Changes to the SCAMPI Methodology and How to Prepare for a SCAMPI Appraisal

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Topics

- Definitions
- CMMI and SCAMPI Evolution
- Reasons for conducting a SCAMPI A Appraisal
- SCAMPI V1.3 Goals and Objectives
- SCAMPI A Appraisal Phases
- Methodology Changes by Phase
- How to Prepare for a SCAMPI A Appraisal - Summary

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Definitions – 1

- **CMM** – Capability Maturity Model
- **CMMI –** Capability Maturity Model Integration
- **ARC –** Appraisal Requirements for CMMI
- **SCAMPI –** Standard CMMI Appraisal Method for Process Improvement. Designed to provide benchmark-quality ratings relative to Capability Maturity Model Integration (CMMI) models
- **SCAMPI MDD –** Class A Standard CMMI Appraisal Method for Process Improvement Method Definition Document. Describes the requirements, activities, and practices associated with the processes that compose the SCAMPI method. The MDD also contains precise descriptions of the method's context, concepts, and architecture
- **PII –** Practice Implementation Indicator
- **PIID –** Practice Implementation Indicator Description

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Definitions – 2

- **Organizational Unit (OU) –** That part of the organization that is being appraised
- **Appraisal Scope –** The definition of the boundaries of the appraisal encompassing the organizational limits and the model limits within which the processes to be investigated operate
- **Gaps in Practice Implementation (weaknesses)** – Ineffective, or lack of, implementation of one more reference model practices
- **Exemplary Practice Implementations** (**strengths)** – Implementations that are above and beyond the model practice expectations
- **Objective evidence –** Artifacts or affirmations used as indicators of the implementation or institutionalization of model practices.
- **Artifacts –** A tangible form of objective evidence indicative of work being performed that represents either the primary output of a model practice or a consequence of implementing a model practice.
- **Affirmation –** An oral or written statement confirming or supporting implementation (or lack of implementation) of a model practice provided by the implementers of the practice, provided via an interactive forum in which the appraisal team has control over the interaction

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SCAMPI V1.3 Definitions

- **Basic Unit –** A managed set of interrelated resources which delivers one or more products or services to a customer or end user and typically operates according to a plan
- **Support Function –** An organizational group that provides products and/or services for a bounded set of activities needed by the other portions of the organization

  Examples: configuration management group, engineering process group, quality assurance group, organizational training group
- **Sampling Factor** – Organizational or work context that reflects meaningful difference in the way work is performed across different basic units within the organizational unit

  Examples: location, customer, and type of work
- **Subgroup –** Cluster of basic units that share common sampling factor alternatives and exhibit similar process implementations
- **Database of Objective Evidence –** Practice implementation indicator description
- **Appraisal Tailoring –** Selection of options within the appraisal method for use in a specific instance. The intent of tailoring is to assist an organization in aligning application of the method with its business needs and objectives

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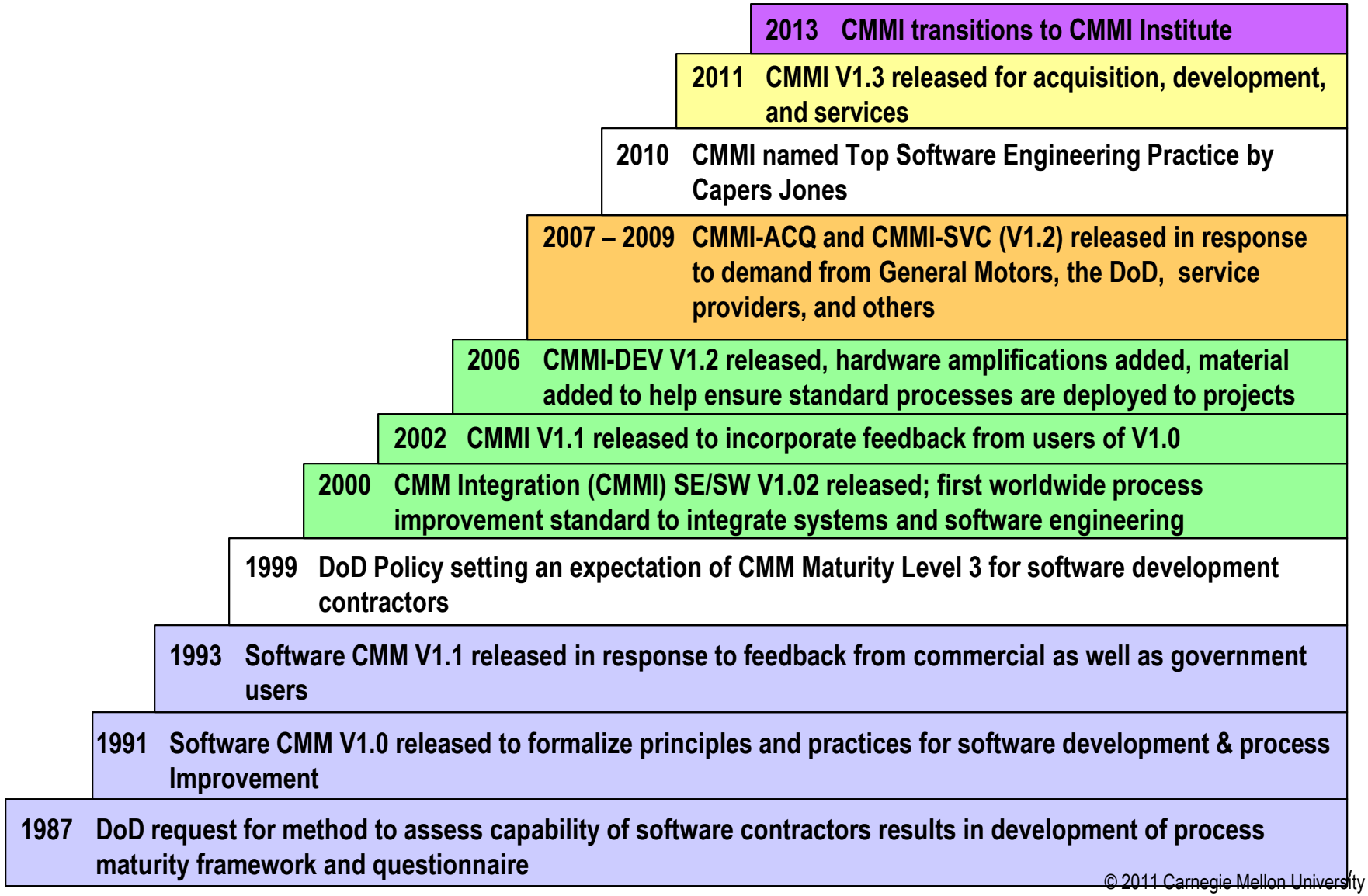
CMMI Model & SCAMPI Methodology Evolution



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Why Go Through a SCAMPI A Appraisal?

SCAMPI A enables a sponsor to:

- Gain insight into an organization's capability by identifying the strengths and weaknesses of its current processes relative to appraisal reference model(s)
- Prioritize improvement plans
- Focus on improvements (correct weaknesses that generate risks) that are most beneficial to the organization given its current level of organizational maturity or process capabilities
- Derive capability level ratings as well as a maturity level rating
- Identify risks relative to capability/maturity determinations
- Obtain benchmark quality ratings relative to CMMI models
- Obtain a benchmark to compare an organization's process improvement achievements with other similar organizations in the industry

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SCAMPI V1.3 Goals and Objectives

SCAMPI V1.3 Goals	SCAMPI V1.3 Objectives	SCAMPI Essential Characteristics	SCAMPI V1.3 Change Concepts
1. Increase Efficiency of the Appraisal Process	▪ Consider entire lifecycle of cost/value (not just 'onsite') ▪ Decrease cost while maintaining accuracy and utility ▪ Increase value returned per cost incurred	▪ Cost/Resource effectiveness ▪ Accuracy ▪ Meaningfulness of results	▪ Appraisal scoping: analysis of sampling factors to assure representative coverage and efficient data collection. (Replaces focus/non-focus projects.) ▪ Clarify handling of basic units and support functions (sufficiency, coverage) ▪ Formalized plans for data collection and resources ▪ Managed discovery, iterative data calls (limit PIID crafting) ▪ Removed distinction of direct and indirect artifacts ▪ Multi-constellation appraisals

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SCAMPI V1.3 Goals and Objectives (cont.)

SCAMPI V1.3 Goals	SCAMPI V1.3 Objectives	SCAMPI Essential Characteristics	SCAMPI V1.3 Change Concepts

2. Remove Barriers to Broader Usage (e.g., other constellations)	▪ Remove terminology unique to CMMI-DEV
	▪ Clarify skill/experience requirements for all users
		▪ Meaningfulness of results
		▪ Repeatability
			▪ Terminology:
			  ▪ organization: “project” > “basic unit”
			  ▪ term “indirect artifact” not used
			  ▪ sampling “subgroups”
			▪ Appraisal team qualifications and field experience for model scope; manage conflicts of interest
			▪ Multi-constellation appraisals

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SCAMPI V1.3 Goals and Objectives (cont.)

SCAMPI V1.3 Goals	SCAMPI V1.3 Objectives	SCAMPI Essential Characteristics	SCAMPI V1.3 Change Concepts
3. Synchronize with CMMI V1.3 Product Suite	▪ Enhance consistency of usage and fidelity to method requirements ▪ Evolve methods based on change requests	▪ Repeatability ▪ ARC compliance	▪ Consistency with other V1.3 product suite (ARC/model) updates ▪ MDD clarifications, cleanup, errata ▪ Simplified features/terms from removal of ARC ISO/IEC 15504 conformance (e.g., appraisal input)

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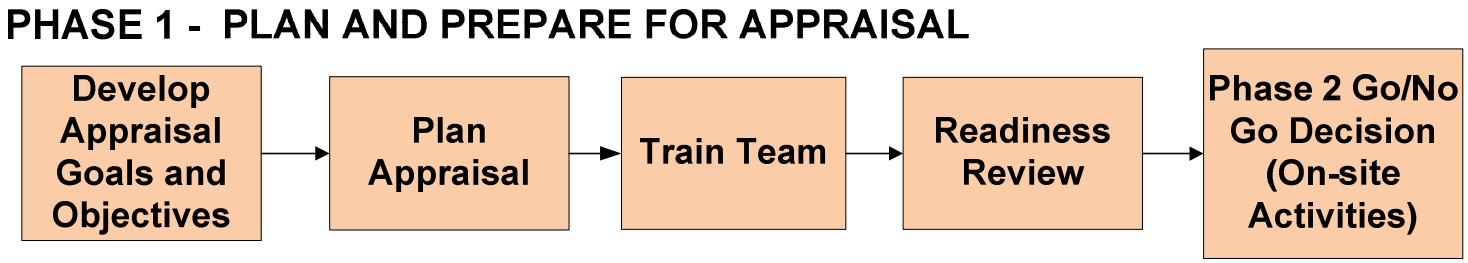
SCAMPI A Appraisal Phases



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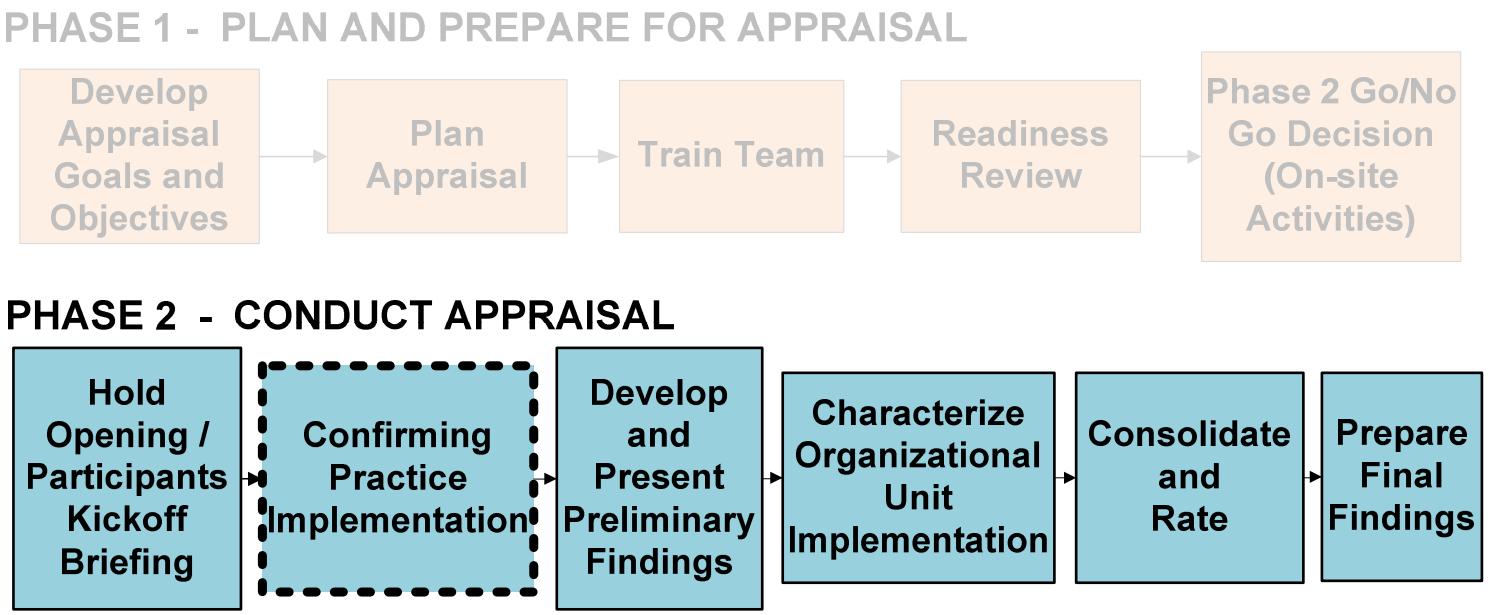
SCAMPI A Appraisal Phases



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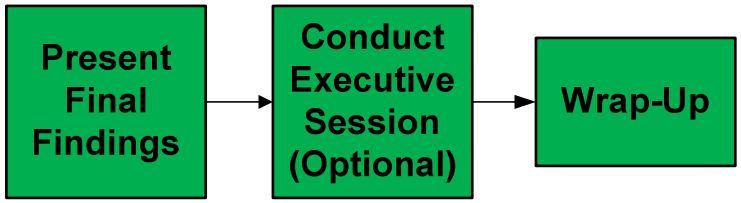
SCAMPI A Appraisal Phases

PHASE 1 - PLAN AND PREPARE FOR APPRAISAL

PHASE 2 - CONDUCT APPRAISAL

PHASE 3 - REPORT RESULTS



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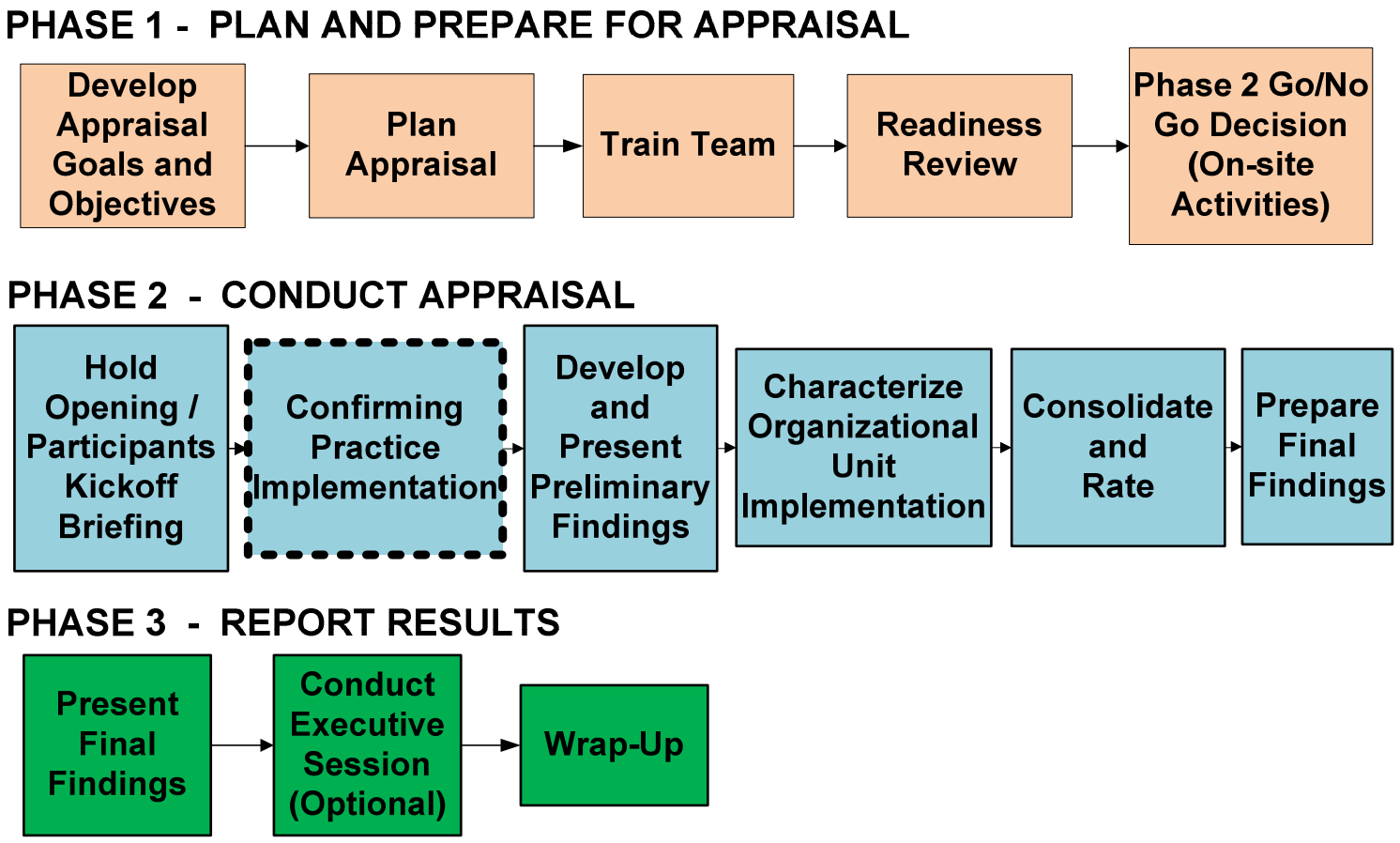
SCAMPI A Appraisal Phases



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Phase 1 – Plan and Prepare for Appraisal

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
1.1 Analyze Requirements	
1.1.1 Determine Appraisal Objectives	1.1.1 Determine Appraisal Objectives
	1.1.2 Determine Data Collection Strategy
1.1.2 Determine Appraisal Constraints	1.1.3 Determine Appraisal Constraints
1.1.3 Determine Appraisal Scope	**1.1.4 Determine Appraisal Scope**
1.1.4 Determine Outputs	1.1.5 Determine Appraisal Outputs
1.1.5 Obtain Commitment to Appraisal Input	1.1.6 Obtain Commitment to Initial Appraisal Plan
1.2 Develop Appraisal Plan	
1.2.1 Tailor Method	**1.2.1 Tailor Method**
1.2.2 Identify Needed Resources	1.2.2 Identify Needed Resources
	1.2.3 Develop Data Collection Plan
1.2.3 Determine Cost and Schedule	1.2.4 Determine Cost and Schedule
1.2.4 Plan and Manage Logistics	1.2.5 Plan and Manage Logistics
1.2.5 Document and Manage Risks	1.2.6 Document and Manage Risks
1.2.6 Obtain Commitment to Appraisal Plan	1.2.7 Obtain Commitment to Appraisal Plan

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Phase 1 – Plan and Prepare for Appraisal (cont.)

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
1.3 Select and Prepare Team	
1.3.1 Identify Appraisal Team Leader	1.3.1 Identify Appraisal Team Leader
1.3.2 Select Team Members	**1.3.2 Select Team Members**
	1.3.3 Document and Manage Conflicts of Interest
1.3.3 Prepare Team	**1.3.4 Prepare Team**
1.4 Obtain and Inventory Initial Objective Evidence	
1.4.1 Obtain Initial Objective Evidence	**1.4.1 Obtain Initial Objective Evidence**
1.4.2 Inventory Objective Evidence	1.4.2 Inventory Objective Evidence
1.5 Prepare for Appraisal Conduct	
1.5.1 Perform Readiness Review	**1.5.1 Perform Readiness Review**
1.5.2 Prepare Data Collection Plan	
1.5.3 Re-plan Data Collection (if needed)	1.5.2 Re-plan Data Collection

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Phase 2 – Conduct Appraisal

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
2.1 Prepare Participants	
2.1.1 Conduct Participant Briefing	2.1.1 Conduct Participant Briefing
2.2 Examine Objective Evidence	
2.2.1 Examine Objective Evidence from Documents 2.2.2 Examine Objective Evidence from Interviews	2.2.1 Examine Objective Evidence from Artifacts 2.2.2 Examine Objective Evidence from Affirmations
2.3 Document Objective Evidence	
2.3.1 Take/Review/Tag Notes 2.3.2 Record Presence/Absence of Objective Evidence 2.3.3 Document Practice Implementation 2.3.4 Review and Update the Data Collection Plan	2.3.1 Take/Review/Tag Notes 2.3.2 Record Presence/Absence of Objective Evidence 2.3.3 Document Practice Implementation 2.3.4 Review and Update the Data Collection Plan
2.4 Verify Objective Evidence	
2.4.1 Verify Objective Evidence 2.4.2 Characterize Implementation of Model Practices	**2.4.1 Verify Objective Evidence** **2.4.2 Characterize Implementation of Model Practices and Generate Preliminary Findings**

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Phase 2 – Conduct Appraisal (cont.)

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
2.5 Validate Preliminary Findings	
2.5.1 Validate Preliminary Findings	2.5.1 Validate Preliminary Findings
2.6 Generate Appraisal Results	
2.6.1 Derive Findings and Rate Goals 2.6.2a Determine Process Area Capability Level 2.6.2b Determine Satisfaction of Process Areas 2.6.3a Determine Capability Profile 2.6.3b Determine Maturity Level 2.6.4 Document Appraisal Results	2.6.1 Derive Findings and Rate Goals 2.6.2 Determine Process Area Ratings 2.6.3 Determine Process Area Profile 2.6.4 Determine Maturity Level 2.6.5 Document Appraisal Results

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Phase 3 – Report Results

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
3.1 Deliver Appraisal Results	
3.1.1 Deliver Final Findings 3.1.2 Conduct Executive Session(s) 3.1.3 Plan for Next Steps	3.1.1 Deliver Final Findings 3.1.2 Conduct Executive Session(s) 3.1.3 Plan for Next Steps
3.2 Package and Archive Appraisal Assets	
3.2.1 Collect Lessons Learned 3.2.2 Generate Appraisal Record 3.2.3 Provide Appraisal Feedback to CMMI Steward 3.2.4 Archive and/or Dispose of Key Artifacts	3.2.1 Collect Lessons Learned 3.2.2 Generate Appraisal Record 3.2.3 Provide Appraisal Feedback to CMMI Steward 3.2.4 Archive and/or Dispose of Key Artifacts

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1.1 Analyze Requirements

1.1.2 Determine Data Collection Strategy

- Verification
- Discovery
- Managed Discovery

- Outlines the overall high level approach for data collection including:
  - When the data to be collected (preparation phase or conduct phase)
  - What data collection techniques to be used (e.g., demonstrations, presentations, interviews, and questionnaires)
- Should be tailored to meet the needs of the organization and the appraisal team
- Has major implications in terms of:
  - Amount of time and effort expensed by the organization preparing for the appraisal
  - Ability to make judgments during the appraisal
  - Accuracy and usefulness of the appraisal results
  - Overall cost of conduct phase of the appraisal
  - Appraisal planning

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
Primarily oriented to use of CMMI-DEV and projects	Accommodates all CMMI constellations + People CMM
Required documentation and examination of "critical factors"	"Critical factors" replaced with "sampling factors"
Arbitrary minimum number of instantiations set at three	No specific arbitrary minimum number of instantiations
No verifiable criteria for establishing a representative sample	Quantitative basis for documenting a representative sample
Involvement of the support functions not defined as part of the process for establishing a representative sample	Support function are explicitly included in establishing a representative sample
Process areas were described as falling into one of two categories: ▪ Organizational Level ▪ Project Level	Process areas are described as appropriate to basic units and support functions

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

The organizational scope of the appraisal is selected as a representative sample of the organizational unit, based on sampling factors that reflect meaningful differences in the conditions under which work is performed.

- Consists of the appraisal reference model scope and the organizational scope to be examined
- Documented in terms of the list of basic units and support functions selected
- Sampling factors used to determine the context in which processes are implemented in different projects within the organizational unit

- **Sampling establishes the organizational scope**
- **Scoping defines the organizational unit**

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

Appraisal Scoping Process – more formalized

Steps to define the Organizational Unit (OU):

1. Identify how people are organized into basic units and support functions to do the work
   - The term “basic unit” is a label to signify groups that instantiate work processes under different conditions (e.g., projects, services, or acquisition programs)
   - The term “support function” a label to signify groups that perform a function in support of more than one basic unit, or in support of the organization (e.g., PPQA, OT, OPF)
2. Identify sampling factors that could affect process implementation
   - Differences in the way work is performed can arise from the constraints placed on the basic unit or support function.
   - The constraints represent pressures against which the practices of the organization must remain resilient.
3. Document the OU using the relevant sampling factors

   The processes to be appraised operate in a range of specific operating conditions. Appraisal planning activities assure that this range is reflected in the description of the organizational unit.

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope (Sampling)

Consideration for the following potential Standard Sampling Factors is required

- **Location:** If the work is performed differently in different locations (e.g., countries, cities, site of installations)
- **Customer:** If the work is performed differently depending on the customer served by that work.
- **Size:** If work is performed differently based on the size of the basic unit or support function.
- **Organizational Structure:** If work is performed differently in different parts of the organizational structure (e.g., different divisions as depicted on an organizational chart)
- **Type of Work:** If work is performed differently based on the type of work (e.g., system integration, software development, IT-support services or help desk)

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope (Sampling)

Documenting Sampling Factors is required

- **Standard Sampling Factors:** A standard set of potential sampling factors shall be examined for relevance in each appraisal. If a given factor does not apply then this fact shall be recorded in the appraisal plan
- **Other Sampling Factors:** Lead appraiser, in collaboration with the appraisal sponsor, shall seek other potential sampling factors that influence process implementation
  - Examples: funding sources, complexity, duration, etc
- **Documenting Analysis Results:** The lead appraiser shall document the analysis performed to identify sampling factors and their relevance to the scope of the organizations unit (OU) - as well as their role in sampling from the OU to define the organizational scope of the appraisal

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope (Organizational Scope)

Determining the Representative Sample Process

Steps to Define the Organizational Scope of the Appraisal:

1. Identify subgroups that represent potential differences in implementation associated with the sampling factors within the OU
   - Identify subgroups based on sampling factors
2. Identify which units within each subgroup will be selected to appropriately represent the subgroup
   - Identify how many units within each subgroup will be sampled
3. The total of the units selected from each sub group will be documented as the organizational scope of the appraisal.
   - Document the organizational scope of the appraisal

The definition of the organizational unit may be revised to exclude one or more subgroups.

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

Sampling Example:

7 Basic units in the organization:

Relevant Sampling factors:

- **Size:** Small or Big – based on the duration of the project
- **Project Type:** Self Developed (R&D) Products or Customized Products for a Specific Client
- **Organizational Structure:** Product Dept (product launches, R&D activities, product packaging, product documentation), Software Dept (Software development and Integration)

Sampling Factors						
Projects	Size		Project Type		Organizational Structure	
	Big	Small	R&D	Custom	Product Dept.	Software Dept.
P1	√		√			√
P2	√		√			√
P3	√			√	√	
P4	√			√		√
P5	√			√		√
P6		√	√		√	
P7		√	√		√	

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

Sampling Example (cont.):

$$\text{Minimum number of Basic Units to be selected from a given Subgroup} = \frac{\text{Number of subgroups} \times \text{Number of basic units in the given subgroup}}{\text{Total number of basic units}}$$

Sampling Results				
Subgroup Name	Count of Basic Units	Result from Applying the Sampling Formula	Number of Basic Units to Sample	Project(s) to be Examined
Software Dept.'s Big R&D Projects	2	1.2	1	**P1**
Product Dept.'s Big Custom Projects	1	0.6	1	**P3**
Software Dept.'s Big Custom Projects	2	1.2	1	**P4**
Product Dept.'s Small R&D Projects	2	1.2	1	**P6**
	7		**4**	

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

Coverage Rules

- Process Areas
- Basic Units
- Support Functions

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

Coverage Rules for Process Areas

Rule 1 – Objective Evidence must address all specific and generic practices that are part of that process area

Each basic unit or support function sampled must address all practices in the process areas for which they supply data

Rule 2 – The design of the process in the organization may lead to process areas being implemented in a range of fashions, such as:

- an individual basic unit within a subgroup
- a single support function that serves the entire organizational unit
- a set of support functions that each serve different parts of the organizational unit
- some hybrid of the above

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

Coverage Rules for Basic Units

Rule 1 – For each subgroup, both artifacts and affirmations shall be provided for at least one basic unit for every process area implemented by basic units within that subgroup

This sampled basic unit shall provide data for all process areas. Selection of this basic unit must consider the schedule of work (e.g., lifecycle stage) achieved, in order to maximize coverage of the process areas.

In cases where this sampled basic unit would have “not yet” characterizations in a process area, additional basic units must be sampled to cover over that process area) unless no other basic units remain to be sampled in the subgroup).

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

Coverage Rules for Basic Units

Rule 2 – For at least 50 percent of the sampled basic units in each subgroup, both artifacts and affirmations shall be provided for at least one process area implemented by basic units within that subgroup

Rule 3 – For all sampled basic units in each subgroup either artifacts or affirmations shall be provided for at least one process area

For subgroups with only one sampled basic unit, satisfaction of the first rule leads to satisfaction of the other two rules

For subgroups with two sampled basic units, satisfaction of the first rule leads to satisfaction of the 2nd

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

Coverage Rules for Support Functions

Rule 1 – Both artifacts and affirmations shall be provided for each support function for all process areas relating to the work performed by that support function

Rule 2 – The artifacts and affirmations provided by support functions shall demonstrate the work performed for basic units for at least one sampled basic unit in each subgroup. This applies for each process area relating to the work performed by that support function for basic units

Rule 3 – In cases where multiple support functions exist within the organizational unit, all instances of the support function shall be included in the appraisal scope

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1.1 Analyze Requirements

1.1.4 Determine Appraisal Scope

Data Collection Table

Sampling Example (cont.):

Projects, Support Groups	Process Areas																	
	PP	PMC	IPM	RSKM	SAM	REQM	RD	TS	PI	VER	VAL	MA	CM	PPQA	DAR	OPF	OPD	OT
P1	√	√	√	√		√	√	√	√	√	√	√	√	√	√			
P3	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√			
P4	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√			
P6	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√			
Quality Dept*													√	√				
Training Department																		√
Engineering Process Group																√	√	
Purchasing Department*					√													
* Evidence will be provided for each project.																		

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1.2 Develop Appraisal Plan

1.2.1 Tailor Method

Customizing the method for the scope and context of use – not merely implementing required practices in a preferred manner.

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
Tailoring discussions existed in various places ▪ Activity 1.2.1 *Tailoring Method* ▪ Tailoring section of each process (the #.# level ▪ *Optional Practices* section of each activity (the 3.3.3. level) ▪ Embedded in many of the *Guidance* sections of each activity	Activity 1.2.1 *Tailoring Method* defines tailoring
	A comprehensive **checklist** is provided in an appendix to prescribe a limited set of things which must be documented a tailoring options
Inferred in a number of the *Parameters and Limits* sections of activities	All other choices made, in conformance with the *Required Practices* and *Parameters and Limits* of each section, are not considered tailoring options

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1.2 Develop Appraisal Plan

1.2.1 Tailor Method

Examples:

Not Tailoring

- Organizational and Model Scope
- Number of Readiness Reviews
- Duration of Events Like Interviews
- Number of People in Each Interview
- Choosing Relevant Sampling Factors
- Use of More than 4 Team Members
- Choosing Interviewees and ATMs

Tailoring

- Optional Outputs (e.g., ML rating)
- Characterizing in Readiness Review
- Doing the Appraisal Incrementally
- Use of Video Teleconferencing
- Performing Readiness Review in the Context of Class C or Class B Appraisal(s)

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1.2 Develop Appraisal Plan

1.2.3 Develop Data Collection Plan

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
Verification-based appraisals	▪ Based on Data Collection Strategy ▪ Emphasis on defining and maintaining a data collection strategy negotiated with the appraisal sponsor during planning activities
	▪ “Managed Discovery” as a Data Collection Strategy introduced as a compromise between two extremes “verification” and “discovery” ▪ Successive “data calls” focused on gaps in data
Activity 1.5.2 Prepare Data Collection Plan is in Phase 1, 1.5 Prepare for Appraisal Conduct process	▪ Much earlier in the Phase 1, 1.2.3 Develop Data Collection Plan as part of 1.2 Develop Appraisal Plan process ▪ More robust
(optional) PIID data structures for verification-based appraisals	▪ The data collection plan evolves and is revised as the appraisal is planned and performed ▪ The concept of ”high yield artifacts” is put in place for “managed discovery” data collection strategy

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1.2 Develop Appraisal Plan

1.2.3 Develop Data Collection Plan

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
Data sorting – distinction between “direct artifact” and “indirect artifact”	distinction between “direct artifact” and “indirect artifact” as been eliminated
Much of the organizational cost incurred for conducting SCAMPI A appraisals has been attributed to the inefficient collection of data provided in PIID data structures, resulting in much effort lost by both the organization and the appraisal team	Improved to make data collection more efficient and cost-effective with a better balance of effort between the appraisal team and the appraised organization

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1.2 Develop Appraisal Plan

1.2.3 Develop Data Collection Plan

Artifacts – *A* tangible form of objective evidence indicative of work being performed that represents either the primary output of a model practice or a consequence of implementing a model practice

Sufficient artifacts demonstrating and corroborating that the work is being done are necessary to verify the implementation of associated model practices

Examples:

- Documents
  - Plans and schedules
  - Project work products
  - Records and emails
  - Process descriptions
- Web-portals or repositories
- Slide “decks” without presenters
- Tools, and the data contained in them

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1.2 Develop Appraisal Plan

1.2.3 Develop Data Collection Plan

Affirmations – An oral or written statement confirming or supporting implementation (or lack of implementation) of a model practice provided by the implementers of the practice, provided via an interactive forum in which the appraisal team has control over the interaction

For an affirmation to be accepted as evidence or practice implementation, it must be supplied by an individual who participated in the implementation of the practice

Examples:

- Interview responses
- Statements elicited during interactive presentations
- Verbal explanations that accompany interactive tool demonstrations or walkthroughs

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1.2.3 Develop Data Collection Plan

1.2.3 Develop Data Collection Plan

- The data collection plan should specify sources of data, tools, and techniques to be used
- The data collection plan should clearly specify whether any virtual methods (e.g., video conferences, teleconferences, and other similar technology) will be used and how they will be used

Data collection plan content includes:

- Data Collection Strategy
- Affirmation Activities participants
- Assignment of Process Area to appraisal team members
- Schedule and success criteria for Readiness Reviews
- Approach for using Class C and Class B appraisals for data collection and/or readiness reviews (if they are used for this purpose)
- A summary of initial objective evidence provided by the organization
- Identification of highest priority data needs
- A schedule of interview-gathering events, revised over time to include more detail
- Identification of an initial set of interview questions (could be maintained outside the appraisal plan)
- Identification of artifacts still needed after the performance of readiness reviews (if any)
- Risks associated with the sufficiency of the data and the adequacy of the schedule

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1.3 Select and Prepare Team

1.3.2 Select Team Member (Appraisal Team Member Qualifications)

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
Includes Lead Appraiser's experience in calculating Appraisal Team experience	Lead Appraiser's experience is **excluded** from Appraisal Team Experience calculations
Refers to engineering field experience, the team (as a group) must	Refers to field experience relating to the content of the reference model
	▪ Appraisal Team Members with at least two (2) years of field experience relating to the content of each of the reference models. ▪ The Lead Appraisers at their discretion may accept one team member with no field experience however this must be documented with their rationale in the appraisal plan
	The appraisal team, as a whole, must have members with experience performing practices from all of the process areas included in the appraisal scope

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1.3 Select and Prepare Team

1.3.2 Select Team Member (Appraisal Team Member Qualifications)

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
	The appraisal team shall not be comprised entirely of staff who wrote the processes being appraised. If one or more process authors are included on the team, the risk management section of the appraisal plan must address how potential conflicts of interest will be managed
	A senior manager who has supervisory authority over the entire Organizational Unit shall not be an appraisal team member
	The sponsor of the appraisal shall not be an appraisal team member

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1.3 Select and Prepare Team

1.3.3 Document and Manage Conflicts of Interest

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
Confusion among lead appraisers on what constitutes a Conflict of Interest (COI)	▪ Clarifies the Concept of Conflict of Interest ▪ Allows a more consistent implementation ▪ Provides Implementation Guidance
Many lead appraisers appear to barely pay attention to this topic	Required Practices address specific COI situations based on industry feedback
Some lead appraisers confuse risks and COI	New section of the MDD addresses COI

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1.3 Select and Prepare Team

1.3.3 Document and Manage Conflicts of Interest

Lead Appraisers have an obligation to seek out potential conflicts of interest and identify them

- Document them in the appraisal plan
- Make them visible to the appraisal sponsor.

The lead appraiser uses professional judgment, applied objectively, to implement remedies.

- Disqualifying some appraisal participants or potential team members
- Avoiding situations by scheduling events or grouping people carefully with the Sponsor

Some conflicts cannot be avoided, need to be managed

- Internal appraisal members want to find good news but must also acknowledge weaknesses
- The lead appraiser's business relationship with the sponsor may create pressure

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1.3 Select and Prepare Team

1.3.3 Document and Manage Conflicts of Interest

A Scenario

A lead appraiser works for the organization about to be appraised and is responsible for one or more of the following:

- Authorship of engineering or management processes being appraised
- Lead or member engineering process group included in the appraisal

This person should not lead the appraisal!

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1.3 Select and Prepare Team

1.3.3 Document and Manage Conflicts of Interest

Examples of questions to ask in order to identify and manage potential conflicts of interest when selecting team members:

- Are any team members authors of one or more processes included in the scope of the appraisal?
- Are any members of the organization's process group serving on the appraisal team?
- Are any "process owners" serving as appraisal team members?
- Are staff with supervisory responsibility over one or more parts of the organizational unit on the team?

If the answer to any of these questions is "yes" then the lead appraiser MUST take steps to remedy or manage the potential conflict of interest – unless other team candidate team members are selected instead.

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1.3 Select and Prepare Team

1.3.4 Prepare the Team

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
▪ To a single appraisal team for the appraisal at hand	▪ To a single appraisal team - **Default training model**
▪ To a large group of potential team members who are not currently engaged in an appraisal	▪ the CMMI Institute must be notified in writing (e.g., via email), at least 30 days prior to the first day of training ▪ A waiver from the CMMI Institute is required to deliver Appraisal Method training ▪ Any training-related waivers must be documented in the Appraisal Plans
▪ To multiple appraisal teams in a single event	▪ the CMMI Institute must be notified in writing (e.g., via email), at least 30 days prior to the first day of training ▪ A waiver from the CMMI Institute is required to deliver Appraisal Method training ▪ Any training-related waivers must be documented in the Appraisal Plans

Lead Appraiser is to ensure that no appraisal activity performed by team members begins until after the method training relating to that activity has been completed

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1.4 Obtain and Inventory Initial Objective Evidence

1.4.1 Obtain Initial Objective Evidence

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
Three types of objective evidence: ▪ Direct Artifact ▪ Indirect Artifact ▪ Affirmations	Two types of objective evidence: ▪ Artifacts ▪ Affirmations

Artifacts – *A* tangible form of objective evidence indicative of work being performed that represents either the primary output of a model practice or a consequence of implementing a model practice

Sufficient artifacts demonstrating and corroborating that the work is being done are necessary to verify the implementation of associated model practices

Affirmations – Oral statements that confirm whether or not a model practice has been implemented.

Those who have implemented (or should have implemented) a model practice provide affirmations to the appraisal team during an interactive forum which the appraisal team controls.

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1.4 Obtain and Inventory Initial Objective Evidence

1.4.1 Obtain Initial Objective Evidence

Artifact examples:

Examples:

- Documents
  - Plans and schedules
  - Project work products
  - Records and emails
  - Process descriptions
- Web-portals or repositories
- Slide “decks” without presenters
- Tools, and the data contained in them

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1.4 Obtain and Inventory Initial Objective Evidence

1.4.1 Obtain Initial Objective Evidence

Affirmation examples:

Examples:

- Interview responses

  One-on-one, group, and follow-up interview sessions

- Statements elicited during interactive presentations

  Not just the “voice track” that goes with the slides

- Verbal explanations that accompany interactive tool demonstrations or walkthroughs

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1.5 Prepare for Appraisal Conduct

1.5.1 Perform Readiness Review

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
	The number of readiness reviews planned and their dates must be documented in the data collection plan.
	Explicit criteria for determining readiness must be established and documented in the data collection plan.

Typical Readiness Review

Separate timelines for distinct appraisals (and other events) leading up to a SCAMPI A

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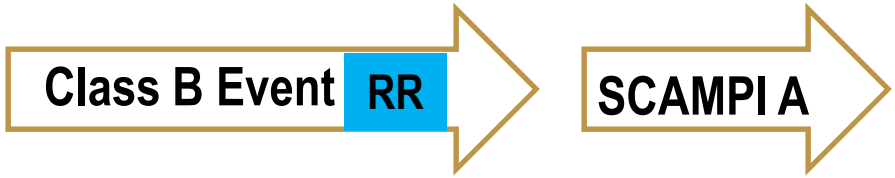
1.5 Prepare for Appraisal Conduct

1.5.1 Perform Readiness Review

The SCAMPI A Phase 2 (Onsite Activities) must be completed within the 90-day constraint:

- If team members review evidence with the intent of using the information from that review to form judgments related to OU compliance with model practices
- If any practice characterizations are done before or during the readiness review
- If a readiness review is used to identify weaknesses in the organization's implementation with the intent to fix them prior to the beginning of the Conduct Appraisal Phase
- If a Class B or C appraisal (e.g., SCAMPI B or SCAMPI C) is used as the readiness review that results in the go/no go decision, the Conduct Appraisal phase will begin upon completion of that review



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2.4 Verify Objective Evidence

2.4.1 Verify Objective Evidence

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
Verify appropriateness of Direct Artifacts, Indirect Artifacts, and Affirmations	Verify the appropriateness of artifacts provided by basic units and/or support functions
Obtain oral affirmations within the model scope of the appraisal for either (1) at least one project or support group for every associated practice and at least one practice for every associated project or support group for the goal (i.e., 1-row, 1-column), or (2) at least 50% of the cells corresponding to the project-support group/practice matrix for the goal	Verify the appropriateness of affirmations provided by people from basic units and/or support functions
Verify implementation of each practice within the appraisal scope is supported by direct artifacts and corroborated by indirect artifacts or affirmations	Verify that the artifacts and affirmations provided are sufficient to cover the organizational and model scope of the appraisal

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2.4 Verify Objective Evidence

2.4.1 Verify Objective Evidence

Data Adequacy Rules

- **Artifacts:** For an artifact to be accepted as evidence of practice implementation, it must be a product or by-product of the practice being examined by the appraisal team
- **Affirmations:** For an affirmation to be accepted as evidence of practice implementation, it must be supplied by an individual who participated in the implementation of the practice being examined by the appraisal team
- **Data Sufficiency:** Verify that all data (i.e., artifacts and/or affirmations) are provided for all sampled basic units and support functions for the model scope of the appraisal, in accordance with the coverage rules specified in section 1.1.4 Determine Appraisal Scope, and documented in the data collection plan
- **Coverage of the Basic Unit or Support Function:** For basic units or support functions that encompass multiple disciplines or facets of work, ensure that the objective evidence covers all aspects of the work (e.g., in a systems and software project, looking only at evidence relating to software engineering is inadequate)

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2.4 Verify Objective Evidence

2.4.2 Characterize Implementation of Model Practices and Generate Preliminary Findings

SCAMPI V1.2 Processes & Activities	SCAMPI V1.3 Processes & Activities
Focused on presence of one or more direct artifacts, and one for more indirect artifacts and/or affirmations to confirm practice implementation	Focused on presence of sufficient artifacts and/or affirmations are present per 1.1.4 and 2.4.1 to demonstrate practice implementation

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How to Prepare for a SCAMPI A Appraisal – Summary

- Determine why a formal SCAMPI A Appraisal is to be conducted
- Determine different types of work performed
- Determine which sampling factors are used as differentiation
- Determine if Maturity or Capability level wanted/needed
- Determine which parts of the organization to be appraised (i.e. entire group or part of the group)
- Determine the model to be used
- Determine your preference on Data Collection Strategy
- Be prepared to spend some time up-front with the Lead Appraiser and answer questions as they come up

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