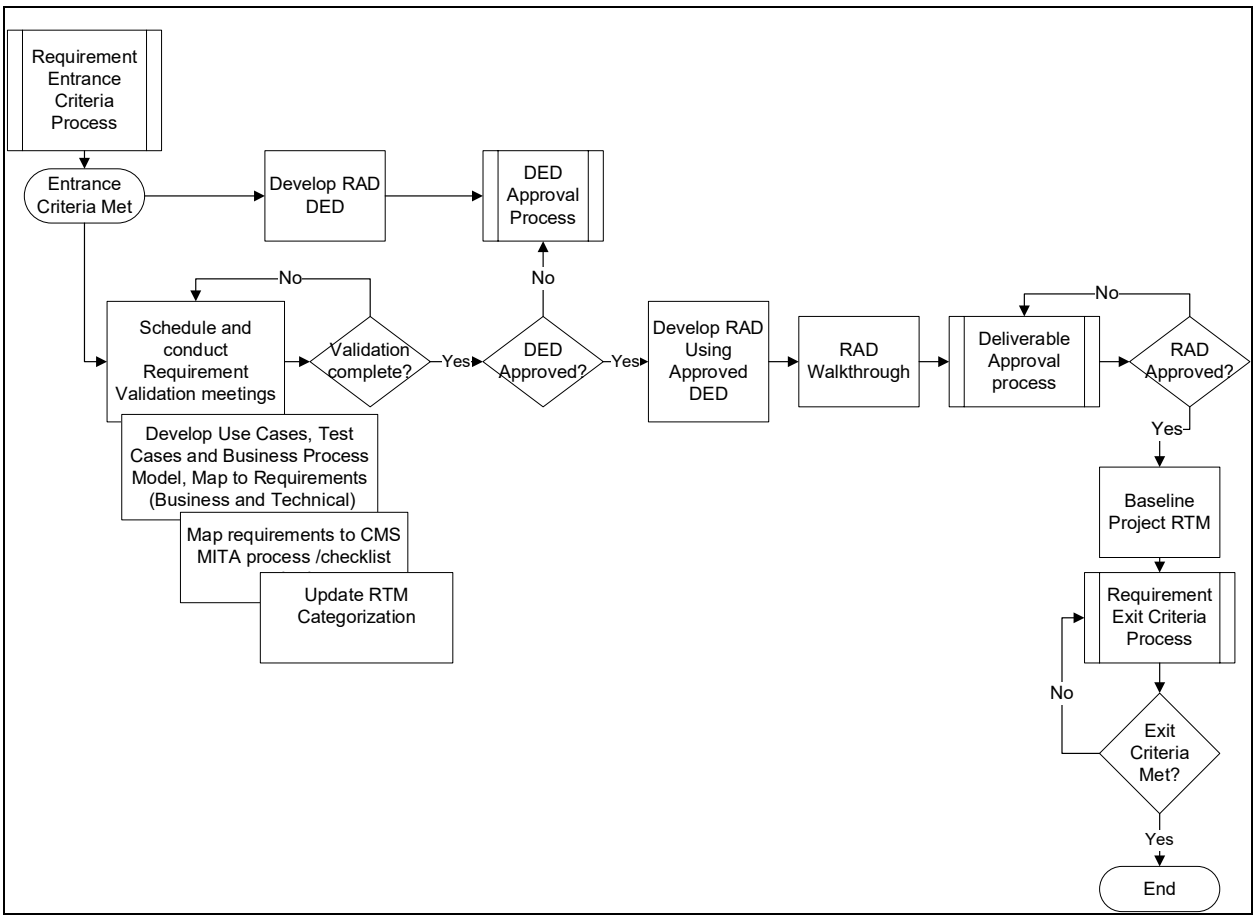


Table 5 represents general tasks, roles, and activities completed during requirement validation. Activities and the roles expected to perform them are determined on a project needs basis. The vendor is expected to outline tasks, roles, responsibilities, and activities in its Requirements Management Plan and Resource Management Plan unless otherwise agreed upon by PRMP.

Table 5: Requirement Validation General Tasks, Roles, and Activities

Task	Role	General Activities
Requirement Analysis/ Validation Meetings	PRMP PgMO	▪ Provide requirements management guidance
	PRMP Project Lead	▪ Coordinate participation ▪ Assist with scheduling meetings ▪ Assist with meeting agenda content ▪ Assist with meeting facilitation ▪ Complete and/or help ensure completion of action items in a timely manner ▪ Confirm requirements are validated
	Vendor	▪ Schedule meetings

Task	Role	General Activities
		▪ Prepare meeting agendas ▪ Facilitate meetings ▪ Provide meeting content ▪ Solicit and capture business rules/detail requirements ▪ Help ensure requirements meet the characteristics listed in Table 4 ▪ Complete action items in a timely manner ▪ Prepare and distribute meeting notes in a time frame agreed upon with PRMP
	PRMP SME	▪ Collaborate with the PRMP project team, PgMO, and vendor to provide use case/business scenario information ▪ Describe business rules/detail requirements ▪ Provide requirement clarity as needed ▪ Make decisions on items that do not require a change request ▪ Complete action items in a timely manner
Use Case, Business Process Model (BPM), RTM Development	PRMP PgMO	▪ Provide requirements management guidance
	PRMP Project Lead	▪ Provide guidance on RTM development and traceability ▪ Provide RTM management
	Vendor	▪ Begin developing test cases ▪ Develop business and technical process models as necessary to illustrate understanding of requirements and system outputs ▪ Update and/or map requirements to CMS MITA business area, business process, and certification criteria ▪ Develop RTM
	PRMP SME	▪ Develop, alongside the PRMP project team, PgMO, and vendor, use cases to support requirement analysis/validation ▪ Provide information to support BPM and RTM development ▪ May also develop test cases

Task	Role	General Activities
DED/RAD	PRMP PgMO	▪ Provide requirements management guidance ▪ Participate in deliverable walkthrough ▪ Review deliverables and provide feedback ▪ Coordinate deliverable approval
	PRMP Project Lead	▪ Provide guidance to vendor on deliverable content ▪ Participate in deliverable walkthrough ▪ Review deliverables and provide feedback ▪ Provide project deliverable acceptance
	Vendor	▪ Develop deliverables and submit for approval ▪ Facilitate deliverable walkthrough ▪ Respond to and incorporate deliverable feedback ▪ Map deliverable document sections to requirement(s) in RTM ▪ Update RTM categorization as necessary ▪ Baseline RTM after RAD and RTM approval
	PRMP SME	▪ Participate in deliverable walkthrough ▪ Review deliverables and provide feedback
	PRMP Program Director	▪ Participate in deliverable walkthrough ▪ Review deliverables and provide feedback ▪ Provide project deliverable acceptance

3.3 Requirements Design

Requirements management during the design phase includes the vendor collaborating with PRMP SMEs, the PRMP PgMO, the PRMP Program Director, and other project stakeholders. The collaboration results in business and technical requirement details necessary to design a solution that meets project requirements and aligns with the MITA State Self-Assessment (SS-A).

The vendor produces solution design project deliverables in adherence to deliverables outlined in the project solicitation document. Those documents shall be structured to support linking specific project deliverables attributes to applicable requirement(s) and depict how the solution design meets project requirements. Each project deliverables will follow the approval process outlined in the vendor's approved Deliverable Management Plan.

Below are typical project deliverables created in requirements design:

- **DED**: The vendor shall prepare a DED for project deliverables that outlines and describes expected content.

- **Detailed System Design (DSD)**: The vendor shall prepare a project DSD for approval that communicates and illustrates detailed specifications about how the design meets product requirements in the RAD and aligns with solicitation deliverable requirements.

Figure 3 outlines typical requirement management tasks completed during the design phase. The vendor may choose the processes that best support the PRMES PRMP project for the design phase, and the Requirements Management Plan must document the strategy, processes, and how the requirement management tasks will be addressed.

Figure 3: Requirement Design Process Sample

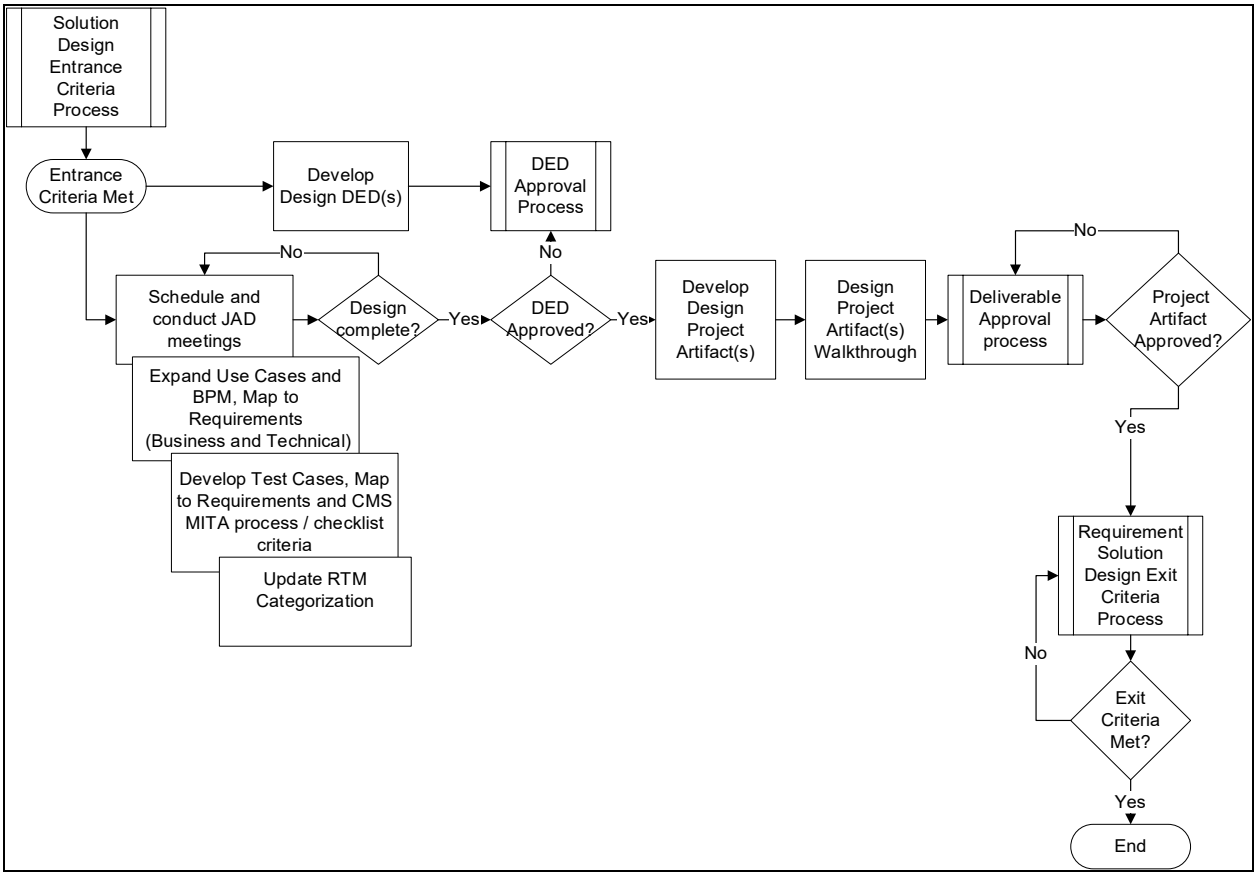


Table 6 represents general tasks, roles, and activities related to requirements management completed during requirement design. Activities and the roles expected to perform them are determined on a project needs basis. For example, the PRMP project manager may assist in RTM management related to mapping user acceptance testing (UAT) test cases, but depending on the RTM tool, the vendor may also be involved in completing this activity. The PRMP PgMO expects the vendor to outline tasks, roles, and activities in its Requirements Management Plan deliverable unless otherwise agreed upon by PRMP.

Table 6: Requirement Design General Tasks, Roles, and Activities

Task	Role	General Activities
JAD Meetings	PRMP PgMO	▪ Provide requirements management guidance
	PRMP Project Lead	▪ Coordinate participation ▪ Assist with scheduling meetings ▪ Assist with meeting agenda content ▪ Assist with meeting facilitation ▪ Complete and/or help ensure completion of actions items in a timely manner
	Vendor	▪ Schedule meetings ▪ Prepare meeting agendas ▪ Facilitate meetings ▪ Provide meeting content ▪ Solicit and capture business rules/detail requirements ▪ Prepare and distribute meeting notes in a time frame agreed upon with PRMP ▪ Present solution design ▪ Complete action items in a timely manner
	PRMP SME	▪ Gather existing use case/business scenario information ▪ Describe business rules/detailed requirements ▪ Provide solution design feedback as needed ▪ Complete action items in a timely manner
Expand Use Cases, BPM, Unified Modeling Language (UML), Develop Test Cases, Update RTM	PRMP PgMO	▪ Provide requirements management guidance
	PRMP Project Lead	▪ Provide guidance on development of use cases ▪ Provide RTM management ▪ Work with the PRMP project team, PgMO, and vendor to begin UAT planning
	Vendor	▪ Develop business and technical process models as necessary to illustrate solution design ▪ Develop test cases ▪ Map test cases to requirements in RTM

Task	Role	General Activities
DED/Solution Design Project Artifact(s)	PRMP PgMO	▪ Provide requirements management guidance ▪ Participate in deliverable walkthrough ▪ Review deliverables and provide feedback
	PRMP Project Lead	▪ Provide guidance to vendor on deliverable content ▪ Participate in deliverable walkthrough ▪ Review deliverables and provide feedback ▪ Provide project deliverable acceptance ▪ Complete and/or help ensure completion of action items in a timely manner
	Vendor	▪ Develop deliverables and submit for approval ▪ Facilitate deliverable walkthrough ▪ Respond to and incorporate deliverable feedback ▪ Map deliverable document sections to requirement(s) in RTM ▪ Update RTM categorization as necessary ▪ Complete action items in a timely manner
	PRMP SME	▪ Participate in deliverable walkthrough ▪ Review deliverables and provide feedback ▪ Complete action items in a timely manner
	Project Sponsor(s)	▪ Participate in deliverable walkthrough ▪ Review deliverables and provide feedback ▪ Provide deliverable acceptance ▪ Complete action items in a timely manner

3.4 Requirement Verification

Requirements management during the verification phase centers on ensuring the delivered solution, product(s), or service(s) is tested sufficiently and verifies alignment with RAD requirements and any approved requirement change requests. The project RTM shall reflect requirement verification attributes, such as test case number(s), to provide clear visibility into requirement progress. In support of the CMS certification reviews, the RTM shall support mapping certification criteria to requirements.

The Test Plan addresses processes and expectations regarding planning and executing project testing activities, including UAT. Reference the Certification Management Plan for information about the CMS certification life cycle.

3.5 Requirement Implementation

Requirements management during the implementation phase centers on the ability to track the release of each verified solution requirement into the production environment. The vendor is expected to follow solicitation requirements for implementing the project. A standardized Release Notes document format and naming convention shall be used to support linking the release notes to each product requirement in the RTM. The project RTM should be updated periodically at an agreed-upon frequency to ensure clear visibility into the current system environment of each project requirement and the related certification criteria deliverables.

3.6 Requirement Change Control

A key element of requirements management is the ability to control and track changes to a requirement throughout its life cycle. The project RTM shall be baselined following approval of the RAD. Any change to requirement scope shall go through a formal change request process, whether it be through a requirement addition, a requirement becoming obsolete, or requirement verbiage adjustments. Approved changes are expected to be linked to the affected requirement(s) in the RTM and the applicable requirement and design project deliverables. The vendor shall re-baseline the RTM to reflect the requirement change(s). The vendor should reference the Change Management Plan for guidance on the change control process.

3.7 Requirements Management Reporting

Throughout the requirement life cycle, clear visibility is necessary to continually monitor and evaluate a requirement, a collection of requirements, or the project requirements overall. The vendor is expected to include project requirement progress as part of its status reporting with content and format agreed upon by the PRMP. Additionally, the RTM tool shall provide flexible dashboard capabilities that allow users to monitor a project's product requirements in a variety of ways. Reference the Requirement Traceability Reporting section of this document for more information about requirement dashboard capabilities.

4.0 Requirement Traceability

Requirement traceability is the ability to follow and audit the life of a requirement, in both a forward and backward direction—from its origins, through its realization to its eventual development and use, through subsequent rounds of modification and refinement.

4.1 Requirement Traceability Categorization

The RTM is used to trace business, functional, technical, and architectural project requirements defined in the RAD, as well as non-functional project requirements, in support of CMS certification. Traceability occurs throughout the duration of the SDLC, including design, configuration/development, testing, implementation, operations and certification.

The vendor shall use standardized requirement categorization and attributes to maintain the RTM and support forward and backward SDLC traceability, as well as from certification deliverables. The attributes allow other project deliverables to be mapped to a requirement, thereby supporting requirements management needs. Examples of these project deliverables include change requests, RAD sections, solution design project deliverables sections, use case number(s), certification criteria, and test case numbers. PRMP expects that traceability extends to defects identified during testing by mapping defect number(s) to the related test case(s). An RTM provides the PRMP PgMO, vendor, and other project stakeholders with:

- Quick perspective on where a requirement is in the life cycle and its status
- Critical requirement information to support requirement change control
- Insight into assessing requirement coverage in the delivered solution design
- A means of identifying project artifact candidates for use as evidence in the CMS certification reviews

Figure 4 illustrates categorization and project deliverables that should be mapped to applicable requirement(s) in the RTM. The figure also depicts the typical requirement life cycle phase on which the mapping can occur. Operations should be involved throughout the life cycle.

Figure 4: Requirement Traceability

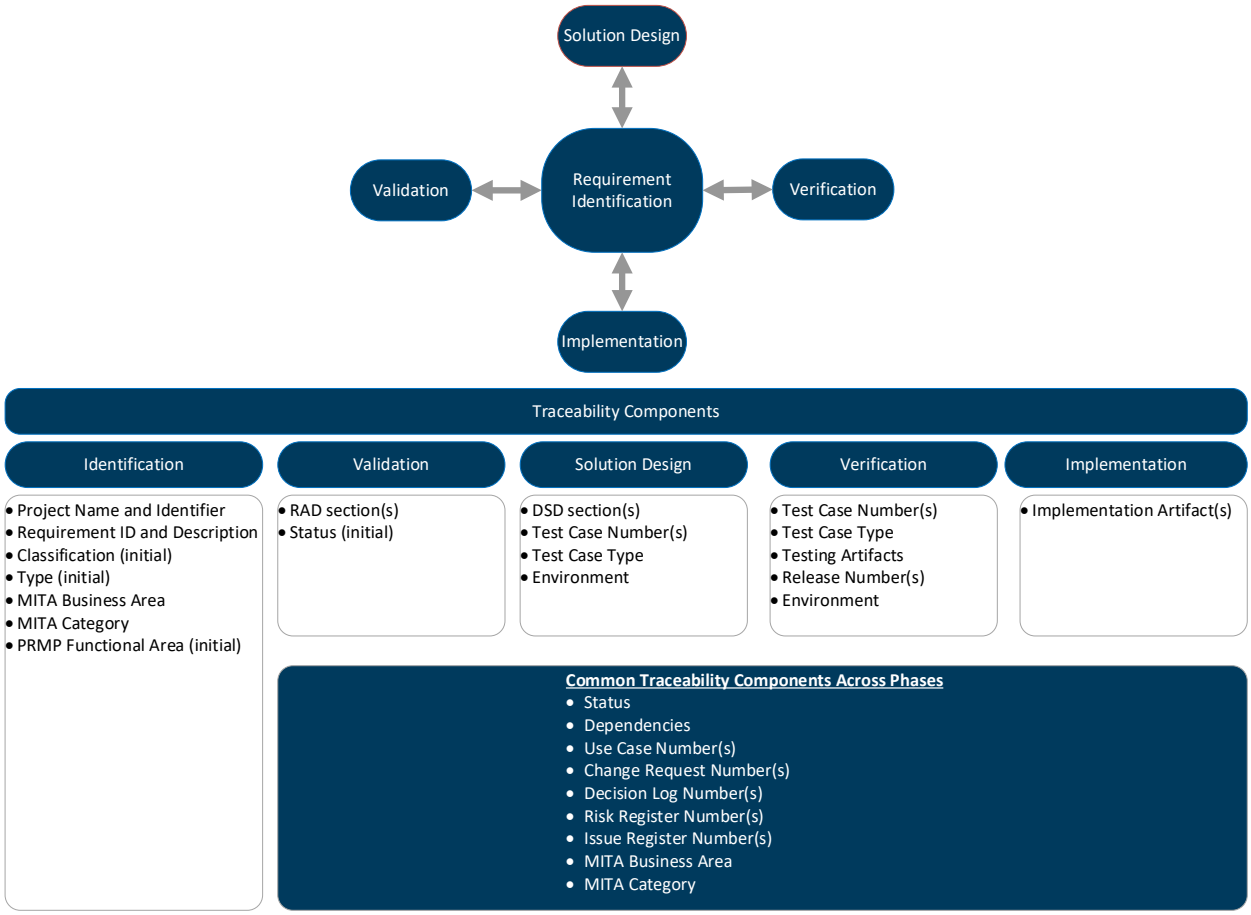


Table 7 provides suggested values for requirement categorization.

Table 7: Requirement Traceability Categorization

Categorization/Definition	Values/Description
Requirement Identifier (ID)	▪ A meaningful, unique identifier assigned to each defined requirement. The definition and its Requirement ID are included in the solicitation document and shall be traced throughout the requirement life cycle.
Requirement Definition	▪ Requirement definition includes several characteristics that support clear and concise communication. Each definition ties back to its unique identifier.
Requirement Classification	▪ Mandatory – Must have and is contractual for the vendor.

<table>
<tr><th>Categorization/Definition</th><th colspan="2">Values/Description</th></tr>
<tr><td></td><td colspan="2">▪ Desirable – Would like to have in this project as the use and value is wanted.
▪ Future – Recommended or prioritized as an enhancement.
▪ Obsolete – No longer required or requested.</td></tr>
<tr><td>Requirement Type</td><td colspan="2">▪ Business
▪ Architectural
▪ Functional
▪ Non-Functional
▪ Other values may be defined as required by a project</td></tr>
<tr><td rowspan="10">MITA Business Area (10) (Parent)
MITA Category (21) (Child)</td><td><u>MITA Business Area</u></td><td><u>MITA Category</u></td></tr>
<tr><td>▪ Business Relationship Management</td><td>– Standards Management</td></tr>
<tr><td>▪ Care Management</td><td>– Case Management
– Authorization Determination</td></tr>
<tr><td>▪ Contractor Management</td><td>– Contractor Information Management
– Contractor Support
– Contract Management</td></tr>
<tr><td>▪ Eligibility and Enrollment Management</td><td>– Member Enrollment
– Provider Enrollment</td></tr>
<tr><td>▪ Financial Management</td><td>– Accounts Receivable Management
– Accounts Payable Management
– Fiscal Management</td></tr>
<tr><td>▪ Member Management</td><td>– Member Information Management (future)
– Member Support (future)</td></tr>
<tr><td>▪ Operations Management</td><td>– Payment and Reporting
– Claims Adjudication</td></tr>
<tr><td>▪ Performance Management</td><td>– Compliance Management</td></tr>
<tr><td>▪ Plan Management</td><td>– Plan Administration
– Health Plan Administration
– Health Benefit Administration</td></tr>
<tr><td>▪ Provider Management</td><td>– Provider Information Management</td></tr>
</table>

Categorization/Definition	Values/Description
	– Provider Support
PRMP Functional Area	▪ Finance ▪ Operations (includes Data Governance Unit, Continuous Improvement Unit, Eligibility and Enrollment, Provider Enrollment Management Unit, and Claims and Encounters Processing Unit) ▪ Regional Offices ▪ Administration ▪ Compliance (includes Quality Control Unit and Fraud Control Unit) ▪ Other value(s) as defined by PRDoH / PRMP
CMS Certification Criteria and required Outcomes	▪ Criteria, outcomes and related KPIs determined as in-scope for CMS system certification

4.2 Requirement Traceability Reporting

Accurate bi-directional traceability reporting depends on an RTM that the vendor regularly maintains the life cycle of each requirement. This leverages standardized categorization and linking of project artifact attributes to a requirement. Requirement traceability will typically grow in complexity as the requirement progresses through its life cycle. The vendor shall provide requirement status reporting, traceability visualization, and dashboard reporting with the level of detail meeting the needs of the project and project stakeholders throughout the project life cycle. Reference the Requirement Management Reporting section of this document for information about requirement status reporting.

Some reporting types might include:

- **Traceability Matrix:** A traceability matrix is a table representation, with filter capability, that maps a requirement to its related categorization and links to other project deliverables.
- **Traceability Graph:** A traceability graph is a node representation of a requirement and its links to other project deliverables. This is useful in representing development status or verification status from a requirements perspective.
- **Hyperlink:** A hyperlink connects project deliverables to a requirement and supports the ability to access the linked document for details.
- **Dashboard(s):** Dashboard functionality supports the ability for project stakeholders to create and generate requirement reports, ideally by requirement, categorization, or linked project artifact. Drill-down capability provides the stakeholder with different levels of detail without having to generate multiple reports.

Appendix A: Acronyms List

Table 8 presents acronyms used in this document.

Table 8: Acronyms

Term or Acronym	Definition
BPM	Business Process Model
CHIP	Children's Health Insurance Program
CMS	Centers for Medicare & Medicaid Services
DED	Deliverable Expectation Document
DDI	Design, Development, and Implementation
DSD	Detailed System Design
EOMC	Enterprise Objective Monitoring and Control
ID	Identifier
IEEE®	Institute of Electrical and Electronics Engineers
JAD	Joint Application Development
KL	BerryDunn KnowledgeLink
MECT	Medicaid Enterprise Certification Toolkit
MES	Medicaid Enterprise Systems
MITA	Medicaid Information Technology Architecture
OIAT	Oficina de Informática y Avances Tecnológicos
PgMO	Program Management Office
PMBOK® Guide	*A Guide to the Project Management Body of Knowledge*
PMI®	Project Management Institute®
PMP	Project Management Plan
PRDoH	Puerto Rico Department of Health
PRMES	Puerto Rico Medicaid Enterprise Systems
PRMP	Puerto Rico Medicaid Program
RACI	Responsible, Accountable, Consulted, and Informed
RAD	Requirement Analysis Document
RFP	Request for Proposals
RTM	Requirements Traceability Matrix
SDLC	System Development Life Cycle

Term or Acronym	Definition
SME	Subject Matter Expert
UAT	User Acceptance Testing
UML	Unified Modeling Language
WBS	Work Breakdown Structure

Appendix B: Sample RAD Outline

Figure 5 provides the RAD template outline.

Figure 5: RAD Outline

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