How Many Ways Can SCAMPI[SM] Be Cooked? Let's Spend Some Time in the Kitchen

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Abstract

It has been publicly stated that only ONE of the three classes of SCAMPI^{SM} appraisals is tailorable.

In fact, all three (SCAMPI^{SM}-A, -B, -C) have significant tailoring options and provide the flexibility for many uses by acquisition organizations for evaluation of supplier processes as well as product development organizations seeking process improvement.

This presentation will present 3 scenarios where different tailored versions of SCAMPI^{SM}-A, B, and C appraisals were used along with there objectives.

SCAMPI^{SM} Tailoring Options

SCAMPI^{SM} Family Architecture

The SCAMPI^{SM} family of appraisal methods contains three different appraisal method definitions (A, B, and C) that, in combination, span the range of typical appraisal objectives. The tailoring and scaling permitted in each method class is so wide that the three methods overlap in many respects; this overlap is evident when the full range of _customized appraisal events_ and the options they support are considered in detail.

Handbook for Conducting Standard CMMI® Appraisal Method for Process

Improvement (SCAMPI^{SM}) B and C Appraisals, Version 1.1

SCAMPI^{SM}-A Tailoring Options

SCAMPI^{SM} A Tailoring

Successful application of SCAMPI^{SM} A relies on _adjusting the parameters of the method to the needs of the organization_ and to the objectives and constraints of the sponsor's organization.

The sponsor's objectives largely influence tailoring decisions. The reference model scope and representation (staged or continuous), the size of the organizational unit, the number and size of sampled projects, the size of the appraisal team, and the number of interviews greatly influence things such as preparation time, time on site, and monetary costs, and so are also major factors when choosing tailoring options. All tailoring decisions must be documented in the appraisal plan.

SCAMPI^{SM}-A, V1.2: Method Description Document

1.2   Develop Appraisal Plan (continued)

Key Points	Skilled appraisal team leaders will effectively develop and use outputs from the other Planning and Preparation phase activities to achieve clarity of the shared vision necessary to make the tradeoffs and decisions resulting in a final plan. This activity is an important opportunity for the appraisal team leader to demonstrate process discipline, as well as the type of careful planning described in the CMMI appraisal reference model. Experienced appraisal team leaders will leverage data, templates, and assets (developed through their own experience) to improve the completeness and effectiveness of the appraisal plan, recognizing the return on investment that will be obtained through smooth and efficient appraisals.
Tools and Techniques	Tools include an appraisal plan template, samples, and embedded procedural guidance in planning templates. Estimation worksheets and methods for assessing the impact of appraisal constraints are also quite useful.
Metrics	• calendar time spanned by the activity • effort consumed in carrying out the activities of this process • level and frequency of changes to the appraisal plan
Verification and Validation	• comparison of actual effort for this activity with historical data accumulated by the appraisal team leader • review of the appraisal plan by affected stakeholders • sponsor's approval of the plan
Records	• estimation worksheets (if used) • appraisal plan (see activity 1.2.6, Obtain Commitment to Appraisal Plan, for a detailed list of plan contents)
Tailoring	• In some applications, planning templates and procedures in routine use within the organization can be adapted to the needs of the appraisal. This approach aids communication as well as local ownership of the process. • A structured planning workshop may be of benefit for organizations with limited appraisal experience. Such a workshop is a valuable opportunity to discover risks as well as mitigation strategies.

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SCAMPI^{SM} B and C Tailoring Options

In a SCAMPI^{SM} C, the data collection plan has the greatest potential for tailoring. The availability of direct or indirect evidence can be augmented with interviews, instruments, or presentations. The amount of objective evidence collected depends on the appraisal objectives.

For example, if the appraisal objective is to expose the organization to the appraisal process, both interviews and document review may be warranted. Determining how extensively new practices are implemented may only require interviews or a survey. In low-maturity organizations, _the emphasis is often on the organization's priorities, not those of the model,_ which allows for a lot of leeway in the amount and type of objective evidence collected.

Handbook for Conducting SCAMPI^{SM} B and C Appraisals, Version 1.1

1.5 Prepare for Collection of Objective Evidence (continued)

Guidance for the Internal Change Agent

Conducting a thorough readiness review is important in determining the satisfaction of entry criteria for conducting the appraisal. The internal change agent typically resides within the organization and may be subject to more pressures to proceed in the absence of adequate preparation. The readiness review process can be used to mitigate this risk. The readiness review should be performed far enough in advance to give the organization time to collect additional evidence to support a more successful appraisal.

The extent of the readiness review will vary based on the amount and type of data required. For example, a SCAMPI C could be limited to interviews only or use of instruments only, or it could consist of a document review limited to examining the approach (reviewing documented policy and process documentation) versus reviewing project artifacts.

The focus of a readiness review in which only interviews are conducted would include a check of the availability of interviewees and their ability to address information needs. A readiness review of an appraisal limited to the use of an instrument (survey) would include a check on both the availability and appropriateness of the individuals completing the survey. The focus of a readiness review where only a document review is conducted would include a check of the availability of the appropriate documentation and its appropriateness to address information needs.

In a SCAMPI C, the data collection plan has the greatest potential for tailoring. The availability of direct or indirect evidence can be augmented with interviews, instruments, or presentations. The amount of objective evidence collected depends on the appraisal objectives. For example, if the appraisal objective is to expose the organization to the appraisal process, both interviews and document review may be warranted. Determining how extensively new practices are implemented may only require interviews or a survey. In low-maturity organizations, the emphasis is often on the organization's priorities, not those of the model, which allows for a lot of leeway in the amount and type of objective evidence collected.

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The "I'm Not Sure I Want Everybody to Know How We Did" SCAMPI[SM]

Objective: The senior manager of an organization inside of an Intelligence Agency wishes to re-validate some previously obtained Capability Levels in 4 CMMI Process Areas and also evaluate additional Process Areas not previously appraised.

But, she wants to be very sure that their target profile will be reached due to "level-centric" perceptions at higher levels of her organization.

One proposal was to execute a "dress rehearsal" SCAMPI[SM]-B to gain confidence that targets levels would be reached and then to execute another SCAMPI-A[SM] to formally generate the levels.

This presents a very high "cost" to the organization. Is there another way?

Hint: Capability Levels are an OPTIONAL output from a SCAMPI[SM]-A appraisal.

Tailoring -1

The appraisal plan was written and approved with a model scope of 9 Process Areas and a target Capability Level of 3

In the Outputs section of the Appraisal Plan, the option for Capability Levels was not chosen

This section identifies artifacts and other appraisal outputs other than those which must be produced in any case.

Check each choice as appropriate to indicate that the corresponding outputs will be produced.

Will Be Generated	Rating Type	Comments
	Discipline-specific findings	
	Discipline-specific ratings	
	Project-specific findings	
	Project-specific ratings	
	Practice Characterizations	
	Process Area Ratings	
	(Process Area) Capability Level rating (s)	
	Maturity Level rating (s)	
	Recommendations on how to address weaknesses	
	Final Appraisal Report	
	Process Improvement Action Plan	
	15504 Process Profile	This option is not currently fully supported by SCAMPI

Tailoring - 2

During the Conduct Appraisal Phase, the potential characterization of practices at the instantiation and organizational levels was closely monitored

After delivery of the preliminary findings, this status was reported to the sponsor for a decision to continue as planned or to generate Capability Levels for ALL Process Areas

Based on the OU characterizations, the sponsor chose to modify the plan and generate Capability Levels.

Outcome: OU Practice Characterizations

	PP	PMC	REQM	RD	TS	PPQA	CM	OPF	OPD
SG1	S	S	S	S	S	S	S	S	S
SP 1.1	FI	FI	FI	FI	FI	FI	FI	FI	FI
SP 1.2	FI	FI	FI	FI	LI	LI	FI	FI	FI
SP 1.3	FI	FI	LI				FI	FI	FI
SP 1.4	FI	FI	FI						FI
SP 1.5		FI	FI						LI
SP 1.6		FI							FI
SP 1.7		FI							
SG 2	S	S		U	S	S	S	S	
SP 2.1	FI	FI		LI	FI	FI	FI	FI	
SP 2.2	FI	FI		PI	FI	FI	FI	FI	
SP 2.3	FI	FI		LI	LI				
SP 2.4	FI				LI				
SP 2.5	FI								
SP 2.6	LI								
SP 2.7	FI								
SG 3	S			S	S		U	S	
SP 3.1	FI			FI	FI		FI	FI	
SP 3.2	FI			FI	FI		PI	FI	
SP 3.3	FI			FI				FI	
SP 3.4				FI				FI	
SP 3.5				FI					

	PP	PMC	REQM	RD	TS	PPQA	CM	OPF	OPD
GG 1	S	S	S	U	S	S	U	S	S
GP 1.1	LI	LI	FI	PI	LI	LI	PI	FI	LI
GG 2	S	S	S	S	U	U	S	S	S
GP 2.1	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.2	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.3	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.4	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.5	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.6	FI	FI	FI	FI	FI	FI	FI	FI	FI
GP 2.7	FI	FI	FI	FI	FI	PI	FI	FI	FI
GP 2.8	FI	FI	FI	FI	FI	LI	FI	FI	LI
GP 2.9		LI	FI	FI	PI	LI	LI	FI	FI
GP 2.10	FI	FI	FI	FI	FI	FI	FI	FI	FI
GG 3	S	S	S	S	S	S	S	S	S
GP 3.1	FI	FI	FI	FI	LI	FI	LI	FI	FI
GP 3.2	FI	FI	FI	FI	FI	FI	FI	FI	FI

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Actions based on outcomes

Organization is focusing on establishing periodic configuration management audits for all projects

Established a working group focusing on requirements and use cases

The "Mendoza Line" SCAMPI-C^{SM}

Objective: The Program Manager has as many as 16 offerors indicating an intention to bid as primes for an upcoming RFP.

He has past experience with source selection SCAMPI^{SM}-B and was pleased with the result, so he wants "to do that again" in order to determine with some level of confidence which offerors are more likely to show greater process capability.

With that information (gathered through an RFI), he wishes to identify those that are "highly competitive" as outlined in the FAR Multi-step Process.

The Challenge

We scoped the appraisal to address the minimum and critical Process areas for the program

Requirements Development: 10 practices

Technical Solution: 9 practices

Product Integration: 9 practices

Generic Practices (CL3): 12 practices

Multiply by 8 Business Units and 3 projects per BU

960 instances to be characterized in approximately 20 hours!

CMMI Scope – Specific and Generic Practices

Requirements Development

- Goal 1, Develop Customer Requirements, is excluded
- Establish Product Requirements
- Allocate Requirements to Components
- Identify Interface Requirements
- Establish CONOPS and Scenarios
- Validate Requirements

Technical Solution

- Evolve CONOPS and Scenarios
- Design the Product
- Establish Tech Data Package
- Design Interfaces
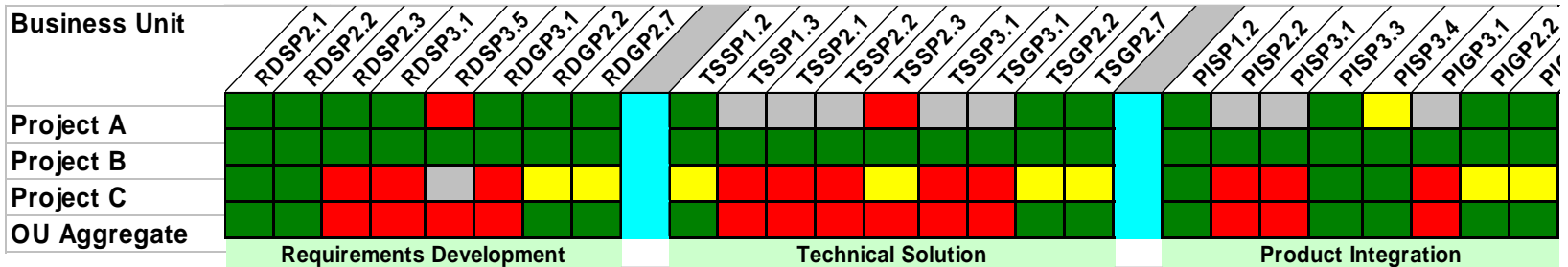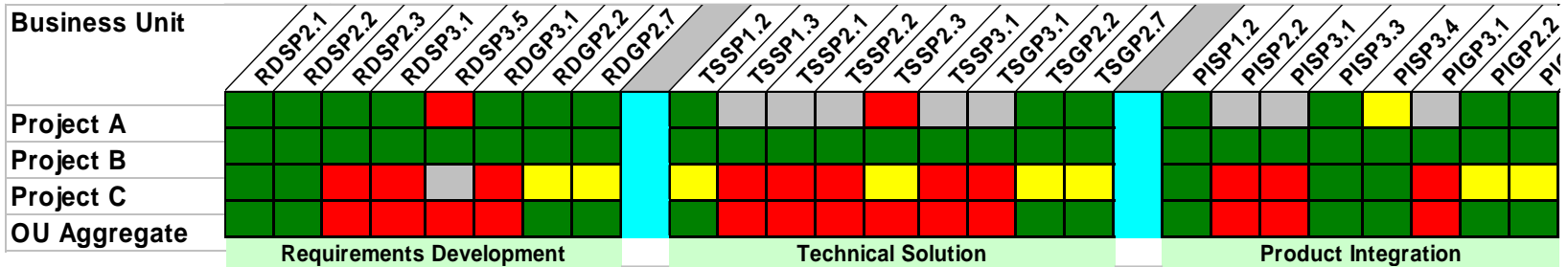- Implement the Product Design

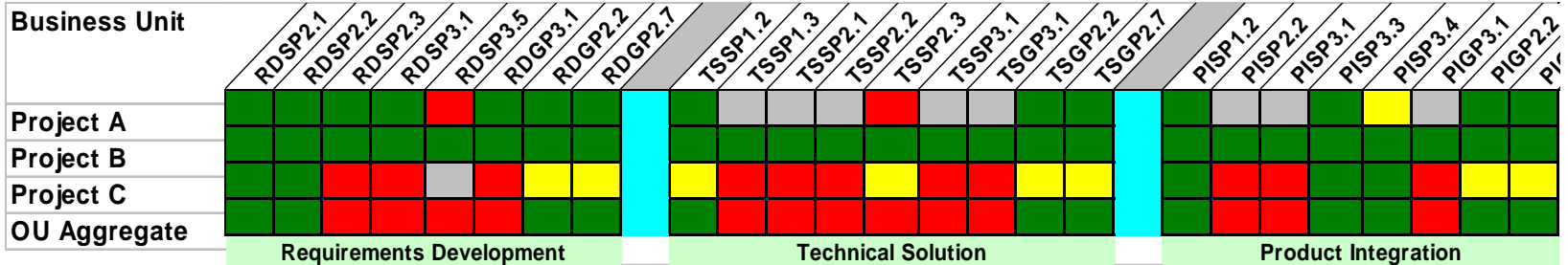## Product Integration

- Establish Integration Environment
- Manage Interfaces
- Confirm Product Readiness for Integration
- Evaluate the Assembled Product
- Package and Deliver the Product

Generic Practices for Each Process Area

- CL3: Establish and Maintain Organizational Processes
- CL2: Plan the Process
- CL2: Involve Relevant Stakeholders

Final CMMI® Scope: 25 Practices per Business Unit

Outcome

	Establish Product Requirements	Allocate Product Requirements	Identify Interface Requirements	Establish CONOPS and Scenarios	Validate Requirements	Establish a Defined Process for RD	Plan RD Process	Involve Stakeholders in RD Process		Evolve CONOPS and Scenarios	Select Product Solutions	Design the Product	Establish Tech Data Package	Design Interfaces Using Criteria	Implement the Design	Establish a Defined Process for TS	Plan TS Process	Involve Stakeholders in TS Process		Establish Integration Environment	Manage Interfaces	Confirm Readiness for Integration	Evaluate Assembled Product	Package and deliver Product	Establish a Defined Process for PI	Plan PI Process	Involve Stakeholders in PI Process	
Offeror #1	H	H	H	H	H	H	H	H		H	H	H	H	H	H	H	H	H		H	H	H	H	H	H	H	H	
Offeror #2	H	H	H	H	H	H	H	H		H	H	H	H	H	H	H	H	H		H	H	H	H	M	H	H	H	
Offeror #3	H	H	H	H	H	H	H	H		H	M	H	H	H	H	H	H	H		H	H	H	H	H	H	H	H	
Offeror #4	H	H	H	H	H	M	H	H		H	H	H	H	H	H	M	H	H		H	H	H	H	M	M	H		
Offeror #5	H	H	L	L	L	L	H	H		H	L	L	L	L	L	L	H	H		H	L	H	H	L	H	H	
Offeror #6	H	L	H	L	L	H	L	L		L	L	L	L	L	H	L	L		M	L	L	H	H	L	L		
Offeror #7	L	L	L	L	L	L	L	L		L	L	L	L	L	L	L	L		L	L	L	L	L	L	L	
Offeror #8	L	L	L	L	L	L	L	L		L	L	L	L	L	L	L	L		L	L	L	L	L	L	L	
	Requirements Development									Technical Solution										Product Integration								

The "Not Yet Ready for Prime Time" SCAMPI-C^{SM}

Objective: The senior manager of an organization requests that a SCAMPI-C^{SM} Appraisal be conducted to gauge the readiness of the organization for planned SCAMPI-B^{SM} and SCAMPI-A^{SM} appraisals.

At the same time, there are 2 process areas that have not yet been deployed, but where a "process review" would be helpful to the organization.

Tailoring

There will be no interviews conducted.

A team (not required) will be used.

Mini-teams will work in user spaces to gather objective evidence in "discovery mode".

For most process areas, Capability Level 3 will be targeted when collecting evidence.

For process areas under "process review", Capability Level 0 will be targeted since no artifacts (other than pilot results) will be available.

Findings will be in the form of "if deployed and implemented as defined" statements.

Outcome

	RD	TS	CM
SP 1.1	green	red	green
SP 1.2	green	red	green
SP 1.3			green
SP 1.4			
SP 1.5			
SP 1.6			
SP 1.7			
SP 2.1	green	green	yellow
SP 2.2	green	yellow	green
SP 2.3	green	yellow	
SP 2.4		red	
SP 2.5			
SP 2.6			
SP 2.7			
SP 3.1	yellow	green	yellow
SP 3.2	yellow	green	red
SP 3.3	green		blue
SP 3.4	yellow		blue
SP 3.5	green		

	RD	TS	CM
GP 2.1	yellow	green	green
GP 2.2	green	green	green
GP 2.3	green	green	green
GP 2.4	green	green	green
GP 2.5	green	green	green
GP 2.6	green	green	green
GP 2.7	green	green	green
GP 2.8	green	green	yellow
GP 2.9	yellow	yellow	red
GP 2.10	green	green	green
GP 3.1	yellow	red	light green
GP 3.2	green	yellow	green

MA Finding: If the organizational Measurement processes are deployed and implemented at the project level, projects will consult the guidebook, choose the relevant measures aligned with objectives, and include these in their project plans.

Artifacts Found	Weaknesses Found	No Artifacts Found

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Summary

In fact, all three (SCAMPI^{SM}-A, -B, -C) have significant tailoring options and provide the flexibility for many uses by acquisition organizations for evaluation of supplier processes as well as product development organizations seeking process improvement.

A thorough understanding of the SCAMPI^{SM}-A Method Description Document (MDD) and the SCAMPI^{SM} B/C Handbook along with the appraisal goals of any organization provides the flexibility for any number of tailored appraisals to satisfy those goals.