CMMI^{sm} V1.1 (SE/SW/IPPD) Work Breakdown Structure (WBS)

1.0 CMMI (Policy—24, Procedure—186, Work Product—462)

    1.1 Maturity Level 1—Initial (Policy—0, Procedure—0, Work Product—0)

    1.2 Maturity Level 2—Managed (Policy—7, Procedure—56, Work Product—138)

        1.2.1 Policy (7)

            1.2.1.1   Requirements Management

            1.2.1.2   Project Planning

            1.2.1.3   Project Monitoring and Control

            1.2.1.4   Supplier Agreement Management

            1.2.1.5   Measurement and Analysis

            1.2.1.6   Process and Product Quality Assurance

            1.2.1.7   Configuration Management

        1.2.2 Procedure (56)

            1.2.2.1   Requirements Management (Procedure—5)

                1.2.2.1.1   Manage Requirements

                    1.2.2.1.1.1   Obtain an Understanding of Requirements

                        1.2.2.1.1.1.1   Receive Requirements

                        1.2.2.1.1.1.2   Identify Source of Requirements

                        1.2.2.1.1.1.3   Evaluate Requirements

                        1.2.2.1.1.1.4   Negotiate Changes to Requirements

                        1.2.2.1.1.1.5   Establish Agreed-to Requirements

                        1.2.2.1.1.1.6   Review and Approve Agreed-To Requirements

                        1.2.2.1.1.1.7   Baseline Agreed-To Requirements

                    1.2.2.1.1.2   Obtain Commitment to Requirements

                        1.2.2.1.1.2.1   Receive Agreed-To Requirements

                        1.2.2.1.1.2.2   Identify Project Groups

                        1.2.2.1.1.2.3   Evaluate Agreed-To Requirements

                        1.2.2.1.1.2.4   Negotiate Changes to Agreed-To Requirements

                        1.2.2.1.1.2.5   Establish Project Requirements

                        1.2.2.1.1.2.6   Review and Approve Project Requirements

---

    1.2.2.1.1.2.7 Baseline Project Requirements
   1.2.2.1.1.3 **Manage Requirements Changes**
    1.2.2.1.1.3.1 Receive Changes to Requirements
    1.2.2.1.1.3.2 Identify Impacted Stakeholders
    1.2.2.1.1.3.3 Evaluate Changes to Requirements
    1.2.2.1.1.3.4 Negotiate Changes to Changed Requirements
    1.2.2.1.1.3.5 Establish Changed Requirements
    1.2.2.1.1.3.6 Review and Approve Changed Requirements
    1.2.2.1.1.3.7 Baseline Changed Requirements
   1.2.2.1.1.4 **Maintain Bi-Directional Traceability of Requirements**
    1.2.2.1.1.4.1 Receive Project Requirements
    1.2.2.1.1.4.2 Identify Predecessor Requirements
    1.2.2.1.1.4.3 Identify Successor Requirements
    1.2.2.1.1.4.4 Identify Sibling and Interface Requirements
    1.2.2.1.1.4.5 Establish Requirements Traceability Matrix
    1.2.2.1.1.4.6 Review and Approve Requirement Traceability Matrix
    1.2.2.1.1.4.7 Baseline Requirement Traceability Matrix
   1.2.2.1.1.5 **Identify Inconsistencies Between Project and Work Requirements**
    1.2.2.1.1.5.1 Receive Project Requirements
    1.2.2.1.1.5.2 Identify Project Work Products
    1.2.2.1.1.5.3 Evaluate Project Work Products Against Project Requirements
    1.2.2.1.1.5.4 Negotiate Changes to Project Work Products
    1.2.2.1.1.5.5 Change Project Work Products
    1.2.2.1.1.5.6 Review and Approve Changed Project Work Products
    1.2.2.1.1.5.7 Baseline Changed Project Work Products
 1.2.2.2 **Project Planning (Procedure—14)**
  1.2.2.2.1 **Establish Estimates**
   1.2.2.2.1.1 **Estimate the Scope of the Project**
    1.2.2.2.1.1.1 Receive Project Requirements
    1.2.2.2.1.1.2 Analyze Project Needs
    1.2.2.2.1.1.3 Identify System Architecture, Activities, Products, Evaluations, Audits,
    1.2.2.2.1.1.4 Reviews, and Baselines
    1.2.2.2.1.1.5 Establish Work Breakdown Structure
    1.2.2.2.1.1.6 Evaluate Work Breakdown Structure
    1.2.2.2.1.1.7 Review and Approve Work Breakdown Structure
    1.2.2.2.1.1.8 Baseline Work Breakdown Structure
   1.2.2.2.1.2 **Establish Estimates of Work Product and Task Attributes**
    1.2.2.2.1.2.1 Receive Work Breakdown Structure

	1.2.2.2.1.2.2	Analyze Work Breakdown Structure
	1.2.2.2.1.2.3	Identify Work Products from Work Breakdown Structure
	1.2.2.2.1.2.4	Establish Work Product Size Estimates
	1.2.2.2.1.2.5	Evaluate Work Product Size Estimates
	1.2.2.2.1.2.6	Review and Approve Work Product Size Estimates
	1.2.2.2.1.2.7	Baseline Work Product Size Estimates
1.2.2.2.1.3	**Define Project Life Cycle**	
	1.2.2.2.1.3.1	Receive Project Requirements and Work Breakdown Structure
	1.2.2.2.1.3.2	Analyze Project Requirements and Work Breakdown Structure
	1.2.2.2.1.3.3	Analyze Candidate Project Life Cycles
	1.2.2.2.1.3.4	Establish a Project Life Cycle
	1.2.2.2.1.3.5	Evaluate Project Life Cycle
	1.2.2.2.1.3.6	Review and Approve Project Life Cycle
	1.2.2.2.1.3.7	Baseline Project Life Cycle
1.2.2.2.1.4	**Determine Estimates of Effort and Cost**	
	1.2.2.2.1.4.1	Receive Work Breakdown Structure, Product Size Estimates, and Project Life Cycle
	1.2.2.2.1.4.2	Analyze Work Breakdown Structure, Product Size Estimates, and Project Life Cycle
	1.2.2.2.1.4.3	Obtain Historical Data for Similar Products
	1.2.2.2.1.4.4	Establish Estimates for Effort and Cost
	1.2.2.2.1.4.5	Evaluate Estimates for Effort and Cost
	1.2.2.2.1.4.6	Review and Approve Estimates for Effort and Cost
	1.2.2.2.1.4.7	Baseline Estimates for Effort and Cost
1.2.2.2.2	**Develop a Project Plan**	
1.2.2.2.2.1	**Establish the Budget and Schedule**	
	1.2.2.2.2.1.1	Receive Work Breakdown Structure, Project Life Cycle, and Estimates of Effort and Cost
	1.2.2.2.2.1.2	Analyze Work Breakdown Structure, Project Life Cycle, and Estimates of Effort and Cost
	1.2.2.2.2.1.3	Identify Major Milestones, Schedule Assumptions, Constraints, and Task
	1.2.2.2.2.1.4	Dependencies
	1.2.2.2.2.1.5	Define Budget and Schedule
	1.2.2.2.2.1.6	Evaluate Budget and Schedule
	1.2.2.2.2.1.7	Review and Approve Budget and Schedule
	1.2.2.2.2.1.8	Baseline Budget and Schedule
1.2.2.2.2.2	**Identify Project Risks**	
	1.2.2.2.2.2.1	Receive Project Requirements

1.2.2.2.2.2	Analyze Project Requirements
1.2.2.2.2.3	Identify Candidate Project Risks
1.2.2.2.2.4	Establish Project Risks
1.2.2.2.2.5	Evaluate Project Risks
1.2.2.2.2.6	Review and Approve Project Risks
1.2.2.2.2.7	Baseline Project Risks

1.2.2.2.2.3 Plan for Data Management

1.2.2.2.3.1	Receive Project Requirements
1.2.2.2.3.2	Analyze Project Requirements
1.2.2.2.3.3	Identify Data Requirements and Candidate Data Items
1.2.2.2.3.4	Establish Data Management Plan
1.2.2.2.3.5	Evaluate Data Management Plan
1.2.2.2.3.6	Review and Approve Data Management Plan
1.2.2.2.3.7	Baseline Data Management Plan

1.2.2.2.2.4 Plan for Project Resources

1.2.2.2.4.1	Receive Work Breakdown Structure, Budget, and Schedule
1.2.2.2.4.2	Analyze Work Breakdown Structure, Budget, and Schedule
1.2.2.2.4.3	Determine Process, Staffing, Facilities, Equipment, and Component Requirements
1.2.2.2.4.4	Establish Project Resource Plan
1.2.2.2.4.5	Evaluate Project Resource Plan
1.2.2.2.4.6	Review and Approve Project Resource Plan
1.2.2.2.4.7	Baseline Project Resource Plan

1.2.2.2.2.5 Plan for Needed Knowledge and Skills

1.2.2.2.5.1	Receive Project Resource Plan
1.2.2.2.5.2	Identify Needed Knowledge and Skills
1.2.2.2.5.3	Assess Current Knowledge and Skills
1.2.2.2.5.4	Establish Needed Knowledge and Skill Plan
1.2.2.2.5.5	Evaluate Needed Knowledge and Skill Plan
1.2.2.2.5.6	Review and Approve Needed Knowledge and Skill Plan
1.2.2.2.5.7	Baseline Needed Knowledge and Skill Plan

1.2.2.2.2.6 Plan Stakeholder Involvement

1.2.2.2.6.1	Receive Needed Knowledge and Skill Plan
1.2.2.2.6.2	Identify Relevant Stakeholders
1.2.2.2.6.3	Identify Resources Needed by Relevant Stakeholders
1.2.2.2.6.4	Establish Stakeholder Involvement Plan
1.2.2.2.6.5	Evaluate Stakeholder Involvement Plan
1.2.2.2.6.6	Review and Approve Stakeholder Involvement Plan

1.2.2.3.1   Monitor Project Against Plan

    1.2.2.3.1.1   Monitor Project Planning Parameters

        1.2.2.3.1.1.1   Measure Project Planning Parameters

        1.2.2.3.1.1.2   Monitor Activity and Milestone Completion

        1.2.2.3.1.1.3   Monitor Cost and Effort Expenditure

        1.2.2.3.1.1.4   Monitor Work Product and Task Attributes

        1.2.2.3.1.1.5   Monitor Resource Provision and Use

        1.2.2.3.1.1.6   Monitor Personnel Knowledge and Skills

        1.2.2.3.1.1.7   Document Measurements and Deviations from Project Plan

    1.2.2.3.1.2   Monitor Commitments

        1.2.2.3.1.2.1   Receive Internal and External Stakeholder Commitments

        1.2.2.3.1.2.2   Analyze Internal and External Stakeholder Commitments

        1.2.2.3.1.2.3   Obtain Status of Internal and External Stakeholder Commitments

        1.2.2.3.1.2.4   Identify Potential Deviations from Internal and External Stakeholder Commitments

        1.2.2.3.1.2.5   Identify Deviations from Internal and External Stakeholder Commitments

        1.2.2.3.1.2.6   Record Methods for Identifying Deviations from Internal and External

        1.2.2.3.1.2.7   Stakeholder Commitments

        1.2.2.3.1.2.8   Document Measurements and Deviations from Internal and External

        1.2.2.3.1.2.9   Stakeholder Commitments

    1.2.2.3.1.3   Monitor Project Risks

        1.2.2.3.1.3.1   Receive Project Risks

        1.2.2.3.1.3.2   Analyze Project Risks

        1.2.2.3.1.3.3   Obtain Status of Current Project Risks

        1.2.2.3.1.3.4   Identify Potential Deviations from Project Risk Thresholds

        1.2.2.3.1.3.5   Identify Deviations from Project Risk Thresholds

        1.2.2.3.1.3.6   Record Methods for Identifying Deviations from Project Risk Thresholds

        1.2.2.3.1.3.7   Document Measurements and Deviations from Project Risk Thresholds

    1.2.2.3.1.4   Monitor Data Management

        1.2.2.3.1.4.1   Receive Data Management Plan

        1.2.2.3.1.4.2   Analyze Data Management Plan

        1.2.2.3.1.4.3   Obtain Status of Current Data Management Requirements

        1.2.2.3.1.4.4   Identify Potential Deviations from Data Management Plan

        1.2.2.3.1.4.5   Identify Deviations from Data Management Plan

        1.2.2.3.1.4.6   Record Methods for Identifying Data Management Plan Deviations

        1.2.2.3.1.4.7   Document Measurements and Deviations from Data Management Plan

    1.2.2.3.1.5   Monitor Stakeholder Involvement

        1.2.2.3.1.5.1   Receive Stakeholder Involvement Plan

	1.2.2.3.1.5.2	Analyze Stakeholder Involvement Plan
	1.2.2.3.1.5.3	Obtain Status of Current Stakeholder Involvement Requirements
	1.2.2.3.1.5.4	Identify Potential Deviations from Stakeholder Involvement Plan
	1.2.2.3.1.5.5	Identify Deviations from Stakeholder Involvement Plan
	1.2.2.3.1.5.6	Record Methods for Identifying Stakeholder Involvement Plan Deviations
	1.2.2.3.1.5.7	Document Measurements and Deviations from Stakeholder Involvement Plan

1.2.2.3.1.6   Conduct Progress Reviews

1.2.2.3.1.6.1   Receive Measurements and Deviations from Project Planning Parameters,
1.2.2.3.1.6.2   Commitments, Risks, Data Management, and Stakeholder Involvement
1.2.2.3.1.6.3   Prepare Progress Report from Project Planning Parameters, Commitments,
1.2.2.3.1.6.4   Risks, Data Management, and Stakeholder Involvement
1.2.2.3.1.6.5   Conduct Progress Review of Project Planning Parameters, Commitments,
1.2.2.3.1.6.6   Risks, Data Management, and Stakeholder Involvement Status
1.2.2.3.1.6.7   Identify and Document Significant Issues and Deviations from Project Plan
1.2.2.3.1.6.8   Document Change Requests and Problem Reports
1.2.2.3.1.6.9   Document Results of Progress Reviews
1.2.2.3.1.6.10 Track Change Requests and Problem Reports to Closure

1.2.2.3.1.7   Conduct Milestone Reviews

1.2.2.3.1.7.1   Determine Type of Milestone Review to Conduct
1.2.2.3.1.7.2   Plan Milestone Reviews
1.2.2.3.1.7.3   Prepare for Milestone Reviews
1.2.2.3.1.7.4   Conduct Dry Run of Milestone Reviews
1.2.2.3.1.7.5   Conduct Milestone Reviews
1.2.2.3.1.7.6   Identify Significant Issues, Impacts, Action Items, Results, and Decisions
1.2.2.3.1.7.7   Track Action Items to Closure from Milestone Reviews

1.2.2.3.2   Manage Corrective Action to Closure

1.2.2.3.2.1   Analyze Issues

1.2.2.3.2.1.1   Receive Deviations from Project Planning Parameters, Commitments, Risks, Data Management, and Stakeholder Involvement
1.2.2.3.2.1.2   Analyze Deviations from Project Planning Parameters, Commitments, Risks, Data Management, and Stakeholder Involvement
1.2.2.3.2.1.3   Identify Deviations Needing Corrective Action
1.2.2.3.2.1.4   Document Deviations Needing Corrective Action
1.2.2.3.2.1.5   Evaluate Deviations Needing Corrective Action
1.2.2.3.2.1.6   Review and Approve Deviations Needing Corrective Action
1.2.2.3.2.1.7   Baseline Deviations Needing Corrective Action

1.2.2.3.2.2   Take Corrective Action

1.2.2.3.2.2.1   Receive Deviations Needing Corrective Action

1.2.2.3.2.2.2	Analyze Deviations Needing Corrective Action
1.2.2.3.2.2.3	Identify Corrective Actions for Deviations
1.2.2.3.2.2.4	Document Corrective Actions for Deviations
1.2.2.3.2.2.5	Evaluate Corrective Actions for Deviations
1.2.2.3.2.2.6	Review and Approve Corrective Actions for Deviations
1.2.2.3.2.2.7	Baseline Corrective Actions for Deviations

1.2.2.3.2.3 Manage Corrective Action

1.2.2.3.2.3.1	Receive Corrective Actions for Deviations
1.2.2.3.2.3.2	Analyze Corrective Actions for Deviations
1.2.2.3.2.3.3	Measure Implementation of Corrective Actions
1.2.2.3.2.3.4	Analyze Implementation Effectiveness of Corrective Actions
1.2.2.3.2.3.5	Document Status of Corrective Actions
1.2.2.3.2.3.6	Review and Approve Status of Corrective Actions
1.2.2.3.2.3.7	Baseline Status of Corrective Actions

1.2.2.4 Supplier Agreement Management (Procedure—7)

1.2.2.4.1 Establish Supplier Agreements

1.2.2.4.1.1 Determine Acquisition Type

1.2.2.4.1.1.1	Receive Project Plan
1.2.2.4.1.1.2	Document Commercial Off the Shelf (COTS) Work Products
1.2.2.4.1.1.3	Document Contractor Developed Work Products
1.2.2.4.1.1.4	Document Internal Non-Developmental Item (NDI) Work Products
1.2.2.4.1.1.5	Document Customer Furnished Work Products
1.2.2.4.1.1.6	Evaluate Acquisition Types
1.2.2.4.1.1.7	Review and Approve Acquisition Types

1.2.2.4.1.2 Select Suppliers

1.2.2.4.1.2.1	Identify Internal and External Supplier Selection Criteria
1.2.2.4.1.2.2	Create Request for Proposal (RFP)
1.2.2.4.1.2.3	Identify Candidate Suppliers and Distribute Request for Proposal (RFP)
1.2.2.4.1.2.4	Solicit Proposals from Candidate Suppliers
1.2.2.4.1.2.5	Evaluate Supplier Proposals
1.2.2.4.1.2.6	Select Suppliers
1.2.2.4.1.2.7	Review and Approve Suppliers

1.2.2.4.1.3 Establish Supplier Agreements

1.2.2.4.1.3.1	Prepare Statement of Work (SOW)
1.2.2.4.1.3.2	Prepare Terms and Conditions
1.2.2.4.1.3.3	Negotiate Contracts with Suppliers
1.2.2.4.1.3.4	Prepare Contracts with Suppliers
1.2.2.4.1.3.5	Evaluate Contracts with Suppliers

1.2.2.5　Measurement and Analysis (Procedure—8)
  1.2.2.5.1　Align Measurement and Analysis Activities
    1.2.2.5.1.1　Establish Measurement Objectives
      1.2.2.5.1.1.1 Identify Sources of Information Needs
      1.2.2.5.1.1.2 Identify and Prioritize Information Needs
      1.2.2.5.1.1.3 Identify Measurement Objectives
      1.2.2.5.1.1.4 Create Traceability Between Information Needs and Measurement Objectives
      1.2.2.5.1.1.5 Document Information Needs and Measurement Objectives
      1.2.2.5.1.1.6 Evaluate Information Needs and Measurement Objectives
      1.2.2.5.1.1.7 Review and Approve Information Needs and Measurement Objectives
    1.2.2.5.1.2　Specify Measures
      1.2.2.5.1.2.1 Analyze Information Needs and Measurement Objectives
      1.2.2.5.1.2.2 Identify Candidate Base and Derived Measures
      1.2.2.5.1.2.3 Specify Operational Definitions for Candidate Base and Derived Measures
      1.2.2.5.1.2.4 Document Base and Derived Measures
      1.2.2.5.1.2.5 Evaluate Base and Derived Measures
      1.2.2.5.1.2.6 Review and Approve Base and Derived Measures
      1.2.2.5.1.2.7 Baseline Base and Derived Measures
    1.2.2.5.1.3　Specify Data Collection and Storage Procedures
      1.2.2.5.1.3.1 Analyze Base and Derived Measures
      1.2.2.5.1.3.2 Identify Existing Sources of Measurement Data
      1.2.2.5.1.3.3 Identify New Sources of Measurement Data
      1.2.2.5.1.3.4 Specify Mechanisms, Guides, Processes, and Procedures for Collecting and Storing Measurement Data (Manually and Automatically)
      1.2.2.5.1.3.5 Evaluate Mechanisms, Guides, Processes, and Procedures for Collecting and Storing Measurement Data
      1.2.2.5.1.3.6 Review and Approve Mechanisms, Guides, Processes, and Procedures for Collecting and Storing Measurement Data
      1.2.2.5.1.3.7 Baseline Mechanisms, Guides, Processes, and Procedures for Collecting and Storing Measurement Data
    1.2.2.5.1.4　Specify Analysis Procedures
      1.2.2.5.1.4.1 Analyze Mechanisms, Guides, Processes, and Procedures for Collecting and Storing Measurement Data
      1.2.2.5.1.4.2 Identify and Prioritize Analyses and Reports for Measurement Data
      1.2.2.5.1.4.3 Select Methods and Tools for Analyzing and Reporting Measurement Data
      1.2.2.5.1.4.4 Develop Procedures for Analyzing and Reporting Measurement Data
      1.2.2.5.1.4.5 Evaluate Procedures for Analyzing and Reporting Measurement Data
      1.2.2.5.1.4.6 Review and Approve for Analyzing and Reporting Measurement Data

	1.2.2.6.2.2.4	Record Trend Analyses of Non-Compliances from Process and Work Product Evaluations
	1.2.2.6.2.2.5	Record Status of Corrective Actions from Process and Work Product Evaluations
	1.2.2.6.2.2.6	Review and Approve Records from Process and Work Product Evaluations
	1.2.2.6.2.2.7	Baseline Records from Process and Work Product Evaluations

1.2.2.7 Configuration Management (Procedure—7)

    1.2.2.7.1 Establish Baselines

        1.2.2.7.1.1 Identify Configuration Items

	1.2.2.7.1.1.1	Receive and Analyze Project Plan
	1.2.2.7.1.1.2	Identify Candidate Configuration Items
	1.2.2.7.1.1.3	Evaluate Candidate Configuration Items
	1.2.2.7.1.1.4	Identify Final Configuration Items
	1.2.2.7.1.1.5	Review and Approve Configuration Items
	1.2.2.7.1.1.6	Define Identifiers, Characteristics, and Owners for Configuration Items
	1.2.2.7.1.1.7	Assign Configuration Items to Baselines

        1.2.2.7.1.2 Establish a Configuration Management System

	1.2.2.7.1.2.1	Receive and Analyze Project Plan
	1.2.2.7.1.2.2	Create and Revise Configuration Management System Structure
	1.2.2.7.1.2.3	Establish Multiple Control Levels for Configuration Management
	1.2.2.7.1.2.4	Store and Receive Configuration Items in Configuration Management System
	1.2.2.7.1.2.5	Share and Transfer Configuration Items Between Control Levels
	1.2.2.7.1.2.6	Store and Retrieve Archived Versions of Configuration Items
	1.2.2.7.1.2.7	Create, Store, Update, and Retrieve Configuration Management Records and Reports

        1.2.2.7.1.3 Create or Release Baselines

	1.2.2.7.1.3.1	Receive and Analyze Project Plan
	1.2.2.7.1.3.2	Create Candidate Baseline of Configuration Items
	1.2.2.7.1.3.3	Evaluate Candidate Baseline of Configuration Items
	1.2.2.7.1.3.4	Create Final Baseline of Configuration Items
	1.2.2.7.1.3.5	Review and Approve Baselines of Configuration Items
	1.2.2.7.1.3.6	Document Configuration Items in Baselines
	1.2.2.7.1.3.7	Make Baselines of Configuration Items Available to Projects

    1.2.2.7.2 Track and Control Changes

        1.2.2.7.2.1 Track Change Requests

	1.2.2.7.2.1.1	Create Change Requests for Baselines of Configuration Items
	1.2.2.7.2.1.2	Record Change Requests for Baselines of Configuration Items
	1.2.2.7.2.1.3	Review Change Requests for Baselines of Configuration Items

1.2.3.1.1.2   Obtain Commitment to Requirements
  1.2.3.1.1.2.1 Requirements Impact Assessments
  1.2.3.1.1.2.2 Documented Commitments to Requirements and Requirements Changes
1.2.3.1.1.3   Manage Requirements Changes
  1.2.3.1.1.3.1 Requirements Status
  1.2.3.1.1.3.2 Requirements Database
  1.2.3.1.1.3.3 Requirements Decision Database
1.2.3.1.1.4   Maintain Bi-directional Traceability of Requirements
  1.2.3.1.1.4.1 Requirements Traceability Matrix
  1.2.3.1.1.4.2 Requirements Tracking System
1.2.3.1.1.5   Identify Inconsistencies Between Project and Work Requirements
  1.2.3.1.1.5.1 Documentation of Inconsistencies
  1.2.3.1.1.5.2 Corrective Actions

1.2.3.2   Project Planning (Work Product—46)
1.2.3.2.1   Establish Estimates
1.2.3.2.1.1   Estimate the Scope of the Project
  1.2.3.2.1.1.1 Task Descriptions
  1.2.3.2.1.1.2 Work Package Descriptions
  1.2.3.2.1.1.3 Work Breakdown Structure
1.2.3.2.1.2   Establish Estimates of Work Product and Task Attributes
  1.2.3.2.1.2.1 Technical Approach
  1.2.3.2.1.2.2 Size and complexity of Tasks and Work Products
  1.2.3.2.1.2.3 Estimating Models
  1.2.3.2.1.2.4 Attribute Estimates
1.2.3.2.1.3   Define Project Life Cycle
  1.2.3.2.1.3.1 Project Life Cycle Phases
1.2.3.2.1.4   Determine Estimates of Effort and Cost
  1.2.3.2.1.4.1 Estimation Rationale
  1.2.3.2.1.4.2 Project Effort Estimates
  1.2.3.2.1.4.3 Project Cost Estimates
1.2.3.2.2   Develop a Project Plan
1.2.3.2.2.1   Establish the Budget and Schedule
  1.2.3.2.2.1.1 Project Schedules
  1.2.3.2.2.1.2 Schedule Dependencies
  1.2.3.2.2.1.3 Project Budget
1.2.3.2.2.2   Identify Project Risks
  1.2.3.2.2.2.1 Identified Risks
  1.2.3.2.2.2.2 Risk Impacts and Probabilities

1.2.3.4.1.3.2   Contracts
1.2.3.4.1.3.3   Memoranda of Agreement
1.2.3.4.1.3.4   Licensing Agreements
1.2.3.4.2   Satisfy Supplier Agreements
1.2.3.4.2.1   Review COTS Products
1.2.3.4.2.1.1   Trade Studies
1.2.3.4.2.1.2   Price Lists
1.2.3.4.2.1.3   Evaluation Criteria
1.2.3.4.2.1.4   Supplier Performance Reports
1.2.3.4.2.1.5   Reviews of COTS Products
1.2.3.4.2.2   Execute Supplier Agreement
1.2.3.4.2.2.1   Supplier Progress Reports and Performance Measures
1.2.3.4.2.2.2   Supplier Review Materials and Reports
1.2.3.4.2.2.3   Action Items Tracked to Closure
1.2.3.4.2.2.4   Documentation of Product and Document Deliveries
1.2.3.4.2.3   Accept the Acquired Product
1.2.3.4.2.3.1   Acceptance Test Procedures
1.2.3.4.2.3.2   Acceptance Test Results
1.2.3.4.2.3.3   Discrepancy Reports or Corrective Action Plans
1.2.3.4.2.4   Transition Products
1.2.3.4.2.4.1   Transition Plans
1.2.3.4.2.4.2   Training Reports
1.2.3.4.2.4.3   Support and Maintenance Reports
1.2.3.5   Measurement and Analysis (Work Product—12)
1.2.3.5.1   Align Measurement and Analysis Activities
1.2.3.5.1.1   Establish Measurement Objectives
1.2.3.5.1.1.1   Measurement Objectives
1.2.3.5.1.2   Specify Measures
1.2.3.5.1.2.1   Specifications of Base and Derived Measures
1.2.3.5.1.3   Specify Data Collection and Storage Procedures
1.2.3.5.1.3.1   Data Collection and Storage Procedures
1.2.3.5.1.3.2   Data Collection Tools
1.2.3.5.1.4   Specify Analysis Procedures
1.2.3.5.1.4.1   Analysis Specification and Procedures
1.2.3.5.1.4.2   Data Analysis Tools
1.2.3.5.2   Provide Measurement Results
1.2.3.5.2.1   Collect Measurement Data
1.2.3.5.2.1.1   Base and Derived Measurement Data Sets

1.2.3.5.2.1.2　　Results of Data Integrity Sets

1.2.3.5.2.2　　Analyze Measurement Data

1.2.3.5.2.2.1　　Analysis Results and Draft Reports

1.2.3.5.2.3　　Store Data and Results

1.2.3.5.2.3.1　　Stored Data Inventory

1.2.3.5.2.4　　Communicate Results

1.2.3.5.2.4.1　　Delivered Reports and Analysis Results

1.2.3.5.2.4.2　　Interpretation Guidance of Analysis Results

1.2.3.6　　Process and Product Quality Assurance (Work Product—14)

1.2.3.6.1　　Objectively Evaluate Processes and Work Products

1.2.3.6.1.1　　Define a Plan for Evaluating Processes and Work Products

1.2.3.6.1.1.1　　Process and Work Product Evaluation Plan

1.2.3.6.1.2　　Objectively Evaluate Processes

1.2.3.6.1.2.1　　Evaluation Reports

1.2.3.6.1.2.2　　Non-Compliance Reports

1.2.3.6.1.2.3　　Corrective Actions

1.2.3.6.1.3　　Objectively Evaluate Work Products and Services

1.2.3.6.1.3.1　　Evaluation Reports

1.2.3.6.1.3.2　　Non-Compliance Reports

1.2.3.6.1.3.3　　Corrective Actions

1.2.3.6.2　　Provide Objective Insight

1.2.3.6.2.1　　Communicate and Ensure Resolution of Noncompliance Issues

1.2.3.6.2.1.1　　Corrective Action Reports

1.2.3.6.2.1.2　　Evaluation Reports

1.2.3.6.2.1.3　　Quality Trends

1.2.3.6.2.2　　Establish Records

1.2.3.6.2.2.1　　Evaluation Logs

1.2.3.6.2.2.2　　Quality Assurance Reports

1.2.3.6.2.2.3　　Status Reports of Corrective Actions

1.2.3.6.2.2.4　　Reports of Quality Trends

1.2.3.7　　Configuration Management (Work Product—16)

1.2.3.7.1　　Establish Baselines

1.2.3.7.1.1　　Identify Configuration Items

1.2.3.7.1.1.1　　Identified Configuration Items

1.2.3.7.1.2　　Establish a Configuration Management System

1.2.3.7.1.2.1　　Configuration Management System with Controlled Work Products

1.2.3.7.1.2.2　　Configuration Management System with Access Control Procedures

1.2.3.7.1.2.3　　Change Request Database

1.2.3.7.1.3 Create or Release Baselines
    1.2.3.7.1.3.1   Baselines
    1.2.3.7.1.3.2   Descriptions of Baselines
1.2.3.7.2 Track and Control Changes
1.2.3.7.2.1 Track Change Requests
    1.2.3.7.2.1.1   Change Requests
1.2.3.7.2.2 Control Configuration Items
    1.2.3.7.2.2.1   Revision History of Configuration Items
    1.2.3.7.2.2.2   Archives of Baselines
1.2.3.7.3 Establish Integrity
1.2.3.7.3.1 Establish Configuration Management Records
    1.2.3.7.3.1.1   Revision History of Configuration Items
    1.2.3.7.3.1.2   Change Log
    1.2.3.7.3.1.3   Copy of Change Requests
    1.2.3.7.3.1.4   Status of Configuration Items
    1.2.3.7.3.1.5   Differences Between Baselines
1.2.3.7.3.2 Perform Configuration Audits
    1.2.3.7.3.2.1   Configuration Audit Results
    1.2.3.7.3.2.2   Action Items

1.3 Maturity Level 3—Defined (Policy—13, Procedure—101, Work Product—276)
1.3.1 Policy (13)
    1.3.1.1   Requirements Development
    1.3.1.2   Technical Solution
    1.3.1.3   Product Integration
    1.3.1.4   Verification
    1.3.1.5   Validation
    1.3.1.6   Organizational Process Focus
    1.3.1.7   Organizational Process Definition
    1.3.1.8   Organizational Training
    1.3.1.9   Integrated Project Management for IPPD
    1.3.1.10   Risk Management
    1.3.1.11   Integrated Teaming
    1.3.1.12   Decision Analysis and Resolution
    1.3.1.13   Organizational Environment for Integration
1.3.2 Procedure (101)
1.3.2.1 Requirements Development (Procedure—11)
1.3.2.1.1 Develop Customer Requirements
1.3.2.1.1.1 Elicit Needs

1.3.2.1.1.1.1	Develop Scope of Initial System Requirements
1.3.2.1.1.1.2	Conduct an Operations Analysis of Customer Functions
1.3.2.1.1.1.3	Develop, Analyze, and Prioritize Statements of Customer Needs
1.3.2.1.1.1.4	Document Customer Needs
1.3.2.1.1.1.5	Evaluate Customer Needs
1.3.2.1.1.1.6	Review and Approve Customer Needs
1.3.2.1.1.1.7	Baseline Customer Needs

1.3.2.1.1.2 Collect Stakeholder Needs

1.3.2.1.1.2.1	Receive Stakeholder Needs from Customer
1.3.2.1.1.2.2	Analyze Stakeholder Needs
1.3.2.1.1.2.3	Prioritize Stakeholder Needs
1.3.2.1.1.2.4	Document Stakeholder Needs
1.3.2.1.1.2.5	Evaluate Stakeholder Needs
1.3.2.1.1.2.6	Review and Approve Stakeholder Needs
1.3.2.1.1.2.7	Baseline Stakeholder Needs

1.3.2.1.1.3 Develop the Customer Requirements

1.3.2.1.1.3.1	Receive Customer and Stakeholder Needs
1.3.2.1.1.3.2	Analyze Customer and Stakeholder Needs
1.3.2.1.1.3.3	Prioritize Customer and Stakeholder Needs
1.3.2.1.1.3.4	Transform Customer and Stakeholder Needs Into Customer Requirements
1.3.2.1.1.3.5	Evaluate Customer Requirements
1.3.2.1.1.3.6	Review and Approve Customer Requirements
1.3.2.1.1.3.7	Baseline Customer Requirements

1.3.2.1.2 Develop Product Requirements

1.3.2.1.2.1 Establish Product and Product Component Requirements

1.3.2.1.2.1.1	Receive Customer Requirements
1.3.2.1.2.1.2	Analyze Customer Requirements
1.3.2.1.2.1.3	Derive Technical Product and Product Component Requirements
1.3.2.1.2.1.4	Analyze and Prioritize Product and Product Component Requirements
1.3.2.1.2.1.5	Evaluate Product and Product Component Requirements
1.3.2.1.2.1.6	Review and Approve Product and Product Component Requirements
1.3.2.1.2.1.7	Baseline Product and Product Component Requirements

1.3.2.1.2.2 Allocate Product Component Requirements

1.3.2.1.2.2.1	Receive Product and Product Component Requirements
1.3.2.1.2.2.2	Allocate Requirements to Functions
1.3.2.1.2.2.3	Allocate Design Constraints to Product Requirements
1.3.2.1.2.2.4	Document Relationships Among Allocated Requirements
1.3.2.1.2.2.5	Evaluate Allocated Product Component Requirements

1.3.2.1.2.2.6　　Review and Approve Allocated Product Component Requirements
1.3.2.1.2.2.7　　Baseline Allocated Product Component Requirements

1.3.2.1.2.3　Identify Interface Requirements
1.3.2.1.2.3.1　　Receive Allocated Product Component Requirements
1.3.2.1.2.3.2　　Analyze Product Component Requirements
1.3.2.1.2.3.3　　Derive External and Internal Interface Requirements from Product Component Requirements
1.3.2.1.2.3.4　　Document Interface Requirements
1.3.2.1.2.3.5　　Evaluate Interface Requirements
1.3.2.1.2.3.6　　Review and Approve Interface Requirements
1.3.2.1.2.3.7　　Baseline Interface Requirements

1.3.2.1.3　Analyze and Validate Requirements
1.3.2.1.3.1　Establish Operational Concepts and Scenarios
1.3.2.1.3.1.1　　Receive Customer Needs, Stakeholder Needs, Customer Requirements, Product
1.3.2.1.3.1.2　　and Product Component Requirements, and Interface Requirements
1.3.2.1.3.1.3　　Analyze Customer Needs, Stakeholder Needs, Customer Requirements, Product
and Product Component Requirements, and Interface Requirements
1.3.2.1.3.1.4　　Develop Operational Concepts and Scenarios for Functionality, Performance,
1.3.2.1.3.1.5　　Maintenance, Support, and Disposal
1.3.2.1.3.1.6　　Document Operational Concept
1.3.2.1.3.1.7　　Evaluate Operational Concept
1.3.2.1.3.1.8　　Review and Approve Operational Concept
1.3.2.1.3.1.9　　Baseline Operational Concept

1.3.2.1.3.2　Establish a Definition of Required Functionality
1.3.2.1.3.2.1　　Analyze and Quantify Functionality Required by End-Users and Identify
Logical or Functional Partitions
1.3.2.1.3.2.2　　Partition Requirements into Groups and Sequence Time Critical Functions
1.3.2.1.3.2.3　　Allocate Customer, Functional, and Performance Requirements to Functional
Partitions
1.3.2.1.3.2.4　　Document Functional Architecture
1.3.2.1.3.2.5　　Evaluate Functional Architecture
1.3.2.1.3.2.6　　Review and Approve Functional Architecture
1.3.2.1.3.2.7　　Baseline Functional Architecture

1.3.2.1.3.3　Analyze Requirements
1.3.2.1.3.3.1　　Analyze Stakeholder Needs, Expectations, Constraints, and External Interfaces
1.3.2.1.3.3.2　　Determine if Requirements Satisfy Higher Level Requirements
1.3.2.1.3.3.3　　Analyze Requirements for Completeness, Feasibility, Realizability, and
Verifiability

	1.3.2.1.3.3.4	Identify Requirements Directly Related to Cost, Schedule, Functionality, Risk, and Performance
	1.3.2.1.3.3.5	Identify Technical Performance Measures and Analyze Operational Concepts and Scenarios
	1.3.2.1.3.3.6	Review and Approve Results of Requirements Analysis
	1.3.2.1.3.3.7	Baseline Requirements

1.3.2.1.3.4 Analyze Requirements to Achieve Balance

	1.3.2.1.3.4.1	Receive Customer Needs, Stakeholder Needs, Customer Requirements, Product and Product Component Requirements, Interface Requirements, Functional Architecture, and Technical Performance Measures
	1.3.2.1.3.4.2	Analyze Requirements Using Models, Simulations, and Prototyping
	1.3.2.1.3.4.3	Perform a Risk Assessment on Requirements and Functional Architecture
	1.3.2.1.3.4.4	Perform a Risk Assessment of Product Life Cycle Concepts
	1.3.2.1.3.4.5	Evaluate Results of Models, Simulations, Prototyping, and Risk Assessment
	1.3.2.1.3.4.6	Review and Approve Results of Models, Simulations, Prototyping, and Risk Assessment
	1.3.2.1.3.4.7	Baseline Results of Models, Simulations, Prototyping, and Risk Assessment

1.3.2.1.3.5 Validate Requirements With Comprehensive Methods

	1.3.2.1.3.5.1	Receive Customer Needs, Stakeholder Needs, Customer Requirements, Product and Product Component Requirements, Interface Requirements, Functional Architecture, and Technical Performance Measures
	1.3.2.1.3.5.2	Determine Risk of Implementing Requirements on Intended Use Environment
	1.3.2.1.3.5.3	Evaluate Requirements Using Prototypes, Simulations, Models, Scenarios, and Storyboards
	1.3.2.1.3.5.4	Document Results of Requirements Validation
	1.3.2.1.3.5.5	Evaluate Results of Requirements Validation
	1.3.2.1.3.5.6	Review and Approve Results of Requirements Validation
	1.3.2.1.3.5.7	Baseline Results of Requirements Validation

1.3.2.2 Technical Solution (Procedure—9)

1.3.2.2.1 Select Product Component Solutions

1.3.2.2.1.1 Develop Detailed Alternative Solutions and Selection Criteria

	1.3.2.2.1.1.1	Identify Screening Criteria for Selecting Sets of Alternative Solutions
	1.3.2.2.1.1.2	Identify Current and New Technologies for Competitive Advantage
	1.3.2.2.1.1.3	Generate Alternative Solutions
	1.3.2.2.1.1.4	Obtain Complete Requirements Allocation for Each Alternative Solution
	1.3.2.2.1.1.5	Develop Criteria for Selecting Best Alternative Solution
	1.3.2.2.1.1.6	Develop Timeline Scenarios for Each Alternative Solution
	1.3.2.2.1.1.7	Evaluate Alternative Solutions

	1.3.2.2.1.1.8	Review and Approve Alternative Solutions
	1.3.2.2.1.1.9	Baseline Alternative Solutions
1.3.2.2.1.2	**Evolve Operational Concepts and Scenarios**	
	1.3.2.2.1.2.1	Receive Product Component Requirements, Interface Requirements, Functional
	1.3.2.2.1.2.2	Requirements, and Operational Concept
	1.3.2.2.1.2.3	Analyze Product Component Requirements, Interface Requirements, Functional
	1.3.2.2.1.2.4	Requirements, and Operational Concept
	1.3.2.2.1.2.5	Develop Product Component Operational Concepts, Scenarios, and Environments
	1.3.2.2.1.2.6	Document Product Component Operational Concepts
	1.3.2.2.1.2.7	Evaluate Product Component Operational Concepts
	1.3.2.2.1.2.8	Review and Approve Product Component Operational Concepts
	1.3.2.2.1.2.9	Baseline Product Component Operational Concepts
1.3.2.2.1.3	**Select Product Component Solutions**	
	1.3.2.2.1.3.1	Evaluate Each Alternative Solution or Set of Solutions
	1.3.2.2.1.3.2	Assess Adequacy of Selection Criteria
	1.3.2.2.1.3.3	Identify and Resolve Issues with Alternative Solutions and Requirements
	1.3.2.2.1.3.4	Select Best Set of Alternative Solutions
	1.3.2.2.1.3.5	Allocate Product Component Requirements to Set of Alternative Solutions
	1.3.2.2.1.3.6	Identify Product Component Solutions to be Reused or Acquired
	1.3.2.2.1.3.7	Document Product Component Solutions
	1.3.2.2.1.3.8	Review and Approve Product Component Solutions
	1.3.2.2.1.3.9	Baseline Product Component Solutions
1.3.2.2.2	**Develop the Design**	
1.3.2.2.2.1	**Design the Product or Product Component**	
	1.3.2.2.2.1.1	Establish and Maintain Criteria for Evaluation of Product Component Designs
	1.3.2.2.2.1.2	Identify Design Methods for Product Components
	1.3.2.2.2.1.3	Assess Product Component Designs Against Design Standards, Design Criteria, and Allocated Requirements
	1.3.2.2.2.1.4	Document Product Component Designs
	1.3.2.2.2.1.5	Evaluate Product Component Designs
	1.3.2.2.2.1.6	Review and Approve Product Component Designs
	1.3.2.2.2.1.7	Baseline Product Component Designs
1.3.2.2.2.2	**Establish a Technical Data Package**	
	1.3.2.2.2.2.1	Determine Number of Design Levels and Documentation Requirements
	1.3.2.2.2.2.2	Develop Detailed Design Descriptions Using Allocated Product Component Requirements, Architecture, and Higher Level Diagrams
	1.3.2.2.2.2.3	Document Design in Technical Data Package

	1.3.2.2.2.2.4	Document Rationale for Key Design Decisions
	1.3.2.2.2.2.5	Evaluate Technical Data Package
	1.3.2.2.2.2.6	Review and Approve Technical Data Package
	1.3.2.2.2.2.7	Baseline Technical Data Package

1.3.2.2.2.3 **Design Interfaces Using Criteria**

    1.3.2.2.2.3.1   Receive Product Component Operational Concepts, Product Component

    1.3.2.2.2.3.2   Solutions, Product Component Designs, and Technical Data Packages

    1.3.2.2.2.3.3   Analyze Product Component Operational Concepts, Product Component
                     Solutions, Product Component Designs, and Technical Data Package

    1.3.2.2.2.3.4   Define Interface Criteria and Interface Alternatives for Product Components

    1.3.2.2.2.3.5   Evaluate Alternative Interface Designs and Document Interface Designs

    1.3.2.2.2.3.6   Document Product Component Interface Designs

    1.3.2.2.2.3.7   Evaluate Product Component Interface Designs

    1.3.2.2.2.3.8   Review and Approve Product Component Interface Designs

    1.3.2.2.2.3.9   Baseline Product Component Interface Designs

1.3.2.2.2.4 **Perform Make, Buy, or Reuse Analysis**

    1.3.2.2.2.4.1   Receive and Analyze Product Component Operational Concepts, Product
                     Component Solutions, Product Component Designs, Technical Data Packages,
                     and Product Component Interface Designs

    1.3.2.2.2.4.2   Develop Criteria for the Development, Reuse, or Purchase of Product
                     Component Designs

    1.3.2.2.2.4.3   Determine if Product Component Designs Should Be Developed, Reused, or
                     Purchased

    1.3.2.2.2.4.4   Document Product Component Make or Buy Analysis

    1.3.2.2.2.4.5   Evaluate Product Component Make or Buy Analysis

    1.3.2.2.2.4.6   Review and Approve Product Component Make or Buy Analysis

    1.3.2.2.2.4.7   Baseline Product Component Make or Buy Analysis

1.3.2.2.3 **Implement the Product Design**

1.3.2.2.3.1 **Implement the Design**

    1.3.2.2.3.1.1   Receive and Analyze Product Component Operational Concepts, Product
                     Component Solutions, Product Component Designs, Technical Data Packages,
                     Product Component Interface Designs, and Product Component Make or Buy
                     Analysis

    1.3.2.2.3.1.2   Identify or Develop Implementation Standards and Criteria

    1.3.2.2.3.1.3   Implement Product Components Using Implementation Standards and Criteria

    1.3.2.2.3.1.4   Evaluate Product Component Implementations

    1.3.2.2.3.1.5   Unit Test Product Component Implementations

    1.3.2.2.3.1.6   Review and Approve Product Component Implementations

1.3.2.2.3.1.7   Baseline Product Component Implementations

1.3.2.2.3.2   Develop Product Support Documentation

1.3.2.2.3.2.1   Receive and Analyze Product Component Operational Concepts, Product

1.3.2.2.3.2.2   Component Solutions, Product Component Designs, Technical Data Packages,

1.3.2.2.3.2.3   Product Component Interface Designs, Product Component Make or Buy

1.3.2.2.3.2.4   Analysis, Product Component Unit Test Results

1.3.2.2.3.2.5   Identify or Develop Installation, Operation, and Maintenance Document Standards

1.3.2.2.3.2.6   Develop Installation, Operation, and Maintenance Documents

1.3.2.2.3.2.7   Evaluate Installation, Operation, and Maintenance Documents

1.3.2.2.3.2.8   Review and Approve Installation, Operation, and Maintenance Documents

1.3.2.2.3.2.9   Baseline Installation, Operation, and Maintenance Documents

1.3.2.3   Product Integration (Procedure—9)

1.3.2.3.1   Prepare for Product Integration

1.3.2.3.1.1   Determine Integration Sequence

1.3.2.3.1.1.1   Identify Product Components for Integration

1.3.2.3.1.1.2   Identify Verification Needed for Product Component Integration

1.3.2.3.1.1.3   Identify Alternative Integration Sequences for Product Components

1.3.2.3.1.1.4   Select Best Integration Sequence for Product Components

1.3.2.3.1.1.5   Evaluate Product Integration Sequence

1.3.2.3.1.1.6   Review and Approve Product Integration Sequence

1.3.2.3.1.1.7   Baseline Product Integration Sequence

1.3.2.3.1.2   Establish the Product Integration Environment

1.3.2.3.1.2.1   Identify Requirements for Product Integration Environment

1.3.2.3.1.2.2   Identify Verification Criteria and Procedures for Product Integration Environment

1.3.2.3.1.2.3   Determine Whether to Make or Buy Product Integration Environment

1.3.2.3.1.2.4   Develop Product Integration Environment

1.3.2.3.1.2.5   Evaluate Product Integration Environment

1.3.2.3.1.2.6   Review and Approve Product Integration Environment

1.3.2.3.1.2.7   Baseline Product Integration Environment

1.3.2.3.1.3   Establish Product Integration Procedures and Criteria

1.3.2.3.1.3.1   Establish Procedures for Product Component Integration

1.3.2.3.1.3.2   Establish Criteria for Product Component Integration

1.3.2.3.1.3.3   Establish Criteria for Validation of Product Component Integration

1.3.2.3.1.3.4   Establish Criteria for Delivery of Product Component Integration

1.3.2.3.1.3.5   Evaluate Product Component Integration Procedures and Criteria

1.3.2.3.1.3.6   Review and Approve Product Component Integration Procedures and Criteria

1.3.2.3.1.3.7   Baseline Product Component Integration Procedures and Criteria

1.3.2.3.2   **Ensure Interface Compatibility**

     1.3.2.3.2.1   **Review Interface Descriptions for Completeness**

         1.3.2.3.2.1.1   Receive Interface Requirements, Product Component Interface Designs, and Product Integration Environment Requirements

         1.3.2.3.2.1.2   Analyze Interface Requirements, Product Component Interface Designs, and Product Integration Environment Requirements

         1.3.2.3.2.1.3   Uniquely Identify Individual Product Component Interfaces

         1.3.2.3.2.1.4   Analyze Product Component Implementations using Product Component Interface Designs

         1.3.2.3.2.1.5   Evaluate Interface Descriptions

         1.3.2.3.2.1.6   Review and Approve Interface Descriptions

         1.3.2.3.2.1.7   Baseline Interface Descriptions

     1.3.2.3.2.2   **Manage Interfaces**

         1.3.2.3.2.2.1   Receive Interface Requirements, Product Component Interface Designs, and Product Integration Environment Requirements

         1.3.2.3.2.2.2   Analyze Changes to Interface Requirements, Product Component Interface Designs, and Product Integration Environment Requirements

         1.3.2.3.2.2.3   Analyze Interface Requirements, Product Component Interface Designs, and Product Integration Environment Requirements

         1.3.2.3.2.2.4   Evaluate Interface Requirements, Product Component Interface Designs, and Product Integration Environment Requirements

         1.3.2.3.2.2.5   Review and Approve Interface Requirements, Product Component Interface Designs, and Product Integration Environment Requirements

         1.3.2.3.2.2.6   Baseline Interface Requirements, Product Component Interface Designs, and Product Integration Environment Requirements

         1.3.2.3.2.2.7   Maintain a Repository of Changes to Interface Requirements, Product Component Interface Designs, and Product Integration Environment Requirements

1.3.2.3.3   **Assemble Product Components and Deliver the Product**

     1.3.2.3.3.1   **Confirm Readiness of Product Components for Integration**

         1.3.2.3.3.1.1   Track Status of Product Components

         1.3.2.3.3.1.2   Place Product Components in Product Integration Environment

         1.3.2.3.3.1.3   Confirm Receipt of Product Components

         1.3.2.3.3.1.4   Analyze Configuration Item Status

         1.3.2.3.3.1.5   Evaluate Product Components and Product Component Interfaces

         1.3.2.3.3.1.6   Review and Approve Product Component Readiness

         1.3.2.3.3.1.7   Baseline Product Components for Integration

1.3.2.3.3.2   **Assemble Product Components**

        1.3.2.3.3.2.1   Analyze Readiness of Product Integration Environment
        1.3.2.3.3.2.2   Analyze Readiness of Product Components for Integration
        1.3.2.3.3.2.3   Analyze Readiness of Product Integration Sequence
        1.3.2.3.3.2.4   Analyze Readiness of Product Integration Procedures and Criteria
        1.3.2.3.3.2.5   Integrate Product Components
        1.3.2.3.3.2.6   Evaluate Product Component Integration Results
        1.3.2.3.3.2.7   Baseline Product Component Integration Results

1.3.2.3.3.3   **Evaluate Assembled Product Components**

        1.3.2.3.3.3.1   Analyze Product Component Status
        1.3.2.3.3.3.2   Analyze Changes to Product Components During Integration
        1.3.2.3.3.3.3   Analyze Deviations from Product Integration Procedures and Criteria
        1.3.2.3.3.3.4   Analyze Product Component Integration Results
        1.3.2.3.3.3.5   Evaluate Product Component Status and Integration Results
        1.3.2.3.3.3.6   Review and Approve Product Component Status, Procedure and Criteria Deviations, and Integration Results
        1.3.2.3.3.3.7   Baseline Product Component Status and Integration Results

1.3.2.3.3.4   **Package and Deliver the Product or Product Component**

        1.3.2.3.3.4.1   Ensure Issues With Requirements, Designs, Products, Verification Results, and Documentation are Resolved
        1.3.2.3.3.4.2   Analyze Requirements for Product Packaging and Delivery
        1.3.2.3.3.4.3   Ensure Requirements for Product Packaging and Delivery are Satisfied
        1.3.2.3.3.4.4   Prepare Operational Site for Product Installation
        1.3.2.3.3.4.5   Deliver Product to Operational Site for Installation
        1.3.2.3.3.4.6   Install Product at Operational Site and Confirm Operation
        1.3.2.3.3.4.7   Review and Approve Packaged and Delivered Product or Product Component

1.3.2.4   **Verification (Procedure—8)**

1.3.2.4.1   **Prepare for Verification**

1.3.2.4.1.1   **Select Work Products for Verification**

        1.3.2.4.1.1.1   Identify Work Products for Verification
        1.3.2.4.1.1.2   Identify Requirements for Work Products
        1.3.2.4.1.1.3   Identify Verification Methods That Are Available for Use
        1.3.2.4.1.1.4   Define Verification Method for Each Work Product
        1.3.2.4.1.1.5   Evaluate Verification Methods for Work Products
        1.3.2.4.1.1.6   Review and Approve Verification Methods for Work Products
        1.3.2.4.1.1.7   Integrate Work Product Verification Methods into Project Plan

1.3.2.4.1.2   **Establish the Verification Environment**

        1.3.2.4.1.2.1   Identify Requirements for Verification Environment

1.3.2.4.1.2.2 Identify Resources for Verification Environment
1.3.2.4.1.2.3 Identify Equipment and Tools for Verification Environment
1.3.2.4.1.2.4 Acquire Equipment and Tools for Verification Environment
1.3.2.4.1.2.5 Evaluate Verification Environment
1.3.2.4.1.2.6 Review and Approve Verification Environment
1.3.2.4.1.2.7 Baseline Verification Environment
1.3.2.4.1.3 Establish Verification Procedures and Criteria
1.3.2.4.1.3.1 Generate Verification Procedures for Work Products and Commercial Off the Shelf Products
1.3.2.4.1.3.2 Develop Verification Criteria for Work Products and Commercial Off the Shelf Products
1.3.2.4.1.3.3 Identify Expected Results and Acceptable Tolerances for Verification Procedures
1.3.2.4.1.3.4 Evaluate Verification Procedures and Criteria
1.3.2.4.1.3.5 Review Verification Procedures and Criteria
1.3.2.4.1.3.6 Baseline Verification Procedures and Criteria
1.3.2.4.2 Perform Peer Reviews
1.3.2.4.2.1 Prepare for Peer Reviews
1.3.2.4.2.1.1 Determine Type of Peer Reviews to Conduct
1.3.2.4.2.1.2 Define Requirements for Data Collection During Peer Reviews
1.3.2.4.2.1.3 Establish Entry and Exit Criteria for Peer Reviews
1.3.2.4.2.1.4 Establish Criteria for Repeating Peer Reviews
1.3.2.4.2.1.5 Establish Checklists for Peer Reviews
1.3.2.4.2.1.6 Develop Schedules for Peer Reviews
1.3.2.4.2.1.7 Verify Entry Criteria Before Peer Reviews
1.3.2.4.2.1.8 Distribute Work Products in Advance of Peer Reviews
1.3.2.4.2.1.9 Assign Roles for Conducting Peer Reviews
1.3.2.4.2.1.10 Examine Work Products in Advance of Peer Reviews
1.3.2.4.2.2 Conduct Peer Reviews
1.3.2.4.2.2.1 Perform Assigned Roles in Peer Reviews
1.3.2.4.2.2.2 Identify and Document Defects During Peer Reviews
1.3.2.4.2.2.3 Record Results of Peer Reviews
1.3.2.4.2.2.4 Collect Data from Peer Reviews
1.3.2.4.2.2.5 Identify Action Items and Communicate Issues During Peer Reviews
1.3.2.4.2.2.6 Conduct Additional Peer Reviews
1.3.2.4.2.2.7 Verify Exit Criteria for Peer Reviews
1.3.2.4.2.3 Analyze Peer Review Data
1.3.2.4.2.3.1 Record Data for Preparation, Conduct, and Results of Peer Reviews

1.3.2.5.1.1.7   Baseline Requirements, Categories, Selected Products and Product Components, and Methods for Validation

1.3.2.5.1.2   Establish the Validation Environment

1.3.2.5.1.2.1   Identify Requirements for Validation Environment

1.3.2.5.1.2.2   Identify Customer Supplied Products for Validation Environment

1.3.2.5.1.2.3   Identify Reusable Items for Validation Environment

1.3.2.5.1.2.4   Identify Test Equipment and Tools for Validation Environment

1.3.2.5.1.2.5   Identify Resources for Validation Environment

1.3.2.5.1.2.6   Plan Resource Availability for Validation Environment

1.3.2.5.1.2.7   Evaluate Validation Environment

1.3.2.5.1.2.8   Review and Approve Validation Environment

1.3.2.5.1.2.9   Baseline Validation Environment

1.3.2.5.1.3   Establish Validation Procedures and Criteria

1.3.2.5.1.3.1   Review Requirements for Products and Product Components

1.3.2.5.1.3.2   Document Required Environment, Operational Scenario, Procedures, Inputs, Outputs, and Criteria for Products and Product Components

1.3.2.5.1.3.3   Assess Maturity of Product and Product Component Designs

1.3.2.5.1.3.4   Develop Validation Procedures and Criteria

1.3.2.5.1.3.5   Evaluate Validation Procedures and Criteria

1.3.2.5.1.3.6   Review and Approve Validation Procedures and Criteria

1.3.2.5.1.3.7   Baseline Validation Procedures and Criteria

1.3.2.5.2   Validate Product or Product Components

1.3.2.5.2.1   Perform Validation

1.3.2.5.2.1.1   Validate Selected Work Products Against Requirements

1.3.2.5.2.1.2   Record Results of Validation

1.3.2.5.2.1.3   Identify Action Items Resulting from Validation

1.3.2.5.2.1.4   Document Methods Used for Validation

1.3.2.5.2.1.5   Evaluate Validation Methods

1.3.2.5.2.1.6   Review and Approve Validation Methods

1.3.2.5.2.1.7   Baseline Validation Methods

1.3.2.5.2.2   Analyze Validation Results

1.3.2.5.2.2.1   Compare Actual Results to Expected Results

1.3.2.5.2.2.2   Identify Products Not Meeting Requirements and Problems With Validation Procedures

1.3.2.5.2.2.3   Analyze Validation Data on Defects

1.3.2.5.2.2.4   Record Results of Validation Data on Defects in a Report

1.3.2.5.2.2.5   Evaluate Validation Report

1.3.2.5.2.2.6   Review and Approve Validation Report

1.3.2.5.2.2.7   Baseline Validation Report

1.3.2.5.2.2.8   Compare Planned Versus Actual Validation on Defects

1.3.2.5.2.2.9   Establish Plan to Resolve Defects Found By Validation

1.3.2.6   Organizational Process Focus (Procedure—7)

1.3.2.6.1   Determine Process Improvement Opportunities

1.3.2.6.1.1   Establish Organizational Process Needs

1.3.2.6.1.1.1   Identify Policies, Standards, and Business Objectives of Organization Process

1.3.2.6.1.1.2   Identify Best Practices for Organization Process

1.3.2.6.1.1.3   Determine Performance Objectives and Characteristics of Organization Process

1.3.2.6.1.1.4   Document Organization Process Needs and Objectives

1.3.2.6.1.1.5   Evaluate Organization Process Needs and Objectives

1.3.2.6.1.1.6   Review and Approve Organization Process Needs and Objectives

1.3.2.6.1.1.7   Baseline Organization Process Needs and Objectives

1.3.2.6.1.2   Appraise the Organization's Processes

1.3.2.6.1.2.1   Obtain Sponsorship for Appraisal of Organization Process

1.3.2.6.1.2.2   Define Scope for Appraisal of Organization Process

1.3.2.6.1.2.3   Determine Method and Criteria for Appraisal of Organization Process

1.3.2.6.1.2.4   Plan, Schedule, and Prepare for Appraisal of Organization Process

1.3.2.6.1.2.5   Conduct Appraisal of Organization Process

1.3.2.6.1.2.6   Document Findings for Appraisal of Organization Process

1.3.2.6.1.2.7   Baseline Findings for Appraisal of Organization Process

1.3.2.6.1.3   Identify the Organization's Process Improvements

1.3.2.6.1.3.1   Analyze Findings from Appraisal of Organization Process

1.3.2.6.1.3.2   Determine Candidate Improvements to Organization Process

1.3.2.6.1.3.3   Prioritize Candidate Improvements to Organization Process

1.3.2.6.1.3.4   Document Improvements to Organization Process

1.3.2.6.1.3.5   Evaluate Improvements to Organization Process

1.3.2.6.1.3.6   Review and Approve Improvements to Organization Process

1.3.2.6.1.3.7   Baseline Improvements to Organization Process

1.3.2.6.2   Plan and Implement Process Improvement Activities

1.3.2.6.2.1   Establish Process Action Plans

1.3.2.6.2.1.1   Receive and Analyze Improvements to Organization Process

1.3.2.6.2.1.2   Identify Strategies, Approaches, and Actions for Improvements to Organization Process

1.3.2.6.2.1.3   Establish Action Teams to Implement Improvements to Organization Process

1.3.2.6.2.1.4   Document Process Action Plans

1.3.2.6.2.1.5   Evaluate Process Action Plans

1.3.2.6.2.1.6   Review and Approve Process Action Plans

1.3.2.7.1.1.7	Baseline Organization Standard Process

1.3.2.7.1.2 Establish Life Cycle Model Descriptions

1.3.2.7.1.2.1	Identify and Evaluate Needs of Projects and Organization
1.3.2.7.1.2.2	Identify Industry, Customer, and Technical Standards for Life Cycle Models
1.3.2.7.1.2.3	Evaluate, Select, and Instantiate Life Cycle Model Descriptions
1.3.2.7.1.2.4	Document Life Cycle Model Descriptions
1.3.2.7.1.2.5	Evaluate Life Cycle Model Descriptions
1.3.2.7.1.2.6	Review and Approve Life Cycle Model Descriptions
1.3.2.7.1.2.7	Baseline Life Cycle Model Descriptions

1.3.2.7.1.3 Establish Tailoring Criteria and Guidelines

1.3.2.7.1.3.1	Create Selection Criteria and Procedures for Tailoring Organization Standard Process
1.3.2.7.1.3.2	Create Standards for Documenting Organization Standard Process
1.3.2.7.1.3.3	Create Procedures for Waivers to Organization Standard Process
1.3.2.7.1.3.4	Document Tailoring Guidelines and Criteria
1.3.2.7.1.3.5	Evaluate Tailoring Guidelines and Criteria
1.3.2.7.1.3.6	Review and Approve Tailoring Guidelines and Criteria
1.3.2.7.1.3.7	Baseline Tailoring Guidelines and Criteria

1.3.2.7.1.4 Establish the Organization's Measurement Repository

1.3.2.7.1.4.1	Determine Measurement Storage, Retrieval, and Analysis Needs of Organization
1.3.2.7.1.4.2	Define a Common Set of Process and Product Measures for Organization Standard Process
1.3.2.7.1.4.3	Design and Implement a Measurement Repository
1.3.2.7.1.4.4	Create Procedures for Storing, Updating, and Retrieving Measures
1.3.2.7.1.4.5	Evaluate Common Set of Process and Product Measures, and Procedures for Storing, Updating, and Retrieving Measures
1.3.2.7.1.4.6	Review and Approve Common Set of Process and Product Measures, Procedures for Storing, Updating, and Retrieving Measures, and Organization Measurement Repository
1.3.2.7.1.4.7	Baseline Common Set of Process and Product Measures, Procedures for Storing, Updating, and Retrieving Measures, and Organization Measurement Repository

1.3.2.7.1.5 Establish the Organization's Process Asset Library

1.3.2.7.1.5.1	Design and Implement Organization Process Asset Library
1.3.2.7.1.5.2	Create Criteria for Adding Work Products to Organization Process Asset Library
1.3.2.7.1.5.3	Create Procedures for Storing and Retrieving Work Products

1.3.2.7.1.5.4	Enter Work Products Into Organization Process Asset Library
1.3.2.7.1.5.5	Evaluate Organization Process Asset Library, Criteria for Adding Work Products, Procedures for Storing and Retrieving Work Products, and Work Products
1.3.2.7.1.5.6	Review and Approve Organization Process Asset Library, Criteria for Adding Work Products, Procedures for Storing and Retrieving Work Products, and Work Products
1.3.2.7.1.5.7	Baseline Organization Process Asset Library, Criteria for Adding Work Products, Procedures for Storing and Retrieving Work Products, and Work Products

1.3.2.8 Organizational Training (Procedure—7)

1.3.2.8.1 Establish an Organizational Training Capability

1.3.2.8.1.1 Establish the Strategic Training Needs

1.3.2.8.1.1.1	Identify Training Needs by Analyzing Strategic Business Objectives and Process Improvement Plan
1.3.2.8.1.1.2	Determine Roles and Skills Needed for Organization Standard Process
1.3.2.8.1.1.3	Identify Training Needs for Roles and Skills of Organization Standard Process
1.3.2.8.1.1.4	Document Organization Training Needs
1.3.2.8.1.1.5	Evaluation Organization Training Needs
1.3.2.8.1.1.6	Review and Approve Organization Training Needs
1.3.2.8.1.1.7	Baseline Organization Training Needs

1.3.2.8.1.2 Determine Which Training Needs Are the Responsibility of the Organization

1.3.2.8.1.2.1	Identify Training Needs Project and Support Group Objectives and Plans
1.3.2.8.1.2.2	Determine Roles and Skills Needed to Support Projects and Support Groups
1.3.2.8.1.2.3	Identify Training Needs for Roles and Skills of Projects and Support Groups
1.3.2.8.1.2.4	Document Project and Support Group Training Needs
1.3.2.8.1.2.5	Evaluation Project and Support Group Training Needs
1.3.2.8.1.2.6	Review and Approve Project and Support Group Training Needs
1.3.2.8.1.2.7	Baseline Project and Support Group Training Needs

1.3.2.8.1.3 Establish Organizational Training Tactical Plan

1.3.2.8.1.3.1	Analyze Organization, Project, and Support Group Training Needs
1.3.2.8.1.3.2	Identify Topics, Schedules, and Methods for Training
1.3.2.8.1.3.3	Identify material requirements and Quality Standards, Tasks, Roles, Responsibilities, and Resources for Training
1.3.2.8.1.3.4	Document Organizational Training Tactical Plan
1.3.2.8.1.3.5	Evaluate Organizational Training Tactical Plan
1.3.2.8.1.3.6	Review and Approve Organizational Training Tactical Plan
1.3.2.8.1.3.7	Baseline Organizational Training Tactical Plan

1.3.2.8.1.4   Establish Training Capability

    1.3.2.8.1.4.1   Select Approaches to Satisfy Organization Training Needs
    1.3.2.8.1.4.2   Determine Whether to Develop or Acquire Training Materials
    1.3.2.8.1.4.3   Develop or Acquire Training Materials
    1.3.2.8.1.4.4   Develop or Acquire Training Instructors
    1.3.2.8.1.4.5   Evaluate Training Materials
    1.3.2.8.1.4.6   Review and Approve Training Materials
    1.3.2.8.1.4.7   Baseline Training Materials

1.3.2.8.2   Provide Necessary Training

1.3.2.8.2.1   Deliver Training

    1.3.2.8.2.1.1   Identify Recipients of Training
    1.3.2.8.2.1.2   Identify Training Instructors and Resources
    1.3.2.8.2.1.3   Schedule Training
    1.3.2.8.2.1.4   Conduct Training
    1.3.2.8.2.1.5   Evaluate Training
    1.3.2.8.2.1.6   Review and Approve Training Results
    1.3.2.8.2.1.7   Baseline Training Results

1.3.2.8.2.2   Establish Training Records

    1.3.2.8.2.2.1   Identify and Analyze Training Attendance
    1.3.2.8.2.2.2   Identify and Analyze Training Waivers
    1.3.2.8.2.2.3   Identify Planned Versus Actual Training Recipients
    1.3.2.8.2.2.4   Document Training Records
    1.3.2.8.2.2.5   Evaluate Training Records
    1.3.2.8.2.2.6   Review and Approve Training Records
    1.3.2.8.2.2.7   Baseline Training Records

1.3.2.8.2.3   Assess Training Effectiveness

    1.3.2.8.2.3.1   Identify and Analyze Training Results and Records
    1.3.2.8.2.3.2   Identify Criteria for Assessing Effectiveness of Training
    1.3.2.8.2.3.3   Develop Survey Instruments to Assess Effectiveness of Training
    1.3.2.8.2.3.4   Administer Survey Instruments to Training Recipients Following Projects
    1.3.2.8.2.3.5   Evaluate Training Survey Results
    1.3.2.8.2.3.6   Review and Approve Training Survey Results
    1.3.2.8.2.3.7   Baseline Training Survey Results

1.3.2.9   Integrated Project Management (Procedure—13)

1.3.2.9.1   Use the Project's Defined Process

1.3.2.9.1.1   Establish the Project's Defined Process

    1.3.2.9.1.1.1   Select Life Cycle Models from Organization Process Asset Library

1.3.2.9.1.1.2	Select Process Elements, Work Products, and Data from Organization Process Asset Library
1.3.2.9.1.1.3	Tailor Life Cycle Models, Process Elements, Work Products, and Data
1.3.2.9.1.1.4	Document Project Defined Process
1.3.2.9.1.1.5	Evaluate Project Defined Process
1.3.2.9.1.1.6	Review and Approve Project Defined Process
1.3.2.9.1.1.7	Baseline Project Defined Process
1.3.2.9.1.2	**Use Organizational Process Assets for Planning Project Activities**
1.3.2.9.1.2.1	Use Life Cycle Models as a Basis for Estimating
1.3.2.9.1.2.2	Use Process Elements, Work Products, and Data as a Basis for Estimating
1.3.2.9.1.2.3	Use Data from Organization Measurement Repository as a Basis for Estimating
1.3.2.9.1.2.4	Product Project Estimates
1.3.2.9.1.2.5	Evaluate Project Estimates
1.3.2.9.1.2.6	Review and Approve Project Estimates
1.3.2.9.1.2.7	Baseline Project Estimates
1.3.2.9.1.3	**Integrate Plans**
1.3.2.9.1.3.1	Integrate Support Plans Into Project Plans
1.3.2.9.1.3.2	Incorporate Measures and Measurement Activities Into Project Plans
1.3.2.9.1.3.3	Identify and Analyze Project, Process, and Product Risks
1.3.2.9.1.3.4	Create a Project Schedule
1.3.2.9.1.3.5	Incorporate Peer Review Plans Into Project Plans
1.3.2.9.1.3.6	Incorporate Training Plans Into Project Plans
1.3.2.9.1.3.7	Establish Entry and Exit Criteria for Tasks
1.3.2.9.1.3.8	Evaluate Requirements With Stakeholder and Support Plans
1.3.2.9.1.3.9	Identify Stakeholder Conflict Resolution Procedures
1.3.2.9.1.3.10	Develop Integrated Project Plans
1.3.2.9.1.3.11	Evaluate Integrated Project Plans
1.3.2.9.1.3.12	Review and Approve Integrated Project Plans
1.3.2.9.1.3.13	Baseline Integrated Project Plans
1.3.2.9.1.4	**Manage the Project Using the Integrated Plans**
1.3.2.9.1.4.1	Use Work Products from Organization Process Asset Library
1.3.2.9.1.4.2	Monitor and Control Project Activities
1.3.2.9.1.4.3	Obtain and Analyze Base and Derived Measures to Manage Project Activities
1.3.2.9.1.4.4	Analyze Adequacy of Tool, Network, Equipment, Training, and Support Environment
1.3.2.9.1.4.5	Periodically Review Project Performance with Stakeholders
1.3.2.9.1.4.6	Modify Project Plan
1.3.2.9.1.4.7	Evaluate Project Plan

	1.3.2.9.1.4.8	Review and Approve Project Plan
	1.3.2.9.1.4.9	Baseline Project Plan
1.3.2.9.1.5	**Contribute to the Organizational Process Assets**	
	1.3.2.9.1.5.1	Identify Improvements to Work Products in Organization Process Asset Library
	1.3.2.9.1.5.2	Submit Actual Process and Product Measures to Organization Measurement Repository
	1.3.2.9.1.5.3	Submit Project Work Products to Organization Process Asset Library
	1.3.2.9.1.5.4	Document Lessons Learned from Projects
	1.3.2.9.1.5.5	Evaluate Lessons Learned
	1.3.2.9.1.5.6	Review and Approve Lessons Learned
	1.3.2.9.1.5.7	Baseline Lessons Learned
1.3.2.9.2	**Coordinate and Collaborate with Relevant Stakeholders**	
1.3.2.9.2.1	**Manage Stakeholder Involvement**	
	1.3.2.9.2.1.1	Identify Participating Stakeholders in Projects
	1.3.2.9.2.1.2	Verify That Work Products Satisfy Commitments
	1.3.2.9.2.1.3	Identify Problems With Product and Product Component Requirements, Architectures, and Designs
	1.3.2.9.2.1.4	Identify Recommendations to Resolve Problems With Product and Product Component Requirements, Architectures, and Designs
	1.3.2.9.2.1.5	Resolve Problems With Product and Product Component Requirements, Architectures, and Designs
	1.3.2.9.2.1.6	Document Stakeholder Involvement Data
	1.3.2.9.2.1.7	Evaluate Stakeholder Involvement Data
	1.3.2.9.2.1.8	Review and Approve Stakeholder Involvement Data
	1.3.2.9.2.1.9	Baseline Stakeholder Involvement Data
1.3.2.9.2.2	**Manage Dependencies**	
	1.3.2.9.2.2.1	Conduct Reviews With Relevant Stakeholders
	1.3.2.9.2.2.2	Identify Critical Dependencies
	1.3.2.9.2.2.3	Establish Need and Plan Dates for Critical Dependencies
	1.3.2.9.2.2.4	Document Critical Dependencies and Commitments
	1.3.2.9.2.2.5	Evaluate Critical Dependencies and Commitments
	1.3.2.9.2.2.6	Review and Approve Critical Dependencies and Commitments
	1.3.2.9.2.2.7	Baseline Critical Dependencies and Commitments
1.3.2.9.2.3	**Resolve Coordination Issues**	
	1.3.2.9.2.3.1	Identify and Document Coordination Issues
	1.3.2.9.2.3.2	Evaluate Coordination Issues
	1.3.2.9.2.3.3	Review and Approve Coordination Issues
	1.3.2.9.2.3.4	Baseline Coordination Issues

	1.3.2.9.2.3.5	Communicate Issues to Relevant Stakeholders
	1.3.2.9.2.3.6	Resolve Issues With Relevant Stakeholders
	1.3.2.9.2.3.7	Address Irresolvable Issues With Senior Management
	1.3.2.9.2.3.8	Track Issues to Closure
	1.3.2.9.2.3.9	Communicate Status of Issues to Relevant Stakeholders

1.3.2.9.3 **Use the Project's Shared Vision for IPPD**

1.3.2.9.3.1 **Define Project's Shared Vision Context**

1.3.2.9.3.1.1 Receive and Analyze Project Requirements, Project Plans, Interface Descriptions, and Operational Scenarios

1.3.2.9.3.1.2 Identify Project Expectations, Constraints, Interfaces, and Operational Conditions

1.3.2.9.3.1.3 Elicit Project Perspectives and Aspirations from Relevant Stakeholders

1.3.2.9.3.1.4 Create Project Shared Vision Context

1.3.2.9.3.1.5 Evaluate Project Shared Vision Context

1.3.2.9.3.1.6 Review and Approve Project Shared Vision Context

1.3.2.9.3.1.7 Baseline Project Shared Vision Context

1.3.2.9.3.2 **Establish the Project's Shared Vision**

1.3.2.9.3.2.1 Plan Workshops to Create Project Shared Vision With Stakeholders

1.3.2.9.3.2.2 Articulate Project Mission, Vision, Values, and Objectives With Stakeholders

1.3.2.9.3.2.3 Establish a Strategy for Communicating Project Shared Vision

1.3.2.9.3.2.4 Develop Project Shared Vision With Stakeholders

1.3.2.9.3.2.5 Evaluate Project Shared Vision With Stakeholders

1.3.2.9.3.2.6 Review and Approve Project Shared Vision

1.3.2.9.3.2.7 Baseline Project Shared Vision

1.3.2.9.3.2.8 Communicate Project Shared Vision to Stakeholders

1.3.2.9.3.2.9 Verify Project Shared Vision is Agreed to by Stakeholders

1.3.2.9.4 **Organize Integrated Teams for IPPD**

1.3.2.9.4.1 **Determine Integrated Team Structure for the Project**

1.3.2.9.4.1.1 Determine Risks in Products and Product Suites

1.3.2.9.4.1.2 Determine Resource Requirements and Risks

1.3.2.9.4.1.3 Establish Responsibilities for Work Products

1.3.2.9.4.1.4 Identify Relevant Work Products from Organization Process Asset Library

1.3.2.9.4.1.5 Review and Confirm Project Shared Vision

1.3.2.9.4.1.6 Identify Alternative Integrated Team Structures

1.3.2.9.4.1.7 Evaluate Alternatives and Evaluate Integrated Team Structure

1.3.2.9.4.1.8 Review and Approve Integrated Team Structure

1.3.2.9.4.1.9 Baseline Integrated Team Structure

1.3.2.9.4.2 **Develop a Preliminary Distribution of Requirements to Integrated Teams**

            1.3.2.10.1.3.2   Likelihood and Severity Criteria, and Risk Thresholds and Boundary Conditions

            1.3.2.10.1.3.3   Identify Scope of Risk Management, Risk Methods and Tools, and Sources of Project Risks

            1.3.2.10.1.3.4   Identify Risk Categories, Parameters, Risk Mitigation Techniques, and

            1.3.2.10.1.3.5   Measures to Monitor Risk Status

            1.3.2.10.1.3.6   Document Risk Management Strategy

            1.3.2.10.1.3.7   Evaluate Risk Management Strategy

            1.3.2.10.1.3.8   Review and Approve Risk Management Strategy

            1.3.2.10.1.3.9   Baseline Risk Management Strategy

1.3.2.10.2   Identify and Analyze Risks

1.3.2.10.2.1 Identify Risks

            1.3.2.10.2.1.1   Identify Cost, Schedule, Performance, and Life Cycle Risks

            1.3.2.10.2.1.2   Review Environmental Factors Impacting Projects

            1.3.2.10.2.1.3   Review Work Breakdown Structures and Project Plans for Completeness

            1.3.2.10.2.1.4   Document Context, Conditions, and Consequences of Risks

            1.3.2.10.2.1.5   Identify Relevant Stakeholders Associated With Risks

            1.3.2.10.2.1.6   Document Risks

            1.3.2.10.2.1.7   Evaluate Risks

            1.3.2.10.2.1.8   Review and Approve Risks

            1.3.2.10.2.1.9   Baseline Risks

1.3.2.10.2.2 Evaluate, Categorize, and Prioritize Risks

            1.3.2.10.2.2.1   Receive, Review, and Analyze Risk and Risk Management Strategy

            1.3.2.10.2.2.2   Evaluate Risks Using Risks Using Risk Parameters

            1.3.2.10.2.2.3   Organize and Group Risks Into Risk Categories

            1.3.2.10.2.2.4   Prioritize Risks

            1.3.2.10.2.2.5   Document Evaluated, Categorized, and Prioritized Risks

            1.3.2.10.2.2.6   Review and Approve Evaluated, Categorized, and Prioritized Risks

            1.3.2.10.2.2.7   Baseline Evaluated, Categorized, and Prioritized Risks

1.3.2.10.3   Mitigate Risks

1.3.2.10.3.1 Develop Risk Mitigation Plans

            1.3.2.10.3.1.1   Determine Thresholds Triggering Risk Mitigation or Contingency Plans

            1.3.2.10.3.1.2   Identify Person or Group Responsible for Mitigating Each Risk

            1.3.2.10.3.1.3   Determine Cost to Benefit Ratio of Risk Mitigation Plans for Each Risk

            1.3.2.10.3.1.4   Develop Risk Mitigation Plans Containing Risk Contingency Plans

            1.3.2.10.3.1.5   Evaluate Risk Mitigation Plans

            1.3.2.10.3.1.6   Review and Approve Risk Mitigation Plans

            1.3.2.10.3.1.7   Baseline Risk Mitigation Plans

1.3.2.10.3.2 Implement Risk Mitigation Plans

    1.3.2.10.3.2.1   Monitor Risk Status

    1.3.2.10.3.2.2   Devise Methods for Tracking Open Risks and Action Items to Closure

    1.3.2.10.3.2.3   Invoke Risk Handling Options When Risk Thresholds are Triggered

    1.3.2.10.3.2.4   Establish a Schedules for Risk Handling Activities With Start and Finish Dates

    1.3.2.10.3.2.5   Provide Resources for Risk Handling Activities

    1.3.2.10.3.2.6   Collect Performance Measures on Risk Handling Activities

    1.3.2.10.3.2.7   Evaluate Implementation Results of Risk Mitigation Plans

    1.3.2.10.3.2.8   Review and Approve Implementation Results of Risk Mitigation Plans

    1.3.2.10.3.2.9   Baseline Implementation Results of Risk Mitigation Plans

1.3.2.11   Integrated Teaming (Procedure—8)

1.3.2.11.1   Establish Team Composition

1.3.2.11.1.1   Identify Team Tasks

    1.3.2.11.1.1.1   Receive and Evaluate Project Plans, System Requirements, and System Interface Descriptions

    1.3.2.11.1.1.2   Define Team Tasks for Delivery of Assigned Work Products

    1.3.2.11.1.1.3   Decide Which Tasks Need Individual or Team Input

    1.3.2.11.1.1.4   Identify and Document Team Tasks

    1.3.2.11.1.1.5   Evaluate Team Tasks

    1.3.2.11.1.1.6   Review and Approve Team Tasks

    1.3.2.11.1.1.7   Baseline Team Tasks

1.3.2.11.1.2   Identify Needed Knowledge and Skills

    1.3.2.11.1.2.1   Identify Business Functions and Processes That Integrated Teams Must Have Knowledge Of

    1.3.2.11.1.2.2   Identify Core Competencies on Which to Base the Activities of Integrated Teams

    1.3.2.11.1.2.3   Establish Knowledge and Skill Profiles for Core and Extended Team Competencies

    1.3.2.11.1.2.4   Define Staffing and Competency Requirements

    1.3.2.11.1.2.5   Document Needed Knowledge and Skills

    1.3.2.11.1.2.6   Evaluate Needed Knowledge and Skills

    1.3.2.11.1.2.7   Review and Approve Needed Knowledge and Skills

    1.3.2.11.1.2.8   Baseline Needed Knowledge and Skills

1.3.2.11.1.3   Assign Appropriate Team Members

    1.3.2.11.1.3.1   Establish Criteria for Evaluating Team Members Against Knowledge and Skill Profiles

    1.3.2.11.1.3.2   Use Criteria to Qualify Candidate Team Members Against Knowledge and Skill Profiles

1.3.2.11.1.3.3   Identify and Orient Team Members Best Suited to Contribute to Team Performance

1.3.2.11.1.3.4   Document Team Members

1.3.2.11.1.3.5   Assess and Determine Integrated Team Capability to Meet its Objectives

1.3.2.11.1.3.6   Review and Approve Team Members

1.3.2.11.1.3.7   Baseline Team Members

1.3.2.11.2   Govern Team Operation

1.3.2.11.2.1   Establish a Shared Vision

1.3.2.11.2.1.1   Convey Shared Vision Context to Team Members

1.3.2.11.2.1.2   Conduct Meetings or Workshops to Discuss Shared Vision

1.3.2.11.2.1.3   Articulate Shared Vision to Team Members

1.3.2.11.2.1.4   Demonstrate Relationship Between Shared Vision, Activities, and Tasks

1.3.2.11.2.1.5   Evaluate Effectiveness of Establishing a Shared Vision

1.3.2.11.2.1.6   Review and Approve Results of Establish a Shared Vision

1.3.2.11.2.1.7   Baseline Results of Establish a Shared Vision

1.3.2.11.2.2   Establish a Team Charter

1.3.2.11.2.2.1   Define and List Team Objectives

1.3.2.11.2.2.2   Identify Strategies for Achieving Team Objectives

1.3.2.11.2.2.3   Establish Team's Level of Empowerment and Independence

1.3.2.11.2.2.4   Identify How Team and Individual Performance Are Measured

1.3.2.11.2.2.5   Identify Critical Success Factors

1.3.2.11.2.2.6   Document Team Charter

1.3.2.11.2.2.7   Evaluate Team Charter

1.3.2.11.2.2.8   Review and Approve Team Charter

1.3.2.11.2.2.9   Baseline Team Charter

1.3.2.11.2.3   Define Roles and Responsibilities

1.3.2.11.2.3.1   Receive and Analyze Team Tasks, Knowledge and Skills, Members, Shared Vision, and Charter

1.3.2.11.2.3.2   Map Roles, Responsibilities, and Expertise of Team Members to Team Tasks and Deliverables

1.3.2.11.2.3.3   Define Working Relationship and Report Structure for Team Members

1.3.2.11.2.3.4   Document Team Roles and Responsibilities

1.3.2.11.2.3.5   Evaluate Team Roles and Responsibilities

1.3.2.11.2.3.6   Review and Approve Team Roles and Responsibilities

1.3.2.11.2.3.7   Baseline Team Roles and Responsibilities

1.3.2.11.2.4   Establish Operating Procedures

1.3.2.11.2.4.1   Define Expectations and Rules to Guide Team Operation

1.3.2.11.2.4.2   Define Degree of Collective Decision Making and Level of Consensus Needed

        1.3.2.11.2.4.3   Define How conflicts and Differences of Opinion Are Addressed and Resolved

        1.3.2.11.2.4.4   Document Team Operating Procedures

        1.3.2.11.2.4.5   Evaluate Team Operating Procedures

        1.3.2.11.2.4.6   Review and Approve Team Operating Procedures

        1.3.2.11.2.4.7   Baseline Team Operating Procedures

1.3.2.11.2.5 Collaborate Among Interfacing Teams

        1.3.2.11.2.5.1   Establish and Maintain Ownership of Work Products Among Project Teams

        1.3.2.11.2.5.2   Establish and Maintain Interfaces and Process to Exchange Inputs, Outputs, and Work Products

        1.3.2.11.2.5.3   Develop, Communicate, and Distribute Commitment Lists and Work Plans for Work Products and Team Interfaces

        1.3.2.11.2.5.4   Develop and Document Team Work Plans

        1.3.2.11.2.5.5   Evaluate Team Work Plans

        1.3.2.11.2.5.6   Review and Approve Team Work Plans

        1.3.2.11.2.5.7   Baseline Team Work Plans

1.3.2.12   Analysis and Resolution (Procedure—6)

1.3.2.12.1 Evaluate Alternatives

1.3.2.12.1.1 Establish Guidelines for Decision Analysis

        1.3.2.12.1.1.1   Receive and Evaluate Project Plans, System Requirements, Interface Requirements, and System Designs

        1.3.2.12.1.1.2   Identify Key Decision Points Relating to Risk, Change Control, Scheduling, Implementation, and Cost

        1.3.2.12.1.1.3   Incorporate Use of Guidelines Into Project Defined Process

        1.3.2.12.1.1.4   Document Guidelines for Decision Analysis

        1.3.2.12.1.1.5   Evaluate Guidelines for Decision Analysis

        1.3.2.12.1.1.6   Review and Approve Guidelines for Decision Analysis

        1.3.2.12.1.1.7   Baseline Guidelines for Decision Analysis

1.3.2.12.1.2 Establish Evaluation Criteria

        1.3.2.12.1.2.1   Identify Criteria for Evaluating Alternative Solutions

        1.3.2.12.1.2.2   Define Range and Scale for Ranking Evaluation Criteria

        1.3.2.12.1.2.3   Rank Criteria

        1.3.2.12.1.2.4   Assess Criteria and Relative Importance of Criteria

        1.3.2.12.1.2.5   Document Rationale for Selection of Evaluation Criteria

        1.3.2.12.1.2.6   Document Evaluation Criteria

        1.3.2.12.1.2.7   Evaluate Evaluation Criteria

        1.3.2.12.1.2.8   Review and Approve Evaluation Criteria

        1.3.2.12.1.2.9   Baseline Evaluation Criteria

1.3.2.12.1.3 Identify Alternative Solutions

1.3.2.12.1.3.1   Perform Literature Searches for Alternative Solutions
1.3.2.12.1.3.2   Solicit Alternatives from Stakeholders
1.3.2.12.1.3.3   Identify Alternative Solutions for Consideration
1.3.2.12.1.3.4   Document Alternative Solutions
1.3.2.12.1.3.5   Evaluate Alternative Solutions
1.3.2.12.1.3.6   Review and Approve Alternative Solutions
1.3.2.12.1.3.7   Baseline Alternative Solutions

1.3.2.12.1.4 Select Evaluation Methods
1.3.2.12.1.4.1   Identify List of Evaluation Methods Based on Decision Analysis Needs
1.3.2.12.1.4.2   Identify List of Evaluation Methods Based on Objectivity and Effectiveness
1.3.2.12.1.4.3   Determine Measures Needed to Support List of Evaluation Methods
1.3.2.12.1.4.4   Document List of Evaluation Methods
1.3.2.12.1.4.5   Evaluate List of Evaluation Methods
1.3.2.12.1.4.6   Review and Approve List of Evaluation Methods
1.3.2.12.1.4.7   Baseline List of Evaluation Methods

1.3.2.12.1.5 Evaluate Alternatives
1.3.2.12.1.5.1   Evaluate Alternative Solutions Using Evaluation Criteria and Methods
1.3.2.12.1.5.2   Evaluate Assumptions and Supporting Evidence
1.3.2.12.1.5.3   Evaluate Level of Uncertainty with Alternative Solutions
1.3.2.12.1.5.4   Perform Simulations, Modeling, Prototypes, and Pilots to Evaluate Criteria, Methods, and Solutions
1.3.2.12.1.5.5   Consider New Alternatives if Necessary
1.3.2.12.1.5.6   Document Results of Evaluating Alternatives
1.3.2.12.1.5.7   Evaluate Results of Evaluating Alternatives
1.3.2.12.1.5.8   Review and Approve Results of Evaluating Alternatives
1.3.2.12.1.5.9   Baseline Results of Evaluating Alternatives

1.3.2.12.1.6 Select Solutions
1.3.2.12.1.6.1   Obtain and Analyze Results of Evaluating Alternatives
1.3.2.12.1.6.2   Assess Risks of Implementing Recommended Alternatives
1.3.2.12.1.6.3   Determine Validity of Results of Evaluating Alternatives
1.3.2.12.1.6.4   Document Results and Rationale for Recommended Alternatives
1.3.2.12.1.6.5   Evaluate Results and Rationale for Recommended Alternatives
1.3.2.12.1.6.6   Review and Approve Results and Rationale for Recommended Alternatives
1.3.2.12.1.6.7   Baseline Results and Rationale for Recommended Alternatives

1.3.2.13 Organizational Environment for Integration (Procedure—6)
   1.3.2.13.1 Provide IPPD Infrastructure
      1.3.2.13.1.1 Establish the Organization's Shared Vision

1.3.2.13.1.1.1   Identify Expectations, Constraints, Interfaces, and Boundary Conditions of Organization's Shared Vision

1.3.2.13.1.1.2   Create Shared Vision for Organization

1.3.2.13.1.1.3   Evaluate Shared Vision for Organization

1.3.2.13.1.1.4   Review and Approve Shared Vision for Organization

1.3.2.13.1.1.5   Baseline Shared Vision for Organization

1.3.2.13.1.1.6   Communicate Shared Vision Internally and Externally

1.3.2.13.1.1.7   Ensure Organization Practices are Aligned with Shared Vision

1.3.2.13.1.1.8   Periodically Review and Update Shared Vision

1.3.2.13.1.1.9   Provide Guidelines for Implementing Shared Vision

1.3.2.13.1.2 Establish an Integrated Work Environment

1.3.2.13.1.2.1   Determine Requirements for Integrated Work Environment

1.3.2.13.1.2.2   Identify New Technologies, Tools, and Resources for Integrated Work Environment

1.3.2.13.1.2.3   Assess Effectiveness of Current Work Environment

1.3.2.13.1.2.4   Plan, Design, and Implement Integrated Work Environment

1.3.2.13.1.2.5   Evaluate Integrated Work Environment

1.3.2.13.1.2.6   Review and Approve Integrated Work Environment

1.3.2.13.1.2.7   Baseline Integrated Work Environment

1.3.2.13.1.2.8   Maintain Integrated Work Environment

1.3.2.13.1.2.9   Periodically Monitor and Evaluate Integrated Work Environment

1.3.2.13.1.3 Identify IPPD-Unique Skill Requirements

1.3.2.13.1.3.1   Identify IPPD Strategic and Tactical Training Needs

1.3.2.13.1.3.2   Document IPPD Strategic and Tactical Training Needs

1.3.2.13.1.3.3   Evaluate Strategic and Tactical Training Needs

1.3.2.13.1.3.4   Review and Approve Strategic and Tactical Training Needs

1.3.2.13.1.3.5   Baseline Strategic and Tactical Training Needs

1.3.2.13.1.3.6   Incorporate IPPD Skills into Organization Strategic Training Needs

1.3.2.13.1.3.7   Incorporate IPPD Skills into Organization Tactical Training Plan

1.3.2.13.2 Manage People for Integration

1.3.2.13.2.1 Establish Leadership Mechanisms

1.3.2.13.2.1.1   Establish Guidelines for Empowering Individuals and Teams

1.3.2.13.2.1.2   Determine Rules for Types and Classes of Decision Making

1.3.2.13.2.1.3   Define Process for Using Decision Making Rules

1.3.2.13.2.1.4   Define Process for Conflict Resolution of Decision Making

1.3.2.13.2.1.5   Document Leadership Mechanisms and Guidelines

1.3.2.13.2.1.6   Evaluate Leadership Mechanisms and Guidelines

1.3.2.13.2.1.7   Review and Approve Leadership Mechanisms and Guidelines

1.3.2.13.2.1.8   Baseline Leadership Mechanisms and Guidelines

1.3.2.13.2.2   Establish Incentives for Integration

1.3.2.13.2.2.1   Develop Recognition and Reward System for IPPD Teams
1.3.2.13.2.2.2   Develop Guidelines for Individual and Team Recognition
1.3.2.13.2.2.3   Define Processes for Integrated Team Leaders and Functional Managers
1.3.2.13.2.2.4   Establish Criteria for Identifying Positive Team Behavior
1.3.2.13.2.2.5   Document Policies and Procedures for Performance Appraisal and Recognition
1.3.2.13.2.2.6   Evaluate Policies and Procedures for Performance Appraisal and Recognition
1.3.2.13.2.2.7   Review and Approve Policies and Procedures for Performance Appraisal and Recognition
1.3.2.13.2.2.8   Baseline Policies and Procedures for Performance Appraisal and Recognition

1.3.2.13.2.3   Establish Mechanisms to Balance Team and Home Organization Responsibilities

1.3.2.13.2.3.1   Establish Guidelines Home Organization Responsibilities
1.3.2.13.2.3.2   Establish Guidelines for Team Management Responsibilities
1.3.2.13.2.3.3   Establish a Performance Review Process Using Inputs from Homes and Teams
1.3.2.13.2.3.4   Develop Guidelines for Managing Home and Team Responsibilities
1.3.2.13.2.3.5   Evaluate Guidelines for Managing Home and Team Responsibilities
1.3.2.13.2.3.6   Review and Approve Guidelines for Managing Home and Team Responsibilities
1.3.2.13.2.3.7   Baseline Guidelines for Managing Home and Team Responsibilities

1.3.3   Work Product (275)

1.3.3.1   Requirements Development (Work Product—29)

1.3.3.1.1   Develop Customer Requirements

1.3.3.1.1.1   Elicit Needs

1.3.3.1.1.1.1   Customer Needs

1.3.3.1.1.2   Collect Stakeholder Needs

1.3.3.1.1.2.1   Stakeholder Needs

1.3.3.1.1.3   Develop the Customer Requirements

1.3.3.1.1.3.1   Customer Requirements
1.3.3.1.1.3.2   Customer Verification Constraints
1.3.3.1.1.3.3   Customer Validation Constraints

1.3.3.1.2   Develop Product Requirements

1.3.3.1.2.1   Establish Product and Product Component Requirements

1.3.3.1.2.1.1   Derived Requirements
1.3.3.1.2.1.2   Product Requirements
1.3.3.1.2.1.3   Product Component Requirements

1.3.3.1.2.2   Allocate Product Component Requirements

1.3.3.1.2.2.1   Requirement Allocation Tables

1.3.3.2.1.3 Select Product Component Solutions
   1.3.3.2.1.3.1 Product Component Selection Decisions
   1.3.3.2.1.3.2 Requirement and Product Component Relationships
   1.3.3.2.1.3.3 Solutions, Evaluations, and Rationale
1.3.3.2.2 Develop the Design
 1.3.3.2.2.1 Design the Product or Product Component
   1.3.3.2.2.1.1 Product Architecture
   1.3.3.2.2.1.2 Product Component Designs
 1.3.3.2.2.2 Establish a Technical Data Package
   1.3.3.2.2.2.1 Technical Data Package
 1.3.3.2.2.3 Design Interfaces Using Criteria
   1.3.3.2.2.3.1 Interface Design Specifications
   1.3.3.2.2.3.2 Interface Control Documents
   1.3.3.2.2.3.3 Interface Specification Criteria
   1.3.3.2.2.3.4 Interface Design Rationale
 1.3.3.2.2.4 Perform Make, Buy, or Reuse Analysis
   1.3.3.2.2.4.1 Design and Product Component Reuse Criteria
   1.3.3.2.2.4.2 Make or Buy Analyses
   1.3.3.2.2.4.3 COTS Product Component Selection Guidelines
1.3.3.2.3 Implement the Product Design
 1.3.3.2.3.1 Implement the Design
   1.3.3.2.3.1.1 Design Implementation
 1.3.3.2.3.2 Develop Product Support Documentation
   1.3.3.2.3.2.1 End-User Training
   1.3.3.2.3.2.2 User Manuals
   1.3.3.2.3.2.3 Operator Manuals
   1.3.3.2.3.2.4 Maintenance Manuals
   1.3.3.2.3.2.5 Online Help Content
1.3.3.3 Product Integration (Work Product—27)
1.3.3.3.1 Prepare for Product Integration
 1.3.3.3.1.1 Determine Integration Sequence
   1.3.3.3.1.1.1 Product Integration Sequence
   1.3.3.3.1.1.2 Integration Sequence Rationale
 1.3.3.3.1.2 Establish the Product Integration Environment
   1.3.3.3.1.2.1 Verified Product Integration Environment
   1.3.3.3.1.2.2 Product Integration Environment Support Documentation
 1.3.3.3.1.3 Establish Product Integration Procedures and Criteria
   1.3.3.3.1.3.1 Product Integration Procedures

1.3.3.4.1.3.1   Verification Procedures

1.3.3.4.1.3.2   Verification Criteria

1.3.3.4.2   Perform Peer Reviews

1.3.3.4.2.1   Prepare for Peer Reviews

    1.3.3.4.2.1.1   Peer Review Schedule

    1.3.3.4.2.1.2   Peer Review Checklist

    1.3.3.4.2.1.3   Work Product Entry and Exit Criteria

    1.3.3.4.2.1.4   Peer Review Completion Criteria

    1.3.3.4.2.1.5   Peer Review Training

    1.3.3.4.2.1.6   Work Product Lists

1.3.3.4.2.2   Conduct Peer Reviews

    1.3.3.4.2.2.1   Peer Review Results

    1.3.3.4.2.2.2   Peer Review Issues

    1.3.3.4.2.2.3   Peer Review Data

1.3.3.4.2.3   Analyze Peer Review Data

    1.3.3.4.2.3.1   Peer Review Data

    1.3.3.4.2.3.2   Peer Review Action Items

1.3.3.4.3   Verify Selected Work Products

1.3.3.4.3.1   Perform Verification

    1.3.3.4.3.1.1   Verification Results

    1.3.3.4.3.1.2   Verification Reports

    1.3.3.4.3.1.3   Demonstrations

    1.3.3.4.3.1.4   Procedure Logs

1.3.3.4.3.2   Analyze Verification Results and Identify Corrective Action

    1.3.3.4.3.2.1   Analysis Reports

    1.3.3.4.3.2.2   Trouble Reports

    1.3.3.4.3.2.3   Change Requests

    1.3.3.4.3.2.4   Corrective Actions

1.3.3.5   Validation (Work Product—16)

1.3.3.5.1   Prepare for Validation

1.3.3.5.1.1   Select Products for Validation

    1.3.3.5.1.1.1   Product and Product Components Lists

    1.3.3.5.1.1.2   Validation Methods

    1.3.3.5.1.1.3   Validation Requirements

    1.3.3.5.1.1.4   Validation Constraints

1.3.3.5.1.2   Establish the Validation Environment

    1.3.3.5.1.2.1   Validation Environment

1.3.3.5.1.3   Establish Validation Procedures and Criteria

1.3.3.10.1.1.1   Sources of External and Internal Risks

1.3.3.10.1.1.2   Risk Categories

1.3.3.10.1.2 Define Risk Parameters

1.3.3.10.1.2.1   Risk Evaluation, Categorization, and Prioritization criteria

1.3.3.10.1.2.2   Risk Management Requirements

1.3.3.10.1.3 Establish a Risk Management Strategy

1.3.3.10.1.3.1   Risk Management Strategy

1.3.3.10.2 Identify and Analyze Risks

1.3.3.10.2.1 Identify Risks

1.3.3.10.2.1.1   Risks

1.3.3.10.2.2 Evaluate, Categorize, and Prioritize Risks

1.3.3.10.2.2.1   Prioritized Risks

1.3.3.10.3 Mitigate Risks

1.3.3.10.3.1 Develop Risk Mitigation Plans

1.3.3.10.3.1.1   Risk Handling Options

1.3.3.10.3.1.2   Risk Mitigation Plans

1.3.3.10.3.1.3   Risk Contingency Plans

1.3.3.10.3.1.4   Risk Management Responsibilities

1.3.3.10.3.2 Implement Risk Mitigation Plans

1.3.3.10.3.2.1   Risk Status

1.3.3.10.3.2.2   Risk Likelihood, Consequence, and Threshold Assessments

1.3.3.10.3.2.3   Risk Handling Options

1.3.3.10.3.2.4   Risk Contingency Plans

1.3.3.10.3.2.5   Risk Mitigation Plans

1.3.3.11 Integrated Teaming (Work Product—25)

1.3.3.11.1 Establish Team Composition

1.3.3.11.1.1 Identify Team Tasks

1.3.3.11.1.1.1   Internal Work Tasks

1.3.3.11.1.1.2   Work Task Expectations

1.3.3.11.1.2 Identify Needed Knowledge and Skills

1.3.3.11.1.2.1   Work Task Disciplines or Functions

1.3.3.11.1.2.2   Work Task Knowledge, Skills, and Expertise

1.3.3.11.1.2.3   Work Task Team Skill and Knowledge Profiles

1.3.3.11.1.3 Assign Appropriate Team Members

1.3.3.11.1.3.1   Selection Criteria

1.3.3.11.1.3.2   Skills Matrix and Knowledge Profiles

1.3.3.11.1.3.3   Team Members

1.3.3.11.1.3.4   Level of Effort and Resources

1.3.3.11.2 Govern Team Operation
    1.3.3.11.2.1 Establish a Shared Vision
        1.3.3.11.2.1.1 Boundary Conditions and Interfaces
        1.3.3.11.2.1.2 Shared Vision
        1.3.3.11.2.1.3 Shared Vision Presentations
    1.3.3.11.2.2 Establish a Team Charter
        1.3.3.11.2.2.1 Team Charter
        1.3.3.11.2.2.2 Expectation Setting and Team Performance Measurement Procedures
        1.3.3.11.2.2.3 Critical Success Factors
        1.3.3.11.2.2.4 Team Strategies
    1.3.3.11.2.3 Define Roles and Responsibilities
        1.3.3.11.2.3.1 Roles and Responsibilities
        1.3.3.11.2.3.2 Assignments
        1.3.3.11.2.3.3 Responsibilities
    1.3.3.11.2.4 Establish Operating Procedures
        1.3.3.11.2.4.1 Operating Procedures and Ground Rules
        1.3.3.11.2.4.2 Work Expectation and Performance Measurement Procedures
    1.3.3.11.2.5 Collaborate Among Interfacing Teams
        1.3.3.11.2.5.1 Work Process and Product Deployment Charts
        1.3.3.11.2.5.2 Integrated Master Plan and Schedule Inputs
        1.3.3.11.2.5.3 Team Work Plans
        1.3.3.11.2.5.4 Team Commitments
1.3.3.12 Analysis and Resolution (Work Product—7)
    1.3.3.12.1 Evaluate Alternatives
    1.3.3.12.1.1 Establish Guidelines for Decision Analysis
        1.3.3.12.1.1.1 Formal Evaluation Process Guidelines
    1.3.3.12.1.2 Establish Evaluation Criteria
        1.3.3.12.1.2.1 Evaluation Criteria
        1.3.3.12.1.2.2 Criteria Rankings
    1.3.3.12.1.3 Identify Alternative Solutions
        1.3.3.12.1.3.1 Alternatives
    1.3.3.12.1.4 Select Evaluation Methods
        1.3.3.12.1.4.1 Evaluation Methods
    1.3.3.12.1.5 Evaluate Alternatives
        1.3.3.12.1.5.1 Evaluation Results
    1.3.3.12.1.6 Select Solutions
        1.3.3.12.1.6.1 Solution Recommendations
1.3.3.13 Organizational Environment for Integration (Work Product—15)

1.3.3.13.1   **Provide IPPD Infrastructure**
    1.3.3.13.1.1   **Establish the Organization's Shared Vision**
        1.3.3.13.1.1.1   Organization Shared Vision
        1.3.3.13.1.1.2   Organization Shared Vision Evaluations
        1.3.3.13.1.1.3   Organization Shared Vision Establishment Guidelines
    1.3.3.13.1.2   **Establish an Integrated Work Environment**
        1.3.3.13.1.2.1   Integrated Work Environment Requirements
        1.3.3.13.1.2.2   Integrated Work Environment Design
        1.3.3.13.1.2.3   Integrated Work Environment
    1.3.3.13.1.3   **Identify IPPD-Unique Skill Requirements**
        1.3.3.13.1.3.1   IPPD Strategic Training Needs
        1.3.3.13.1.3.2   IPPD Tactical Training Needs
1.3.3.13.2   **Manage People for Integration**
    1.3.3.13.2.1   **Establish Leadership Mechanisms**
        1.3.3.13.2.1.1   Team and Individual Empowerment Guidelines
        1.3.3.13.2.1.2   Leadership and Decision Making Establishment Guidelines
        1.3.3.13.2.1.3   Issue Resolution Guidelines
    1.3.3.13.2.2   **Establish Incentives for Integration**
        1.3.3.13.2.2.1   Performance Appraisal Policies and Procedures
        1.3.3.13.2.2.2   Team and Individual Recognitions and Rewards
    1.3.3.13.2.3   **Establish Mechanisms to Balance Team and Home Organization Responsibilities**
        1.3.3.13.2.3.1   Team and Home Balancing Guidelines
        1.3.3.13.2.3.2   Performance Review Process

1.4   **Maturity Level 4—Quantitatively Managed (Policy—2, Procedure—l 3, Work Product—28)**
  1.4.1   **Policy (2)**
    1.4.1.1   Organizational Process Performance
    1.4.1.2   Quantitative Project Management
  1.4.2   **Procedure (13)**
    1.4.2.1   **Organizational Process Performance (Procedure—5)**
      1.4.2.1.1   **Establish Performance Baselines and Models**
        1.4.2.1.1.1   **Select Processes**
          1.4.2.1.1.1.1   Receive Organization Standard Process and Organization Measurement Repository
          1.4.2.1.1.1.2   Analyze Organization Standard Process and Organization Measurement Repository
          1.4.2.1.1.1.3   Identify Process Elements in Organization Standard Process and Process and Product Measures in Organization Measurement Repository
          1.4.2.1.1.1.4   Select and Document List of Process Elements to Measure

1.4.2.1.1.1.5	Evaluate List of Process Elements
1.4.2.1.1.1.6	Review and Approve List of Process Elements
1.4.2.1.1.1.7	Baseline List of Process Elements

1.4.2.1.1.2   Establish Process Performance Measures

1.4.2.1.1.2.1	Analyze and Identify Relevant Business Objective
1.4.2.1.1.2.2	Analyze and Identify Relevant Process and Product Measures
1.4.2.1.1.2.3	Select Process and Product Measures Relevant to Business Objectives
1.4.2.1.1.2.4	Designate Relevant Process and Product Measures as Common Measures
1.4.2.1.1.2.5	Evaluate Common Measures
1.4.2.1.1.2.6	Review and Approve Common Measures
1.4.2.1.1.2.7	Baseline Common Measures

1.4.2.1.1.3   Establish Quality and Process Performance Objectives

1.4.2.1.1.3.1	Analyze and Identify Business Objectives Relevant to Quality
1.4.2.1.1.3.2	Analyze and Identify Process and Product Measures Relevant to Quality
1.4.2.1.1.3.3	Select Process and Product Measures Relevant to Quality
1.4.2.1.1.3.4	Prioritize and Select Process and Product Measures Relevant to Quality
1.4.2.1.1.3.5	Evaluate Process and Product Quality Measures
1.4.2.1.1.3.6	Review and Approve Process and Product Quality Measures

1.4.2.1.1.4   Establish Process Performance Baselines

1.4.2.1.1.4.1	Collect Measures from Projects
1.4.2.1.1.4.2	Establish Organization Process Performance Baselines
1.4.2.1.1.4.3	Evaluate Organization Process Performance Baselines
1.4.2.1.1.4.4	Review and Approve Organization Process Performance Baselines
1.4.2.1.1.4.5	Baseline Organization Process Performance Baselines
1.4.2.1.1.4.6	Evaluate Organization Process Performance Baselines Against Quality Business Objectives
1.4.2.1.1.4.7	Align Organization Process Performance Baselines With Quality Business Objectives

1.4.2.1.1.5   Establish Process Performance Models

1.4.2.1.1.5.1	Receive Organization Standard Process and Organization Measurement Repository
1.4.2.1.1.5.2	Analyze and Identify Process Elements and Process and Product Measures
1.4.2.1.1.5.3	Develop Process Performance Models from Process Elements and Process and Product Measures
1.4.2.1.1.5.4	Calibrate and Document Process Performance Models
1.4.2.1.1.5.5	Evaluate Process Performance Models
1.4.2.1.1.5.6	Review and Approve Process Performance Models
1.4.2.1.1.5.7	Baseline Process Performance Models

1.4.2.2 Quantitative Project Management (Procedure—8)
    1.4.2.2.1 Quantitatively Manage the Project
        1.4.2.2.1.1 Establish the Project's Objectives
            1.4.2.2.1.1.1   Review Organization Objectives for Process and Product Quality
            1.4.2.2.1.1.2   Identify Customer Objectives for Process and Product Quality
            1.4.2.2.1.1.3   Identify Methods for Measuring Process and Product Quality
            1.4.2.2.1.1.4   Identify Process and Product Quality Measures for Life Cycle Phases, Process Elements, and Products
            1.4.2.2.1.1.5   Define and Document Project Objectives for Process and Product Quality
            1.4.2.2.1.1.6   Evaluate Project Objectives for Process and Product Quality
            1.4.2.2.1.1.7   Review and Approve Project Objectives for Process and Product Quality
            1.4.2.2.1.1.8   Baseline Project Objectives for Process and Product Quality
            1.4.2.2.1.1.9   Define and Negotiate Process and Product Quality Objectives for Suppliers
        1.4.2.2.1.2 Compose the Defined Process
            1.4.2.2.1.2.1   Establish Criteria for Identifying Subprocesses for Statistical Management
            1.4.2.2.1.2.2   Analyze and Identify Subprocesses for Statistical Management
            1.4.2.2.1.2.3   Determine Suitability of Subprocesses for Statistical Management
            1.4.2.2.1.2.4   Analyze Interrelationships of Subprocesses for Statistical Management
            1.4.2.2.1.2.5   Identify Risks Associated with Statistically Managing Subprocesses
            1.4.2.2.1.2.6   Document Candidate Subprocesses for Statistical Management
            1.4.2.2.1.2.7   Evaluate Candidate Subprocesses for Statistical Management
            1.4.2.2.1.2.8   Review and Approve Candidate Subprocesses for Statistical Management
            1.4.2.2.1.2.9   Baseline Candidate Subprocesses for Statistical Management
        1.4.2.2.1.3 Select the Subprocesses That Will Be Statistically Managed
            1.4.2.2.1.3.1   Identify Quality Objectives for Statistical Management of Subprocesses
            1.4.2.2.1.3.2   Identify Criteria Final Selection of Subprocesses for Statistical Management
            1.4.2.2.1.3.3   Select Final Subprocesses for Statistical Management
            1.4.2.2.1.3.4   Document Subprocesses for Statistical Management
            1.4.2.2.1.3.5   Evaluate Subprocesses for Statistical Management
            1.4.2.2.1.3.6   Review and Approve Subprocesses for Statistical Management
            1.4.2.2.1.3.7   Baseline Subprocesses for Statistical Management
        1.4.2.2.1.4 Manage Project Performance
            1.4.2.2.1.4.1   Periodically Measure Statistical Performance of Project Subprocesses
            1.4.2.2.1.4.2   Periodically Analyze Planned Versus Actual Project Subprocess Performance
            1.4.2.2.1.4.3   Periodically Measure and Analyze Planned Versus Actual Supplier Subprocess Performance
            1.4.2.2.1.4.4   Create and Use Subprocess Performance Models for Analyzing Project and Supplier Subprocess Performance

1.4.2.2.1.4.5   Identify and Manage Risks Associated with Project and Supplier Subprocess Performance

1.4.2.2.1.4.6   Evaluate Results of Project and Supplier Subprocess Performance Management

1.4.2.2.1.4.7   Review and Approve Results of Project and Supplier Subprocess Performance Management

1.4.2.2.1.4.8   Baseline Results of Project and Supplier Subprocess Performance Management

1.4.2.2.2   Statistically Manage Subprocess Performance

1.4.2.2.2.1   Select Measures and Analytic Techniques

1.4.2.2.2.1.1   Analyze Common Measures from Organization Process Asset Library for Statistical Management

1.4.2.2.2.1.2   Analyze Additional Measures to Support Statistical Management

1.4.2.2.2.1.3   Identify Measures for Statistical Management

1.4.2.2.2.1.4   Specify Operational Definition of Measures for Statistical Management

1.4.2.2.2.1.5   Analyze Relationship of Business Objectives to Measures for Statistical Management

1.4.2.2.2.1.6   Instrument Organization Standard Process, Process Elements, and Project Defined Process for Statistical Management

1.4.2.2.2.1.7   Identify Statistical Analysis Techniques to Support Statistical Management

1.4.2.2.2.1.8   Evaluate Measures and Analytic Techniques for Statistical Management

1.4.2.2.2.1.9   Review and Approve Measures and Analytic Techniques for Statistical Management

1.4.2.2.2.1.10   Baseline Measures and Analytic Techniques for Statistical Management

1.4.2.2.2.2   Apply Statistical Methods to Understand Variation

1.4.2.2.2.2.1   Establish Trial Natural Bounds for Subprocesses With Suitable Historical Performance Data

1.4.2.2.2.2.2   Collect Data on Subprocesses As They Are Executed

1.4.2.2.2.2.3   Calculate Natural Bounds of Subprocess Performance for Measured Attributes

1.4.2.2.2.2.4   Evaluate Subprocess Performance Measures

1.4.2.2.2.2.5   Review and Approve Subprocess Performance Measures

1.4.2.2.2.2.6   Baseline Subprocess Performance Measures

1.4.2.2.2.2.7   Identify Special Causes of Variation

1.4.2.2.2.2.8   Determine Corrective Actions To Be Taken for Special Causes of Variation

1.4.2.2.2.3   Monitor Performance of the Selected Subprocesses

1.4.2.2.2.3.1   Review and Analyze Subprocess Performance Objectives and Measures

1.4.2.2.2.3.2   Compare Planned Versus Actual Subprocess Performance Objectives and Measures

1.4.2.2.2.3.3   Monitor Planned Versus Actual Subprocess Performance Objectives and Measures

1.4.2.2.2.3.4   Identify and Document Analysis of Subprocess Capability Deficiencies

1.4.2.2.2.3.5   Evaluate Analysis of Subprocess Capability Deficiencies

1.4.2.2.2.3.6   Review and Approve Analysis of Subprocess Capability Deficiencies

1.4.2.2.2.3.7   Baseline Analysis of Subprocess Capability Deficiencies

1.4.2.2.2.4   Record Statistical Management Data

1.4.2.2.2.4.1   Receive Measures, Analytical Techniques, Subprocess Performance Measures, and Analysis of Subprocess Capability Deficiencies

1.4.2.2.2.4.2   Analyze Measures, Analytical Techniques, Subprocess Performance Measures, and Analysis of Subprocess Capability Deficiencies

1.4.2.2.2.4.3   Identify Measures, Analytical Techniques, Subprocess Performance Measures, and Analysis of Subprocess Capability Deficiencies for Archive Purposes

1.4.2.2.2.4.4   Record Selected Measures, Analytical Techniques, Subprocess Performance Measures, and Analysis of Subprocess Capability Deficiencies

1.4.2.2.2.4.5   Evaluate Records of Measures, Analytical Techniques, Subprocess Performance Measures, and Analysis of Subprocess Capability Deficiencies

1.4.2.2.2.4.6   Review and Approve Records of Measures, Analytical Techniques, Subprocess Performance Measures, and Analysis of Subprocess Capability Deficiencies

1.4.2.2.2.4.7   Baseline Records of Measures, Analytical Techniques, Subprocess Performance Measures, and Analysis of Subprocess Capability Deficiencies

1.4.3   Work Product (28)

1.4.3.1   Organizational Process Performance

1.4.3.1.1   Establish Performance Baselines and Models (Work Product—5)

1.4.3.1.1.1   Select Processes

1.4.3.1.1.1.1   Processes or Process Elements

1.4.3.1.1.2   Establish Process Performance Measures

1.4.3.1.1.2.1   Process Performance Measurements

1.4.3.1.1.3   Establish Quality and Process Performance Objectives

1.4.3.1.1.3.1   Organization Quality and Process Performance Objectives

1.4.3.1.1.4   Establish Process Performance Baselines

1.4.3.1.1.4.1   Organization Process Performance Baseline Data

1.4.3.1.1.5   Establish Process Performance Models

1.4.3.1.1.5.1   Process Performance Models

1.4.3.2   Quantitative Project Management (Work Product—23)

1.4.3.2.1   Quantitatively Manage the Project

1.4.3.2.1.1   Establish the Project's Objectives

1.4.3.2.1.1.1   Project Quality and Process Performance Objectives

1.4.3.2.1.2   Compose the Defined Process

1.4.3.2.1.2.1   Subprocess Identification Criteria

1.5.2.1.1.1.3	Identify Innovative Process and Technology Improvement Proposals
1.5.2.1.1.1.4	Identify Potential Barriers and Risks to Process and Technology Improvement Proposals
1.5.2.1.1.1.5	Estimate Cost, Effort, and Schedule of Process and Technology Improvement Proposals
1.5.2.1.1.1.6	Select Process and Technology Improvement Proposals for Piloting
1.5.2.1.1.1.7	Document Process and Technology Improvement Proposals for Piloting
1.5.2.1.1.1.8	Evaluate Process and Technology Improvement Proposals for Piloting
1.5.2.1.1.1.9	Review and Approve Process and Technology Improvement Proposals for Piloting
1.5.2.1.1.1.10	Baseline Process and Technology Improvement Proposals
1.5.2.1.1.2	**Identify and Analyze Innovations**
1.5.2.1.1.2.1	Identify Weaknesses of Organization Standard Process
1.5.2.1.1.2.2	Identify Improvements to Weaknesses of Organization Standard Process
1.5.2.1.1.2.3	Analyze Identified Improvements to Organization Standard Process
1.5.2.1.1.2.4	Analyze Costs and Benefits of Improvements to Organization Standard Process
1.5.2.1.1.2.5	Create Process Improvement Proposals for Organization Standard Process
1.5.2.1.1.2.6	Evaluate Process Improvement Proposals
1.5.2.1.1.2.7	Review and Approve Process Improvement Proposals
1.5.2.1.1.2.8	Baseline Process Improvement Proposals
1.5.2.1.1.3	**Create Plans for Pilot Improvements**
1.5.2.1.1.3.1	Evaluate and Prioritize Process Improvement Proposals Based on Costs and Benefits
1.5.2.1.1.3.2	Select Process Improvement Proposals for Piloting
1.5.2.1.1.3.3	Define Criteria for Evaluating Results of Piloting Process Improvement Proposals
1.5.2.1.1.3.4	Create Plans for Piloting Process Improvement Proposals
1.5.2.1.1.3.5	Evaluate Plans for Piloting Process Improvement Proposals
1.5.2.1.1.3.6	Review and Approve Plans for Piloting Process Improvement Proposals
1.5.2.1.1.3.7	Baseline Plans for Piloting Process Improvement Proposals
1.5.2.1.1.4	**Pilot Improvements**
1.5.2.1.1.4.1	Obtain and Analyze Organization Standard Software Process
1.5.2.1.1.4.2	Make Changes to Organization Standard Software Process
1.5.2.1.1.4.3	Deploy Changes to Organization Standard Software Process Under Realistic Conditions
1.5.2.1.1.4.4	Document Results of Process Improvement Pilots
1.5.2.1.1.4.5	Evaluate Results of Process Improvement Pilots
1.5.2.1.1.4.6	Review and Approve Results of Process Improvement Pilots

1.5.2.1.1.4.7   Baseline Results of Process Improvement Pilots

1.5.2.1.1.5   Select Improvements for Deployment

1.5.2.1.1.5.1   Prioritize Process Improvement Proposals

1.5.2.1.1.5.2   Select Process Improvement Proposals for Deployment

1.5.2.1.1.5.3   Determine How to Deploy Selected Process Improvement Proposals

1.5.2.1.1.5.4   Document Results of Selected Process Improvement Proposals

1.5.2.1.1.5.5   Evaluate Results of Selected Process Improvement Proposals

1.5.2.1.1.5.6   Review and Approve Results of Selected Process Improvement Proposals

1.5.2.1.1.5.7   Baseline Results of Selected Process Improvement Proposals

1.5.2.1.2   Deploy Improvements

1.5.2.1.2.1   Plan the Deployment

1.5.2.1.2.1.1   Determine Adjustments to Selected Process Improvement Proposals

1.5.2.1.2.1.2   Determine Scope of Changes to Organization Standard Process

1.5.2.1.2.1.3   Identify Strategies for Eliminating Barriers to Process Improvement Proposals

1.5.2.1.2.1.4   Establish Objectives and Measures for Improving Organization Standard Processes

1.5.2.1.2.1.5   Develop and Document Plan for Deploying Process Improvements

1.5.2.1.2.1.6   Evaluate Plan for Deploying Process Improvements

1.5.2.1.2.1.7   Review and Approve Plan for Deploying Process Improvements

1.5.2.1.2.1.8   Baseline Plan for Deploying Process Improvements

1.5.2.1.2.2   Manage the Deployment

1.5.2.1.2.2.1   Monitor Deployment of Process and Technology

1.5.2.1.2.2.2   Coordinate Deployment of Process and Technology

1.5.2.1.2.2.3   Deploy Process and Technology in a Disciplined Manner

1.5.2.1.2.2.4   Incorporate Process and Technology Improvements Into Organization Standard Process

1.5.2.1.2.2.5   Coordinate Deployment of Process and Technology Into Project Defined Processes

1.5.2.1.2.2.6   Provide Consulting Support for Process and Technology Deployments

1.5.2.1.2.2.7   Provide Training Materials for Process and Technology Deployments

1.5.2.1.2.2.8   Confirm Completion of Process and Technology Deployments

1.5.2.1.2.2.9   Evaluate Negative Impacts of Process and Technology Deployments on Satisfaction of Business Objectives

1.5.2.1.2.2.10   Document Results of Process and Technology Deployments

1.5.2.1.2.2.11   Evaluate Results of Process and Technology Deployments

1.5.2.1.2.2.12   Review and Approve Results of Process and Technology Deployments

1.5.2.1.2.2.13   Baseline Results of Process and Technology Deployments

1.5.2.1.2.3   Measure Improvement Effects

1.5.2.1.2.3.1	Measure Actual Cost, Effort, and Schedule for Deployment of Process and Technology
1.5.2.1.2.3.2	Measure Value of Process and Technology Deployments
1.5.2.1.2.3.3	Measure Impact of Deployment of Process and Technology on Process and Product Quality Objectives
1.5.2.1.2.3.4	Analyze Impact of Deployment of Process and Technology on Process and Product Quality Objectives
1.5.2.1.2.3.5	Evaluate Results of Impact Analysis on Process and Product Quality Objectives
1.5.2.1.2.3.6	Review and Approve Results of Impact Analysis on Process and Product Quality Objectives
1.5.2.1.2.3.7	Baseline Results of Impact Analysis on Process and Product Quality Objectives

1.5.2.2 Causal Analysis and Resolution (Procedure—8)

1.5.2.2.1 Determine Causes of Defects

1.5.2.2.1.1 Select Defect Data for Analysis

1.5.2.2.1.1.1	Review Defect Data in Organization Measurement Repository
1.5.2.2.1.1.2	Identify Customer, End-User, Project, Peer Review, Test, Product, and Process Defects
1.5.2.2.1.1.3	Prioritize and Select Defect Data for Further Analysis
1.5.2.2.1.1.4	Document Defect Data for Analysis
1.5.2.2.1.1.5	Evaluate Defect Data for Analysis
1.5.2.2.1.1.6	Review and Approve Defect Data for Analysis
1.5.2.2.1.1.7	Baseline Defect Data for Analysis

1.5.2.2.1.2 Analyze Causes

1.5.2.2.1.2.1	Plan Causal Analysis Activities With Relevant Stakeholders
1.5.2.2.1.2.2	Use Objective and Subjective Methods to Identify Causes of Defects
1.5.2.2.1.2.3	Classify and Categorize Defects and Causes Using Objective Methods
1.5.2.2.1.2.4	Document Defects and Their Causes
1.5.2.2.1.2.5	Evaluate Defects and Their Causes
1.5.2.2.1.2.6	Review and Approve Defects and Their Causes
1.5.2.2.1.2.7	Baseline Defects and Their Causes

1.5.2.2.1.3 Develop Action Proposals

1.5.2.2.1.3.1	Receive and Analyze Defects and Their Causes
1.5.2.2.1.3.2	Develop Criteria for Prioritizing Defects and Their Causes
1.5.2.2.1.3.3	Identify and Prioritize Defects Based on Severity, Impact, Cost, Customer Needs, or Compromise of Basic Process and Product Quality Objectives
1.5.2.2.1.3.4	Identify and Document Action Proposals for Eliminating Defects and Their Causes
1.5.2.2.1.3.5	Evaluate Action Proposals for Eliminating Defects

<div style="text-align: right">

1.5.2.2.2.5.2   Record Rationale for Decisions, Record Action Proposals, Selected Action Proposals, and Plans for Implementing Action Proposals

1.5.2.2.2.5.3   Record Results of Implementing Action Proposals and Effect of Changes

1.5.2.2.2.5.4   Record Costs of Implementing Action Proposals and Current Defect Levels

1.5.2.2.2.5.5   Evaluate Records of Implementing Action Proposals

1.5.2.2.2.5.6   Review and Approve Records of Implementing Action Proposals

1.5.2.2.2.5.7   Baseline Records of Implementing Action Proposals

</div>

1.5.3   Work Product (21)

    1.5.3.1   Organizational Innovation and Deployment (Work Product—12)

        1.5.3.1.1   Select Improvements

            1.5.3.1.1.1   Collect and Analyze Improvement Proposals

                1.5.3.1.1.1.1   Process and Technology Improvement Proposal Analysis

            1.5.3.1.1.2   Identify and Analyze Innovations

                1.5.3.1.1.2.1   Candidate Improvements

                1.5.3.1.1.2.2   Improvement Analysis

            1.5.3.1.1.3   Create Plans for Pilot Improvements

                1.5.3.1.1.3.1   Plans for Pilot Improvements

            1.5.3.1.1.4   Pilot Improvements

                1.5.3.1.1.4.1   Pilot Evaluation Reports

                1.5.3.1.1.4.2   Pilot Lessons Learned

            1.5.3.1.1.5   Select Improvements for Deployment

                1.5.3.1.1.5.1   Selected Process and Technology Improvement Proposals

        1.5.3.1.2   Deploy Improvements

            1.5.3.1.2.1   Plan the Deployment

                1.5.3.1.2.1.1   Process and Technology Improvement Proposal Deployment Plans

            1.5.3.1.2.2   Manage the Deployment

                1.5.3.1.2.2.1   Training Materials

                1.5.3.1.2.2.2   Process and Technology Improvement Activity Results

                1.5.3.1.2.2.3   Process and Technology Improvement Measures, Objectives, Priorities, and Deployment Plans

            1.5.3.1.2.3   Measure Improvement Effects

                1.5.3.1.2.3.1   Process and Technology Improvement Effects (Quantitative)

    1.5.3.2   Causal Analysis and Resolution (Work Product—9)

        1.5.3.2.1   Determine Causes of Defects

            1.5.3.2.1.1   Select Defect Data for Analysis

                1.5.3.2.1.1.1   Defect and Problem Data

            1.5.3.2.1.2   Analyze Causes

                1.5.3.2.1.2.1   Action Proposals

1.5.3.2.1.3 Develop Action Proposals
    1.5.3.2.1.3.1   Action Proposals

1.5.3.2.2   Address Causes of Defects

1.5.3.2.2.1   Select Action Proposals for Eliminating Defects
    1.5.3.2.2.1.1   Selected Action Proposals

1.5.3.2.2.2   Create Plans for Implementing Action Proposals
    1.5.3.2.2.2.1   Action Proposal Implementation Plans

1.5.3.2.2.3   Implement the Action Proposals
    1.5.3.2.2.3.1   Selected Action Proposals
    1.5.3.2.2.3.2   Improvement Proposals

1.5.3.2.2.4   Evaluate the Effect of Changes
    1.5.3.2.2.4.1   Performance Measures

1.5.3.2.2.5   Record Data
    1.5.3.2.2.5.1   Causal Analysis Records