# The Federal Aviation Administration Integrated Capability Maturity Model® (FAA-iCMM®) Appraisal Method (FAM) Version 2.0


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The Federal Aviation Administration Integrated Capability Maturity Model® (FAA-iCMM®) Appraisal Method (FAM) has been developed in part by adapting some portions of the following documents.

*Software Capability Evaluation, v3.0 Method Description,* Paul Byrnes and Mike Phillips, CMU/SEI-96-TR-002, April 1996.

*Interim Profile: Development and Trial of a Method to Rapidly Measure Software Engineering Maturity Status,* Roselyn Whitney et. al, CMU/SEI-94-TR-4, March 1994.



In addition, *ISO/IEC 15504-2:2003 Information Technology – Process Assessment – Part 2: Performing an assessment* is used in Appendix F to demonstrate conformance with ISO/IEC 15504-2 requirements.



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# To the Reader

**Abstract**

The purpose of this document is to provide a rigorous appraisal method to use with the Federal Aviation Administration Integrated Capability Maturity Model (FAA-iCMM). This FAA-iCMM Appraisal Method (FAM) describes each activity of a formal FAA-iCMM-based appraisal and also provides alternative appraisal variations plus descriptions of when and how to use all of them appropriately during implementation of FAA-iCMM-based process improvement. Separately available toolkits contain additional guidance material, tools, templates, forms, and training materials for each type of appraisal.

**Who should use FAM?**

Enterprises, organizations or projects performing engineering, acquisition, and management are candidates for using the FAA-iCMM and the FAM. The FAM can be used as the starting point of an effort to improve processes used to provide products and services to internal or external customers. The FAA-iCMM is focused on the needs of four primary groups:

- practitioners,
- process developers,
- individuals charged with appraising how specific organizations implement their processes, and
- managers.

These are also the key groups that will be interested in these appraisals.

**What is the scope of FAM?**

The scope of the FAM includes variations and guidance for appraisals throughout the implementation of a process improvement effort from startup to the achievement of high maturity. This document is a process description for the FAM, not a training manual. Some materials are included that support appraisal training or the development of appraisal training materials; however, it is *not* the intent of this document or its toolkits to be a substitute for appraisal training.

**How should it be used?**

The FAM description was developed to support self-appraisal and third-party appraisal or external evaluation of an organization against the FAA-iCMM.

# To the Reader, continued

**The term "appraisal"**

We use the generic term "appraisal" for this method since through the method and its variations it encompasses both internal appraisals (sometimes called "assessments") and external third-party appraisals (sometimes called "evaluations").

**What's new in FAM v2.0**

Version 2.0 incorporates lessons learned from using FAM v1.0, updates the method for compliance with ISO/IEC 15504 and Appraisal Requirements for CMMI, and adds 6 new appraisal variations. The FAM Lead Appraiser process is also included as a new appendix.

**Who developed FAM?**

The Federal Aviation Administration (FAA) with supporting team members from TRW/SETA and the Software Engineering Institute (SEI) developed the FAM v1.0. The author team and affiliations are:

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# To the Reader, continued

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**For further information**

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# Chapter 1: Introduction to the FAA-iCMM Appraisal Method

**Overview of document**

This document contains basic information on the FAA-iCMM appraisal method (FAM). It is structured into three chapters and appendices.

- Chapter 1 contains the appraisal context, overview of the method and its variations, and role descriptions.
- Chapter 2 contains process descriptions of each of the major activities in the full internal appraisal. The major activities fall within three phases: "Plan and Prepare for the Appraisal," "Conduct Appraisal," and "Report Results."
- Chapter 3 contains process descriptions of 11 alternative types of appraisals (variations), with cross-references to the full internal appraisal.
- The appendices contain a glossary, references, traceability to the Appraisal Requirements for CMMI, change history and a change request form for this document, traceability to ISO/IEC 15504-2 requirements, and FAM Lead Appraiser Requirements.

Separately available appraisal guidance and toolkits provide additional guidance, training materials, tools, forms and templates. Appendix E enumerates these appraisal aids.

**In this chapter**

The following table provides a guide to the information found in this chapter.



| Topic | See Page |
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## 1.1 Summary of the FAA-iCMM Appraisal Method

**Introduction**

This section provides a brief overview of the phases of a full FAA-iCMM appraisal. Each of these phases is provided as a series of process activities in Chapter 2 with additional "how-to" guidance in the toolkit. To meet the specific needs and constraints of an organization wishing to perform an FAA-iCMM appraisal, there are eleven (11) appraisal variations. The variations are overviewed in Section 1.2 and described in Chapter 3. Tailoring is encouraged for all of these, with example materials and templates in the toolkit.

**Appraisal purposes**

Appraisals are typically performed

- to focus, motivate, direct, and/or launch improvement within the organization,
- as a diagnostic to determine status compared to a model or standard, or
- to form a baseline for, or to track, self-improvement.

An appraisal will typically identify strengths and weaknesses in the appraised entity's process and produce a process capability profile that compares the appraised entity to a standard (the FAA-iCMM). It may also identify process assets and relate them to the model.

Because of the way the FAA-iCMM was constructed, i.e. to capture all features of the source models that were integrated, FAA-iCMM appraisal results will be consistent with appraisals conducted against the source models as applicable. Thus a rating on an FAA-iCMM process area would indicate achievement of an equivalent or greater capability relative to that rating on the source process areas that were used in developing that process area.

# 1.1 Summary of the FAA-iCMM Appraisal Method, continued

**Appraisal selection and scope**

The appraisal method or variation is selected to meet the organization's appraisal objectives. These will depend on the appraised entity's process improvement context (see section 1.2) as well as desired appraisal scope.

Appraisals can be focused on almost any business unit of an enterprise: a specific project, program, strategic business unit or line of business, or the entire enterprise. Scope is based upon the sponsoring organization's goals.

Three major aspects of appraisal scope are the model (process areas/application area, capability levels, maturity levels), entity appraised (projects included, etc.), and life cycle coverage (mission analysis, investment analysis, solution implementation, in-service management, or the whole life cycle). These have a significant impact on the duration and resources required for the appraisal that in turn help select the appropriate variation and its tailoring.

**Results**

The primary work products of a FAA-iCMM appraisal are a findings briefing and an appraisal report. The findings address both strengths and weaknesses of the appraised entity, and may include a capability level for each process area appraised (a process capability profile). The appraisal team may write an appraisal report after the final briefing that includes more detail on each of the findings and specific recommendations for process improvement based on the findings.

Findings are presented in different ways, depending on the appraisal method chosen, as described in section 1.2, and in Chapters 2 and 3.

# 1.1 Summary of the FAA-iCMM Appraisal Method, continued

**Phases**

Table 1-1 lists the phases of the appraisal process. The steps for each phase are fully described in Chapter 2. Figure 1-1 shows the overall process flowchart for a full internal appraisal in accordance with the Chapter 2 process description. Figures 1-2 through 1-4 provide activity descriptions for each phase (see each appraisal type description for alternative appraisal type steps).

| Phase | Description |
|---|---|
| Plan and Prepare for the Appraisal | The activities done in preparation for an appraisal |
| Conduct Appraisal | The activities done in data gathering, analysis, and presentation. |
| Report Results | The activities done after the appraisal briefing. |

**Table 1-1. Appraisal Phases**

**Plan and Prepare for the Appraisal**
- Obtain Sponsor Commitment
- Select Appraisal Organizational Scope
- Select Appraisal Team
- Plan Appraisal Details
- Orient Participants
- Train Team
- Obtain and Analyze Preliminary Evidence

↓

**Conduct Appraisal**
- Conduct Opening meeting
- Conduct Interviews
- Review Documentation
- Consolidate Data
- Develop Draft Findings
- Present Draft Findings
- Develop Ratings
- Develop Final Briefing
- Brief Sponsor
- Present Final Briefing
- Conduct Wrap-Up

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**Report Results**
- Prepare and Deliver Appraisal Report
- Manage Records

**Figure 1-1. Full Internal Appraisal Flowchart**

# 1.1 Summary of the FAA-iCMM Appraisal Method, continued

**Plan and Prepare Phase**

Figure 1-2 summarizes the steps in the Plan and Prepare for Appraisal phase.

**Obtain Sponsor Commitment**
- Understand customer needs
- Brief the iCMM and appraisal method
- Propose appraisal solution
- Agree on basics
- Record commitments

**Select Appraisal Organizational Scope**
- Collect project/organization data
- Identify organization scope
- Select organizational appraisal representative
- Make preliminary arrangements
- Document preliminary plan

**Plan Appraisal Details**
- Obtain/use planning tools
- Finalize participants
- Develop detailed schedule
- Finalize schedule
- Finalize budget
- Identify appraisal risk
- Document plan
- Select/develop questionnaires
- Request documentation
- Approve plan

**Select Appraisal Team**
- Identify team member candidates
- Screen candidates
- Select team members

**Train Team**
- Conduct team building
- Provide overview
- Provide organizational orientation
- Review FAA-iCMM
- Review FAM

**Orient Participants**
- Conduct orientation briefing

**Obtain and Analyze Preliminary Evidence**
- Administer Questionnaire
- Collect preliminary evidence
- Analyze questionnaire evidence
- Analyze documentation evidence
- Record results
- Evaluate readiness
- Develop exploratory questions
- Request information

**Figure 1-2. Plan and Prepare for Appraisal Phase**

# 1.1 Summary of the FAA-iCMM Appraisal Method, continued

**Conduct Appraisal Phase**

Figure 1-3 summarizes the steps in the Conduct Appraisal phase.

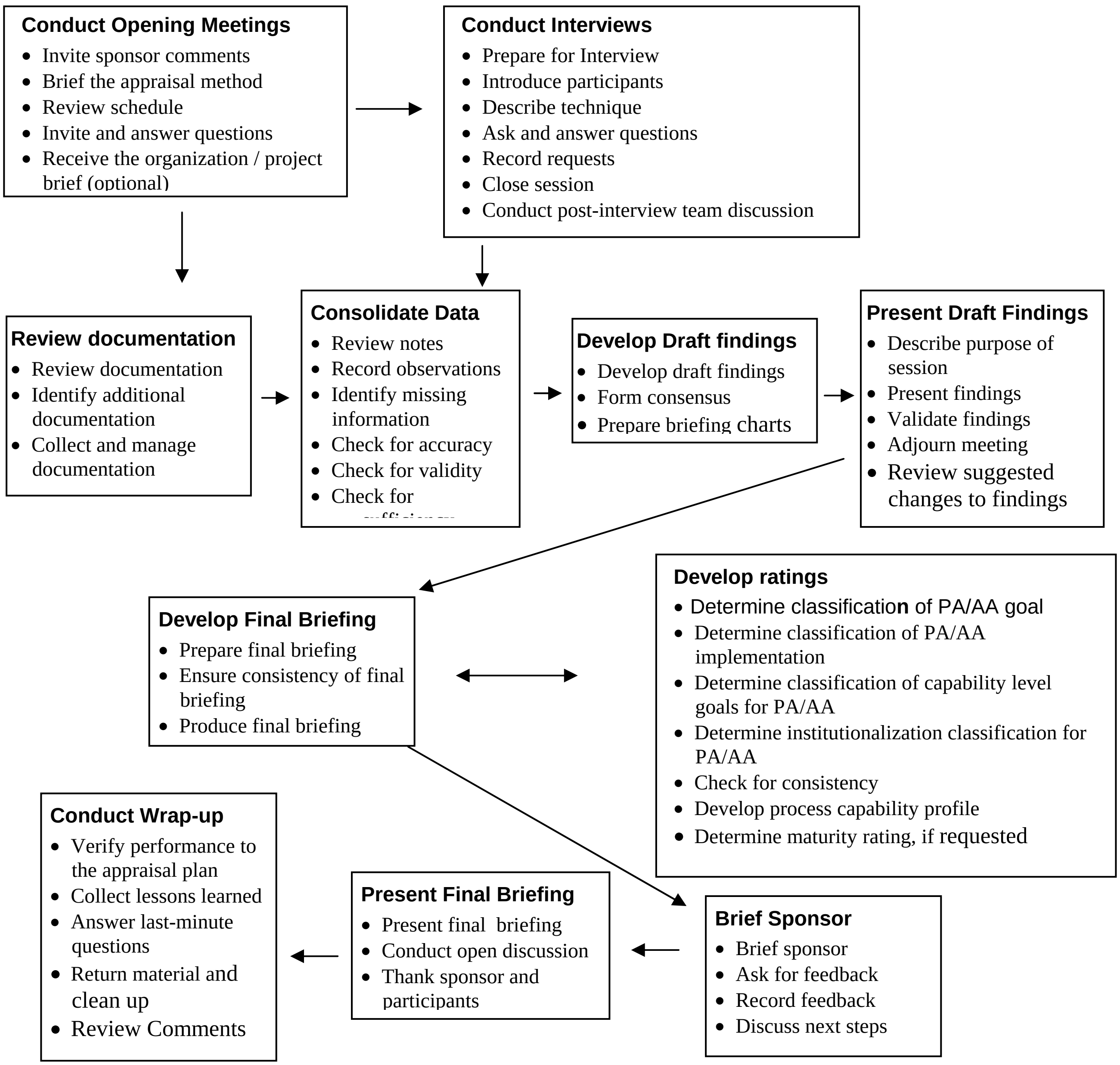


**Figure 1-3. Conduct Appraisal Phase**

**Report Results Phase**

Figure 1-4 summarizes the steps in the Report Results Phase.

**Prepare and Deliver Appraisal Report**
- Review final briefing
- Plan the preparation of the report
- Write the report
- Review/revise the report
- Distribute/deliver the report

↓

**Manage Records**
- Gather materials
- Transfer materials to be kept
- Arrange organization feedback
- Destroy unwanted materials

**Figure 1-4. Report Results Phase.**

## 1.2 Context and Usage

**Introduction**

This section presents the underlying assumptions about the context of process improvement that are relevant to using FAM.

**Assumptions**

This FAM description is based on the following assumptions:

- Appraisals are performed in the context of an organizational process improvement effort, and the type and tailoring are dependent on where in the organizational process improvement cycle the organization is.
- Readers are familiar with the content and concepts of the reference model used for the appraisal (i.e., *The FAA Integrated Capability Maturity Model (FAA-iCMM)* or other models with similar architectural components).
- FAM appraisal team leaders have been trained in this appraisal method.
- Although FAM can be tailored to self-improvement, external evaluation, or combined with an ISO 9000 audit, the intent of the model and appraisal method is self-improvement.

**Process improvement context**

Appraisals fit in the broad context of a process improvement program. Figure 1-5 presents an approach for process improvement programs. The FAA has adapted and adopted this approach from [ISO/IEC TR 15504-7:1998(E)]. Each step is briefly explained below.

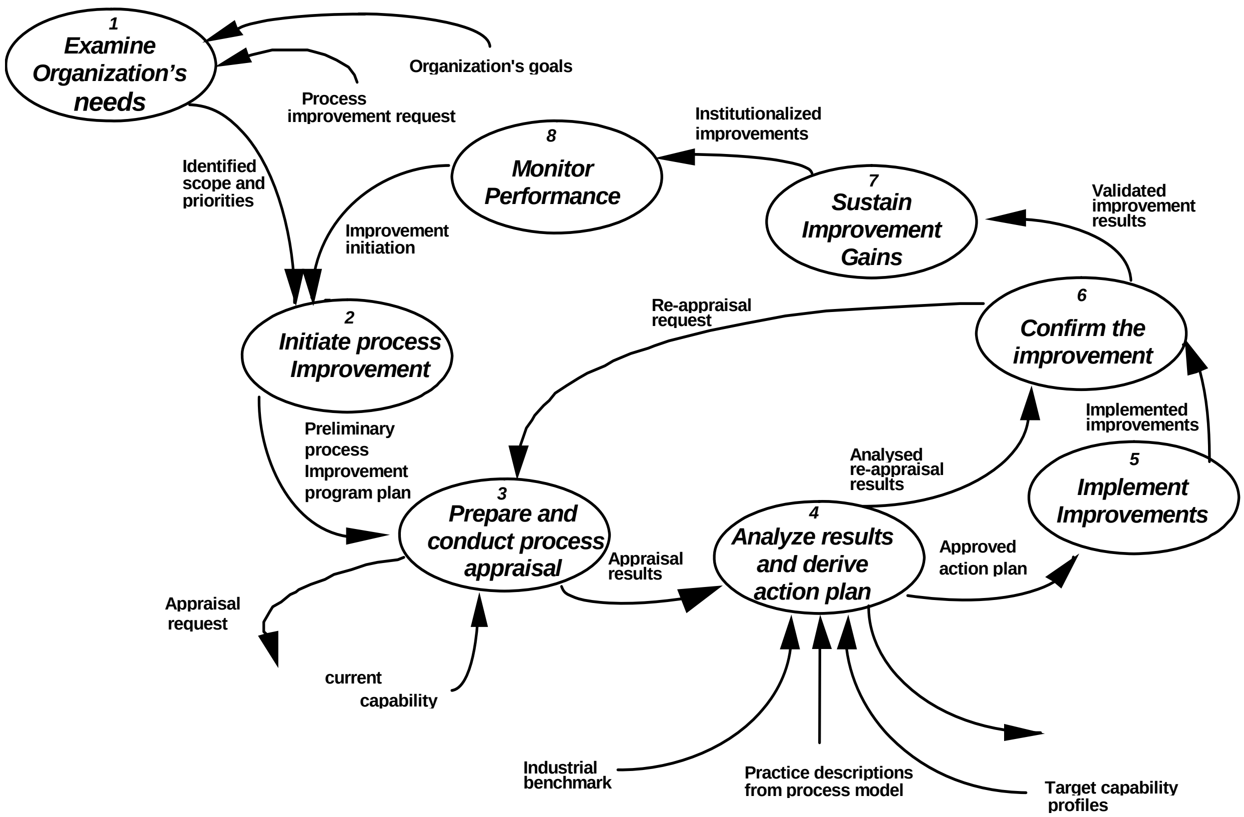


**Figure 1-5. Process Improvement Approach**

| | |
|---|---|
| ***1. Examine organization's needs*** | Purpose: Ensure process improvement is aligned with organization's needs<br>Output: Quantitative process improvement goals tied to organization's business plan |
| ***2. Initiate process improvement*** | Purpose: Ensure plan is laid out and infrastructure is in place<br>Outputs: Preliminary program plan; charters; empowerment letters; resources; technical strategy (FAA-iCMM and FAM) |
| ***3. Prepare and conduct appraisal*** | Purpose: Determine current situation<br>Output: Appraisal results |

| | |
|---|---|
| ***4. Analyze results and derive action plan*** | Purpose: Decide on improvements and plan accordingly<br>Outputs: Quantitative improvement targets; action plan, integrated with revised program plan; commitment to undertake planned improvements |
| ***5. Implement improvements*** | Purpose: Carry out projects to improve processes<br>Outputs: Project plans; improved processes; measures; process definitions, checklists, lessons learned, tailoring guidelines, training materials, sample documents |
| ***6. Confirm improvement*** | Purpose: Confirm improvement achieves goals and organization is ready for widespread use<br>Output: Reappraisal results (on specific processes); measures; validated results |
| ***7. Sustain improvement gains*** | Purpose: Institutionalize and monitor the improvement<br>Output: Deployment plan; improved process assets entered into process asset library; widespread training on improved process; coaching and monitoring; measures |
| ***8. Monitor performance*** | Purpose: Ensure program and projects remain appropriate; improve process improvement process<br>Output: Further improvement initiatives; lessons learned |

**Appraisals in improvement**

As illustrated above, appraisals are conducted to establish baseline measures of process capability and derive action plans (steps 3 and 4 above). Improvements are also reconfirmed via reappraisals (step 6).

Appraisals are always about comparing practices actually performed against a standard. The intended result is that appraisals lead to better performance.

**Application of Appraisals**

There are twelve types of appraisal described in this manual. They are designed to meet a variety of process improvement needs for an organization. The full internal method is the standard method of which the other types are variants. This method is described in Chapter 2. The other appraisal types are described in Chapter 3.

The appraisal types and their purposes are summarized in Table 1-2. Then each type is more fully described.

| Appraisal Type | Purpose |
|---|---|
| Full internal (FI) | Establish or reestablish a formal baseline of actual practice in the organization. Formal comparison of practices to the model. |
| Facilitated Discussion (FD) | Formulate process descriptions and implementation plans for a process area. |
| Document-Intensive (DI) | Check the completeness and quality of supporting documentation and artifacts. |
| Questionnaire-based (QBA) | Check on process improvement progress based mainly on questionnaire results analyzed by an appraisal team, with feedback and discussion sessions included. |
| Interview-based (IB) | Gather momentum of staff to do improvement by uncovering major process improvement issues or barriers to change. |
| Full external (FE) | Carry out a formal appraisal of an external organization's practices, based on the model. |
| Value Analysis (VA) | Explore the value and effectiveness of processes. |
| Gap Analysis Process (GAP) | Identify gaps between an organization's actual performance and the model, typically in preparation for a full internal appraisal. |
| Formal Appraisal Readiness Review (FARR) | Follow up to a Gap Analysis Process to determine if gaps were closed and the organization is likely to achieve its capability level objectives in a full internal appraisal. |
| Delta (DELTA) | Determine whether an organization has corrected weaknesses from a full internal appraisal. |
| FAA-iCMM : ISO 9001 (FAM:ISO) | Concurrently appraise against the FAA-iCMM and audit against ISO 9001 to achieve efficiency benefits from common data collection. |
| Self-appraisal (SELF) | Measure extent of implementation of practices by means of a web-based questionnaire type appraisal self administered by an organization. |

**Table 1-2. Appraisal Types and Usage Characteristics**

## 1.2 Context and Usage, continued

**Obtaining a quick-look via Self-appraisal**

The Self-appraisal provides an efficient way for an organization or project to quickly obtain information on the performance of base practices for selected process/application areas. This type of appraisal uses a web-based survey tool supported by a report generator. Appraisals are managed by the organization and no appraisal team is required. The appraisal reports indicate the percent of practices implemented (based on statistical rules built into the report tool) for selected process/application areas and identify problem practices as well as issues with staff knowledge of processes. Because of the low effort required to conduct an appraisal (~ 30 minutes per participant) the Self-appraisal is an ideal way to explore the use of the FAA-iCMM and check for process issues. The Self-appraisal is described in section 3.11.

**Organizational baseline via Full Internal Appraisal**

At the organization-wide level of interest, a full internal appraisal will generally be used to diagnose the current situation, establish an organizational baseline of actual practice in the organization, and identify the priority needs of the organization for process improvement. This step may come first, if executive or organizational awareness is needed about process improvement, or it may come after some process establishment and improvement has occurred to check on progress and distribution of the improved processes. The full internal appraisal should focus the organization on the widest possible scope of improvement to gain the benefits of economy of scale. The full internal appraisal is described in Chapter 2. It is designed to be conformant with ISO/IEC 15504 and the Appraisal Requirements for CMMI.

**Resolution of appraisal issues via Delta Appraisal**

A full internal appraisal may result in significant weaknesses that prevent an organization from achieving its appraisal objectives. In such cases, and after an organization has corrected the weaknesses, a Delta appraisal may be conducted (within six months of the original appraisal) with the objective of demonstrating that all significant weaknesses have been corrected. The Delta appraisal re-examines weaknesses and samples other areas to confirm elimination of the weaknesses and maintenance of strengths. Capability and maturity level ratings from the original appraisal may be adjusted as appropriate. The Delta appraisal is described in section 3.9.

**Process description via Facilitated Discussion**

When an organization needs to create some process descriptions, a Facilitated Discussion appraisal method is very appropriate. This method identifies the practices and goals currently satisfied in an individual process area (the "as-is" process description), provides a "to-be" (compliant) process description, and an implementation plan that the organization element(s) responsible for the process can use to deploy the compliant process. This method is described in Section 3.1.

**Tracking improvement via Questionnaire-based Appraisals**

Once improvement efforts have been underway, a questionnaire-based appraisal provides periodic tracking of the improvement's implementation. These should not be performed any more frequently than quarterly for any particular process area efforts. Accuracy may be somewhat low early in the improvement efforts, but sampling can provide a sufficiently accurate "snapshot" to indicate to management whether intervention is needed or not. Sometimes this is used to remind practitioners in the improvement effort that management is interested in their work and results. Unlike the Self-appraisal described above, the Questionnaire-based appraisal employs an appraisal team and achieves a degree of validation through draft findings feedback and discussions with project representatives. This type of appraisal is described in Section 3.3, and is based on the Interim Profile method (IP).

**Focusing improvement efforts via Interview-based Appraisals**

An interview-based appraisal can be conducted to uncover the most important issues to resolve. These appraisals are less comprehensive than full appraisals but can still build consensus for adjustments in improvement focus. This type of appraisal is described in Section 3.4, and it is partly based on SE-CMM Appraisal Method (SAM).

**Preparing for a full appraisal via Document-intensive Appraisals**

Full internal appraisals require documentation, artifacts, and other evidence or proof of performance of practices or goal satisfaction. The document-intensive appraisal organizes and verifies completeness of the set of documentation typically in preparation for a full appraisal or just to formalize the process asset repository or library. It may be a periodic process group exercise or training exercise to orient new process improvement staff. This appraisal type is described in Section 3.2.

**Preparing for a full appraisal via Gap Analysis Process and Formal Appraisal Readiness Reviews**

The gap analysis process and formal appraisal readiness review appraisals provide a more in-depth preparation for a full appraisal. The gap analysis process, similar to the full internal appraisal, includes dialog with participants and document reviews to probe for gaps between an organization's performance of model practices and the FAA-iCMM. Once this process is completed and the organization asserts that any weaknesses have been corrected, a formal appraisal readiness review is conducted to validate the correction of weaknesses and estimate the probability of success for a full internal appraisal. These appraisal types are described in sections 3.7 and 3.8.

**Organizational Evaluation via Full External Appraisals**

Full external appraisals determine the process capability of the organization. They are similar to full internal appraisals, but are performed by others typically to evaluate the external organization's capability. This appraisal type is described in section 3.5. It is partly based on the CMM-Based Appraisal for Software Capability Evaluation (SCE) method.

**Concurrent FAA-iCMM appraisal and ISO 9001 audit via FAA-iCMM : ISO 9001 Appraisal**

Due to the similarity of material (practices/clauses) in the FAA-iCMM and ISO 9001, it can be very efficient to combine data collection activities and obtain an audit for nearly the effort of just an appraisal (or vice versa). Accordingly this appraisal type is designed for organizations that are either using both the FAA-iCMM and ISO 9001, or organizations that are using one and wish to see how they stand against the other for very little additional effort. This type of appraisal is described in section 3.10.

**Measuring Process Value and Effectiveness via Value Analysis Appraisals**

Value Analysis appraisals are used to determine how well processes are meeting organizational needs and to help prioritize areas for process improvement. Process performance results are measured, independently of capability or maturity level. These appraisals can be performed for single or multiple process areas and combined with other appraisal types or performed stand-alone. Key Results are identified for process areas being investigated, along with the users and producers of the Key Results. Users of Key Results are then asked to rate the usefulness of results and the producers of the results are asked to rate the efficiency of producing the results, as compared with planned or benchmarked resources. Value Analysis appraisals are described in section 3.6.

**Case Studies**

In order to elaborate the usage of the FAM and its variations, the following hypothetical scenarios are provided. Naturally, other scenarios are possible depending on the needs and culture of the organization.

**Case 1**

An organization, AXX, has considered and is committed to a process improvement program. AXX believes that it is in fairly good shape with respect to the appropriate process areas of the FAA-iCMM with which it is involved. AXX staff believe that they have experience in the practices of the FAA-iCMM and that their documentation is adequate. Because of this, and the fact that the director wants to know where they stand with respect to the FAA-iCMM, they have decided that a full internal FAM is required. The FAM results are fairly good, justifying their approach, and they next want to create a formal process improvement program. Based on the FAM results, they have selected several process areas to focus on. In order to build process descriptions and implementation plans for these process areas, AXX has decided to employ the facilitated discussion (FD) method.

After about nine months, AXX wishes to take a quick check on results. They do not believe that a full FAM is necessary at the time so they opt for a questionnaire-based appraisal (QBA). If the QBA results are good they will add additional process areas to their improvement program, again using the FD method to develop implementation plans. They also decide to evaluate and baseline their documentation progress via a document intensive (DI) appraisal. The DI results are integrated into their improvement program efforts and they plan on conducting another full internal FAM to re-baseline their process against the FAA-iCMM in the 18-24 month period since the improvement program began.

Note that the timeline for this case is about two years. The organization may wish to spread this out depending on resources, implementation schedule, and organizational goals. Notice that three FAM variations were employed, along with the full internal FAM.

**Case 2**

In this case, the organization, AYY, is not sure about proceeding with a full process improvement program but recognizes that it has engineering, acquisition, and management issues. They believe it is more important to focus on major issues before taking the plunge into a formal program. Because of this, they decide that the interview-based (IB) method is the appropriate one for them at this point. AYY decides to tackle two issues uncovered in the IB appraisal, directly related to process areas in the FAA-iCMM. They employ the FD method to develop their process improvement plans. In about nine months AYY decides it is time to check the progress of this program. To get a quick check, they decide to employ the QBA method.

The results are good, and AYY is now comfortable with process improvement. They decide to pursue their process improvement efforts with increased intensity and request that a full internal FAM be conducted to baseline their practices against the FAA-iCMM.

Note that the timeline for this scenario is about one year. Notice that three FAM variations were employed, along with the full internal FAM.

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**Case 3**

In this case, organization, AZZ was just beginning to think about systematic improvement of their capability to perform the assigned mission. They were looking at using a capability maturity model or ISO 9001 or possibly both. The organization's main concerns were:

- applicability and coverage of the selected improvement standard(s)
- cost of the improvement program
- impact to ongoing activities
- ability to demonstrate benefits of the improvement program

Looking at the FAA-iCMM, the organization representative responsible for looking into improvement options noticed that the Self –appraisal would be a low cost/low impact way to try out the FAA-iCMM. By performing a Self-appraisal, a sizeable fraction of the organization staff could participate, taking only about 30 minutes of their time. Staff feedback (and buy-in should the model be selected) would be obtained regarding relevance to the AZZ products and services, clarity of the terminology, and overall staff impression of the model.

**Case 3, continued**

AZZ conducted a Self-appraisal, targeting 70% of the staff. There was some typical grumbling: "What is this?...I'm busy!...this too shall pass!" However, feedback from the staff was generally favorable and the Manager of AZZ was a little surprised by a result indicating that most of the staff were relatively uninformed about the results of quality assurance activities.

Based on reactions to the Self-appraisal and further review of the model's coverage of the AZZ life cycle activities, as well as the low cost of training and available appraisal services, the FAA-iCMM was selected as a reference for improvement. The use of ISO 9001 was deferred, though it was noted that a joint appraisal/audit method was available.

**Case 4**

In this case, the BAA organization had been using the FAA-iCMM for several years to baseline and improve selected process areas critical to their business. They had been appraised at maturity level 2 about 10 months ago, using the Full Internal Appraisal method. BAA became aware of an opportunity to support a larger organization, CRR, developing a new service for its customer. This opportunity would allow BAA to grow some in size, and more importantly, demonstrate its evolving capabilities. A particular concern was coordination of processes for the two organizations. CRR had recently achieved maturity level 2 with the FAA-iCMM and capability level 3 in Project Management, Configuration Management, and Quality Assurance and Management. Since BAA had been considering additional initiatives in their process improvement program anyway, they opted for an improvement effort paralleling CRR's process capability

Advancing the three process areas from capability level two to capability level three in a little less than a year was judged to be reasonable. However, there would be no time for remedial process improvement, in order to nail down the role with CRR, if there were problems. To manage the risks relating to meeting the objectives, BAA planned for a Gap Analysis Process (GAP) appraisal in month 7, a Formal Appraisal Readiness Review (FARR) appraisal in month 10 and a Full internal appraisal in month 12, for the three process areas. In addition to lower risk for the process improvement effort, this plan would provide CRR with ongoing visibility into BAA progress.

**Case 5**

In this case, the NAA organization had been conducting a process improvement program for a number of years and had been operating at maturity level 3 for about two years. The quality of NAA's products and services was considered better than satisfactory; however overall program costs were steadily increasing and cost reduction efforts had not been as effective as hoped.

As part of the ongoing process improvement program, a Value Analysis (VA) appraisal was conducted on the Quality Assurance and Management and Evaluation process areas. Test monitoring was selected as the Key Result for focusing the appraisal of value and effectiveness relating to the quality assurance processes. In preparation for the appraisal, NAA conducted benchmarking activities with a number of external organizations. Information was shared among the organizations on the resources expended in quality assurance monitoring of product level dry run and formal testing (normalizing the results by the number of requirements tested). During the VA appraisal, data were then collected from quality assurance staff on the effort expended in test monitoring. Comparison of the appraisal results with the benchmark data showed NAA was spending about 20% more than the benchmark average. This appraisal result led to an in-depth investigation on why the test monitoring cost was relatively high and what might be done about it. As a result, NAA was able to make changes in its quality assurance test monitoring process that reduced the cost.

The new process underwent a trial period to determine whether there would be any adverse effects on product quality. The investigation leading to the new process focused attention on NAA's practice of having both systems engineering staff and quality assurance staff perform 100% monitoring and reporting of the product testing. The new process retained the systems engineering test monitoring coverage, but reduced the quality assurance test monitoring to 15% sampling of test cases.

## 1.3 Appraisal Roles

**Roles**

Table 1-3 defines the roles that are typically involved in an appraisal. The responsibilities and functions performed by each of the roles are further defined in Chapter 2. Multiple roles may be assigned to one person as appropriate. Roles may vary for the different appraisal types, as described in Chapter 3.

| Role Name | Description |
|---|---|
| Appraisal advocate | Individual who advocates the appraisal to the sponsor and management groups and obtains the commitments for the appraisal. The advocate usually provides the site coordinator and engages the sponsor or others in removing any obstacles that may be encountered. |
| Sponsor | Individual who provides the resources for the appraisal and the commitment to the process improvement effort in the organization being appraised. The sponsor shows commitment by<br>• participating in both the opening and closing meetings of the Conduct Appraisal phase<br>• approving the appraisal plan and resources to perform the appraisal<br>The sponsor receives and owns appraisal results and commits to act upon them. |
| Appraisal team leader (ATL) | Team member who<br>• Is verified by the FAA Chief Engineer for Process Improvement and the sponsor as having the necessary competence and skills to lead, perform or oversee the appraisal (see also Appendix G)<br>• Provides appraisal materials and guidance as needed<br>• Trains the appraisal team on the model and method<br>• Leads the appraisal process<br>• Provides FAA-iCMM and FAM expertise<br>• Has experience managing teams, facilitating discussions, using the appraisal method, and preparing and making presentations<br>• Verifies the FAM method or variation is being followed |

**Table 1-3. Appraisal Roles**

| Role Name | Description |
|---|---|
| Organization appraisal representative (OAR) | Team member who<br>• Is looked to as the organizational or site expert<br>• Is the point of contact for the team, especially for follow-up activities. |
| Appraisal team | The appraisal team consists of those who conduct the appraisal. This group includes the following roles:<br>• Appraisal team leader<br>• Organization appraisal representative<br>• Team members drawn from the organization being appraised<br>• Team members external to the organization being appraised |
| Data Manager | Team member who<br>• Tracks document requests and coordinates receipt and return with the site coordinator during the Conduct Appraisal phase<br>• Manages documents and artifacts requested by the team during the Conduct Appraisal phase<br>• Oversees records disposition during Report Results phase |
| Timekeeper | Team member who<br>• supports the appraisal team leader by reminding the team of time constraints during sessions.<br>Typically the timekeeper will note halfway points, and five minutes to go, as well as expiration of session time. |

**Table 1-3. Appraisal Roles (continued)**

# 1.3 Appraisal Roles, continued

| Role Name | Description |
|---|---|
| Site coordinator | Organizational member who<br>• Arranges facilities and other resources for the appraisal<br>• Schedules people and activities<br>• May administer, collect, and record questionnaires, and collect and organize documentation for review<br>• May provide clerical support during team activities |
| Appraisal participants | The appraisal participants are the sources of data gathered during an appraisal. This group includes<br>• Leads with extensive experience across many of the management processes of the model, for example, a project leader, a senior technical practitioner, or an organizational manager<br>• Practitioners of acquisition, engineering, or support groups such as quality assurance, configuration management, etc. |
| Leads | Appraisal participants who have responsibility for a project and/or broad knowledge of the full life cycle of product or service provision. Each lead<br>• Completes the FAM questionnaire<br>• Participates in one or more question and answer/interview sessions<br>• Attends briefings of draft and final findings |
| Practitioners | Appraisal participants who perform or support the organization's processes (e.g., engineering, training, quality assurance, configuration management, supplier agreement management, measurement, process improvement). Practitioners<br>• Participate in interviews<br>• Attend draft and final findings briefings<br>• Complete specific process area based questionnaires. |

**Table 1-3. Appraisal Roles (continued)**

**Typical Effort for Appraisal Roles**

Table 1-4 defines typical effort requirements for members of the organizational unit in preparing for and participating in a full internal appraisal. The number of participants is determined by the scope of the appraisal as described in Chapter 2.

| Role | Activity | Hours per person |
|---|---|---|
| Sponsor | Determine appraisal scope and objectives | 4-6 |
| Site Coordinator | Arrange facilities and schedules | 8-10 |
| Organizational Appraisal Representative or Site Coordinator | Arrange questionnaire administration and collect documentation | 8-16 |
| Appraisal Participants | Complete Questionnaire | .5-1 |
| Appraisal Participants | Attend Briefings | 5 |
| Appraisal Participants | Participate in Interview Session | 1-1.5 |

**Table 1-4. Typical Levels of Effort for Organizational Unit in a Full Internal Appraisal**

Table 1-5 defines typical labor requirements for appraisal team members in preparing for and carrying out a full internal appraisal. The number of appraisal team members depends on the scope of the appraisal as described in Chapter 2. These are averages provided for a typical maturity level 2 appraisal (3-5 projects, 9 process areas up to capability level 2) and a typical maturity level 3 appraisal (3-5 projects, 20 process areas up to capability level 3).

Estimating and scheduling tools are available in the toolkit to assist in appraisal planning.

# 1.3 Appraisal Roles, continued

| Role | Activity | Hours per person |
|---|---|---|
| Appraisal Team Leader | Planning and preparing for the appraisal | 40 |
| Appraisal Team | Appraisal team training | 20 |
| | Preliminary evidence review<br>• Maturity Level 2<br>• Maturity Level 3 | <br>4<br>8 |
| Appraisal Team | Conduct Appraisal (on-site)<br>• Maturity Level 2 Appraisal<br>• Maturity Level 3 Appraisal | <br>40 (5 days)<br>72 (9 days) |

**Table 1-5. Typical Levels of Effort for Appraisal Team Members in a Full Internal Appraisal**

**Relative Effort of Various Appraisal Types**

Table 1-6 compares typical effort of selected appraisal variations in relation to the estimates provided above for a full internal appraisal.

| Appraisal Type | General effort in comparison to full internal appraisal |
|---|---|
| Full external | About the same |
| Interview-based | About the same |
| FAA-iCMM : ISO 9001 | About the same |
| Gap Analysis Process | ~20% more effort than a full internal appraisal |
| Formal Appraisal Readiness Review | ~ 30-40% of the effort of its corresponding gap analysis process |
| Delta | ~20% of the effort of its corresponding full internal appraisal |

**Table 1-6 Relative Levels of Effort for Selected Appraisal Types**

The remaining appraisal types are not readily comparable to a full internal appraisal but estimates for all appraisal activities are provided in the process descriptions in Chapter 2 and Chapter 3.

# Chapter 2: FAM Process Description

**Introduction**

This chapter contains process descriptions for the activities of the FAA-iCMM Appraisal Method (FAM).

**In this chapter**

The following process descriptions are provided.


| ID | Activity Name | See Page |
|---|---|---|
| **2.1** | **Plan and Prepare for the Appraisal** | **2-3** |
| 2.1.1 | Obtain Sponsor Commitment | 2-4 |
| 2.1.2 | Select Appraisal Organizational Scope | 2-11 |
| 2.1.3 | Select Appraisal Team | 2-15 |
| 2.1.4 | Plan Appraisal Details | 2-20 |
| 2.1.5 | Orient Participants | 2-27 |
| 2.1.6 | Train Team | 2-30 |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | 2-33 |
| **2.2** | **Conduct Appraisal** | **2-39** |
| 2.2.1 | Conduct Opening Meetings | 2-40 |
| 2.2.2 | Conduct Interviews | 2-43 |
| 2.2.3 | Review Documentation | 2-47 |
| 2.2.4 | Consolidate Data | 2-51 |
| 2.2.5 | Develop Draft Findings | 2-54 |
| 2.2.6 | Present Draft Findings | 2-57 |
| 2.2.7 | Develop Ratings | 2-60 |
| 2.2.8 | Develop Final Briefing | 2-65 |
| 2.2.9 | Brief Sponsor | 2-68 |
| 2.2.10 | Present Final Briefing | 2-71 |
| 2.2.11 | Conduct Wrap-Up | 2-74 |
| **2.3** | **Report Results** | **2-78** |
| 2.3.1 | Prepare Appraisal Report | 2-79 |
| 2.3.2 | Manage Records | 2-81 |

**Process descriptions**

All activity descriptions are formatted the same, containing the paragraphs that are described in Table 2-1. Detailed guidance for how to perform the activities and training materials are provided separately.

| Block Title | Description |
|---|---|
| Purpose | The purpose for this phase or activity. |
| Summary description | A summary of the work performed during the activity. |
| Entry criteria | The conditions or decision to start. |
| Exit criteria | A description of the decision-making criteria to determine if the phase or activity has been completed. |
| Roles | The roles involved in the phase or activity and a summary of their responsibilities. |
| Inputs | The input artifacts needed to perform the activity. |
| Steps | The list of steps or tasks and brief guidance to perform each step. |
| Outputs | The output artifacts of this phase or activity that may be checked for compliance. |
| Typical duration/effort | The measurements collected and how to collect them as part of improvement of the process.<br>• Typical calendar duration<br>• Typical effort (team or staff hours to perform the activity)<br>Appraisal work product measurements may be collected as applicable. |
| Notes | Additional details regarding the activity, including references and guidance. |

**Table 2-1. Process Description Format**

## 2.1 Plan and Prepare for the Appraisal

**Purpose**

The purpose of the Plan and Prepare for the Appraisal phase is to prepare the sponsor, the appraisal team, and the organization (appraised entity) for the appraisal activities.

**Summary description**

Plan and Prepare for the Appraisal includes seven activities as depicted below.

**Obtain Sponsor Commitment**
- Understand the customer's need
- Brief the iCMM and appraisal method
- Propose appraisal solution
- Agree on basics
- Record commitments

**Select A**ppraisal Organizational Scope
- Collect project/organization data
- Identify organization scope
- Select Organization Appraisal Representative
- Make preliminary arrangements
- Document preliminary plan

**Plan Appraisal Details**
- Obtain and use planning tools
- Finalize participants
- Develop detailed schedule
- Finalize schedule
- Finalize budget
- Identify appraisal risk
- Document plan
- Select and develop questionnaires
- Request documentation
- Approve plan

**Select Appraisal Team**
- Identify team member candidates
- Screen candidates
- Select team members

**Train team**
- Conduct team-building
- Provide overview
- Provide organizational orientation
- Review FAA-iCMM
- Review FAM

**Orient Participants**
- Conduct orientation briefing

**Obtain and analyze preliminary evidence**
- Administer Questionnaire
- Collect preliminary evidence
- Analyze questionnaire evidence
- Analyze documentation evidence
- Record results
- Evaluate readiness
- Develop exploratory questions
- Request information

### 2.1.1 Obtain Sponsor Commitment

**Purpose**

The purpose of Obtain Sponsor Commitment is to establish improvement areas to be addressed in the appraisal that support business objectives and obtain sponsor commitment on the appraisal capability levels and process areas or application areas for baseline or improvement, as well as the funding, schedule, outcomes, and appraisal constraints.

**Summary description**

Obtain Sponsor Commitment involves meeting with the sponsor(s) (or sponsor's delegated representative) of the appraisal to identify sponsor interests and business goals and to provide the sponsor an understanding of the concepts of the FAA-iCMM and the FAA-iCMM appraisal method (FAM), engaging the sponsor in dialogue to determine improvement areas (PAs and/or AAs and practices) relating to business objectives. The activity also includes working with the sponsor (or sponsor's delegated representative) to determine the needed personnel and funding resources as well as ensuring that the sponsor understands his/her role in the appraisal.

**Entry criteria**

- Invitation to participate in the decision to perform an appraisal

**Exit criteria**

- Improvement areas (model scope) to be addressed that support business objectives identified
- Appraisal type confirmed
- Sponsor commitment to provide appraisal resources obtained
- Commitment to sponsor role before, during, and after the appraisal obtained
- Appraisal team leader confirmed

# 2.1.1 Obtain Sponsor Commitment, continued

**Roles**

Table 2-2 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Sponsor | Engages in dialogue with appraisal team leader to understand appraisal context and set appraisal goals; commits resources for the appraisal. Selects/approves appraisal team leader. |
| Appraisal advocate | Establishes link between sponsor, appraisal team leader, and potential appraisal participants. |
| Appraisal team leader (candidate) | Determines the sponsor of the appraisal and the sponsor's relationship to the organizational unit being appraised. Assists the sponsor in determining a model scope that meets organizational improvement needs. Provides sponsor with information needed to make a commitment decision on the appraisal. (Note that until confirmed at the end of this activity, the appraisal team leader is a "candidate" lead.) |

**Table 2-2. Participants for Obtain Sponsor Commitment**

**Inputs**

- Appraisal and FAA-iCMM information or presentation
- Organizational improvement plan
- Examples of schedules and levels of effort for appraisals

## 2.1.1 Obtain Sponsor Commitment, continued

**Steps**

Table 2-3 shows the steps for this activity.

| Step | Description |
|---|---|
| Understand the customer's need | Identify sponsor interests and business goals that the appraisal could address. Discuss organizational improvement plans and objectives. |
| Brief the FAA-iCMM and Appraisal Method | Discuss appropriate FAA-iCMM components and how they may relate to business goals. Brief the sponsor on appraisal context in the improvement cycle and options for appraisal tailoring, outcomes, and expectations. |
| Propose appraisal solution | Identify model scope to be appraised that supports the achievement of organization/ business goals. Establish an approximate schedule, and expectations for the appraisal outputs and sponsor's participation. |
| Agree on basics | Agree on appraisal type and sponsor role and responsibilities; assign/confirm the appraisal team leader; assign or identify candidates for the organizational appraisal representative (OAR) and site coordinator; agree on ensuring non-attribution to appraisal participants. |
| Record commitments | Document the agreements. |

**Table 2-3. Steps for Obtain Sponsor Commitment**

## 2.1.1 Obtain Sponsor Commitment, continued

**Outputs**

- Documented agreement targeting process areas or application areas and capability levels for which establishing a baseline and/or improvement would support organizational business goals
- Funding and sponsorship for the general resources needed, and a tentative schedule for the planning and conduct of the appraisal
- Sponsor approval of the appraisal team leader and his/her qualifications

**Typical duration/ effort**

- Typical calendar duration: two hours to several weeks
- Typical level of effort: two hours to a day

**Notes**

In this activity the sponsor (or sponsor's delegated representative) communicates the nature and business needs of the organization and the ATL reciprocates with information on the FAA-iCMM and appraisal method(s), as well as how application of the FAA-iCMM and appraisal could benefit the organization. Based on this common information base, the sponsor and ATL jointly determine which process areas and/or application areas and capability levels should be appraised in order to provide an improvement solution, and confirm the appraisal type and tailoring as most appropriate for the solution.

Additional topics to be discussed include the option of evaluating the Usefulness and/or Effectiveness (via a Value Analysis appraisal) of one or more PAs/AAs, the possible collection of data on other selected practices, and whether compliance with ISO/IEC 15504 is required. The ATL also confirms the suitability of the appraisal method relative to the appraisal's purpose, objectives, and constraints.

Focusing on achieving a given maturity level as an organizational objective should be avoided, and investigation of improvement opportunities relating to business objectives encouraged. When a maturity level or selected capability levels are established as an organizational goal, consideration should be given to also including some "stretch" areas, e.g., practices for investigation that go beyond the level objective and have the potential to uncover strengths or weaknesses relating to business objectives.

Care should be taken to not mix organizational objectives with appraisal objectives; for example, appraisal objectives should not include achieving a maturity level.

## 2.1.1 Obtain Sponsor Commitment, continued

**Notes, continued**

In discussing appraisal outcomes and expectations with the sponsor, explain that the findings will be in terms of areas for potential improvement, and that "how" to make corrective actions or improvements is up to the appraised organization. Agree on the level of detail in the findings, as well as whether the final brief will also be considered the final report (if not, what additional information is to be provided in the final report.)

Discuss options for follow-up or delta appraisals for cases in which organization objectives are not met (e.g., one or more capability levels are not achieved), including the not-longer-than-six-month guideline and that a delta appraisal may collect data on any process areas or organizational areas covered by the appraisal.

During this activity, the ATL should discuss the role of the sponsor in pre appraisal, appraisal, and follow up activities. Sponsor responsibilities include:

- determination of appraisal organizational and model scope (with assistance from the ATL) that support business objectives
- commitment to the appraisal scope, results, schedule and resources
- providing appraisal planning inputs
- selecting/approving appraisal team members, including the ATL (the sponsor should verify the qualifications of the ATL with the appropriate FAA representative)
- visible advocacy/support of the appraisal, appraisal results, and improvement activities before, during and after the appraisal
- approving the documented outputs of this Obtain Sponsor Commitment activity and the Preliminary Appraisal Plan, and approving and signing the final Appraisal Plan prior to appraisal team onsite data collection and analysis activities
- follow up on improvements relating to appraisal results
- agreement on ensuring non-attribution to appraisal participants

**Notes, continued**

The agreement with the sponsor on confidentiality of data should always ensure non-attribution to individuals; attribution to groups or projects of more than one person should be discussed and negotiated with the sponsor. The trade off of obtaining candid inputs versus knowing where to focus improvement should be carefully considered. The assurance of non-attribution to individuals and the approach to group attribution should be documented in the appraisal plan, reviewed in team training, briefed in the opening meeting and adhered to in appraisal activities, especially the draft and final findings briefings.

This is a go/no-go decision point. If sponsor commitment for the appraisal is not obtained, no further steps related to FAM should be performed. The ATL is responsible for confirming the sponsor's commitment to proceed with the appraisal.

The OAR and site coordinator may be identified at this time. If not identified, the appraisal advocate can serve as the OAR until one is identified. The site coordinator may be identified at this time if necessary. However, the site coordinator is normally assigned once the appraisal period requires logistics support.

The candidate Appraisal Team Leader (ATL) is normally the person who is brought in by the appraisal advocate to initiate appraisal action. The ATL is an approved lead appraiser for the FAM. The sponsor approves the ATL selection and his/her qualifications during this activity. The required ATL qualifications are provided in Section 1.3 and Appendix G.

## 2.1.1 Obtain Sponsor Commitment, continued

**Notes, continued**

The following guidelines for estimating appraisal resources are provided. A general guideline for determining appraisal team size is that at least one mini team of at least two people is needed for three process areas (or equivalent) to be appraised. (Mini-teams are appraisal sub-teams of two or more team members). Additionally, at least one alternate should be identified (the alternate may or may not begin the appraisal with the team). Labor and travel for each team member will need to be negotiated with the appraised organization and/or the team member's organization. Travel resources need to be determined by the location of the team members (estimated at this time, since members may not be known), the appraisal site location, the training site location, and the preliminary evidence review location. The approximate time required of each team member is provided in the Typical duration/ effort of each activity. If the onsite period extends beyond one week, additional travel resources may need to be estimated.

The ATL and sponsor should review and plan for any coordination required, including coordination with labor unions if appropriate.

Discuss with the sponsor the disposition of results including if project-specific findings are to be provided and to whom, and include in the plan.

### 2.1.2 Select Appraisal Organizational Scope

**Purpose**

The purposes of Select Appraisal Organizational Scope are to establish the organizational participation in the appraisal and confirm the appraisal method and model scope.

**Summary description**

Select Appraisal Organizational Scope involves determining organizational participation in the appraisal that is both representative of the organization's capability and feasible in terms of appraisal schedule and resources, and confirming appraisal method and model scope that support organizational business objectives. In addition, a preliminary appraisal plan is produced and approved.

**Entry criteria**

- Sponsor commitment to fund and perform appraisal obtained

**Exit criteria**

- OAR and site coordinator confirmed
- Agreement on preliminary plan by the sponsor and appraisal lead confirmed

**Roles**

Table 2-4 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Site coordinator or Organizational appraisal representative | Checks on schedules, lead times, potential participants' availability constraints and makes tentative arrangements for the appraisal. |
| OAR or Advocate | Collects project/organization data to support planning. |
| Appraisal team leader | With affected management, determines the projects to include in the appraisal. Drafts feasible schedules to perform the appraisal and proposes one as part of the preliminary plan. Confirms model scope with the sponsor. |
| Sponsor | Provides appropriate input on organizational units or subunits (e.g., projects, functional units) to participate in the appraisal. |

**Table 2-4. Participants for Select Appraisal Organizational Scope**

# 2.1.2 Select Appraisal Organizational Scope, continued

**Inputs**

- Sponsor's appraisal and business goals (from previous activity)
- Organization chart
- Appraisal plan template

**Steps**

Table 2-5 shows the steps for this activity.

| Step | Description |
|---|---|
| Collect project/organization data | Collect project/organization data to help determine appraisal scope and support appraisal planning. (e.g., Administer project/organization questionnaires) |
| Identify organization scope | From the model scope determined in activity 2.1.1, work with the advocate or sponsor to identify the affected parts of the enterprise to be included in the appraisal, and designate those not to be included. |
| Select Organizational Appraisal Representative (OAR) | Select an OAR that can function both as an appraisal team member and a representative of the organization, will be effective in communicating appraisal results to affected parts of the organization, and will be reasonably free of conflict of interest. |
| Make preliminary arrangements | Identify the site coordinator if not done in previous activity (2.1.1). Produce a list of potential participants from projects and functional groups within the organization's projects scope. Update schedules and other tentative arrangements for the appraisal. |
| Document preliminary plan | Document the preliminary appraisal plan and obtain sponsor and appraisal team lead approval. |

**Table 2-5. Steps for Select Appraisal Organizational Scope**

## 2.1.2 Select Appraisal Organizational Scope, continued

**Outputs**

Approved preliminary appraisal plan to include:

- appraisal organizational scope description identifying organizational units, subunits (projects, functional units, groups and individuals) to participate in the appraisal
- appraisal model scope description (FAA-iCMM targeted process areas and/or application areas and capability levels for each)
- appraisal method
- description of entity being appraised
- tentative schedule
- estimated costs
- candidate organizational participants

**Typical duration/ effort**

- Typical calendar duration: one to two weeks, depending on complexity of tailoring required, and sponsor's prior experience with appraisals
- Typical level of effort: one to eight staff hours

**Notes**

Projects and staff selected for participation in the appraisal need to be representative of the organizational capability to the largest extent practical. As the time and other resources to perform an appraisal are limited, a sampling approach is usually employed based on the size and nature of the organization. For organizations with projects, a mix of large and small projects covering the life cycle phases should be selected. It may also be useful to consider whether a project was initiated under relatively current policies and procedures. Appraising a project that has been mostly carried out before processes were established may offer little value to the organization's current process improvement effort. Functional groups are identified for participation, according to the scope of processes being covered in the appraisal. The names and affiliations (organizational units or subunits) of participants in the appraisal activities need to be determined in this activity.

**Notes, continued**

The OAR will need to be able to interface between the appraisal team and the organization on site terminology and identify where evidence may be obtained. The OAR will also need to be able to assist the organization in interpreting and acting on appraisal results and be reasonably free of conflict of interest. The latter means that the OAR, for example, should not be responsible for achieving process improvement goals, be responsible for the process descriptions, or for staff adherence to organization policies or processes.

The site coordinator performs all logistics functions. However, if a site coordinator is not identified at this time the organizational appraisal representative can perform these duties.

Project and/or organization data collected may also be used to orient the appraisal team and to help in developing exploratory questions.

Project/organization data collected to support planning typically includes: project and infrastructure descriptions, products provided to customers, equipment (tools), geographic dispersion, and customer identification or characteristics.

Organization data collection began in Obtain Sponsor Commitment with sponsor discussions, and continues throughout appraisal scoping and planning. In this activity, a project and/or organizational questionnaire can be administered to obtain the desired information. (An example request form for such materials is in the Toolkit.) Documents, such as organization charts, organization /project presentations, program management review materials and schedules are useful for determining the appraisal scope and should be acquired as needed.

It is recommended that the sponsor and appraisal team lead sign the Preliminary Appraisal Plan.

### 2.1.3 Select Appraisal Team

**Purpose**

The purpose of Select Appraisal Team is to select an appraisal team with the capability and experience to conduct the appraisal.

**Summary description**

Team members are identified, invited, and scheduled, and commit to participating in this activity.

**Entry criteria**

- Preliminary Appraisal Plan completed and approved
- OAR, ATL and site coordinator selected

**Exit criteria**

- Appraisal team members selected
- Commitments received from team member organization
- Sufficient team members (including alternates) to cover the appraisal scope identified

**Roles**

Table 2-6 lists the roles involved in this activity.

| Role | Summary |
| --- | --- |
| Appraisal advocate and/or sponsor and/or Organizational appraisal representative | Provides the appraisal team leader and/or site coordinator with organization, project, and potential team member information. Approves and communicates desired team members through the management chain to encourage their ability to participate. |
| Appraisal team leader | Guides or approves selection of team to achieve coverage of the appraisal scope. Determines availability of potential team members. |
| Appraisal team member managers | Approve team member's participation and resource needs (i.e., labor and travel) |
| Site coordinator | Determines availability of potential team members from the organization. |

**Table 2-6. Participants for Select Appraisal Team**

**Inputs**

- Preliminary Appraisal Plan

## 2.1.3 Select Appraisal Team, continued

**Steps**

Table 2-7 shows the steps for this activity.

| Step | Description |
|---|---|
| Identify team member candidates | Brainstorm potential team members. |
| Screen candidates | Screen candidates against qualifications, conflict of interest and availability to support both pre onsite and onsite activities. |
| Select team members | Invite candidates to serve on the team. Get agreements to serve and ensure that this will be the priority for the team members during the appraisal period. Come to agreement with the team members about the priority and need to participate in every team activity barring family emergencies. Identify individuals for team roles. |

**Table 2-7. Steps for Select Appraisal Team**

**Outputs**

- Appraisal team member role commitments secured
- Cross-reference matrix of team members by process area/application area
- Approved resource commitments for team members, from their management

**Typical duration/ effort**

- Typical calendar duration: Site coordinator: one to four weeks; Others: one to two hours
- Typical level of effort: two to sixteen staff hours

**Notes**

Team size is typically 5 to 8 members with a minimum of 4 and a maximum of 12. This includes the appraisal team leader and organizational appraisal representative, but excludes the site coordinator who is not a team member. Team members should have at least five years of appropriate functional experience and the team should have a total of 25 or more years of total functional experience. At least one member should have at least 6 years of management experience with a total of ten years of management experience for the team. The team experience should cover the subject matter expertise relating to the process areas or application areas to be appraised.

The team should be made up of people both within and external to the organization, but no more that half the team should be from within the organization. More than one team member from the organization is encouraged. The ATL (as a team member) may be either from within or external to an appraised organization.

Team members from the organization should include opinion leaders, those who will be involved in making the changes indicated, those who know what typically happens within the organizational infrastructure that supports projects, and/or those who manage projects and support groups.

Observers are not recommended, but if permitted, must be committed to non-intrusive behavior, and there should not be more than two.

An important consideration in selecting appraisal team members is the candidate’s availability for all appraisal activities including team training and preliminary evidence review, as well as onsite activities.

Team members should be selected such that if any team member becomes unavailable, either the alternate or the appraisal team leader will be able to maintain the needed level of process area and/or discipline expertise.

Use the Appraisal Team Selection Form from the toolkit to ensure the appraisal team applicant’s supervisor approves (including resources) and to document the applicant’s qualifications.

# 2.1.3 Select Appraisal Team, continued

**Notes, continued**

**Conflict of Interest Guidelines**

A. All team members should meet the following objectivity criteria and **NOT** be:

1. a manager of one of the selected appraisal projects
2. a person that must be interviewed
3. a person (other than the OAR) that reports directly to a person that is responsible for achievement of the process improvement and appraisal goals
4. within the management chain (higher-level) of any one that will be interviewed
5. one who has ownership (e.g., wrote, or major contributor) of the processes being appraised or one who has responsibility for achievement of appraisal goals
6. one that has a conflicting agenda with process improvement
   Examples of conflicting agendas:
   - Wants to prove the organization is (or is not) mature
   - Has a personal performance goal riding on results (or other personal gain)

   Examples of non-conflicting agendas
   - Wants to better understand the FAA-iCMM and FAM
   - Wants to better understand the organization
   - Wants to take process improvement principles back to home organization

B. The OAR must be from the appraised organization and all of the above (except item 3) should be maintained.

C. Additionally, when the organization is attempting to reach a performance goal with an appraisal, the Appraisal Team Leader should **NOT** report directly to the manager or next level management of the appraised organization.

# 2.1.3 Select Appraisal Team, continued

**Notes, continued**

The major criterion for team selection is objectivity. Team members should not bring any pre-determined agendas to the team. They should be open-minded and flexible. A team member should not be a person providing major process improvement support prior to the appraisal. High-level support should not be considered a conflict.

The final decision on whether a significant conflict of interest exists that would disqualify a potential appraisal team member should be decided jointly between the ATL and the appraised organization's sponsor. The plan should document that no significant conflict of interest exists among team members.

### 2.1.4 Plan Appraisal Details

**Purpose**

The purpose of Plan Appraisal Details is to produce and approve an appraisal plan.

**Summary description**

Plan Appraisal Details involves filling in the details, scheduling and staffing, documenting and approving of the plan.

**Entry criteria**

- Appraisal scope and sufficient and appropriate staff identified.
- Preliminary Appraisal Plan completed and approved

**Exit criteria**

- Appraisal plan approved by Sponsor and ATL.

**Roles**

Table 2-8 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Site coordinator | Confirms logistics details for the appraisal. |
| Appraisal team leader | Develops plan and documentation. Leads appraisal risk assessment activities. Verifies that the appraisal method requirements will have been met if the appraisal is conducted in accordance with the plan. Produces questionnaire(s). |
| Sponsor | Approves appraisal plan. |

**Table 2-8. Participants for Plan Appraisal Details**

**Inputs**

- Preliminary appraisal plan (appraisal goals, budget, scope, and potential staffing from previous activities)
- Appraisal plan template (from Toolkit)

## 2.1.4 Plan Appraisal Details, continued

**Steps** Table 2-9 shows the steps for this activity.

| Step | Description |
|---|---|
| Obtain and use planning tools | Use appropriate Toolkit components, e.g., the appraisal scheduling tool and the plan template, to ensure all activities and dependencies are accounted for. |
| Finalize participants | Finalize the selection of willing, available, and appropriate participants that are committed and approved to participate in the appraisal. |
| Develop detailed schedule | Provide appropriate details for all appraisal activities. Plan to use the results of preliminary evidence review to ensure that interview sessions and onsite document review will provide the needed information for organizational, model, and life cycle coverage/ sufficiency. |
| Finalize schedule | Finalize commitments and schedule with the participants selected, and confirm or make arrangements for workspace, supplies, support, etc. |
| Finalize budget | Estimate all costs of all resources. |
| Identify appraisal risk | Identify the risks associated with conducting the appraisal with appropriate mitigation actions or plans. |
| Document plan | Document the plan. |
| Select and develop participant questionnaire(s) | Select the questionnaire approach to be used. Develop and append to the appraisal plan the participant questionnaire(s). |
| Request documentation | Provide the organization with a list of practices to be appraised (e.g., document trace tables from the Toolkit) and request that they identify documentation evidence of performance of each practice, and return the association of documentation with practices along with the identified documents as required by the appraisal schedule. Establish the documentation library and designate a team member as data manager to manage the documentation and artifacts submitted. |
| Approve plan | Review, adjust, and approve plan (to be signed by the Sponsor, or sponsor’s delegated authority, and the Appraisal Lead), and communicate plan details to those affected. |

**Table 2-9. Steps for Plan Appraisal Details**

**Outputs**

Approved appraisal plan, which includes:

- identification of the organizational unit and subunits being appraised, and organizational personnel to be interviewed
- sampling characteristics for the appraisal (e.g., fraction of projects appraised, per cent of staff interviewed)
- identity of the sponsor and relation to the organization
- organization goals and/or purpose for the appraisal, including alignment with business objectives
- size of the organizational unit, and any other relevant demographics
- application domain of the products or services of the organizational unit
- key characteristics (e.g. size, criticality, complexity and quality) of the products or services of the organizational unit
- appraisal approach/type (e.g., Full Internal, Document Intensive), including any tailoring of the method and any trade off analyses (e.g., sample size versus appraisal resources)
- scope of the model (PAs, AAs, practices and capability levels to be investigated)
- any additional information to be collected during the appraisal to support process improvement or process capability determination, e.g. specific data (or metrics) that are needed to quantify the organization's ability to meet a particular business goal
- scope of the organization (projects, functions, and processes to be included)
- activities and schedule
- resources (updated from original estimate) assigned to activities
- ATL, team members, other participants, and support staff, and their affiliations and responsibilities
- appraisal constraints considering, at minimum:
  1) key resources and their constraints, if any
  2) the maximum duration of the appraisal
  3) processes or organizational units to be excluded from the appraisal
  4) quantity and type of objective evidence to be examined in the appraisal
  5) identification, recipients and ownership of the appraisal outputs (oral and written) and any restrictions on their use
  6) controls on information resulting from a confidentiality agreement (e.g., securing the appraisal notes and team room, destruction of team notes)
  7) provisions for non-attribution of appraisal data to sources

## 2.1.4 Plan Appraisal Details, continued

**Outputs, continued**

- identification of the reference model(s), and versions
- logistics including:
    - meeting rooms and supplies
    - equipment
    - support staff identification and availability
- appraisal risks and mitigations
- criteria to verify ISO/IEC 15504 requirements have been met (if requested by sponsor)
- reference to Chapter 1 and Appendix G for criteria for competence of the ATL
- description of planned appraisal outputs and information to be included in the appraisal report (if planned) and in the appraisal record.
- disposition and recipients of the appraisal record and the report
- description of any appraisal follow-on activities
- questionnaires (organizational characteristics, appraisal data collection, and appraisal feedback forms)
- documentation or artifact requests

**Typical duration/ effort**

- Typical calendar duration: two to six weeks, depending on the complexity of the appraisal plan
- Typical level of effort: four staff hours to a staff week

**Notes**

This is when the actual schedule for all appraisal activities is produced. See the Toolkit Appraisal Checklist and the Appraisal Scheduling Tool for details on preparing for the logistics of an appraisal. Use the Appraisal Plan Template to ensure all the required appraisal planning elements (appraisal inputs) are addressed. Detailed planning includes planning for team training and pre onsite review and analysis of questionnaire results and documentation (see section 2.1.7), as well as onsite activities.

In approving the appraisal plan, the ATL is affirming that the appraisal plan is feasible and is sufficient to accomplish the appraisal method requirements.

# 2.1.4 Plan Appraisal Details, continued

**Notes, continued**

Planning for collection of relevant data from the organizational unit is based on the established organizational scope and the model scope (outputs of activities 2.1.1 and 2.1.2). Plan to use an appraisal team method and/or tool to plan, record, track, and corroborate the needed information.

Determine which elements of the organization would be expected to perform the practices within the appraisal scope and which ones would be knowledgeable of that performance, e.g., supervisors and users of the results of performing practices. In the case of questionnaires, target appropriate groups with questions on practices they are expected to perform or be knowledgeable of. For documentation, provide tables of practices within the appraisal scope and request that appropriate organization staff indicate and provide examples of evidence of performance for each practice. Plan and schedule participant interviews to validate and corroborate questionnaire results and documentation, as well as resolve any issues that arise from the preliminary evidence reviews. In all cases (requests for documents, questionnaires, interviews) structure the requests for information/evidence to cover the organizational unit, the life cycle, and all practices within appraisal scope.

The data collection planning should be able to answer the question "How will the selected interviews and other data collection sessions assure organizational, model, and life cycle coverage/sufficiency of appraisal scope?"

Plan to review/revise the coverage strategy after pre onsite documentation and questionnaire results analysis, and daily during onsite activities (e.g., more/less interview times for certain mini teams, PAs/AAs). Sufficiency and coverage requirements are described in Section 2.2.4. Once observation review begins there will be very little time to fill voids relating to practice performance or coverage/sufficiency issues. Plan to do one PA/AA observation review early (e.g., on interview day two), to provide the team with a warm-up on the actual process to be used.

Documentation requests during this activity should be early enough to support the scheduled preliminary evidence review (see Activity 2.1.7). As mentioned, provide document trace tables (from the Toolkit) with the request.

**Notes, continued**

Criteria for verifying ISO/IEC 15504 requirements have been met can be addressed by placing the following paragraph in the plan.

The ATL verifies that ISO/IEC 15504 requirements have been met by: (1) verifying that the plan contains all the Plan Appraisal Details activity outputs, (2) that the exit criteria of this activity have been satisfied prior to approving the plan, (3) verifying at the completion of major activities during the appraisal that the plan is being followed, and (4) announcing that all planned activities have been accomplished at the conclusion of the final brief.

Any useful documents, such as policies, process descriptions (often in training materials), standards, even meeting minutes or action item lists, may be requested, collected, organized, and stored by the site data manager.

Plan to manage onsite appraisal schedule risk. In connection with schedule risk, consider:

- ensuring strict enforcement of time management during the appraisal
- adding a mid-appraisal checkpoint with the option of extending the appraisal schedule based on team and sponsor consensus.
- discussing schedule risk and contingencies with the sponsor.
- advising the team to make flexible travel plans
- determining the latest point an alternate team member can be requested to support the appraisal in case a team member becomes indisposed (discuss this with the alternate(s))
- use of parallel interviews as needed to manage the schedule

In connection with performance risk, consider:

- discussion of at-risk practice performance with the sponsor during the onsite activities
- alternative methods of obtaining information; for example, meet with the appropriate members of the organization to discuss or ensure understanding of what types of evidence might be appropriate to address performance of a practice.

## 2.1.4 Plan Appraisal Details, continued

**Notes, continued**

The two questionnaire methods described in Chapter 3 can be used in the context of Full Internal Appraisals: the QBA (section 3.3) and the Self-Appraisal (section 3.11). Other questionnaires/questionnaire-methods may be considered.

The questionnaire used in the appraisal is developed based on the model scope and organizational scope. The questionnaire typically addresses:

- achievement of goals (to be answered by leads)
- performance of practices (to be answered by practitioners)

It is recommended that questionnaire respondents and questions be selected so that the time to answer the questionnaire is less than an hour. This typically means less than about 60 questions. Selection of respondents should include a significant number of staff beyond those to be interviewed, since this provides an important additional perspective on performance of the practices. Obtain and use site terminology to the maximum extent feasible in the questions. Plan an activity with the organization to address this.

Other questionnaire methods, that provide a reasonable level of reliability, may be used for corroboration (see activity 2.2.4) as agreed by the Chief Engineer for Process Improvement and the ATL.

In planning for appraisal logistics, document in the appraisal plan and communicate to the site coordinator the following logistical requirements:

- comfortable, quiet, private and secure team room and interview room for the duration of the appraisal
- at least one data terminal for each mini team if online documentation is provided
- scheduling of briefing rooms (opening meetings, draft findings reviews, final findings presentation)
- badges and/or vehicle passes to the appraisal site as appropriate
- shipping of documentation to the training session and preliminary evidence review; provision of the documentation in the team room

## 2.1.5 Orient Participants

**Purpose**

The purpose of Orient Participants is to prepare the appraisal participants to perform their information sharing roles, especially to make the participants as comfortable as possible with the what, why, and how of the appraisal process so that they will participate appropriately. This activity may be combined with or replace the opening meeting (see Activity 2.2.1).

**Summary description**

The orientation begins with an overview of the appraisal plan including the appraisal scope, with an optional overview of the model content and structure. The what, why, and how of the appraisal, with expected outcomes, are provided along with a question and answer session. Questionnaires may be administered immediately following this activity (see Activity 2.1.7).

**Entry criteria**

- Preliminary Appraisal Plan approved
- Appraisal participants identified and invited to attend

**Exit criteria**

- Appraisal participants are aware of how the appraisal will be conducted, and what will be expected of them during the appraisal.

**Roles**

Table 2-10 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team leader | Leads the participants through the model and appraisal method and answers any questions. |
| Participants | Learn about model and appraisal method and receive questionnaire if provided at this time. |

**Table 2-10. Participants for Orient Participants**

# 2.1.5 Orient Participants, continued

**Inputs**

- Appraisal plan (previous activity)
- Template of briefing materials (tailor from Toolkit team training materials)
- Questionnaire (see 2.1.4 and 2.1.7)

**Steps**

Table 2-11 shows the steps for this activity.

| Step | Description |
|---|---|
| Conduct orientation briefing | Conduct the orientation briefing. The briefing includes the purpose and scope of the appraisal, typical outputs, key aspects of the appraisal plan, confidentiality rules, and optionally, the model content and format. |

**Table 2-11. Steps for Orient Participants**

**Outputs**

- Briefing slides
- Recorded questions and answers

**Typical duration/ effort**

- Typical calendar duration: one to two hours
- Typical level of effort: one to two hours

# 2.1.5 Orient Participants, continued

**Notes**

This activity reduces participant concerns by providing open and candid descriptions of the what, how, and why of the appraisal, together with a question and answer session. The orientation is typically a half hour to two-hour activity, depending on the existing level of organizational awareness, which overviews the FAA-iCMM and the appraisal method. Orientation participants include all personnel who will be involved in interviews and any personnel who are interested in appraisal findings and will be involved in post appraisal improvement activities. Items to consider for inclusion in the orientation briefing: the purpose and objectives of the appraisal, FAA-iCMM, confidentiality rules, the activities of the appraisal method, model/appraisal terminology and possible subsequent activities.

This activity is especially important for organizations new to appraisals. It may be combined with or replace the Opening Meeting (see Activity 2.2.1).

The questionnaire may be administered to designated appraisal participants immediately following this activity (unless the orientation is combined with the opening meeting). See Activity 2.1.7.

## 2.1.6 Train Team

**Purpose**

The purpose of Team Training is to prepare the appraisal team to perform its role in the appraisal process.

**Summary description**

This is a necessity for the appraisal team to understand the FAA-iCMM, be able to perform the appraisal method, and build teamwork to enhance performance. Team training includes one or more team-building exercises, an orientation on the organization and its products, an overview or detailed training on the model structure and content, and practice using the appraisal method techniques.

**Entry criteria**

- Appraisal Plan approved
- Appraisal team members identified and scheduled to attend

**Exit criteria**

- Appraisal team understands use of FAA-iCMM in appraisal context.
- Appraisal team understands how to perform their roles.
- Appraisal team commits to perform the appraisal as structured in the appraisal plan.

**Roles**

Table 2-12 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team leader | Leads the team through the model and appraisal method training and answers any questions. Ensures team is adequately trained. |
| Organizational appraisal representative | Provides orientation on the organization and its products. |
| Appraisal team members | Learn model and appraisal method, participate in team-building, and practice appraisal techniques. |

**Table 2-12. Participants for Team Training**

**Inputs**

- Appraisal plan (previous activity)
- Tailored method (previous activity)
- Training materials

**Steps**

Table 2-13 shows the steps for this activity.

| Step | Description |
|---|---|
| Conduct team-building | The appraisal team leader leads the team in a team-building exercise; at the very least, all team members introduce themselves. |
| Provide overview | A general overview of the model, appraisal method, confidentiality rules, and a questions and answers session for all team members may be held at the outset. |
| Provide organizational orientation | Present organizational and product overview. |
| Review FAA-iCMM | Present the salient features of the model and its use in appraisal and discuss them with the team. |
| Review FAM | Explain each step in the appraisal process. Describe the roles with particular emphasis on behavior and procedures to be used. Describe the techniques that will be used, and lead the team through exercises to practice the techniques. |

**Table 2-13. Steps for Team Training**

**Outputs**

- Trained Team

**Typical duration/ effort**

- Typical calendar duration: 2 1/2 days
- Typical level of effort: 2 1/2 team days

## 2.1.6 Train Team, continued

**Notes**

This step ensures that the appraisal team understands the basic flow of the appraisal activities and their responsibilities throughout the Conduct Appraisal and Report Results phases. See the Toolkit for training support materials and tools such as the Appraisal Checklist.

At the discretion of the ATL, team members with recent appraisal experience and training are not required to attend. However, having all the team present is valuable for team building, establishing a common understanding of how the appraisal will be conducted, organization briefing by the OAR, and document review.

Additionally, team training provides an opportunity for:

- determining or confirming mini team assignments
- review of data management and data protection methods
- appraisal plan review
- confidentiality rules review

### 2.1.7 Obtain and Analyze Preliminary Evidence

**Purpose**

The purpose of Obtain and Analyze Preliminary Evidence is to obtain information on practice and goal performance in advance of the onsite activities in order to reduce the onsite effort, to support advance preparation of interview questions, to evaluate appraisal readiness, and to identify and request additional information needed for the onsite phase.

**Summary description**

Obtain and Analyze Preliminary Evidence involves collection and analysis of questionnaire results and documentation. The analysis results are used in developing exploratory questions for interviews, to evaluate appraisal readiness, record evidence of practice and goal achievement and to identify information needed. Questions are developed to facilitate the appraisal team in further data gathering (interview and on-site document review process).

**Entry criteria**

- Appropriate questionnaires developed and administered
- Preliminary Appraisal Plan Approved
- Documentation requested

**Exit criteria**

- Analysis of questionnaire responses and documentation completed
- Notes and/or observations or information needed recorded for each practice and goal
- Exploratory questions prepared for each process area/application area and interview session
- Needed information requested of the organization
- Appraisal readiness assessed and reported

# 2.1.7 Obtain and Analyze Preliminary Evidence, continued

**Roles**

Table 2-14 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team leader or Organization appraisal representative | Conducts the questionnaire administration. Answers respondents' questions. |
| Appraisal team leader | Leads the team in the process. Provides guidance in the review of preliminary evidence, recording of observations, and formulation of exploratory questions and further data requests. Advises sponsor regarding readiness determination. |
| Organization appraisal representative or Site Coordinator | Arranges questionnaire administration, and collects any documentation. Translates model terminology to site terms and concepts in the exploratory questions. |
| Appraisal participants selected to complete a questionnaire | Provide data on practices, projects and the organization via questionnaire responses. |
| Appraisal team | Reviews documentation, analyzes questionnaire responses, and records results in the selected data recording and summarizing tool. Develops and agrees upon a set of initial questions and follow-up questions for the data gathering process. Determines the completeness of initial evidence as input to further data collection planning. |
| Data Manager | Organizes and records questionnaire results and documentation received. |

**Table 2-14. Participants for Obtain and Analyze Preliminary Evidence**

# 2.1.7 Obtain and Analyze Preliminary Evidence, continued

**Inputs**

- Participant questionnaires
- Questionnaire instructions
- Data recording and summarizing tool
- Template for Exploratory Questions (Toolkit)
- Example Exploratory Questions worksheets by PA/AA (Toolkit)

**Steps**

Table 2-15 shows the steps for this activity.

| Step | Description |
|---|---|
| Administer Questionnaire | Distribute the questionnaire to all designated participants for completion. Brief the respondents on instructions for answering questions and terminology. |
| Collect preliminary evidence | Collect and secure the questionnaire results, document trace tables and documents. |
| Analyze questionnaire evidence | Review and analyze the questionnaire results. Review the comments for insight into performance issues or terminology. |
| Analyze documentation evidence | Review and analyze the document trace tables and documents. Identify any practices for which the documentation is inappropriate or insufficient. |
| Record results | Record the results of the preliminary evidence review in the form of notes or observations, strengths, weaknesses, and information needed for each practice. |
| Evaluate readiness | If indicated in the appraisal plan, make a readiness determination based on sufficiency of the preliminary evidence and advise the sponsor accordingly. |
| Develop exploratory questions | Develop exploratory questions. Transcribe the questions into an appropriate form for each PA/AA and distribute copies to each team member prior to the interviews. |
| Request information | Request follow up documents or information from the organization relating to missing evidence or information needed, to be available prior to the onsite activities |

**Table 2-15. Steps for Obtain and Analyze Preliminary Evidence**

## 2.1.7 Obtain and Analyze Preliminary Evidence, continued

**Outputs**

- Questionnaire responses
- Summarized questionnaire and documentation review data
    - Documented exploratory questions by PA/AA or interview session
    - List of additional documentation or information needed
    - Estimate of the organization's readiness for the appraisal

**Typical duration/ effort**

- Typical calendar duration: as below
- Typical level of effort:

ATL:

Prepare and administer questionnaire: two hours

Appraisal Team:

Collect and secure questionnaire results and documentation: two hours

Review and analyze questionnaire results: one hour per PA (may be more for an AA, due to the number of Implementation Practices and related questions)

Review and analyze documentation: two hours per PA

Develop Exploratory Questions: one hour per PA

Participants:

Attend Questionnaire orientation brief: 45 minutes per participant

Respond to questionnaire: one hour per respondent

# 2.1.7 Obtain and Analyze Preliminary Evidence, continued

**Notes**

The participant questionnaire may cover all the practices of the FAA-iCMM that are within appraisal scope as determined in activity 2.1.4, or a subset of the practices. The combination of practices selected and their allocation to respondent groups should be such that no participant spends more than one hour responding to questionnaires. This typically means no more than 50 – 60 questions per participant.

Questionnaire responses can be analyzed using various tools. Examples are provided in chapter 3. If the questionnaire method includes statistical analysis, apply statistical rules to questionnaire responses and render the information to show Implemented/Not Implemented/Info needed. Capability profiles for the projects and the organization may be prepared.

Questionnaires may be administered in various ways:

- during the orientation meeting
- during one or more face-to-face meetings
- electronically
- by fax response
- mail-ins

Documents may be obtained as hard copy, soft copy, or links to where they reside in a web-based environment.

The preliminary evidence obtained and analyzed can be used to fine-tune the interview sessions, e.g., allocation of time to PAs/AAs and selection of organization staff and/or functional groups to participate in interviews.

Development of interview questions should be ongoing throughout this preliminary evidence review activity. Interview questions should include focused questions relating to issues discovered during evidence review, as well as general or lead-in questions to set the interview context and encourage interviewees to describe how they produce the products and services.

Preliminary evidence judged to indicate noteworthy or exemplary performance of a practice should be recorded as such.

# 2.1.7 Obtain and Analyze Preliminary Evidence, continued

**Notes, continued**

A determination of on-site appraisal readiness should be made and the sponsor advised if issues are identified. Onsite appraisal activities should not be conducted until readiness issues are resolved.

The Obtain and Analyze Preliminary Evidence activity should be conducted sufficiently in advance of the onsite period to allow any additionally requested documents or information to be provided to the appraisal team before the onsite period. It is recommended that this activity be completed at least three weeks before the scheduled onsite activities to allow for possible rescheduling of onsite activities if readiness issues need to be resolved.

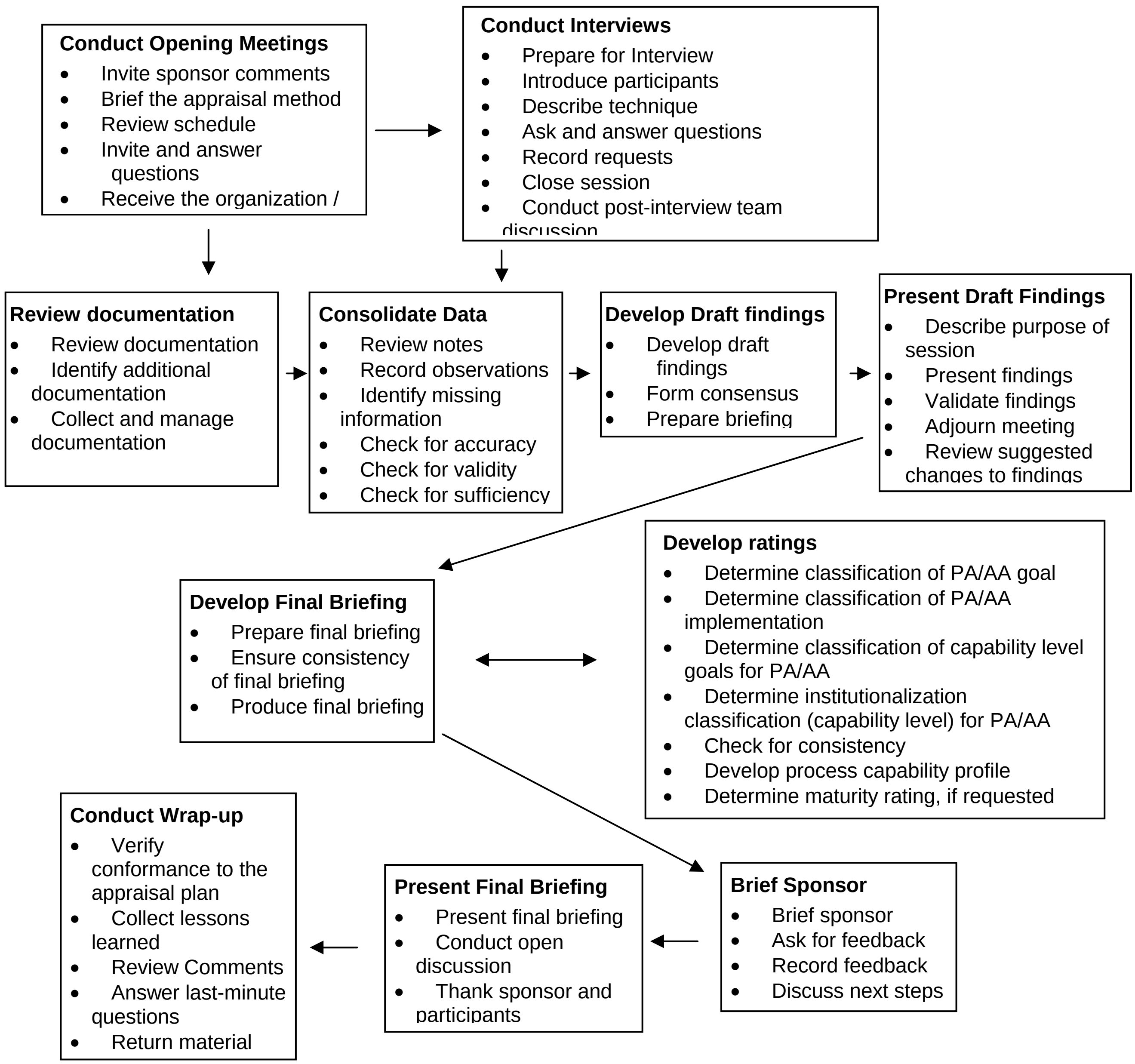
## 2.2 Conduct Appraisal

**Purpose**

The purposes of the Conduct Appraisal phase are to continue to obtain data about the entity being appraised, consolidate that data, develop ratings and present appraisal findings.

**Summary description**

Conduct Appraisal includes 11 activities as depicted below.



## 2.2.1 Conduct Opening Meetings

**Purpose**

The purposes of Conduct Opening Meetings are to describe the appraisal process to the sponsor and all appraisal participants, to review the appraisal schedule for them, and to give the sponsor an opportunity to express support for the appraisal activities.

**Summary description**

Conduct Opening Meetings involves gathering all the appraisal participants together, along with the sponsor or customer of the appraisal (depending on appraisal context), to describe the appraisal process, review the appraisal schedule, and publicly affirm the sponsor's commitment to the appraisal and the subsequent process improvement activities.

**Entry criteria**

- Completed and signed Appraisal Plan and decision to proceed with appraisal
- Appraisal Team training completed
- Preliminary evidence review completed by appraisal team
- Additional documentation received as requested from preliminary evidence review

**Exit criteria**

- Opening briefing delivered.
- Questions of appraisal participants answered.

**Roles**

Table 2-16 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Organization appraisal representative | Welcomes participants and introduces sponsor and appraisal team leader. |
| Sponsor | In the FAM brief, the Sponsor shows management support for the appraisal and subsequent process improvement activities. Encourages active involvement by appraisal participants. In the Organization brief, the sponsor briefs the appraisal team on the organization (if not done by OAR pre onsite) |
| Appraisal team leader | Presents brief overview of the model and appraisal process. |
| Appraisal team | Supports appraisal team leader. |
| Appraisal participants | Learn their role(s) in appraisal activities. |

**Table 2-16. Participants for Conduct Opening Meetings**

# 2.2.1 Conduct Opening Meetings, continued

**Input(s)**

Appraisal Plan

**Steps**

Table 2-17 shows the steps for this activity

| Step | Description |
|---|---|
| Invite sponsor comments | The sponsor expresses support for the appraisal and commitment to the resulting process improvement recommendations. The sponsor indicates how the results of the appraisal will be used to accomplish improvement. |
| Brief the appraisal method | An introduction to the FAA-iCMM and an overview of the appraisal method are provided, including a discussion of the confidentiality rules. |
| Review schedule | The ATL reviews the schedule and locations for the appraisal activities and stresses the necessity of being on time. |
| Invite and answer questions | The sponsor, appraisal team leader, and organizational appraisal representative answer any questions from the appraisal participants. |
| Receive the organization/project brief (optional) | The sponsor or a designated representative briefs the appraisal team on the organization and projects. |

**Table 2-17. Steps for Conduct Opening Meetings**

## 2.2.1 Conduct Opening Meetings, continued

**Outputs**

- Participants ready for appraisal

**Typical duration/ effort**

- Typical calendar duration: one to two hours
- Typical level of effort: one to two hours for each participant and team member

**Notes**

Refer to Appraisal Tool Kit for a sample opening briefing.

The appraisal goals and use of results are established in the preparation phase as part of Select Appraisal Organizational Scope.

The opening meeting brief should mention the sponsor and participant feedback forms and that the site coordinator will collect them for delivery to the FAA process improvement group.

## 2.2.2 Conduct Interviews

| | |
|---|---|
| **Purpose** | The purpose of Conduct Interviews is to gather data from appraisal participants and to understand process implementation issues not resolvable during documentation reviews. |
| **Summary description** | The Appraisal Team Leader will determine the interview sessions appropriate for the information needed and the available interview time. The rules of confidentiality should be communicated to all interview participants and the interviews conducted in a manner determined by the ATL and appraisal team. Individuals or groups may be interviewed by the full appraisal team or a subset of the team consisting of at least one mini team. |
| **Entry criteria** | • Exploratory question sets have been scripted.<br>• Interview time allocated to each mini team for each interview.<br>• Interview structure and constraints agreed to by appraisal team.<br>• Interviews have been planned and scheduled. |
| **Exit criteria** | • An understanding of each interviewee's perspective of project and organizational processes obtained.<br>• All documents identified during the interview sessions have been requested.<br>• All process areas/application areas within the scope of the appraisal have been addressed by participants with appropriate knowledge of processes and practices. |

## 2.2.2 Conduct Interviews, continued

**Roles**

Table 2-18 lists the roles involved in this activity

| Role | Summary |
| --- | --- |
| Appraisal team leader (or appraisal team member if designated) | Leads the interview session, ensuring the correct person (interviewer) is conducting the interview. Ensures that the key exploratory questions are addressed. |
| Organization appraisal representative or Site coordinator | Ensures attendance of the participants. |
| Appraisal team | Takes notes during interviews. Notes artifacts and documents mentioned during the interview. Asks questions to seek additional information, or clear up ambiguity. |
| Data Manager | Makes a list of artifacts and documents requested by the Appraisal team leader, or other team member. Provides the interviewee, and organization appraisal representative or Site coordinator, with a copy subsequent to the session. Keeps track of items requested, received, and returned by the appraisal team. |
| Timekeeper | Ensures compliance with time constraints. |
| Interviewee or Group | Provide the appraisal team with knowledge of process. Discuss practices performed. Provide the appraisal team with samples of the work products that support process claims. |

**Table 2-18. Participants for Conduct Interviews**

**Inputs**

- Exploratory question sets (from Activity 2.1.7 or templates from the Tool Kit)
- Session checklists for the facilitator/moderator

## 2.2.2 Conduct Interviews, continued

**Steps**

Table 2-19 shows the steps for this activity.

| Step | Description |
|---|---|
| Prepare for Interview | The ATL receives mini team interview time requests and allocates time to mini teams. The ATL reviews team rules with the team for conducting interviews. |
| Introduce participants | The ATL welcomes the individual or group, and explains the purpose of the interview session. The appraisal team and interviewees introduce themselves. |
| Describe technique | The rules of confidentiality are reinforced, and the procedure for the structured interview is described to the interviewees. |
| Ask and answer questions | The interviewer begins with the exploratory questions. Members of the appraisal team should take notes and ask questions as appropriate. Strict adherence to time constraints is of paramount importance. |
| Record requests | The data manager records any requests of the appraisal team for documentation, or other data. Follow-up is necessary to ensure that the items are received. |
| Close Session | The ATL draws the dialogue to a close, asks closing questions, thanks the participant(s) and reminds them of the confidentiality rules, and data requests made by the appraisal team. A small amount of time should be afforded the interviewee for questions of the appraisal team, or to offer key information that may have been overlooked. |
| Conduct post-interview team discussion | Conduct a brief team discussion, summarizing key information obtained and information needed. |

**Table 2-19. Steps for Conduct Interviews**

**Outputs**

- Interview notes and/or draft observations
- List of various artifacts requested during the interview sessions

**Typical duration/ effort**

- Typical calendar duration: one to four days
- Typical level of effort: Leads: one group or three to five individual lead interviews; Practitioners: one to five groups or eight to ten individual interviews
  - one to two team hours per individual interview
  - one to two team hours per group interview

# 2.2.2 Conduct Interviews, continued

**Notes**

Prior to the interviews, the ATL receives and allocates mini team interview time requests. The ATL also reviews the interview rules determined by the team, e.g., to what extent does a mini team/individual prefer that other team members restrain from asking questions during that mini team/person's allocated interview time. The trade off is that restricting other team member follow up questions may negate efficiencies of asking multiple questions while a given context is established.

The ATL guides the interviewees through the data collection process. A checklist for this work is in the toolkit, Training Support Materials. The keys to success are building understanding -- the participants feel that what they provide is useful and comprehended by the appraisal team. To that end, it is recommended that the team apply active listening practices (eye contact, head nods, etc.), while ensuring that all of the critical questions are asked.

About one to one and a half hours and one to four interviewees are typical for an interview session.
A brief team meeting immediately after each interview is recommended to review and reinforce key information obtained and new information needs.

The use of "mini teams" and parallel interviews may be required to complete the activity within the time constraints. The Appraisal Team Leader will designate the leaders for "mini teams".

The ATL or mini team lead for parallel interviews advises interviewees:
- note taking not allowed
- confidentiality rules

Typically, the interview sessions include the following. The interview facilitator opens and closes interview sessions, beginning with asking the interviewees to introduce themselves and state how long they have been with the organization and how long they have been working in their discipline or current type of work. The facilitator may close with asking each interviewee how things are different as a result of the process improvement program and if they could change one thing (other than their salary or boss) what would it be. Before adjourning the meeting, the facilitator reminds everyone of the confidentiality rules and the time and location of the next session they are expected to attend.

## 2.2.3 Review Documentation

**Purpose**

The purposes of Review Documentation are to review and analyze documentation received after Obtain and Analyze Preliminary Evidence activity and from additional information requests resulting from interviews.

**Summary description**

The appraisal team members continue documentation review and identify any additional documentation needed by the appraisal team. The requested documentation is collected for review. The data manager keeps track of all documentation provided by the organization being appraised. The appraisal team reviews documentation for data/information to support the appraisal process.

**Entry Criteria**

- Documentation received

**Exit criteria**

- No additional documentation needed

**Roles**

Table 2-20 lists the roles involved in this activity

| Role | Summary |
|---|---|
| Appraisal team | Identifies any additional documentation needed. Independently/individually reviews documentation and takes notes/makes observations while engaged in review of documentation. |
| Site coordinator | Assists appraisal team by arranging for space to store documentation and conduct documentation review. Locates and collects documentation needed by the appraisal team. |
| Appraisal team leader | Keeps documentation review progressing according to appraisal activities schedule. |
| Data manager | Maintains accountability of documentation for the appraisal team. |

**Table 2-20. Participants for Review Documentation**

## 2.2.3 Review Documentation, continued

**Inputs**

- Relevant project, program, and organization documents.

**Steps**

Table 2-21 shows the steps for this activity.

| Step | Description |
|---|---|
| Review documentation | The appraisal team reviews documentation already collected and takes notes/makes observations as appropriate. |
| Identify additional documentation. | Based on data gathered during individual interviews, group sessions, or documentation review, appraisal team identifies necessary supplemental documentation. |
| Collect and manage documentation | Documentation is located, collected, logged and tracked. |

**Table 2-21. Steps for Review Documentation**

**Output(s)**

- Notes and observations from reviewed documentation.

**Typical duration/ effort**

- Typical calendar duration: one to three days
- Typical level of effort: four to eight team hours

**Notes**

Most of the documentation review should be done prior to onsite appraisal activities.

In reviewing documentation and developing observations, care should be exercised to base observations only on those documents that are indicative of work actually resulting from the performance of a practice (for model-related observations). Again any noteworthy or exemplary performance should be noted.

Multiple additional document requests usually indicate that the organization either does not have the requested/needed documentation or that they don't understand what is being asked for. When this is occurring, the mini team should hold a face-to-face meeting with appropriate organization staff to expedite resolution.

## 2.2.4 Consolidate Data

**Purpose**

The purpose of Consolidate Data is to consolidate information obtained from all appraisal data sources into a set of valid and sufficient observations.

**Summary description**

Consolidate Data involves consolidating notes into observations to reflect the integration of the information gained in the individual interviews, group interviews, questionnaires, briefings, and document reviews. This activity should be performed multiple times, typically at the conclusion of each data collection session. Observation review allows the members of the appraisal team to verify their understanding of the information obtained with the other team members. This activity also allows the team to strategize any needed changes in the data gathering events.

**Entry criteria**

- At least one data collection session has concluded.

**Exit criteria**

- Team members agree that observations are valid and sufficient.

**Roles**

Table 2-22 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal Team Leader | Provides guidance and model expertise for the team's deliberations. |
| Appraisal team | Discusses any issues; formulates observations; ensures that they meet the consolidation requirements of accuracy, validity, and sufficiency; and approves observations by consensus. |

**Table 2-22. Participants for Consolidate Data**

**Inputs**

- Notes from data collection sessions

# 2.2.4 Consolidate data, continued

**Steps** Table 2-23 shows the steps for this activity.

| Step | Description |
|---|---|
| Review notes | Each team member privately reviews his/her notes from the data collection sessions. |
| Record observations | Each team member creates observations from his/her notes. Each observation should include: a link to the FAA-iCMM practice if applicable; indication that it is a strength, weakness, or alternative practice; session(s) where observation was collected; and identification of the team member recording the observation. |
| Identify missing information | As missing information is identified, the need is documented and the appraisal strategy is modified as required. |
| Check for accuracy | Team members will ensure that the observation is accurate. The appraisal team as a whole will then review the proposed observation. Accuracy includes all of the following:<br>• **Worded correctly** (e.g., clear, does not use absolutes, expressed in site terms, and non-attributable)<br>• **Based on information provided** and documented in notes<br>• **Relevant** by determining that it can be mapped to the FAA-iCMM or otherwise has a significant impact on the organization's process capability<br>• **Significant** by determining that it can be classified as evidence of strength, weakness, or acceptable alternative practices<br>• **Not redundant with other observations** |

## 2.2.4 Consolidate data, continued

| Step | Description |
|---|---|
| Check for validity | The appraisal team will ensure that the accurate observation is valid. Validity includes:<br>• **Corroborated** -<br>    ∗ Based on data from at least two independent sources, e.g., two separate people or a person and a document<br>    ∗ Based on data obtained during at least two different data gathering sessions<br>    ∗ Strengths and alternative practices confirmed by at least one source that indicates actual practice performance<br>• **Consistent** with other validated observations (does not include weaknesses that conflict with evidence of strengths or acceptable alternatives) |
| Check for sufficiency | The appraisal team will ensure that the set of accurate and valid observations for a goal is sufficient. Sufficiency indicates that data were collected during the appraisal to cover the appraisal scope:<br>• the organizational scope of the appraisal<br>• the full life cycle within scope of the appraisal<br>• the FAA-iCMM components within scope of the appraisal<br>    ∗ observations cover each BP<br>    ∗ observations cover each GP (for each PA or AA)<br>Sufficiency also requires a review of documentation indicating work actually performed, for each goal. See the Notes for minimum required documentation review. |

**Table 2-23. Steps for Consolidate Data**

## 2.2.4 Consolidate data, continued

**Outputs**

A sufficient set of valid observations for each goal within appraisal scope, or if sufficiency cannot be attained, an agreement that such a goal will be designated “not rated”.

**Typical duration/ effort**

- Typical calendar duration: Four to eight hours total during the data gathering (four days)
- Typical level of effort: Eight or more team hours

**Notes**

Findings validity and organization buy-in depend on obtaining information from multiple sources and sessions. In connection with corroboration, data sources include interviews, briefings, draft findings presentation, participant questionnaire responses, and documentation. The two–data-gathering-sessions requirement can be satisfied a number of ways, including: two separate interview sessions, an interview session and a document, two different briefings, an interview and a participant questionnaire response, and two different documents (each document qualifies as a data gathering session). Questionnaire results should be from a method that meets acceptable sampling and reliability requirements.

If sufficiency is not attainable in a reasonable amount of time during observation review, the goal will be “not rated” (see 2.2.7).
It is recommended that the observation review be limited to two hours for a process area or application area. If consensus on validity and sufficiency cannot be reached within that time, an issue investigation task might be assigned and observation review rescheduled.

Organizational coverage sufficiency:
For appraisal of an organization with multiple projects, acceptable organization coverage requires observations for each practice from at least half the projects and observations for at least two thirds of the practices for a PA/AA for each project. An easy way to think of this is to construct a matrix with columns for projects and rows of practices; for each row there should be an observation for at least half the columns and, for each column there should be observations for at least two thirds of the rows. These observations can be from any mix of sources; thus relatively equal weight is given to interviews, documents, briefings and questionnaire responses.

**Notes, continued**

Life cycle coverage sufficiency is achieved if:

- The appraisal plan provides that projects and staff to be interviewed appropriately address the life cycle of products and/or services of the organization.
- Data collection is performed as planned and all requirements for validity and sufficiency are satisfied.

The above is confirmed at the end of observation review.

Documentation review:
The minimum documentation review requirements are that documentation indicating work actually performed must be reviewed for at least half the practices of each goal for each project.

References to “goals” in this activity refer to both process area/application area goals and capability level goals.

Observations that the team judges to be noteworthy or exemplary performance of a practice should be indicated as such in the observation statement, and in the appropriate findings statement.

## 2.2.5 Develop Draft Findings

**Purpose**

The purpose of Develop Draft Findings is to develop findings for each process area/application area investigated in the appraisal.

**Summary description**

Develop Draft Findings involves analyzing the consolidated observations and synthesizing them into a manageable set for incorporation into the final briefing.

**Entry criteria**

- Data has been consolidated
- Team consensus that sufficient coverage has been obtained

**Exit criteria**

- Consensus is obtained on draft findings.
- Draft findings briefing is developed.

**Roles**

Table 2-24 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team leader | Provides expertise on the FAA-iCMM and the appraisal method and guides the team in forming consensus. |
| Appraisal team | Develops draft findings<br>Achieves consensus |

**Table 2-24. Participants for Develop Draft Findings**

**Inputs**

- Consolidated data
- Template for findings

# 2.2.5 Develop Draft Findings, continued

**Steps**

Table 2-25 shows the steps for this activity.

| Step | Description |
|---|---|
| Develop draft findings | Review the observations. Identify those major issues for each PA/AA that need to be presented to the appraised organization. Aggregate and record related observations into appropriate strengths or weaknesses. Organize the findings according to process area/application area and non-FAA-iCMM findings. |
| Form consensus | Each finding is presented to the team for final edit and approval. The team *must* agree to support each finding. (See Notes for guidance when achieving consensus is difficult.)<br>This step continues until consensus is achieved on the draft findings presentation. |
| Prepare briefing charts | The findings are placed on briefing charts for presentation. See the Toolkit for a sample of the findings presentation slides. |

**Table 2-25. Steps for Develop Draft Findings**

**Outputs**

- Draft findings

**Typical duration/ effort**

- Typical calendar duration: Four to eight hours
- Typical level of effort: Four to eight team hours

**Notes**

There are sometimes local issues that must be addressed if the appraisal is to have credibility with the participants. These may be identified as non-FAA-iCMM or cultural findings. Mini-teams typically develop these draft findings.
A finding is:

- Worded correctly (clear, does not use absolutes, expressed in site terms, and non-attributable to a person)
- Non-attributable to a project unless this has been specifically requested by the sponsor after appropriate discussion and is recorded in the plan (see 2.1.4)
- A summary of observations, either strengths or weaknesses.

## 2.2.5 Develop Draft Findings, continued

**Notes, continued**

Findings do not address "goodness" of practice performance, but rather reflect what the team considers "reasonable" performance. Reasonable performance considers the context of the organizational unit, including size, application domain, and key characteristics (e.g., size, criticality, complexity and quality) of the products or services.

Observations designated as "exemplary" or "noteworthy" during data consolidation should retain that designation in the findings.

Maintain the record of traceability between practice strengths and weaknesses, objective evidence, findings and related goals.

The ATL should ensure that too much time is not spent on "wordsmithing" the draft findings. The following may aid in this:

- Review and agree on form and/or templates for findings during team training
- Identify a team member as the lead for grammar and style
- Use a person for real time editing that is skilled in typing, composition, spelling and grammar.

If team members leave the appraisal without full commitment to all of the findings, the other participants will sense the lack of consensus and interpret it as a weakness in the findings. If a team cannot reach consensus on a finding, the issue should be identified as information needed in the presentation or provisionally included as a finding to elicit response.

Draft findings development, as with all team activities, should be conducted in private and the draft findings and input materials secured. (e.g., the team room door should be locked to control entrance by non team members.)

At the conclusion of draft findings development, the ATL should remind the team of the following:

- The ATL will read the draft findings verbatim
- Team members should refrain from elaboration on the findings while they are being read.
- As participants ask questions, the ATL may call on a team member to explain, but not elaborate on, a term or aspect of a finding.

## 2.2.6 Present Draft Findings

**Purpose**

The purpose of Present Draft Findings is for the team to validate with the participants that the synthesized findings represent the information provided during data gathering. This session is important in establishing the credibility of the appraisal with the participants and for providing improvement momentum.

**Summary description**

Present Draft Findings involves presenting the synthesized findings to the managers as a group, and to all the practitioners as a group. This provides the opportunity for participants to provide feedback on the validity of the information. Generally all managers and strong opinion leaders are grouped in one group, with the other participants in the other group. The team later revises findings, if appropriate.

**Entry Criteria**

- Draft findings slides prepared

**Exit Criteria**

- Presentation of draft findings complete.
- Participant comments recorded and findings are updated.

**Roles**

Table 2-26 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team leader or OAR | Presents the draft findings. Solicits comments from participants. Facilitates the feedback portion of the meeting. |
| Appraisal team | Observes reactions of participants to findings, and takes notes on the feedback. Modifies findings as needed and comes to consensus on the findings. |
| Appraisal participants | Listen to findings presentation; provide feedback on whether the appraisal team captured what is happening in the organization. Offer improvements. |

**Table 2-26. Participants for Present Draft Findings**

**Inputs**

- Draft findings slides (from activity 2.2.5)

## 2.2.6 Present Draft Findings, continued

**Steps**

Table 2-27 shows the steps for this activity.

| Step | Description |
|---|---|
| Describe purpose of session | Re-emphasize that the goal of the appraisal is to capture the "state of the practice" in the appraised entity; this session allows the appraisal team to validate that they have accurately captured the viewpoint of the participants. No copy of the briefing should be passed out at this time. No note taking is allowed by the participants. |
| Present findings | Present the findings portion of the briefing verbatim in accordance with team consensus. During this briefing, observe the reactions to the findings. |
| Validate findings | After the run-through of the findings, solicit feedback from the practitioners, e.g., "Is this what you told us and is this worded in a way to get positive action from management?" Lead the discussion. When changes are proposed, no commitment to change is made, but the comment is simply recorded. |
| Adjourn meeting | Remind participants of the time for the final findings briefing and the deadline for submitting additional documentation. |
| Review suggested changes to findings | Not all requested changes will be accepted, particularly, ones that do not add to the critical issues of the appraisal. The information received in the Draft Findings session will be treated as data obtained from another data collection session. The team must come to consensus on the changes before they are made. |

**Table 2-27. Steps for Present Draft Findings**

**Outputs**

- Notes by team
- Revised findings

## 2.2.6 Present Draft Findings, continued

**Typical duration/ effort**

- Typical calendar duration: One hour for each presentation; two hours to update findings.
- Typical level of effort: Four team hours plus one participant's hour

**Notes**

The ATL reads the draft findings verbatim to ensure that the team consensus on findings is presented.

Feedback helps to validate and gather consensus of the need for change.

The ATL asks the participants to not take notes and to keep draft findings to themselves until after the final findings briefing. This allows participants in a subsequent findings presentation to respond to the findings in an original and unbiased manner.

Although participants are not allowed to take notes during the draft findings presentation, if appropriate, the ATL may designate a team member to record selected notes for the participants. Notes that may be recorded are explanations of terminology and areas or sources where the organization might find documentation they would provide to rebut findings. This kind of note taking is appropriate when there are a large number of findings such that it would be unreasonable for the organizational representative to remember what and where to look regarding additional documentation.

These notes may be made available to a participant representative after all draft findings presentations are completed.

Additionally, after all draft findings presentations are completed the ATL and mini team representatives may meet with an organizational representative to clarify the type of documentation that might be appropriate to rebut findings.

During the presentation the ATL should establish a deadline for receipt of additional documentation. Typically this would be within an hour of start of business the next day for draft findings presentations in the afternoon.

## 2.2.7 Develop Ratings

**Purpose**

The purpose of Develop Ratings is to develop the process capability profile.

**Summary description**

Develop Ratings involves the appraisal team coming to consensus on the process capability profile. The capability rating of each PA and/or AA is determined by coming to consensus on the extent to which the appraised organization meets the goals of each process area/ application area and capability level within scope of the appraisal. These capability ratings together constitute the process capability profile. A maturity rating can then be derived from the profile if requested by the organizational unit.

**Entry criteria**

- Updated findings

**Exit criteria**

- Process capability profile is finalized.

**Roles**

Table 2-28 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team | Develops and comes to consensus on the process capability profile. |

**Table 2-28. Participants for Develop Ratings**

**Inputs**

- Observations
- Updated findings

# 2.2.7 Develop Ratings, continued

**Steps** Table 2-29 shows the steps for this activity.

<table>
<tr><th>Step</th><th>Description</th></tr>
<tr><td>Determine classification of PA/AA goal</td><td>Review each goal for each PA/AA; classify and record that goal as:<ul><li>Not Rated - The appraisal findings do not sufficiently cover the goal (as defined in section 2.2.4).</li><li>Not Applicable - The FAA-iCMM goal is not applicable to the organization’s environment.</li><li>Satisfied - The base practices (or application practices, as appropriate) associated with the PA/AA goal are performed as defined in the FAA-iCMM or with adequate alternative practices. There must be no significant weaknesses.</li><li>Unsatisfied - There are significant weaknesses in the performance of the base practices associated with the goal, and no adequate alternatives in place.</li></ul></td></tr>
<tr><td>Determine classification of PA/AA implementation</td><td>Review the PA/AA goal classifications for each PA/AA; classify and record that PA/AA as:<ul><li>Not Rated – At least one goal for the PA/AA is classified as Not Rated.</li><li>Not Applicable – All goals for the PA/AA are classified as Not Applicable.</li><li>Implemented – All goals are classified as Satisfied or at least one goal is classified as Satisfied with all other goals classified as Not Applicable. Capability level 1 has been achieved.</li><li>Not implemented – All goals are rated and at least one goal is classified as Unsatisfied. This is capability level 0.</li></ul></td></tr>
</table>

## 2.2.7 Develop Ratings, continued

| | |
|---|---|
| Determine classification of capability level goals for PA/AA | For each implemented PA/AA, review each capability level goal; classify and record that goal as:<br>• **Not Rated** - The appraisal findings do not sufficiently cover the goal (as defined in section 2.2.4).<br>• **Satisfied** - The generic practices associated with that capability level goal are performed for the PA/AA as defined in the FAA-iCMM or with adequate alternative practices. There must be no significant weaknesses.<br>• **Unsatisfied** - There are significant weaknesses in the performance of the generic practices associated with that capability level goal, and no adequate alternatives in place. |
| Determine institutionalization classification (capability level) for PA/AA | Review each PA/AA implementation classification and its capability level goal classification; classify and record the PA/AA as:<br>• **Not Rated** - The PA/AA implementation classification is Not Rated. No capability level is assigned; the PA/AA is classified as Not Rated (NR).<br>• **Not Applicable** - The PA/AA implementation classification is Not Applicable. No capability level is assigned; the PA/AA is classified as Not Applicable (NA)<br>• **Institutionalized at level X** - The PA/AA implementation classification is Implemented and the PA/AA capability level goals up to and including level X are satisfied. If the PA/AA is Implemented but the Level 2 capability level goal is Unsatisfied or Not Rated, then the PA/AA is determined to be Implemented (capability level 1). If the PA/AA is Not Implemented then the PA/AA is classified as capability level 0. |

## 2.2.7 Develop Ratings, continued

| | |
|---|---|
| Check for consistency | The capability rating is compared with the strengths and weaknesses of each PA/AA (including global strengths and weaknesses) to ensure consistency. |
| Develop Process Capability Profile | The process capability profile is determined by charting each PA/AA capability level (0-5) or classification. |
| Determine Maturity Rating, if requested | A maturity level rating is determined from the capability level ratings, as defined in the maturity level definitions in the notes below. |

**Table 2-29. Steps for Develop Ratings**

**Outputs**

- Organization profile and project profile, as appropriate
- Maturity level rating (optional)

**Typical duration/ effort**

- Typical calendar duration: Two to four hours
- Typical level of effort: Two to four team hours

**Notes**

The following maturity level definitions are used in determining maturity levels:

- **Maturity Level 1:** To achieve maturity level 1, all process areas staged at maturity level 1 must be implemented (i.e., capability level 1 achieved) (or be not applicable).
- **Maturity Level 2:** To achieve maturity level 2, all process areas staged at maturity levels 1 and 2 must be institutionalized at capability level 2 (or be not applicable).
- **Maturity Level 3:** To achieve maturity level 3, all process areas staged at maturity levels 1, 2, and 3 must be institutionalized at capability level 3 (or be not applicable).
- **Maturity Level 4:** To achieve maturity level 4, all process areas staged at maturity levels 1, 2, 3, and 4 must be institutionalized at capability level 3 (or be not applicable) and selected process areas additionally must be institutionalized at capability level 4.
- **Maturity Level 5:** To achieve maturity level 5, all process areas staged at maturity levels 1, 2, 3, 4, and 5 must be institutionalized at capability level 3 (or be not applicable) and selected process areas additionally must be institutionalized at capability level 5.

# 2.2.7 Develop Ratings, continued

**Notes, continued**

Develop Ratings is performed simultaneously with the last step of Present Draft Findings and the first step of Develop Final Briefing. A typical scenario would be to develop final findings, ratings, summaries, recommendations, and come to consensus in an iterative fashion.

- The term "rated" is used to define a PA/AA that does not have the classification of "Not Rated".
- A PA/AA must be found to be Implemented if the findings indicate that the organization implements all related practices or acceptable alternatives to related practices.
- An implemented PA/AA must be found to be Institutionalized at a given level if the findings indicate that the organization implements all related generic practices or acceptable alternatives to related generic practices.
- A PA/AA cannot be Institutionalized at a specific level unless the findings indicate that the process is institutionalized and has been in place for a satisfactory period of time.
- PAs/AAs that are not within the scope of the appraisal are designated "Out of Scope" in the capability profiles.
- During the rating activity any practice weaknesses that are considered significant to the model component ratings are noted in the appraisal record.

Alternative ways may be used to develop and present appraisal results. For example, for each process area/application area, the percentage of base practices implemented (performed with no significant weaknesses) may be computed and reported. This may also be done to include the percentage of generic practices implemented up through the capability level scope set for each process area/application area. Finally, this may be rolled up to cover all PAs/AAs and capability levels so that a final percentage of all practices implemented within appraisal scope can be provided. This is another way of measuring progress and can be an encouraging indicator for organizations, rather than a single capability level for each PA or AA.

Alternative ways of developing and presenting appraisal results also include providing results in ISO/IEC 15504 form. In this form each ISO/IEC 15504 achievement result is rated as achieved or not achieved based on whether there are any significant weaknesses in the iCMM practices relating to the achievement. Process Attribute ratings are then determined using the percentage scale of extent of achievement. Process Attribute ratings should be identified by the process area name and the process attribute name (see Appendix F, Clause 6.3 for additional information).

## 2.2.8 Develop Final Briefing

**Purpose**

The purpose of Develop Final Briefing is to prepare the final briefing to the sponsor and participants.

**Summary description**

Develop Final Briefing involves the appraisal team coming to consensus on the final briefing.

**Entry criteria**

- Team consensus on final capability profile and maturity level rating (if included)

**Exit criteria**

- Team consensus on a final briefing that includes the components indicated below

**Roles**

Table 2-30 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team | Makes changes to the briefing if needed and comes to consensus on them. Provides global, cultural, and other non-FAA-iCMM finding slides as well as the beginning and closing part of the briefing. Prepares slides and enough copies of the final briefing for the sponsor and the appraisal team, plus a few extras in case the sponsor wants extras for his/her own distribution. |

**Table 2-30. Participants for Develop Final Briefing**

**Inputs**

- Process capability profile (from activity 2.2.7)
- Maturity level rating (from activity 2.2.7)
- Validated, updated findings (from activity 2.2.6)
- Template for presentation (Toolkit)
- Checklist for the activity

## 2.2.7 Develop Final Briefing, continued

**Steps** Table 2-31 shows the steps for this activity.

| Step | Description |
|---|---|
| Prepare final briefing | The appraisal team develops, reviews, modifies, and comes to consensus on all parts of the briefing. This includes:<br>• Opening and closing<br>• PA/AA findings and ratings<br>• Next steps<br>• Findings found across many PAs that are identified as “global” findings<br>• Non-FAA-iCMM findings<br>• PA/AA “Summaries”, and “Recommended Actions” The recommended actions should address weaknesses.<br>• Appraisal disclosure statement |
| Ensure consistency of final briefing | Ensure that there is no conflict and that the final briefing is consistent. |
| Produce final briefing | Create the final charts, and copies of the briefing. |

**Table 2-31. Steps for Develop Final Briefing**

**Outputs**

- Final briefing is prepared for delivery to participants.

**Typical duration/ effort**

- Typical calendar duration: one to four hours
- Typical level of effort: one to four team hours

## 2.2.7 Develop Final Briefing, continued

**Notes**

Confirm and document that the appraisal was conducted in accordance with the plan, as well as the extent of appraisal compliance to 15504 (if provided for in the plan). If the appraisal plan indicates presentation of ISO/IEC 15504 process profiles, include the process attribute ratings in accordance with Appendix F, Clause 6.3.

Be sure the presenter(s) are comfortable delivering the briefing and that the whole team supports the results.

Next Steps may include a delta appraisal, within a time frame determined by the appraisal team, typically not greater than 6 months; if so, this should be confirmed with the sponsor prior to presentation of the Final briefing. If a Delta appraisal is planned, include in the final brief that the Delta will be conducted in accordance with Section 3.9 of the FAM and may include collecting data on any process areas or organizational areas within the appraisal scope, as judged appropriate by the appraisal team.

Additionally, in the Next Steps section, the role of the OAR in communicating and understanding the findings for appraisal follow-up activities should be discussed. Post appraisal consultations from team members is generally available to organization staff (confidentiality will continue to apply).

Ratings may be omitted if requested by the sponsor.

An appraisal disclosure statement provides a simple one-page summary of the appraisal and can be used by the sponsor in describing appraisal achievements. This statement should include:

- Appraisal sponsor
- Appraisal team leaders and appraisal team members
- Organizational unit appraised
- Reference model for the appraisal
- Appraisal method
- Process areas/application areas rated and process areas/application areas not rated
- Capability level ratings for each process area/application area, and maturity level designation if applicable
- ISO/IEC 15504 process attribute ratings, if provided for in the plan or requested by the sponsor.
- Dates of on-site activity
- Date of issuance of the statement
- Statement that all FAM requirements were met
- ATL signature, team members and sponsor signatures optional

## 2.2.9 Brief Sponsor

**Purpose**

The purposes of Brief Sponsor are to provide the sponsor with an opportunity to see results and findings and to ask questions privately, to obtain or provide feedback on the appraisal process, and to discuss next steps in more detail.

**Summary description**

Brief Sponsor involves the appraisal team members and sponsor having an open discussion on the results of the appraisal, the appraisal process, and/or the next steps, as appropriate. All confidentiality rules are still in effect for this meeting. No results or findings are changed as a result of this meeting with the sponsor, but the sponsor is the first to see them so that the final briefing session is not a surprise.

**Entry Criteria**

- Appraisal findings completed and process capability profile developed.

**Exit criteria**

- Sponsor is briefed on appraisal results.

**Roles**

Table 2-32 lists the roles involved in activity.

| Role | Summary |
|---|---|
| Appraisal team leader or organization appraisal representative | Reviews final briefing with sponsor. Asks sponsor if any clarification or other information is needed, suggests follow-on activities or assignments. Reaffirms confidentiality of participant responses and comments. |
| Appraisal team | Answer sponsor's questions, as appropriate. |
| Sponsor | Asks any questions not appropriate for a general audience; makes follow-up assignments. |

**Table 2-32. Participants for Brief Sponsor**

## 2.2.8 Brief Sponsor, continued

**Input(s)**

- Final briefing.

**Steps**

Table 2-33 shows the steps for this activity.

| Step | Description |
|---|---|
| Brief sponsor | Present results and findings to sponsor and review highlights of appraisal activities. Thank sponsor for providing appraisal opportunity. Reaffirm confidentiality.<br>Reassert need for sponsor to attend final briefing and to speak to appraisal participants. |
| Ask for feedback | Obtain sponsor feedback on the appraisal results and the appraisal process. Often the sponsor has questions of clarification that he/she prefers not to ask in a large group; even if there are no specific questions, this is a good time to gauge the sponsor's reaction – sometimes the results are right in line with the sponsor's prior thinking, sometimes they are a surprise. |
| Record feedback | Any feedback from the sponsor on the appraisal process should be noted and included in the lessons learned that are collected in 2.2.11 Conduct Wrap-Up. The sponsor is reminded to return the sponsor feedback questionnaire, as indicated on the form, at the conclusion of the final brief. |
| Discuss next steps | The sponsor should be reminded to take responsibility for improvement and to address follow-on activities as well as assignments, if appropriate. The briefer may provide some typical scenarios for follow-up activities and general guidance on the needed level of commitment. |

**Table 2-33 Steps for Brief Sponsor**

## 2.2.8 Brief Sponsor, continued

**Output(s)**

- Affirmation of appraisal results by sponsor.
- Appraisal team clarifications to sponsor questions on the results.
- Sponsor feedback on the appraisal process.

**Typical duration/ effort**

- Thirty minutes to one hour for sponsor and team.

**Notes**

This step is frequently used as a way to ensure sponsor follow-through and assignment of actions. It also provides the sponsor with an opportunity to see results and findings (privately) and to get a better understanding of the findings so that he/she may be more comfortable discussing the appraisal results and findings in front of or among the appraisal participants at the final briefing. Attendance at a sponsor briefing may be limited, for example to the ATL and OAR, based on sponsor's preference.

Ratings may be omitted from the final brief if requested by the sponsor

If the appraisal results include significant weaknesses, confirm with the sponsor whether the Next Steps section of the Final Briefing should include a Delta Appraisal. If a Delta is considered, discuss key aspects of the Delta, including the within-six-months guideline and that any process area or organizational area within the appraisal scope may be investigated in a Delta, as the appraisal team judges appropriate.

The sponsor briefing also provides an opportunity to obtain feedback on the sponsor's perspective of the appraisal process.

The sponsor is to be provided with the hardcopy and file of the final brief and asked who else is allowed to retain copies.

## 2.2.10 Present Final Briefing

| | |
|---|---|
| **Purpose** | The purposes of Present Final Briefing are to present the appraisal results and findings to the organization's appraisal participants, to provide the sponsor with an opportunity to reaffirm support for the appraisal process and the associated results and findings, and to discuss follow-on activities that address the results and findings (e.g., catalyst for process improvement effort). |
| **Summary description** | Present Final Briefing involves presenting the results of the appraisal to the appraisal participants and to the sponsor via a briefing that synthesizes the results and findings in a non-attributable form. Note that the sponsor may have already been briefed in private on the appraisal results and findings, but now has an opportunity to publicly reaffirm his/her support for the efforts of the appraisal team and to thank his/her organization's participants for their effort and support. |
| **Entry Criteria** | • Complete set of final briefing charts/slides and other materials. |
| **Exit criteria** | • Final briefing presentation completed.<br>• Participant questions answered, or recorded as actions. |

**Roles**

Table 2-34 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team leader or organization appraisal representative | Presents the final briefing. |
| Appraisal team | Notes feedback from participants and sponsor. |
| Sponsor | Receives appraisal results and findings from team; reaffirms support for the effort; discusses actions to be taken based on appraisal results. |
| Appraisal participants | Listen to appraisal results and provide recommendations to sponsor where appropriate. |

**Table 2-34. Participants for Present Final Briefing**

**Input(s)**

- Appraisal findings and process capability profile

**Steps**

Table 2-35 shows the steps for this activity.

| Step | Description |
|---|---|
| Present final briefing | The presenter goes through the entire briefing, including process capability profile and next steps; presenter asks for questions to be held until the end. Team takes notes on any feedback. |
| Conduct open discussion | Usually at the end of the briefing, the sponsor gives a "thank you" message, provides initial reaction, and then opens with his/her own questions or opens the discussion to the floor. |
| Thank sponsor and participants | Acknowledge the support personnel and all those who helped the appraisal succeed. |

**Table 2-35. Steps for Present Final Briefing**

## 2.2.9 Present Final Briefing, continued

**Output(s)**

- Action items from briefing presentation
- Notes on participant reaction/feedback

**Typical duration/ effort**

- One to two hours duration for each appraisal team member and each appraisal participant.

**Notes**

Before the actual briefing the sponsor should be coached on his/her participation in the meeting - i.e., the sponsor should be reminded that his/her reaction will have an impact on the reaction to follow-on actions.

## 2.2.11 Conduct Wrap-Up

**Purpose**

The purposes of Conduct Wrap-Up are to obtain feedback from the appraisal team on the appraisal process, to provide an opportunity for consulting with the appraisal team leader and organization appraisal representative on moving forward with the results, to ensure that appraisal materials are properly accounted for, to return all documentation provided by the (appraised) organization to its proper location or custodian, and to list "what worked" and "what did not work."

**Summary description**

Conduct Wrap-Up involves obtaining information about what worked and what did not work from the appraisal team members for feeding back to the process improvement organization. It also involves discussing and resolving findings and assignments for the recommendation(s) report if appropriate. It requires returning all documentation and/or other materials borrowed for the appraisal to the appropriate accountable individuals, and making certain that the appraisal rooms/locations are restored to their pre-appraisal condition(s). Finally, the lessons learned report is prepared.

**Entry Criteria**

- Appraisal completed and briefing presented

**Exit criteria**

- Appraisal lessons learned are recorded.
- Assignments are verified.
- Actual schedule and resource utilization are recorded
- Documentation and materiel returned.
- Appraisal rooms/locations cleaned up.

# 2.2.10 Conduct Wrap-Up, continued

**Roles**

Table 2-36 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team leader/ organization appraisal representative | Facilitates gathering data on what worked and did not work during the appraisal. Verifies and documents conformance of appraisal to the appraisal plan. |
| Appraisal team members | Provide input into what worked and what didn't work. Clean up appraisal locations. |
| Data manager | Return documentation and material. |

**Table 2-36. Participants for Conduct Wrap-Up**

**Input(s)**

- Action items from final briefing.

## 2.2.10 Conduct Wrap-Up, continued

**Steps**

Table 2-37 shows the steps for this activity.

| Step | Description |
|---|---|
| Verify conformance to the appraisal plan | The ATL verifies and documents the extent of conformance to the appraisal plan, including conformance to 15504, if provided for in the plan. |
| Collect lessons learned | Appraisal team notes “lessons learned” - i.e., “what worked” and “what did not work”- and planned versus actual schedule and resource utilization |
| Review comments | Note comments from appraisal participants that arose during final briefing. |
| Answer last-minute questions | Often appraisal team members have questions about improvement plans, etc., that the ATL can spend some time answering and/or providing references for. |
| Return material and clean up. | Return borrowed documentation to appropriate custodians and return other materials. Clean up rooms and restore to original condition. |

**Table 2-37 Steps for Conduct Wrap-Up**

**Output(s)**

- Schedule for completion of appraisal report, if different than the final brief.
- Completed appraisal team feedback questionnaires.
- Appraisal Lessons Learned.

**Typical duration/ effort**

- Typical calendar duration:  one to two hours
- Typical effort: one to two hours for each appraisal team member.

## 2.2.10 Conduct Wrap-Up, continued

**Notes**

This activity should occur immediately after the final briefing, in order to obtain timely feedback from the team before they depart the site.

A format for collecting team member lessons learned involves asking each team member, in turn, to provide a single item on what worked well or needs to be improved, and continuing until the feedback is concluded.

During this activity the Appraisal Lessons Learned are completed, consisting of:

- Collected appraisal team feedback on what worked well and what needs to be improved.
- Appraisal team feedback questionnaires
- Appraisal process feedback notes recorded during the sponsor brief
- ATL feedback summary

## 2.3 Report Results

**Purpose**

The purpose of the Report Results phase is to prepare the appraisal report and manage appraisal records.

**Summary description**

The Record Results phase contains 2 activities as depicted below.

**Prepare Appraisal Report**

- Review final briefing
- Plan the preparation of the report
- Write the report
- Review/revise the report
- Distribute/deliver the report

**Manage Records**

- Gather materials
- Transfer materials to be retained
- Arrange organization feedback
- Destroy unwanted materials

## 2.3.1 Prepare Appraisal Report

**Purpose**

The purpose of Prepare Appraisal Report is to provide details or explanations beyond what was contained in the final briefing.

**Summary description**

The report provides the organization with documentation of the appraisal, and additional findings detail if appropriate.

**Entry criteria**

- On site phase completed
- Provision for an appraisal report in the Appraisal Plan

**Exit criteria**

- Report completed

**Roles**

Table 2-38 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Organization appraisal representative or appraisal team leader | Coordinates preparation of report. |
| Appraisal team | Individual team members perform writing assignments and act as peer reviewers for the entire appraisal report. |

**Table 2-38. Participants for Prepare Appraisal Report**

**Inputs**

- Final briefing
- Notes

## 2.3.1 Prepare Appraisal Report, continued

**Steps**

Table 2-39 shows the steps for this activity.

| Step | Summary |
|---|---|
| Review final briefing | Review the final briefing |
| Plan the preparation of the report | Determine what needs to be provided in the final report, and who should do what, by when. |
| Write the report | Write the report |
| Review/revise the report | Peer review the report and revise as required. |

**Table 2-39. Participants for Prepare Appraisal Report**

**Outputs**

- Appraisal report

**Typical duration/ effort**

- Typical calendar duration: one to four weeks
- Typical level of effort: one to five team days

**Notes**

Typically, the appraisal report may be a copy of the final briefing, plus any further detail requested by the sponsor as determined in the plan (e.g., project specific findings, or reporting % of practices implemented, etc.)

Appraisal notes may be used in writing the report and during peer review to assist in developing recommendations and in verification of accuracy of the appraisal report.

The content of the appraisal report shall be as specified in the appraisal plan.

The ATL shall also ensure that the sponsor or designated representative has a copy of the approved appraisal plan.

The appraisal report may be used to provide additional findings detail beyond what is contained in the final briefing, as long as the confidentiality rules indicated in the plan are followed. Additional detail on findings may relate to an aspect of a model practice, the project(s), or life cycle phase that a weakness is related to. The distribution of project-specific findings may be limited to the affected projects, if so indicated by the plan.

### 2.3.2 Manage Records

**Purpose**

The purpose of Manage Records is to ensure appropriate disposition of all appraisal materials in accordance with the appraisal plan.

**Summary description**

Manage Records involves reviewing all appraisal materials and ensuring their proper disposition. Appraisal results are provided to the organization and transmitted to the FAA process improvement group. Intermediate notes and work products are appropriately destroyed once the appraisal report is complete.

**Entry criteria**

- Appraisal final briefing completed

**Exit criteria**

- Records being kept are secured
- Records not needed are destroyed

**Roles**

Table 2-40 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team | Gathers notes and other records and appropriately disposes of them. |
| Organization appraisal representative | Ensures all records are properly managed. |
| Process Improvement Organization | Maintains a library of FAA-iCMM appraisal reports |

**Table 2-40. Participants for Manage Records**

**Inputs**

- All appraisal materials
- Appraisal plan

**Steps**

Table 2-41 shows the steps for this activity.

| Step | Summary |
|---|---|
| Gather materials | Gather all appraisal materials |
| | |
| Transfer material to be retained | Transfer Final Brief (or appraisal report), Lessons Learned, and any other materials to appropriate recipients, as indicated by the plan. |
| Arrange organization feedback | Remind the site coordinator to collect the sponsor and participant feedback forms and send them to the FAA process improvement group, as indicated on the forms. |
| Destroy unwanted materials | Destroy materials that are not to be managed |

**Table 2-41. Steps for Manage Records**

**Outputs**

- Process asset repository updated with material to be saved

**Typical duration/ effort**

- Typical calendar duration: one to two hours
- Typical level of effort: one to two person hours

## 2.3.2 Manage Records, continued

**Notes**

For the records to be kept, the security provided should be equivalent to that for personnel actions. It is important that the integrity of the team be maintained; violation of the stated confidentiality rules, even after the fact, can damage future appraisal activities.

In general, appraisal materials are distributed to appropriate recipients as indicated by the sponsor and the plan. The appraisal method requires the following specific distributions.

Sponsor:

- Final Brief
- Record of practice strengths/weaknesses and goal ratings, if requested (e.g., PA/AA worksheets).
- Appraisal Report, if different than the Final Brief
- Approved appraisal plan (if modified or not previously provided)

FAA Chief Engineer for Process Improvement

- Final Brief
- Appraisal Report (if approved by the Sponsor)
- Feedback forms
- Lessons learned
- Approved appraisal plan

The ATL shall also ensure that the sponsor or delegated representative has a copy of the approved appraisal plan.

The site coordinator should collect the sponsor and participant feedback forms and send them to the FAA Chief Engineer for Process Improvement.

The Software Engineering Institute (SEI) maintains a repository of appraisal results, the Process Appraisal Information System (PAIS). The appraisal results should be entered in this system if indicated by the appraisal plan and approved by the sponsor.

All appraisal team member notes and files should be destroyed after the final brief or when the final report is completed, according to the appraisal plan.

# Chapter 3: Alternative Appraisal Type Descriptions

**Introduction**

This chapter contains descriptions for the alternative appraisal types that are part of the FAA-iCMM Appraisal Method (FAM).

These appraisal types are variations of the FAM Process Description (Full Internal Appraisal) depicted in Chapter 2, and are presented in comparison to that standard.

**In this chapter**

The following descriptions are provided.


| Section | Appraisal Type | See Page |
|---|---|---|
| 3.1 | Facilitated Discussion Appraisal | 3-3 |
| 3.2 | Document-intensive Appraisal | 3-28 |
| 3.3 | Questionnaire-based Appraisal | 3-43 |
| 3.4 | Interview-based Appraisal | 3-70 |
| 3.5 | Full External Evaluation | 3-83 |
| 3.6 | Value Analysis Appraisal | 3-94 |
| 3.7 | Gap Analysis Appraisal | 3-114 |
| 3.8 | Formal Appraisal Readiness Review | 3-129 |
| 3.9 | Delta Appraisal | 3-146 |
| 3.10 | FAA-iCMM : ISO 9001 Appraisal | 3-154 |
| 3.11 | Self-Appraisal | 3-162 |

# Chapter 3: Alternative Appraisal Type Descriptions, continued

**Process descriptions**

All descriptions are formatted the same, containing the blocks of information that are described in Table 3-1. Toolkits with appraisal aids and training materials for each appraisal type are listed in Appendix E and provided separately.

| Block Title | Description |
|---|---|
| 1. Introduction | This includes purpose, overview, and roles. |
| 2. Summary description | This is a summary of the work performed during the appraisal type. It includes a cross-reference table comparing the standard activities in the Full Internal Appraisal to the activities in the appraisal type. The differences from the standard activities are identified in the table as<br>• no change,<br>• minor change,<br>• major change,<br>• activity deleted, or<br>• new activity<br>with brief remarks summarizing activity variations as appropriate. |
| 3. Detailed description | This section provides more details on the activities of the variation in relation to the standard, as appropriate.<br>• If there is no change, or the standard activity is deleted from this method, no further information is provided.<br>• If there is a minor change in the activity a separate section will discuss these changes<br>• If there is a major change to the method, the separate section will use the full template format of chapter 2 to discuss the changes. |

**Table 3-1. Process Description Format**

# 3.1 Facilitated Discussion Appraisal Description

**Contents**

The following table provides a guide to the information found in this section:


| Topic | Page |
|---|---|
| 3.1.1 Introduction | 3-4 |
| 3.1.2 Summary Description | 3-7 |
| 3.1.3 Detailed Description | 3-8 |

## 3.1.1 Introduction

**Purpose**

The Facilitated Discussion (FD) appraisal develops a description of an updated, improved process known as the “to-be” process. This appraisal method will not result in any type of rating of either maturity level or capability level.

The FD appraisal variation provides a starting point for a Process Action Team (PAT) just beginning a process improvement effort. It provides an option for training the PAT and program team members in the specific requirements of the selected Process Area (PA).

This appraisal method is truly a “self-appraisal” because it is carried out, for the most part, by those who perform the process being appraised. It acts on appraisal findings as part of the method and develops a description of an improved process that addresses weaknesses found in the appraisal.

The appraisal team, in this method, constitutes a Process Action Team (PAT) for a particular PA. Through a series of facilitated workshops, the appraisal team describes the currently used process for a particular Process Area (PA). This process is commonly known as the “as-is” process. The “as-is” process is appraised by comparing it to the Generic Practices (GPs), and the selected process area’s (PAs) Base Practices (BPs). Additional improvements are also sought. The resulting findings, or “gap analysis”, provide the basis for improvements to the “as-is” process and the generation of an updated, improved process known as the “to-be” process. The “to-be” process is presented as the final appraisal results, along with a plan to implement that improved process. The process is subsequently piloted in the program and eventually institutionalized.

This method can be used to develop an improved process covering more than one process area.

## 3.1.1 Introduction, continued

**FD Roles**

The following table shows the various roles of the people involved in the FD:

| Role | Description |
|---|---|
| Appraisal Advocate | The description in chapter 1 is appropriate. |
| Sponsor | The description in chapter 1 is appropriate. The level of the sponsor for the FD is typically the program or project lead. It must be someone with the authority to commit the resources and prioritize the effort. |
| Facilitator | In the FD, the *Appraisal Team Lead (ATL)* is usually called a Facilitator. The facilitator must have a strong understanding of the FAA-iCMM, the FD appraisal method, and the particular PA selected, and must possess facilitation skills. The facilitator is a guide. |
| PAT Lead | The PAT lead plays the role of both the *OAR* and the *Site Coordinator*. The PAT lead does the up-front planning with the facilitator, arranges and schedules the PAT activities, documents the process, and (in conjunction with the facilitator) leads the documentation sessions. It is important that this person be knowledgeable in the selected PA, respected in the program, and have the time and willingness to support the effort. FD appraisal method knowledge is desirable. |
| Process Action Team (PAT) | The PAT acts as both the *FAM appraisal team and the appraisal participants*. They are the group responsible for deriving and describing an improved process for the selected PA, and developing its implementation plan. It is important that the people selected for this team be knowledgeable in the selected PA, and respected on the program. If at all possible, it is suggested that appropriate subject matter experts (SMEs) be included on the PAT. It is best to have between 3-5 people on this team. Anyone else involved in the selected PA will be involved through the review team. |

# 3.1.1 Introduction, continued

| Role | Description |
| --- | --- |
| Review Team | The review team is made up of program members who carry out the selected PA. The review team validates the processes developed by the PAT. If the SMEs are not part of the PAT then it is imperative that they be appraisal participants by being on the review team. |
| Data Manager | The description in chapter 1 is appropriate. |

### 3.1.2 Summary Description

| ID | FAM Activity Name | FD Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for the Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | Minor change. | Scope may address several PAs and several FD appraisals. |
| 2.1.2 | Select Appraisal Organizational Scope | Minor change. | Preliminary PAT project plan developed. |
| 2.1.3 | Select Appraisal Team | Minor change. | Select PAT members. |
| 2.1.4 | Plan Appraisal Details | Minor change. | Develop and approve detailed PAT project plan. |
| 2.1.5 | Orient Participants | No change. | |
| 2.1.6 | Train Team | Major change. | Explain roles and responsibilities to the PAT and ensure PA knowledge. |
| 2.1.7 | Obtain and Analyze preliminary Evidence | Activity deleted. | |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meeting | Activity deleted | |
| 2.2.2 | Conduct Interviews | Major change. | The interview sessions are facilitated discussions used to elicit the as-is process. Review Documentation (2.2.3) and Consolidate Data (2.2.4) are conducted concurrently to evolve the as-is process. |
| 2.2.3 | Review Documentation | Minor change | Relevant documents may describe parts of the as-is process. |
| 2.2.4 | Consolidate Data | Major change | This brings together the as-is process description. |
| 2.2.5 | Develop Draft Findings | Major change. | Findings are the gap analysis. Improvement opportunities are identified. |
| 2.2.6 | Present Draft Findings | Activity deleted. | |
| 2.2.7 | Develop Ratings | Activity deleted. | |
| 2.2.8 | Develop Final Briefing | Major change. | Final Brief is the to-be Process. This activity is renamed “Derive To-Be Process” |
| 2.2.9 | Brief Sponsor | Minor change. | Get approval for to-be Process and Implementation plan. |
| 2.2.10 | Present Final Briefing | Activity deleted. | |
| 2.2.11 | Conduct Wrap-Up | No change. | |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | Activity deleted. | |
| 2.3.2 | Manage Records | Activity deleted. | |

## 3.1.3 Detailed Description

**FD 2.1.1** **Obtain Sponsor Commitment**

**Summary Description**

Obtain Sponsor Commitment involves determining the PA or PAs the PAT will work on and selecting the PAT lead and facilitator.

**Exit Criteria**

- Overall PI implementation strategy developed
- PAT Lead identified and selected
- Facilitator selected.

**Roles**

Table FD-1 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Sponsor | Determines focus of the appraisal (number of PAs, priority of each PA, priority of process improvement as compared to other tasking), selects Facilitator and PAT Lead. |
| Appraisal Advocate | Guides the Sponsor in defining the appraisal scope, determining an overall strategy for implementing process improvement, and the selection of a PAT Lead and Facilitator. |
| PAT Lead | Assumes ATL role. |
| Facilitator | Supports PAT lead |

**Table FD-1. Participants for Obtain Sponsor Commitment**

## 3.1.3 Detailed Description, continued

**FD 2.1.2** **Obtain Sponsor Commitment, continued**

**Steps**

Table FD-2 shows additional information for steps for this activity.

| Step | Description |
|---|---|
| Propose appraisal solution | • Select the PA(s) targeted for Process Improvement.<br>• Determine the priority of the PI effort (as compared to other tasking).<br>• Identify the order the PAs should be worked. |
| Agree on basics | • Identify and select the PAT Lead.<br>• Agree on and select Facilitator |

**Table FD-2. Steps for Select Appraisal Scope**

**Notes**

The sponsor is typically at a program or project level, rather than an organizational level. Selecting the scope can occur once and detail an implementation timeline for several PAs or it can be done individually for each PA and each PAT. If scope of appraisal extends beyond sponsor's authority, multiple sponsors may be required.

**FD 2.1.2** **Select Appraisal Organizational Scope**

**Exit Criteria**

- Overall PI implementation strategy developed
- Preliminary PAT project plan developed

**Inputs**

- PAT Project Plan template (see toolkit).

**Outputs**

- Preliminary PAT project plan replaces Preliminary Appraisal Plan

**Notes**

A preliminary PAT project plan replaces the Preliminary Appraisal Plan and it indicates roles, responsibilities, schedule, risks, and other items as seem appropriate from the PAT project plan template. The Facilitator assists the PAT lead.

**FD 2.1.3** **Select Appraisal Team**

**Entry Criteria**

- Preliminary PAT project plan developed
- PAT Lead identified and selected

**Exit Criteria**

- PAT members selected

**Inputs**

- Preliminary PAT Project Plan

**Roles**

Table FD-3 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Sponsor | Reviews and approves the selection and participation of PAT members. |
| Appraisal Advocate | Works with the PAT Lead and Facilitator to determine the best members for the PAT. |
| PAT Lead | Develops a list of potential PAT members. Makes contact with the potential members to discuss availability. Works with sponsor and members' supervisors to finalize membership. |
| Facilitator | Works with the PAT Lead to ensure the right types of people are included on the PAT. |

**Table FD-3. Participants for Select Appraisal Team**

**Steps**

Table FD-4 shows the steps for this activity.

| Steps | Description |
|---|---|
| Identify PAT and Review Team Candidates | Recommend potential team members. |
| Select PAT and Review Team members | Determine availability of candidates. Get commitment from the individuals, their managers, and the sponsor for selection to this team. |

**Table FD-4. Steps for Select Appraisal Team**

## 3.1.3 Detailed Description, continued

**FD 2.1.3** **Select Appraisal Team, continued**

**Outputs**

- Updated and approved PAT Project Plan with PAT and Review team members identified.

**Notes**

The PAT size is typically 3-5 members, with a minimum of 3 and a maximum of 8. There may be more people in the program involved in the PA, but they should be part of the review team. Too many people as part of the PAT will make the process too slow. The facilitator is not counted in the numbers above. The PAT should have as many SMEs as possible. If there are no SMEs on the PAT, they *must* be part of the review team. Trying to implement a new or improved process without the prior approval of the SMEs will almost surely result in a failed effort. Similarly, staffing a PAT with the most inexperienced people in the program will probably result in a process that can not be implemented or supported.

**FD 2.1.4** **Plan Appraisal Details**

**Purpose**

The purpose of Plan Appraisal Details is to produce and approve a detailed PAT Project Plan.

**Exit Criteria**

- PAT Project Plan finalized and approved

**Roles**

Table FD-5 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| PAT Lead | Develops PAT Project Plan and all associated details in conjunction with PAT and Facilitator. |
| PAT | Support PAT Lead in development of PAT Project Plan. |
| Facilitator | Support PAT Lead in development of PAT Project Plan. |
| Sponsor | Approve PAT Project Plan. |

**Table FD-5. Participants for Plan Appraisal Details**

**Steps**

Table FD-6 (all steps except those noted below are unchanged).

| Step | Description |
|---|---|
| Develop Questionnaire | Delete this step. |
| Request Documentation | Identify and gather any process documentation related to the selected PA. |

**Table FD-6. Steps for Plan Appraisal Details**

# 3.1.3 Detailed Description, continued

**FD 2.1.4** **Plan Appraisal Details, continued**

**Outputs**

- Approved PAT Project Plan, which includes
  - Goals of the appraisal
  - Process Area(s) selected and if more than one PA selected, the order in which they will be accomplished.
  - Roles, Responsibilities, Assignments –a description of what each role should do and the name(s) of the individual(s) filling that particular role.
  - Assumptions
  - Priority – a statement indicating the sponsor's determination of how this effort should be prioritized as related to other tasking.
  - Expected outputs – examples would be graphical process description, high-level process description, detailed process description, detailed procedure description.
  - Resource and schedule
  - Tasks/activities to be performed (these are the steps of the FD method with any tailoring)
  - Reporting Requirements – some examples are: periodic status report to sponsor, and to directorate SEPG; items expected to report on (i.e., schedule status, accomplishment, risks reviewed, resource and schedule tracking)
  - Detailed schedule – this should list major milestones and may be provided as an attachment.
  - Risks and Risk Mitigation Strategy

- Library of current process documentation for the selected PA

**Notes**

Delete any information related to the gathering, developing, analyzing, or conducting a questionnaire.

# 3.1.3 Detailed Description, continued

**FD 2.1.6** **Train Team**

**Purpose**

The purpose of Train Team is to explain to the PAT their role and responsibilities in conducting a FD.

**Summary Description**

The training centers on reviewing the appropriate parts of the PAT Project Plan (i.e., Goals, Roles, Responsibilities, Activities, and Assignments).

**Entry Criteria**

- PAT Project Plan approved
- PAT Lead, PAT identified

**Exit Criteria**

- PAT appears to be willing and able to carry out the FD appraisal.

**Roles**

Table FD-7 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| PAT Lead | Leads the PAT through the PAT Project Plan and associated roles and responsibilities. |
| Facilitator | Assists PAT lead as needed. Provides training as needed. |
| PAT | Attend training. |

**Table FD-7. Participants for Train Team**

**Inputs**

- Approved PAT Project Plan

**FD 2.1.6** **Train Team, continued**

**Steps**

Table FD-8 shows the steps for this activity.

| Step | Description |
|---|---|
| Determine training needs. | Determine if the PAT needs a review or refresher of the selected process area. |
| Provide PA training. | Discuss the overall goals and base practices of the selected PA with the PAT. Also discuss the Generic Practices. (as appropriate) |
| Provide FD training. | Explain and discuss the overall FD method (i.e., as-is, gap analysis, to-be, implementation plan). |
| Review PAT Project Plan | Discuss the PAT Project Plan paying particular attention to roles, responsibilities, schedule, outputs, and risks. |

**Table FD-8. Steps for Train Team**

**Outputs**

- Briefing slides

**Typical duration/ effort**

- Typical calendar duration: 8 hours
- Typical level of effort: 2-8 hours per PAT member

**Notes**

This activity reduces PAT concerns by providing descriptions of the what, how, and why of the process improvement effort, together with a question and answer session.

Different parts of this training can be combined with other parts of the process. For example, the PAT participates in developing the PAT Project Plan (2.1.4). So, all or some of the training might be provided when the team is developing the project plan.

**FD 2.2.2** **Conduct Interviews**

**Purpose**

The purpose for Conduct Interviews is to elicit, through facilitated discussion, the as-is process.

**Summary Description**

The team describes the specified PAs process. Eliciting the as-is process may take several sessions and this step may recur in conjunction with Review Documentation and Consolidate Data.

**Entry Criteria**

- PAT Lead and PAT members have been selected and trained.

**Exit Criteria**

- As-is process sufficiently described.

**Roles**

Table FD-9 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| PAT Lead | • Leads PAT, with assistance from the facilitator, in the documentation of the selected PA.<br>• Documents the process.<br>• Provides minutes of the session (as needed)<br>• Assigns and follows up on action items |
| Facilitator | • Helps to lead the documentation of the process (as required). |
| PAT | • Participate in all sessions and develop the as-is process. |

**Table FD-9. Participants for Conduct Interviews**

**Inputs**

- Any prior versions of a documented process for the selected PA

**FD 2.2.2** **Conduct Interviews, continued**

**Steps**

Table FD-10 shows the typical steps in this activity.

| Step | Description |
|---|---|
| Describe or review current high level process | Identify the high-level process steps being used for accomplishing the selected PA. In general, there should be about 4-8 process steps associated with this level of description. This may be done initially, following a top-down approach, or the high level process may be derived from lower level steps elicited first. |
| Describe or review intermediate level process | Take the individual high-level process steps and break each down to the next level of detail, as needed. Sometimes, a high level description is sufficient for describing and understanding the process. The PAT may start by describing intermediate level process steps if it seems more natural. |
| Describe or review procedures, if appropriate | Take the intermediate level process steps and break them down into the specific steps used to accomplish them. The description should identify the person responsible (by function), the action(s) required, any inputs needed, the output expected. This should be carried out only in enough detail so that the team is satisfied that this is the current process being followed, and that findings can be derived from the description. These procedures may already be described in team documents (see Review Documentation). The team may start at this lowest level and then group steps together to form higher-level process descriptions. |

**Table FD-10. Steps for Conduct Interviews**

## 3.1.3 Detailed Description, continued

**FD 2.2.2** **Conduct Interviews, continued**

**Outputs**

- Data on the as-is process.

**Typical duration/ effort**

- Typical calendar duration: 1-30 days
- Typical level of effort: 4-40 hours per person

## 3.1.3 Detailed Description, continued

**FD 2.2.3** **Review Documentation**

**Purpose**

The purpose of Review Documentation is to augment the development of the as-is process description through team artifacts.

**Summary description**

The team reviews documentation of the currently used process and incorporates it into the evolving description of the as-is process.

**FD 2.2.4** **Consolidate Data**

**Purpose**

The purpose of Consolidate Data is to bring together the description of the as-is process as obtained during facilitated discussions and document review. This step should be performed multiple times, typically at the conclusion of data gathering sessions.

**Summary description**

The team consolidates the data obtained and derives the as-is process description. This is mainly a documentation step.

**Entry Criteria**

At least one data gathering session has been held

**Exit criteria**

The as-is process for the selected PA is described.

**Roles**

Table FD-11 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| PAT Lead | Develops the as-is process description |
| Facilitator | Assists in developing the process description |
| PAT | Assists in developing the process description |

**Table FD-11. Participants for Consolidate Data**

**Inputs**

Documents and interview notes

**FD 2.2.4** **Consolidate Data, continued**

**Steps**

Table FD-12 shows the steps for this activity.

| Step | Description |
| --- | --- |
| Document results | Bring together and document results obtained during group discussions and document review. |

**Table FD-12. Steps for Consolidate Data**

**Output(s)**

- as-is process description.

**Typical Duration/Effort**

- Typical calendar duration: 3-10 days
- Typical level of effort: 8-20 hours, total effort

**Notes**

Data may be consolidated several times as the as-is process description evolves.

Typically, one or two people carry out this activity.

**FD 2.2.5** **Develop Draft Findings**

**Purpose**

The purpose of Develop Draft Findings is to compare the as-is process description to the FAA-iCMM process area and generic practices, to look for other ways that the process might be improved, and to incorporate this into a Gap Analysis report.

**Summary description**

The team performs a detailed analysis (Gap Analysis) of the just described as-is process, comparing it to the FAA-iCMM BP and GP descriptions and identifying possible shortfalls or omissions. General improvement opportunities are sought and also included in Draft Findings.

**Entry Criteria**

- The as-is process for the selected PA is documented.

**Exit criteria**

- The as-is process has been reviewed and draft findings (a Gap Analysis report) have been generated.

**Roles**

Table FD-13 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| PAT | Compare as-is process to the FAA-iCMM and develop Gap Analysis report. |
| Facilitator | Assist team in Gap Analysis and identification of improvement opportunities |
| PAT Lead | Lead the PAT in developing the gap analysis report |

**Table FD-13. Participants for Develop Draft Findings**

**Inputs**

- Completed as-is process for selected PA

**FD 2.2.5** **Develop Draft Findings, continued**

**Steps**

Table FD-14 shows the steps for this activity.

| Step | Description |
| --- | --- |
| Develop traceability matrix | Map as-is process to the practices in the appropriate traceability matrix |
| Review as-is process for compliance with FAA-iCMM | Review completed traceability matrix identifying gaps. |
| Identify areas for potential improvement | Examine the as-is process and identify areas for potential improvement considering quality, efficiency, effectiveness, experience with the as-is process, etc. |
| Document results | Document draft findings in a Gap Analysis report |

**Table FD-14. Steps for Develop Draft Findings**

**Output(s)**

- Draft Findings (Gap Analysis Report)

**Typical Duration/Effort**

- Typical calendar duration: 3-10 days
- Typical level of effort: 6-16 hours per person

**Notes**

Develop Draft Findings includes for example reviewing the current process vs. current relevant policies, standards, etc. during review of the generic practices.
Identifying areas for potential improvement may include identifying and understanding differences between documented processes and the captured as-is process.

**FD 2.2.8** — **Derive To-Be Process** ***(renamed from Develop Final Briefing)***

**Purpose**

The purpose of Derive To-Be Process to form a new improved process called the "to-be" process, and to develop a plan to implement it.

**Summary description**

The PAT will take the gap analysis results and develop an updated process, along with associated procedures. This may be as simple as adding one or two steps to a procedure or as complicated as having to restructure flows and functions. The PAT and the Review team review the new process and ensure it is compliant. The PAT then develops the implementation plan.

**Entry Criteria**

- The gap analysis has been conducted.

**Exit criteria**

- The to-be process and implementation plan are documented, reviewed, and agreed upon.

**Roles**

Table FD-15 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| PAT Lead | Leads the PAT through the development of an updated process and implementation plan. |
| PAT | Develop the to-be process and the implementation plan. |
| Review Team | Review to-be process and the implementation plan. |
| Facilitator | Facilitate the team, as needed. |
| Sponsor | Review issues and provide direction/guidance |

**Table FD-15. Participants for Derive To-Be Process**

**Inputs**

- Documented as-is process for selected PA.
- Gap Analysis Report.

**FD 2.2.8**

**Derive To-Be Process, continued** ***(renamed from Develop Final Briefing)***

**Steps**

Table FD-16 shows the steps for this activity.

| Step | Description |
|---|---|
| Analyze issues | Using the gap analysis report, prioritize the issues and identify relationships among issues. |
| Review issues | Review issues with review team and revise as required. |
| Brief sponsor | Present issues and status of the appraisal. Receive direction and/or guidance regarding acceptability and feasibility for implementation. This is an optional step. |
| Describe improvements | Based on the gap analysis report, issues, and sponsor guidance, review the as-is process. Propose specific improvements to the as-is process. This may involve making only minor changes, or it may require a complete restructuring of the process. The to-be process should be described at an appropriate level of detail to ensure it is repeatable by those who will perform it. |
| Document results | Document the new “to-be” process. |
| Regap | Perform another gap analysis of the new “to-be” process. Update the traceability matrix. Review compliance with PA and capability level goals. |
| Review/ revise to-be process | Review the “to-be” process with the review team. PAT incorporates changes as required. |
| Develop implementation plan | Develop a plan to implement the to-be process. |
| Review/ revise | Review implementation plan with review team. PAT incorporates changes as required. |

**Table FD-16. Steps for Derive To-Be Process**

## 3.1.3 Detailed Description, continued

| | |
|---|---|
| **FD 2.2.8** | **Derive To-Be Process, continued** ***(renamed from Develop Final Briefing)*** |
| **Output(s)** | • to-be process<br>• Implementation Plan |
| **Typical Duration/Effort** | • Typical calendar duration: 14-90 days (based on extensiveness of gap analysis)<br>• Typical level of effort: PAT: 16-80 hours/team member<br>Review team: 8-40 hours/team member<br>Sponsor: 1-2 hours |
| **Notes** | • The implementation plan can be an extension to the PAT Project Plan or a separate document. The same general topics identified in the PAT Project Plan should be addressed relative to the implementation of the to-be process. In addition, process and domain training should be addressed.<br>• Derive To-Be Process activities may require iteration through further gap analysis as the to-be process evolves.<br>• Disposition and coordinate all review comments regarding the to-be process and the implementation plan. |

## 3.1.3 Detailed Description, continued

**FD 2.2.9** **Brief Sponsor**

**Purpose**

The purpose of brief sponsor is to obtain sponsor approval of the to-be process and the implementation plan.

**Summary description**

The to-be process is presented to the sponsor for approval to implement along with a plan on how to implement it.

**Entry Criteria**

- To-be process and implementation plan have been reviewed and agreed upon.

**Exit criteria**

- Sponsor approves the to-be process and implementation plan.

**Roles**

Table FD-17 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| PAT Lead | Develops Briefing. Presents to-be process and implementation plan to the Sponsor. |
| PAT | Supports the PAT Lead as needed. |
| Review Team | Supports the PAT Lead as needed. |
| Facilitator | Supports the PAT Lead as needed. |
| Sponsor | Provide direction/guidance to PAT Lead on to-be process and implementation plan. |

**Table FD-17. Participants for Brief Sponsor**

**Inputs**

- to-be process and Implementation Plan.

## 3.1.3 Detailed Description, continued

**FD 2.2.9** **Brief Sponsor, continued**

**Steps**

Table FD-18 shows the steps for this activity.

| Step | Description |
|---|---|
| Develop Briefing | Develop the sponsor briefing |
| Brief Sponsor | Summarize results and appraisal activities and present implementation plan. |
| Obtain approval | Obtain approval of the sponsor to implement the to-be process. |
| Discuss next steps | Discuss the remaining schedule and risks identified in the implementation plan. |

**Table FD-18. Steps for Brief Sponsor**

**Output(s)**

- Approved to-be process and Implementation Plan.

**Typical Duration/Effort**

- Typical calendar duration: 1 day
- Typical level of effort: 1 hour for sponsor and each PAT member attending briefing

**Notes**

Typically the PAT lead will brief the sponsor, but other team members may attend. If sponsor does not approve the as-is process of the implementation plan, the team could revisit prior steps based on guidance from the sponsor.

## 3.2 Document Intensive Appraisal Method Description

**Contents**

The following table provides a guide to the information found in this section:


| Topic | Page |
| --- | --- |
| 3.2.1 Introduction | 3-29 |
| 3.2.2 Summary Description | 3-31 |
| 3.2.3 Detailed Description | 3-32 |

### 3.2.1 Introduction

**Purpose**

The Document Intensive appraisal method (DI Appraisal) focuses on an organization's documented processes and associated artifacts.

The DI appraisal takes a detailed look at the procedures defining any particular process, along with the associated resulting artifacts, and compares them to FAA-iCMM practices. It also provides an option to have the project manager guide the DI appraisal team through the documents and provide additional insight into the process.

The DI appraisal method is structured closer to audit principles than the full internal appraisal method. As a result, while strengths may be noted, the main output from this type of appraisal is the identification of weaknesses and areas needing attention.

The DI appraisal is a good check to perform several months prior to a full internal appraisal. This appraisal method will not result in any type of rating at either the maturity level or the capability level. It focuses on weaknesses. That, coupled with the organization's prioritization and action planning, should result in successful preparation for the full FAM.

## 3.2.1 Introduction, continued

The following table shows the various roles of people involved in the DI appraisal:

| Role | Description |
|---|---|
| Sponsor | The description in chapter 1 is appropriate. However, the level of the sponsor for the DI can be much lower, even the Program/Project Manager. |
| Appraisal Team Lead (ATL) | The description in chapter 1 is appropriate. |
| Organization Appraisal Representative (OAR) | The description in chapter 1 is appropriate. |
| Appraisal Team | The description in chapter 1 is appropriate. |
| Site Coordinator | The description in chapter 1 is appropriate. |
| Data Manager | The description in chapter 1 is appropriate. |
| Appraisal Participant(s) | Act as guides through the documentation matrix and program artifacts. They may also verify and provide additional information to support the appraisal team. Appraisal participants should be very familiar with the process under review, and if at all possible, the process owner. |

### 3.2.2 Summary Description

| ID | FAM Activity Name | DI Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for the Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | Minor change | Provides pros and cons of two types of DI Appraisals. |
| 2.1.2 | Select Appraisal Organizational Scope | No change | |
| 2.1.3 | Select Appraisal Team | Minor change | Size and membership of team are based on scope. |
| 2.1.4 | Plan Appraisal Details | Minor change | Documentation matrix replaces questionnaire. |
| 2.1.5 | Orient Participants | Minor change | Optional activity incorporated in 2.1.4. However, if not done there, it needs to be done now. |
| 2.1.6 | Train Team | No change | Length of training is approximately 1-2 hours (model training excluded) |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | Major change | Ensure the documentation matrix is sufficiently completed to conduct the DI appraisal successfully. Renamed Administer Documentation Matrix. |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meeting | No change | |
| 2.2.2 | Conduct Interviews | Activity deleted | |
| 2.2.3 | Review Documentation | Major change | Review the documentation using the documentation matrix as a guide. |
| 2.2.4 | Consolidate Data | Minor change | Delete interviews, the corroboration activity, and the sufficiency review. |
| 2.2.5 | Develop Draft Findings | No change | |
| 2.2.6 | Present Draft Findings | Minor change | Optional activity. Not needed in the non-participative method. In the participative method, strengths and weaknesses are reviewed with appraisal participants when developed. |
| 2.2.7 | Develop Ratings | Activity deleted | |
| 2.2.8 | Develop Final Briefing | Minor change | Optional activity. Draft findings may become final if no issues identified. |
| 2.2.9 | Brief Sponsor | No change | |
| 2.2.10 | Present Final Briefing | Minor change | Optional activity. Dependent on level of sponsor and sponsor's role in appraisal. |
| 2.2.11 | Conduct Wrap-Up | No change | |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | No change | |
| 2.3.2 | Manage Records | No change | |

## 3.2.3 Detailed Description

**DI 2.1.1 Obtain Sponsor Commitment**

**Notes**

Once it is decided to perform a DI Appraisal, determine what type of DI Appraisal is desired. There are two types: the participative and the non-participative model.

In the non-participative, approach the ATL or team of appraisers (always at least two people) from outside the project come in to review the documentation based on the documentation matrix. The documentation matrix is a spreadsheet detailing each Base Practice and Generic Practice for each Process Area. The Project Managers (or their designees) are responsible for filling out this matrix prior to the start of the DI. For more information on the documentation matrix, see the toolkit. There is minimal interaction between the appraisal team and any project personnel.

Advantages of this approach:
1. Completely independent review of process and artifacts.
2. Does not take any time away from normal daily functions.

Disadvantages of this approach: Results are based solely on information provided in the documentation matrix and appraisal library. So, unless the projects ensured that the correct documentation and mapping is provided, the results may not accurately reflect the project’s position.

The participative approach is the same as the non-participative except the organization provides appraisal participants to sit with the appraisal team and assist them through the documentation matrix. In addition to being guides through the documentation matrix, the discussions between the appraisal participants and appraisal team provides additional verification of both strengths and weaknesses.

This has several advantages.
1. There is a better chance of finding additional information should the initial references in the documentation matrix be incorrect or insufficient.
2. Any discrepancies found have a much better chance of buy-in by the appraisal participants since they were part of the process.

Disadvantages of this approach:
1. Will require several hours of appraisal participants’ time to support (per project/per process area).
2. Will take longer to perform due to the interactions between the appraisal team and participants.

**DI 2.1.3** **Select Appraisal Team**

**Notes**

The DI Appraisal requires the following roles: the ATL, OAR, Site Coordinator, Data Manager, and Appraisal Team Members

The size of the appraisal team varies based on the number of PAs and Projects selected, the number of days allocated for the appraisal, and the number of appraisal team members. The minimum team size is two. It is equally feasible to have a team of six. The rule of thumb is that it takes a team about four hours per Process Area per Project being appraised. An appraisal covering two process areas and four projects would produce the following estimates:

1. One team approximately four days
2. Two teams approximately two days
3. Three teams approximately a day and a half
4. Four teams approximately a day and a half

If the appraisal scope were three process areas over the same four projects, the estimates are:

1. One team approximately six days
2. Two teams approximately three days
3. Three teams approximately two days
4. Four teams approximately two days

Qualifications for appraisers center on familiarity with the FAA-iCMM and the specific process area(s) under review. Since the appraisal team may be small, it is important to ensure that the team skill and experience include all process area disciplines.

**DI 2.1.4** **Plan Appraisal Details**

**Step: Select and Develop Participant Questionnaire(s)**

Delete this step since the DI does not use a participant questionnaire.

**Outputs**

Delete the following outputs: application domain, key characteristics, appraisal constraints (as appropriate), criteria to verify ISO/IEC 15504 requirements, questionnaires.

**DI 2.1.4** **Plan Appraisal Details, continued**

**Notes**

Delete the paragraphs concerning the questionnaire. Disregard Notes material on interviews, interview planning, sufficiency, and ISO/IEC 15504.

As part of providing the documentation matrix to the OAR/Site Coordinator, provide an overview of how to fill in the matrix, who should do it, and the level of information needed. The whole discussion typically takes about 30 minutes. The OAR is then responsible for explaining to the individuals selected to fill out the matrix what needs to be done. This eliminates the need to do specific training for each appraisal participant. The documentation matrix will be completed, and the ATL will review the documentation matrix in activity DI 2.1.7, Administer Documentation Matrix, to ensure the correct level of information is being provided. The ATL should also request that the actual documentation be organized to facilitate quick access, to the extent possible considering effort required by the organization. This will lead to a more efficient appraisal.

**DI 2.1.5** **Orient Participants**

**Summary Description**

Delete the reference to questionnaires.

**Roles, Inputs**

Replace Documentation Matrix for questionnaire in each area.

**Notes**

Delete the references to both the questionnaire and the interviews.

As mentioned in activity DI 2.1.4, during plan appraisal details, the OAR is provided the documentation matrices and training. The OAR now distributes the documentation matrices, explains to the participants the appraisal process and how to fill out the matrices, and provides any needed guidance and follow-up with the appraisal participants.

The project people selected to participate in the appraisal are usually the same people who fill out the documentation matrices. If this is not the case, then separate guidance sessions need to be held for the participants and the people filling in the documentation matrix. The OAR should coordinate this.

# 3.2.3 Detailed Description, continued

**DI 2.1.5** **Orient Participants, continued**

**Notes, continued**

The orientation for the people filling in the documentation matrix should be done 3-4 weeks prior to the scheduled start of the appraisal. Otherwise, there will be insufficient time to complete the matrices. If different people will be the appraisal participants, they can receive the information they need to participate in the appraisal during the opening briefing.

**DI 2.1.7** **Administer Documentation Matrix** ***(renamed from Obtain and Analyze Preliminary Evidence)***

**Purpose**

The purpose of Administer Documentation Matrix is to ensure the matrix is completed, and that it provides enough detail to allow efficient conduct of the DI Appraisal.

**Summary description**

The OAR distributes the documentation matrix to the participants for completion. The Appraisal Team Leader reviews the documentation matrix to ensure all items in the matrix have references to project documentation or artifacts, as appropriate. The ATL also ensures that the references are detailed enough to provide a ready reference point (i.e., document name, page number, paragraph number). If there are empty references or the traceability into the documentation is sketchy or high level (i.e., Project Plan), the ATL needs to meet with the OAR and require additional or more detailed information, or confirm that the information is not available. Additionally, the ATL needs to review the objective of the appraisal and determine if the deficiency of data would prevent accomplishment of the goal of the appraisal. For example, if the goal of the appraisal is to validate preparedness for a full internal appraisal and the matrix indicates missing documentation, then evaluate the readiness for conducting this appraisal.

**Entry Criteria**

- Orientation completed

**Exit criteria**

- Documentation matrices have been reviewed by ATL and found to contain sufficient references and details to allow for the conduct of the DI Appraisal.

**DI 2.1.7** **Administer Documentation Matrix *(renamed from Obtain and Analyze Preliminary Evidence)***

**Roles** Table DI-1 lists the roles involved in this activity.

| Role | Summary |
| --- | --- |
| Appraisal Team Leader | Accomplishes review of documentation matrix. Coordinates with OAR for additional information. Assesses readiness of documentation matrices for beginning of DI Appraisal. |
| OAR | Gathers all documentation matrices from selected projects. Provides matrices to Appraisal Team Leader. Coordinates any requests for additional information with the Appraisal Participants. Reviews success probability with Appraisal Team Leader. Participates with Appraisal Team Leader in discussion with Sponsor when success probability is low. |
| Appraisal Participants | Fill out of the documentation matrix. |

**Table DI-1. Participants for Administer Documentation Matrix**

**Inputs**

- Blank Documentation Matrices

**DI 2.1.7** **Administer Documentation Matrix** ***(renamed from Obtain and Analyze Preliminary Evidence)***

**Steps** Table DI-2 shows the steps for this activity.

| Step | Description |
|---|---|
| Complete Documentation Matrix | The Appraisal Participants research and provide a detailed reference (document, page number, paragraph number) for each entry in the documentation matrix. |
| Collect Documentation Matrices | 1. Collect completed documentation matrices from each Appraisal Participant.<br>2. Review each matrix for omissions of data and level of information.<br>3. If information is not specific enough, work with Appraisal Participants to provide correct level.<br>4. Package all matrices and send to ATL for review. |

**Table DI-2. Steps for Administer Documentation Matrix (1 of 2)**

**DI 2.1.7** **Administer Documentation Matrix** ***(renamed from Obtain and Analyze Preliminary Evidence)***

| | |
|---|---|
| Review Documentation Matrices | ATL reviews all matrices for omissions and level of detail provided. (i.e., If there are empty references or the traceability into the documentation is sketchy or high level (i.e., Project Plan), the ATL needs to meet with the OAR and require additional or more detailed information, or confirm that the information is not available).<br>Review matrix results with goals of appraisal (i.e., if the goal of the appraisal is to validate preparedness for a full internal appraisal and the matrix indicates missing documentation, then evaluate the readiness for conducting this appraisal).<br>Communicate results of review to OAR. |
| Analyze Document-ation Matrices | Determine if additional information or further actions are required and act on actions required. |

**Table DI-2. Steps for Administer Documentation Matrix (2 of 2)**

**Output(s)**

- Completed Documentation Matrices
- Updated Appraisal Plan (if needed)

**Typical Duration/Effort**

Preparation Time: approximately 8 hours to 5 days to fill out the documentation matrix per process area per project (including addressing any requests for missing or more detailed information)

Review Time: Typically, up to an hour.

**Notes**

It is critical that the documentation matrices be completed to the appropriate level prior to beginning the appraisal. If the matrices are not sufficiently completed, the amount of time to conduct the appraisal significantly increases. Preparation time is dependent on the Appraisal Participants' familiarity with the project's documentation and understanding of FAA-iCMM. The result of documentation matrix review could mean the difference between a smoothly run appraisal and a time consuming, stress filled appraisal.

**DI 2.2.3** **Review Documentation**

**Purpose**

The purpose of Review Documentation is to review process/procedure descriptions, along with process artifacts, for compliance with the relevant FAA-iCMM process areas.

**Summary description**

The appraisal team will use the documentation matrix as a guide to review project or organization procedures and artifacts. In the non-participative method, either there is compliance or not. The appraisal team may request additional information, but time constraints limit the amount of information that can be followed up on. In the participative method, the appraisal participant acts as guide for the appraisal team walking them through the matrix and documentation along with providing additional references/information if needed/available.

**Entry Criteria**

- Completed Appraisal Plan and decision to continue.

**Exit criteria**

- All relevant project/organization documentation has been reviewed.

**Roles**

Table DI-3 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal Team | As teams or individually, review the project/organization documentation and artifacts for compliance with selected Process Area Base Practices and Generic Practices. Identify any missing elements or significant strengths. Documents results for later consolidation. |
| Appraisal Participants | If participative approach is used, guide appraisal team through documentation matrix mapping and project/organization documentation and artifacts. Provide additional references and clarification as needed. |

**DI 2.2.3 Roles, continued**

**Review Documentation, continued**

| | |
|---|---|
| Data Manager/Site Coordinator | Locates and collects documentation needed by the appraisal team. |
| Site Coordinator | Assists appraisal team by arranging for space to store documentation and conduct documentation review. |
| Data Manager | Maintains accountability of documentation for the appraisal team. |
| Appraisal Team Leader | Keeps documentation review progressing according to appraisal activities schedule. |

**Table DI-3. Participants for Review Documentation**

**Inputs**

- Relevant project, program, and organization documents.
- Completed Documentation Matrices

**Steps**

Table DI-4 shows the steps for this activity.

| Step | Description |
|---|---|
| Review documentation | The appraisal team walks through the documentation matrix comparing the project/organization documentation and artifacts to the FAA-iCMM guidelines. If this is a participative DI appraisal, the appraisal team can ask the appraisal participants for additional information to clarify or satisfy any particular BP or GP. |
| Document results | The appraisal team documents the missing items (weaknesses) or identifies significant strengths identified in the documentation. In a participative DI, review the strengths and weaknesses with the appraisal participants as each is developed. |

**Table DI-4. Steps for Review Documentation**

**Output(s)**

- Notes and observations from reviewed documentation.

# 3.2.3 Detailed Description, continued

| | |
|---|---|
| **DI 2.2.3** | **Review Documentation, continued** |
| **Typical Duration/Effort** | On average, it will take about four hours per process area per project to review the documentation and record notes and observations. |
| **Notes** | Number of hours varies with the amount and type of documentation; also varies with type and scope of appraisal. |
| **DI 2.2.4** | **Consolidate Data** |
| **All paragraphs** | Disregard all references to interviews. |
| **Step: Check for Validity** | Do not perform the activity for corroboration. Data is only being gathered from one source in this method. Even with the participative method, the information gathered from the appraisal participants are not subject to the corroboration rules. |
| **DI 2.2.5** | **Develop Draft Findings** |
| **Notes** | In many cases, the draft findings will be the final findings report presented to the sponsor since a draft presentation will not be done. |

## 3.2.3 Detailed Description, continued

**DI 2.2.6** **Present Draft Findings**

**Notes**

This is an optional activity.

If a non-participative style appraisal were conducted, then this activity would be deleted.

If a participative style appraisal was done, then this activity requires no changes to perform. Additionally, if each observation was reviewed with the Program representative on the appraisal team (in Review Documentation – DI 2.2.3) as it was entered, then there should be no need for a separate briefing.

It must be noted that this activity will add about a half day of time to the schedule. Since one of the reasons for doing a DI Appraisal is to get a “Quick Look,” adding a half-day may in fact not be in step with the appraisal goals. It does however, offer the opportunity for buy-in and confirmation with the appraisal participants prior to presentation to the sponsor.

**DI 2.2.8** **Develop Final Briefing**

**Notes**

This is an optional activity. If a non-participative style appraisal was done, delete this activity. If a participative style was done and a draft briefing was decided upon, then the appraisal team would conduct this step only if any changes were identified.

**DI 2.2.10** **Present Final Briefing**

**Notes**

This is an optional activity.

The sponsor may request a separate briefing or the management team can be briefed at the same time as the sponsor (need sponsor approval to do this).

## 3.3 Questionnaire-based Appraisal Description

**In this section** The following table provides a guide to the information found in this section:


| Topic | Page |
|---|---|
| 3.3.1 Introduction | 3-44 |
| 3.3.2 Summary Description | 3-48 |
| 3.3.3 Detailed Description | 3-49 |

## 3.3.1 Introduction

**Purpose**

The Questionnaire-based appraisal (QBA) is a method that can be used for rapidly measuring the status of an organization's process capability between full FAM appraisals. It is primarily based on questionnaire data provided by a broad sample of appraisal participants. QBA is designed to be used by organizations that

- Have completed a full FAM appraisal
- Have a process improvement effort in place
- Intend to use the results for status monitoring and process improvement plan adjustment

QBA provides participating projects with individual status profiles and provides senior management with quantifiable data on the process improvement status of the organization. These profiles represent a measure of the process capability of projects and the organization, and provide visibility into process improvement progress. This allows for mid-course corrections and/or trend analysis of process changes.

A primary motivation for conducting a Questionnaire-based Appraisal is to allow members of the organization to communicate the status of the process that is currently in use in a manner that is consistent with the full internal appraisal method, but at lower cost.

This appraisal method allows for and encourages much broader participation than other methods, and it provides focused feedback for members of participating projects. A goal of the method is to promote an ongoing discussion about process improvement.

QBA can be used as a stand-alone appraisal method or in conjunction with the Full Internal FAM or any of its variations.

**Purpose, continued**

A questionnaire-based appraisal is carried out as follows:

- Questionnaire is administered
- Results are summarized and analyzed
- Initial project profiles are built, reviewed, revised, and distributed
- Organizational profiles are built from project profiles, and distributed

The Project Profiles provide “interim ratings” for each process area in the scope of the appraisal, and include reliability factors for each participating project. “Interim ratings” are given as “Not Applicable,” “Not Rated,” “Not implemented,” “Implemented”, or “Capability Level n (where n=2-5)”.

Organizational Profiles summarize the “interim ratings” provided for each process area by the percentage of projects receiving each rating. The reliability factors reported for each project are also summarized.

Note that these are not “official” ratings, which can only be determined by the full internal, full external, delta, or FAM:ISO9001 methods.

**QBA Roles**

These notes identify the key roles and functions they perform in a questionnaire-based appraisal. While one person cannot be responsible for all functions, it is likely that one individual will play multiple roles. Those responsible for process improvement (e.g., process group members) should play as many of the roles as possible.

Some of the roles described below are more specialized descriptions of specific functions played by members of the appraisal team or other roles, as described in Chapter 1.

| **Role** | **Description** |
|---|---|
| Appraisal sponsor | The description in chapter 1 is appropriate |

# 3.3.1 Introduction, continued

| Role | Description |
| --- | --- |
| Appraisal team leader | The Appraisal Team Leader is authorized to lead questionnaire-based appraisals, provides appraisal materials and guidance to the site coordinator and other roles as needed, trains the appraisal team on the model and the method, leads the appraisal process, provides FAA-iCMM expertise, and has experience preparing and making presentations. |
| Site Coordinator | The Site Coordinator arranges facilities and other resources for the appraisal, and schedules people and activities. This person has overall responsibility for on-site communication, logistics and setup. |
| Organization appraisal representative | The Organization appraisal representative is looked to as the organizational or site expert and is the point of contact for the appraisal team, especially for follow-up activities. This person has overall responsibility for determining how results should be distributed, overseeing the review of initial profiles, and finally gathering feedback from participants on the appraisal. During a QBA, the OAR also serves as: |
| (Results Distributor) | • The **Results Distributor**, who oversees the distribution of draft and final profiles to the appropriate people in the organization, and |
| (Results Reviewer) | • The **Results Reviewer**, who is responsible for working with the participating projects after the initial profiles have been distributed. The person in this role must answer any questions that arise during the review of initial profiles. In situations where there are concerns regarding the initial profile, the Results Reviewer must work with the project to determine what additional information is needed to justify modification of the profile. |

## 3.3.1 Introduction, continued

| Role | Description |
|---|---|
| Questionnaire Facilitator | The Questionnaire Facilitator delivers the method overview and detailed instructions to the questionnaire respondents. The person in this role also answers questions from the participants during administration of the questionnaire, supervises the administration, and ensures that completed questionnaires are accurately labeled so that response data can be aggregated later. Several Questionnaire Facilitators may be required. |
| Data Reducer | The Data Reducer is responsible for inputting the questionnaire and participant data and summarizing the data according to the participating projects. |
| Profile Builder | The Profile Builder is responsible for building both initial and final profiles. This role requires individuals who are well experienced with the FAA-iCMM, have had appraisal training and have participated in at least one appraisal. |
| Appraisal Participants | Participants fill in questionnaires and attend review sessions. Typically, one participant for each project serves as point of contact for that project. |

### 3.3.2 Summary Description

| ID | FAM Activity Name | QBA Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | No change. | |
| 2.1.2 | Select Appraisal Organizational Scope | Minor change. | Includes more detailed sample selection requirements. |
| 2.1.3 | Select Appraisal Team | No change | Includes selection of additional roles (see previous section) |
| 2.1.4 | Plan Appraisal Details | Minor change. | Emphasis on planning questionnaire administration (see notes) |
| 2.1.5 | Orient Participants | No change. | |
| 2.1.6 | Train Team | No change. | Less time required to train team (about 4 hours). |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | Major change. | Questionnaires are the major source of data for this appraisal. |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meeting | Activity deleted. | Covered during Obtain and Analyze Preliminary Evidence activity. |
| 2.2.2 | Conduct Interviews | Activity deleted | |
| 2.2.3 | Review Documentation | Activity deleted | |
| 2.2.4 | Consolidate Data | Major change. | Questionnaire data are summarized |
| 2.2.5 | Develop Draft Findings | Major change. | Initial project profiles are built |
| 2.2.6 | Present Draft Findings | Minor change. | More details on results validation |
| 2.2.7 | Develop Ratings | Minor change. | Final profiles are built. |
| 2.2.8 | Develop Final Briefing | Minor change. | Final profiles are built. |
| 2.2.9 | Brief Sponsor | No change. | |
| 2.2.10 | Present Final Briefing | Minor change. | Final profiles are distributed. |
| 2.2.11 | Conduct Wrap-Up | No change. | |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | Activity deleted | Appraisal results are delivered in Present Final Briefing. |
| 2.3.2 | Manage Records | Minor change | More details on types of records |

### 3.3.3 Detailed Description

**QBA 2.1.2** **Select Appraisal Organizational Scope**

**Notes**

- **Selecting participating projects.** Part of selecting appraisal scope is identifying the population or pool of potential participants for the appraisal. During initial discussions with the sponsor, it is necessary to document the scope of the effort with a rough estimate of the number of divisions, projects, and respondents who will participate. An organization chart may help, or the sponsor may specify the participating projects and individuals.

- **Project characteristics to consider**. To enable informed selection of projects, a project questionnaire could be used to collect information about the size, status, and life cycle phase of potential projects. Projects and life cycle phases should be well represented. The FAM project questionnaire can be used.

- **Sample selection guidance.** As a heuristic, a minimum of 60% of the organization's projects should be selected, and at least 60% of the personnel in the selected projects should be included. These are guidelines and may not be practical for organizations with many small projects or few large projects. Participation should be limited to projects with at least three representatives to preserve anonymity. Broad participation is particularly important for this questionnaire-based approach since outputs may be viewed as unreliable where only a small minority of the project team participates.

**QBA 2.1.4** **Plan Appraisal Details**

**Summary**

Since this is a questionnaire-based appraisal, no interviews are conducted and no documentation is requested from appraisal participants. Much of the appraisal planning details center on questionnaire administration, as described below.

**Steps**

| **Step** | **Description** |
|---|---|
| Schedule and Set Up Questionnaire Administration | Multiple sessions are set up to make completion of the questionnaire as convenient as possible and to minimize the amount of disruption to the work force. The sessions last approximately two hours, the first 30 minutes of each session consisting of an overview of the method's purpose, scope, outputs, and use. |
| Identify Questionnaire Facilitator(s) | Questionnaires are completed by participants in a supervised administration. This is done in order to minimize differences in interpretation among the respondents, as well as the potential impacts of social pressures, which might influence respondents. If issues causing confusion for the respondents are not clarified quickly and uniformly, then the comparability of the response data is threatened.<br><br>The number of Questionnaire Facilitators needed for each session should be determined by the number of people completing the questionnaire, as well as their level of familiarity with the FAA-iCMM. In organizations that have had only one appraisal and minimal experience with the FAA-iCMM, one Questionnaire Facilitator per 25 respondents is recommended. |

**QBA 2.1.4** **Plan Appraisal Details, continued**

| Step | Description |
|---|---|
| Notify Projects | All projects identified for inclusion in the Orient Participants step must be notified of available dates and times. The projects must confirm the information regarding the makeup of the project and the availability of the staff. Low participation rates for one or more of the projects may increase the risk of results being viewed as inaccurate by non-participating project members. It is recommended that 100% participation be the goal with a minimum participation rate of 60% |
| Prepare Materials | The materials to be used during data collection must be inventoried and reviewed by the people who will oversee the data collection. At this time, the On-Site Coordinator and the Questionnaire Facilitator should review the terms found on the questionnaire, which might be confusing to participants. For each term identified a local definition must be supplied based on an understanding of both the FAA-iCMM and the local vernacular.<br><br>In addition, the On-Site Coordinator should create a roster for each session, listing the people scheduled for that session. This roster should then be used to track attendance rates for each project. If low attendance rates are detected early, additional sessions may be scheduled or projects can be dropped from participation. |

**Table QBA-1. Steps for Plan Appraisal Details**

**QBA 2.1.7** **Obtain and Analyze Preliminary Evidence**

**Purpose**

The purposes of Obtain and Analyze Preliminary Evidence during a QBA are:

- to collect candid responses to the questionnaire in a setting that minimizes disruption and external influences, while maximizing efficiency
- to prevent misunderstandings regarding the purpose of the QBA, as well as the content of the questionnaire

**Summary description**

The questionnaire is administered. There are 3 key activities carried out in each session:

- Provide Method Overview
- Facilitate the session
- Track Materials

**Entry criteria**

- Respondents scheduled for the sessions are in attendance

**Exit criteria**

- Questionnaires are completed

**Roles**

Table QBA-2 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Questionnaire Facilitator | Presents method overview, answers questions during the session as required, tracks completed questionnaires |
| Appraisal participants | Complete questionnaire |

**Table QBA-2. Participants for QBA Administer Questionnaire**

**Inputs**

- Session roster
- Blank questionnaires

### QBA 2.1.7 Obtain and Analyze Preliminary Evidence, continued

**Steps**

Table QBA-3 shows the steps for this activity.

| Step | Description |
|---|---|
| Present overview | The Questionnaire Facilitator (QF) presents an overview of the method, stressing the importance of the respondents' input as well as the confidentiality guidelines. Basic instructions for how to complete the questionnaire and how to resolve ambiguities are then provided. |
| Facilitate session | While the respondents complete the questionnaire, the QF answers questions and clarifies issues for respondents. The QF's role is to minimize the impact of terminology issues, and to ensure that all respondents have a common understanding of the issues being probed by the questionnaire. In doing this, it is vital that the respondents provide their individual views rather than a group view, which might be derived through discussion with others in the room. |
| Track materials | As respondents finish, the QF is responsible for tracking completed forms and ensuring that the identification of individuals and their associated projects is clearly recorded on the questionnaires for use later in summarizing the data. Mishaps here can lead to significant delays in producing outputs. |

**Table QBA-3. Steps for QBA Obtain and Analyze Preliminary Evidence**

## 3.3.3 Detailed Description, continued

**QBA 2.1.7 Obtain and Analyze Preliminary Evidence, continued**

| | |
|---|---|
| **Outputs** | • Completed questionnaires |
| **Typical Duration/Effort** | • Typical calendar duration: Two hours per session over as many days as are needed<br>• Typical level of effort: Two hours per respondent |
| **Notes** | Key issues to keep in mind are<br>• The questionnaire is not a test. Responses do not reflect people's knowledge or ability.<br>• Specific responses of individuals must never be disclosed. Data are only reported in aggregate form on the profiles.<br>• The goal of the method is to promote an ongoing discussion about process improvement. |

### QBA 2.2.4 Consolidate Data

**Purpose**

The purpose of Consolidate Data in a QBA is to summarize the data provided by a large group of respondents in a form that can be used to create initial profiles.

**Summary description**

Prior to making initial "ratings", the information provided on the set of questionnaires for each project must be summarized for manageability. Completed questionnaires are consolidated into summary reports. This process involves

- Take questionnaire inventory
- Summarize response data
- Summarize reliability factors

**Entry criteria**

- Completed questionnaires are available

**Exit criteria**

- Questionnaire data are consolidated

**Roles**

Table QBA-4 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Data Reducer | Consolidates questionnaire data by project |

**Table QBA-4. Participants for QBA Consolidate Data**

**Inputs**

- Completed questionnaires

# 3.3.3 Detailed Description, continued

**QBA 2.2.4 Consolidate Data, continued**

**Steps**

Table QBA-5 shows the steps for this activity.

| Step | Description |
|---|---|
| Take inventory | Take inventory of the set of questionnaires. Doing so will ensure proper identification of each respondent and his/her affiliation with one of the projects. Cases where a single respondent is associated with more than one project must be resolved. In some situations it may be necessary to accommodate a single respondent's data in two different projects. Based on this inventory and the planned participation rate for each project, additional administrations may be scheduled, or exclusion of projects with limited participation may be necessary. |
| Summarize response data | All the data gathered from questionnaire respondents must be summarized for use in building profiles. For each project, the following response data must be summarized:<br>• The number and percentage of Yes, No, Does Not Apply, and Do Not Know responses to each question.<br>• "Yes" degree of confidence for each question – the percentage of "yes" responses given with high confidence (i.e. > 3)<br>• "No" degree of confidence for each question – the percentage of "no" responses given with high confidence (i.e. >3).<br>• All comments written by project staff in response to each question. |

### QBA 2.2.4 Consolidate Data, continued

| | |
|---|---|
| Summarize reliability factors | In addition to responses and comments, a summary of the reliability factors is prepared for each project. There are 5 summary statistics to be reported for each participating project, which represent a type of "margin of error" for assessing the results. The statistics include:<br>• "Yes" degree of confidence – the percentage of all "yes" responses given with high confidence<br>• Overall degree of confidence – the percentage of all questionnaire responses given with high confidence (including all responses other than "Don't Know")<br>• Percentage of group responding – the percentage of staff in the project who participated<br>• Percentage of respondents who are relatively new to the field – the percentage of the respondents in the project who fall below the 25$^{th}$ percentile for years of experience relative to all participants regardless of which project they are from.<br>• Percentage of respondents who are relatively more experienced in the field – the percentage of the respondents in the project who fall above the 75$^{th}$ percentile for years of experience relative to all participants. |

**Table QBA-5. Steps for QBA Consolidate Data**

**Outputs**

- Summary report of questionnaire data consolidated for each project

**Typical Duration/Effort**

- Typical calendar duration: 1 week
- Typical level of effort: 1 person week for about 200 respondents

# 3.3.3 Detailed Description, continued

### QBA 2.2.4 Consolidate Data, continued

**Notes**

Here is an example of a summary report for one particular question regarding controlling changes to configuration items/units.

| Project | Sample Size/ Project Total (%) | Yes | No | N/A | D/K | Strong Yes's | Strong No's |
|---|---|---|---|---|---|---|---|
| Able | 100/200 (50%) | 83 83% | 12 12% | 3 3% | 2 2% | 78% | 80% |
| Baker | 20/25 (80%) | 11 55% | 7 35% | 0 0% | 2 10% | 82% | 75% |
| Charlie | 5/5 (100%) | 4 80% | 0 0% | 0 0% | 1 20% | 75% | 60% |
| Delta | 75/150 (50%) | 65 87% | 8 11% | 1 1% | 1 1% | 85% | 80% |

Comments:
Able D/K I didn't understand this question
Yes Our configuration control board has a charter and defined procedures to support the charter
Delta Yes I was trained on this procedure last week
Yes We hold weekly CCB meetings to discuss this

In this example, 100 of the 200 people in project Able completed a questionnaire. Eighty-three of these 100 participants answered "yes" to the question summarized. Of those 83 "yes" responses, 78% of them were strong "yes's" (i.e. they gave a confidence rating >3). For project Delta, 65 of the 75 participants said "yes", which equals 87% of the project participants. The listing of comments under the table shows that one of the respondents who answered D/K (don't know) wrote a comment. Note also that none of the respondents for projects Baker and Charlie wrote a comment on this question.

# 3.3.3 Detailed Description, continued

**QBA 2.2.5 Develop Draft Findings**

**Purpose**

The purpose of Develop Draft Findings in a QBA is to examine the patterns of data from each project and develop initial profiles that are consistent with what respondents communicated in their questionnaires.

**Summary description**

The consolidated questionnaire data are analyzed and used to derive initial profiles for each project. This activity involves the following steps:

- Rate items
- Rate process areas
- Include reliability factors
- Draft project profiles

**Entry criteria**

- Questionnaire data are consolidated and summarized

**Exit criteria**

- Draft initial profiles are completed

**Roles**

Table QBA-6 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Profile Builder | Builds initial profile |

**Table QBA-6. Participants for QBA Develop Draft Findings**

**Inputs**

- Questionnaire summary report

# 3.3.3 Detailed Description, continued

## QBA 2.2.5 Develop Draft Findings, continued

**Steps**

Table QBA-7 shows the steps for this activity.

| Step | Description |
|---|---|
| Rate Items | • Apply item-rating process (see notes). This produces a suggested rating of "yes" or "no" for each item for each project.<br>• Look for borderline cases where appropriate. Ratings may need further analysis, and additional judgment is required.<br>• Read comments. Comments often provide the most compelling information for making rating judgments. |
| Rate Process Areas | • Apply process area rating process (see notes). This produces a suggested rating of "not applicable," "not rated," "not implemented," "implemented" or "institutionalized at capability level n" for each applicable (within scope) process area for each project.<br>• Look for borderline cases. A final check must be performed before transferring the data to initial profiles. |
| Include Reliability Factors | The 5 statistics discussed in "Consolidate Data" are included on the profile:<br>• "Yes" degree of confidence<br>• Overall degree of confidence<br>• Percentage of group responding<br>• Percentage of respondents who are relatively new to the field<br>• Percentage of respondents who are relatively more experienced in the field. |
| Draft Project Profiles | Project profiles are drafted. Revisions may be necessary before they are final and the data can be summarized at the organizational level. |

**Table QBA-7. Steps for QBA Develop Draft Findings**

**QBA 2.2.5 Develop Draft Findings, continued**

**Outputs**

- Initial profiles for each participating project (see example in toolkit)

**Typical Duration/Effort**

- Typical calendar duration: 3-6 hours
- Typical level of effort: 3-6 hours per person

**Notes**

The item rating process

The item rating process for individual questions (items) about process areas is:

1. Check that 60% of project personnel have responded. A lower response rate may indicate insufficient data for rating purposes; in which case, the item may be rated as “not rated.” If the items of a process area are “not rated”, the process area is excluded from process area rating. (The process area is rated as “not rated”.)
2. Determine if the item applies. If more than 80% of the respondents answer “does not apply” to an item, then the Profile Builder must determine whether the practices described in that item apply to the project. If the practices do not apply, then the item is rated as “not applicable”.
3. If at least 80% of the responses were “yes” and at least 50% of the “yes” answers were accompanied by a confidence rating greater than 3, then the item is rated as “yes”
4. If neither a “yes” nor “not applicable” is warranted, the item is rated as “no”.

**QBA 2.2.5 Develop Draft Findings, continued**

**Notes, continued**

The process area rating process

The rating process for process areas is:

If any item for this process area was “not rated,” the process area is “not rated.”

If all goal-related and/or practice-related items for this process area were “not applicable,” then the process area is “not applicable.”

If the applicable process area goal-related items are not all rated as “yes,” or if the applicable process area practice-related items are not all rated as “yes,” then the process area is “not implemented.”

If the applicable process area goal-related items are all rated “yes,” or if the applicable process area practice-related items are all rated “yes,” then the process area is “implemented.”

If the process area is “implemented” and in addition the capability level 2-through-n related items (“institutionalization goal and generic practice items”) pertaining to this process area are all rated as “yes,” then the process area is rated as “institutionalized at capability level n” where n = 2-5. For example:

- If PA is implemented, and not all CL2 items are “yes,” PA is “implemented.”
- If PA is implemented, and all CL2 items are “yes,” PA is rated “institutionalized at capability level 2.”
- If PA is implemented, and all CL2 and some (not all) CL3 items are “yes,” PA is rated “institutionalized at capability level 2.”

# 3.3.3 Detailed Description, continued

## QBA 2.2.5 Develop Draft Findings, continued

**Notes, continued**

Borderline cases

Borderline cases require professional judgment based on an examination of all information available including response patterns and written comments. Here are some examples of borderline cases, possible actions to take, and rationale.

| **Borderline Case** | **Possible Action** | **Rationale for Possible Action** |
|---|---|---|
| A PA is Implemented (all goal and/or practice related items are rated "yes"). All, except one, of the capability level 2 items are rated "yes". Rule says rate Implemented, not at CL 2. | Because the PA is very close to CL2 the team considers rating the PA at Capability Level 2 rather than Implemented. | Respondent's comments have referenced sound alternatives in answering capability level 2 related items. |
| All but one of the PA goal-related items are rated "yes"; most of the institutionalization items are rated "yes". Rule says rate "Not-implemented". | Rate the PA "Implemented" rather than "Not Implemented" | Respondent's comments indicate a possible lack of communication in answering PA goal-related items. |

## 3.3.3 Detailed Description, continued

**QBA 2.2.6 Present Draft Findings**

**Summary**

The validation that occurs during this activity is vital to the ongoing communication that this method is designed to support. Participants are presented with draft project profiles, instructions for interpreting the profiles, and instructions for contacting the Results Reviewer. Participants meet to review their profiles and schedule meetings with the Results Reviewer as needed. Upon completion of the review, final project profiles are created by the Profile Builder.

**Notes**

**Distribution.** Initial draft profiles are distributed only to the point of contact designated for each project. This is typically the project leader. Guidelines for interpreting the profiles and suggestions for validating results with project participants are provided along with the profiles.

**Review Questions.** Participating projects are typically provided with several questions to consider while reviewing the initial profile. These questions should be provided in written instructions and may include the following:

- How do these results compare to results from past appraisals?
- Do the reliability factors show high or low confidence?
- Are there enough people from the project represented in the data?
- Which process areas are rated as not implemented, implemented, or at a capability level? Do these make sense?
- Which areas are currently the focus of process improvement activities? Do the ratings confirm improvements made?
- Are there areas where ratings don't look right?
- Where weaknesses exist, are there current plans to address them?
- Are there areas where recommendations could be provided?

**Review Process.** The review process may be tailored to include a variety of activities, as will be discussed below. However, the basic process of reviewing and revising initial profiles involves meetings between the Results Reviewer and the project participants. Project artifacts and historical information are reviewed, and the group discusses progress on the organization's action plan.
These meetings must be facilitated in order to ensure proper interpretation of the purpose of this appraisal method.

### QBA 2.2.6 Present Draft Findings, continued

**Notes, continued**

**What can be revised?** First identify why the profile is perceived to be inaccurate. Possible reasons for proposing a revision to the project profile include:

- One or more PA ratings is incorrect
- Inadequate participation rates lead to questionable ratings in some areas

**Defining an issue**. The items in the questionnaire may require some translation and interpretation. The role of the results reviewer is to help participants in the review meeting to see what aspects of their process are being probed. When explaining the FAA-iCMM, the goals of each PA typically serve as the focal point, with implementation of specific practices being viewed as enablers to the goals.

**Gathering new data.** In making revisions to the initial profiles the Results Reviewer must seek additional information at the questionnaire item level, not just information relating to the PA. In doing this, the Results Reviewer must draw on experience with the FAA-iCMM and process improvement.

Group meetings with project members and review of project and organizational artifacts are the two additional data collection activities used. Reviewing the findings of past appraisals and actions taken on their basis will provide valuable input as well.

**Making judgments**. QBA emphasizes use of documentation and other artifacts during the review process. This emphasis places more stringent requirements than traditional project leader interviews. The Results Reviewer must establish the presence of processes using documents or other lasting artifacts to support their professional judgments. No explicit criteria for documentation are provided, as the nature of this type of artifact varies widely from organization to organization.

### QBA 2.2.6 Present Draft Findings, continued

**Notes, continued**

**Revising the project profile.** The Results Reviewer and the Profile Builder make revisions. First annotate the original response data for each item with the new data collected. Next, the results Reviewer and the Profile Builder must revisit the PAs in question and re-rate the items as "yes" or "no" for the project. Once each item has been sufficiently considered, the process for rating PAs is again applied (exactly as it was when the initial ratings were generated).

**Retaining records**. It is important to retain both the original draft and final profiles on record. Systematic examination of the types of changes made to initial profiles for an organization may yield important topics for discussion when explaining the organizational profile. For example, consistently under rated PAs may indicate the need for communicating a recent change that is not yet widely known.

**Goals of validation**. Validation must be completed within a designated time frame (generally one to two weeks) and cannot be a subjective, persuasive exercise. The final profiles need to accurately represent the organization, and at the same time provide usable information to the staff. In addition to the standard review and revision process described above, there are some other ways to make use of this opportunity to involve project staff in process improvement.

**Optional review activities**. QBA was designed to be used as an integral part of an organization's process improvement effort. As such, there are tailoring decisions that can be made to suit specific organizational needs. The table below represents three possible scenarios and the tailoring decisions one might make.

| | Conditions | Motivation | Activity |
|---|---|---|---|
| Simple Status Feedback | Organization has an established process improvement effort | Ongoing SEPG service | Review meetings on exception basis |
| Engage Project Staff | Organization has pockets of staff who are uninformed about process improvement efforts. | Pro-active gesture to get participation | Scheduled project discussions regarding initial profile |
| Leverage Best Practice and New Ideas | Organization has pockets of process excellence | Sponsorship of technical interchange | Scheduled functional area meetings for peer to peer presentations of process ideas. |

## 3.3.3 Detailed Description, continued

**QBA 2.2.7 Develop Ratings, and**
**QBA 2.2.8 Develop Final Briefing**

**Notes**

Interim ratings were generated in Develop Draft Findings and validated in Present Draft Findings. Thus, at this point in the QBA process, individual project profiles are in their final form. The last "rating" aspect of QBA is to create an organizational summary based on project-level information. This, combined with the individual project profiles, becomes the Final Briefing.

**Organizational profiles**

Organizational profiles contain the same 2 main components described for the project profiles. On the organizational profile, the interim ratings provided for each process area are summarized by the percentage of projects receiving each rating. Thus for each PA, the organizational profile lists the percentage of projects rated as Not Implemented, Implemented, Institutionalized at capability Level n, Not Rated, or Not Applicable.

The reliability factors reported for each project are also summarized. A sample of the resulting organizational profile is provided in the toolkit.

QBA may derive more than one level of organizational profile, depending on the sponsor and scope of the appraisal.

## 3.3.3 Detailed Description, continued

### QBA 2.2.10 Present Final Briefing

**Distribution Notes**

The lasting artifacts of the method are distributed to the appropriate people in the organization. These artifacts – final project and organizational profiles – document the organization's status. However, the profiles are only a small part of the outcomes of the QBA.

The distribution of results may take a variety of forms depending on the needs of the organization. Some of the choices for presentation of the final profiles include:

- Distribution of the organizational profile to every member of the organization
- Distribution of the organizational profile to only the sponsor
- Formal presentation of the organizational profile in an auditorium
- A workshop to go over the organizational and project profiles with recommendations
- A complete written report elaborating the outcomes in more detail

Project profiles are never distributed outside the project. If project profiles are to be shared with senior management, they are provided by the project, not by the Results Distributor.

The organizational profile is distributed to the sponsor(s), and the project profiles are distributed to the project points of contact.

Organizational profiles are public to all members of the organization. They are distributed to the senior management team prior to distribution to the entire organization.

Finalized project profiles are distributed to the project points of contact that received the initial profiles. These profiles are treated as confidential.

# 3.3.3 Detailed Description, continued

**QBA 2.3.3 Manage Records**

**Notes**

**Records to Archive.** The Results Reviewer must maintain all records regarding conduct of the QBA until there is no chance of inquiry for more details. Following this period (typically 3-4 weeks), the following things should be archived at the process improvement organization for future use:

- Organizational Profile
- Project Profiles for all projects
- Summary reports used for rating
- Initial profiles for all projects
- The schedule for the conduct of the QBA annotated with actual events and effort expended
- The list of potentially problematic FAA-iCMM terms

**Items to Destroy.** Any remaining artifacts should be destroyed in a secure manner to preserve the confidentiality of respondent information. The items to be destroyed include:

- Completed questionnaires identifying respondents
- All notes taken that are already summarized in the archived data
- All unnecessary records which could cause a breach in confidentiality

Retention of appropriate records will allow the analysis of process improvements over time and will facilitate planning of future appraisals.

# 3.4 Interview Based Appraisal Method Description

**Contents**

The following table provides a guide to the information found in this section: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| 3.4.1 Introduction | 3-71 |
| 3.4.2 Summary Description | 3-73 |
| 3.4.3 Detailed Description | 3-74 |

## 3.4.1 Introduction

**Purpose**

The Interview Based appraisal method (IB Appraisal) allows a high level/generic view into several or all of an organization's process areas with the output being the identification of major strengths and weaknesses and those areas needing process improvement or management attention.

The IB appraisal method provides an overall picture of an organization's process development without the rigors of intensive document review or formal comment corroboration. It may serve to focus or refocus an improvement effort.

The IB appraisal method will generally not result in any type of capability level or maturity level rating. It will identify weaknesses or other issues that need attention. This method determines if the basic process structures are in place and producing the desired results. This, along with organizational priorities and process plans, should result in successful preparation for a full FAM.

The IB appraisal method focuses on information about an organization's processes collected during interviews with project and technical area leads and practitioners from that organization.
It does allow for the IB appraisal team to guide the project manager(s) through the initial questionnaire and to provide additional insight into the appraisal process.

The interviews may be supported by documentary evidence; however, the intent is to determine higher level or cross-process cultural/ workplace affecting the process areas of the appraised organization.

## 3.4.1 Introduction, continued

The following table shows the various roles of people involved in the IB:

| Role | Description |
|---|---|
| Sponsor | The description in chapter 1 is appropriate. |
| Appraisal Team Lead (ATL) | The description in chapter 1 is appropriate. |
| Organization Appraisal Representative (OAR) | The description in chapter 1 is appropriate. |
| Appraisal Team | The description in chapter 1 is appropriate. |
| Site Coordinator | The description in chapter 1 is appropriate. |
| Data Manager | The description in chapter 1 is appropriate. |
| Appraisal Participant(s) | The description in chapter 1 is appropriate. |

### 3.4.2 Summary Description

| ID | FAM Activity Name | IB Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for the Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | No change | |
| 2.1.2 | Select Appraisal Organizational Scope | No change | |
| 2.1.3 | Select Appraisal Team | Minor change | The size of the appraisal team is typically smaller. |
| 2.1.4 | Plan Appraisal Details | Minor change | Little or no emphasis on documentary evidence and artifacts. |
| 2.1.5 | Orient Participants | No change | |
| 2.1.6 | Train Team | No change. | Less time required for training. |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | Minor change | Questions are more generic in nature; documentation not emphasized. |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meeting | No change | Describe generic nature of expected results |
| 2.2.2 | Conduct Interviews | Minor change. | Group interview sessions are essentially free form. |
| 2.2.3 | Review Documentation | No change. | Optional since documentation is incidental to the method |
| 2.2.4 | Consolidate Data | Minor change. | Focus is on accuracy and validity of data. Sufficiency is not specifically verified. |
| 2.2.4A | Development Preliminary Findings | New activity | |
| 2.2.4B | Review Preliminary Findings | New activity | |
| 2.2.5 | Develop Draft Findings | Minor change. | Findings tend to be fewer in number, not necessarily based on individual process areas, but most likely generic or cultural in nature. |
| 2.2.6 | Present Draft Findings | No change. | |
| 2.2.7 | Develop Ratings | Activity deleted. | |
| 2.2.8 | Develop Final Briefing | Minor change | No steps related to ratings. |
| 2.2.9 | Brief Sponsor | No change. | |
| 2.2.10 | Present Final Briefing | No change | |
| 2.2.11 | Conduct Wrap-Up | No change. | |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | Optional | Without ratings final report detailing findings and recommendations may be sufficient for reporting purposes. |
| 2.3.2 | Manage Records | No change. | |

## 3.4.3 Detailed Description

| | |
|---|---|
| **IB 2.1.3** | **Select Appraisal Team** |
| **Notes: additional comments** | The size of the appraisal team varies based on the number of PAs and Projects (or complexity of the organization) selected. The size of the appraisal team will generally be on the lower side of the range because there is much less focus on documentation. |

| | |
|---|---|
| **IB 2.1.4** | **Plan Appraisal Details** |
| **Step: Request Documentation** | IB appraisal deletes Request Documentation because the emphasis is on data from questionnaires supported by information collected during interview sessions. Documentation is not specifically requested for review in this method. |
| **Outputs** | Delete the requirement for requests for documentation or artifacts. |

| | |
|---|---|
| **IB 2.1.7** | **Obtain and Analyze Preliminary Evidence** |
| **Entry Criteria** | Delete criterion that documentation has been received. |
| **Notes** | The exploratory questions will be used as icebreakers to open the discussions for the group interview sessions and to keep the discussions going or guide the direction of the discussion if they bog down or go too far off subject. Also, exploratory questions are used to direct lead interviews. |

| | |
|---|---|
| **IB 2.2.2** | **Conduct Interviews** |
| **Purpose** | The purpose of Conduct Interviews is to collect information from appraisal participants (leads and practitioners) that will supplement the questionnaire data and enable the appraisal team to develop findings based on process areas and/or generic/cultural issues. While individual interview sessions are similar to the full FAM, group sessions are less structured to facilitate interactive discussion. This is the primary means of collecting and verifying information related to process performance and process improvement. |
| **IB 2.2.4** | **Consolidate Data** |
| **Notes: additional comments** | The essential difference is that the focus is on accuracy and that findings should be based on data from two separate sources. These two sources may have been in the same interview session. However the IB method still checks for coverage of appraisal scope. |
| **Step: Check for sufficiency** | This step is not performed. |

## 3.4.3 Detailed Description, continued

### IB 2.2.4A Develop Preliminary Findings

**Purpose**

The purpose of Develop Preliminary Findings is to develop findings for each process area investigated in the appraisal – based on a first analysis of the consolidated observations.

**Summary description**

Develop Preliminary Findings involves analyzing the consolidated observations and synthesizing them into a manageable set for incorporation into a presentation to the project/program/system/ technical leads.

**Entry criteria**

- Data has been consolidated
- Team consensus that adequate coverage has been obtained

**Exit criteria**

- Consensus is obtained on a set of preliminary findings (often 40-60 in number), which can be presented to the leads for verification.

**Roles**

Table IB-1 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team leader | Provides expertise on the FAA-iCMM and the appraisal method and guides the team in forming consensus. |
| Appraisal team | Develops preliminary findings<br>Achieves or forms consensus |

**Table IB-1. Participants for Develop Draft Findings**

### IB 2.2.4A Develop preliminary findings, continued

**Inputs**

- Consolidated data
- Template for findings

**Steps**

Table IB-2 shows the steps for this activity.

| Step | Description |
|---|---|
| Develop preliminary findings | Review the observations. Identify those major issues for each PA that need to be presented to the appraised organization. There are sometimes local issues that must be addressed if the appraisal is to have credibility with the participants. These may be identified as non-FAA-iCMM or cultural findings. |
| Prioritize findings | Prioritization is based on business goals, if available, or on the team's consensus on the major barriers to improvement in the organization. |
| Form consensus | Each finding is presented to the team for edit and consensus. The team *must* agree that these findings represent what was heard and will be presented for review.<br>This step continues until consensus is achieved. If consensus is not achieved the finding should not be used. |
| Prepare briefing charts | The findings are placed on briefing charts for presentation. |

**Table IB-2. Steps for Develop Preliminary Findings**

**Outputs**

- Preliminary findings

**Typical duration/ effort**

- Typical calendar duration: Four to eight hours
- Typical level of effort: Four to eight team hours

**IB 2.2.4A Develop preliminary findings, continued**

**Notes**

A preliminary finding is:

- Worded correctly (clear, does not use absolutes, expressed in site terms, and non-attributable to person or project)
- A group of observations, either strengths or weaknesses.
- Based on information from two sources

## IB 2.2.4B Review Preliminary Findings

**Purpose**

The purpose of Review Preliminary Findings is to allow each "lead" an individual opportunity to provide feedback on the preliminary findings and to validate that these preliminary findings represent the information provided during data gathering. These sessions are important in establishing the credibility of the appraisal with the "leads" and for providing assistance to the appraisal team for the synthesis of the preliminary findings into 5-10 draft findings.

**Summary description**

Review Preliminary Findings involves presenting the preliminary findings to the "leads" or managers as a group so that they may provide comments.

**Entry Criteria**

- Preliminary findings slides prepared

**Exit Criteria**

- Presentation of preliminary findings complete.
- Participant comments recorded and findings are updated.

**Roles**

Table IB-3 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team leader or OAR | Presents the preliminary findings. Solicits comments from participants. ("leads"). Facilitates the feedback portion of the meeting. |
| Appraisal team | Observes reactions of participants to findings, and takes notes on the feedback. Modify findings as needed and come to consensus on the findings. |
| Appraisal participants | Listen to findings presentation; provide feedback on whether the appraisal team captured what is happening in the organization. Offer improvements. |

**Table IB-3. Participants for Present Draft Findings**

**Inputs**

- Preliminary findings slides (from activity 2.2.4A)

### IB 2.2.4B Review Preliminary Findings, continued

**Steps**

Table IB-4 shows the steps for this activity.

| Step | Description |
|---|---|
| Introduction | The appraisal team greets the "lead" at the beginning of each session and provides an update of appraisal activities. Then the team explains that this is a session to review "preliminary" findings and that the findings will be further synthesized into a set of 5-10 draft findings.<br>The team reminds each lead that the findings should not be discussed outside of this session – i.e., that nothing is final until the final briefing is conducted. |
| Present findings | Present the preliminary findings to each lead. The following questions are used:<br>• Do you agree/disagree this finding applies to your project?<br>• Do you agree/disagree this finding applies to your organization?<br>Appraisal team members in attendance take notes on feedback and comments from "leads" |
| Closing | After all of the findings have been presented the session leader asks the "lead" what one thing – other than salary or supervisor – would each of them like to see changed in their organization<br>Also the session leader asks each "lead" to name an organizational strength–other than the staff.<br>Remind participants of the time for the presentation of the draft findings and emphasize that this is an opportunity to interact with the practitioners who participated in the appraisal. |
| Review suggested changes to findings | Not all requested changes will be accepted; particularly, ones that do not add to the critical issues of the appraisal. The information received in the Preliminary Findings session will be treated as data obtained from another data collection session. The team must come to consensus on the changes before they are made. |

**Table IB-4. Steps for Review Preliminary Findings**

# 3.4.3 Detailed Description, continued

**IB 2.2.4B Review Preliminary Findings, continued**

**Outputs**

- Notes by team
- Updated findings

**Typical duration/ effort**

- Typical calendar duration***:*** 2 hours
- Typical level of effort: 1 hour per lead, 2 hours to update findings

**Notes**

Feedback helps to validate and gather consensus of the need for change.

Ask the participants to keep findings to themselves until after the findings briefing.

The leads may review preliminary findings in parallel sessions providing at least two members of the appraisal team attend each.

| | |
|---|---|
| **IB 2.2.5** | **Develop Draft Findings** |
| **Input** | Preliminary findings and feedback from previous activity. |
| **Step: Develop draft findings** | Instead of reviewing the observations, the appraisal will review the preliminary findings and feedback comments from the "leads." Then the team will proceed as in a full FAM except that the result may be 5-10 findings in total rather than 5-10 for each process area. |
| **Notes** | The findings will be more generic or cultural in nature – i.e., the findings will be more general and cross process areas. |

| | |
|---|---|
| **IB 2.2.8** | **Develop Final Briefing** |
| **Notes** | No steps related to ratings are performed. |

## 3.5 Full External Evaluation

**Contents**

The following table provides a guide to the information found in this section:


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## 3.5.1 Introduction

**Purpose**

The purpose of the Full External (FE) evaluation method is to specify how an external organization would perform an independent evaluation of another organization based on the FAA-iCMM.

The FE method uses the full internal FAM as the standard method and tailors it to allow the FAM to be used to conduct an external evaluation.

Principles of the Software Capability Evaluation (SCE) method, version 3, have been incorporated. The SCE defines three uses, or variations, of the method: Supplier Selection, Process Monitoring, and Internal Evaluation. The Supplier Selection SCE is used by an external procurement organization for the evaluation of a potential offeror, typically in a competitive solicitation. The Process Monitoring SCE is used by one external organization for the evaluation of another organization. An example is the evaluation of the FAA by the Government Accountability Office (GAO), or the evaluation by the FAA of an external supplier. The Internal Evaluation SCE is used by an organization that contracts with an external SCE team to perform an evaluation, for example, as preparation for a potential SCE or to validate process improvement gains.

## 3.5.1 Introduction, continued

**Roles**

The following table shows the various roles of the people involved in the FE:

| Role | Description |
|---|---|
| Sponsor | External organization or individual who provides resources for the appraisal team and notifies the appraised organization authority of the upcoming evaluation. In most cases, the sponsor is not directly involved in follow-up process improvement activities. |
| Appraised Organization Authority | Notified by the sponsor of the intended evaluation. Designates an OAR as the point of contact for the evaluation. Commits resources for the appraisal. Receives the final audit report if appropriate. |
| Organizational Appraisal Representative (OAR) | Establishes link between the appraised organization and the evaluation team. Organizes projects to be appraised and coordinates resources in preparation for the evaluation. Establishes contact with the external organization point of contact and coordinates logistic arrangements. The OAR is typically not a member of the appraisal team. |
| Site coordinator | The description in Chapter 1 is appropriate. |
| Appraisal Participants | The description in Chapter 1 is appropriate. |
| Appraisal Team | The description in Chapter 1 is appropriate. |
| Appraisal Team Leader (ATL) | The description in Chapter 1 is appropriate. |
| Data Manager | The description in Chapter 1 is appropriate. |

## 3.5.2 Summary Description

| ID | FAM Activity Name | FE Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | Minor change | Notifies organization of pending evaluation |
| 2.1.2 | Select Appraisal Organizational Scope | Minor change | Determined by evaluating organization; questionnaire is administered. |
| 2.1.3 | Select Appraisal Team | Minor change | Evaluating organization selects team |
| 2.1.4 | Plan Appraisal Details | No change | |
| 2.1.5 | Orient Participants | Minor change | OAR orients participants |
| 2.1.6 | Train Team | Minor change | FAA can provide this training |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | No change | |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meeting | Minor change | Sponsor is not there. |
| 2.2.2 | Conduct Interviews | No change | |
| 2.2.3 | Review Documentation | No change | |
| 2.2.4 | Consolidate Data | No change | |
| 2.2.5 | Develop Draft Findings | No change | |
| 2.2.6 | Present Draft Findings | No change | Optional for Supplier Selection |
| 2.2.7 | Develop Ratings | Minor change | Optional based on purpose of evaluation |
| 2.2.8 | Develop Final Briefing | Minor change | Optional based on purpose of evaluation |
| 2.2.9 | Brief Sponsor | Minor change | Optional based on purpose of evaluation |
| 2.2.10 | Present Final Briefing | Minor change | Optional based on purpose of evaluation |
| 2.2.11 | Conduct Wrap-Up | Minor change | OAR records lessons learned |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | Minor change | Prepared by evaluating organization. |
| 2.3.2 | Manage Records | Minor change | Appraised and appraising organizations both perform this. |

## 3.5.3 Detailed Description

| | |
|---|---|
| **FE 2.1.1** | **Obtain Sponsor Commitment** |
| **Summary description** | The organization to be appraised is notified of the impending evaluation by the evaluating organization. In this case, the sponsor is the authority at the evaluating organization who orders the evaluation. The appraised organization authority appoints an OAR and Site coordinator. In some cases these may be one and the same person. The OAR coordinates with the appraisal team leader (ATL) and organizational resources in order to prepare for the evaluation. |

| | |
|---|---|
| **FE 2.1.2** | **Select Appraisal Organizational Scope** |
| **Summary description** | The sponsor, OAR and the ATL coordinate to identify candidate projects for the appraisal and the groups that will provide participants. Typically the scope will be determined by the external organization, and the OAR is notified of that scope, but does not participate in setting the scope. |
| **Entry Criteria** | • The appraised organization authority has agreed to the evaluation |
| **Step: Collect project/ organizational data** | The ATL may request the following information from the OAR at this time:<br>• Process Improvement Plan. This is used to determine the status of the organization's process improvement activities.<br>• Completed Organization/ Project Questionnaire for the organization and all projects. These are used to help scope the evaluation.<br>• Proposed Project Attributes in cases where a new project is the basis for the evaluation. (See Notes for information on Proposed Project Attributes.) |

**FE 2.1.2** **Select Appraisal Organizational Scope, continued**

**Step: Identify organization scope**

The Proposed Project Attributes, Process Improvement Plan, and Project Questionnaires are used to determine the projects that will be evaluated and the process areas that will be included.

The Proposed Project Attributes are used when the evaluation is triggered by the need to evaluate the capability of the organization to acquire a new system/product. It provides a view of a project that the appraised organization is planning to undertake and is used by the appraisal team to determine the types of experience required for the project and help scope the evaluation.

The appraisal team may use a Mismatch Identification Table to assist in this activity. (See Notes for information on Mismatch Identification.) The Mismatch Identification Table contrasts the attributes of the proposed project and the project represented by the project questionnaire data. The result is an experience match across the projects offered for evaluation.

**Inputs**

- Process Improvement Plan
- Proposed Project Attributes

**FE 2.1.2** **Select Appraisal Organizational Scope, continued**

**Notes**

Here is an example of a mismatch table where XXX, YYY, and ZZZ are existing projects that completed the project questionnaire.  The focus of this example is software specific.

| Project / Project Attributes | XXX | YYY | ZZZ | Overall |
|---|---|---|---|---|
| Size | X | X | X | X |
| Duration | | X | X | |
| Estimated size (software) | | X | | |
| Reuse Percent (software) | X | X | | |
| | | | | |
| Type of Work | | | | |
| Development Team Approach | | | | |
| Language(s) | | X | X | |
| Applicable Standards | | | | |
| Precedence | X | X | X | X |

The Project Questionnaires are compared to the Proposed Project Attributes. Where there is a mismatch, i.e., there is a significant difference between the attribute in the project and the corresponding attribute in the proposed project, an X indicates the mismatch.

An X in the overall column indicates that there is a mismatch between the proposed project and all of the projects being considered for the appraisal. Where there is no overall mismatch it indicates that there is experience within the organization in that area. If there are significant differences in the overall column the appraisal organization could ask that other projects be selected for the appraisal with a better match.

The presence of several X's in the project columns could also indicate possible risk areas for the proposed project. For example, if reuse is a requirement for the new project, the appraisal team may wish to focus on PAs that bear on this attribute, for example, PA 04, Alternatives.

# 3.5.3 Detailed Description, continued

**FE 2.1.3 Notes**

**Select Appraisal Team**
The identification and selection of the appraisal team is normally provided by the sponsoring organization. This team is typically formed from external people. It is possible for the appraised organization to have a member or observer on the team. The observer serves to facilitate the evaluation through identification of FAA appraisal participants and documentation. It is to the benefit of the appraised organization to have an observer on the team to help ensure that the team does not reach conclusions based on a lack of or poor information. The OAR is typically not on the appraisal team.

**FE 2.1.5 Notes**

**Orient Participants**
The OAR without involvement of the appraisal team would normally conduct this activity. When conducted it is identical to the full FAM except that appraisal team members may not be involved.

**FE 2.1.6 Notes**

**Train Team**
The ATL may request team training from the FAA. Training could include the FAA-iCMM, the FAM, and the FE. The OAR should coordinate with the FAA Chief Engineer for Process Improvement for the conduct of this training.

## 3.5.3 Detailed Description, continued

**FE 2.2.1** **Conduct Opening Meeting**

**Notes**

The opening meeting is similar to an opening meeting conducted in an internal appraisal; however, the perspective is different since it is an evaluation. It is still in the best interest of the appraised organization to present a full and accurate picture of their process improvement program and the projects that will participate in the evaluation.

If not done during Train Team, the appraised organization may optionally present a general briefing on their process improvement program and the projects within the scope of the evaluation. The presentation should focus on the state of the process improvement program, especially as it relates to the scope of the FE (e.g., if focused on acquisition, acquisition activities would be focused on). The idea is to concentrate on how the improvement program is progressing and the current state of the process. It is important to present an accurate and positive portrayal of the process improvement program to the FE appraisal team, as well as an overview of the programs that have been selected to participate in the FE.

It is advisable that the Appraised Organization Authority attend this meeting.

**FE 2.2.7** **Develop Ratings**

**Notes**

This is optional as determined by the sponsor.

**FE 2.2.8** **Develop Final Briefing**

**Notes**

This activity is optional. It is typically used in an Internal Evaluation when, through prior agreement, the external organization agrees to brief the appraised organization at the close of the evaluation.

## 3.5.3 Detailed Description, continued

**FE 2.2.9** **Brief Sponsor**

**Notes**

In this case, “brief sponsor” refers to a briefing to the Appraised Organization Authority. This activity is normally not conducted during an FE evaluation. It would only be conducted at the option of the evaluating organization or team. If conducted, it is identical to the final sponsor briefing of the FAM except that the team may choose not to give ratings to the Appraised Organization Authority.

**FE 2.2.10** **Present Final Briefing**

**Notes**

This activity is normally not conducted during an FE evaluation. It would only be conducted at the option of the evaluating organization or team. If conducted, it is identical to the sponsor brief, as described in FE 2.2.9.

**FE 2.2.11** **Conduct Wrap-Up**

**Notes**

The OAR should prepare a report based on the content of FAM 2.3.1 in order to capture lessons learned. These should be based on the OAR’s observations depending on his/her overall involvement in the appraisal. This report should be provided to the FAA SEPG.

## 3.5.3 Detailed Description, continued

| | |
|---|---|
| **FE 2.3.1** | **Prepare Appraisal Report** |
| **Notes** | A final report is normally prepared according to the evaluating organization’s policy and procedures. |

| | |
|---|---|
| **FE 2.3.2** | **Manage Appraisal Records** |
| **Notes** | These are managed by the FE team with the exception of those records that may have been recorded by the OAR. |

# 3.6 Value Analysis Appraisal Description

**Contents**

The following table provides a guide to the information found in this section:


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## 3.6.1 Introduction

**Purpose**

The Value Analysis (VA) Appraisal measures the Usefulness and Cost Effectiveness relating to the results of performing a process. These two measurements are called the generic attributes of a process area.
The VA appraisal can be used as a stand-alone appraisal method or in conjunction with the Full Internal FAM or any of its variations.

VA appraisals can be used in a number of ways to improve an organization's ability to meet business objectives and improve its processes. The appraisals can be used to screen process areas for whether to conduct process appraisals. They can also be used to confirm the value of mature processes and detect the need for changes in process improvement approaches, priorities and objectives – that is, check the alignment of process capability against the usefulness and cost effectiveness of process results. For example, any process area at capability 2 or higher that is below average on the Usefulness and Cost Effectiveness scales should be evaluated to confirm the effectiveness of the process and the need for process improvement attention.

In order to focus the appraisal on manageable and significant results of performing a process, one or more significant outputs of a process are selected for which data are collected and the generic attributes scored. This output is called the Key Result(s) (KR). Data on the usefulness of KR are collected from <u>users</u> (e.g., internal customers) of the KR. For measurements relating to cost effectiveness of the process, the <u>producers</u> of the KR are the primary source of data.

The appraised Usefulness of process results is related to the extent the need is met. Usefulness is scored as a single parameter, e.g., Plan, Low, or High (value added). Cost Effectiveness, however, is presented as a two dimensional concept – relative cost with respect to Usefulness, kind of like "return on investment". In order to present Cost Effectiveness this way, an additional parameter is defined – Resource Efficiency. The Resource Efficiency of a KR is scored as Plan, Low, or High relative to the qualified cost of producing the Key Result. Ideally the reference cost is the benchmarked or organization wide cost (e.g., standard or average cost). If the benchmark is not available, the "planned" cost may be used. The two-dimensional plot of Usefulness versus Resource Efficiency, for the KR, represents the Cost Effectiveness, as indicated in the diagram below.

## 3.6.1 Introduction, continued

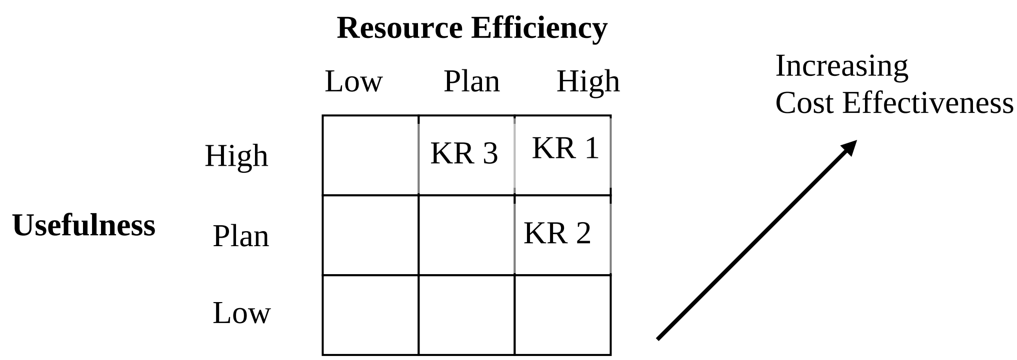


**Figure VA-1 Cost Effectiveness; one project, one PA, 3 Key Results**

**Example Value Analysis Results**

In general, the desired location of a KR is the center position, with Usefulness and Cost Effectiveness as planned. Other locations on the chart may be desirable for some KR, depending on the business objectives. If cost is a primary consideration, KR 2 is likely to be in a more desirable position than KR 3.
Consider a project with significant technical risk and only moderate cost sensitivity, such that the expected/targeted Usefulness is somewhat less than the Usefulness ultimately desired. This can happen when there is some uncertainty in the ability to meet a need and a lower than ultimately desired usefulness is established as a project objective. In such a case, the position of KR 3 may be more desirable than KR 2. Exceeding a requirement is generally not a good idea. The upper row is only desirable in limited cases; e.g., if meeting "optional" requirements is desirable, if the ultimate need is greater than the targeted need, or if added value is justifiable in some way relative to the cost. Further, at higher capability levels, variance from the target cost may not be a good thing either, even if the cost is lower, as predictability is often the focus.

**VA Roles**

The following table shows the various roles of the people involved in the VA Appraisal:

| Role | Description |
|---|---|
| Appraisal Advocate | The description in chapter 1 is appropriate. |
| Sponsor | The description in chapter 1 is appropriate. |
| Appraisal team leader | The ATL for a VA appraisal should also have training or experience in conducting VA appraisals |
| Organization appraisal representative | The description in chapter 1 is appropriate. |
| Appraisal team | If the VA appraisal is conducted along with a FI appraisal, the description in chapter 1 is appropriate. When a VA only appraisal is performed, the team may have fewer members, and overlapping roles. |
| Data Manager | The description in chapter 1 is appropriate. |
| Timekeeper | The description in chapter 1 is appropriate. |
| Site coordinator | The description in chapter 1 is appropriate. |
| Appraisal participants | The description in chapter 1 is appropriate. |
| Leads– work product development | These leads should be knowledgeable of the effort and effort estimating methods for the Key Results for process areas being appraised. |
| Leads – work product users | These leads should be knowledgeable of the use of Key Results for process areas appraised. |
| Practitioners- work product development | These practitioners should be involved in producing the Key Results for process areas appraised. |
| Practitioners- work product users | These practitioners should be involved in using the Key Results for process areas being appraised. |

### 3.6.2 Summary Description

| ID | FAM Activity Name | VA Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for the Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | Minor change. | Discuss choice of generic attributes (GAs) and PAs. Capability levels do not apply. |
| 2.1.2 | Select Appraisal Organizational Scope | Minor change. | One or both GAs may be appraised. |
| 2.1.2b | Conduct pre-appraisal interviews | Major Change (new activity) | Conduct pre-appraisal interviews |
| 2.1.3 | Select Appraisal Team | Minor change. | The appraisal team should have experience with VA Appraisals. |
| 2.1.4 | Plan Appraisal Details | Minor change. | Modifications to Outputs, Steps and Notes |
| 2.1.5 | Orient Participants | Minor change. | Focus on GAs |
| 2.1.6 | Train Team | Minor change. | Focus on GAs |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | Minor change. | Questionnaire on Usefulness and Resource Efficiency of Key Results. |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meetings | No change. | Optional |
| 2.2.2 | Conduct Interviews | Minor change. | Interview groups include both users and producers of Key Results. |
| 2.2.3 | Review Documentation | No change. | |
| 2.2.4 | Consolidate Data | Minor change. | Accuracy, validity, and sufficiency criteria are adjusted for VA appraisals. |
| 2.2.5 | Develop Draft Findings | Major change. | Draft VA Results (includes preliminary VA ratings) |
| 2.2.6 | Present Draft Findings | Minor change | Present Draft VA Results |
| 2.2.7 | Develop Ratings | Deleted | |
| 2.2.8 | Develop Final Briefing | Minor change | Present VA Results and compare with process appraisal results if available. |
| 2.2.9 | Brief Sponsor | No change. | |
| 2.2.10 | Present Final Briefing | No change. | |
| 2.2.11 | Conduct Wrap-Up | No change. | |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | No change. | |
| 2.3.2 | Manage Records | No change. | |

## 3.6.3 Detailed Description

**VA 2.1.1** **Obtain Sponsor Commitment**

**Notes**

Obtain Sponsor Commitment includes a determination of the GAs and process areas that will undergo the VA appraisal. For the selected PAs, the Usefulness GA is always appraised; the Cost Effectiveness GA is optional, depending on goals and data availability. In order to achieve meaningful results, processes selected for VA appraisal should have an appropriate level of maturity and stability of outputs.

**VA 2.1.2** **Select Appraisal Organizational Scope**

**Notes**

Select Appraisal Organizational Scope involves a preliminary determination of the projects that will undergo the VA appraisal. Leads from each project are identified for the pre-appraisal interviews. The Organizational information (e.g., Organization/Project Profiles) should be available and have been analyzed prior to the meeting with the sponsor to establish the appraisal organizational scope. Organizational information is also used in identifying the project and lead participation. The amount of organization information that needs to be collected will typically be less than for an FI appraisal; collecting the information verbally from the sponsor, advocate, and/or OAR may be adequate.

**VA 2.1.2b** **Conduct Pre-appraisal Interviews**

**Purpose**

The purpose of conducting pre-appraisal interviews is to identify candidate Key Results, and their users and developers (if the appraisal scope includes Cost Effectiveness), as well as the availability of related documentation. Key Results are the outputs of processes (work products or services) that will be the focus of Usefulness and Cost Effectiveness determinations.

**Summary Description**

Leads are interviewed for each project to identify: the candidate Key Results, the users and developers of Key Results, and the availability of documentation relating the Key Results.

**Entry Criteria**

- Completed sponsor meeting, preliminary appraisal scope, and approval to continue.

**Exit Criteria**

- Completed interviews with leads.

**Roles**

Table VA-1 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Project Leads | Staff in a lead position for each Key Result are interviewed |
| Appraisal Team Lead and OAR | The appraisal team lead and OAR conduct the interviews. |

**Table VA-1. Participants for Conduct Pre-appraisal Interviews**

**Inputs**

- Preliminary appraisal scope in terms of projects, process areas, and generic attributes
- Candidate participants

**VA 2.1.2b** **Conduct Pre-appraisal Interviews, continued**

**Steps**

Table VA-2 shows the step for this activity.

| Step | Description |
|---|---|
| Interview Leads | Interview management and/or technical leads for each project to determine:<br>• the nature of the projects and their current phase<br>• the types of results or work products or services for the process areas to be appraised (candidate Key Results)<br>• staff involved in producing and using the results<br>• identity and availability of documentation relating to the quality of results, resources expended or cost of results, and basis of estimating the resource or cost of results. |
| Select Key Results | Review candidate Key Results with the sponsor and select the ones to be used. |

**Table VA-2. Steps for Pre-appraisal Interviews**

**Outputs**

For Each PA

- Key Results
- Confirmed appraisal scope (Process Areas, projects/activities, GAs)
- List of potential appraisal participants
- List of documentation to be requested

**Typical duration/ effort**

- One hour per project lead. The number of project leads to be interviewed is determined by adequacy of coverage of Appraisal Scope (Projects, Process Areas and Key Results).

**Notes**

Typical Key Results, Users, and Needs are provided for each process area in the toolkit item: Potential Key Results/Needs Table by Process Area.

# 3.6.3 Detailed Description, continued

**VA 2.1.3** **Select Appraisal Team**

**Notes**

Appraisal team size is determined by the number of projects, number of PAs and number of Key Results to be appraised. The recommended minimum team size is two people. At least two appraisal team members should have experience conducting VA Appraisals when the VA appraisal is performed in conjunction with an FI appraisal. When a VA only appraisal is performed, each mini team should have one person with experience performing a VA appraisal.

**VA 2.1.4** **Plan Appraisal Details**

**Inputs**

- Preliminary appraisal plan and scope
- Results of pre-appraisal interviews, including Key Results, identification of users and producers
- Appraisal plan

**VA 2.1.4** | **Plan Appraisal Details, continued**

**Step: Finalize participants**

Finalize Participants is modified for VA appraisals. For each process area and each project, the following participants should be identified and scheduled for interview:

- Lead responsible for production/provision of the Key Result(s)
- Two practitioners who were involved in producing the Key Result.
- Lead user/customer of Key Result

Two practitioners involved in using the Key Result.

**Step: Select and develop participant questionnaire(s)**

In VA appraisals, this step is modified to focus on users and producers. Separate questionnaires are developed for users and producers of Key Results. The user questionnaire asks the user(s) to rate the usefulness of the Key Results. The producer questionnaire asks the producer(s) to rate the resource utilization for the Key Results. All respondents are asked to identify any documentation that supports their response and to indicate a level of confidence in their response.

**Step: Request Documentation**

The Request Documentation step is modified to identify and request the following documentation for each PA appraised:

- Key Result(s) (if documented)
- Benchmarking or estimating documentation used to plan development of Key Results.
- Actual cost or resources expended in producing the Key Results
- Results of reviews of Key Results (e.g., peer review results)

**Outputs**

VA Appraisal Plan outputs also include:

- Finalized appraisal scope (process areas, projects, GAs)
- Finalized Key Results.
- Key Result users and producers to be interviewed.

**Notes**

See the Toolkit for an example questionnaire of a VA appraisal and an Appraisal Checklist of details on preparing for the logistics of an appraisal.

## 3.6.3 Detailed Description, continued

**VA 2.1.5** **Orient participants**

**Notes**

The orientation includes an overview of generic attributes and the differences between appraisal of Value and Cost Effectiveness versus appraisal of process capability. The orientation lasts about half an hour, depending on participant questions.

**VA 2.1.6** **Train Team**

**Notes**

This activity ensures that the appraisal team understands the basic flow of the appraisal activities and their responsibilities throughout the appraisal. See the Toolkit for training support materials and tools such as the Appraisal Checklist. The training material focuses on generic attributes and the Value Analysis Appraisal process.

**VA 2.1.7** **Obtain and Analyze Preliminary Evidence**

**Purpose**

The purpose of Obtain and Analyze Preliminary Evidence is to obtain information on generic attributes in advance of the onsite activities in order to reduce the onsite effort, support advance preparation of interview questions, evaluate appraisal readiness, and identify and request additional information needed for the onsite phase.

**Summary Description**

Obtain and Analyze Preliminary Evidence involves administering and collecting questionnaires, summarizing the results and collecting supporting documentation or artifacts. Inputs are obtained on the Usefulness and Resource Efficiency for each Key Result, from users and producers respectively. The results are used as a starting point for appraisal team findings and generic attribute scoring.

## 3.6.3 Detailed Description, continued

| | |
|---|---|
| **VA 2.1.7** | **Obtain and Analyze Preliminary Evidence, continued** |
| **Notes** | The number of staff that completes the questionnaire is tailorable. At a minimum, two people per project, per process area, from the user group and from the producer group should take the questionnaire. The questionnaire is different from that used in other appraisal methods since it focuses on usefulness and resource efficiency for the identified Key Results instead of whether practices are performed. An example questionnaire is available in the tool kit. |

| | |
|---|---|
| **VA 2.2.2** | **Conduct Interviews** |
| **Purpose** | The purpose of Conduct Interviews is to obtain additional information on the Usefulness and Resource Efficiency of Key Results that is needed for completeness and validation. |
| **Summary Description** | Each appraisal participant is interviewed separately and the previously developed Exploratory Questions are asked. The rules of confidentiality should be communicated to the interviewee. |
| **Exit Criteria** | • Exploratory questions have been asked and the results recorded.<br>• All documents identified during the interview session have been requested.<br>• All projects, process areas, Key Results, and generic attributes within the appraisal scope have been addressed by participants with appropriate knowledge of the Key Results. |
| **Typical duration/ effort** | • One user lead and one producer lead, plus one or two producer practitioners and one or two user practitioners for each project.<br>• For each person interviewed: 20 minutes. Each interview is followed by a 15-minute period for completion of notes, appraisal team discussion of what was heard, and transition to next interviewee. |

# 3.6.3 Detailed Description, continued

**VA 2.2.2** **Conduct Interviews**

**Notes**

The exploratory questions developed in Section 2.1.7 are asked. Supporting documentation is requested as opportunities are presented. Where documentary evidence is not available, leads and practitioners are asked to make estimates of the results. In such cases, Key Results producers may be asked to estimate the percent deviation of actual cost or resources expended from the “expected” cost or resource; and Key Results users asked to estimate the amount of rework, if any, required to make the results useful. The confidence level of the appraisal assigned GA scores will be less for estimates than for scores supported by documentation.

The questions relating to what could be changed to improve quality and strengths are not asked.

**VA 2.2.4** **Consolidate Data**

**Step: Record Observations**

This step is modified to address GA parameters. Each team member creates observations from their notes. Each observation should include: a link to the FAA-iCMM process area, project, and Usefulness, and Resource Efficiency parameter in the scope of the appraisal. Observations are recorded for each Key Result for each PA – not against PA practices. Observations for GAs do not include an indication of strength, weakness, or alternative practice.

**Step: Check for accuracy**

The following changes are made in connection with Accuracy. “Relevant” for an observation means the observation provides information about the Usefulness or Resource Efficiency (as appropriate to the scope of the appraisal) of a Key Result.

The “Significant” component of Accuracy is not used in VA appraisals.

**Step: Check for validity**

The Corroboration component of Validity is changed to eliminate the item referring to strengths and alternative practice confirmation. The consistency component of validity is changed to refer only to Key Result observations (reference to strengths or acceptable alternatives is removed). Otherwise, Check for Validity is unchanged.

**VA 2.2.4** **Consolidate Data, continued**

**Step: Check for sufficiency**

The Check Sufficiency step is modified to read as follows for VA appraisals.

The appraisal team will ensure that the set of observations is sufficient. Sufficiency indicates that data were collected during the appraisal to cover the appraisal scope:

- the organizational scope of the appraisal
- the appropriate life cycle phases within scope of the appraisal
- the selected Key Results relating to the FAA-iCMM components within scope of the appraisal

Key Results for which Cost Effectiveness is within scope require at least one document indicating the cost of producing the Key Result and one document indicating either the planned or benchmarked cost.

**Notes**

Sufficiency is significantly different for VA appraisals in that the final ratings are unique to a project – not aggregated to the organization level. Appropriate life cycle phases for a VA appraisal depend on the process area and the nature of the project. For example, for a project with a well-defined requirements phase, observation(s) on the Usefulness of a requirements document would only be needed for the requirements phase. For a support PA like Configuration Management, observations for a Key Result at selected phases (as agreed with the sponsor in the appraisal plan) may be appropriate.
Key Results are maintained separately for each PA and presented as described in 2.2.7.

**VA 2.2.5** **Develop Draft Results**

**Purpose**

The purpose of Develop Draft Results is to develop preliminary results for presentation to participants to obtain their reaction and feedback.

**Summary Description**

Draft VA Results are developed for presentation to user and developer participants.

**Entry Criteria**

- Data has been consolidated
- Team consensus that sufficient coverage has been obtained

**Exit Criteria**

- Consensus is obtained on preliminary VA results
- Draft VA Results briefing is developed

**Roles**

Table VA-3 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team leader | Provides expertise on the FAA-iCMM, Generic Attributes, and the appraisal method and guides the team in forming consensus. |
| Appraisal team | Develops Draft Results<br>Achieves consensus |

**Table VA-3. Participants for Develop Draft VA Results**

**Inputs**

- Consolidated data
- Template for findings

## 3.6.3 Detailed Description, continued

**VA 2.2.5** **Develop Draft Results, continued**

**Steps**

Table VA-4 shows the steps for this activity.

| Step | Description |
|---|---|
| Review data | The appraisal team reviews the consolidated data and updates the Key Results Data Sheets. |
| Score the Usefulness GA | The appraisal team assigns one of the following values to the Usefulness GA for each Key Result:<br>• High - Key Result(s) exceeds the need<br>• Plan - Key Result(s) meets the need as planned<br>• Low - Key Result(s) is deficient in meeting the need |
| Score the Resource Efficiency Parameter | The appraisal team assigns one of the following values to the Resource Efficiency for each Key Result.<br>• High - Resources consumed are less than the expected<br>• Plan - Resources consumed are within the expected values as planned<br>• Low - Resources consumed are more than the expected values |

**Table VA-4. Steps for Develop Draft Results**

**Outputs**

- Usefulness and Resource Efficiency for each Key Result

**Typical duration/ effort**

- Typical calendar duration: Four to eight hours
- Typical level of effort: 1 - 3 team hours per Key Result

**VA 2.2.5** **Develop Draft Results, continued**

**Notes**

Draft Results include the following for each Key Result:

- Scoring of Usefulness as High, Plan, or Low
- Scoring of Resource Efficiency (if in scope) as High, Plan, or Low
- Observations as appropriate
- Information needed (optional)
- Supporting evidence or rationale (optional)

Cost Effectiveness (the plot of Usefulness versus Resource Efficiency) is presented in the Final Findings Presentation.

The following guidance is provided for scoring the Usefulness and Resource Efficiency.

Usefulness:
If a Key Result is notably deficient in meeting user expectations score it "Low". Often this can be judged by the extent of rework required to make the Key Result acceptable or greater than expected effort (or lower quality) of a component or service that the Key Result is a part of, or integrates with. If a Key Result shows notable value beyond what was expected and the added value is truly needed, score the Usefulness as "High". "High" Usefulness is only desirable in limited cases; e.g., if meeting "optional" requirements is desirable, if the ultimate need is greater than the targeted need, or if added value is justifiable in some way relative to the cost.
Resource Efficiency:
If the Resources consumed in producing the Key Result are within an acceptable variation of the benchmarked (or planned) value, score the Resource Efficiency as "Plan". The acceptable variance should be established by the sponsor or organization management – generally not exceeding 10%. If the resources used are more or less than the acceptable variation, score the Resource Efficiency as "Low" or "High" respectively. Note that a scoring of "High" for Resource Effectiveness is generally not desirable at higher capability levels, as variance from the target cost, even if the cost is lower, conflicts with predictability.

## 3.6.3 Detailed Description, continued

**VA 2.2.5** **Develop Draft Results, continued**

**Notes**

Observations, as appropriate, include any information obtained during data collection that is potentially useful to the organization; e.g., information on the performance of an iCMM practice that is related to the scoring of a Key Result. An observation relating to a Key Result should be worded correctly (clear, does not use absolutes, expressed in site terms, and non-attributable to a person). Results are attributable to projects.
Draft Results development, as with all team activities, should be conducted in private and the draft findings and input materials secured. The team room door should be locked to control entrance by non-team members.

At the conclusion of Draft Results development, the ATL should remind the team of the following:

- The ATL will read the Draft Results verbatim
- Team members should refrain from elaboration on the Draft Results while they are being read.
- As participants ask questions, the ATL may call on a mini team member to explain, but not elaborate on, a term or aspect of a Result.

**VA 2.2.6** **Present Draft Results**

**Notes**

Mini teams read the draft results separately to users (as a group) and developers (as a group) for each project and each process area. Feedback may include agreement or disagreement. For cases of disagreement, objective evidence is requested of the participants.

**VA 2.2.8** — **Develop Final Briefing**

**Entry Criteria**

- Appraisal team consensus on final results

**Exit Criteria**

- Appraisal team consensus on the briefing

**Inputs**

For each Key Result:
- Draft Results
- Feedback from Draft Results Presentation

**Step: Determine the Cost Effectiveness**

For each project and each process area, develop the Cost Effectiveness plot – all the Key Results for each PA on a graph of Usefulness versus Resource Efficiency.

**Step: Prepare Final Briefing**

Information relevant to GAs is added to this step. The appraisal team develops, reviews, modifies, and comes to consensus on all parts of the briefing, including:
- Opening and closing remarks
- PA GAs for each Key Result
- Observations
- Comparisons across projects (if possible)
- Comparison of GAs with PA Capability levels, if available

**Notes**

The Final Briefing consists of the updated Draft Results based on the Draft Results Presentation feedback plus the Cost Effectiveness plots for each PA and project. Results for the same process area and Key Results may be compared across projects. The results of a recent or concurrent process appraisal may also be included in the briefing, and capability levels compared with VA results. VA results for projects are not rolled up to the organizational level. An example of the Cost Effectiveness GA (Usefulness versus Resource Efficiency plot) is shown below.

# 3.6.3 Detailed Description, continued

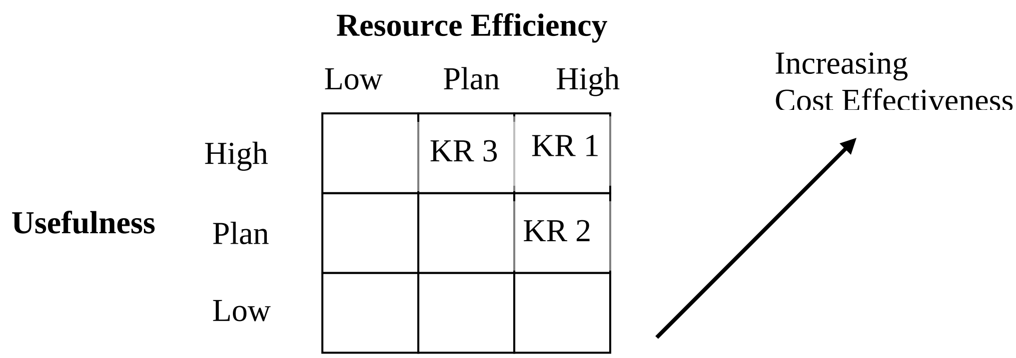


**Figure VA-2 Cost Effectiveness; one project, one PA, 3 Key Results**

# 3.7 Gap Analysis Process Appraisal Description

**Contents**

The following table provides a guide to the information found in this section:


| Topic | Page |
|---|---|
| 3.7.1 Introduction | 3-115 |
| 3.7.2 Summary Description | 3-117 |
| 3.7.3 Detailed Description | 3-119 |

### 3.7.1 Introduction

**Purpose**

The Gap Analysis Process (GAP) is used to identify the weaknesses of a program, system, organization and/or its services as they relate to the FAA-iCMM. An organization should realize that while strengths may be identified during the discussion sessions, the intent of the GAP is to focus on weaknesses and how to address those weaknesses.

GAPs are for education about the model, mapping of performed processes of the model, and to provide insight to where the organization is in relation to the model. In addition, it allows for identifying opportunities for improvement of existing processes.

The GAP can be performed as a stand-alone process or it could be used as a precursor to a Formal Appraisal. If it is the intent of the organization to perform a Formal Appraisal Readiness Review (FARR) appraisal, then a GAP is a prerequisite. However, a GAP is not required for a Formal Appraisal.

It is highly recommended that when an organization is considering a GAP that they scope the GAP to include a broad range of process areas, specifically all of the Process Areas (PA) at level 2. Doing this will give the organization a clearer picture as to where the organization is in relation to the model. In many cases, the organization is mapped closer to the model than what is initially believed.

Differences from the Formal Appraisal are: discussion sessions are performed instead of interviews, and draft and final findings are presented differently.

# 3.7.1 Introduction, continued

**GAP Roles**

The following table shows the various roles of the people involved in the GAP:

| Role | Description |
|---|---|
| Appraisal Advocate | The description in chapter 1 is appropriate. |
| Sponsor | The description in chapter 1 is appropriate. |
| Appraisal Team Leader | The description in chapter 1 is appropriate. |
| Organization Appraisal Representative | The description in chapter 1 is appropriate. |
| Appraisal Team | The description in chapter 1 is appropriate. |
| Data Manager | The description in chapter 1 is appropriate. |
| Timekeeper | The ATL assumes this role. |
| Site Coordinator | The description in chapter 1 is appropriate. |
| Appraisal Participants | The description in chapter 1 is appropriate. |
| Leads | The description in chapter 1 is appropriate. |
| Practitioners | The description in chapter 1 is appropriate. |

### 3.7.2 Summary Description

| ID | FAM Activity Name | GAP Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for the Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | Minor change | Information provided in the notes section. |
| 2.1.2 | Select Appraisal Organizational Scope | Minor change | The first step "Administer project and/or organization questionnaire" may or may not be performed. |
| 2.1.3 | Select Appraisal Team | Minor change | See notes section for size of team. |
| 2.1.4 | Plan Appraisal Details | Minor change | The planning aspects are incorporated into the opening briefing. The Sponsor and/or Advocate and the ATL approve the plan and schedule. |
| 2.1.5 | Orient Participants | Activity deleted | Participants are oriented during the Opening Brief. |
| 2.1.6 | Train Team | Minor Change | See notes section regarding team training. |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | Minor change | The preliminary evidence in this case will be plans, SOPs, guidelines, etc. Questionnaires are not distributed or used for a GAP Appraisal. |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meetings | Minor change | Information provided in Notes Section. |
| 2.2.2 | Conduct Interviews | Minor change | In the GAP, they are called discussion sessions. |
| 2.2.3 | Review Documentation | No change | |
| 2.2.4 | Consolidate Data | No change | |
| 2.2.5 | Develop Draft Findings | Minor change | These are also called detailed findings, and we utilize/present the detailed worksheets. |
| 2.2.6 | Present Draft Findings | Minor change | Managers and Practitioners are grouped together. |
| 2.2.7 | Develop Ratings | Major change | The title of this section is changed to "Emphasize gaps and provide recommendations". Recommendations not ratings are developed. |

## 3.7.2 Summary Description, continued

| ID | FAM Activity Name | GAP Description | Remarks |
|---|---|---|---|
| 2.2.8 | Develop Final Briefing | Minor change | Final briefing includes gaps, recommendations, conclusions and capability evidence. |
| 2.2.9 | Brief Sponsor | No change | |
| 2.2.10 | Present Final Briefing | Minor change | Feedback forms are given to the site coordinator for distribution to participants. |
| 2.2.11 | Conduct Wrap-Up | No change | |
| | | | |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | Minor change | The name of the activity is changed, as the report is a letter to only the sponsor with final briefing and detailed findings attached. |
| 2.3.2 | Manage Records | Minor change | All records are maintained by the ATL and forwarded to the Sponsor only. |

### 3.7.3 Detailed Description

**GAP 2.1.1** **Obtain Sponsor Commitment**

**Notes**

The GAP Appraisal is planned to take a minimum 7 to 8 days, equating to 56-64 hours for each team member for a Maturity Level 2 type of Organization and two full weeks (80+ hours) for a Maturity Level 3 type of Organization. However, depending on the scope of the Gap, the GAP Team and the sponsor/advocate of the organization can decide less hours/days is sufficient.

A confidentiality form is not signed.

**GAP 2.1.2** **Select Appraisal Organizational Scope**

**Table 2-5, Step: Administer project and/or organization questionnaire**

This step may or may not be performed, as a questionnaire is not required.

**GAP 2.1.3** **Select Appraisal Team**

**Notes**

The size of the team is typically 4-6 members dependent on the scope of the GAP.

**GAP 2.1.4** **Plan Appraisal Details**

**Roles**

Table GAP-1 lists the roles involved in this activity.

| Role | Summary |
| --- | --- |
| Appraisal team leader | Questionnaire may or may not be produced. |

**Table GAP-1. Participants for Plan Appraisal Details**

**Table 2-9, Step: Select and develop participant questionnaire(s)**

This step may or may not be performed, as a questionnaire is not required.

**GAP 2.1.4** **Plan Appraisal Details, continued**

**Outputs**

- Approved Appraisal plan that includes:
  - Purpose
  - Identity of the sponsor
  - Scope of the model (PAs, AAs, practices and capability levels to be investigated)
  - Scope of the organization
  - Activities and schedule
  - Resources assigned to activities
  - ATL, team members

**Notes**

All notes in regards to a questionnaire may not pertain if a questionnaire is not used.

**GAP 2.1.6** **Train Team**

**Notes**

Team is required to have met the training/familiarization requirements on the model. If requested, orientation is provided by the ATL on the GAP Appraisal. In addition, the GAP Appraisal is used for training on the model and process.

**GAP 2.1.7** **Obtain and Analyze Preliminary Evidence**

**Summary Description**

Obtain and Analyze Preliminary Evidence involves the collection of plans, SOPs, guidelines, etc (at least 2 business days prior to the GAP) and reviewing the evidence in order to assist in developing exploratory questions for discussion sessions, to evaluate appraisal readiness, record evidence of practice and goal achievement and to identify information needed. Questions are developed (at least 1 business day prior to the GAP) to facilitate the appraisal team in further data gathering.

**Entry criteria**

Does not include:

- Appropriate questionnaire.
- Preliminary Appraisal Plan Approved.

**GAP 2.1.7** **Obtain and Analyze Preliminary Evidence, continued**

**Exit criteria**

Does not include:

- Analysis of questionnaire responses.

**Roles**

Table Gap-2 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team | Reviews documentation and records results. Develops and agrees upon a set of initial questions and follow-up questions for the data gathering process. |

**Table GAP-2. Participants for Obtain and Analyze Preliminary Evidence**

**Inputs**

- Mapping Template.
- Organization's documentation.

**Steps**

Table GAP-3 shows the steps for this activity.

| Step | Description |
|---|---|
| Analyze documentation evidence | Identify any practices for which the documentation is inappropriate or insufficient. |
| Record results | Record the results of the preliminary evidence review in the form of notes or observations, strengths, weaknesses, and information needed for each practice. |
| Develop exploratory questions | Develop exploratory questions. Transcribe the questions into an appropriate form for each PA/AA and distribute copies to each team member prior to the discussion sessions. |
| Request information | Request follow up documents or information from the organization relating to missing evidence or information needed, to be available prior to the onsite activities. |

**Table GAP-3. Steps for Obtain and Analyze Preliminary Evidence**

**GAP 2.1.7** **Obtain and Analyze Preliminary Evidence, continued**

**Outputs**

- Summarized documentation review data.
- Documented exploratory questions by PA/AA or discussion session.
- List of additional documentation or information needed.

**Typical duration/effort**

Disregard all time involved for questionnaire.

**Notes**

Disregard all notes regarding questionnaire.

Prior to the GAP Appraisal (2-3 business days) binders with all of the following forms shall be provided to the GAP Team Members:

- Discussion Schedule
- GAP Draft Detailed Findings Worksheets
- Process Area Evidence Charts
- Senior Management Questions/Worksheet
- GAP Appraisal Briefing Template
- GAP Appraisal Feedback Form – This form will be given out at the conclusion of the Final Findings briefing. Please note: Due to possible union concerns, the appraised organization participants are not mandated to complete the form.

**GAP 2.2.1** **Conduct Opening Meeting**

**Notes**

The following items are needed for the opening brief:

- Lap Top
- Projector
- Copies of the Schedule
- Sign-In Sheet
- Soft copy of the Opening Brief
- The remaining forms and extra copies of worksheets can be taken to the Conference Room after the Opening Briefing for the discussion.

## 3.7.3 Detailed Description, continued

**GAP 2.2.2** **Conduct Interviews**

**Notes**

Replace the word "interview" with "discussion session".

The GAP team conducts discussion sessions to: obtain information from organizational members about their policies, procedures, processes and other relevant information. The sessions are used as a data source along with findings from the documentation review. The sessions help determine if their statements reflect the contents, accuracy of their documents/documented processes. Participants in the sessions could be managers, leads, and subject matter experts, separated so we can get different perspectives and candid comments.

It is also meant to be educational and interactive.

**GAP 2.2.5** **Develop Draft Findings**

**Inputs**

- Consolidated data
- Template for GAP Draft Detailed Findings
- Template for Final Findings

**Steps**

Table GAP-4 shows the steps for this activity.

| Step | Description |
|---|---|
| Develop detailed findings | Review the observations. Aggregate related observations into appropriate weaknesses. |
| Prepare briefing charts | Each finding is presented by BP (utilizing the GAP Draft Detailed Findings Worksheet) and any weaknesses are italicized in red (see notes section). For the GP findings, use the template for the final findings. See the Toolkit for a sample of the templates. |

**Table GAP-4. Steps for Develop Draft Findings**

## 3.7.3 Detailed Description, continued

**GAP 2.2.5** **Develop Draft Findings, continued**

**Notes**

Findings/observations are gathered/documented from the discussion sessions and document review. Weaknesses against BPs and GPs are determined by contradictory statements regarding procedures, policy, etc., obtained from discussion sessions and document reviews. Weaknesses are: non-existent or inconsistent documented procedures/processes, lack of awareness or knowledge of their own documentation, and/or lack of evidence in practice performance. The primary goal of the draft finding is to document/highlight weaknesses against the BPs and the GPs, not to document organizations strengths.

**GAP 2.2.6** **Present Draft Findings**

**Notes**

Present Draft Findings differs in that both managers and practitioners are grouped together.

**GAP 2.2.7** **Emphasize Gaps and Provide Recommendations**

**Purpose**

The purpose of Emphasize Gaps and Provide Recommendations is to highlight and emphasize existing gaps while providing recommendation on how to fill these gaps.

**Summary Description**

This step involves the appraisal team coming to a consensus on the existing gaps within each Process Area and Generic Practice and subsequently providing recommendations on how to fill these gaps in order to meet the goals of each process area and capability level within the scope of the appraisal.

**Entry criteria**

- Process Area Evidence Charts, GAP draft detailed findings worksheet and conclusions are finalized.

**Exit criteria**

- Process Capability profile is finalized.

## GAP 2.2.7 Emphasize Gaps and Provide Recommendations, continued

Table GAP-5 lists the roles involved in this activity.

**Roles**

| Role | Summary |
|---|---|
| Appraisal team | Develops and comes to consensus on the process capability profile and recommendations on how to fill gaps. |

**Table GAP-5. Participants in Emphasize Gaps and Provide Recommendations**

**Inputs**

- Observations
- Updated Findings

**Steps**

Table GAP-6 shows the steps for this activity.

| Step | Description |
|---|---|
| Update gaps | Update the GAP draft detailed findings worksheet based on information received from the draft findings. Then provide recommendations on how to fill the gap based on the FAA-iCMM guidelines and past experiences. |
| Complete Process Area Evidence Chart | Based on the findings, complete the Process Area Evidence Chart by documenting if evidence exists or not to satisfy the base practice. (Evidence = It is documented, proven by awareness of process/product in discussion sessions and artifacts exist as a result of the process [if applicable]) If one or more do not exist then it should not be considered as evident. |
| Develop conclusions for each Process Area | The appraisal team (using knowledge gained from past experience) determines the number of base practices satisfied using Process Area Evidence Chart. This is then equated into the percentage of base practices satisfied for each process area. |

**Table GAP-6. Steps for Emphasize Gaps and Provide Recommendations**

## 3.7.3 Detailed Description, continued

| | |
|---|---|
| **GAP 2.2.7** | **Emphasize Gaps and Provide Recommendations, continued** |
| **Outputs** | • Organization/project profile |
| **Typical duration/ effort** | • Typical calendar duration: 2 to 4 hours<br>• Typical level of effort: 2 to 4 team-hours |
| **Notes** | • Disregard all notes pertaining to ratings.<br>• A weakness/gap, no matter how small is highlighted, emphasized and includes possible recommendations to address the weakness/gap (e.g., include basis of estimates in individual project plans under section X and state that this was based upon X data/information). |
| **GAP 2.2.8** | **Develop Final Briefing** |
| **Inputs** | • Detailed findings<br>• Template for Final Findings<br>• Organization/project profile |

**GAP 2.2.8** **Develop Final Briefing, continued**

**Steps**

Table GAP-7 shows the steps for this activity.

| Step | Description |
|---|---|
| Prepare final briefing | The appraisal team develops, reviews, modifies, and comes to consensus on all parts of the briefing. This includes:<br>• Summary weaknesses<br>• Recommendations<br>• Conclusions<br>• Evidence worksheet<br>• Common findings across many PAs that are identified as “global” findings.<br>• Non FAA-iCMM findings regarding the culture that are identified as “cultural” findings.<br>• Other non-FAA-iCMM findings<br>• Appraisal Disclosure Statement (ADS) |
| Ensure consistency of final briefing | Ensure that there is no contradiction and that the final briefing is consistent. |
| Produce final briefing | Create the final charts, and copies of the briefing. |

**Table GAP-7. Steps for Develop Final Briefing**

**Notes**

Be sure the presenter(s) are comfortable delivering the briefing and that the whole team supports the results.

Next steps include:

- A GAP results letter, within a week after the GAP, is sent to the organization.
- A GAP Action Plan from the appraised organization. If an action plan is not received within 30 days of receipt of the letter a follow up notice will be sent.
- A Formal Appraisal Readiness Review, within a time frame determined by the appraisal team, typically/recommended within 6 months.

## 3.7.3 Detailed Description, continued

**GAP 2.2.10** **Present Final Briefing**

**Table 2-37 Steps**

| Step | Description |
|---|---|
| Thank sponsor and participants | Acknowledge the support personnel and all those who helped the appraisal succeed. Hand out the GAP Appraisal Feedback form to the site coordinator advising this is to be given only to those who participated in the GAP (this should be returned within a week). |

**GAP 2.3.1** **Prepare Appraisal Letter**

**Notes**

Replace the word Report with Letter.
The following data shall be provided to the sponsor or the designated sponsor's representative:

- Final Briefing
- Detailed Findings

**GAP 2.3.2** **Manage Records**

**Table 2-41 Steps**

| Step | Description |
|---|---|
| Transfer material to be retained. | The following items are transferred to the sponsor who should designate an individual to keep the records:<br>• GAP Opening Briefing<br>• GAP Schedule<br>• GAP Detail Draft Findings<br>• GAP Final Findings<br>• Final Findings Letter |
| Arrange organization feedback. | Remind the site coordinator to collect the sponsor and participant feedback forms. |
| Complete Appraisal Disclosure Statement | Complete the Appraisal Disclosure Statement and forward to the Chief Engineer for Process Improvement. |

**Notes**

Only the sponsor receives appraisal information.

## 3.8 Formal Appraisal Readiness Review Appraisal Description

**Contents**

The following table provides a guide to the information found in this section:


| Topic | Page |
|---|---|
| 3.8.1 Introduction | 3-130 |
| 3.8.2 Summary Description | 3-132 |
| 3.8.3 Detailed Description | 3-134 |

### 3.8.1 Introduction

**Purpose**

The Formal Appraisal Readiness Review (FARR) is used to determine if a program, system, organization or its service has satisfied the GAP Findings previously identified in the GAP Appraisal as they relate to the FAA-iCMM. The FARR will provide insight as to where the organization is in relation to the model.

## 3.8.1 Introduction, continued

**FARR Roles**

The following table shows the various roles of the people involved in the FARR:

| Role | Description |
|---|---|
| Appraisal Advocate | The description in chapter 1 is appropriate. |
| Sponsor | The description in chapter 1 is appropriate. |
| Appraisal team leader | The description in chapter 1 is appropriate. |
| Organization appraisal representative | The description in chapter 1 is appropriate. |
| Appraisal team | The description in chapter 1 is appropriate. |
| Data Manager | The description in chapter 1 is appropriate. |
| Timekeeper | The ATL assumes this role. |
| Site coordinator | The description in chapter 1 is appropriate. |
| Appraisal participants | The description in chapter 1 is appropriate. |
| Leads | The description in chapter 1 is appropriate. |
| Practitioners | The description in chapter 1 is appropriate. |

## 3.8.2 Summary Description

| ID | FAM Activity Name | FARR Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for the Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | Minor change | Entry Criteria is changed. The appraisal model scope is the same as the GAP Appraisal. |
| 2.1.2 | Select Appraisal Organizational Scope | Minor change | Organizational scope is the same as the GAP Appraisal. |
| 2.1.3 | Select Appraisal Team | Minor change | The notes section indicates that some of the team may be the same as a GAP while other members will not. |
| 2.1.4 | Plan Appraisal Details | Minor change | The planning aspects are incorporated into the opening briefing. The Sponsor and/or Advocate and the ATL approve the schedule. Data collection planning focuses mainly on areas with previous gaps, and spot checks in other areas. |
| 2.1.5 | Orient Participants | Activity deleted | |
| 2.1.6 | Train Team | Activity deleted | Team is required to have training/familiarization requirements. If requested, orientation is provided by the ATL on the FARR Process. In addition, the FARR Process is used for training on the model and process. |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | Minor change | The preliminary evidence in this case will be plans, SOPs, guidelines, etc. Questionnaires are not distributed or used for a FARR. Data collection focuses mainly on areas with previous gaps, and spot checks in other areas. The preliminary evidence also includes the GAP Action Plan. |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meetings | Minor change | Information provided in Notes Section. |
| 2.2.2 | Conduct Interviews | Minor change | In the FARR, they are called discussion sessions. |
| 2.2.3 | Review Documentation | No change | |
| 2.2.4 | Consolidate Data | No change | |

## 3.8.2 Summary Description, continued

| ID | FAM Activity Name | FARR Description | Remarks |
|---|---|---|---|
| 2.2.5 | Develop Draft Findings | Minor change | The draft findings focus only on changes, or lack thereof, in previously identified weaknesses. |
| 2.2.6 | Present Draft Findings | Minor change | Managers and practitioners are grouped together |
| 2.2.7 | Develop Ratings | Major change | The title of this section is changed to “Emphasize gaps and provide recommendations”. Recommendations not ratings are developed. |
| 2.2.8 | Develop Final Briefing | Minor change | Final briefing includes outstanding weaknesses, conclusions, capability evidence and recommendations for proceeding to a Formal Appraisal. |
| 2.2.9 | Brief Sponsor | No change | |
| 2.2.10 | Present Final Briefing | Minor change | Feedback forms are given to the site coordinator for distribution to participants. |
| 2.2.11 | Conduct Wrap-Up | No change | |
| | | | |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | Minor change | The report is a letter to the sponsor only with the final briefing attached. |
| 2.3.2 | Manage Records | Minor change | All records are maintained by the ATL and forwarded to the Sponsor only. |

### 3.8.3 Detailed Description

**FARR 2.1.1** **Obtain Sponsor Commitment**

**Entry Criteria**

- GAP Appraisal must be performed
- The organization asserts gaps have been closed
- Artifacts supporting the project's lifecycle activities must be up to date
- A completed and approved FARR application.

**FARR 2.1.2** **Select Appraisal Organizational Scope**

**Notes**

The Organizational scope for a FARR appraisal is the same as the organizational scope of the corresponding GAP appraisal. The same projects participating in the original appraisal should be selected for participation in the FARR. An approved preliminary appraisal plan is not created; however, a draft schedule and draft opening briefing are created.

**FARR 2.1.3** **Select Appraisal Team**

**Notes**

Some of the appraisal team members may be the same as the GAP; however, most are not the same as the GAP in order to promote objectivity.

## 3.8.3 Detailed Description, continued

**FARR 2.1.4** **Plan Appraisal Details**

**Roles**

Table FARR-1 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Site coordinator | Confirms logistics details for the appraisal. |
| Appraisal team leader | Develops Schedule (at least 5 days prior to the start of the FARR) and Opening Brief. Verifies that the appraisal method requirements will have been met if the appraisal is conducted in accordance with the schedule. |
| Sponsor | Approves the Schedule and Opening Brief. |

**Table FARR-1. Participants in Plan Appraisal Details**

**Table 2-9, Step: Select and develop participant questionnaire(s)**

This step may or may not be performed, as a questionnaire is not required.

**Outputs**

- Approved Appraisal Plan that includes:
  - Purpose
  - Identity of the sponsor
  - Scope of the model (PAs, AAs, practices and capability levels to be investigated)
  - Scope of the organization
  - Activities and schedule
  - Resources assigned to activities
  - ATL, team members

**Notes**

All notes in regards to a questionnaire may not pertain if a questionnaire is not used.

Data collection planning for a FARR focuses mainly on areas where weaknesses were uncovered in the GAP Appraisal and spot-checks in other areas.

**FARR 2.1.7** **Obtain and Analyze Preliminary Evidence**

**Summary Description**

Obtain and Analyze Preliminary Evidence involves the collection of plans, SOPs, guidelines, etc (at least 2 business days prior to the FARR) and reviewing the evidence in order to assist in developing exploratory questions for discussion sessions, to evaluate appraisal readiness, record evidence of practice and goal achievement and to identify information needed. The GAP Action Plan will also be reviewed for completion of the gaps. Questions are developed (at least 1 business day prior to the FARR) to facilitate the appraisal team in further data gathering.

**Entry criteria**

- Documentation requested.

**Exit criteria**

Does not include:

- Analysis of questionnaire responses.

**Roles**

Table FARR-2 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team | Reviews documentation and records results. Develops and agrees upon a set of initial questions and follow-up questions for the data gathering process. |

**Table FARR-2. Participants in Obtain and Analyze Preliminary Evidence**

**Inputs**

- Mapping Template
- Organization's documentation

# 3.8.3 Detailed Description, continued

**FARR 2.1.7** **Obtain and Analyze Preliminary Evidence, continued**

**Steps**

Table FARR-3 shows the steps for this activity.

| Step | Description |
|---|---|
| Analyze documentation evidence | Review and analyze any missing artifacts that were identified from the GAP Appraisal. Identify any practices for which the documentation is inappropriate or insufficient. |
| Record results | Record the results of the preliminary evidence review in the form of notes or observations, strengths, weaknesses, and information needed for each practice. |
| Develop exploratory questions | Develop exploratory questions. Transcribe the questions into an appropriate form for each PA/AA and distribute copies to each team member prior to the discussion sessions. |
| Request information | Request follow up documents or information from the organization relating to missing evidence or information needed, to be available prior to the onsite activities |

**Table FARR-3. Steps in Obtain and Analyze Preliminary Evidence**

**Outputs**

- Summarized documentation review data
- Documented exploratory questions by PA/AA or discussion session
- List of additional documentation or information needed

**Typical duration/effort**

Disregard all time involved for questionnaire.

**FARR 2.1.7** **Obtain and Analyze Preliminary Evidence, continued**

**Notes**

Disregard all notes regarding questionnaire.

Prior to the FARR (2-3 business days) binders with all of the following forms shall be provided to the FARR Team Members:

- Overview/Discussion Schedule
- Opening Briefing
- Senior Management Questions/Worksheet
- Generic Practice (GP) Worksheets
- FARR Briefing Template (from GAP Appraisal Findings comparing GAP Findings to FARR findings)
- FARR Feedback Form – This form will be given out at the conclusion of the Final Findings briefing. Please note: Due to union issues the appraised organization participants are not mandated to complete the form.

**FARR 2.2.1** **Conduct Opening Meeting**

**Notes**

The following items are needed for the opening brief:

- Lap Top
- Projector
- Copies of the Schedule
- Sign-In Sheet
- Soft copy of the Opening Brief
- The remaining forms and extra copies of worksheets can be taken to the Conference Room after the Opening Briefing for the discussion.

## 3.8.3 Detailed Description, continued

**FARR 2.2.2** **Conduct Interviews**

**Notes**

Replace the word “interview” with “discussion session”

The FARR team conducts discussion sessions to: obtain information from organizational members about their policies, procedures, processes and other relevant information. The sessions are used as a data source along with findings from the documentation review. The sessions help determine if their statements reflect the contents, accuracy of their documents/documented processes. Participants in the sessions could be managers, leads, and subject matter experts, separated so we can get different perspectives and candid comments.

It is also meant to be educational and interactive.

**FARR 2.2.5** **Develop Draft Findings**

**Inputs**

- Consolidated data
- Template for Final Findings

**Steps**

Table FARR-4 shows the steps for this activity.

| Step | Description |
|---|---|
| Develop detailed findings | Review the observations. Aggregate related observations into appropriate strengths and/or weaknesses. |
| Prepare briefing charts | Using the FARR template for the final findings, list the weaknesses identified in the GAP on the left side and then the finding from the FARR associated with the weakness on the right side. If a weakness remains this should be italicized in red (see notes section). See the Toolkit for a sample of the template. |

**Table FARR-4. Steps in Develop Draft Findings**

**FARR 2.2.5** **Develop Draft Findings, continued**

**Notes**

- Findings/observations are gathered/documented from the discussion sessions and document review. Weaknesses against BP's are determined by contradictory statements regarding procedures, policy, etc., obtained from discussion sessions and document reviews. Weaknesses are: non-existent or inconsistent documented procedures/processes, lack of awareness or knowledge of their own documentation and/or lack of evidence in practice performance. The primary goal of the draft finding is to document/highlight weaknesses against the BPs and the GPs, not to document an organization's strengths.
- For other areas of the original GAP Appraisal where spot-checking was performed, additional weaknesses could be identified and therefore an adjustment could be made to the recommendation, conclusion and/or capability evidence. For example, a process area previously determined to have evidence of capability may no longer be judged to have evidence as a result of the FARR.

**FARR 2.2.6** **Present Draft Findings**

**Summary Description**

Present Draft Findings differs in that both managers and practitioners are grouped together.

**FARR 2.2.7** **Emphasize Gaps and Provide Recommendations**

**Purpose**

The purpose of Emphasize Gaps and Provide Recommendations is to highlight and emphasize remaining gaps.

**Summary Description**

This step involves the appraisal team coming to consensus on the remaining gaps within each Process Area and Generic Practice in order to determine if the goals of each process area have been met and the capability level within the scope of the appraisal, and in order to make a determination in regards to moving on to a Full Internal Appraisal.

## 3.8.3 Detailed Description, continued

**FARR 2.2.7** **Emphasize Gaps and Provide Recommendations, continued**

**Entry criteria**

- Process Area Evidence Charts, GAP detailed findings worksheet

**Exit criteria**

- Recommendations to move or not toward a Full Internal Appraisal.

**Roles**

Table FARR-5 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal team | Develops and comes to consensus on the process capability profile and recommendations on continuing to a Full Internal Appraisal. |

**Table FARR-5. Participants in Emphasize Gaps and Provide Recommendations**

**Inputs**

- Observations
- Updated Findings

## 3.8.3 Detailed Description, continued

**FARR 2.2.7** **Emphasize Gaps and Provide Recommendations, continued**

**Steps**

Table FARR-6 shows the steps for this activity.

| Step | Description |
|---|---|
| Update gaps | Transfer the findings (gaps) from the final brief of the GAP to the (left hand side) template for the FARR Final Brief. Identify the existing gaps and the gaps that have been addressed on the right hand side of the brief. |
| Complete Process Area Evidence Chart | Based on the findings, using the Process Area Evidence Chart from the GAP, complete the FARR section of the Process Area Evidence Chart by documenting if evidence exists or not to satisfy the base practice. (Evidence = It is documented, proven by awareness of process/product in discussion sessions and artifacts exist as a result of the process [if applicable]) If one or more do not exist, then it should not be considered as evident. |
| Develop conclusions for each Process Area | The appraisal team (using knowledge gained from past experience) determines the number of base practices satisfied using evidence worksheets. This is then equated into the percentage of base practices satisfied for each process area. Review the remaining gap(s) and provide a recommendation as to whether the team feels that the organization is ready to move onto a Formal Appraisal (see notes section for guidance). |

**Table FARR-6. Steps for Emphasize Gaps and Provide Recommendations**

**Outputs**

- Organization/project profile
- Recommendation for or against Full Internal Appraisal

**Typical duration/ effort**

- Typical calendar duration: 2 to 4 hours
- Typical level of effort: 2 to 4 team-hours

**FARR 2.2.7** **Emphasize Gaps and Provide Recommendations, continued**

**Notes**

- Disregard all notes pertaining to ratings.
- An organization is considered to be ready to move on to a Formal Appraisal when:
    - Most of the gaps have been addressed or are well on their way to being addressed
    - The time available to address these gaps is sufficient
    - The gap is not considered severe in nature
    - The evidence that has been provided is reasonable

**FARR 2.2.8** **Develop Final Briefing**

**Inputs**

- Template for Final Findings
- Organization/project profile

**Steps**

Table FARR-7 shows the steps for this activity.

| Step | Description |
|---|---|
| Prepare final briefing | The appraisal team develops, reviews, modifies, and comes to consensus on all parts of the briefing. This includes:<br>• Outstanding gaps<br>• Recommendations<br>• Conclusions<br>• Evidence worksheet<br>• Findings found across many PAs that are identified as “global” findings.<br>• Non FAA-iCMM findings regarding the culture that are identified as “cultural” findings.<br>• Other non-FAA-iCMM findings |
| Ensure consistency of final briefing | Ensure that there is no conflict and that the final briefing is consistent. |
| Produce final briefing | Create the final charts, and copies of the briefing. |

**Table FARR-7. Steps for Develop Final Briefing**

**FARR 2.2.8** **Develop Final Briefing, continued**

**Notes**

Be sure the presenter(s) are comfortable delivering the briefing and that the whole team supports the results.

Next steps include:

- A FARR results letter within a week after the FARR sent to the organization.

**FARR 2.2.10** **Present Final Briefing**

**Table 2-37 Step**

| Step | Description |
|---|---|
| Thank sponsor and participants | Acknowledge the support personnel and all those who helped the appraisal succeed. Hand out the FARR Appraisal Feedback form to the site coordinator this is to be given only to those who participated in the FARR (this should be returned within a week). |

**FARR 2.3.1** **Prepare Appraisal Letter**

**Notes**

Replace the word Report with Letter.
The following data shall be provided to the sponsor or the designated sponsor's representative:

- Final Briefing

## 3.8.3 Detailed Description, continued

**FARR 2.3.2** **Manage Records**

**Table 2-41 Steps**

| Step | Description |
|---|---|
| Transfer material to be retained | The following items are transferred to the sponsor who should designate an individual to keep the records:<br>• FARR Opening Briefing<br>• FARR Schedule<br>• FARR Draft Findings<br>• FARR Final Findings<br>• Final Findings Letter |
| Arrange organization feedback. | Remind the site coordinator to collect the sponsor and participant feedback forms. |
| Complete Appraisal Disclosure Statement | Complete the Appraisal Disclosure Statement and forward to the Chief Engineer for Process Improvement. |

**Notes** Only the sponsor receives appraisal information.

## 3.9 Delta Appraisal Description

**Contents**

The following table provides a guide to the information found in this section:


| Topic | Page |
|---|---|
| 3.9.1 Introduction | 3-147 |
| 3.9.2 Summary Description | 3-149 |
| 3.9.3 Detailed Description | 3-150 |

## 3.9.1 Introduction

**Purpose**

The Delta appraisal (DELTA) is a method used as a follow-up to a Full Internal Appraisal when organizational objectives were not met (e.g., one or more capability levels not achieved). The method seeks to enhance appraisal efficiency by focusing mainly on previously identified weaknesses, and potentially allowing ratings to be adjusted without the expense of another full appraisal. The DELTA appraisal also entails spot checks on any areas that were within the scope of the original appraisal to assure process performance in these areas has not degraded since the original appraisal.

A DELTA appraisal can be performed only when weaknesses identified in the original appraisal are confined to no more than 3 in a single process area, and the percent of process areas with significant weaknesses is no more than approximately 20 percent of those originally appraised.

Only one DELTA appraisal may be performed associated with the same original Full Internal Appraisal, and the on-site activities of a DELTA should commence within six months of the conclusion of the original appraisal.

## 3.9.1 Introduction, continued

**DELTA Roles**

The following table shows the various roles of the people involved in the DELTA appraisal:

| Role | Description |
|---|---|
| Appraisal Advocate | The description in chapter 1 is appropriate. |
| Sponsor | The description in chapter 1 is appropriate. |
| Appraisal team leader | The description in chapter 1 is appropriate. |
| Organization appraisal representative | The description in chapter 1 is appropriate. |
| Appraisal team | The description in chapter 1 is appropriate. |
| Data Manager | The description in chapter 1 is appropriate. |
| Timekeeper | The description in chapter 1 is appropriate. |
| Site coordinator | The description in chapter 1 is appropriate. |
| Appraisal participants | The description in chapter 1 is appropriate. |
| Leads | The description in chapter 1 is appropriate. |
| Practitioners | The description in chapter 1 is appropriate. |

### 3.9.2 Summary Description

| ID | FAM Activity Name | DELTA Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for the Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | Minor change | Appraisal model scope is same as original appraisal. Must be the same ATL as for original appraisal. |
| 2.1.2 | Select Appraisal Organizational Scope | Minor change | Organizational scope is same as original appraisal, although fewer participants would be involved. |
| 2.1.3 | Select Appraisal Team | Minor change | Appraisal team includes a subset of the original appraisal team. |
| 2.1.4 | Plan Appraisal Details | Minor change | Data collection planning focuses mainly on areas with previous weaknesses, and spot checks in other areas. On-site should start within 6 months of original appraisal. Questionnaire is optional. |
| 2.1.5 | Orient Participants | No change | |
| 2.1.6 | Train Team | Activity deleted | Team has been recently trained |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | Minor change | Questionnaire is optional. |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meetings | No change | |
| 2.2.2 | Conduct Interviews | No change | |
| 2.2.3 | Review Documentation | No change | |
| 2.2.4 | Consolidate Data | Minor change | Sufficiency requirements adjusted |
| 2.2.5 | Develop Draft Findings | No change | |
| 2.2.6 | Present Draft Findings | No change | |
| 2.2.7 | Develop Ratings | Minor change | Original ratings may be adjusted |
| 2.2.8 | Develop Final Briefing | Minor change | Original briefing may be adjusted |
| 2.2.9 | Brief Sponsor | No change | |
| 2.2.10 | Present Final Briefing | No change | |
| 2.2.11 | Conduct Wrap-Up | No change | |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | No change | |
| 2.3.2 | Manage Records | No change | |

### 3.9.3 Detailed Description

**DELTA 2.1.1** **Obtain Sponsor Commitment**

**Inputs**

- Original appraisal plan is an additional input.

**Notes**

A DELTA appraisal is a follow-up to a previous appraisal (denoted as the original appraisal). For a DELTA appraisal, the model scope remains the same as the scope of the original appraisal.

The ATL for a DELTA is the same ATL as for the original appraisal.

**DELTA 2.1.2** **Select Appraisal Organizational Scope**

**Inputs**

- Original appraisal plan is an additional input.
- Original Final Briefing is an additional input.

**Notes**

The organizational scope for a DELTA appraisal is the same as the organizational scope of the original appraisal. However, fewer participants will be involved since the focus of the DELTA appraisal is on areas where weaknesses were uncovered in the original appraisal. The same projects participating in the original appraisal should be selected for participation in the DELTA if possible or appropriate. Other representative projects may be additionally included.

# 3.9.3 Detailed Description, continued

**DELTA 2.1.3** **Select Appraisal Team**

**Inputs**

- Original appraisal plan is an additional input.
- Original Final Briefing is an additional input.

**Notes**

The appraisal team for a DELTA appraisal should include a subset of the original appraisal team plus at least one new team member. Any new team members must be trained, experienced appraisers since no additional team training is provided as part of a DELTA appraisal. This team should include at least one member from the organizational unit being appraised, and it is strongly recommended that this be the original OAR. For those areas where weaknesses were uncovered in the original appraisal, it is desirable to have team members who were on those original mini-team(s) if possible. At least half of the DELTA appraisal team members must from the original appraisal team.

## 3.9.3 Detailed Description, continued

**DELTA 2.1.4** **Plan Appraisal Details**

**Inputs**

- Original appraisal plan is an additional input.
- Original Final Briefing is an additional input.

**Notes**

Data collection planning for a DELTA appraisal focuses mainly on areas where weaknesses were uncovered in the original appraisal. These areas should be covered in detail, i.e., as with a full appraisal.

Data collection is also needed in other areas within the scope of the original appraisal, but just as spot checks to ensure those processes are still being performed as determined in the original appraisal. Data collection planning for these other (sampled) areas should include any practices or areas that are closely related (e.g., dependencies exist) to the areas of weakness referred to above. For sampled areas, recent documentation should be requested, indicating performance within the months since the original appraisal.

A DELTA appraisal plan should be developed that references the original appraisal plan and documents the changes for the DELTA, with the same approvals. The on-site period should commence within 6 months of completion of the original appraisal.

The administration of a participant questionnaire is optional.

**DELTA 2.1.7** **Obtain and Analyze Preliminary Evidence**

**Notes**

The participant questionnaire is optional in a DELTA appraisal. If not used, all activities related to questionnaire administration and analysis would be deleted from this activity.

## 3.9.3 Detailed Description, continued

**DELTA 2.2.4** **Consolidate Data**

**Notes**

All observations in a DELTA appraisal need to be accurate and valid. Sufficiency requirements apply only to goals for a PA whose ratings are being considered for adjustment, and to any goals in which spot checking identifies a weakness. If one goal for a process area has a deficiency, other goals should be spot-checked.

**DELTA 2.2.7** **Develop Ratings**

**Inputs**

- Original ratings (from original Final Briefing) are an additional input.

**Notes**

Ratings are re-determined in areas where weaknesses were uncovered in the original appraisal. For example, capability level determinations in such areas, based on DELTA appraisal findings, may result in achievement of capability levels not achieved in the original appraisal.

For other areas of the original appraisal where spot-checking was performed, ratings may also be adjusted to reflect appraisal results. For example, a process area previously determined to be at a given capability level may no longer be judged to be at that level as a result of a DELTA appraisal.

**DELTA 2.2.8** **Develop Final Briefing**

**Inputs**

- Original Final Briefing is an additional input.

**Notes**

The original Final Briefing is adjusted to reflect the outcomes of the DELTA appraisal. Next steps, however, may not include another DELTA appraisal.

# 3.10 FAA-iCMM : ISO 9001 Appraisal Description

**Contents**

The following table provides a guide to the information found in this section:


| Topic | Page |
|---|---|
| 3.10.1 Introduction | 3-155 |
| 3.10.2 Summary Description | 3-157 |
| 3.10.3 Detailed Description | 3-158 |

## 3.10.1 Introduction

**Purpose**

The FAA-iCMM : ISO 9001 (FAM:ISO) Appraisal method provides an efficient approach to collecting improvement information for organizations that are interested in both the iCMM and ISO 9001. The method results in both iCMM and ISO 9001 findings by means of a single appraisal.

The iCMM and ISO 9001 are closely aligned and mutually supportive in many areas. Achieving improvements using one or the other greatly supports accomplishments in both. This appraisal method leverages the high degree of commonality to efficiently collect improvement data in a single appraisal/audit. The method is strongly dependent on the "Guidelines for Using FAA-iCMM v2.0 and ISO 9001:2000 in Process Improvement" (Guidelines), available in the toolkit.

## 3.10.1 Introduction, continued

**FAM:ISO Roles**

The following table shows the various roles of the people involved in the FAA-iCMM : ISO 9001 Appraisal.

| Role | Description |
|---|---|
| Appraisal Advocate | In addition to the description in chapter 1, the advocate should be familiar with the organization's use or interest in ISO 9001. |
| Sponsor | The description in chapter 1 is appropriate. |
| Appraisal team leader (or iCMM co-lead) | The description in chapter 1 is appropriate for the iCMM appraisal function. The team lead role is shared by iCMM and ISO 9001 auditor co-leads, if the iCMM lead is not also an ISO 9001 certified lead auditor |
| ISO auditor co-lead | If the appraisal team lead is not also an ISO 9001 certified lead auditor, an authorized ISO 9001 certified lead auditor is required as a co-lead. |
| Organization appraisal representative | In addition to the description in chapter 1, the advocate should be familiar with the organization's use or interest in ISO 9001. |
| Appraisal team | In addition to the description in chapter 1, training and/or experience in ISO 9001 is needed for a significant fraction of the team. |
| Data Manager | The description in chapter 1 is appropriate. |
| Timekeeper | The description in chapter 1 is appropriate. |
| Site coordinator | The description in chapter 1 is appropriate. |
| Appraisal participants | The description in chapter 1 is appropriate. |
| Leads | The description in chapter 1 is appropriate. |
| Practitioners | The description in chapter 1 is appropriate. |

### 3.10.2 Summary Description

| ID | FAM Activity Name | FAM:ISO Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for the Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | Minor change | Appraisal scope includes all iCMM practices that align with ISO 9001. |
| 2.1.2 | Select Appraisal Organizational Scope | Minor change | Organizational scope is appropriate for both iCMM and ISO 9001. |
| 2.1.3 | Select Appraisal Team | Minor change | 1 team member must have ISO 9001 internal auditor (or equivalent) training |
| 2.1.4 | Plan Appraisal Details | Minor change | Allow for some additional time and activities for the ISO 9001 dimension. |
| 2.1.5 | Orient Participants | Minor change | Include Orientation on ISO 9001 and the relationship to the iCMM. |
| 2.1.6 | Train Team | Minor change | Add training on iCMM and ISO 9001 relationships and on interviewing for both ISO 9001 and iCMM. |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | Minor change | Develop interview questions, and obtain evidence concurrently, for iCMM and ISO 9001. |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meetings | No change | |
| 2.2.2 | Conduct Interviews | No change | |
| 2.2.3 | Review Documentation | No change | |
| 2.2.4 | Consolidate Data | Minor change | Provide observations to ISO 9001 lead |
| 2.2.5 | Develop Draft Findings | Minor change | Include findings for non-rated iCMM practices if planned. |
| 2.2.6 | Present Draft Findings | No change | |
| 2.2.7 | Develop Ratings | Minor change | Develop ratings and audit results. |
| 2.2.8 | Develop Final Briefing | Minor change | Include findings and observations for non-rated iCMM practices and for ISO 9001 if indicated by the appraisal plan. |
| 2.2.9 | Brief Sponsor | No change | |
| 2.2.10 | Present Final Briefing | Minor change | Explain any Findings or observations, including those from non-rated iCMM practices and from ISO 9001 if indicated by the appraisal plan. |
| 2.2.11 | Conduct Wrap-Up | No change | |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | No change | |
| 2.3.2 | Manage Records | No change | |

## 3.10.3 Detailed Description

**FAM:ISO 2.1.1** **Obtain Sponsor Commitment**

**Notes**

The majority of observations and findings will typically be associated with the iCMM PAs, practices, and Capability Levels that address the sponsor's selected iCMM coverage requirements. Additional observations and possibly partially validated findings will be developed that are related to other iCMM practices due to their alignment with ISO 9001 requirements.

The latter are referred to as additional non-rated iCMM practices, since they won't be used for iCMM rating purposes. However, the lead should discuss with the sponsor the degree of corroboration desired for these practices considering that they typically will only address parts of a PA. Information about their degree of implementation, however, should be useful to the sponsor. The sponsor can choose whether or not to have this information reported as appraisal output.

The sponsor should approve the ISO 9001 co-lead as well as the iCMM co-lead, if two leads are planned.

Note that this method may be tailored to be used for informal internal audit, with an ISO 9001 internal lead auditor as co-lead.

**FAM:ISO 2.1.2** **Select Appraisal Organizational Scope**

**Notes**

Projects and personnel selected to participate in the appraisal should be appropriate for an ISO 9001 audit as well as for an iCMM appraisal. The co-leads should coordinate to ensure that the selected participation of personnel and projects, and composition of interview groups, is appropriate for both the audit and the appraisal.

**FAM:ISO 2.1.3** **Select Appraisal Team**

**Notes**

The appraisal lead, in addition to being an authorized iCMM appraiser, should also be a certified ISO 9001 lead auditor, or there should be co-leads with appropriate qualifications. At least one team member must have ISO 9001 internal auditor (or equivalent) training.

# 3.10.3 Detailed Description, continued

**FAM:ISO 2.1.4** **Plan Appraisal Details**

**Associate ISO 9001 Requirements to PAs**

This is a new step in which the Guidelines are used to associate ISO 9001 requirements to PAs and practices for concurrent data collection.

**Notes**

Using the mapping tables in the Guidelines, associate ISO 9001 requirements to PAs and practices, and accordingly assign mini team responsibility for ISO 9001 data collection as well as iCMM data collection. Each ISO 9001 requirement should be uniquely associated to an iCMM practice for data collection assignments, even though the requirement may map to multiple practices. This will ensure that all ISO 9001 requirements are covered and avoid the need to integrate data for requirements that are mapped to multiple practices.

Observation worksheets that include the ISO 9001 associations are contained in the toolkit.

If there are co-leads for ISO 9001 and the iCMM, they should collaborate and agree on all appraisal planning details, and both sign the appraisal/audit plan.

While the amount of time to perform an appraisal/audit is less than the total time to do an appraisal and an audit separately, some additional time may be required to ensure completion of all ISO 9001 auditor functions. Coordination among the leads on the time required, and the number, type and composition of interviews to meet both the iCMM and ISO 9001 requirements is critical.

**FAM:ISO 2.1.5** **Orient Participants**

**Notes**

Include in the orientation an overview of ISO 9001 and the relation between it and the iCMM.

## 3.10.3 Detailed Description, continued

**FAM:ISO 2.1.6** **Train Team**

**Notes**

Add to team training:

- overview of ISO 9001
- overview of the Guidelines
- team requirements and constraints relating to team support to the ISO 9001 auditor
- interviewing to address both iCMM and ISO 9001 requirements

**FAM:ISO 2.1.7** **Obtain and Analyze Preliminary Evidence**

**Notes**

During review of questionnaires and documents, record notes and observations that cover both iCMM practices and ISO 9001 requirements. Provide copies of the ISO 9001 related notes and observations to the ISO 9001 co-lead.

Concurrent data collection is illustrated by the following typical steps.

- Using the worksheet, select a practice.
- Recall (or refer to) the practice Statement/Description.
- Formulate a general question.
- Select the first ISO 9001 requirement associated with the practice.
- Review the material on the relation between the practice and the ISO 9001 requirement in Section 3 of the Guidelines.
- Review the text of the ISO 9001 requirement in ISO 9001:2000.
- Determine the part(s) of the ISO 9001 requirement associated with the practice.
- Formulate an exploratory question that addresses both the ISO 9001 requirement and the practice. (Due to the assignment of some multi-faceted ISO 9001 requirements to several iCMM practices, for appraisal efficiency, some aspects of the ISO requirement may not relate to the practice; develop exploratory questions for these requirement components as well.)
- Review the exploratory questions with the ISO 9001 co-lead for appropriate ISO 9001 coverage. A coverage matrix is developed by the ISO 9001 co-lead to show what ISO 9001 clauses are asked of what business areas to show sampling across the business areas.

## 3.10.3 Detailed Description, continued

**FAM:ISO 2.2.4** **Consolidate Data**

**Notes**

ISO 9001 related observations and notes are provided to the ISO 9001 co-lead to supplement his/her observations from samples taken. The ISO 9001 co-lead verifies the evidence and performs selective follow-up interviews to corroborate as necessary.

**FAM:ISO 2.2.5** **Develop Draft Findings**

**Notes**

Include in the Draft Findings any valid findings for ISO 9001 and for non-rated iCMM practices if indicated by the Appraisal Plan. Retain observations on non-rated iCMM practices for Final Findings presentation if approved by the sponsor.

**FAM:ISO 2.2.7** **Develop Ratings**

**Notes**

The ISO 9001 audit results are developed independently by the ISO 9001 co-lead in accordance with the ISO 9001 audit process.

**FAM:ISO 2.2.8** **Develop Final Briefing**

**Notes**

The Final Briefing has separate sections for iCMM appraisal results and ISO 9001 Audit results.

Include valid Findings as well as observations (qualified as to the extent of sufficiency) for non-rated iCMM practices that were collected as a result of ISO 9001 data collection, if indicated in the Appraisal Plan.

**FAM:ISO 2.2.10** **Present Final Briefing**

**Notes**

Explain the rationale for inclusion and any qualifications for findings or observations on non-rated iCMM practices.

ISO audit findings are processed by the ISO Registrar and followed-up on for corrective action by the ISO Registrar process. ISO Registration certificates are provided by the ISO Registrar independent of the iCMM Capability or Maturity level determined by the appraisal team.

# 3.11 Self-Appraisal Description

**Contents**

The following table provides a guide to the information found in this section:


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## 3.11.1 Introduction

**Purpose**

The self-appraisal method (SELF) can be used for rapidly measuring the extent to which an organization performs best practices in key areas. The self-appraisal is based on questionnaire data provided by a broad sample of appraisal participants. The results indicate the percent of practices performed as compared to best practices in FAA-iCMM process areas or application areas. A supporting tool provides participating projects and organizations with statistically aggregated performance profiles. These results provide visibility regarding process improvement status and progress.

The Self-Appraisal is carried out as follows:

- Self-appraisal is planned
- Questionnaire is administered via a web-based supporting tool
- Results are analyzed, and project profiles and organizational profiles are generated by the supporting tool
- Results are distributed

Self-appraisals may be re-conducted periodically to measure status after agreed improvements have been implemented.

## 3.11.1 Introduction, continued

**SELF Roles**

The following table shows the various roles of the people involved in the SELF appraisal:

| Role | Description |
|---|---|
| Appraisal Advocate | The description in Chapter 1 is appropriate. |
| Sponsor | The description in Chapter 1 is appropriate. |
| Appraisal team leader | The description in Chapter 1 is appropriate, except that no formal verification is required of the ATL qualifications. It is expected that the appraisal lead is the process improvement lead in the organization performing the appraisal and is familiar with the FAA-iCMM and its use in process improvement. |
| Organization appraisal representative | The ATL assumes this role. |
| Appraisal team | There is no appraisal team required for the self-appraisal. |
| Data Manager | There is no data manager required for the self-appraisal. |
| Timekeeper | The ATL assumes this role, reminding participants to complete the questionnaire in the allotted time frame, if required. |
| Site coordinator | The ATL assumes this role, checking on people's time constraints and activities when scheduling the self-appraisal. |
| Appraisal participants | The description in Chapter 1 is appropriate. Appraisal participants are those who respond to the self-appraisal questionnaire, and typically include leads and practitioners. |
| Tool Administrator | The self-appraisal tool administrator sets up the self-appraisal tool with information provided by the appraisal lead, and distributes tool set-up information and self-appraisal reports to the appraisal lead. |

## 3.11.2 Summary Description

| ID | FAM Activity Name | SELF Description | Remarks |
|---|---|---|---|
| **2.1** | **Plan and Prepare for the Appraisal** | | |
| 2.1.1 | Obtain Sponsor Commitment | Minor change. | Additional notes regarding goals and roles for self-appraisal, and potential scope limitations. |
| 2.1.2 | Select Appraisal Organizational Scope | Minor change. | Self-appraisal participants can be determined in a variety of ways. |
| 2.1.3 | Select Appraisal Team | Activity deleted. | No team is required. |
| 2.1.4 | Plan Appraisal Details | Minor change. | Planning is simplified, and the questionnaire is set up. |
| 2.1.5 | Orient Participants | Minor change. | Orientation includes review of questionnaire instructions and terminology, if needed. |
| 2.1.6 | Train Team | Activity deleted. | No team is required. |
| 2.1.7 | Obtain and Analyze Preliminary Evidence | Major change. | The questionnaire is the sole source of data for the self-appraisal. |
| **2.2** | **Conduct Appraisal** | | |
| 2.2.1 | Conduct Opening Meetings | Activity deleted. | This is covered during Orient Participants. |
| 2.2.2 | Conduct Interviews | Activity deleted. | No interviews are conducted. |
| 2.2.3 | Review Documentation | Activity deleted. | No documentation is reviewed. |
| 2.2.4 | Consolidate Data | Activity deleted. | This is part of activity 2.2.7. |
| 2.2.5 | Develop Draft Findings | Activity deleted. | There are no draft findings. |
| 2.2.6 | Present Draft Findings | Activity deleted. | There are no draft findings. |
| 2.2.7 | Develop Ratings | Major change. | Self-appraisal tool develops ratings. |
| 2.2.8 | Develop Final Briefing | Major change. | Self-appraisal tool generates final reports. |
| 2.2.9 | Brief Sponsor | Minor change. | Sponsor feedback may be collected via appraisal disclosure statement. |
| 2.2.10 | Present Final Briefing | Minor change. | Appraisal lead distributes final reports within the organization. Additional notes are provided regarding using the results. |
| 2.2.11 | Conduct Wrap-Up | Activity deleted. | |
| **2.3** | **Report Results** | | |
| 2.3.1 | Prepare Appraisal Report | Activity deleted. | Results are delivered in Present Final Briefing. |
| 2.3.2 | Manage Records | No change. | |

### 3.11.3 Detailed Description

**SELF 2.1.1** **Obtain Sponsor Commitment**

**Notes**

Any of several process areas, or application areas, and capability levels may be selected for appraisal scope, based on the needs of the organization and the tool features supported. The appraisal lead should contact the tool administrator for latest information on model coverage provided by the tool.

The following information may be helpful in explaining the self-appraisal method to the sponsor.

<u>Sponsor:</u>

The self-appraisal should help the sponsor achieve the following:

- Understand status of process improvement implementation
- Motivate improvements
- Track status of process improvement efforts

The sponsor provides/authorizes resources for participating in the appraisal and demonstrates commitment to act on appraisal results.

<u>Appraisal Lead:</u>

The self-appraisal should help the appraisal lead achieve the following:

- Measure the extent of practice implementation in the organization, within the scope of the appraisal
- Obtain information that is useful in improving practice
- Gauge change after practices have been improved

The appraisal lead

- Plans the self-appraisal and prepares for questionnaire administration
- Provides instructions, guidance and expertise to appraisal participants
- Distributes appraisal results within organization

Subsequently, it would be expected that the lead would formulate plans to address appraisal results, as appropriate.

<u>Participants/Respondents:</u>

The self-appraisal should help the participants have an efficient, effective, easy, and anonymous way to express their views regarding the state of practice. Participants respond to the questionnaire.

# 3.11.3 Detailed Description, continued

**SELF 2.1.2** **Select Appraisal Organizational Scope**

**Notes**

**<u>How to Select Appraisal Participants</u>**

The self-appraisal is designed to provide flexibility in obtaining desired information. There are two levels of self-appraisal reporting: at the organizational level, and at the project level. These levels can be set up and used in various ways as indicated below.

**Select participating projects within the organization**
The sponsor and the lead would together decide on participating projects or groups of respondents within the organization that has agreed to perform the self-appraisal. For appraisal results to reliably represent the organization, it is recommended that at least 60% of the organization's projects should be selected. Projects should represent a mix of sizes (try to include both large and small projects if possible) and life cycle phases (try to include projects at various life cycle phases if possible).

*Some special cases:*

- <u>Single project:</u> The self-appraisal could be conducted for a single project if desired. In that case, just indicate a single project when setting up the questionnaire information.
- <u>Other groupings:</u> For gaining separate insights from various groups within the organization, "projects" (not necessarily in the traditional project sense) could be identified that comprise e.g., managers, engineers, support staff, or any other groupings that you would like to consider separately.
- <u>Documentation only:</u> The self-appraisal may be used to assess whether documented processes at various levels (organizational process, orders, operating procedures, etc.) address best practice. In that case, identify a project that will focus on a documented process, and ask project participants to respond with their views as to whether the documented process addresses the questions.

**SELF 2.1.2** **Select Appraisal Organizational Scope, continued**

**Notes, continued**

- Documentation versus actual practice: Whether practitioners are following the documented process, or whether they are performing best practices that might not be identified in the documented process can be checked. To address this situation, identify 2 groups: a group assessing the documented process (as described above) and an additional group that would indicate in the self-appraisal whether they are actually performing the best practices (regardless of whatever is stated in the documentation). This would provide a mechanism for identifying potential gaps and improving both the documented or high-level process, and the implemented processes.

**Selecting participating respondents within projects**
This self-appraisal method, since it is questionnaire-based, is intended to capture perceptions across a broad sample of respondents within selected participating projects and groups. To assure response reliability, at least 60% of personnel in selected projects need to respond to the questionnaire. 100% participation should be the goal. Note that less than 60% response rate will result in questions being "not rated" (see rating algorithm in activity 2.2.7).

*Some special cases:*

- Trial use with limited participation: You may decide to try out the self-appraisal with just a few people (or just yourself) initially, in order to review the questions, estimate response time, try different features, examine reports issued, etc. In this case, just indicate when you initiate the survey that the number of participants in your (single) project is the number of responses that you expect (e.g., 1 or a few)
- Participants in more than one project: If you have people that work on more than one project, or that you want to respond in more than one group, just inform them that they should respond once for each project/group that they participate in when you issue the instructions to appraisal participants.

# 3.11.3 Detailed Description, continued

**SELF 2.1.4** **Plan Appraisal Details**

**Table 2.8, Roles**

Adjust roles to include Tool Administrator

| Role | Summary |
|---|---|
| Tool Administrator | Receives questionnaire information from appraisal lead and sets up survey accordingly. |

**Table 2-9, Step: Request Documentation**

This step is deleted as no documentation is requested in this appraisal.

**New Step: Set up Survey Tool**

Provide questionnaire information and set up the survey (see notes)

**Notes**

The self-appraisal plan is simplified since appraisal activities are limited to a few:

- Orienting the participants
- Responding to the questionnaire
- Briefing the sponsor on the results
- Distributing final reports within the organization

Dates for these activities should be scheduled, and the selection of appraisal participants should be confirmed/finalized.

The questionnaire used for the self-appraisal should be attached to the plan and provided to the sponsor.

The participant questionnaire covers the practices of the FAA-iCMM that are within appraisal scope as determined in activity 2.1.1. The combination of practices selected and their allocation to respondent groups should be such that no participant spends more than one hour responding to questionnaires. This typically means no more than 50 – 60 questions per participant.

**SELF 2.1.4** **Plan Appraisal Details, continued**

**Notes, continued**

The plan should address who receives final reports, any restrictions on their use, confidentiality of appraisal information, and it should mention that appraisal results are anonymous and not attributed to individual respondents. Use planning template in toolkit.

As part of planning appraisal details, the appraisal lead provides appraisal parameters to the tool administrator, including organization name, name of each project within the organization, and number of staff expected to respond in each project. Note that for each project, at least 60% of this number should respond to the survey. Survey start and stop dates are also provided to the tool administrator. The tool administrator informs the appraisal lead when the survey is ready for use.

**SELF 2.1.5** **Orient Participants**

**Notes**

Orientation should include instructions on answering questions, and clarification of questionnaire terminology, if needed. It is recommended that the questionnaire be set up and ready for use at the time of the orientation. Participants should be reminded that results are anonymous.

**SELF 2.1.7** **Obtain and Analyze Preliminary Evidence**

**Purpose**

The purpose of Obtain and Analyze Preliminary Evidence is to obtain information on practice performance via the self-appraisal questionnaire.

**Summary description**

Obtain and Analyze Preliminary Evidence involves collection and aggregation of questionnaire results. Participants respond to the questionnaire, and the self-appraisal supporting tool automatically collects and aggregates the results.

# 3.11.3 Detailed Description, continued

**SELF 2.1.7** **Obtain and Analyze Preliminary Evidence, continued**

**Entry criteria**

- Appropriate questionnaires developed
- Self-appraisal tool set up and ready to receive responses
- Preliminary Appraisal Plan Approved
- Survey start and end dates confirmed

**Exit criteria**

- Responses aggregated and stored.

**Roles**

Table SELF-1 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Appraisal leader | Answers respondents' questions regarding use of the tool, if needed. |
| Appraisal participants selected to complete a questionnaire | Provide data on practices, projects and the organization via questionnaire responses. |
| Tool Administrator | Closes survey at agreed stop date |

**Table SELF-1. Participants for Obtain and Analyze Preliminary Evidence**

**Inputs**

- Participant questionnaires
- Questionnaire instructions

## 3.11.3 Detailed Description, continued

**SELF 2.1.7** **Obtain and Analyze Preliminary Evidence, continued**

**Steps** Table SELF-2 shows the steps for this activity.

| Step | Description |
|---|---|
| Administer Questionnaire | Provide access to the questionnaire to all designated participants for completion. Brief the respondents on instructions for answering questions and terminology if needed, or for participants that did not attend participant orientation (activity 2.1.5). |
| Collect preliminary evidence | The supporting tool collects, aggregates, and secures the questionnaire responses. |

**Table SELF-2. Steps for Obtain and Analyze Preliminary Evidence**

**Outputs**

- Questionnaire responses stored in supporting tool

**Typical duration/ effort**

Appraisal Lead: 0 to 2 hours to address any questions
Participants: up to one hour to respond to questionnaire

**Notes**

Questionnaires are administered electronically using the self-appraisal support tool. Administration would typically start directly after participants have been oriented (activity 2.1.5).

**SELF 2.2.7** **Develop Ratings**

**Purpose**

The purpose of Develop Ratings is to determine ratings associated with model components within the appraisal scope based on statistical analysis of questionnaire responses.

**Summary Description**

Develop Ratings involves statistical analysis of questionnaire responses. The self-appraisal supporting tool automatically develops ratings.

**Entry Criteria**

- Questionnaire responses collected

**Exit Criteria**

- Ratings determined

**Roles**

Table SELF-3 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Tool Administrator | Executes tool to develop ratings |

**Table SELF-3. Participants for Develop Ratings**

**Inputs**

- Questionnaire responses

**Steps**

Table SELF-4 shows the steps for this activity.

| Step | Description |
|---|---|
| Develop Ratings | Ratings are developed as described below. |

**Table SELF-4. Steps for Develop Ratings**

# 3.11.3 Detailed Description, continued

**SELF 2.2.7** **Develop Ratings, continued**

**Outputs**

- Ratings for each question in the questionnaire

**Typical duration/ effort**

- Typical calendar duration: 1 day
- Typical level of effort: minimal

**Notes**

**Rating algorithm**

Rate Each Question as "Implemented", "Not Implemented", "Not Applicable", or "Not Rated":

1. Sufficient Data?
   - if at least **60%** of project personnel have provided valid responses*, then data are sufficient (proceed)
   - else, rate the question as **NOT RATED (done)**
2. Item applicable?
   - if more than **80%** of valid responses* indicate "does not apply", then rate the question as **NOT APPLICABLE (done)**
   - else, proceed
3. Implemented?
   - if at least **80%** of valid responses* were "yes" and at least **50%** of those "yes" answers had confidence rating greater than three, then rate the question as **IMPLEMENTED (done)**
   - else (if neither IMPLEMENTED nor NOT APPLICABLE) rate the question as **NOT IMPLEMENTED (done)**

* Note that for question rating computations, a "valid response" is defined as a questionnaire answer that includes both an indication of whether or not the practice is performed and a confidence level associated with that answer except that an answer of "Don't Know" does not require a confidence level to be considered a "valid response".

## 3.11.3 Detailed Description, continued

**SELF 2.2.8** **Develop Final Briefing**

**Purpose**

The purpose of Develop Final Briefing is to generate reports presenting the Self-Appraisal results.

**Summary Description**

Develop Final Briefing involves generation of final reports. The self-appraisal supporting tool automatically develops the reports.

**Entry Criteria**

- Questionnaire responses collected
- Ratings determined

**Exit Criteria**

- Reports generated and provided to self-appraisal lead

**Roles**

Table SELF-5 lists the roles involved in this activity.

| Role | Summary |
|---|---|
| Tool Administrator | Executes tool to generate final reports and provides them to the appraisal lead |
| Appraisal Lead | Receives final reports |

**Table SELF-5. Participants for Develop Final Briefing**

**Inputs**

- Ratings
- Organizational and project information

**Steps**

Table SELF-6 shows the steps for this activity.

| Step | Description |
|---|---|
| Generate final reports | Develop final reports as described below |
| Distribute final reports | Provide final reports to appraisal lead |

**Table SELF-6. Steps for Develop Final Briefing**

## 3.11.3 Detailed Description, continued

**SELF 2.2.8** **Develop Final Briefing, continued**

**Outputs**

- Final reports

**Typical duration/ effort**

- Typical calendar duration: 1 day
- Typical level of effort: minimal

**Notes**

Final reports are generated by aggregating question ratings developed in activity 2.2.7. The level of aggregation depends on the model scope of the appraisal. For Process Areas, all question ratings are summarized at the process area level. For Application Areas, question ratings are summarized at the application practice and application goal levels. In both cases, results are then similarly aggregated at the Project and Organizational levels. Processing flow and rules are shown below.

<u>Summarize Question Ratings for each Process Area (all practice questions) or each Application Area (for each Application Practice, and Application Goal), and also Overall at the Project Level and at the Organizational Level</u>

- Report percentage of associated “Implemented” ratings as % Implemented
- Report percentage of associated “Not Applicable” ratings as % Not Applicable
- Report percentage of associated “Not Rated” ratings as % Not Rated

Note that for organizational level aggregation, each project is given equal weight.

<u>Reliability Factors (at the Project Level and at the Organizational Level)</u>

- **Overall degree of confidence** is the percentage of all valid responses* given with high confidence (greater than 3) except that responses of “Don’t Know”, regardless of any associated confidence levels, are not included as high confidence responses.
- **“Yes” degree of confidence** is the percentage of all “yes” valid responses* given with high confidence (greater than 3)

**SELF 2.2.8** **Develop Final Briefing, continued**

**Notes, continued**

* Note that for question rating and reliability factor computations, a "valid response" is defined as a questionnaire answer that includes both an indication of whether or not the practice is performed and a confidence level associated with that answer except that an answer of "Don't Know" does not require a confidence level to be considered a "valid response".

The self-appraisal tool will generate two types of reports: a Project Profile for each participating project, and an Organizational Profile for the organization that sponsored the appraisal. Report contents are described below, and sample reports are provided below and also in the toolkit.

**Project Profiles**
For each project participating in the appraisal, a report is generated with the following information:

*Identifying and Summarizing Information:*
Organization name, Project name, Date of the self-appraisal
Reliability Factors for the project including: percentage of the project responding (expressed to indicate number respondents over number in the project), overall degree of confidence and "yes" degree of confidence

*Project Self-Appraisal Results:*
A detailed report showing the rating for each question on the survey (rated as "implemented", "not implemented", "not applicable", or "not rated") (Note that these ratings are at the project level and are determined as described in activity 2.2.7 Develop Ratings.)
For process areas:

- A roll up of these ratings for the process area, indicating percentage implemented, percentage not applicable, and percentage not rated

## 3.11.3 Detailed Description, continued

**SELF 2.2.8** **Develop Final Briefing, continued**

**Notes, continued**

*Project Self-Appraisal Results(continued):*
For application areas:

- A roll up of these ratings for each application practice, indicating percentage implemented, percentage not applicable, and percentage not rated
- A roll up of these ratings for each application goal, indicating the same percentages but aggregated at the goal level

An overall project roll up, indicating the same percentages considering for process areas, all practices, or for application areas all goals and practices.
A listing of comments provided by respondents (individuals not identified).

**Organizational Profile**
For the organization that sponsored the appraisal, a report is generated with the following information:

*Identifying and Summarizing Information:*
Organization name, Number of projects, Date of self-appraisal
Reliability Factors for the organization including: percentage of the organization responding (expressed to indicate number of respondents over number in all participating projects), overall degree of confidence and "yes" degree of confidence

*Organizational Self-Appraisal Results:*
For process areas:

- A roll up aggregating project ratings for the process area, indicating percentage implemented, percentage not applicable, and percentage not rated

For application areas:

- A roll up aggregating project ratings for each application practice, indicating percentage implemented, percentage not applicable, and percentage not rated
- A roll up aggregating project ratings for each goal, indicating the same percentages but aggregated at the goal level

An overall organizational roll up, indicating the same percentages considering for process areas, all practices, or for application areas, all goals and practices

**iCMM Self Appraisal Report (Sample)**
**Project Level Report – Quality Assurance and Management Process Area**

| | | | |
|---|---|---|---|
| Organization: | XYZ | | Appraisal Period: |
| Project | Project X | | mm/dd/yy to mm/dd/yy |
| Process Area | Quality Assurance and Management | | |

| | | | |
|---|---|---|---|
| Reliability Factors: | % project responding: | 90 | (9/10) |
| | Overall degree of confidence: | 95 % | |
| | "Yes" degree of confidence: | 80% | |

| **Quality Assurance and Management All Questions** | Implemented **57%** | Not Applicable **14%** | Not Rated **14%** |
|---|---|---|---|

| BP # | Question Topic | Rating |
|---|---|---|
| 01 | Are processes and methods established to ensure achievement of quality objectives? | Implemented |
| 02 | Is compliance with established processes objectively monitored during all phases of product development and service provision? | Implemented |
| 03 | Are work products and services objectively measured against the requirements and standards that define them? | Implemented |
| 04 | Are the results of quality assurance activities recorded and reported to appropriate stakeholders? | Not Implemented |
| 05 | Are quality assurance results and measurements analyzed to detect the need for corrective action, and recommendations developed for quality improvement or corrective and preventive actions? | Implemented |
| 06 | Are activities initiated to address identified quality issues or quality improvement opportunities? | Not Rated |
| 07 | Are the effects of changes to improve quality evaluated after they have been implemented? | Not Applicable |

Notes:

Confidence Levels:

- Overall degree of confidence is the percentage of all questionnaire responses given with high confidence (greater than 3) including all responses other than "Don't Know")
- "Yes" degree of confidence is the percentage of all "yes" responses given with high confidence (greater than 3)

Ratings:

- "Not Rated" means less than 60% of the planned number of project personnel actually responded.
- "Not applicable" means that more than 80% of the respondents said the question was not applicable.
- "Implemented" means at least 80% of responses were "yes" and at least 50% of the "yes" answers had confidence rating greater than three.
- "Not Implemented" means that none of the above rating conditions were met.

**iCMM Self Appraisal Report (Sample)**
**Organizational Level**

| | | | |
|---|---|---|---|
| Organization: | XYZ | | Appraisal Period: |
| Number of Projects | 3 | | mm/dd/yy to mm/dd/yy |

| | | | |
|---|---|---|---|
| | % organization responding: | 65 | (65/100) |
| Reliability Factors: | Overall degree of confidence: | 95 % | |
| | "Yes" degree of confidence: | 80% | |

| **Overall Organization Results** | Implemented **80%** | Not Applicable **0%** | Not Rated **0%** |
|---|---|---|---|
| | | | |
| **Process Area Results** | Implemented | Not Applicable | Not Rated |
| **Project Management** | 80% | 0% | 0% |
| **Quality Assurance and Management** | 80% | 0% | 0% |
| **Configuration Management** | 80% | 0% | 0% |
| **Measurement and Analysis** | 80% | 0% | 0% |
| **Needs** | 80% | 0% | 0% |
| **Requirements** | 80% | 0% | 0% |
| **Evaluation** | 80% | 0% | 0% |

Notes:

Confidence Levels:

- Overall degree of confidence is the percentage of all questionnaire responses given with high confidence (greater than 3) including all responses other than "Don't Know")
- "Yes" degree of confidence is the percentage of all "yes" responses given with high confidence (greater than 3)

Ratings:

- "Not Rated" means less than 60% of the planned number of project personnel actually responded.
- "Not applicable" means that more than 80% of the respondents said the question was not applicable.
- "Implemented" means at least 80% of responses were "yes" and at least 50% of the "yes" answers had confidence rating greater than three.
- "Not Implemented" means that none of the above rating conditions were met.

**SELF 2.2.9** **Brief Sponsor**

**Notes**

Sponsor feedback may be provided either on the Appraisal Disclosure Statement or via a separate sponsor feedback form.

**SELF 2.2.10** **Present Final Briefing**

**Notes**

**Distributing the Results**

The appraisal lead distributes the final reports to the sponsor and/or project leads or more broadly according to what was agreed in the plan.

**How to Use the Results**

**Interpreting the reliability factors**

The reliability factors give you a sense of the confidence level associated with the results of the self-appraisal. Examine the *percentage responding* and determine whether you think enough people have responded overall. Inadequate participation may lead to questionable ratings or may indicate less than desirable interest. A low *degree of confidence*, either overall or for “yes” responses, could indicate the need for more communication and/or training regarding the implementation of the practices in your organization. Or it may indicate that some of the questions were not clearly understood; in which case, it may be useful to review and discuss the practices addressed within your organization.

**Using the results for process improvement**

When questions are rated as *implemented*, this indicates that respondents perceive those activities to be well established and consistently performed. Those projects implementing these activities are good sources for sharing their practices with any projects not performing them so as to improve overall organizational process performance.

Activities that are *not implemented* are candidates for potential improvements. They should be discussed, prioritized and considered when developing process improvement action plans.

**SELF 2.2.10** **Present Final Briefing, continued**

**Notes, continued**

When activities are identified as being *not applicable*, it is important to see where else in the organization these activities are possibly being performed. It is likely that the practices appraised are relevant to your business, but they may be outsourced or performed externally.

When questions are *not rated*, this means that less that 60% of identified appraisal participants responded to those questions and thus the data collected were insufficient for generating any meaningful ratings. In such a case you may seek to understand why the questions were not answered, resolve the problem, and conduct another self-appraisal. Another option is to request that the reports be regenerated, setting the sample size to the actual number of respondents in order to allow more questions to be rated. The sponsor should be advised that the follow-up (adjusted) reports do not meet the 60% threshold established for reasonable representation, but the results may be useful in any case as long as this is understood.

And of course it is important to review the (anonymous) *comments* provided by participants. These should be very helpful for gaining further insights and perspectives.

**Using the results for measuring status and change**
It is suggested that this self-appraisal be conducted periodically, say every 4 to 6 months or so, to measure implementation status and any changes that may have occurred since a previous self-appraisal. When reviewing self-appraisal results, the following might be considered:

- How do these results compare to results from past appraisals?
- Which areas are currently the focuses of process improvement activities? Do those ratings reflect intended improvements?
- Where weaknesses exist, are there current plans to address them?
- Do current process improvement plans need adjustment (e.g., to focus on weaknesses or to better align with enterprise goals)?

It is recommended that meetings be held with personnel to discuss findings and to determine subsequent process improvement actions. This appraisal method encourages broad participation, which is one of the keys to process improvement success.

# Appendix A: Glossary

| | |
|---|---|
| **Introduction** | This glossary defines terms used in this document plus related terms from appraisal sources used or consulted in developing FAM appraisal method descriptions. |
| **accurate observation** | An observation extracted from data collected during an appraisal that has been determined by the appraisal team to be: a) worded correctly, b) based on information provided and documented in notes, c) relevant to the appraisal reference model being used, d) significant such that it can be classified as a strength, weakness, or acceptable alternative practice, and e) not redundant with other observations. |
| **advocate** | Individual or organization publicly espousing process improvement. |
| **application area (AA)** | A set of related practices (application practices) that when performed collectively can achieve the purpose of the application area. An application area contains goals or outcomes to which the application practices are mapped, and each application practice is mapped to a set of implementing practices in the reference model. It is expected that the implementing practices would be performed, in the particular application area context, to satisfy related application goals. [iCMM-S/S] |
| **alternative practice** | A practice that is a substitute for one or more practices contained in the reference model that achieves an equivalent effect toward satisfying the goal associated with the practices. Alternative practices are not necessarily one-for-one replacements for the replaced practices. |
| **appraisal** | An examination of one or more processes by a trained team of professionals using an appraisal reference model as the basis for determining strengths and weaknesses. [adapted from ARC] |
| **appraisal constraints** | Restrictions placed on the use of appraisal outputs and on the appraisal team's freedom of choice regarding conduct of the appraisal [adapted from 15504] |

**appraisal findings** The results of an appraisal that identify the most important strengths, issues, problems, or opportunities for process improvement within the appraisal scope. Examples of findings are strengths and weaknesses based on validated observations.

**appraisal input** Information required before a process appraisal can commence [adapted from 15504]; The collection of appraisal information required before data collection can commence [ARC]

**appraisal method class** Designation assigned to an appraisal method that satisfies a defined subset of requirements in the Appraisal Requirements for CMMI (ARC). These three classes defined in the ARC align with typical applications of appraisal methods. [ARC]

**appraisal output** All of the tangible results from an appraisal (see "appraisal record"). [15504, ARC]

**appraisal participants** Members of the organizational unit who participate in providing information during the appraisal [ARC]

**appraisal rating** The value assigned by an appraisal team to either (1) a reference model goal or process area or application area, (2) the capability level of a process area or application area, or (3) the maturity level of an organizational unit. The rating is determined by enacting the defined rating process for the appraisal method being employed. [adapted from ARC]

**appraisal record** An orderly, documented collection of information which is pertinent to the appraisal and adds to the understanding and verification of the appraisal results. [adapted from 15504 and ARC]

**appraisal reference model** The model to which an appraisal team relates process activities; a benchmark for measuring process performance.

# Appendix A: Glossary, continued

**appraisal scope** The definition of the boundaries of the appraisal, provided as part of the appraisal input, encompassing the organizational limits and the reference model limits. (see also process context)

**appraisal sponsor** The individual or entity, internal or external to the organization unit being appraised, who requires the appraisal to be performed, and provides financial or other resources to carry it out. [adapted from 15504 and ARC]

**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. [ARC]

**appraisal team** Individuals who conduct an appraisal.

**appraisal team leader** The member of the appraisal team who leads the activities of an appraisal and has satisfied the qualification criteria defined for the appraisal method.

**audit** Systematic, independent and documented process for obtaining audit evidence and evaluating it objectively to determine the extent to which audit criteria are fulfilled [ISO 9000]

**audit criteria** Set of policies, procedures or requirements used as a reference [ISO 9000]

**audit evidence** Records, statements of fact or other information which are relevant to the audit criteria and verifiable [ISO 9000]

**audit findings** Results of the evaluation of the collected audit evidence against audit criteria. Audit findings can indicate either conformity or nonconformity with audit criteria, or opportunities for improvement. [ISO 9000]

**auditor** Person with the competence to conduct an audit [ISO 9000]

# Appendix A: Glossary, continued

**base practice (BP)** A practice that summarizes a fundamental essential characteristic of performing a process that meets the purpose of the process area to which this base practice is related. [iCMM]

**capability evaluation** An appraisal by a trained team of professionals used as a discriminator to select suppliers, for contract monitoring, or for incentives. Evaluations are used to help decision makers make better acquisition decisions, improve subcontractor performance, and provide insight to a purchasing organization. [ARC]

**certification (also: registration)** The issuance of a written declaration by a third party, stating that the quality management system of an organization has been examined and found to comply with the requirements of a specified quality or environmental standard. [AIREG]

**consensus** A method of decision making that allows team members to develop a common basis of understanding and develop general agreement concerning a decision which all team members are willing to support. [ARC]

**coverage** The extent to which evidence gathered addresses the scope of the appraisal, including organizational, life cycle and model scope.

**coverage criteria** The specific criteria used in order to claim coverage.

**consolidation** The activity of collecting and summarizing the information provided during an appraisal into a manageable set of data, to (a) determine the extent to which the data are corroborated and cover the areas being investigated, (b) determine the data's sufficiency for making judgments, and (c) revise the data-gathering plan as necessary to achieve this sufficiency. [ARC]

**data collection session** — An activity during which information that will later be used as the basis for observation formulation or corroboration is gathered. Data collection sessions (or activities) include the administration and/or analysis of questionnaires, document review, interviews, and presentations.

**draft findings** — Preliminary findings created by an appraisal team after consolidating and synthesizing sufficient valid observations. Draft findings are presented to appraisal participants for validation purposes.

**exploratory question** — A question that elicits an explanation rather than yes/no answer used to involve interviewees and focus groups in describing practices and their strengths and weaknesses during an appraisal.

**findings** — See appraisal findings.

**generic attribute (GA)** — A way of measuring process performance results, independently of capability and maturity level. Generic attributes encompass two characteristics of the performance of a process area: usefulness and cost effectiveness. [iCMM]

**generic practice (GP)** — A practice that enhances the capability to perform any process. Generic practices are added to the base practices of a process area to create a higher capability process. They are applicable to any process area. [iCMM]

**goal** — In a reference model, a goal summarizes an observable, expected state to be achieved if practices mapped to that goal are performed. Each process area has goals and the base practices of a process area map to its goals. Each capability level has a goal and all generic practices at that level map to that goal. [iCMM]

**institutionalization** The building and reinforcement of infrastructure and corporate culture that supports methods, practices, and procedures so that they are the ongoing way of doing business, even after those who originally defined them are gone. [iCMM]

**interviews** A meeting of appraisal team members with appraisal participants for the purpose of gathering information relative to work processes in place. [ARC]

**lead appraiser** A person who has achieved recognition from an authorizing body to perform as an appraisal team leader for a particular appraisal method; [ARC]; a person who has demonstrated the competencies to conduct an appraisal and to monitor and verify the conformance of a process appraisal [adapted from 15504]

**lead auditor** A person who is qualified to lead an Audit. Lead Auditors generally have more experience and must satisfy more requirements than "regular" Auditors. [AIREG]

**life cycle** The general term covering all phases of the evolution of a product or service beginning with concept definition and continuing through the disposal of the product or service. [iCMM]

**maturity level** Degree of process improvement across a predefined set of process areas and process capability levels in which all goals within the set are attained. [iCMM]

**observation** A written statement that represents an appraisal team member's understanding of information either seen or heard during the appraisal data collection activities. An observation includes: a link to a reference model practice, if applicable; indication that it is a strength, weakness, or alternative practice; source(s) of the observation; team member recording the observation.

**organization appraisal representative** — Individual member of an appraisal team who is from the organizational unit undergoing appraisal and who acts as a liaison between the appraisal team and the organization unit.

**organizational unit** — That part of an organization that is appraised. An organizational unit deploys one or more processes that have a coherent process context and operates within a coherent set of business goals and objectives. An organizational unit is typically part of a larger organization, although in a small organization, the organizational unit may be the whole organization. [adapted from 15504 and ARC]

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**process** — A set of activities performed to achieve a given purpose. [iCMM]

**process area (PA)** — A group of related base practices that are essential for achieving the purpose of the process area. [iCMM]

**process capability** — The range of expected results that can be achieved by following a process. [iCMM]; a characterization of the ability of a process to meet current or projected business goals [iCMM and 15504]

**process capability level** — A point on the six-point ordinal scale (of process capability) that represents the capability of the process; each level builds on the capability of the level below [15504]

**process capability determination** — A systematic appraisal and analysis of selected processes within the organization against a target capability, carried out with the aim of identifying the strengths, weaknesses and risks associated with deploying the processes to meet a particular specified requirement. [adapted from 15504]

**process capability profile** — The set of capability level ratings for process areas within the scope of an appraisal.

# Appendix A: Glossary, continued

| | |
|---|---|
| **process context** | The set of factors, documented in the appraisal input and plan, that influence the judgment and comparability of appraisal ratings. These include, but are not limited to: the size of the organizational unit to be appraised; the demographics of the organizational unit; the application discipline of the products or services; the size, criticality, and complexity of the products or services; and the quality characteristics of the products or services. [adapted from 15504 and ARC] |
| **process performance** | The extent to which the execution of a process achieves its purpose [15504] |
| **project** | An undertaking that develops and/or maintains one or more products or provides a service. A project typically has its own funding, cost accounting, and schedule. It may be structured as a team, task force, or other entity used by the organization to produce products or provide services to a customer. [iCMM] |
| **rating** | See appraisal rating. |
| **reference model** | See appraisal reference model. |
| **registration (also: certification)** | A declaration made by a third party, stating that the quality management system of an organization has been examined and found to comply with the requirements of a specified quality or environmental standard. [AIREG] |
| **registrar** | A qualified, independent and impartial organization that provides registration services. [AIREG] |
| **satisfied** | Rating given to a goal when the aggregate of validated observations and associated findings does not negatively impact achievement of the goal. |
| **strength** | Implementation (performance) of one or more aspects of one or more reference model practices.<br><br>May also indicate exemplary or noteworthy implementation of a reference model practice [ARC] |

## Appendix A: Glossary, continued

| | |
|---|---|
| **target capability** | The process capability which the process capability determination sponsor judges will represent an acceptable process risk to the successful implementation of the specified requirements [15504] |
| **valid observation** | An observation that the appraisal team members agree is a) accurate, b) corroborated, and c) consistent with other validated observations. |
| **weakness** | Partial, or lack of, implementation (performance) of one or more reference model practices. |

# Appendix B: References


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[AIREG] ISO 9000 American International Registrars Corporation Glossary

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[SCAMPI] Standard CMMI® Appraisal Method for Process Improvement (SCAMPI[sm]) A, Version 1.2: Method Definition Document, SCAMPI Upgrade Team, CMU/SEI-2006-HB-002, August 2006.

[SCE] Software Capability Evaluation, v3.0 Method Description, Paul Byrnes and Mike Phillips, CMU/SEI-96-TR-002, April 1996.

# Appendix C: Traceability to Appraisal Requirements for CMMI

**Introduction**

The following provides the map of the FAM v2.0 activities to the Appraisal Requirements for CMMI (ARC) V1.2 requirements for a CMMI-based appraisal. It provides the requirement line item cross-reference to where each ARC requirement is addressed in this appraisal method. The FAM v2.0 supports ISO/IEC 15504-conformant appraisals.

This ARC mapping is to the full internal appraisal method, and its variations.

The FAA-iCMM is the model used for FAM. The CMMI is included in the FAA-iCMM, as well as many other standards. The FAA-iCMM is represented using a continuous with staging architecture.

The ARC is a standard against which appraisal methods can be compared. Compliance generally means that the appraisal method will provide an accurate, repeatable set of findings and ratings according to the model, if used in its domain of reference. The ARC identifies 3 classes of appraisals (A, B, and C). Class A appraisal methods are the most stringent and result in the generation of ratings; Class B methods are likely to be used for interim appraisals between Class A appraisals; Class C methods are likely to be used for quick-looks or periodic self-appraisal.

Four methods in FAM 2.0 are Class A appraisal methods: Full Internal, Full External, Delta, and FAA-iCMM:ISO 9001. The other appraisal variations are used as described in Chapter 1 and in their respective sections of Chapter 3.

Traceability to the ARC for the FAM Full Internal and alternative appraisal methods is provided in two parts: Part 1 provides traceability to FI, FD, DI, QBA, IB, FE, and VA methods; part 2 provides traceability to GAP, FARR, DELTA, FAM:ISO, and SELF methods.

**Part 1: ARC traceability to the FI, FD, DI, QBA, IB, FE, and VA appraisal alternatives**

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| | **4.1.1 The method shall define the responsibilities of the appraisal sponsor, which at a minimum shall include the following activities:** | | | | | | | | |
| ABC | a. Verify that the appraisal team leader has the appropriate experience, knowledge, and skills to take responsibility for and lead the appraisal. | 1.3 Appraisal Roles<br>2.1.1 Obtain Sponsor Commitment | X | X | X | X | X | X | X |
| ABC | b. Ensure that the appropriate organizational units or subunits (e.g., projects, functional units) participate in the appraisal. | 2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | c. Support appraisal method provisions for ensuring non-attribution to appraisal participants. | 2.1.1 Obtain Sponsor Commitment<br>2.2.1 Conduct Opening Meetings<br>2.2.10 Present Final Briefing | X | X | X | X | X | X | X |
| ABC | d. Ensure that resources are made available to conduct the appraisal. | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | e. Review and approve the appraisal input prior to the beginning of data collection by the appraisal team. | 2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |

# Appendix C: Traceability to Appraisal Requirements for CMMI (ARC), continued

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| | **4.1.2 The method shall define the responsibilities of the appraisal team leader, which at a minimum shall include the following activities:** | | | | | | | | |
| ABC | a. Ensure that the appraisal is conducted in accordance with the method's documented process. | 1.3 Appraisal Roles | X | X | X | X | X | X | X |
| ABC | b. Confirm the sponsor's commitment to proceed with the appraisal. | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | c. Ensure that appraisal participants are briefed on the purpose, scope, and approach of the appraisal. | 2.1.5 Orient Participants<br>2.2.1 Conduct Opening Meetings | X | X | X | X | X | X | X |
| ABC | d. Ensure that all appraisal team members have the appropriate experience, knowledge, and skills in the appraisal reference model and appraisal method; the necessary competence to use instruments or tools chosen to support the appraisal; and access to documented guidance on how to perform the defined appraisal activities. | 2.1.3 Select Appraisal Team<br>2.1.6 Train team | X | X | X | X | X | X | X |
| ABC | e. Verify and document that the appraisal method requirements have been met. | 2.2.8 Develop Final Briefing | X | X | X | X | X | X | X |
| | **4.2.1 The method shall be documented and, at a minimum, include** | | | | | | | | |
| ABC | a. identification of the CMMI models (version, discipline, and representation [staged or continuous]) with which the method can be used | Chapter 1 | X | X | X | X | X | X | X |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | b. identification of the ARC version upon which the appraisal method is based | Appendix C | X | X | X | X | X | X | X |
| ABC | c. identification of which CMMI appraisal requirements are satisfied by the method, along with the CMMI appraisal method class membership (if applicable) | Appendix C | X | X | X | X | X | X | X |
| ABC | d. activity descriptions, artifacts, and guidance that implement each of the appraisal requirements | FAM Chapters 2 and 3 | X | X | X | X | X | X | X |
| A | e. (A) declaration as to whether or not the method supports 15504-conformant appraisals | Appendix F | X | | | | | X | N/A |
| | **4.2.2 The method documentation shall provide guidance for** | | | | | | | | |
| ABC | a. identifying an appraisal's purpose, objectives, and constraints | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | b. determining the suitability of the appraisal method relative to the appraisal's purpose, objectives, and constraints | 2.1.1 Obtain Sponsor Commitment<br>FAM Chapter 1 | X | X | X | X | X | X | X |
| | **4.2.3 The method documentation shall provide guidance for identifying the scope of the CMMI model(s) to be used for the appraisal:** | | | | | | | | |
| ABC | a. process areas to be investigated (continuous and staged representations) | 1.2 Context and Usage<br>2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |

# Appendix C: Traceability to Appraisal Requirements for CMMI (ARC), continued

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | b. capability levels to be investigated for each process area (continuous representation) | 1.2 Context and Usage<br>2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | N/A |
| | **4.2.4 The method documentation shall provide guidance for identifying the organizational unit to be appraised:** | | | | | | | | |
| ABC | a. the sponsor of the appraisal and the sponsor's relationship to the organizational unit being appraised | 2.1.1 Obtain Sponsor Commitment | X | X | X | X | X | X | X |
| ABC | b. projects within the organizational unit that will participate | 2.1.2 Select Organizational Scope | X | X | X | X | X | X | X |
| ABC | c. functional elements of the organizational unit that will participate | 2.1.2 Select Appraisal Organizational Scope | X | X | X | X | X | X | X |
| ABC | d. names and affiliations (organizational units) of participants in the appraisal activities | 2.1.2 Select Appraisal Organizational Scope | X | X | X | X | X | X | X |
| | **4.2.5 The method documentation shall provide guidance for selecting appraisal team members and criteria for qualification, including** | | | | | | | | |
| ABC | a. technical experience (discipline-specific) | 2.1.3 Select Appraisal Team | X | X | X | X | X | X | X |
| ABC | b. management experience | 2.1.3 Select Appraisal Team | X | X | X | X | X | X | X |
| ABC | c. experience, knowledge, and skills in the appraisal reference model and appraisal method | 2.1.3 Select Appraisal Team | X | X | X | X | X | X | X |
| | **4.2.6 The method documentation shall provide guidance for an appraisal team leader's qualification criteria, including** | | | | | | | | |
| ABC | a. training and experience using the appraisal reference model | 1.3 Appraisal Roles<br>Appendix G | X | X | X | X | X | X | X |

# Appendix C: Traceability to Appraisal Requirements for CMMI (ARC), continued

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | b. training and experience using the appraisal method | 1.3 Appraisal Roles<br>Appendix G | X | X | X | X | X | X | X |
| ABC | c. experience in delivering training, managing teams, facilitating group discussions, and making presentations | 1.3 Appraisal Roles<br>Appendix G | X | X | X | X | X | X | X |
| ABC | **4.2.7 The method documentation shall provide guidance for determining the appropriate size of the appraisal team. For Class A appraisals, the minimum team size if four members; for Class B appraisals, two members; for Class C appraisals, one member.** | 1.3 Appraisal Roles<br>2.1.3 Select Appraisal Team | X | X | X | X | X | X | X |
| ABC | **4.2.8 The method documentation shall provide guidance on the roles and responsibilities of appraisal team members.** | 1.3 Appraisal Roles<br>Chapter 2 all activities | X | X | X | X | X | X | X |
| ABC | **4.2.9 The method documentation shall provide guidance addressing the responsibilities of the appraisal sponsor.** | 1.3 Appraisal Roles<br>Chapter 2 all activities | X | X | X | X | X | X | X |
| ABC | **4.2.10 The method documentation shall provide guidance addressing the responsibilities of the appraisal team leader.** | 1.3 Appraisal Roles<br>Chapter 2 all activities | X | X | X | X | X | X | X |
| ABC | **4.2.11 The method documentation shall provide guidance for estimating the resources required to conduct the appraisal (including the amount of time required to conduct an appraisal).** | 1.3 Appraisal Roles<br>Chapter 2 all activities | X | X | X | X | X | X | X |
| ABC | **4.2.12 The method documentation shall provide guidance for appraisal logistics.** | 2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | **4.2.13 The method documentation shall provide guidance for collecting relevant data on the organizational unit and associating the data to the specific and generic practices of the appraisal reference model.** | 2.1.4 Plan Appraisal Details<br>2.1.7 Obtain and Analyze Preliminary Evidence<br>2.2.2 Conduct Interviews<br>2.2.4 Consolidate Data | X | X | X | X | X | X | N/A |
| ABC | **4.2.14 The method documentation shall provide guidance for creating findings, including both strengths and weaknesses relative to the appraisal reference model.** | 2.2.5 Develop Draft Findings<br>2.2.8 Develop Final Briefing | X | X | X | X | X | X | N/A |
| ABC | **4.2.15 The method documentation shall provide guidance for protecting the confidentiality of appraisal data and ensuring non-attribution of data contributed by appraisal participants.** | 2.1.1 Obtain Sponsor Commitment<br>2.1.6 Train Team<br>2.2.4 Consolidate Data<br>2.2.5 Develop Draft Findings<br>2.2.10 Present Final Briefing | X | X | X | X | X | X | X |
| | **4.2.16 The method documentation shall provide guidance for (1) recording traceability between the data collected during the appraisal and the findings and/or ratings, (2) the retention and safekeeping of appraisal records, and (3) compiling and maintaining an appraisal record that supports the appraisal team's findings and/or ratings and that contains the following minimum content:** | | | | | | | | |
| ABC | a. dates of appraisal | 2.1.4 Plan Appraisal Details<br>2.2.8 Develop Final Briefing | X | X | X | X | X | X | X |
| ABC | b. appraisal input | 2.1.4 Plan Appraisal Details<br>2.2.8 Develop Final Briefing | X | X | X | X | X | X | X |
| A | c.objective evidence, or id thereof, sufficient to substantiate goal rating judgments | 2.2.4 Consolidate Data<br>2.2.8 Develop Final Briefing | X | | | | | X | |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | d. identification of appraisal method (and version) used, along with any tailoring options | 2.1.4 Plan Appraisal Details<br>2.2.8 Develop Final Briefing | X | X | X | X | X | X | X |
| ABC | e. findings | 2.2.8 Develop Final Briefing | X | X | X | X | X | X | X |
| A | f. any ratings rendered during the appraisal (goals, process areas, and maturity or capability levels) | 2.2.7 Develop Ratings<br>2.2.8 Develop Final Briefing | X | | | X | | X | N/A |
| A | g. the set of 15504 process profiles resulting from the appraisal, if requested by the appraisal sponsor | 2.1.1 Obtain Sponsor Commitment<br>2.2.7 Develop Ratings<br>2.2.8 Develop Final Briefing | X | | | | | X | N/A |
| | **4.3.1 The method shall provide for the preparation of appraisal participants by addressing, at a minimum,** | | | | | | | | |
| ABC | a. the purpose of the appraisal | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details<br>2.2.1 Conduct Opening Meetings | X | X | X | X | X | X | X |
| ABC | b. the scope of the appraisal | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details<br>2.2.1 Conduct Opening Meetings<br>2.1.2 Select Appraisal Organizational Scope | X | X | X | X | X | X | X |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | c. the appraisal approach | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details<br>2.2.1 Conduct Opening Meetings | X | X | X | X | X | X | X |
| ABC | d. the roles and responsibilities of participants in the appraisal | 1.3 Appraisal Roles<br>2.1.4 Plan Appraisal Details<br>2.2.1 Conduct Opening Meetings | X | X | X | X | X | X | X |
| ABC | e. the schedule of appraisal activities | 2.1.4 Plan Appraisal Details<br>2.2.1 Conduct Opening Meetings | X | X | X | X | X | X | X |
| ABC | **4.3.2 The method shall provide for the development of the appraisal input prior to the beginning of data collection by the appraisal team.** | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal organizational Scope<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| | **4.3.3 At a minimum, the appraisal input shall specify** | | | | | | | | |
| ABC | a. the identity of the sponsor of the appraisal, and the sponsor’s relationship to the organizational unit being appraised | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | b. the appraisal purpose, including alignment with business objectives | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational scope<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | c. the appraisal reference model scope, including<br>1. the process areas to be investigated within the organizational unit<br>2. the highest maturity level and/or capability level to be investigated for each process area within the appraisal scope | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | N/A |
| ABC | d. the organizational unit that is the subject of the appraisal | 2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | e. the process context, which, at a minimum, shall include<br>1. the size of the organizational unit<br>2. the demographics of the organizational unit<br>3. the application domain of the products or services of the organizational unit<br>4. the size, criticality, and complexity of the products or services<br>5. *the quality characteristics of the products or services (e.g., defect density, reliability)* | 2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |

## Appendix C: Traceability to Appraisal Requirements for CMMI (ARC), continued

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | f. the appraisal constraints, which, at a minimum, shall include<br>1. availability of key resources (e.g., staffing, funding, tools, facilities)<br>2. schedule constraints<br>3. the maximum amount of time to be used for the appraisal<br>4. specific process areas or organizational entities to be excluded from the appraisal<br>5. the minimum, maximum, or specific sample size or coverage that is desired for the appraisal<br>6. the ownership of the appraisal outputs and any restrictions on their use<br>7. controls on information resulting from a confidentiality agreement<br>8. non-attribution of appraisal data to associated sources | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.3 Select Appraisal Team<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | g. the identity of the CMMI models used, including the version, discipline, and representation (staged or continuous) | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | h. the criteria for experience, knowledge, and skills of the appraisal team leader who is responsible for the appraisal | 2.1.4 Plan Appraisal Details<br>Appendix G: Lead Appraiser process | X | X | X | X | X | X | X |
| ABC | i. the identity and affiliation of the appraisal team members, including the appraisal team leader, with their specific appraisal responsibilities | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | j. the identity (name and organizational affiliation) of appraisal participants and support staff, with specific responsibilities for the appraisal | 2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | k. any additional information to be collected during the appraisal to support achievement of the appraisal objectives | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | l. a description of the planned appraisal outputs, including ratings to be generated (process areas, maturity level) | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | m. anticipated follow-on activities (e.g., reports, appraisal action plans, reappraisal) | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | n. planned tailoring of the appraisal method and associated tradeoffs, including the sample size or coverage of the organizational unit | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | **4.3.4 The method shall require that the appraisal input, and any changes to the appraisal input, shall be agreed to by the sponsor (or the delegated authority) and documented in the appraisal record.** | 1.3 Appraisal Roles<br>2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| | **4.3.5 The method shall require the development of an appraisal plan that, at a minimum, specifies** | | | | | | | | |
| ABC | a. the appraisal input | 2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |

# Appendix C: Traceability to Appraisal Requirements for CMMI (ARC), continued

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | b. the activities to be performed in conducting the appraisal | 2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | c. resources and schedule assigned to appraisal activities | 2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | d. appraisal logistics | 2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| ABC | e. mitigation steps to address risks associated with appraisal execution | 2.1.4 Plan Appraisal Details | X | X | X | X | X | X | X |
| A | f. the criteria to verify that the requirements of ISO/IEC 15504 have been met, if requested by the appraisal sponsor | 2.1.4 Plan Appraisal Details | X | | | | | X | N/A |
| | Both of the two types of objective evidence identified below are required for Class A and Class B appraisal methods. At least one type of objective evidence is required for Class C methods. | | | | | | | | |
| | **4.4.1 The method shall collect data by conducting interviews (e.g., with project leaders, managers, practitioners).** | 2.1.4 Plan Appraisal Details<br>2.2.2 Conduct Interviews | X | X | | | X | X | X |
| | **4.4.2 The method shall collect data by reviewing documentation (e.g., organizational policies, instruments, project procedures, and implementation-level work products).** | 2.1.7 Obtain and Analyze Preliminary Evidence<br>2.2.3 Review Documentation | X | X | X | X | X | X | X |
| ABC | **4.5.1 The method shall require appraisal team consensus when teams are involved in decisions related to determining the validity of findings, and establishing ratings.** | 2.2.4 Consolidate Data<br>2.2.5 Development Draft Findings<br>2.2.7 Develop Ratings<br>2.2.8 Develop Final Briefing | X | X | X | X | X | X | X |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| | **4.5.2 The method shall require a mechanism for consolidating the data collected during an appraisal into accurate findings according to the following criteria:** | | | | | | | | |
| ABC | a. The finding was derived from objective evidence seen or heard during data collection sessions. | 2.2.4 Consolidate Data | X | X | X | | X | X | X |
| ABC | b. The finding is clearly worded, phrased without attribution, and expressed in terminology used at the organizational unit | 2.2.4 Consolidate Data | X | X | X | | X | X | X |
| ABC | c. Objective evidence supporting the finding is traceable to the project or organizational unit. | 2.2.5 Develop Draft Findings | X | X | X | | X | X | X |
| ABC | d. The finding is relevant to the appraisal reference model and can be associated with a specific model component. | 2.2.4 Consolidate Data | X | X | X | | X | X | X |
| | **4.5.3 The method shall require a mechanism for verifying findings according to the following criteria:** | | | | | | | | |
| AB | a. The finding is based on corroborated objective evidence. | 2.2.4 Consolidate Data | X | | | | X | X | |
| AB | b. The finding is consistent with other verified findings. (Verified findings cannot be both true and mutually inconsistent; in aggregate, they constitute a set of truths about the organizational unit that must be consistent.) | 2.2.4 Consolidate Data<br>2.2.6 Present Draft Findings | X | | | | X | X | |
| | **4.5.4 The method shall require the following minimum set of criteria to be satisfied in order for objective evidence to be considered “corroborated”:** | | | | | | | | |

# Appendix C: Traceability to Appraisal Requirements for CMMI (ARC), continued

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| AB | a. The objective evidence is obtained from at least two different sources. | 2.2.4 Consolidate Data | X | | | | X | X | |
| AB | b. At least one of the two sources must reflect work actually being done (e.g., process area implementation). | 2.2.4 Consolidate Data | X | | | | X | X | |
| | **4.5.5 The method shall require a mechanism for determining that sufficient data has been collected to cover the scope of the appraisal, according to the following minimum set of rules:** | | | | | | | | |
| A | a. A specific or generic practice has sufficient data coverage if corroborated objective evidence exists for the practice and<br>1.is adequate to understand the extent of implementation of the practice<br>2. is representative of the organizational unit<br>3. is representative of the life-cycle phases in use within the organizational unit | 2.2.4 Consolidate Data | X | | | X | | X | N/A |
| A | b. In a staged representation, a process area has sufficient data coverage if all of its specific and generic practices have sufficient data coverage. | 2.2.4 Consolidate Data | X | | | X | | X | N/A |
| A | c. In a continuous representation, a process area has sufficient data coverage if all of its specific practices and the generic practices within the appraisal scope have sufficient data coverage up through the capability level being investigated for the process area (e.g., the target capability level) | 2.2.4 Consolidate Data | X | | | X | | X | N/A |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| A | **4.5.6 The method shall require a mechanism for consolidating objective evidence into preliminary findings of strengths and weaknesses relative to the appraisal reference model.** | 2.2.5 Develop Draft Findings | X | | X | X | X | X | N/A |
| A | **4.5.7 The method shall require that appraisal participants be presented with the preliminary findings in order to solicit their responses for validation of the findings' accuracy and clarity.** | 2.2.6 Present Draft Findings | X | | | X | | X | X |
| | **4.6.1 The method shall define a rating process that specifies, at a minimum, the following:** | | | | | | | | |
| A | a. An appraisal team can rate a specific or generic goal when corroborated objective evidence for each practice related to the goal meets the method's defined data coverage criteria. | Consolidate Data<br>2.2.7 Develop Ratings | X | | | X | | X | N/A |
| A | b. An appraisal team can rate a process area when it has rated each of the process area's specific goals and generic goals within the appraisal scope. | 2.2.7 Develop Ratings | X | | | X | | X | N/A |
| A | c. An appraisal team can determine a maturity level rating once it has rated all of the process areas within that level and each level below. | 2.2.7 Develop Ratings | X | | | | | X | N/A |
| A | d. An appraisal team can determine the capability level of a process area when it has rated each of the generic goals at or below the target capability level. | 2.2.7 Develop Ratings | X | | | X | | X | N/A |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| A | **4.6.2 The method shall require that maturity level ratings and/or capability level ratings be based on the definitions of capability levels and maturity levels in the CMMI models.** | 2.2.7 Develop Ratings | X | | | X | | X | N/A |
| | **4.6.3 The method shall rate each specific and generic goal (provided the prerequisites of rating have been met) within the appraisal scope in accordance with the following rules:** | | | | | | | | |
| A | a. Rate the goal "satisfied" when the associated generic or specific practices (or acceptable alternative practices) are judged to be implemented and the aggregate of weaknesses does not have a significant negative impact on goal achievement. | 2.2.7 Develop Ratings | X | | | X | | X | N/A |
| A | b. Rate the goal "not rated" if the goals cannot be rated in accordance with the method's defined criteria for data sufficiency. | 2.2.7 Develop Ratings | X | | | X | | X | N/A |
| A | c. Rate the goal "unsatisfied" otherwise. | 2.2.7 Develop Ratings | X | | | X | | X | N/A |
| | **4.6.4 The method shall rate each process area within the appraisal scope, if requested by the appraisal sponsor, in accordance with the following rules:** | | | | | | | | |
| A | a. For a staged representation, the process area is "satisfied" if and only if all of its specific and generic goals are rated "satisfied." | 2.2.7 Develop Ratings | X | | | X | | X | N/A |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| A | b. For a continuous representation, the process area is given a capability level rating based upon the highest level for which all of its specific goals and generic goals have been satisfied. | 2.2.7 Develop Ratings | X | | | X | | X | N/A |
| A | c. When a process area is determined to be outside of the organizational unit's scope of work, the process area is designated as "not applicable" and is not rated. | 2.2.7 Develop Ratings | X | | | X | | X | N/A |
| A | d. When an applicable process area is outside of the scope of the model used for the appraisal, the process area is designated as "out of scope" and is not rated. | 2.2.7 Develop Ratings | X | | | X | | X | N/A |
| A | e. When one or more goals cannot be rated in accordance with the method's defined criteria for data sufficiency, the process area is designated as "not rated" and is not rated. | 2.2.7 Develop Ratings | X | | | X | | X | N/A |
| | **4.6.5 The method shall rate the maturity level, if requested by the appraisal sponsor, in accordance with the following rules:** | | | | | | | | |
| A | a. A maturity level for a staged representation is achieved if all process areas within the level and within each lower level are either "satisfied" or "not applicable." | 2.2.7 Develop Ratings | X | | | | | X | N/A |
| A | b. (A) A maturity level for a continuous representation is achieved if the capability level profile is at or above the target profile for all process areas for that maturity level and all lower maturity levels in the equivalent staging, excepting those process areas that are designated as "not applicable." | 2.2.7 Develop Ratings | X | | | | | X | N/A |

| Class | ARC Requirement | FAM v2.0 Paragraph | FI | FD | DI | QBA | IB | FE | VA |
|---|---|---|---|---|---|---|---|---|---|
| ABC | **4.7.1 The method shall require documenting and reporting the appraisal findings and/or ratings to the appraisal sponsor and to the appraised organization.** | 2.2.8 Develop Final Briefing<br>2.2.9 Brief Sponsor<br>2.2.10 Present Final Briefing<br>2.3.1 Prepare Appraisal Report<br>2.3.2 Manage Records | X | X | X | X | X | X | X |
| A | **4.7.2 If ISO/IEC 15504 conformance is desired, the method shall define a mechanism for converting objective evidence used by the appraisal team as the basis for goal ratings into associated process attribute outcomes in accordance with the translation requirement of ISO/IEC TR 15504-2 (clause 7.6).** | Appendix F, Traceability to ISO/IEC 15504 Requirements (pertains to ISO/IEC 15504 (2002)) Clauses 6.3 and 5.7<br>2.2.7 Develop Ratings | X | | | | | X | N/A |
| A | **4.7.3 The method shall require the submission of appraisal data required by the CMMI Steward for the purpose of reporting aggregated appraisal information to the constituent community.** | 2.3.2 Manage Records | X | | | | | X | N/A |
| ABC | **4.7.4 The method shall require that the appraisal record be provided to the appraisal sponsor for retention.** | 2.3.2 Manage Records | X | X | X | X | X | X | X |

## Part 2: ARC traceability to the GAP, FAAR, Delta, FAM:ISO, and Self appraisal alternatives

| Class | ARC Requirement | GAP | FARR | Delta | FAM:ISO | Self |
|---|---|---|---|---|---|---|
| | **4.1.1 The method shall define the responsibilities of the appraisal sponsor, which at a minimum shall include the following activities:** | | | | | |
| ABC | a. Verify that the appraisal team leader has the appropriate experience, knowledge, and skills to take responsibility for and lead the appraisal. | X | X | X | X | X |
| ABC | b. Ensure that the appropriate organizational units or subunits (e.g., projects, functional units) participate in the appraisal. | X | X | X | X | X |
| ABC | c. Support appraisal method provisions for ensuring non-attribution to appraisal participants. | X | X | X | X | X |
| ABC | d. Ensure that resources are made available to conduct the appraisal. | X | X | X | X | X |
| ABC | e. Review and approve the appraisal input prior to the beginning of data collection by the appraisal team. | X | X | X | X | X |
| | **4.1.2 The method shall define the responsibilities of the appraisal team leader, which at a minimum shall include the following activities:** | | | | | |
| ABC | a. Ensure that the appraisal is conducted in accordance with the method's documented process. | X | X | X | X | X |
| ABC | b. Confirm the sponsor's commitment to proceed with the appraisal. | X | X | X | X | X |
| ABC | c. Ensure that appraisal participants are briefed on the purpose, scope, and approach of the appraisal. | X | X | X | X | X |
| ABC | d. Ensure that all appraisal team members have the appropriate experience, knowledge, and skills in the appraisal reference model and appraisal method; the necessary competence to use instruments or tools chosen to support the appraisal; and access to documented guidance on how to perform the defined appraisal activities. | X | X | X | X | X |
| ABC | e. Verify and document that the appraisal method requirements have been met. | X | X | X | X | |
| | **4.2.1 The method shall be documented and, at a minimum, include** | | | | | |
| ABC | a. identification of the CMMI models (version, discipline, and representation [staged or continuous]) with which the method can be used | X | X | X | X | X |
| ABC | b. identification of the ARC version upon which the appraisal method is based | X | X | X | X | X |
| ABC | c. identification of which CMMI appraisal requirements are satisfied by the method, along with the CMMI appraisal method class membership (if applicable) | X | X | X | X | X |
| ABC | d. activity descriptions, artifacts, and guidance that implement each of the appraisal requirements | X | X | X | X | X |

# Appendix C: Traceability to Appraisal Requirements for CMMI (ARC), continued

| Class | ARC Requirement | GAP | FARR | Delta | FAM:ISO | Self |
|---|---|---|---|---|---|---|
| A | e. (A) declaration as to whether or not the method supports 15504-conformant appraisals | | | X | X | |
| | **4.2.2 The method documentation shall provide guidance for** | | | | | |
| ABC | a. identifying an appraisal's purpose, objectives, and constraints | X | X | X | X | X |
| ABC | b. determining the suitability of the appraisal method relative to the appraisal's purpose, objectives, and constraints | X | X | X | X | X |
| | **4.2.3 The method documentation shall provide guidance for identifying the scope of the CMMI model(s) to be used for the appraisal:** | | | | | |
| ABC | a. process areas to be investigated (continuous and staged representations) | X | X | X | X | X |
| ABC | b. capability levels to be investigated for each process area (continuous representation) | X | X | X | X | X |
| | **4.2.4 The method documentation shall provide guidance for identifying the organizational unit to be appraised:** | | | | | |
| ABC | a. the sponsor of appraisal and sponsor's relationship to the organizational unit being appraised | X | X | X | X | X |
| ABC | b. projects within the organizational unit that will participate | X | X | X | X | X |
| ABC | c. functional elements of the organizational unit that will participate | X | X | X | X | X |
| ABC | d. names and affiliations (organizational units) of participants in the appraisal activities | X | X | X | X | X |
| | **4.2.5 The method documentation shall provide guidance for selecting appraisal team members and criteria for qualification, including** | | | | | |
| ABC | a. technical experience (discipline-specific) | X | X | X | X | |
| ABC | b. management experience | | | X | X | |
| ABC | c. experience, knowledge, and skills in the appraisal reference model and appraisal method | | | X | X | |
| | **4.2.6 The method documentation shall provide guidance for an appraisal team leader's qualification criteria, including** | | | | | |
| ABC | a. training and experience using the appraisal reference model | X | X | X | X | X |
| ABC | b. training and experience using the appraisal method | X | X | X | X | |
| ABC | c. experience in delivering training, managing teams, facilitating group discussions, and making presentations | X | X | X | X | |
| ABC | **4.2.7 The method documentation shall provide guidance for determining the appropriate size of the appraisal team. For Class A appraisals, the minimum team size if four members; for Class B appraisals, two members; for Class C appraisals, one member.** | X | X | X | X | X |
| ABC | **4.2.8 The method documentation shall provide guidance on the roles and responsibilities of appraisal team members.** | X | X | X | X | X |

# Appendix C: Traceability to Appraisal Requirements for CMMI (ARC), continued

| Class | ARC Requirement | GAP | FARR | Delta | FAM:ISO | Self |
|---|---|---|---|---|---|---|
| ABC | **4.2.9 The method documentation shall provide guidance addressing the responsibilities of the appraisal sponsor.** | X | X | X | X | X |
| ABC | **4.2.10 The method documentation shall provide guidance addressing the responsibilities of the appraisal team leader.** | X | X | X | X | X |
| ABC | **4.2.11 The method documentation shall provide guidance for estimating the resources required to conduct the appraisal (including the amount of time required to conduct an appraisal).** | X | X | X | X | X |
| ABC | **4.2.12 The method documentation shall provide guidance for appraisal logistics.** | X | X | X | X | X |
| ABC | **4.2.13 The method documentation shall provide guidance for collecting relevant data on the organizational unit and associating the data to the specific and generic practices of the appraisal reference model.** | X | X | X | X | |
| ABC | **4.2.14 The method documentation shall provide guidance for creating findings, including both strengths and weaknesses relative to the appraisal reference model.** | X | X | X | X | |
| ABC | **4.2.15 The method documentation shall provide guidance for protecting confidentiality of appraisal data and ensuring non-attribution of data contributed by appraisal participants.** | X | X | X | X | X |
| | **4.2.16 The method documentation shall provide guidance for (1) recording traceability between the data collected during the appraisal and the findings and/or ratings, (2) the retention and safekeeping of appraisal records, and (3) compiling and maintaining an appraisal record that supports the appraisal team's findings and/or ratings and that contains the following minimum content:** | | | | | |
| ABC | a. dates of appraisal | X | X | X | X | X |
| ABC | b. appraisal input | X | X | X | X | X |
| A | c. objective evidence, or identification thereof, sufficient to substantiate goal rating judgments | X | X | X | X | |
| ABC | d. identification of appraisal method (and version) used, along with any tailoring options | X | X | X | X | X |
| ABC | e. findings | X | X | X | X | |
| A | f. any ratings rendered during the appraisal (goals, process areas, and maturity or capability levels) | | | X | X | |
| A | *g. the set of 15504 process profiles resulting from appraisal, if requested by appraisal sponsor* | | | X | X | |
| | **4.3.1 The method shall provide for the preparation of appraisal participants by addressing, at a minimum,** | | | | | |
| | | | | | | |

# Appendix C: Traceability to Appraisal Requirements for CMMI (ARC), continued

| Class | ARC Requirement | GAP | FARR | Delta | FAM:ISO | Self |
|---|---|---|---|---|---|---|
| ABC | a. the purpose of the appraisal | X | X | X | X | X |
| ABC | b. the scope of the appraisal | X | X | X | X | X |
| ABC | c. the appraisal approach | X | X | X | X | X |
| ABC | d. the roles and responsibilities of participants in the appraisal | X | X | X | X | X |
| ABC | e. the schedule of appraisal activities | X | X | X | X | X |
| ABC | **4.3.2 The method shall provide for the development of the appraisal input prior to the beginning of data collection by the appraisal team.** | X | X | X | X | X |
| | **4.3.3 At a minimum, the appraisal input shall specify** | | | | | |
| ABC | a. the identity of the sponsor of the appraisal, and the sponsor's relationship to the organizational unit being appraised | X | X | X | X | X |
| ABC | b. the appraisal purpose, including alignment with business objectives | X | X | X | X | X |
| ABC | c. the appraisal reference model scope, including<br>1. the process areas to be investigated within the organizational unit<br>2. the highest maturity level and/or capability level to be investigated for each process area within the appraisal scope | X | X | X | X | X |
| ABC | d. the organizational unit that is the subject of the appraisal | X | X | X | X | X |
| ABC | e. the process context, which, at a minimum, shall include<br>1. the size of the organizational unit<br>2. the demographics of the organizational unit<br>3. the application domain of the products or services of the organizational unit<br>4. the size, criticality, and complexity of the products or services<br>5. *the quality characteristics of the products or services (e.g., defect density, reliability)* | | | X | X | |
| ABC | f. the appraisal constraints, which, at a minimum, shall include<br>1. availability of key resources (e.g., staffing, funding, tools, facilities)<br>2. schedule constraints<br>3. the maximum amount of time to be used for the appraisal<br>4. specific process areas or organizational entities to be excluded from the appraisal<br>5. the minimum, maximum, or specific sample size or coverage that is desired for appraisal<br>6. the ownership of the appraisal outputs and any restrictions on their use<br>7. controls on information resulting from a confidentiality agreement<br>8. non-attribution of appraisal data to associated sources | X | X | X | X | X |

| Class | ARC Requirement | GAP | FARR | Delta | FAM:ISO | Self |
|---|---|---|---|---|---|---|
| ABC | g. the identity of the CMMI models used, including the version, discipline, and representation (staged or continuous) | X | X | X | X | X |
| ABC | h. the criteria for experience, knowledge, and skills of the appraisal team leader who is responsible for the appraisal | X | X | X | X | X |
| ABC | i. the identity and affiliation of the appraisal team members, including the appraisal team leader, with their specific appraisal responsibilities | X | X | X | X | |
| ABC | j. the identity (name and organizational affiliation) of appraisal participants and support staff, with specific responsibilities for the appraisal | X | X | X | X | |
| ABC | k. any additional information to be collected during the appraisal to support achievement of the appraisal objectives | X | X | X | X | X |
| ABC | l. a description of the planned appraisal outputs, including ratings to be generated (process areas, maturity level) | X | X | X | X | X |
| ABC | m. anticipated follow-on activities (e.g., reports, appraisal action plans, reappraisal) | X | X | X | X | X |
| ABC | n. planned tailoring of the appraisal method and associated tradeoffs, including the sample size or coverage of the organizational unit | X | X | X | X | X |
| ABC | **4.3.4 The method shall require that the appraisal input, and any changes to the appraisal input, shall be agreed to by the sponsor (or the delegated authority) and documented in the appraisal record.** | X | X | X | X | X |
| | **4.3.5 The method shall require the development of an appraisal plan that, at a minimum, specifies** | | | | | |
| ABC | a. the appraisal input | | | X | X | X |
| ABC | b. the activities to be performed in conducting the appraisal | X | X | X | X | X |
| ABC | c. resources and schedule assigned to appraisal activities | X | X | X | X | X |
| ABC | d. appraisal logistics | | | X | X | X |
| ABC | e. mitigation steps to address risks associated with appraisal execution | | | X | X | X |
| A | *f. the criteria to verify that the requirements of ISO/IEC 15504 have been met, if requested by the appraisal sponsor* | | | X | X | |
| | Both of the two types of objective evidence identified below are required for Class A and Class B appraisal methods. At least one type of objective evidence is required for Class C methods. | | | | | |

# Appendix C: Traceability to Appraisal Requirements for CMMI (ARC), continued

| Class | ARC Requirement | GAP | FARR | Delta | FAM:ISO | Self |
|---|---|---|---|---|---|---|
| | **4.4.1 The method shall collect data by conducting interviews (e.g., with project leaders, managers, practitioners).** | X | X | X | X | |
| | **4.4.2 The method shall collect data by reviewing documentation (e.g., organizational policies, instruments, project procedures, and implementation-level work products).** | X | X | X | X | X |
| ABC | **4.5.1 The method shall require appraisal team consensus when teams are involved in decisions related to determining the validity of findings, and establishing ratings.** | X | X | X | X | |
| | **4.5.2 The method shall require a mechanism for consolidating the data collected during an appraisal into accurate findings according to the following criteria:** | | | | | |
| ABC | a. The finding was derived from objective evidence seen or heard during data collection sessions. | X | X | X | X | |
| ABC | b. The finding is clearly worded, phrased without attribution, and expressed in terminology used at the organizational unit | X | X | X | X | |
| ABC | c. Objective evidence supporting the finding is traceable to the project or organizational unit. | X | X | X | X | |
| ABC | d. The finding is relevant to the appraisal reference model and can be associated with a specific model component. | X | X | X | X | |
| | **4.5.3 The method shall require a mechanism for verifying findings according to the following criteria:** | | | | | |
| AB | a. The finding is based on corroborated objective evidence. | X | X | X | X | |
| AB | b. The finding is consistent with other verified findings. (Verified findings cannot be both true and mutually inconsistent; in aggregate, they constitute a set of truths about the organizational unit that must be consistent.) | X | X | X | X | |
| | **4.5.4 The method shall require the following minimum set of criteria to be satisfied in order for objective evidence to be considered "corroborated":** | | | | | |
| AB | a. The objective evidence is obtained from at least two different sources. | X | X | X | X | |
| AB | b. At least one of the two sources must reflect work actually being done (e.g., process area implementation). | X | X | X | X | |
| | **4.5.5 The method shall require a mechanism for determining that sufficient data has been collected to cover the scope of appraisal, according to the following minimum set of rules:** | | | | | |
| A | a. A specific or generic practice has sufficient data coverage if corroborated objective evidence exists for the practice and<br>1. is adequate to understand the extent of implementation of the practice<br>2. is representative of the organizational unit<br>3. is representative of the life-cycle phases in use within the organizational unit | X | X | X | X | X |

| Class | ARC Requirement | GAP | FARR | Delta | FAM:ISO | Self |
|---|---|---|---|---|---|---|
| A | b. In a staged representation, a process area has sufficient data coverage if all of its specific and generic practices have sufficient data coverage. | X | X | X | X | X |
| A | c. In a continuous representation, a process area has sufficient data coverage if all of its specific practices and the generic practices within the appraisal scope have sufficient data coverage up through the capability level being investigated for the process area (e.g., the target capability level) | X | X | X | X | X |
| A | **4.5.6 The method shall require a mechanism for consolidating objective evidence into preliminary findings of strengths and weaknesses relative to the appraisal reference model.** | X | X | X | X | |
| A | **4.5.7 The method shall require that the appraisal participants be presented with the preliminary in order to solicit their responses for validation of the findings' accuracy and clarity.** | X | X | X | X | |
| | **4.6.1 The method shall define a rating process that specifies, at a minimum, the following:** | | | | | |
| A | a. An appraisal team can rate a specific or generic goal when corroborated objective evidence for each practice related to the goal meets the method's defined data coverage criteria. | | | X | X | |
| A | b. An appraisal team can rate a process area when it has rated each of the process area's specific goals and generic goals within the appraisal scope. | | | X | X | |
| A | c. An appraisal team can determine a maturity level rating once it has rated all of the process areas within that level and each level below. | | | X | X | |
| A | d. An appraisal team can determine the capability level of a process area when it has rated each of the generic goals at or below the target capability level. | | | X | X | |
| A | **4.6.2 The method shall require that maturity level ratings and/or capability level ratings be based on the definitions of capability levels and maturity levels in the CMMI models.** | | | X | X | |
| | **4.6.3 The method shall rate each specific and generic goal (provided the prerequisites of rating have been met) within the appraisal scope in accordance with the following rules:** | | | | | |
| A | a. Rate the goal "satisfied" when the associated generic or specific practices (or acceptable alternative practices) are judged to be implemented and the aggregate of weaknesses does not have a significant negative impact on goal achievement. | | | X | X | |
| A | b. Rate the goal "not rated" if the goals cannot be rated in accordance with the method's defined criteria for data sufficiency. | | | X | X | |
| A | c. Rate the goal "unsatisfied" otherwise. | | | X | X | |

| Class | ARC Requirement | GAP | FARR | Delta | FAM:ISO | Self |
|---|---|---|---|---|---|---|
| | **4.6.4 The method shall rate each process area within the appraisal scope, if requested by the appraisal sponsor, in accordance with the following rules:** | | | | | |
| A | a. For a staged representation, the process area is "satisfied" if and only if all of its specific and generic goals are rated "satisfied." | | | X | X | |
| A | b. For a continuous representation, the process area is given a capability level rating based upon the highest level for which all of its specific goals and generic goals have been satisfied. | | | X | X | |
| A | c. When a process area is determined to be outside of the organizational unit's scope of work, the process area is designated as "not applicable" and is not rated. | | | X | X | |
| A | d. When an applicable process area is outside of the scope of the model used for the appraisal. The process area is designated as "out of scope" and is not rated. | | | X | X | |
| A | e. When one or more goals cannot be rated in accordance with the method's defined criteria for data sufficiency, the process area is designated as "not rated" and is not rated. | | | X | X | |
| | **4.6.5 The method shall rate the maturity level, if requested by the appraisal sponsor, in accordance with the following rules:** | | | | | |
| A | a. A maturity level for a staged representation is achieved if all process areas within the level and within each lower level are either "satisfied" or "not applicable." | | | X | X | |
| A | b. (A) A maturity level for a continuous representation is achieved if the capability level profile is at or above the target profile for all process areas for that maturity level and all lower maturity levels in the equivalent staging, excepting those process areas designated as "not applicable." | | | X | X | |
| ABC | **4.7.1 The method shall require documenting and reporting the appraisal findings and/or ratings to the appraisal sponsor and to the appraised organization.** | | | X | X | X |
| A | **4.7.2 If ISO/IEC 15504 conformance is desired, the method shall define a mechanism for converting objective evidence used by the appraisal team as the basis for goal ratings into associated process attribute outcomes in accordance with the translation requirement of ISO/IEC TR 15504-2 (clause 7.6).** | | | X | X | |
| A | **4.7.3 The method shall require the submission of appraisal data required by the CMMI Steward for purpose of reporting aggregated appraisal information tonconstituent community.** | | | X | X | |
| ABC | **4.7.4 The method shall require appraisal record be provided to appraisal sponsor for retention.** | X | X | X | X | X |

# Appendix D: Change History and Change Request Form

**Change History**

| **Version** | **Section** | **Change Summary** |
|---|---|---|
| FAM v1.0 | Entire Document | First version, April 1999 |
| FAM v2.0 | Chapter 1 | Rewritten in view of revised FI description and addition of 6 new appraisal variations |
| | Chapter 2 | Revised to comply with ISO/IEC 15504, with ARC, and to address lessons learned since version 1.0 |
| | Chapter 3 | Added 6 new appraisal variations including VA, GAP, FARR, DELTA, iCMM: ISO 9001, and SELF appraisal |
| | Appendices | Updated and revised glossary<br>Updated to provide traceability to ARC (instead of CAF)<br>Updated to provide traceability to new ISO/IEC 15504 requirements<br>Added appendix for FAM Lead Appraiser process |

# Appendix D:  Change History and Change Request Form

**Change Request Form**

| Name/Organization: | Phone: | Email: |
|---|---|---|
| Description of problem: | | |
| Impact if the problem is not resolved: | | |
| Possible solutions: | | |

Please send Change Requests to FAA Chief Engineer for Process Improvement.

# Appendix E: List of Appraisal Aids

| *Appraisal Type* | *Guidance or Toolkit Contents* |
|---|---|
| **Full Internal (FI) Appraisal** | **Appraisal Guidance Material**<br><br>Plan and Prepare for the Appraisal<br>• Team Makeup<br>• Appraisal Planning<br>• Orientation of Appraisal Team and Participants<br>• Conducting Presentations<br><br>On-Site Activities<br>• Library Management<br>• Document Review<br>• Questionnaire<br>• Interviewing<br>• Note taking<br>• Consolidate Data<br>• Develop Findings Presentations<br>• Ratings<br>• Appraisal Wrap up<br><br>**Toolkit**<br>Sponsor Brief<br>Appraisal Scheduling Tool<br>Cross-reference Matrix of Team Members by PA/AA<br>Appraisal Team Selection Form<br>Appraisal Plan Template<br>Confidentiality Agreement<br>Appraisal Training Materials<br>Organization/Project Questionnaire<br>Appraisal Participants Orientation Brief<br>Appraisal Team Onsite Orientation<br>QBA Questionnaire<br>QBA Administration Brief<br>Opening Brief<br>PA/AA Document Trace Tables<br>Middle Management Interview Sheet<br>Interview Checklist<br>Interview Worksheet |

# Appendix E: List of Appraisal Aids, continued

| *Appraisal Type* | *Guidance or Toolkit Contents* |
|---|---|
| **Full Internal (FI) Appraisal, continued** | PA/AA Worksheets<br>Draft Findings Brief<br>Final Findings Brief<br>QBA Project Profile<br>QBA Organizational Profile<br>Appraisal Feedback<br>• Sponsor<br>• Appraisal Team Lead<br>• Appraisal Team<br>• Participants<br>• Process Appraisal Information System Record of Entry (PAISROE) (to SEI) |
| **General – for Alternative Appraisal Types** | FAA-iCMM Appraisal Disclosure Statement for Alternative Appraisal Types |
| **Facilitated Discussion (FD) Appraisal** | FD Project Plan Template (PAT Project Plan Template)<br>Process Template<br>Procedure Template<br>Implementation Plan Template<br>Traceability Matrices<br>Process Area Tracking Chart |
| **Document Intensive (DI) Appraisal** | PA/AA Document Trace Tables<br>DI Appraisal Team Training Material<br>DI Appraisal Plan Template<br>Opening Meeting Slides<br>Appraisal Team Worksheets<br>Final Briefing Slides |
| **Questionnaire Based Appraisal (QBA)** | QBA Questionnaire<br>QBA Data Processing Guide<br>QBA Training Material<br>QBA Sample Briefings<br>QBA Profile Templates (Sample Project Profile; Sample Organizational Profile) |

## Appendix E: List of Appraisal Aids, continued

| *Appraisal Type* | *Guidance or Toolkit Contents* |
|---|---|
| **Interview Based (IB) Appraisal** | Sponsor Brief<br>Appraisal Plan Template<br>Appraisal Training Materials<br>Organizational Questionnaire<br>Appraisal Participants Orientation Brief<br>QBA Questionnaire<br>QBA Administration Brief<br>Interview Checklist<br>Interview Worksheet<br>Opening Brief<br>PA/AA Worksheet<br>Draft Findings Brief (may also be used for preliminary findings)<br>Final Findings Brief |
| **Full External (FE) Appraisal** | Organization/Project Questionnaire<br>Proposed Project Attributes<br>Mismatch Identification Table |
| **Value Analysis (VA) Appraisal** | Potential Key Results/Needs Table by Process Area<br>Example Questionnaire for a VA appraisal<br>Example VA Exploratory Questions |
| **Gap Analysis Process (GAP) Appraisal** | GAP Opening Briefing<br>GAP Schedule<br>GAP Detail Draft Findings<br>GAP Final Findings<br>Final Findings Letter<br>GAP Participant Feedback Form<br>GAP Checklist<br>GP Questions<br>GP Worksheets<br>PA Worksheet<br>GAP Action Plan Template<br>Discussion Scripts |

# Appendix E: List of Appraisal Aids, continued

| *Appraisal Type* | *Guidance or Toolkit Contents* |
| --- | --- |
| **Formal Appraisal Readiness Review (FARR) Appraisal** | FARR Opening Briefing<br>FARR Schedule<br>FARR Draft Findings<br>FARR Final Findings<br>Final Findings Letter<br>FARR Participant Feedback Summary<br>FARR Checklist<br>GP Questions<br>GP Worksheets<br>PA Worksheet<br>FARR Application<br>Discussion Scripts |
| **DELTA Appraisal** | No additional Toolkit items required |
| **FAA-iCMM : ISO 9001 Appraisal** | PA worksheets with associated ISO 9001 requirements<br>Guidelines document |
| **SELF Appraisal** | Self-appraisal tool and program documentation<br>Tool administrator user's guide<br>Safety and Security Self-Appraisal - Method Description and Guidelines for Use<br>FAA-iCMM Self-Appraisal – Guidelines for Use, containing<br>• Sample Briefing Materials<br>• Sample Reports<br>• Planning Template<br>• Sample Questionnaire<br>• Appraisal Disclosure Statement |

# Appendix F: Traceability to ISO/IEC 15504 Requirements

**Introduction**

*ISO/IEC 15504 Information Technology – Process Assessment – Part 2: Performing an Assessment* (ISO/IEC 15504-2) defines minimum requirements for performing an assessment that will "ensure assessment results are objective, impartial, consistent, repeatable and representative of the assessed processes. Results of conformant process assessments may be compared when the scopes of the assessments are considered to be similar".

There are three types of conformance to the requirements of ISO/IEC 15504-2:

- Conformance of process assessments, which verifies conformance with requirements stated in ISO/IEC 15504-2 clause 4
- Conformance of Process Reference Models, which verifies conformance with requirements in ISO/IEC 15504-2 clause 6.2
- Conformance of Process Assessment Models, which verifies conformance with requirements in ISO/IEC 15504-2 clause 6.3

The first part of this Appendix demonstrates conformance of the FAA-iCMM Appraisal Method (FAM) with ISO/IEC 15504. It provides a map of the appraisal method to the requirements for assessments conformant with ISO/IEC 15504-2 clause 4. This mapping is of the full FAA-iCMM appraisal method, and not of its variations.

The FAA-iCMM is the model used for FAM. The second and third parts of this appendix demonstrate conformance of the FAA-iCMM with ISO/IEC 15504. They provide maps of the FAA-iCMM to the requirements for Process Reference Models and Process Assessment Models as described in ISO/IEC 15504-2 clauses 6.2 and 6.3.

The expected readers of this appendix include FAM lead appraisers who would use this appendix for tailoring purposes, e.g., nothing from these 15504 based requirements should be tailored out when the full FAM method is applied.

# ISO/IEC 15504-2, Clause 4 – Performing an Assessment

<table>
<tr><th>Requirement in ISO/IEC 15504-2 (for appraisal method conformance)</th><th>FAM Paragraph</th></tr>
<tr><td>4.2 The assessment process</td><td></td></tr>
<tr><td>4.2.1 The assessment shall be conducted according to a documented assessment process that is capable of meeting the assessment purpose</td><td>Chapters 1 and 2</td></tr>
<tr><td>4.2.2 The documented assessment process shall contain at minimum the following activities</td><td></td></tr>
<tr><td>a) Planning A plan for the assessment shall be developed and documented, including at minimum:<br>1) The required inputs specified in this part of ISO/IEC 15504<br>2) The activities to be performed in conducting the assessment<br>3) The resources and schedule assigned to these activities<br>4) The identity and defined responsibilities of the participants in the assessment<br>5) The criteria to verify that the requirements of this International Standard have been met<br>6) A description of the planned assessment outputs</td><td>2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details<br><br>Item 5, if requested by sponsor</td></tr>
<tr><td>b) Data Collection Data required for evaluating the processes within the scope of the assessment (see 4.4.2 (c)) and additional information (see 4.4.2 (j)) shall be collected in a systematic manner, applying at minimum the following:<br>1) The strategy and techniques for the selection, collection, analysis of data and justification of the ratings shall be explicitly identified and shall be demonstrable<br>2) Correspondence shall be established between the organizational unit’s processes, specified in the assessment scope, and the elements in the Process Assessment Model<br>3) Each process identified in the assessment scope shall be assessed on the basis of objective evidence<br>4) The objective evidence gathered for each attribute for each process assessed shall be sufficient to meet the assessment purpose and scope<br>5) The identification of the objective evidence gathered shall be recorded and maintained to provide the basis for verification of the ratings</td><td>2.1.4 Plan Appraisal Details<br>2.1.7 Obtain and Analyze Preliminary Evidence<br><br>2.2.2 Conduct Interviews<br>2.2.3 Review Documentation<br>2.2.4 Consolidate Data<br>2.2.5 Develop Draft Findings</td></tr>
<tr><td>c) Data Validation The data collected shall be validated to<br>1) Confirm that the evidence collected is objective<br>2) Ensure that the objective evidence is sufficient and representative to cover the scope and purpose of the assessment<br>3) Ensure that the data as a whole is consistent</td><td>2.2.4 Consolidate Data<br>2.2.6 Present Draft Findings</td></tr>
<tr><td>d) Process Attribute Rating A rating shall be assigned based on validated data for each process attribute<br>1) The set of process attribute ratings shall be recorded as the process profile for the defined organization unit<br>2) During the assessment, the defined set of assessment indicators in the Process Assessment Model shall be used to support the assessors’ judgement in rating process attributes in order to provide the basis for repeatability across assessments<br>3) The decision-making process that is used to derive rating judgements shall be recorded<br>4) Traceability shall be maintained between an attribute rating and the objective evidence used in determining that rating<br>5) For each process attribute rated, the relationship between the indicators and the objective evidence shall be recorded</td><td>2.2.4 Consolidate Data<br>2.2.5 Develop Draft Findings<br>2.2.7 Develop Ratings</td></tr>
</table>

# ISO/IEC 15504-2, Clause 4 – Performing an Assessment, cont'd

| Requirement in ISO/IEC 15504-2 (for appraisal method conformance) | FAM Paragraph |
|---|---|
| **e) Reporting** The assessment results, including at minimum the outputs specified in Clause 4.5 shall be documented and reported to the assessment sponsor or to their delegated representative | 2.2.9 Brief Sponsor<br>2.2.10 Present Final Briefing<br>2.3.1 Prepare Appraisal Report<br>2.3.2 Manage Records |
| **4.3 Roles and Responsibilities** | |
| 4.3.1 The sponsor of the assessment shall<br>a) verify that the individual who is to take responsibility for conformity of the assessment is a competent assessor | 2.1.1 Obtain Sponsor Commitment<br>1.3 Appraisal Roles |
| b) ensure that resources are made available to conduct the assessment. | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details |
| c) ensure that the assessment team has access to the relevant resources | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details |
| 4.3.2 The competent assessor shall<br>a) confirm the sponsor's commitment to proceed with the assessment | 2.1.1 Obtain Sponsor Commitment<br>2.1.4 Plan Appraisal Details |
| b) ensure that the assessment is conducted in accordance with the requirements of this part of ISO/IEC 15504 | 1.3 Appraisal Roles |
| c) ensure that participants in the assessment are briefed on the purpose, scope and approach of the assessment. | 2.1.5 Orient Participants<br>2.2.1 Conduct Opening Meetings |
| d) ensure that all members of the assessment team have knowledge and skills appropriate to their roles | 2.1.3 Select Appraisal Team<br>2.1.6 Train Team |
| e) ensure that all members of the assessment team have access to appropriate documented guidance on how to perform the defined assessment activities | 2.1.6 Train Team |
| f) ensure that the assessment team has the competencies to use the tools chosen to support the assessment | 2.1.6 Train Team |
| g) confirm receipt of the assessment result deliverables by the sponsor | 2.2.9 Brief Sponsor<br>2.2.10 Present Final Briefing<br>2.3.2 Manage Records |
| h) on completion of the assessment, verify and document the extent of conformance of the assessment to ISO/IEC 15504 (see also clause 7.4) | 2.2.8 Develop Final Briefing |
| 4.3.3 The assessor(s) shall<br>a) carry out assigned activities associated with the assessment, e.g. detailed planning, data collection, data validation and reporting | Chapter 2, all activities |
| b) rate the process attributes | 2.2.7 Develop Ratings |

| Requirement in ISO/IEC 15504-2 (for appraisal method conformance) | FAM Paragraph |
|---|---|
| **4.4 Defining the initial assessment input** | |
| 4.4.1 The assessment input shall be defined prior to the data collection phase of an assessment and approved by the sponsor of the assessment or the sponsor's delegated authority | 2.1.4 Plan Appraisal Details |
| 4.4.2 At a minimum, the assessment input shall specify<br>a) the identity of the sponsor of the assessment and the sponsor's relationship to the organizational unit being assessed | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details |
| b) the assessment purpose | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details |
| c) the assessment scope including:<br>1) the processes to be investigated within the organizational unit<br>2) the highest capability level to be investigated for each individual process within the assessment scope<br>3) the organizational unit that deploys the processes<br>4) the context which includes:<br>i) the size of the organizational unit<br>ii) the application domain of the products or services of the organizational unit<br>iii) key characteristics (e.g. size, criticality, complexity and quality) of the products or services of the organizational unit | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details |
| d) the assessment approach | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details |
| e) the assessment constraints considering, at minimum:<br>1) availability of key resources<br>2) the maximum duration of the assessment<br>3) specific processes or organizational units to be excluded from the assessment<br>4) the quantity and type of objective evidence to be examined in the assessment<br>5) the ownership of the assessment outputs and any restrictions on their use<br>**6)** controls on information resulting from a confidentiality agreement | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.3 Select Appraisal Team<br>2.1.4 Plan Appraisal Details |

# ISO/IEC 15504-2, Clause 4 – Performing an Assessment, cont'd

| Requirement in ISO/IEC 15504-2 (for appraisal method conformance) | FAM Paragraph |
|---|---|
| f) the identity of Process Assessment Model (including the identity of the Process Reference Model(s) used) that meet the requirements defined in clause 6.3<br>If the Process Reference Model(s) includes system or software engineering processes then the relationship of these processes with ISO/IEC 15288 or ISO/IEC 12207 Amd 1 (Annex F)) shall be defined**.** | To the Reader<br>1.2 Context and Usage<br>Appendix F<br>2.1.4 Plan Appraisal Details<br>FAA-iCMM Mapping Table supplement (in particular, 12207, 15288, and ISO/IEC TR 15504 mappings) |
| g) the identity of the competent assessor | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details |
| h) the criteria for competence of the assessor who is responsible for the assessment | 2.1.4 Plan Appraisal Details<br>Appendix G: Lead Appraiser process |
| i) the identity and role of assessees, the assessment team and assessment support staff with specific responsibility for the assessment | 2.1.2 Select Appraisal Organizational Scope<br>2.1.3 Select Appraisal Team<br>2.1.4 Plan Appraisal Details |
| j) any additional information to be collected during the assessment to support process improvement or process capability determination, e.g. specific data (or metrics) that are needed to quantify the organization's ability to meet a particular business goal (this may also include information detailed at clause 6.3.5 and associated note) | 2.1.1 Obtain Sponsor Commitment<br>2.1.2 Select Appraisal Organizational Scope<br>2.1.4 Plan Appraisal Details |
| 4.4.3 Any changes in the assessment input shall be agreed with the sponsor or the sponsor's delegated authority and documented in the assessment record. | 1.3 Appraisal Roles<br>2.1.4 Plan Appraisal Details |
| **4.5 Recording the assessment output** | |
| **4.5.1** Information which is pertinent to the assessment and will support understanding the output of the assessment shall be compiled and included in the assessment record for retention by the sponsor or their delegated authority | 2.2.10 Present Final Briefing<br>2.3.1 Prepare Appraisal Report<br>2.3.2 Manage Records |
| **4.5.2** At a minimum, the assessment record shall contain:<br>**a)** the date of the assessment<br>**b)** the assessment input<br>**c)** the identification of the objective evidence gathered<br>**d)** identification of the documented assessment process<br>**e)** the set of process profiles resulting from the assessment (i.e. one profile for each process assessed)<br>**f)** the identification of any additional information collected during the assessment as specified in clause 4.4.2. | 2.2.8 Develop Final Briefing<br>2.2.10 Present Final Briefing<br>2.3.1 Prepare Appraisal Report<br>2.3.2 Manage Records |

# ISO/IEC 15504-2 Clause 6.2 – Process Reference Models

ISO/IEC 15504-2 Clause 6.2 sets out the requirements for a Process Reference Model. Process Reference Models provide the mechanism whereby defined Process Assessment Models are related to the Measurement Framework defined by ISO/IEC 15504. Process Assessment Models are based on the process descriptions provided in Process Reference Models. In order to assure that assessment results are translatable into an ISO/IEC 15504 process profile in a repeatable and reliable manner, Process Reference Models shall adhere to certain requirements.

The FAA-iCMM is the model used with the FAM. The process dimension of the FAA-iCMM addresses Process Reference Model requirements.

| Requirement in ISO/IEC 15504-2 (for Process Reference Model) | FAA-iCMM Reference |
|---|---|
| **6.2.3 Requirements for Process Reference Models** | |
| **6.2.3.1** A process Reference Model shall contain: | |
| a) a declaration of the domain of the Process Reference Model | The domain or scope of the FAA-iCMM includes: acquisition, supply, engineering, development, operation, evolution, support, disposal, and management of products and services; disciplines include software engineering, systems engineering, acquisition, integrated process and product development, strategic management, leadership; quality management, high performance; complete product or service life cycle from conception through disposal. (See Chapter 1: Introduction) |
| b) a description, meeting the requirements of clause 6.2.4 of this International Standard, of the processes within the scope of the Process Reference Model | There are 24 process areas in the process dimension of the FAA-iCMM, in three categories as follows: (see Chapter 5: Process Areas and Base Practices)<br>Management Category:<br>Integrated Enterprise Management; Project Management; Risk Management; Supplier Agreement Management; Integrated Teaming<br>Life Cycle Category:<br>Needs; Requirements; Design; Design Implementation; Integration; Evaluation; Deployment, Transition and Disposal; Operation and Support<br>Support Category:<br>Alternatives Analysis; Outsourcing; Quality Assurance and Management; Configuration Management; Information Management; Measurement and Analysis; Work Environment; Process Definition; Process Improvement; Training; Innovation |

| Requirement in ISO/IEC 15504-2 (for Process Reference Model) | FAA-iCMM Reference |
|---|---|
| c) a description of the relationship between the Process Reference Model and its intended context of use | The FAA-iCMM is intended for use in multiple organizational contexts and to meet a full range of different business needs, application domains, and sizes. It is flexible with regard to type of product or service being acquired, developed, operated or provided. It is intended for organizations that focus on high-level issues, low-level issues or both. It is designed for selective use to meet business needs. The FAA-iCMM can be used to support process improvement, to support appraisal, and in process design. (See Chapter 3: Using the Model) |
| d) a description of the relationship between the processes defined within the Process Reference Model | Each process area (PA) provides a description of "Relationships between this PA and other PAs" (See Chapter 5: Process Areas and Base Practices). |
| **6.2.3.2** The Process Reference Model shall document the community of interest of the model and the actions taken to achieve consensus within that community of interest | |
| a) the relevant community of interest shall be characterized or specified | The FAA-iCMM is an integrated standards-based model that captures, aligns, and harmonizes content from 10 source standards and documents. The community of interest for the FAA-iCMM includes the communities of interest for those 10 sources. These communities include those concerned with software engineering, systems engineering, quality systems, performance excellence, acquisition, process assessment, integrated product and process development (See Chapter 1: Introduction) |
| b) the extent of achievement of consensus shall be documented | Four of sources integrated into the FAA-iCMM are ISO standards (15288, 12207,15504, and 9001) that went through the international consensus process. EIA/IA 731 is also a consensus based standard. Malcolm Baldrige, as national award criteria, is of very broad interest to organizations concerned about performance excellence. The CMM sources integrated into the FAA-iCMM (CMMI, SA-CMM, SE-CMM, and SW-CMM) are consensus-based documents that are or have been in broad use. The FAA-iCMM was developed by a team from government and industry that integrated existing standards and models. Extensive broad review was carried out, and the configuration control board for the model achieved consensus in approving it. The FAA-iCMM is a very mature integrated, standards-based model and has been in use since 1997. (See Chapter 1: Introduction) |
| c) if no actions are taken to achieve consensus, a statement to this effect shall be documented | Not applicable |
| **6.2.3.3** The processes defined within a Process Reference Model shall have unique process descriptions and identification | Each process area in the FAA-iCMM is identified uniquely (See Chapter 5: Process Areas and Base Practices) |

# ISO/IEC 15504-2 Clause 6.2 – Process Reference Models, cont'd

| Requirement in ISO/IEC 15504-2 (for Process Reference Model) | FAA-iCMM Reference |
|---|---|
| **6.2.4 Process descriptions** | |
| The fundamental elements of a Process Reference Model are the descriptions of the processes within the scope of the model. The process descriptions in the Process Reference Model incorporate a statement of the purpose of the process which describes at a high level the overall objectives of performing the process, together with the set of outcomes which demonstrate successful achievement of the process purpose. These process descriptions shall meet the following requirements: | |
| a) a process shall be described in terms of its purpose and outcomes | Each process area in the FAA-iCMM contains a purpose statement and goals (outcomes, expected states) (See Chapter 5: Process Areas and Base Practices). |
| b) in any process description the set of process outcomes shall be necessary and sufficient to achieve the purpose of the process | For each process area in the FAA-iCMM, the set of process outcomes (goals) summarizes the expected state to be achieved if the purpose is met and the process area is successfully implemented (See Chapter 5: Process Areas and Base Practices). |
| c) process descriptions shall be such that no aspects of the Measurement Framework as described in clause 5 of this International Standard beyond level 1 are contained or implied. | The process dimension (process areas and base practices) of the FAA-iCMM focuses on performance required to achieve capability level 1. (See Chapter 5: Process Areas and Base Practices) |
| An outcome statement describes one of the following:<br>- Production of an artifact<br>- A significant change of state<br>- Meeting of specified constraints, e.g. requirements, goals, etc | The goals or outcomes associated with each process area of the FAA-iCMM describe an expected state to be achieved and are mapped to base practices (indicators) that support achievement of each goal. Goals summarize their related base practices, and each base practice is expected to produce an artifact. Goals may also be expressed as accomplishment of specified conditions, or establishment of a specified state. (See Chapter 5: Process Areas and Base Practices) |

# ISO/IEC 15504-2 Clause 6.3 – Process Assessment Models

A Process Assessment Model provides a two-dimensional view of process capability. The process dimension describes a set of process entities that relate to the processes in the Process Reference Model; the capability dimension describes capabilities that relate to process capability levels and process attributes defined in this International Standard.

"In order to assure that assessment results are translatable into an ISO/IEC 15504 process profile in a repeatable and reliable manner, Process Assessment Models shall adhere to certain requirements. A Process Assessment Model shall contain a definition of its purpose, scope and elements; its mapping to the Measurement Framework and specified Process Reference Model(s); and a mechanism for consistent expression of results."

The FAA-iCMM is the model used with the FAM. The process and capability dimensions of the FAA-iCMM form the Process Assessment Model.

| Requirement in ISO/IEC 15504-2 (for Process Assessment Model) | FAA-iCMM or FAM Reference |
|---|---|
| **6.3.2 Process Assessment Model scope** | |
| **6.3.2.1** A Process Assessment Model shall relate to at least one process from the specified Process Reference Model(s) | The FAA-iCMM Process Assessment Model includes the entire process dimension of the FAA-iCMM Process Reference Model. |
| **6.3.2.2** A Process Assessment Model shall address, for a given process, all, or a continuous subset, of the levels (starting at level 1) of the Measurement Framework for process capability for each of the processes within its scope. | The FAA-iCMM Process Assessment Model includes the entire capability dimension of the FAA-iCMM, which defines capability levels 0 to 5 for each of the process areas in the process dimension of the FAA-iCMM. |
| **6.3.2.3** A Process Assessment Model shall declare its scope of coverage in the terms of:<br>a) the selected Process Reference Model(s) | The Process Reference Model is the FAA-iCMM. |
| b) the selected processes taken from the Process Reference Model(s) | The FAA-iCMM Process Assessment Model includes the entire process dimension of the FAA-iCMM Process Reference Model. |
| c) the capability levels selected from the Measurement Framework | The FAA-iCMM Process Assessment Model includes the entire capability dimension of the FAA-iCMM which addresses capability levels 0 through 5 of the Measurement Framework. |

# ISO/IEC 15504-2 Clause 6.3 – Process Assessment Models, continued

| Requirement in ISO/IEC 15504-2 (for Process Assessment Model) | FAA-iCMM or FAM Reference |
|---|---|
| **6.3.3 Process Assessment Model indicators**<br>A Process Assessment Model shall be based on a set of indicators that explicitly addresses the purposes and outcomes, as defined in the selected Process Reference Model, of all the processes within the scope of the Process Assessment Model; and that demonstrates the achievement of the process attributes within the capability level scope of the Process Assessment Model. The indicators focus attention on the implementation of the processes in the scope of the model. | The FAA-iCMM process dimension (Process Reference Model) (See Chapter 5: Process Areas and Base Practices) includes a set of indicators of process performance (base practices, and typical work products) for all process areas. The FAA-iCMM capability dimension (See Chapter 4: Generic Practices) includes a set of indicators of process capability (generic practices) for all capability levels 1 through 5. Both FAA-iCMM dimensions comprise the Process Assessment Model. |
| **6.3.4 Mapping Process Assessment Models to Process Reference Models**<br>A Process Assessment Model shall provide an explicit mapping from the relevant elements of the model to the processes of the selected Process Reference Model and to the relevant process attributes of the Measurement Framework. The mapping shall be complete, clear and unambiguous. The mapping of the indicators within the Process Assessment Model shall be to: | |
| a) the purpose and outcomes of the processes in the specified Process Reference Model | Indicators of process performance map to goals and purpose of each process area of the FAA-iCMM (See Chapter 5) |
| b) the process attributes (including all of the results of achievements listed for each process attribute) in the Measurement Framework. | See Table 1 below for mapping of indicators to process attributes in the Measurement Framework. |
| **6.3.5 Expression of assessment results** | |
| A Process Assessment Model shall provide a formal and verifiable mechanism for representing the results of an assessment as a set of process attribute ratings for each process selected from the specified Process Reference Model(s).<br><br>Note: the expression of results may involve a direct translation of Process Assessment Model ratings into a process profile as defined in this international standard, or the conversion of the data collected during the assessment (with the possible inclusion of additional information) through further judgement on the part of the assessor. | FAM 2.2.7 Develop Ratings<br>Use the following mechanism for each process area selected:<br>• Refer to Table 1 below: For each achievement result associated with a process attribute (left hand column), determine whether any FAA-iCMM generic practice mapped to that item (right hand column) has a significant weakness and no adequate alternatives in place. If so, that achievement result is considered “not achieved”. Else, it is considered “achieved”.<br>• Based on these achievement results, determine the process attribute rating using the percentage scale of extent of achievement (N, P, L, F) for each process attribute (requirement 5.7, page F-15)<br>• The resulting set of process attribute ratings is the process profile. |

This Table addresses requirements 6.3.4 and 6.3.5.

**Table 1: Explicit mapping of Indicators in the FAA-iCMM to the Measurement Framework**

| **Measurement Framework of ISO/IEC 15504 (Capability levels, process attributes, and their achievements)** | | **Process Assessment Model (FAA-iCMM) Indicators (Capability levels and generic practices)** | |
|---|---|---|---|
| **ID** | **Title** | **ID** | **Title** |
| **Level 0** | **Incomplete Process** | **Level 0** | **Incomplete** |
| **Level 1** | **Performed Process** | **Level 1** | **Performed** |
| PA1.1 | Process Performance attribute | | |
| | a) the process achieves its defined outcomes | GP 1.1<br>GP 1.2 | Identify the Work Scope<br>Perform the Process |
| **Level 2** | **Managed Process** | **Level 2** | **Managed: Planned and Tracked** |
| PA2.1 | Performance management attribute | | |
| | a) objectives for the performance of the process are identified | GP 2.3 | Plan the Process |
| | b) performance of the process is planned and monitored | GP 2.3<br>GP 2.12 | Plan the Process<br>Measure Process Performance |
| | c) Performance of the process is adjusted to meet plans | GP 2.14 | Take Corrective Action |
| | d) responsibilities and authorities for performing the process are defined, assigned and communicated | GP 2.5<br>GP 2.15 | Assign Responsibility<br>Coordinate with Participants and Stakeholders |
| | e) resources and information necessary for performing the process are identified, made available, allocated and used | GP 2.3<br>GP 2.4 | Plan the Process<br>Provide Adequate Resources |
| | f) interfaces between the involved parties are managed to ensure both effective communication and also clear assignment of responsibility | GP 2.15 | Coordinate with Participants and Stakeholders |
| PA2.2 | Work product management attribute | | |
| | a) requirements for the work products of the process are defined | GP 2.7 | Establish Work Product Requirements |
| | b) requirements for documentation and control of work products are defined | GP 2.9 | Manage Work Products |
| | c) work products are appropriately identified, documented, and controlled | GP 2.9 | Manage Work Products |
| | d) work products are reviewed in accordance with planned arrangements and adjusted as necessary to meet requirements | GP 2.11<br>GP 2.14 | Objectively Verify Work Products<br>Take Corrective Action |
| | | <br>GP 2.1<br>GP 2.2<br>GP 2.6<br>GP 2.8<br>GP 2.10<br>GP 2.13 | *Additional practices related to CL2*<br>Establish Organizational Policy<br>Document the Process<br>Ensure Skill and Knowledge<br>Consistently Use & Manage the Process<br>Objectively Assess Process Compliance<br>Review Performance with Higher-level Management |

# ISO/IEC 15504-2 Clause 6.3 – Process Assessment Models, continued

| **Measurement Framework of ISO/IEC 15504 (Capability levels, process attributes, and their achievements)** | | **Process Assessment Model (FAA-iCMM) Indicators (Capability levels and generic practices)** | |
|---|---|---|---|
| Level 3 | Established Process | Level 3 | Defined |
| PA3.1 | Process definition attribute | | |
| | a) a standard process, including appropriate tailoring guidelines, is defined that describes the fundamental elements that must be incorporated into a defined process | GP 3.1 | Standardize the Process |
| | b) the sequence and interaction of the standard process with other processes is determined | GP 3.1 | Standardize the Process |
| | c) Required competencies and roles for performing a process are identified as part of the standard process | GP 3.1 | Standardize the Process |
| | d) required infrastructure and work environment for performing a process are identified as part of the standard process | GP 3.1 | Standardize the Process |
| | e) suitable methods for monitoring the effectiveness and suitability of the process are determined | GP 3.1<br>GP 3.3 | Standardize the Process<br>Improve Processes |
| PA3.2 | Process deployment attribute | | |
| | a) a defined process is deployed based upon an appropriately selected and/or tailored standard process | GP 3.2 | Establish and Use a Defined Process |
| | b) required roles, responsibilities and authorities for performing the defined process are assigned and communicated | GP 3.2 | Establish and Use a Defined Process |
| | c) personnel performing the defined process are competent on the basis of appropriate education, training, and experience | GP 3.2 | Establish and Use a Defined Process |
| | d) required resources and information necessary for performing the defined process are made available, allocated and used | GP 3.2 | Establish and Use a Defined Process |
| | e) required infrastructure and work environment for performing the defined process are made available, managed and maintained | GP 3.2 | Establish and Use a Defined Process |
| | f) appropriate data are collected and analyzed as a basis for understanding the behavior of, and to demonstrate the suitability and effectiveness of the process, and to evaluate where continuous improvement of the process can be made | GP 3.3 | Improve Processes |

# ISO/IEC 15504-2 Clause 6.3 – Process Assessment Models, continued

| **Measurement Framework of ISO/IEC 15504 (Capability levels, process attributes, and their achievements)** | | **Process Assessment Model (FAA-iCMM) Indicators (Capability levels and generic practices)** | |
|---|---|---|---|
| **Level 4** | **Predictable Process** | **Level 4** | **Quantitatively Managed** |
| PA4.1 | Process measurement attribute | | |
| | a) process information needs in support of relevant defined business goals are established | GP 4.1 | Stabilize Process Performance |
| | b) process measurement objectives are derived from process information needs | GP 4.1 | Stabilize Process Performance |
| | c) quantitative objectives for process performance in support of relevant business goals are established | GP 4.1 | Stabilize Process Performance |
| | d) measures and frequency of measurement are identified and defined in line with process measurement objectives and quantitative objectives for process performance | GP 4.1 | Stabilize Process Performance |
| | e) results of measurement are collected, analysed and reported in order to monitor the extent to which the quantitative objectives for process performance are met | GP 4.1 | Stabilize Process Performance |
| | f) measurement results are used to characterize process performance | GP 4.1 | Stabilize Process Performance |
| PA4.2 | Process control attribute | | |
| | a) analysis and control techniques are determined and applied where applicable | GP 4.1 | Stabilize Process Performance |
| | b) control limits of variation are established for normal process performance | GP 4.1 | Stabilize Process Performance |
| | c) measurement data are analyzed for special causes of variation | GP 4.1 | Stabilize Process Performance |
| | d) corrective actions are taken to address special causes of variation | GP 4.1 | Stabilize Process Performance |
| | e) control limits are re-established (as necessary) following corrective action | GP 4.1 | Stabilize Process Performance |

# ISO/IEC 15504-2 Clause 6.3 – Process Assessment Models, continued

| **Measurement Framework of ISO/IEC 15504 (Capability levels, process attributes, and their achievements)** | | **Process Assessment Model (FAA-iCMM) Indicators (Capability levels and generic practices)** | |
|---|---|---|---|
| **Level 5** | **Optimizing Process** | **Level 5** | **Optimizing** |
| PA5.1 | Process innovation attribute | | |
| | a) process improvement objectives for the process are defined that support the relevant business goals | GP 5.1 | Pursue Process Optimization |
| | b) appropriate data are analyzed to identify common causes of variations in process performance | GP 5.1 | Pursue Process Optimization |
| | c) appropriate data are analyzed to identify opportunities for best practice and innovation | GP 5.1 | Pursue Process Optimization |
| | d) improvement opportunities derived from new technologies and process concepts are identified | GP 5.1 | Pursue Process Optimization |
| | e) an implementation strategy is established to achieve the process improvement objectives | GP 3.3<br>GP 5.1 | Improve Processes<br>Pursue Process Optimization |
| PA5.2 | Process optimization attribute | | |
| | a) impact of all proposed changes is assessed against the objectives of the defined process and standard process | GP 5.1 | Pursue Process Optimization |
| | b)implementation of all agreed changes is managed to ensure that any disruption to the process performance is understood and acted upon | GP 5.1 | Pursue Process Optimization |
| | c)effectiveness of process change on the basis of actual performance is evaluated against the defined product requirements and process objectives to determine whether results are due to common or special causes | GP 5.1 | Pursue Process Optimization |

# ISO/IEC 15504-2 Clause 6.3 – Process Assessment Models, continued

These requirements and translations further address requirements 6.3.4 and 6.3.5.

| Requirement in ISO/IEC 15504-2 (for process assessment models) | FAA-iCMM Reference or FAM Translation |
|---|---|
| **5.7 Rating process attributes** | |
| **5.7.1 Process attribute rating scale**<br>The extent of achievement of a process attribute is measured using an ordinal scale of measurement as defined below. | The FAM rating scale represents the extent of (significance of) weaknesses in the performance of practices or adequate alternative practices associated with process area or capability level goals. For determining process attribute ratings, 15504 achievement results are rated as FAA-iCMM goals would be, using the practice associations shown in Table 1. Then the extent of achievement is measured as indicated in 5.7.2. |
| **5.7.2 Process attribute rating values** The ordinal rating scale defined below shall be used to express the levels of achievement of the process attributes.<br>The ordinal points shall be understood in terms of a percentage scale representing extent of achievement. | |
| **N Not achieved** 0% to 15% achievement - There is little or no evidence of achievement of the defined attribute in the assessed process. | |
| **P Partially achieved** >15% to 50% achievement - There is some evidence of an approach to, and some achievement of, the defined attribute in the assessed process. Some aspects of achievement of the attribute may be unpredictable. | |
| **L Largely achieved** >50% to 85% achievement - There is evidence of a systematic approach to, and significant achievement of, the defined attribute in the assessed process. Some weakness related to this attribute may exist in the assessed process. | |
| **F Fully achieved** >85% to 100% achievement - There is evidence of a complete and systematic approach to, and full achievement of, the defined attribute in the assessed process. No significant weaknesses related to this attribute exist in the assessed process. | |
| **5.7.3 Process attribute ratings** Each process attribute shall be rated using the ordinal rating scale defined above. A process shall be assessed up to and including the highest capability level defined in the assessment scope. *(Note: The set of process attribute ratings for a process forms the process profile for that process. The output of an assessment includes the set of process profiles for all assessed processes.)* | **2.2.7 Develop Ratings** |

# ISO/IEC 15504-2 Clause 6.3 – Process Assessment Models, continued

| Requirement in ISO/IEC 15504-2 | FAA-iCMM Reference or FAM Translation |
|---|---|
| **5.7.4 Referencing of process attribute ratings** Each process attribute rating shall be given an identifier that records the process name and the process attribute assessed. (*Note: The ratings may be represented in any format, such as a matrix or as part of a database, provided that the representation allows the identification of individual ratings according to this referencing scheme.)* | **2.2.4 Consolidate Data**<br>**2.2.7 Develop Ratings** |
| **5.8 Process capability level model** | |
| **5.8.1 Achievement of process capability levels** The capability level achieved by a process shall be derived from the process attribute ratings for that process according to the process capability level model defined below. *(Note: The purpose of this requirement is to ensure uniformity of meaning when a process capability level is quoted for a process)* | See below.<br>Note that FAM ratings can be converted to ISO/IEC 15504 ratings as described above, but that the ratings are not always equivalent. For example, a process area may be rated at ISO/IEC 15504 CL2, when it would not be at FAA-iCMM CL2 since the FAA-iCMM has more stringent requirements on level achievement. |

| ISO/IEC 15504 Capability level ratings | | | FAM ratings |
|---|---|---|---|
| **Scale** | **Process Attributes** | **Rating** | |
| Level 1 | Process Performance | Largely or fully | **Capability Level 1 (Implemented)** – All process area goals are classified as Satisfied or at least one goal is classified as Satisfied with all other goals classified as Not Applicable |
| Level 2 | Process Performance<br>Performance Management<br>Work Product Management | Fully<br>Largely or fully<br>Largely or fully | **Institutionalized at Capability Level 2** – The process area is **Implemented** and capability level 2 goal is **Satisfied.** |
| Level 3 | Process Performance<br>Performance Management<br>Work Product Management<br>Process Definition<br>Process Deployment | Fully<br>Fully<br>Fully<br>Largely or fully<br>Largely or fully | **Institutionalized at Capability Level 3** – The process area is **Implemented** and capability level 2 and 3 goals are **Satisfied.** |
| Level 4 | Process Performance<br>Performance Management<br>Work Product Management<br>Process Definition<br>Process Deployment<br>Process Measurement<br>Process Control | Fully<br>Fully<br>Fully<br>Fully<br>Fully<br>Largely or fully<br>Largely or fully | **Institutionalized at Capability Level 4** – The process area is **Implemented** and capability level 2, 3, and 4 goals are Satisfied**.** |
| Level 5 | Process Performance<br>Performance Management<br>Work Product Management<br>Process Definition<br>Process Deployment<br>Process Measurement<br>Process Control<br>Process Innovation<br>Process Optimization | Fully<br>Fully<br>Fully<br>Fully<br>Fully<br>Fully<br>Fully<br>Largely or fully<br>Largely or fully | **Institutionalized at Capability Level 5** – The process area is **Implemented** and capability level 2, 3, 4, and 5 goals are **Satisfied.** |

# Appendix G: FAM Lead Appraiser Process

## FAA-iCMM Appraisal Method (FAM) Lead Appraiser Authorization/Recognition Process

FAA will “authorize” leads to perform FAA-iCMM appraisals in the FAA, and will “recognize” leads to perform FAA-iCMM appraisals in organizations outside the FAA. Lead appraisers lead FAA-iCMM appraisals according to the FAM (which includes training of the appraisal team).

The FAM Lead Appraiser Authorization/Recognition Process recognizes the qualifications of those who are already authorized to lead appraisals using related appraisal methods. In such cases, Lead Appraiser Training is not typically required, although other requirements apply.

This document describes the FAM lead qualifications and the authorization/recognition process for all FAM variations. Note however that authorized leads for the DELTA and iCMM:ISO9001 appraisal variations are required to be authorized leads for the Full Internal method; thus details for those variations are not included in the following tables. In addition, Self-Appraisal leads do not apply to become leads, but should meet the qualifications noted.

The following acronyms are used in this appendix:

| Name | Acronym |
|---|---|
| *FAM Methods and Variations* | |
| Full Internal Appraisal | FI |
| Full External Evaluation | FE |
| Delta Appraisal | DELTA |
| FAA-iCMM : ISO 9001 Appraisal | iCMM:ISO9001 |
| Facilitated Discussion Appraisal | FD |
| Document-intensive Appraisal | DI |
| Questionnaire-based Appraisal | QBA |
| Interview-based Appraisal | IB |
| Value Analysis Appraisal | VA |
| Gap Analysis Appraisal | GAP |
| Formal Appraisal Readiness Review | FARR |
| Self-Appraisal | SELF |
| | |
| *Other Appraisal Methods* | |
| CMM Based Appraisal -Internal Process Improvement | CBA-IPI |
| SE-CMM Appraisal Method | SAM |
| EIA/IS 731 Appraisal Method | EIA/IS 731-2 |
| Standard CMMI Appraisal Method for Process Improvement – Class A | SCAMPI-A |
| ISO/IEC 15504 Process Assessment | ISO/IEC 15504 |
| CMM Based Appraisal –Software Capability Evaluation | SCE |
| Interim Profile | IP |
| Software Process Assessment | SPA |

### Requirements for FAM Lead Appraiser (see also recommended attributes on page G-4)

| **Requirements to be an applicant** | **FI or FE[1]** | **DI** | **QBA** | **IB** | **FD** | **VA** | **GAP** | **FARR** | **SELF** |
|---|---|---|---|---|---|---|---|---|---|
| *Appraisal participation (in the past 4 years)* | Two full[2] appraisals | One full appraisal | One full appraisal | Two full appraisals | N/A | Two full appraisals or one full and one VA | Two full appraisals | Two full appraisals | N/A |
| *Experience in one or a combination of FAA-iCMM source disciplines* | 7 years | 3 years | 3 years | 3 years | 3 years | 3 years | 5 years | 5 years | 2 years |

N/A denotes the requirement is not applicable.

Notes:
1. These qualifications pertain to both the FI and FE methods, as well as to both DELTA and iCMM:ISO9001 lead appraisers.
2. Full appraisals are: FI, FE, CBA-IPI, CBA-SCE, SAM, EIS/IS 731-2, SCAMPI-A, GAP, or ISO/IEC 15504 appraisal vs. FAA-iCMM or one of its source CMMs or EIA/IS 731 or ISO/IEC 15504 conformant process assessment models.

| **Requirements to be a candidate** | **FI or FE** | **DI** | **QBA** | **IB** | **FD** | **VA** | **GAP** | **FARR** | **SELF** |
|---|---|---|---|---|---|---|---|---|---|
| *Completion of FAA-iCMM model training* | Applies | Applies | Applies | Applies | Applies | Applies | Applies | Applies | Applies |
| *Completion of Lead Appraiser Training* | Applies unless waived[3] | Applies | Applies unless waived[4] | Applies unless waived[5] | Applies | Applies | Applies | Applies | N/A |
| *FAA-iCMM appraisal participation*[6] | One FI | One DI | One QBA | One IB | N/A | One VA | One GAP | One FARR | N/A |

| **Requirements to be a Lead** | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| *Successfully lead an appraisal (of the type applied for as lead) being observed by an authorized lead*[7] | Applies | Applies | Applies | Applies | N/A | Applies | Applies | Applies | N/A |

Notes:
3. Further lead training is not required for authorized CBA-IPI, CBA-SCE, SCAMPI-A, EIA/IS 731-2, or ISO/IEC 15504 Leads. May also waive this requirement for leads for other robust methods.
4. Further lead training is not required for IP leads.
5. Further lead training is not required for SAM, EIA/IS 731-2, or SPA leads.
6. This appraisal may be one of the appraisals used to meet applicant requirements, but must be conducted vs. the FAA-iCMM.
7. This requirement is waived for FAA “recognized” leads who perform FAA-iCMM appraisals outside the FAA.

### Recommended Skills and Attributes for Effective Appraisal Leadership

The following skills and attributes are additionally recommended for Lead Appraisers:

- Oral and written communication skills
- Ability to interact with management and members of the technical staff
- Appreciation of the value of process improvement
- Training skills
- Ability to work effectively in a team environment and knowledge of group facilitation and team building techniques
- Diplomacy (professionalism and decorum)
- Discretion (maintain confidentiality)
- Persistence and resistance handling ability (including conflict resolution)
- Judgment and leadership (respected)
- Integrity (no conflict of interest)
- Rapport (open and honest communication)

## FAM Lead Authorization/recognition Process

**FAA Authorized Lead Appraiser Process:**

1. Potential leads apply to be authorized leads
– The application is submitted to the FAA Chief Engineer for Process Improvement. The application should indicate the FAM method or variation(s) where leadership is sought, and should address each of the requirements identified above.
– The applicant's qualifications are reviewed by the FAM Lead Authorization group. Interviews may be held if necessary to clarify any items on the application.
– The applicant is notified of the results of applicant review. Results may be: accepted as applicant, rejected as applicant with reasons noted, defer decision until specific criteria are more fully satisfied.

2. Accepted applicants become candidates
– Applicant completes Lead appraiser training in the method or variation, or provides evidence of already being an authorized lead of one of the appraisal methods noted.
– Applicant participates in FAA-iCMM appraisal(s) using the method where leadership is being sought, or provides evidence of previous participation.

3. Candidates successfully lead an appraisal, being observed by an authorized lead.
Candidates are notified when authorization is granted.

4. Authorizations granted are subject to tri-annual review by the FAM Lead Authorization Group.

**FAA Recognized Lead Appraiser Process:**

1. Potential leads apply to be recognized leads
– The application is submitted to the FAA Chief Engineer for Process Improvement. The application should indicate the FAM method or variation(s) where leadership is sought, and should address each of the requirements identified above.
– The applicant's qualifications are reviewed by the FAM Lead Authorization group. Interviews may be held if necessary to clarify any items on the application.
– The applicant is notified of the results of applicant review. Results may be: accepted as applicant, rejected as applicant with reasons noted, defer decision until specific criteria are more fully satisfied.

2. Accepted applicants become recognized leads
– Applicant completes Lead appraiser training in the method or variation, or provides evidence of already being an authorized lead of one of the appraisal methods noted.
– Applicant participates in FAA-iCMM appraisal(s) using the method where leadership is being sought, or provides evidence of previous participation
– Applicants are notified when recognition is granted.