
**The Federal Aviation Administration
Integrated Capability Maturity Model^â
(FAA-iCMM^â)**

**Version 1.0 to Version 2.0
Transition Guidelines**

Linda Ibrahim



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1. Introduction

These guidelines are intended for programs or organizations that are currently using the Federal Aviation Administration integrated Capability Maturity Model (FAA-iCMM or iCMM) v1.0 in their improvement efforts. You will find here information to help you plan and transition to iCMM v2.0 based on the improvements you have already implemented. It helps answer questions such as:

- You have achieved maturity level 2 on the iCMM v1.0. What is required to achieve that level on iCMM v2.0?
- You have achieved capability level 2 on several of the process areas staged at maturity level 2 in iCMM v1.0. What is required to sustain that level, or to achieve that level on the iCMM v2.0, given where you are now?
- You are planning to achieve maturity level 3, or capability level 3 in selected process areas. What is required at level 3 in the new version?
- What do levels 4 and 5 look like? What else is new in the model?
- How should I plan for transition?

These guidelines do not replace the necessity of examining the full version 2.0 model description. They intend to point out main transition considerations, and places to look when planning for transition.

These guidelines are organized as follows:

1. Introduction
2. Frequently Asked Questions
3. Mapping Tables to Aid Transition
 - 3.1 Using Table 1: Version 1.0 to Version 2.0
 - 3.2 Using Table 2: Version 2.0 to Version 1.0
4. Transitioning to Level 2
 - 4.1 Maturity Level 2 – PA Staging Changes
 - 4.2 Capability Levels 1 and 2 – Generic Practice Changes
 - 4.3 ML2 Process Areas – Base Practice Changes
5. Transitioning to Level 3
 - 5.1 Maturity Level 3 – PA Staging Changes
 - 5.2 Capability Level 3 – Generic Practice Changes
 - 5.3 ML3 Process Areas – Base Practice Changes
6. What’s left?
 - 6.1 Maturity Levels 4 and 5 – PA Staging Changes
 - 6.2 Capability Levels 4 and 5 – Generic Practice Changes
 - 6.3 The ML5 Process Area – Base Practice Changes
 - 6.4 The “Unstaged” Process Areas

Appendix A - Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0

Appendix B - Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0

2. Frequently Asked Questions

First, some frequently asked questions regarding transition:

- ***Do I have to switch to iCMM v2.0?***
Yes, because at some point iCMM v1.0 will no longer be supported.
- ***For how long will iCMM v1.0 be supported?***
iCMM v1.0 will be supported during a “sunset period” of about two years from release of v2.0, or until around the end of FY 2003. During this time, training will continue on version 1.0 (on request only), and appraisals will be performed with reference to the version identified by the appraisal sponsor.
- ***What happens to the ratings I’ve already achieved?***
Appraisal results indicate the performance level that was achieved at a given point in time, using a particular reference model. Those results do not change.
- ***What happens to the improvements I’ve already institutionalized?***
They are yours! Nothing in the new version detracts from improvements already made. Version 2.0 provides updated, improved guidance to help further the ongoing improvement effort.
- ***Who should transition now, who later?***
If achieving iCMM v1.0 maturity level 2 or 3 is a near-term goal (say less than one year or so), planning for transition after accomplishment of that goal is recommended.
If capability level achievements are the goals, review the relevant revised process areas right away, weigh the advantages of version 2.0, and plan accordingly.
All new programs should use version 2.0 right away (no transition required!)
- ***How do I transition?***
 1. Allocate some time to review these guidelines and attend v2.0 training/workshops.
 2. Consider your current process improvement goals and achievements.
 3. Consider the processes that you currently perform.
 4. Use these guidelines to help determine if any changes to your current process are required to meet improved v2.0 requirements (perform a “gap analysis” of sorts) (also refer to the full model description).
 5. Develop a plan to modify processes if any needed changes were identified.
 6. Implement the plan.
- ***Is there a general FAQ sheet on version 2.0?***
Yes – you can find it on the iPG and AIO websites. (www.faa.gov/ipg or www.faa.gov/aio)

- ***My organization has been pursuing ISO 9001 certification. Will there be guidelines relating ISO 9001 and iCMM version 2.0?***

Yes – guidelines will be available relating these and explaining how to use iCMM v2.0 if ISO 9001 certification is also an objective. Guidelines relating iCMM v2.0 to other source models and standards will also be provided if required or requested.

3. Mapping Tables to Aid Transition

Two mapping tables are provided as appendices. Table 1 maps iCMM v1.0 process areas, goals, and practices to iCMM v2.0; Table 2 maps the other way, from iCMM v2.0 process areas, goals, and practices to v1.0 sources. These tables can be used in a variety of ways, as you see fit. The mapping information included in this document is extracted and reformatted from other documents including *Mapping Table Supplement to the FAA-iCMM Version 2.0*, available at the iPG and AIO websites.

(Note that in version 2, the detailed mapping tables indicating sources of practices for each process area have been removed from the process area descriptions in the model itself. These tables (since they are quite lengthy) are in the separately published mapping table supplement.)

3.1 Using Table 1: Version 1.0 to Version 2.0

Table 1 answers the question: “Where did that v1.0 practice go in the new version?” Note that all practices in v1.0 are included in v2.0, but they may have moved to a different process area, or to more than one other process area, etc. Here are some example situations:

Situation	Version 1.0	Version 2.0	Comment
V1.0 practice covered in more than one v2.0 practice	BP 11.03 Establish Estimates	BP 11.03 Establish Planning Parameters BP 11.04 Estimate Project Resource Requirements	Change provides more clarity and guidance through increased granularity of subject coverage
V1.0 practice moved to different PA	BP 01.03 Develop System Requirements	BP 02.07 Record and Baseline Requirements	Change makes implementation easier
	BP 17.01 Conduct Peer Reviews	BP 08.04 Evaluate Incremental Work Products	In this case, PA 17 Peer Review in its entirety is now in PA 08 Evaluation
V1.0 practice still in same PA, but renamed	BP 16.05 Communicate Configuration Status	BP 16.05 Record and Report Configuration Status	Need to read the practice: the practices are related but ... is “record” included in “communicate”?
V1.0 practice covered by BP and GP	BP 13.04 Review and Validate Risk Assessment	BP 11.11 Review and Analyze Project Performance GP 2.13 Review Performance with Higher-level Management (applied to PA13)	The BP is no longer part of PA13. It is covered via PM review and review of RM performance.

Situation	Version 1.0	Version 2.0	Comment
All things look equal	BP 13.03 Assess Risks	BP 13.03 Assess Risks	Still need to look at the v2.0 BP description; may be additional guidance from the new breadth of standards relating to each practice.

3.2 Using Table 2: Version 2.0 to Version 1.0

Table 2 maps iCMM v2.0 goals and practices to iCMM v1.0 thus illustrating *one* of the sources (i.e., iCMM v1.0) for the practices in the new version. (Other sources for v2.0 practices are identified in the separately published *Mapping Table Supplement* previously mentioned). Here are some example situations:

Situation	Version 2.0	Version 1.0	Comment
V2.0 practice includes v1.0 practices from different PAs	BP 05.03 Prepare for the Solicitation or Tasking	BP 05.03 Prepare for the Solicitation BP 08.03 Incorporate Evaluation Requirements into the Solicitation and Contract	Related practices were brought together for ease of implementation.
V2.0 practice has no v1.0 source, although the PA exists in v1.0 (Case 1)	BP 11.01 Define Project Objectives, Scope, and Outputs	-	This is an essential practice that v1.0 did not cover within this PA (of course you are probably doing this anyway).
V2.0 practice has no v1.0 source, although the PA exists in v1.0 (Case 2)	BP 09.02 Prepare Facility and Infrastructure Environment	-	This is part of Deployment extension to PA 09.
V2.0 practice has no v1.0 source (case 3)	BP 00.02 Align to Achieve the Vision	-	This is a new PA – no transition issue! (PA 00 Integrated Enterprise Management)
All things look equal (almost)	BP 12.03 Maintain Supplier Agreement Integrity	BP 12.03 Maintain Contract Integrity	The v2.0 PA refers to all kinds of supplier agreements. Need to look at the BP description in any case.

4. Transitioning to Level 2

You have achieved maturity level 2 on the iCMM v1.0, or you have achieved capability level 2 on several of the process areas staged at maturity level 2 in iCMM v1.0. What would be required to sustain that level, or achieve that level on the iCMM v2.0, given where you are now?

Here we look at changes in maturity level (ML) staging, generic practices, and at each of the ML2 process areas in iCMM v2.0 in detail. Note however, that it is still very important to look at the full descriptions provided in version 2.0, since this is simply a guide.

4.1 Maturity Level 2 - PA Staging Changes

There are still 9 PAs staged at ML2. BUT ... they are different, as shown below.

Version 2 ML2 PAs	Version 1 ML2 PAs
-	<i>PA 01 Needs</i>
PA 02 Requirements	PA 02 Requirements
PA 05 Outsourcing	PA 05 Outsourcing
PA 08 Evaluation	PA 08 System Test and Evaluation
PA 09 <i>Deployment, Transition, and Disposal</i>	PA 09 Transition
PA 11 Project Management	PA 11 Project Management
PA 12 Supplier Agreement Management	PA 12 Contract Management
PA 15 Quality Assurance and Management	PA 15 Quality Assurance and Management
PA 16 Configuration Management	PA 16 Configuration Management
<i>PA 18 Measurement and Analysis</i>	-

From the broad perspective, a program or organization already at ML2 on v1.0 would need to additionally achieve capability level 2 in *PA 18 Measurement and Analysis* in order to achieve ML2 on v2.0. In addition, PA 09 Transition processes would need to be extended to cover the new scope of *PA 09 Deployment, Transition, and Disposal*.

On the other hand, a program or organization planning to achieve ML2 would not need to include achieving capability level 2 in *PA 01 Needs* in its near-term process improvement planning since this PA is no longer staged at ML2 in v2.0. (PA 01 Needs is now staged at ML3). Of course those who have already achieved CL2 in PA 01 Needs have a jump start to level 3! And in order to successfully implement PA 02, it is critical that several practices in PA 01 be performed. (See PA 01 discussion on page 5-3).

4.2 Capability Levels 1 and 2 – Generic Practice Changes

For those programs or organizations that are already at CL2 in v1.0, what is required to sustain that level on v2.0? There are changes in generic practices as well as base practices. First the generic practice changes are explained.

Capability Level 1

There has been no change in the fact that you must achieve capability level 1 in order to be at capability level 2. The capability level 1 changes are noted below.

CL1 in iCMM Version 2	CL1 in iCMM Version 1
<i>Capability Level 1: Performed</i> Goal: The process achieves the goals of the process area.	Capability Level 1 – Initial: Performed Informally No goal explicitly stated
1.1 Identify Work Scope	-
1.2 Perform the Process	1.1 Perform the Process

There is a new generic practice (*GP 1.1 Identify Work Scope*) at capability level 1 in v2.0 that requires identifying the scope of the work to be performed, the work products or services to be produced by performing the process, and communicating this information to those performing the work. Also the capability level name has been changed and a goal has been introduced explicitly stating what had only been implicit in v1.0.

Capability Level 2

Capability level 2 changes are noted below.

CL2 in iCMM Version 2	CL2 in iCMM Version 1
<i>Capability Level 2: Managed: Planned and Tracked</i> Goal: The process is institutionalized as a managed (planned and tracked) process.	Capability Level 2: Repeatable: Planned and Tracked Goal: The activities for the process are institutionalized to support a repeatable process.
2.1 Establish <i>Organizational Policy</i>	2.1 Establish Policy
2.2 Document the Process	2.5 Document the Process
2.3 Plan the Process (<i>tied to objectives</i>)	2.6 Plan the Process
2.4 Provide Adequate Resources (<i>as planned</i>)	2.2 Allocate Adequate Resources
2.5 Assign Responsibility (<i>includes “commitment”</i>)	2.3 Assign Responsibility
2.6 Ensure <i>Skill and Knowledge</i>	2.4 Ensure Training
2.7 Establish Work Product Requirements	-
2.8 Consistently Use and Manage the Process (<i>emphasizes consistent use</i>)	2.7 Use a Repeatable Process
2.9 Manage Work Products	2.8 Manage Configurations
2.10 <i>Objectively</i> Assess Process Compliance.	2.9 Assess Process Compliance
2.11 <i>Objectively</i> Verify Work Products	2.10 Verify Work Products 3.3 <i>Perform Reviews with Peers</i>
2.12 Measure <i>Performance (performance is relative to objectives in the plan)</i>	2.11 Measure Process
2.13 Review <i>Performance</i> with Higher-level Management	2.12 Review Status
2.14 Take Corrective Action (<i>for any deviations, not just status</i>)	2.13 Take Corrective Action
2.15 Coordinate with Stakeholders	2.14 Coordinate Within the Project 3.4 <i>Coordinate with Affected Groups</i>

The new generic practice (*GP 2.7 Establish Work Product Requirements*) introduced at capability level 2 in v2.0 requires establishing and maintaining requirements on work products and services that result from the process. These requirements are used in developing products and services and in verifying that products and services meet requirements.

By introducing GP 2.7 explicitly, it should be easier to implement *GP 2.11 Objectively Verify Work Products*, since verification is performed in relation to requirements established in GP 2.7. Also, defect reviews with peers are specifically introduced as a potential means for performing GP 2.11, and *GP 3.3 Perform Reviews with Peers* no longer exists at a separate GP in version 2 (it has been integrated into GP 2.11, and placed at a lower capability level).

The general process management focus at capability level 2 has been more explicitly tied to process performance objectives in several of the GPs. For example, the plan for the process (GP 2.3) includes process performance objectives; process performance is measured against the plan (GP 2.11), reviewed with higher-level management (GP 2.12), and corrective action taken to address any problems that need attention (GP 2.14).

Finally, *GP 2.15 Coordinate with Stakeholders* includes coordination both within the project and with other affected groups, thus integrating and replacing the two separate GPs from v1.0 (GP 2.14 Coordinate Within the Project and GP 3.4 Coordinate with Affected Groups).

4.3 ML2 Process Areas – Base Practice Changes

This section addresses the base practices in the nine ML2 process areas in version 2.0 and discusses their relationships to version 1.0 practices. These discussions focus on what is required in version 2.0. Note that, as in v1.0, you may perform alternative practices and still achieve PA goals. However, to simplify these guidelines, PA goals are not included in the discussion below. (PA goals are included in the mapping tables at the end of this document).

A general point to note is that version 2.0 base practices have a new feature called “Additional Practice Guidance.” Additional practices are listed here from various source models and standards that are related to the base practice characteristic (and considered potentially useful), but that may go beyond what is considered base or essential. This feature is optional, as it may not pertain to all base practices. These additional practices may be useful for process improvement purposes, but will not be considered in appraisals.

PA 02 Requirements

Version 2.0 PA 02 Requirements Base Practices	Version 1.0 Related Practices
<i>BP 02.01 Identify Functional and Performance Requirements</i>	-
<i>BP 02.02 Identify Nonfunctional Requirements and Constraints</i>	-
BP 02.03 Identify key requirements	BP 02.02 Identify key requirements
BP 02.04 Derive requirements	BP 02.03 Derive and partition requirements <i>BP 03.01 Derive system architecture requirements</i>
BP 02.05 Identify <i>external</i> interface requirements	BP 02.04 Identify interface requirements
BP 02.06 Analyze requirements	BP 02.06 Analyze requirements BP 06.02 Analyze Allocated Requirements
BP 02.07 Record and baseline requirements	<i>BP 01.03 Develop System Requirements</i> <i>BP 01.04 Obtain Customer Agreement</i> BP 02.07 Capture and baseline requirements
BP 02.08 Analyze and <i>resolve</i> requirements change requests	BP 02.08 Analyze and incorporate requirements changes
BP 02.09 Maintain consistency and traceability	BP 02.09 Maintain Consistency and traceability BP 06.08 Maintain Consistency across Software Work Products

New practices: Note that there are two new base practices: *BP 02.01 Identify Functional and Performance Requirements* and *BP 02.02 Identify Nonfunctional Requirements and Constraints*. These practices provide improved clarity and specificity regarding the types of requirements developed. BP 02.01 additionally includes any requirements pertaining to safety, security, human factors, or other specialized areas, and BP 02.02 directs attention to process requirements, operational environment constraints, human factors limitations, full life cycle requirements, policy or legal constraints, etc.

Practices moved to and received from PA 01: Some version 1.0 users found difficulty in interpreting and implementing practices previously split between PA 01 and PA 02. To alleviate this situation the following changes were made: *BP 02.02 Develop Detailed Operational Concept* from v1.0 is now removed from PA 02 and included in PA 01 Needs, where practices pertaining to the operational context are included. *BP 01.03 Develop System Requirements* and *BP 01.04 Obtain Customer Agreement* from v1.0 are now removed from PA 01 and included in PA 02 since these practices deal with developing, recording, agreeing to, and baselining the statement of requirements developed in PA 02 (not the statement of need developed in PA 01).

Practices moved to and received from PA 03: Only *external* interface requirements are identified in *BP 02.05 Identify External Interface Requirements* as internal interfaces among solutions elements are part of design activities in PA 03 Design. Similarly, *BP 02.05 Allocate Requirements* from v1.0 is now included as a design activity in PA 03 Design. However, allocation of requirements among functional partitions or objects, as

well as partitioning of requirements into groups, might still be performed, if appropriate, as part of BP 02.01. These activities are not required however since they are dependent on the requirements analysis method chosen by the implementer. The derivation of system architecture requirements, previously in PA 03, is now included in PA 02.

What about the software practices included from PA 06? Practices from PA 06 Software Development and Maintenance, in version 1.0, have been dispersed to the relevant life cycle PAs in v2.0 that pertain. There are no software-specific process areas in v2.0.

PA 05 Outsourcing

Version 2.0 PA 05 Outsourcing Base Practices	Version 1.0 Related practices
BP 05.01 Identify Needed Products or Services	BP 05.01 Identify Needed System or Process Components
BP 05.02 Identify Competent Suppliers	BP 05.02 Identify Competent Suppliers
BP 05.03 Prepare for the Solicitation or Tasking	BP 05.03 Prepare for the solicitation <i>BP 08.03 Incorporate Evaluation Requirements into the Solicitation and Contract</i>
BP 05.04 Choose Supplier	BP 05.04 Choose Supplier
BP 05.05 Communicate with Suppliers	BP 05.05 Communicate with Suppliers

There are no new practices in this PA. The PA more specifically includes items that may be acquired from off-the-shelf vendors, or that might be acquired by a credit card purchase.

BP 05.03 Prepare for the Solicitation or Tasking specifically requires the inclusion of evaluation criteria in the solicitation or tasking package. This requirement had previously been included as a practice in PA 08 System Test and Evaluation in version 1.0, but has now been placed in PA 05 Outsourcing for improved clarity and ease of implementation. (Please note that movement of a base practice from one PA to another PA in the model does not require any changes in processes already being performed. The practice has been moved to enhance the usefulness of the model in guiding you in improving the way you carry out your business!)

Note that the supplier may be internal to the organization.

PA 08 Evaluation

Version 2.0 PA 08 Evaluation Base Practices	Version 1.0 Related Practices
BP 08.01 Develop Evaluation Strategy.	BP 08.01 Develop Evaluation Strategy and Requirements.
BP 08.02 Develop Evaluation Procedures	BP 08.02 Define Evaluation Procedures
<i>BP 08.03 Establish and Maintain Evaluation Environment</i>	BP 08.05 Perform Planned Evaluations
<i>BP 08.04 Evaluate incremental work products</i>	BP 08.05 Perform Planned Evaluations <i>BP 17.01 Conduct Peer Reviews</i> BP 06.03 Design Software (includes design evaluation) BP 06.05 Test Software
<i>BP 08.05 Verify end-Products</i>	BP 08.05 Perform Planned Evaluations BP 07.03 Verify System Element Correctness BP 07.04 Verify System Element Interfaces BP 06.06 Perform Integration Testing
<i>BP 08.06 Validate end-products</i>	BP 08.05 Perform Planned Evaluations
BP 08.07 Analyze Evaluation Results	BP 08.06 Analyze Evaluation Results <i>BP 17.02 Record and Analyze Peer Review Data.</i>

PA 08 Evaluation in v2.0 provides much more focus and specific guidance than its v1.0 predecessor, PA 08 System Test and Evaluation. This PA has always included both verification and validation, of both incremental and end-products, but this is stated much more explicitly in version 2. Furthermore, two practices that were included in PA 08 in version 1.0 have been moved to other PAs, to which they are more closely aligned, in order to improve clarity and simplify implementation: *BP 08.03 Incorporate Evaluation Requirements into the Solicitation and Contract* to PA 05 Outsourcing, and *BP 08.04 Monitor Developer Performance* to PA 12 Supplier Agreement Management.

In v2.0, BP 08.03, BP 08.04, BP 08.05, and BP 08.06 all elaborate on a single practice from v1.0 (*BP 08.05 Perform Planned Evaluations*). This should provide improved guidance in this area. So if you have already implemented PA 08, you should ensure that your implementation includes the more specific guidance of version 2.

Another noteworthy change in PA 08 is that it now completely includes peer review practices that had been identified in a separate process area in version 1 (PA 17 Peer Review). In PA 08, peer reviews are identified as a method for incremental work product review. However, an equally effective alternative method can be used.

Two verification practices previously included in PA 07 Integration are now included in PA 08: *BP 07.03 Verify System Element Correctness* and *BP 07.04 Verify System Element Interfaces*.

As mentioned previously, practices from PA 06 have been dispersed across applicable life cycle PAs, including PA 08 Evaluation, as noted in the table above.

PA 09 Deployment, Transition, and Disposal

Version 2.0 PA 09 Deployment, Transition and Disposal Base Practices	Version 1.0 Related Practices
BP 09.01 Develop, Deploy, and Maintain a Strategy for Deployment, Transition and Disposal Activities	BP 09.02. Develop and follow transition to support strategy
<i>BP 09.02 Prepare Facility and Infrastructure Environment</i>	-
BP 09.03 Oversee Configuration of Product or Service	BP 09.01 Conduct Inventory BP 09.04 Oversee the Configuration Management of the System BP 09.05 Oversee the Requirements Management of the System
BP 09.04 Demonstrate Support Capability	BP 09.03 Demonstrate Support Capability
BP 09.05 Transition Product or Service	BP9.02 Develop and follow Transition to Support Strategy BP9.06 Transfer and Tailor Developer's Processes to Support Organization
<i>BP 09.06 Deactivate and Dispose Replaced Product and/or Dispense with Service</i>	-

The scope of PA 09 has expanded considerably in version 2.0. Whereas PA 09 (Transition) in version 1.0 focused on transitioning a product or service to the support environment, PA 09 (Deployment, Transition, and Disposal) now includes transitioning to the customer/stakeholder and placing it into operation. Deactivation and disposal of replaced products and services are also included.

To include these new features, there are 2 new base practices: *BP 09.02 Prepare Facility and Infrastructure Environment*, and *BP 09.06 Deactivate and Dispose Replaced Product and/or Dispense with Service*. Other base practices have been expanded to cover the extended scope.

PA 11 Project Management

Project Management is still the largest process area in the iCMM in terms of the number of base practices ... and this has now increased from 10 to 12 practices. In general, these new practices were introduced to provide additional structure, guidance, and more complete coverage of standard project management practices.

Version 2.0 PA 11 Project Management Base Practices	Version 1.0 Related Practices
<i>BP 11.01 Define Project Objectives, Scope, and Outputs</i>	-
BP 11.02 Define the Activities and Life Cycle Approach	BP 11.01 Identify the Activities BP 11.02 Identify the Life Cycle Approach
<i>BP 11.03 Estimate Planning Parameters</i>	BP 11.03 Establish Estimates
<i>BP 11.04 Estimate Project Resource Requirements</i>	BP 11.03 Establish Estimates
BP 11.05 Establish Schedules	BP 11.04 Establish Schedules
BP 11.06 Establish and Maintain Plans	BP 11.05 Establish and Maintain Plans
BP 11.07 Establish Commitment	BP 11.06 Establish Commitment
<i>BP 11.08 Organize to meet Project Objectives</i>	-
<i>BP 11.09 Direct the Project</i>	-
BP 11.10 Monitor Project Performance	BP 11.07 Monitor the Project according to Established Plans BP 11.08 Track Technical Process
BP 11.11 Review and Analyze Project Performance	BP 11.09 Review Performance Against Established Plans <i>BP 13.04 Review and Validate Risk Assessment</i>
BP 11.12 Take Corrective Action	BP 11.10 Take Corrective Action <i>BP 18.04 Take Corrective Action</i>

New base practices: There are three new base practices. *BP 11.01 Define Project Objectives, Scope, and Outputs* was introduced to assure project objectives are identified, including measures that will be used to evaluate performance. It includes confirming the customers for project deliverables, and confirming that project objectives are traceable to approved needs and/or requirements. *BP 11.08 Organize to meet Project Objectives* includes identifying how the project will be structured and organized, including individuals or teams that will carry out project activities. *BP 11.09 Direct the Project* is about performing the day-to-day direction, communication, and coordination activities of Project Management.

Extended practice: Two base practices (BP 11.03 and BP 11.04) are now provided that relate to estimation. These provide more specific guidance than was available in related v1.0 base practice *PA 11.03 Establish Estimates*.

Combined practices: *BP 11.02 Define the Activities and Life-cycle Approach* focuses on the activities that the project will carry out, and how they are structured in order to form a basis for planning and scheduling project activities. These practices had been identified in 2 separate base practices in version 1.0 (PA 11.01 and BP 11.02), but were combined

since they are so highly related. Similarly, the single practice, *BP 11.10 Monitor Project Performance* in version 2.0, combine the related practices of programmatic monitoring (BP 11.07) and technical tracking (BP 11.08).

PA 12 Supplier Agreement Management

PA 12 Supplier Agreement Management Base Practices	Version 1.0 Related Practices
BP 12.01 Use Planning documents:	BP 12.01 Review and Use Planning documents:
BP 12.02 Review and Monitor Agreement Performance	BP 12.02 Conduct Periodic Reviews <i>BP 08.04 Monitor Developer Performance</i>
BP 12.03 Maintain Supplier Agreement Integrity	BP 12.03 Maintain Contract Integrity
BP 12.04 Monitor Supplier's <i>Plans, Processes, Activities and Products</i>	BP 12.04 Monitor Contractor's Support Processes
BP 12.05 Foster Cooperative and Collaborative Environment.	BP 12.05 Foster Cooperative Environment
<i>BP 12.06 Analyze and Direct Agreement Activities</i>	-
<i>BP 12.07 Administer Supplier Agreement</i>	-
<i>BP 12.08 Determine Product or Service Acceptance</i>	-

The main thing to note is that there are three new base practices in version 2 (*BP 12.06*, *BP 12.07*, and *BP 12.08*). These provide more specific guidance regarding activities generally associated with Supplier Agreement Management, but that had not been directly included in version 1.0. You should check to see if these activities are being performed as part of your current contract/supplier agreement process, and make adjustments if necessary.

BP 08.04 Monitor Developer Performance (in version 1) is now included as part of the work entailed in *BP 12.02 Review and Monitoring Agreement Performance*. If you are performing this practice now, there is no special transitioning required. Note however that monitoring agreement performance in version 2 emphasizes the use of quantitative means for supplier monitoring.

Finally, BP 12.04 has been strengthened and extended to include monitoring of supplier's plans and quality assurance, configuration management, corrective action, and risk management systems as well as process activities, results, and products.

PA 15 Quality Assurance and Management

Version 2.0 PA 15 Quality Assurance and Management Base Practices	Version 1.0 Related Practices
<i>BP 15.01 Establish a Quality Management System</i>	-
BP 15.02 Monitor <i>Process</i> Compliance	BP 15.01 Monitor Process Compliance BP 15.02 Evaluate Product and Process
BP 15.03 Monitor <i>Product</i> and Service Quality	BP 15.02 Evaluate Product and Process
BP 15.04 Record and Report Results	BP 15.04 Record and Report Results
BP 15.05 Analyze Quality	BP 15.03 Detect Need for Corrective Actions BP 15.05 Analyze Quality <i>BP 19.01 Conduct Causal Analysis Meetings</i>
BP 15.06 Initiate Quality Improvement	BP 15.06 Initiate Quality Improvement Opportunities <i>BP 19.02 Coordinate Action Proposals</i> <i>BP 19.04 Revise Processes for Defect Prevention</i>
<i>BP 15.07 Evaluate the Effect of Changes</i>	<i>BP 19.03 Document and Track Prevention Data</i>

There are two major changes associated with PA 15: the requirement to establish a quality management system, and the integration and inclusion of *PA 19 Prevention* from version 1.0.

BP 15.01 Establish a Quality Management System is a case of what we call “controlled redundancy” in iCMM version 2.0. This is basically a redundant practice as it is covered by the level 2 generic practices when they are applied to Quality Assurance and Management. In that sense it is “raising the bar” for performing PA 15 at CL1, since this new practice does require a documented process for performing quality assurance and management, policy, and QA on the process! On the other hand, if you have achieved CL2 in PA 15 version 1.0, you probably already have a quality management system in place.

By including PA 19 Prevention here, this is a logical extension of what had previously been separated out and staged at ML5! An integral part of quality management is not only correcting problems, but looking for root causes, seeking ways to prevent their occurrence, and checking to see if process changes, once implemented, have corrected the problem.

Another change introduced is to have separate practices devoted to monitoring process compliance (BP 15.02) and to monitoring product and service quality (BP 15.03). These practices had been entwined in version 1.0 and sometimes difficult to interpret and implement.

PA 16 Configuration Management

Version 2.0 PA 16 Configuration Management Base Practices	Version 1.0 Related Practices
BP 16.01 Establish a Configuration Management Strategy	BP 16.01 Establish Configuration Management Methodology
BP 16.02 Identify <i>and Baseline</i> Configuration Items and Interim Work Products	BP 16.02 Identify Configuration Units/Items
BP 16.03 Establish and Maintain a Repository for Work Product Baselines	BP 16.03 Establish and Maintain a Repository for Work Product Baselines
BP 16.04 Control Changes	BP 16.04 Control and Track Changes
BP 16.05 Record and Report Configuration Status	BP 16.05 Communicate Configuration Status
BP 16.06 Conduct Configuration Audits and Inspections	BP 16.06 Conduct Configuration Audits

Configuration management did not change very much in version 2.0. There is improved guidance regarding levels of formalization of control, focus on interim as well as final work products, and specific inclusion of “version control” in the context of configuration management. Also, baselining configuration items and interim work products is specifically addressed in BP 16.02.

PA 18 Measurement and Analysis

Version 2.0 PA 18 Measurement and Analysis Base Practices	Version 1.0 Related Practices
BP 18.01 Establish Measures based on Goals	BP18.01 Establish Measures based on Quantitative Goals
BP 18.02 Collect Relevant Measurement Data	BP18.02 Collect and Analyze Measurement Data
<i>BP 18.03 Store Data and Results</i>	-
BP 18.04 Analyze Measurement Data	BP18.02 Collect and Analyze Measurement Data
BP 18.05 Communicate Results	BP18.03 Communicate Quantitative Status

The main thing that is new about PA 18 Measurement and Analysis is that it is now staged at maturity level 2, whereas it was staged at ML4 in version 1. Also there is a new practice *BP 18.03 Store Data and Results*. Since no program or organization was actively pursuing this process area, there is no transitioning required, except to include it in your plans.

Note that this PA is a supporting PA, and it relies for its implementation on receiving goals from some “boss” PA (like PA 11, PA 00, PA 12, PA 13, or PA 14). It then communicates measurement information back to the “boss” who uses that information as appropriate.

5. Transitioning to Level 3

Several programs and organizations have been working towards maturity level 3, or towards capability level 3 in selected areas. Others have goals or plans in place regarding level 3.

In this section we look at changes in ML3 staging, CL3 generic practices, and ML3 process areas.

5.1 Maturity Level 3 – PA Staging Changes

There are now eleven process areas, instead of nine, staged at ML3, as shown below.

Version 2 ML3 PAs	Version 1 ML3 PAs
PA 00 Integrated Enterprise Management	-
PA 01 Needs	-
PA 03 Design	PA 03 Architecture
PA 04 Alternatives Analysis	PA 04 Alternatives
PA 06 Design Implementation	PA 06 Software Development and Maintenance
PA 07 Integration	PA 07 Integration
PA 13 Risk Management	PA 13 Risk Management
PA 14 Integrated Teaming	PA 14 Coordination
-	<i>PA 17 Peer Review</i>
PA 20 Process Definition	PA 20 Organization Process Definition
PA 21 Process Improvement	-
PA 22 Training	PA 22 Training

Three additional PAs are now staged at ML3: *PA 00 Integrated Enterprise Management*, which is a new PA to the iCMM, *PA 01 Needs*, which was previously staged at ML2, and *PA21 Process Improvement*, which in version 1 was called Organization Process Improvement and was staged at ML5.

On the other hand, *PA 17 Peer Review* is no longer a separate PA in version 2 as it has been integrated into *PA 08 Evaluation*, staged at ML2.

Notice that several PAs have new names in version 2.0. The new names better reflect their content.

Achieving maturity level 3 on the iCMM v2.0 still entails the same endeavor as it did in version 1.0. Thus, to achieve ML3, all 20 process areas staged at ML2 and ML3 must have satisfied capability levels 1, 2, and 3 according to an iCMM appraisal. (Note that maturity level definitions for ML4 and ML5 have changed however, as discussed in section 6 of this document).

5.2 Capability Level 3 – Generic Practice Changes

CL3 in iCMM Version 2	CL3 in iCMM Version 1
<i>Capability Level 3: Defined</i> Goal: The process is institutionalized as a defined process.	Capability Level 3: Defined; Well Defined Goal: The activities of the process are institutionalized to support a defined process.
3.1 Standardize the Process	3.1 Standardize the Process
3.2 Establish and Use a Defined Process	3.2 Use Defined Process
3.3 Improve Processes	
	3.3 Perform Review with Peers (<i>now part of GP 2.11</i>)
	3.4 Coordinate with Affected Groups (<i>now part of GP 2.15</i>)

There is one new generic practice: GP 3.3 Improve Processes. This is a very powerful practice and it is used for improving both the organizational process and the defined processes used by projects. It includes (and replaces) generic practices that were previously at capability level 5 in version 1: *5.1 Perform Continual Process Improvement on the Organizational Standard and Tailored Processes* and *5.2 Implement Improved Processes*. It builds on improvements that may be performed on the managed process by means of *GP 2.14 Take Corrective Action* at capability level 2, and reinforces the view that there is no need to wait until level 5 to improve both the organizational and the defined processes! This is also consistent with the inclusion of PA 21 Process Improvement at ML3.

The other CL3 generic practices from version 1 are now included with CL2 generic practices, as discussed earlier.

5.3 ML3 Process Areas – Base Practice Changes

In this section, ML3 process area changes are pointed out.

PA 00 Integrated Enterprise Management

Version 2.0 PA 00 Integrated Enterprise Management – Base Practices	Version 1.0 Related Practices
<i>BP 00.01 Establish and maintain strategic vision</i>	BP 10.01 Define Product Evolution
<i>BP 00.02 Align to achieve the vision</i>	-
<i>BP 00.03 Establish and maintain strategy</i>	-
<i>BP 00.04 Develop and deploy action plans</i>	-
<i>BP 00.05 Review performance</i>	-
<i>BP 00.06 Act on results of review</i>	BP 18.04 Take corrective action
<i>BP 00.07 Fulfill public responsibility</i>	-

This is a new process area in the iCMM, introduced to fill a need to include best practice regarding overall management of an enterprise. It has been derived from several sources, and supports requirements of the Government Performance and Results Act. It is the “big boss” of the model, setting enterprise vision, mission, values, goals, objectives, and

strategic plans. Its practices include initiating and resourcing projects and activities, and evaluating organizational performance relative to measurable performance goals.

PA 00 does bring in two practices from iCMM v1.0 however. *BP10.01 Define Product Evolution* is included in PA 00 since it is here where product lines and core activities are identified to support the organization’s strategic vision. *Note that PA 10 Product Evolution in v1.0 is no longer a separate PA as its content is included in PA 00 and PA 23 in version 2.* Taking corrective action, at an enterprise level, is part of PA 00 and thus BP 18.04 maps to this practice (as well as to BP 11.12 Take Corrective Action in PA 11 Project Management).

PA 01 Needs

Version 2.0 PA 01 Needs Base Practices	Version 1.0 Related Practices
<i>BP 01.01 Identify Customers and Stakeholders</i>	-
BP 01.02 Elicit Needs	BP 01.01 Elicit Needs
BP 01.03 Analyze Needs	BP 01.02 Analyze Needs <i>BP 02.01 Develop detailed operational concept Human Factors Engineering Addendum</i>
<i>BP 01.04 Establish and Maintain a Statement of Need</i>	-
BP 01.05 Communicate with Customers	BP 01.05 Inform Customer
<i>BP 01.06 Determine Customer Satisfaction</i>	-

PA 01 is the “customer” PA, focusing on customers, their world, their environment, their needs, and their satisfaction.

There are three new base practices in this PA. *BP 01.01 Identify Customers and Stakeholders* was introduced to assure that the sources for elicitation of needs have been identified and that interested parties are appropriately represented when determining needs and expectations. The statement of needs and expectation is established in the new practice *BP 01.04 Establish and Maintain a Statement of Need*. This statement forms the basis for validating products and services in the operational environment via practices of PA 08 Evaluation. It is also used in developing requirements via practices of PA 02 Requirements. *BP 01.06 Determine Customer Satisfaction* has been introduced into PA 01 and this information is used to improve current products and services, address current and projected needs, anticipate future needs, and develop new opportunities.

BP 01.03 Analyze Needs is considerable strengthened in version 2 and focuses on expressing the need in the context of the intended operational environment. The practice includes describing the operational context, operational scenarios, human interactions, etc. at preliminary and more detailed conceptual levels.

Another point to note is that new technology demonstrations and results of human factors engineering analyses, studies, or research are called out as additional ways to elicit needs.

PA 03 Design

Version 2.0 PA 03 Design Base Practices	Version 1.0 Related Practices
BP 03.01 Identify and Prioritize Design Issues	BP 03.02 Identify Key Design Issues
BP 03.02 Develop Design Structure	BP 03.03 Develop Architectural Structure BP 06.03 Design Software
BP 03.03 Develop Interface Specifications	BP 03.04 Develop Architectural Interface Requirements BP 06.03 Design Software <i>BP 02.04 Identify interface requirements</i> BP 07.01 Define Interfaces
BP 03.04 Allocate Requirements	BP 03.05 Allocate Architecture Requirements BP 06.03 Design Software <i>BP 02.05 Allocate requirements</i>
<i>BP 03.05 Define Interactions among Design Elements</i>	BP 06.03 Design Software
<i>BP 03.06 Establish Component Specifications</i>	BP 06.03 Design Software
<i>BP 03.07 Establish and Use a Strategy for Non-developmental Items</i>	-
BP 03.08 Establish and Maintain Design Description	BP 03.06 Capture system architecture BP 06.03 Design Software

PA 03 was renamed from Architecture in version 1.0 to Design in version 2.0. This renaming (subject to much discussion among the author team) reflects the expanded scope of the process area to more explicitly deal with both high level (architecture) and lower level (component specification) design topics.

Some parts of practices that were previously included in PA 02 Requirements are now part of Design. *Internal* interface requirements, from *BP 02.04 Identify Interface Requirements*, are identified in *BP 03.03 Develop Interface Requirements*, and *BP 02.05 Allocate Requirements (to people or support elements)* is now included in *BP 03.04 Allocate Requirements*. (Allocation of requirements among functional partitions, objects, or groups may still be performed as part of PA 02 however, if appropriate, as discussed earlier).

BP 03.05 Define Interactions among Design Elements is a new practice that focuses on defining dynamic interactions and operational sequences among design elements, and *BP 03.06 Establish Component Specifications* results in design specifications (at any number of levels of detail) for elements that might be produced or acquired. Another new practice, *BP 03.07 Establish and Use a Strategy for Non-developmental Items*, has been introduced to assure consideration is given to issues that arise when using non-developmental, re-usable, product or service components.

Finally, *BP 06.03 Design Software* was a general software design practice in version 1.0 covering development of software architecture and detailed design. PA 03 provides more detailed guidance for design activities and BP 06.03 has been elaborated upon across the many design practices in PA 03. PA 03 however is not specific to software; it is used for the design of any product or service.

PA 04 Alternatives Analysis

Version 2.0 PA 04 Alternatives Analysis Base Practices	Version 1.0 Related Practices
<i>BP 04.01 Establish Analysis Strategy</i>	-
<i>BP 04.02 Define the Problem</i>	BP 04.01 Establish Evaluation Criteria
BP 04.03 Select Analysis Method	BP 04.02 Define Analysis Approach
BP 04.04 Identify Alternative Solutions	BP 04.03 Identify Alternatives
BP 04.05 Analyze Alternative Solutions	BP 04.04 Analyze Alternatives
BP 04.06 Select Solution	BP 04.05 Select Solution
BP 04.07 Communicate Analysis Results	BP 04.06 Capture the Disposition of Each Alternative

PA 04 Alternatives Analysis in v2.0 provides much more guidance regarding the application of structured analysis and decision-making than did its predecessor in v1.0. The new practice *BP 04.01 Establish Analysis Strategy* includes establishing guidelines for identifying when structured decision-making would be required. *BP 04.02 Define the Problem* includes establishing evaluation criteria, but also adds the notion of assuring the problem or issue to be analyzed is clearly understood. All practices have been elaborated with more extensive notes and examples.

PA 06 Design Implementation

Version 2.0 PA 06 Design Implementation Base Practices	Version 1.0 Related Practices
BP 06.01 Establish the Implementation Environment	BP 06.01 Integrate Methods and Tools
<i>BP 06.02 Formulate product or service components</i>	BP 06.04 Implement Software
BP 06.03 Develop Documentation	BP 06.04 Implement Software BP 06.07 Develop Documentation

When it comes to actually developing solution elements, or implementing design specifications, iCMM v1.0 only dealt with software. Version 2.0 however covers fabrication, production, or development of any kind of component or service element that is part of a needed product or service. The 3 practices of PA 06 identify the essential characteristics of what is done in producing a specified solution component, including the development of documentation for operating and maintaining that component.

PA 07 Integration

Version 2.0 PA 07 Integration Base Practices	Version 1.0 Related Practices
BP 07.01 Develop Integration Strategy	BP 07.07 Develop Integration Strategy
<i>BP 07.02 Confirm Readiness of Product and Service Elements</i>	BP 07.02 Verify Receipt of System Elements
<i>BP 07.03 Review and Coordinate Interface Definitions</i>	-
BP 07.04 Assemble Product and Service Elements	BP 07.05 Assemble Aggregates of System Elements
<i>BP 07.05 Confirm Integrated Product or Service Operation</i>	BP 07.06 Test System Level Integration BP 06.06 Perform Integration Testing

PA 07 Integration still focuses on ensuring that product and service elements will function together as a whole. However, in v2.0, evaluation activities, including those related to Integration, are all addressed in PA 08 Evaluation. Thus, *BP 07.02 Confirm Readiness of Product and Service Elements* includes confirming that received elements have been checked for quality compliance prior to integration. Practices to verify product and service element and interface correctness have been removed from PA 07 and included in PA 08 Evaluation where all evaluation practices are described. Similarly, *BP 07.05 Confirm Integrated Product or Service Operation* confirms that the integrated product or service is operational, but comprehensive evaluation against all requirements is addressed in PA 08 Evaluation.

PA 07 includes an important new practice *BP 07.03 Review and Coordinate Interface Definitions* to assure review and coordination of interface issues throughout the life cycle.

PA 13 Risk Management

Version 2.0 PA 13 Risk Management Base Practices	Version 1.0 Related Practices
BP 13.01 Develop Risk Management Approach	BP 13.01 Develop Risk Management Approach
BP 13.02 Identify Risks	BP 13.02 Identify Risks
BP 13.03 Assess Risks	BP 13.03 Assess Risks
<i>BP 13.04 Develop Risk Mitigation Plans</i>	-
BP 13.05 Implement and Monitor Risk Mitigation Plans	BP 13.05 Execute Risk Mitigation Plans

Risk Management now includes a new practice: *BP 13.04 Develop Risk Mitigation Plans*. This practice explicitly calls for developing plans that meet risk action criteria, as defined in the risk management approach.

Note that risk assessment review is no longer part of this process area, but is now included as part of PA 11 Project Management, as previously discussed. Risk assessment review is also covered when *GP 2.13 Review Performance with Higher-level Management* is applied to the Risk Management PA.

PA 14 Integrated Teaming

Version 2.0 PA 14 Integrated Teaming Base Practices	Version 1.0 Related Practices
BP 14.01 Develop and Communicate Team Goals	BP 14.06 Develop and Communicate Project Goals
BP 14.02 Establish and Maintain Integrated Teams	BP 14.01 Involve Disciplines
BP 14.03 <i>Establish and Maintain a Collaborative Workplace</i>	BP 14.02 Promote Cross-Discipline Understanding
BP 14.04 Establish Coordination and Communication Methods	BP 14.03 Establish Coordination Methods
BP 14.05 Establish Resolution Methods	BP 14.04 Establish Resolution Methods
BP 14.06 Communicate <i>Integrated Team</i> Activity Results	BP 14.05 Communicate Interdisciplinary Activity Results

PA 14 Integrated Teaming provides more detailed guidance for establishing and maintaining multidisciplinary and/or cross-functional teams than did its predecessor in v1.0 (PA 14 Coordination). In addition, *BP 14.03 Establish and Maintain a Collaborative Workplace* introduces new emphasis on the working environment needed for effective teaming, and team communication methods were not addressed in v1.0 but are now included in *BP 14.04 Establish Coordination and Communication Methods*.

PA 20 Process Definition

Version 2.0 PA 20 Process Definition Base Practices	Version 1.0 Related Practices
BP 20.01 Establish Standard Processes	BP 20.03 Establish Standard Processes <i>BP 21.02 Change the Standard Process</i>
BP 20.02 Develop Tailoring Guidelines	BP 20.04 Develop Tailoring Guidelines
BP 20.03 Maintain Process Assets	BP 20.05 Maintain Process Assets
BP 20.04 Coordinate and Communicate Process Definition	BP 20.06 Coordinate and Communicate Process Definition

A major change introduced in PA 20 Process Definition is that the process area is no longer confined to *organizational* process definition. It applies to developing standard process descriptions at any level: enterprise, organization, or project. Further, *BP 21.02 Change the Standard Process* in v1.0 is now included in PA 20, since *BP 20.01 Establish Standard Processes* includes establishing and maintaining the set of standard processes. (By the way, a *set* of standard processes can be a set with one member, if appropriate.)

PA 21 Process Improvement

Version 2.0 PA 21 Process Improvement Base Practices	Version 1.0 Related Practices
BP 21.01 Identify Process <i>Improvement</i> Goals	BP 20.02 Identify Process Goals
BP 21.02 Establish Process Improvement Program	BP 21.01 Establish Process Improvement Program
BP 21.03 Appraise process	BP 20.01 Appraise Processes
<i>BP 21.04 Establish an Action Plan</i>	-
<i>BP 21.05 Implement Improvements</i>	-
<i>BP 21.06 Confirm Improvements</i>	-
<i>BP 21.07 Sustain and Deploy Improvement Gains</i>	-
<i>BP 21.08 Monitor Performance</i>	-

PA 21 Process Improvement introduces changes both conceptual and practical. Conceptually, it is no longer confined to *organizational* process improvement as it was in version 1. It pertains to improvement of any process, at any time. (Note this PA is no longer staged at ML5. No need to wait until then when process improvement is a continuous activity that includes improving to capability level 1!). On the practice side, PA 21 elaborates the 8-step process improvement model that we have already been following, although it was not detailed in the iCMM. Thus the new practices BP21.04 through BP 21.08 have been introduced to provide more detailed guidance regarding the steps typically carried out when performing process improvement.

PA 22 Training

Version 2.0 PA 22 Training Base Practices	Version 1.0 Related Practices
BP 22.01 Identify Training Needs	BP 22.01 Identify Strategic Needs BP 22.02 Identify Unique Training Needs
<i>BP 22.02 Establish Training Plan</i>	-
<i>BP 22.03 Establish Training Mechanism</i>	BP 22.04 Obtain Training
BP 22.04 Train Individuals	BP 22.03 Train Individuals
BP 22.05 Establish and Maintain Records	BP 22.05 Establish and Maintain Records
BP 22.06 Assess Training Effectiveness	BP 22.06 Assess Training Effectiveness
<i>BP 22.07 Establish Learning Environment</i>	-

Two new base practices have been introduced into PA 22 Training. *BP 22.02 Establish Training Plan* was introduced to assure (at capability level 1) that a training plan is developed, including a schedule of courses that will be offered. *BP 22.07 Establish Learning Environment* assures that an environment conducive to learning is established and maintained. *BP 22.03 Establish Training Mechanism* was extended beyond obtaining training; it also includes establishing and maintaining the training capability to address training needs.

6. What's Left?

This section discusses other changes, including staging changes at ML4 and ML5, changes in generic practices at CL4 and CL5, and how PA 23 Innovation is different in version 2. Lastly, the 2 new process areas in v2.0 that have not been staged at any maturity level are briefly introduced.

6.1 Maturity Levels 4 and 5

Version 2.0 ML4 PAs	Version 1.0 ML4 PAs
None	PA 10 Product Evolution (<i>now integrated into PA 00 and PA 23</i>) PA 18 Measurement (<i>now staged at ML2</i>)

In version 2.0, we no longer have any process areas staged at ML4. PA 10 Product Evolution is no longer a separate PA, and PA 18 Measurement was renamed to PA 18 Measurement and Analysis and is now staged at ML2.

It is very important to note that the definition of ML4 has changed in v2.0. To achieve ML4, all 20 process areas staged at ML2 and ML3 must have satisfied capability levels 1, 2, and 3 and *selected process areas* additionally must have satisfied capability level 4 according to an iCMM appraisal. These process areas are selected based on the business objectives of the organization. This is an important shift. It basically means that maturity level 4 is obtained by achieving maturity level 3 plus *capability level 4* in selected PAs.

Version 2.0 ML5 PAs	Version 1.0 ML5 PAs
-	PA 19 Prevention (<i>now integrated into PA 15</i>)
-	PA 21 Organization Process Improvement (<i>now staged at ML3</i>)
PA 23 Innovation	PA 23 Innovation

PA 23 Innovation is the only process area staged above ML3, and it is still at ML5. PA 19 Prevention is now part of PA 15 Quality Assurance and Management, and PA 21 Organization Process Improvement was renamed to PA 21 Process Improvement and is now staged at ML2.

Note that the definition of ML5 has also changed in v2.0. To achieve ML5, all 21 process areas staged at ML2, 3, 4, and 5 must have satisfied capability levels 1, 2, and 3 and *selected process areas* additionally satisfy capability levels 4 and 5 according to an iCMM appraisal. These process areas are selected based on the business objectives of the organization. Thus, another way to view ML5 is that it equates to all staged PAs being at capability level 3, plus achieving *capability level 5* in selected PAs.

6.2 Capability Levels 4 and 5 - Generic Practice Changes

So ... what are capability levels 4 and 5 all about? Basically, selecting a process area according to measures tied to your business objectives, bringing it under statistical process control according to those measures (at CL4), and then attempting to shift the mean value of that measure at CL5.

The specifics are presented below.

Capability Level 4

CL4 in iCMM Version 2	CL4 in iCMM Version 1
<i>Capability Level 4: Quantitatively Managed</i> Goal: The process is institutionalized as a quantitatively managed process.	Capability Level 4: Managed; Quantitatively Controlled Goal: The activities of the processes are institutionalized to support quantitative management of defined processes.
<i>4.1 Stabilize Process Performance</i>	4.1 Establish Quality Objectives for Product and Process 4.2 Select Processes for Measurement. 4.3 Select Measures for the Process 4.4 Determine Quantitative Process Capability 4.5 Use Quantitative Process Capability

Capability level 4 is concerned with stabilizing process performance capability. *GP 4.1 Stabilize Process Performance* incorporates all of the CL4 generic practices from version 1. The statement of GP 4.1 is “Select measures key to meeting business objectives and bring processes relevant to those measures under statistical process control.”

Capability Level 5

CL5 in iCMM Version 2	CL5 in iCMM Version 1
<i>Capability Level 5: Optimizing</i> Goal: The process is institutionalized as an optimizing process	Capability Level 5: Optimizing; Continuously improving Goal: Continually improving processes are deployed throughout the organization.
<i>5.1 Pursue Process Optimization</i>	5.1 Perform Continual Process Improvement on the Organizational Standard and Tailored Processes (<i>now part of GP 3.3 Improve Processes</i>)
	5.2 Implement Improved Processes (<i>now part of GP 3.3 Improve Processes</i>)

Capability level 5 builds on improving processes under statistical control. More specifically, the statement of GP 5.1 is “Pursue improvement to the performance of statistically managed processes based on business objectives, innovation, and removal of common problems.” This is where PA 23 Innovation comes in, and explains why it is staged at ML5.

The GPs previously staged at CL5 have been included at capability level 3, which is where all improvements to standard and defined processes are made.

6.3 The ML5 Process Area - Base Practice Changes

Version 2.0 PA 23 Innovation Base Practices	Version 1.0 Related Practices
BP 23.01 Maintain New Technology Awareness	BP 23.01 Maintain New Technology Awareness BP 10.02 Identify New Product Technologies
BP 23.02 Select New Technologies	BP 23.02 Select New Technologies BP 10.02 Identify New Product Technologies
BP 23.03 Prepare for Infusion	BP 23.03 Prepare for Infusion BP 10.04 Ensure Critical Component Availability
BP 23.04 Infuse New Technologies	BP 23.04 Infuse New Technologies BP 10.03 Adapt Development Processes BP 10.05 Insert Product Technology
BP 23.05 <i>Manage</i> Innovation	BP 23.05 Support Innovation

PA 23 Innovation is the only process area staged at ML5. Its scope has been enhanced to include technology improvements pertaining to products, as well as to processes and the work or support environment. Also, BP 23.05 has shifted from supporting innovation, to managing innovation.

6.4 The “Unstaged” Process Areas

There are two process areas in iCMM v2.0 that have not been staged because they are not included in any model that has staging. The new process areas are introduced below.

PA 10 Operation and Support

The purpose of this new process area, PA 10 Operation and Support, is to operate the product, system, or service, support its users, monitor and sustain its performance, and take or initiate corrective action as required. iCMM v1.0 did not cover this aspect of the life cycle, nor do any existing CMMs. This PA however is relevant to any organization that delivers services to a customer. Its practices integrate best practice guidance from several non-CMM standards and documents (see *Mapping Table Supplement to the FAA-iCMM v2.0*). Although this PA is not staged for benchmarking purposes, it could reasonably be staged at maturity level 3.

Here are its base practices:

PA 10 Operation and Support Base Practices	Version 1.0 Related Practices
BP 10.01 Operate the System, Product or Service	-
BP 10.02 Monitor and Evaluate Capacity, Service, and Performance	-
BP 10.03 Confirm Availability of Parts and Personnel	-
BP 10.04 Perform Preventive Maintenance	-
BP 10.05 Analyze Failures	-
BP 10.06 Take or Initiate Corrective Action	-
BP 10.07 Provide Customer Support	-

PA 17 Information Management

Finally, the only PA we haven't yet talked about is PA 17 Information Management. The purpose of Information Management is to make relevant and timely information available to those who need it during and after the lifetime of products and services. The PA supports establishing an infrastructure to support sharing of information and knowledge. It is related to PA 16 Configuration Management, but is different in many ways. (See model description for a full discussion).

This is a new PA that is drawn from non-CMM sources. Since it is not in any CMM currently, it is not staged for benchmarking purposes. A reasonable staging for this PA however could be at ML2.

Here are the base practices of this new PA:

PA 17 Information Management Base Practices	Version 1.0 Related Practices
BP 17.01 Establish Information Management Strategy	-
BP 17.02 Establish Information Management Capability	-
BP 17.03 Store Information	-
BP 17.04 Share Information	-
BP 17.05 Protect Information	-
BP 17.06 Establish Information Standards	-

That's it!!

Appendix A – Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0

Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0	
<i>FAA-iCMM v1.0</i>	<i>FAA-iCMM v2.0</i>
<i>PA 01 Needs</i>	<i>PA 01 Needs; PA 02 Requirements</i>
1. Customer needs are represented in a statement of system requirements.	PA 02 1. Requirements are developed from customer and other stakeholder needs.
2. Changes to the system requirements are communicated to the customer for agreement.	PA 02 3. All requirements information is recorded in a baseline that is maintained and controlled throughout the life cycle.
BP 01.01 Elicit Needs	BP 01.02 Elicit Needs
BP 01.02 Analyze Needs	BP 01.03 Analyze Needs
BP 01.03 Develop System Requirements	BP 02.07 Record and Baseline Requirements
BP 01.04 Obtain Customer Agreement	BP 02.07 Record and Baseline Requirements
BP 01.05 Inform Customer	BP 01.05 Communicate with Customers
<i>PA 02 Requirements</i>	<i>PA 02 Requirements; PA 01 Needs; PA 03 Design</i>
1. Requirements are derived from customer needs and other appropriate sources	PA 02 1. Requirements are developed from customer and other stakeholder needs.
2. Requirements are allocated to support the synthesis of solutions.	PA 03 3. Allocations of requirements to the design elements are established and maintained.
3. Requirements are unambiguous, traceable, and verifiable.	PA 02 2. Requirements satisfy established quality criteria including unambiguity, completeness, traceability, feasibility, and verifiability.
4. Requirements are controlled to establish a baseline for engineering and management use.	PA 02 3. All requirements information is recorded in a baseline that is maintained and controlled throughout the life cycle.
5. Plans, products, and activities are kept consistent with requirements.	PA 02 4. Plans, products, activities, and agreements are checked for consistency with requirements, and any inconsistencies are identified for correction.
BP 02.01 Develop Detailed Operational Concept	BP 01.03 Analyze Needs
BP 02.02 Identify Key Requirements	BP 02.03 Identify Key Requirements
BP 02.03 Derive and Partition Requirements	BP 02.04 Derive Requirements
BP 02.04 Identify Interface Requirements	BP 02.05 Identify External Interface Requirements <i>(internal interface specifications in PA 03)</i>
BP 02.05 Allocate Requirements	BP 03.04 Allocate Requirements <i>(also noted in BP 02.01 Identify Functional and Performance Requirements)</i>
BP 02.06 Analyze Requirements	BP 02.06 Analyze Requirements
BP 02.07 Capture and Baseline Requirements	BP 02.07 Record and Baseline Requirements
BP 02.08 Analyze and Incorporate Requirements Changes	BP 02.08 Analyze and Resolve Requirements Change Requests
BP 02.09 Maintain Consistency and Traceability	BP 02.09 Maintain Consistency and Traceability
<i>PA 03 Architecture</i>	<i>PA 03 Design; PA 02 Requirements</i>
1. A system architecture that will meet the defined requirements is established and maintained.	PA 03 1. A product or service design that will meet the defined requirements is established and maintained.
2. The architecture evolves to meet changing requirements.	PA 03 1. A product or service design that will meet the defined requirements is established and

Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0	
<i>FAA-iCMM v1.0</i>	<i>FAA-iCMM v2.0</i>
	maintained.
BP 03.01 Derive System Architecture Requirements	BP 02.04 Derive Requirements
BP 03.02 Identify Key Design Issues	BP 03.01 Identify and Prioritize Design Issues
BP 03.03 Develop Architectural Structure	BP 03.02 Develop Design Structure
BP 03.04 Develop Architectural Interface Requirements	BP 03.03 Develop Interface Specifications
BP 03.05 Allocate Architecture Requirements	BP 03.04 Allocate Requirements
BP 03.06 Capture System Architecture	BP 03.08 Establish and Maintain Design Description
<i>PA 04 Alternatives</i>	<i>PA 04 Alternatives Analysis</i>
1. An evaluation strategy is established and maintained.	1. Strategies are established and maintained that support the analysis of alternatives and structured decision-making.
2. Alternatives are identified, analyzed and selected in accordance with the established strategy.	2. Alternative solutions to selected issues are analyzed and solutions selected or recommended in accordance with established strategy and criteria with the established strategy.
3. Results of the evaluation are recorded for each alternative.	3. Results and rationale of alternatives analysis are documented and communicated.
BP 04.01 Establish Evaluation Criteria	BP 04.02 Define the Problem
BP 04.02 Define Analysis Approach	BP 04.03 Select Analysis Method
BP 04.03 Identify Alternatives	BP 04.04 Identify Alternative Solutions
BP 04.04 Analyze Alternatives	BP 04.05 Analyze Alternative Solutions
BP 04.05 Select Solution	BP 04.06 Select Solution
BP 04.06 Capture the Disposition of Each Alternative	BP 04.07 Communicate Analysis Results
<i>PA 05 Outsourcing</i>	<i>PA 05 Outsourcing</i>
1. Qualified suppliers are selected to provide product or process components.	2. Qualified suppliers are selected to provide solution or process components.
2. A productive communications environment is established and maintained with suppliers.	3. A productive communications environment is established and maintained with potential suppliers.
BP 05.01 Identify Needed System or Process Components	BP 05.01 Identify Needed Products or Services
BP 05.02 Identify Competent Suppliers	BP 05.02 Identify Competent Suppliers
BP 05.03 Prepare for the solicitation	BP 05.03 Prepare for the Solicitation or Tasking
BP 05.04 Choose Supplier	BP 05.04 Choose Supplier
BP 05.05 Communicate with Suppliers	BP 05.05 Communicate with Suppliers
<i>PA 06 Software Development and Maintenance</i>	<i>PA 06 Design Implementation; PA 02 Requirements; PA 03 Design; PA 08 Evaluation; PA 07 Integration</i>
1. The software engineering tasks are defined, integrated, and consistently performed to produce the software.	PA 06 1. Solution component(s) are developed.
2. Software work products are kept consistent with each other.	PA 06 2. Documentation to support solution component(s) is established and maintained.
BP 06.01 Integrate Methods and Tools	BP 06.01 Establish the Implementation Environment

Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0	
<i>FAA-iCMM v1.0</i>	<i>FAA-iCMM v2.0</i>
BP 06.02 Analyze Allocated Requirements	BP 02.06 Analyze Requirements BP 03.06 Establish Component Specifications
BP 06.03 Design Software	BP 03.02 Develop Design Structure BP 03.03 Develop Interface Specifications BP 03.04 Allocate Requirements BP 03.05 Define Interactions among Design Elements BP 03.06 Establish Component Specifications BP 03.08 Establish and Maintain Design Description BP 08.04 Evaluate Incremental Work Products
BP 06.04 Implement Software	BP 06.02 Formulate Product or Service Components BP 06.03 Develop Documentation
BP 06.05 Test Software	BP 08.04 Evaluate Incremental Work Products
BP 06.06 Perform Integration Testing	BP 08.05 Verify End-Products BP 07.05 Confirm Integrated Product or Service Operation
BP 06.07 Develop Documentation	BP 06.03 Develop Documentation
BP 06.08 Maintain Consistency across Software Work Products	BP 02.09 Maintain Consistency and Traceability BP 08.07 Analyze Evaluation Results BP 07.05 Confirm Integrated Product or Service Operation
PA 07 Integration	<i>PA 07 Integration; PA 03 Design; PA 08 Evaluation</i>
1. A strategy for integrating the system elements is defined.	PA 07 1. A strategy for integrating the product and service elements is defined.
2. Interfaces are defined in accordance with the system architecture.	PA 03 1. A product or service design that meets the product and service requirements is established and maintained.
3. System elements are verified.	PA 07 2. Readiness of product and service elements for integration is verified.
4. The system is integrated in accordance with the integration strategy.	PA 07 3. The product or service is integrated in accordance with the integration strategy.
BP 07.01 Define Interfaces	BP 03.03 Develop Interface Specifications
BP 07.02 Verify Receipt of System Elements	BP 07.02 Confirm Readiness of Product and Service Elements
BP 07.03 Verify System Element Correctness	BP 08.05 Verify End-Products
BP 07.04 Verify System Element Interfaces	BP 08.05 Verify End-Products
BP 07.05 Assemble Aggregates of System Elements	BP 07.04 Assemble Product and Service Elements
BP 07.06 Test System Level Integration	BP 07.05 Confirm Integrated Product or Service Operation
BP 07.07 Develop Integration Strategy	BP 07.01 Develop Integration Strategy
<i>PA 08 System Test and Evaluation</i>	<i>PA 08 Evaluation; PA 05 Outsourcing; PA 12 Supplier Agreement Management</i>
1. The evaluation approach, requirements and methods are defined to provide an objective basis to support the decision for acceptance of the system products and services.	PA 08 1. The evaluation approach, requirements, methods, and environment are established to provide an objective basis for determining whether the products and services meet requirements and

Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0	
<i>FAA-iCMM v1.0</i>	<i>FAA-iCMM v2.0</i>
	can be accepted.
2. Evaluations are performed as planned.	PA 08 2. Evaluations are performed as planned
3. Analyses are conducted on results of evaluations and developer performance.	PA 08 3. Analyses are conducted on results of evaluations to support acceptance or corrective actions.
BP 08.01 Develop Evaluation Strategy and Requirements	BP 08.01 Develop Evaluation Strategy
BP 08.02 Define Evaluation Procedures	BP 08.02 Develop Evaluation Procedures
BP 08.03 Incorporate Evaluation Requirements into the Solicitation and Contract	BP 05.03 Prepare for the Solicitation or Tasking
BP 08.04 Monitor Developer Performance	BP 12.02 Review and Monitor Agreement Performance
BP 08.05 Perform Planned Evaluations	BP 08.03 Establish and Maintain Evaluation Environment BP 08.04 Evaluate Incremental Work Products BP 08.05 Verify End-Products BP 08.06 Validate End-products
BP 08.06 Analyze Evaluation Results	BP 08.07 Analyze Evaluation Results
<i>PA 09 Transition</i>	<i>PA 09 Deployment, Transition, and Disposal</i>
1. The system support organization demonstrates its capacity to provide the required support upon assumption of responsibility for the system.	3. Customer/ stakeholder operation and support organizations demonstrate their capacity to support the product or service upon assumption of responsibility.
2. Continuity of configuration and requirements management is maintained during the transition.	3. Customer/ stakeholder operation and support organizations demonstrate their capacity to support the product or service upon assumption of responsibility.
BP 09.01 Conduct Inventory	BP 09.03 Oversee Configuration of Product or Service
BP 09.02 Develop and Follow Transition to Support Strategy	BP 09.01 Develop, Deploy, and Maintain a Strategy for Deployment, Transition and Disposal Activities BP 09.05 Transition Product or Service
BP 09.03 Demonstrate Support Capability	BP 09.04 Demonstrate Support Capability
BP 09.04 Oversee the Configuration Management of the System	BP 09.03 Oversee Configuration of Product or Service
BP 09.05 Oversee the Requirements Management of the System	BP 09.03 Oversee Configuration of Product or Service
BP 09.06 Transfer and Tailor Developer's Processes to the Support Organization	BP 09.05 Transition Product or Service
<i>PA 10 Product Evolution</i>	<i>PA 23 Innovation; PA 00 Integrated Enterprise Management</i>
1. Strategies that support disciplined product evolution are established and maintained.	PA 00: 2. Strategies are developed and projects are launched that visibly support goal achievement.
BP 10.01 Define Product Evolution	BP 00.01 Establish and Maintain Strategic Vision
BP 10.02 Identify New Product Technologies	BP 23.01 Maintain New Technology Awareness BP 23.02 Select New Technologies
BP 10.03 Adapt Development Processes	BP 23.04 Infuse New Technologies
BP 10.04 Ensure Critical Component Availability	BP 23.03 Prepare for Infusion

Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0	
<i>FAA-iCMM v1.0</i>	<i>FAA-iCMM v2.0</i>
BP 10.05 Insert Product Technology	BP 23.04 Infuse New Technologies
<i>PA11 Project Management</i>	<i>PA 11 Project Management</i>
1. Plans for managing the project are established early in the project lifecycle and maintained.	1. Project plans are established, maintained and executed to provide required products and services that reflect customer and stakeholder needs.
2. Estimates of the project's planning parameters are established and maintained.	2. Estimates of the project's planning parameters are established and maintained to support resource estimates.
3. Commitments related to the project are established and maintained.	3. Commitments related to the project are established and maintained.
4. Progress of the project is evaluated against the project's established plans.	4. Progress of the project is evaluated against its plans.
5. Corrective actions are taken appropriately and managed to closure.	5. Corrective actions are taken when appropriate and managed to closure
BP 11.01 Identify the Activities	BP 11.02 Define the Activities and Life Cycle Approach
BP 11.02 Identify the Life Cycle Approach	BP 11.02 Define the Activities and Life Cycle Approach
BP 11.03 Establish Estimates	BP 11.03 Estimate Planning Parameters BP 11.04 Estimate Project Resource Requirements
BP 11.04 Establish Schedules	BP 11.05 Establish Schedules
BP 11.05 Establish and Maintain Plans	BP 11.06 Establish and Maintain Plans
BP 11.06 Establish Commitment	BP 11.07 Establish Commitment
BP 11.07 Monitor the Project according to Established Plans	BP 11.10 Monitor Project Performance
BP 11.08 Track Technical Process	BP 11.10 Monitor Project Performance
BP 11.09 Review Performance Against Established Plans	BP 11.11 Review and Analyze Project Performance
BP 11.10 Take Corrective Action	BP 11.12 Take Corrective Action
<i>PA12 Contract Management</i>	<i>PA 12 Supplier Agreement Management</i>
1. The contract is kept consistent with the requirements of the acquisition project and relevant laws, policies, regulations, and guidance.	1. The documented agreement is kept consistent with the acquirer's requirements and relevant laws, policies, regulations, and other applicable guidance.
2. Contractor performance, products, and services are reviewed throughout the project to identify risks, problems, and appropriate corrective actions.	2. Supplier performance, processes, products and services are reviewed and monitored to identify problems and to ensure that products and services conform to requirements.
3. Measurements are used to track the contractor's performance.	3. Measurements are used to track the supplier's performance.
4. Communications between the acquirer's project team and the contractor are established and maintained.	4. Communications between the acquirer and the supplier are established and maintained to foster a cooperative and productive agreement environment.
BP 12.01 Review and Use Planning documents	BP 12.01 Use Planning documents:
BP 12.02 Conduct Periodic Reviews	BP 12.02 Review and Monitor Agreement Performance
BP 12.03 Maintain Contract Integrity	BP 12.03 Maintain Supplier Agreement Integrity
BP 12.04 Monitor Contractor's Support Processes	BP 12.04 Monitor Supplier's Plans, Processes,

Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0	
<i>FAA-iCMM v1.0</i>	<i>FAA-iCMM v2.0</i>
	Activities and Products
BP 12.05 Foster Cooperative Environment	BP 12.05 Foster Cooperative and Collaborative Environment.
<i>PA 13 Risk Management</i>	<i>PA 13 Risk Management; PA 11 Project Management</i>
1. Risk Management is an integral part of project management and engineering activities.	PA 13 1. A risk management strategy is established and used that includes the plans, methods and parameters for management of risk.
2. Risks are identified and assessed for their likelihood and impact.	PA 13 2. Risks are identified and assessed for their likelihood and consequence.
3. Risk mitigation is performed when analysis indicates action.	PA 13 3. Risk mitigation is performed when analysis indicates action.
BP 13.01 Develop Risk Management Approach	BP 13.01 Develop Risk Management Approach
BP 13.02 Identify Risks	BP 13.02 Identify Risks
BP 13.03 Assess Risks	BP 13.03 Assess Risks
BP 13.04 Review and Validate Risk Assessment	BP 11.11 Review and Analyze Project Performance GP 2.13 Review Performance with Higher-level Management
BP 13.05 Execute Risk Mitigation Plans	BP 13.05 Implement and Monitor Risk Mitigation Plans
<i>PA 14 Coordination</i>	<i>PA 14 Integrated Teaming</i>
1. The project goals, processes and interfaces between the disciplines necessary to the system life cycle are coordinated.	1. Integrated teams composed of appropriate disciplines and stakeholders are established and maintained
2. Methods are established and maintained for interdisciplinary communication, coordination, and conflict resolution.	2. Team processes and methods are established and maintained for effective coordination, collaboration, communication, conflict resolution and decision-making
BP 14.01 Involve Disciplines	BP 14.02 Establish and Maintain Integrated Teams
BP 14.02 Promote Cross-Discipline Understanding	BP 14.03 Establish and Maintain a Collaborative Workplace
BP 14.03 Establish Coordination Methods	BP 14.04 Establish Coordination and Communication Methods
BP 14.04 Establish Resolution Methods	BP 14.05 Establish Resolution Methods
BP 14.05 Communicate Interdisciplinary Activity Results	BP 14.06 Communicate Integrated Team Activity Results
BP 14.06 Develop and Communicate Project Goals	BP 14.01 Develop and Communicate Team Goals
<i>PA 15 Quality Assurance and Management</i>	<i>PA 15 Quality Assurance and Management</i>
1. Adherence of work products and activities to the applicable standards, procedures, and requirements is verified objectively.	1. Adherence of work products, services, and activities to applicable standards, procedures, and requirements is verified objectively.
2. Noncompliance issues that cannot be resolved within the software project are addressed by senior management.	2. Noncompliance issues are tracked and those that cannot be resolved at the project level are addressed by senior management.
3. Affected groups and individuals are informed of quality assurance activities, results, and quality improvement opportunities.	3. Affected groups and individuals are informed of quality assurance activities, and results. 5. Quality improvement opportunities are initiated

Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0	
<i>FAA-iCMM v1.0</i>	<i>FAA-iCMM v2.0</i>
	with the appropriate stakeholders.
BP 15.01 Monitor Process Compliance	BP 15.02 Monitor Process Compliance
BP 15.02 Evaluate Product and Process	BP 15.02 Monitor Process Compliance BP 15.03 Monitor Product and Service Quality
BP 15.03 Detect Need for Corrective Actions	BP 15.05 Analyze Quality
BP 15.04 Record and Report Results	BP 15.04 Record and Report Results
BP 15.05 Analyze Quality	BP 15.05 Analyze Quality
BP 15.06 Initiate Quality Improvement Opportunities	BP 15.06 Initiate Quality Improvement
<i>PA 16 Configuration Management</i>	<i>PA 16 Configuration Management</i>
1. Configuration items that constitute baselines are identified.	1. Configuration items that are to be managed are identified.
2. Configuration items are controlled to support the disciplined evolution of the product baseline.	2. Configuration items are controlled and managed throughout the life cycle.
3. Configuration status is communicated to affected groups.	3. Status of configuration items is recorded and reported to all stakeholders.
4. Configuration baselines are audited to verify the product baseline integrity.	4. The integrity of baselines and work products is assured.
BP 16.01 Establish Configuration Management Methodology	BP 16.01 Establish a Configuration Management Strategy
BP 16.02 Identify Configuration Units/items	BP 16.02 Identify and Baseline Configuration Items and Interim Work Products
BP 16.03 Establish and Maintain a Repository for Work Product Baselines	BP 16.03 Establish and Maintain a Repository for Work Product Baselines
BP 16.04 Control and Track Changes	BP 16.04 Control Changes
BP 16.05 Communicate Configuration Status	BP 16.05 Record and Report Configuration Status
BP 16.06 Conduct Configuration Audits	BP 16.06 Conduct Configuration Audits and Inspections
<i>PA 17 Peer Review</i>	<i>PA 08 Evaluation</i>
1. Defects in work products are identified and removed.	PA 08 2. Evaluations are performed as planned. PA 08 3. Analyses are conducted on results of evaluations to support acceptance or corrective actions
BP 17.01 Conduct Peer Reviews	BP 08.04 Evaluate Incremental Work Products
BP 17.02 Record and Analyze Peer Review Data	BP 08.07 Analyze Evaluation Results
<i>PA 18 Measurement</i>	<i>PA 18 Measurement and Analysis; PA 00 Integrated Enterprise Management; PA 11 Project Management</i>
1. Measurements are established, maintained and used based on the project and organization goals.	PA 18 1. Measures related to goals, objectives and major issues are established
2. Measurements are collected, analyzed and reported.	PA 18 2. Measurement data are collected, analyzed, and results are reported
BP 18.01 Establish Measures Based on Quantitative Goals	BP 18.01 Establish Measures based on Goals
BP 18.02 Collect and Analyze Measurement Data	BP 18.02 Collect Relevant Measurement Data BP 18.04 Analyze Measurement Data
BP 18.03 Communicate Quantitative Status	BP 18.05 Communicate Results
BP 18.04 Take Corrective Action	BP 00.06 Act on Results of Review BP 11.12 Take Corrective Action

Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0	
<i>FAA-iCMM v1.0</i>	<i>FAA-iCMM v2.0</i>
<i>PA 19 Prevention</i>	<i>PA 15 Quality Assurance and Management</i>
1. Common causes of defects are sought out and identified.	PA 15 4. Causes of defects are sought out, identified, prioritized, corrected, and methods of elimination are evaluated.
2. Common causes of defects are prioritized and systematically eliminated.	PA 15 4. Causes of defects are sought out, identified, prioritized, corrected, and methods of elimination are evaluated.
BP 19.01 Conduct Causal Analysis Meetings	BP 15.05 Analyze Quality
BP 19.02 Coordinate Action Proposals	BP 15.06 Initiate Quality Improvement
BP 19.03 Document and Track Prevention Data	BP 15.07 Evaluate the Effect of Changes
BP 19.04 Revise Processes for Defect Prevention	BP 15.06 Initiate Quality Improvement
<i>PA 20 Organization Process Definition</i>	<i>PA 20 Process Definition; PA 21 Process Improvement</i>
1. The organization's set of standard processes is established and maintained.	PA 20 1. The set of standard processes is established and maintained.
2. Guides for tailoring the organization's standard processes are established and maintained.	PA 20 2. Guides for tailoring the standard processes are established and maintained.
3. Goals, performance data, and other assets for the organization's processes are collected, maintained, and communicated.	PA 20 3. Goals, performance data, and other assets that support the processes are collected, maintained, and communicated.
4. Process definition and improvement activities are coordinated across the organization.	PA 21 2. Process improvement activities are coordinated across projects and the organization.
BP 20.01 Appraise Processes	BP 21.03 Appraise process
BP 20.02 Identify Process Goals	BP 21.01 Identify Process Improvement Goals
BP 20.03 Establish Standard Processes	BP 20.01 Establish Standard Processes
BP 20.04 Develop Tailoring Guidelines	BP 20.02 Develop Tailoring Guidelines
BP 20.05 Maintain Process Assets	BP 20.03 Maintain Process Assets
BP 20.06 Coordinate and Communicate Process Definition	BP 20.04 Coordinate and Communicate Process Definition
<i>PA 21 Organization Process Improvement</i>	<i>PA 21 Process Improvement; PA 20 Process Definition</i>
1. The set of standard processes and projects' defined processes are improved continuously.	PA 21 3. Improvements are deployed, monitored, and sustained within the project and organization.
BP 21.01 Establish Process Improvement Program	BP 21.02 Establish Process Improvement Program
BP 21.02 Change the Standard Process	BP 20.01 Establish Standard Processes
<i>PA 22 Training</i>	<i>PA 22 Training</i>
1. Training needs are solicited and identified.	1. Training needs are solicited and identified.
2. Required training is provided.	2. Required training is provided
BP 22.01 Identify Strategic Needs	BP 22.01 Identify Training Needs
BP 22.02 Identify Unique Training Needs	BP 22.01 Identify Training Needs
BP 22.03 Train Individuals	BP 22.04 Train Individuals
BP 22.04 Obtain Training	BP 22.03 Establish Training Mechanism
BP 22.05 Establish and Maintain Records	BP 22.05 Establish and Maintain Records
BP 22.06 Assess Training Effectiveness	BP 22.06 Assess Training Effectiveness
<i>PA 23 Innovation</i>	<i>PA 23 Innovation</i>
1. Agile adaptation to change is driven by the organization's profound knowledge of its products.	1. Agile adaptation to change is driven by the organization's knowledge of its products.

Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0	
<i>FAA-iCMM v1.0</i>	<i>FAA-iCMM v2.0</i>
processes, technologies, and core competencies.	processes, technologies, and core competencies.
2. The organization environment is updated in a planned, controlled manner while minimizing disruptions to users.	3. Selected technologies are deployed to relevant parts of the organization in accordance with the organization's objectives and goals.
BP 23.01 Maintain New Technology Awareness	BP 23.01 Maintain New Technology Awareness
BP 23.02 Select New Technologies	BP 23.02 Select New Technologies
BP 23.03 Prepare for Infusion	BP 23.03 Prepare for Infusion
BP 23.04 Infuse New Technologies	BP 23.04 Infuse New Technologies
BP 23.05 Support Innovation	BP 23.05 Manage Innovation
Capability Levels and Generic Practices	Capability Levels and Generic Practices
<i>Capability Level 1 - Initial: Performed Informally (no goal)</i>	<i>Capability Level 1: Performed</i> <i>Level 1 Goal: The process achieves the goals of the process area.</i>
1.1 Perform the Process	1.2 Perform the Process
<i>Capability Level 2 - Repeatable: Planned and Tracked</i> <i>Level 2 Goal: The activities for the process are institutionalized to support a repeatable process</i>	<i>Capability Level 2: Managed: Planned and Tracked</i> <i>Level 2 Goal: The process is institutionalized as a managed (planned and tracked) process.</i>
2.1 Establish Policy	2.1 Establish Organizational Policy
2.2 Allocate Adequate Resources	2.4 Provide Adequate Resources
2.3 Assign Responsibility	2.5 Assign Responsibility
2.4 Ensure Training	2.6 Ensure Skill and Knowledge
2.5 Document the Process	2.2 Document the Process
2.6 Plan the Process	2.3 Plan the Process
2.7 Use a Repeatable Process	2.8 Consistently Use and Manage the Process
2.8 Manage Configurations	2.9 Manage Work Products
2.9 Assess Process Compliance	2.10 Objectively Assess Process Compliance.
2.10 Verify Work Products	2.11 Objectively Verify Work Products
2.11 Measure Process	2.12 Measure Performance
2.12 Review Status	2.13 Review Performance with Higher-level Management
2.13 Take Corrective Action	2.14 Take Corrective Actions
2.14 Coordinate Within the Project	2.15 Coordinate with Stakeholders
<i>Capability Level 3: Defined; Well Defined</i> <i>Level 3 Goal: The activities of the process are institutionalized to support a defined process.</i>	<i>Capability Level 3: Defined</i> <i>Level 3 Goal: The process is institutionalized as a defined process.</i>
3.1 Standardize the Process	3.1 Standardize the Process
3.2 Use Defined Process	3.2 Establish and Use a Defined Process
3.3 Perform Reviews with Peers	2.11 Objectively Verify Work Products
3.4 Coordinate with Affected Groups	2.15 Coordinate with Stakeholders
<i>Capability Level 4 - Managed; Quantitatively Controlled</i> <i>Level 4 Goal: The activities of the processes are institutionalized to support quantitative management of defined processes.</i>	<i>Capability Level 4: Quantitatively Managed</i> <i>Level 4 Goal: The process is institutionalized as a quantitatively managed process.</i>
4.1 Establish Quality Objectives for Product and Process	4.1 Stabilize Process Performance
4.2 Select Processes for Measurement	4.1 Stabilize Process Performance
4.3 Select Measures for the Process	4.1 Stabilize Process Performance

Table 1: FAA-iCMM v1.0 to FAA-iCMM v2.0	
<i>FAA-iCMM v1.0</i>	<i>FAA-iCMM v2.0</i>
4.4 Determine Quantitative Process Capability	4.1 Stabilize Process Performance
4.5 Use Quantitative Process Capability	4.1 Stabilize Process Performance
<i>Capability Level 5 – Optimizing; Continuously improving</i> <i>Level 5 Goal: Continually improving processes are deployed throughout the organization.</i>	<i>Capability Level 5: Optimizing</i> <i>Level 5 Goal: The process is institutionalized as an optimizing process</i>
5.1 Perform Continual Process Improvement on Organizational Standard and Tailored Processes	3.3 Improve Processes
5.2 Implement Improved Processes	3.3 Improve Processes

Appendix B – Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
<i>PA 00 Integrated Enterprise Management</i>	<i>PA 10 Product Evolution; PA 18 Measurement</i>
1. Vision, mission, values, performance goals and objectives are established, maintained, and communicated to all employees.	-
2. Strategies are developed and projects are launched that visibly support goal achievement.	PA 10 1. Strategies that support disciplined product evolution are established and maintained.
3. Projects are continued, changed, or terminated based on performance, within the capability of the organization, and with acceptable risk and potential benefit to the organization.	-
BP 00.01 Establish and Maintain Strategic Vision	BP 10.01 Define Product Evolution
BP 00.02 Align to Achieve the Vision	-
BP 00.03 Establish and Maintain Strategy	-
BP 00.04 Develop and Deploy Action Plans	-
BP 00.05 Review Performance	-
BP 00.06 Act on Results of Review	BP 18.04 Take Corrective Action
BP 00.07 Fulfill Public Responsibility	-
<i>PA 01 Needs</i>	<i>PA 01 Needs; PA 02 Requirements; PA 24 Human Factors Engineering</i>
1. A statement of customer and other stakeholder needs and expectations is established and maintained.	-
2. A description of the interaction of needed products and services with users in the intended environment is defined.	-
3. Communication with the customer and other stakeholders is established and maintained.	-
4. Customer satisfaction with products and services is determined and monitored.	-
BP 01.01 Identify Customers and Stakeholders	-
BP 01.02 Elicit Needs	BP 01.01 Elicit Needs
BP 01.03 Analyze Needs	BP 01.02 Analyze Needs BP 02.01 Develop detailed operational concept Human Factors Engineering Addendum
BP 01.04 Establish and Maintain a Statement of Need	-
BP 01.05 Communicate with Customers	BP 01.05 Inform Customer
BP 01.06 Determine Customer Satisfaction	-
<i>PA 02 Requirements</i>	<i>PA 02 Requirements; PA 01 Needs; PA 24 Human Factors Engineering; PA 03 Architecture</i>
1. Requirements are developed from customer and other stakeholder needs.	PA 02 1. Requirements are derived from customer needs and other appropriate sources. PA 01 1. Customer needs are represented in a statement of system requirements.

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
2. Requirements satisfy established quality criteria including unambiguity, completeness, traceability, feasibility, and verifiability.	PA 02 3. Requirements are unambiguous, traceable, and verifiable.
3. All requirements information is recorded and controlled to establish a baseline that is maintained throughout the life cycle.	PA 02 4. Requirements are controlled to establish a baseline for engineering and management use. PA 01 2. Changes to system requirements are communicated to the customer for agreement.
4. Plans, products, activities, and agreements are checked for consistency with requirements, and any inconsistencies are identified for correction.	PA 02 5. Plans products and activities are kept consistent with requirements.
BP 02.01 Identify Functional and Performance Requirements	<i>(allocation of requirements (BP 02.04) noted)</i> <i>(partitioning of requirements (BP 02.03) noted)</i>
BP 02.02 Identify Nonfunctional Requirements and Constraints	-
BP 02.03 Identify Key Requirements	BP 02.02 Identify Key Requirements
BP 02.04 Derive Requirements	BP 02.03 Derive and Partition Requirements BP 03.01 Derive System Architecture Requirements
BP 02.05 Identify External Interface Requirements	BP 02.04 Identify Interface Requirements
BP 02.06 Analyze Requirements	BP 02.06 Analyze Requirements BP 06.02 Analyze Allocated Requirements
BP 02.07 Record and Baseline Requirements	BP 01.03 Develop System Requirements BP 01.04 Obtain Customer Agreement BP 02.07 Capture and Baseline Requirements <i>(partitioning of requirements (BP 02.03) noted)</i>
BP 02.08 Analyze and Resolve Requirements Change Requests	BP 02.08 Analyze and Incorporate Requirements Changes
BP 02.09 Maintain Consistency and Traceability	BP 02.09 Maintain Consistency and Traceability BP 06.08 Maintain Consistency across Software Work Products
<i>PA 03 Design</i>	<i>PA 03 Architecture; PA 06 Software Development and Maintenance</i>
1. A product or service design that will meet the defined requirements is established and maintained.	PA 03 1. A system architecture that will meet the defined requirements is established and maintained. PA 03 2. The architecture evolves to meet changing requirements. PA 07 2. Interfaces are defined in accordance with the system architecture.
2. The established product or service design is based on an evaluation of alternatives against criteria that represent the requirements.	
BP 03.01 Identify and Prioritize Design Issues	BP 03.02 Identify key design issues
BP 03.02 Develop Design Structure	BP 03.03 Develop architectural structure BP 06.03 Design Software
BP 03.03 Develop Interface Specifications	BP 03.04 Develop architectural interface requirements BP 06.03 Design Software BP 02.04 Identify interface requirements BP 07.01 Define interfaces
BP 03.04 Allocate Requirements	BP 03.05 Allocate architecture requirements BP 06.03 Design Software

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
	BP 02.05 Allocate requirements
BP 03.05 Define Interactions among Design Elements	BP 06.03 Design Software
BP 03.06 Establish Component Specifications	BP 06.03 Design Software
BP 03.07 Establish and Use a Strategy for Non-developmental Items	-
BP 03.08 Establish and Maintain Design Description	BP 03.06 Capture system architecture BP 06.03 Design Software
<i>PA 04 Alternatives Analysis</i>	<i>PA 04 Alternatives</i>
1. Strategies are established and maintained that support the analysis of alternatives and structured decision-making.	1. An evaluation strategy is established and maintained.
2. Alternative solutions to selected issues are analyzed and solutions selected or recommended in accordance with established strategy and criteria.	2. Alternatives are identified, analyzed and selected in accordance with the established strategy.
3. Results and rationale of alternatives analysis are documented and communicated.	3. Results of the evaluation are recorded for each alternative.
BP 04.01 Establish Analysis Strategy	-
BP 04.02 Define the Problem	BP 04.01 Establish Evaluation Criteria
BP 04.03 Select Analysis Method	BP 04.02 Define Analysis Approach
BP 04.04 Identify Alternative Solutions	BP 04.03 Identify Alternatives
BP 04.05 Analyze Alternative Solutions	BP 04.04 Analyze Alternatives
BP 04.06 Select Solution	BP 04.05 Select Solution
BP 04.07 Communicate Analysis Results	BP 04.06 Capture the Disposition of Each Alternative
<i>PA 05 Outsourcing</i>	<i>PA 05 Outsourcing</i>
1. Needs for outsourcing are determined.	-
2. Qualified suppliers are selected to provide solution or process components.	1. Qualified suppliers are selected to provide product or process components.
3. A productive communications environment is established and maintained with potential suppliers.	2. A productive communications environment is established and maintained with suppliers.
BP 05.01 Identify Needed Products or Services	BP 05.01 Identify Needed System or Process Components
BP 05.02 Identify Competent Suppliers	BP 05.02 Identify Competent Suppliers
BP 05.03 Prepare for the Solicitation or Tasking	BP 05.03 Prepare for the solicitation BP 08.03 Incorporate Evaluation Requirements into the Solicitation and Contract
BP 05.04 Choose Supplier	BP 05.04 Choose Supplier
BP 05.05 Communicate with Suppliers	BP 05.05 Communicate with Suppliers
<i>PA 06 Design Implementation</i>	<i>PA 06 Software Development and Maintenance</i>
1. Solution component(s) are developed.	1. The software engineering tasks are defined, integrated, and consistently performed to produce the software.
2. Documentation to support solution component(s) is established and maintained.	2. Software work products are kept consistent with each other.
BP 06.01 Establish the Implementation Environment	BP 06.01 Integrate Methods and Tools
BP 06.02 Formulate Product or Service Components	BP 06.04 Implement Software
BP 06.03 Develop Documentation	BP 06.04 Implement Software BP 06.07 Develop Documentation

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
<i>PA 07 Integration</i>	<i>PA 07 Integration</i>
1. A strategy for integrating the product and service elements is defined.	1. A strategy for integrating the system elements is defined.
2. Readiness of product and service elements for integration is verified.	3. System elements are verified.
3. The product or service is integrated in accordance with the integration strategy.	4. The system is integrated in accordance with the integration strategy.
BP 07.01 Develop Integration Strategy.	BP 07.07 Develop Integration Strategy
BP 07.02 Confirm Readiness of Product and Service Elements.	BP 07.02 Verify Receipt of System Elements
BP 07.03 Review and Coordinate Interface Definitions.	-
BP 07.04 Assemble Product and Service Elements.	BP 07.05 Assemble Aggregates of System Elements
BP 07.05 Confirm Integrated Product or Service Operation	BP 07.06 Test System Level Integration BP 06.06 Perform Integration Testing
<i>PA 08 Evaluation</i>	<i>PA 08 System Test and Evaluation; PA 17 Peer Review</i>
1. The evaluation approach, requirements, methods, and environment are established to provide an objective basis for determining whether the products and services meet requirements and can be accepted.	PA 08 1. The evaluation approach, requirements and methods are defined to provide an objective basis to support the decision for acceptance of the system products and services.
2. Evaluations are performed as planned.	PA 08 2. Evaluations are performed as planned. PA 17 1. Defects in work products are identified and removed.
3. Analyses are conducted on results of evaluations to support acceptance or corrective actions.	PA 08 3. Analyses are conducted on results of evaluations and developer performance. PA 17 1. Defects in work products are identified and removed.
BP 08.01 Develop Evaluation Strategy.	BP 08.01 Develop Evaluation Strategy and Requirements.
BP 08.02 Develop Evaluation Procedures	BP 08.02 Define Evaluation Procedures
BP 08.03 Establish and Maintain Evaluation Environment	BP 08.05 Perform Planned Evaluations
BP 08.04 Evaluate incremental work products	BP 08.05 Perform Planned Evaluations BP 17.01 Conduct Peer Reviews BP 06.03 Design Software BP 06.05 Test Software
BP 08.05 Verify end-Products	BP 08.05 Perform Planned Evaluations BP 07.03 Verify System Element Correctness BP 07.04 Verify System Element Interfaces BP 06.06 Perform Integration Testing
BP 08.06 Validate end-products	BP 08.05 Perform Planned Evaluations
BP 08.07 Analyze Evaluation Results	BP 08.06 Analyze Evaluation Results BP 17.02 Record and Analyze Peer Review Data.
<i>PA 09 Deployment, Transition and Disposal</i>	<i>PA09 Transition</i>
1. Customer/ stakeholder operation and support facilities are prepared to accept the delivery, placement and transition of the product or service into use.	-

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
2. Customer/ stakeholder operation and support personnel are prepared to accept delivery, placement and transition of the product or service into use.	-
3. Customer/ stakeholder operation and support organizations demonstrate their capacity to support the product or service upon assumption of responsibility.	1. The system support organization demonstrates its capacity to provide the required support upon assumption of responsibility for the system. 2. Continuity of configuration and requirements management is maintained during the transition.
4. Continuity of operational performance is maintained.	-
5. The replaced product or service is deactivated, disposed and/or dispensed of, as appropriate.	-
BP 09.01 Develop, Deploy, and Maintain a Strategy for Deployment, Transition and Disposal Activities	BP 09.02. Develop and follow transition to support strategy
BP 09.02 Prepare Facility and Infrastructure Environment	-
BP 09.03 Oversee Configuration of Product or Service	BP 09.01 Conduct Inventory BP 09.04 Oversee the Configuration Management of the System BP 09.05 Oversee the Requirements Management of the System
BP 09.04 Demonstrate Support Capability	BP 09.03 Demonstrate Support Capability
BP 09.05 Transition Product or Service	BP9.02 Develop and Follow Transition to Support Strategy BP9.06 Transfer and Tailor Developer's Processes to Support Organization
BP 09.06 Deactivate and Dispose Replaced Product and/or Dispense with Service	-
<i>PA 10 Operation and Support</i>	-
1.The product, system, or service is operated and monitored.	-
2. Methods are established and used to sustain required service levels and to detect the need for corrective action.	-
3. Operational support is provided and needed corrective actions are deployed.	-
BP 10.01. Operate the System, Product or Service	-
BP 10.02. Monitor and Evaluate Capacity, Service, and Performance	-
BP 10.03. Confirm Availability of Parts and Personnel	-
BP 10.04. Perform Preventive Maintenance	-
BP 10.05. Analyze Failures	-
BP 10.06. Take or Initiate Corrective Action	-
BP 10.07. Provide Customer Support	-
<i>PA 11 Project Management</i>	<i>PA11 Project Management</i>
1. Project plans are established, maintained and executed to provide required products and services that reflect customer and stakeholder needs.	1. Plans for managing the project are established early in the project lifecycle and maintained.
2. Estimates of the project's planning parameters are	2. Estimates of the project's planning parameters are

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
established and maintained to support resource estimates.	established and maintained.
3. Commitments related to the project are established and maintained.	3. Commitments related to the project are established and maintained.
4. Progress of the project is evaluated against its plans.	4. Progress of the project is evaluated against the project's established plans.
5. Corrective actions are taken when appropriate and managed to closure.	5. Corrective actions are taken appropriately and managed to closure.
BP 11.01 Define Project Objectives, Scope, and Outputs	-
BP 11.02 Define the Activities and Life Cycle Approach	BP 11.01 Identify the Activities BP 11.02 Identify the Life Cycle Approach
BP 11.03 Estimate Planning Parameters	BP 11.03 Establish Estimates
BP 11.04 Estimate Project Resource Requirements	BP 11.03 Establish Estimates
BP 11.05 Establish Schedules	BP 11.04 Establish Schedules
BP 11.06 Establish and Maintain Plans	BP 11.05 Establish and Maintain Plans
BP 11.07 Establish Commitment	BP 11.06 Establish Commitment
BP 11.08 Organize to meet Project Objectives	-
BP 11.09 Direct the Project	-
BP 11.10 Monitor Project Performance	BP 11.07 Monitor the Project according to Established Plans BP 11.08 Track Technical Process
BP 11.11 Review and Analyze Project Performance	BP 11.09 Review Performance Against Established Plans BP 13.04 Review and Validate Risk Assessment
BP 11.12 Take Corrective Action	BP 11.10 Take Corrective Action BP 18.04 Take Corrective Action
<i>PA 12 Supplier Agreement Management</i>	<i>PA 12 Contract Management; PA 08 System Test and Evaluation</i>
1. The documented agreement is kept consistent with the acquirer's requirements and relevant laws, policies, regulations, and other applicable guidance.	PA 12 1. The contract is kept consistent with the requirements of the acquisition project and relevant laws, policies, regulations, and guidance.
2. Supplier performance, processes, products and services are reviewed and monitored to identify problems and to ensure that products and services conform to requirements.	PA 12 2. Contractor performance, products, and services are reviewed throughout the project to identify risks, problems, and appropriate corrective actions.
3. Measurements are used to track the supplier's performance.	PA 12 3. Measurements are used to track the contractor's performance.
4. Communications between the acquirer and the supplier are established and maintained to foster a cooperative and productive agreement environment.	PA 12 4. Communications between the acquirer's project team and the contractor are established and maintained.
5. Acceptance of deliverable products or services is based on the supplier meeting the terms and conditions described in the agreement.	-
BP 12.01 Use Planning documents:	BP 12.01 Review and Use Planning documents:
BP 12.02 Review and Monitor Agreement Performance	BP 12.02 Conduct Periodic Reviews BP 08.04 Monitor Developer Performance
BP 12.03 Maintain Supplier Agreement Integrity	BP 12.03 Maintain Contract Integrity
BP 12.04 Monitor Supplier's Plans, Processes, Activities and Products	BP 12.04 Monitor Contractor's Support Processes

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
BP 12.05 Foster Cooperative and Collaborative Environment.	BP 12.05 Foster Cooperative Environment
BP 12.06 Analyze and Direct Agreement Activities	-
BP 12.07 Administer Supplier Agreement	-
BP 12.08 Determine Product or Service Acceptance	-
<i>PA 13 Risk Management</i>	<i>PA 13 Risk Management</i>
1. A risk management strategy is established and used that includes the plans, methods and parameters for management of risk.	1. Risk Management is an integral part of project management and engineering activities.
2. Risks are identified and assessed for their likelihood and consequence.	2. Risks are identified and assessed for their likelihood and impact.
3. Risk mitigation is performed when analysis indicates action.	3. Risk mitigation is performed when analysis indicates action.
4. Risk mitigation actions are monitored to determine their effectiveness and corrective action is taken as needed.	-
BP 13.01 Develop Risk Management Approach	BP 13.01 Develop Risk Management Approach
BP 13.02 Identify Risks	BP 13.02 Identify Risks
BP 13.03 Assess Risks	BP 13.03 Assess Risks
BP 13.04 Develop Risk Mitigation Plans	-
BP 13.05 Implement and Monitor Risk Mitigation Plans	BP 13.05 Execute Risk Mitigation Plans
<i>PA 14 Integrated Teaming</i>	<i>PA 14 Coordination</i>
1. Integrated teams composed of appropriate disciplines and stakeholders are established and maintained	1. The project goals, processes and interfaces between the disciplines necessary to the system life cycle are coordinated.
2. Team processes and methods are established and maintained for effective coordination, collaboration, communication, conflict resolution and decision-making	2. Methods are established and maintained for interdisciplinary communication, coordination, and conflict resolution.
BP 14.01 Develop and Communicate Team Goals	BP 14.06 Develop and Communicate Project Goals
BP 14.02 Establish and Maintain Integrated Teams	BP 14.01 Involve Disciplines
BP 14.03 Establish and Maintain a Collaborative Workplace	BP 14.02 Promote Cross-Discipline Understanding
BP 14.04 Establish Coordination and Communication Methods	BP 14.03 Establish Coordination Methods
BP 14.05 Establish Resolution Methods	BP 14.04 Establish Resolution Methods
BP 14.06 Communicate Integrated Team Activity Results	BP 14.05 Communicate Interdisciplinary Activity Results
<i>PA 15 Quality Assurance and Management</i>	<i>PA 15 Quality Assurance and Management; PA 19 Prevention</i>
1. Adherence of work products, services, and activities to applicable standards, procedures, and requirements is verified objectively.	PA 15 1. Adherence of work products and activities to the applicable standards, procedures, and requirements is verified objectively.
2. Noncompliance issues are tracked and those that cannot be resolved at the project level are addressed by senior management.	PA 15 2. Noncompliance issues that cannot be resolved within the software project are addressed by senior management
3. Affected groups and individuals are informed of quality assurance activities, and results.	PA 15 3. Affected groups and individuals are informed of quality assurance activities, results

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
4. Causes of defects are sought out, identified, prioritized, corrected, and methods of elimination are evaluated.	PA 19 1. Common causes of defects are sought out and identified. PA 19 2. Common causes of defects are prioritized and systematically eliminated.
5. Quality improvement opportunities are initiated with the appropriate stakeholders.	PA 15 3. ... and quality improvement opportunities.
BP 15.01 Establish a Quality Management System	-
BP 15.02 Monitor Process Compliance	BP 15.01 Monitor Process Compliance BP 15.02 Evaluate Product and Process
BP 15.03 Monitor Product and Service Quality	BP 15.02 Evaluate Product and Process
BP 15.04 Record and Report Results	BP 15.04 Record and Report Results
BP 15.05 Analyze Quality	BP 15.03 Detect Need for Corrective Actions BP 15.05 Analyze Quality BP 19.01 Conduct Causal Analysis Meetings
BP 15.06 Initiate Quality Improvement	BP 15.06 Initiate Quality Improvement Opportunities BP 19.02 Coordinate Action Proposals BP 19.04 Revise Processes for Defect Prevention
BP 15.07 Evaluate the Effect of Changes	BP 19.03 Document and Track Prevention Data
<i>PA 16 Configuration Management</i>	<i>PA 16 Configuration Management</i>
1. Configuration items that are to be managed are identified.	1. Configuration items that constitute baselines are identified.
2. Configuration items are controlled and managed throughout the life cycle.	2. Configuration items are controlled to support the disciplined evolution of the product baseline.
3. Status of configuration items is recorded and reported to all stakeholders.	3. Configuration status is communicated to affected groups.
4. The integrity of baselines and work products is assured.	4. Configuration baselines are audited to verify the product baseline integrity.
BP 16.01 Establish a Configuration Management Strategy	BP 16.01 Establish Configuration Management Methodology
BP 16.02 Identify and Baseline Configuration Items and Interim Work Products	BP 16.02 Identify Configuration Units/Items
BP 16.03 Establish and Maintain a Repository for Work Product Baselines	BP 16.03 Establish and Maintain a Repository for Work Product Baselines
BP 16.04 Control Changes	BP 16.04 Control and Track Changes
BP 16.05 Record and Report Configuration Status	BP 16.05 Communicate Configuration Status
BP 16.06 Conduct Configuration Audits and Inspections	BP 16.06 Conduct Configuration Audits
<i>PA 17 Information Management</i>	-
1. An infrastructure is established and maintained to provide the mechanisms and media needed to support the information management at project, organization and enterprise levels.	-
2. Information is managed in accordance with established requirements and strategy.	-
3. Information is stored and protected from loss, damage, and unwarranted access.	-

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
4. Timely access to information is available to those that need it.	-
BP 17.01 Establish Information Management Strategy	-
BP 17.02 Establish Information Management Capability	-
BP 17.03 Store Information	-
BP 17.04 Share Information	-
BP 17.05 Protect Information	-
BP 17.06 Establish Information Standards	-
<i>PA 18 Measurement and Analysis</i>	<i>PA 18 Measurement</i>
1. Measures related to goals, objectives and major issues are established	1. Measurements are established, maintained and used based on the project and organization goals.
2. Measurement data are collected, analyzed, and results are reported	2. Measurements are collected, analyzed and reported
3. Measurement data and results are stored for use.	-
BP 18.01 Establish Measures Based on Goals	BP18.01 Establish Measures Based on Quantitative Goals
BP 18.02 Collect Relevant Measurement Data	BP18.02 Collect and Analyze Measurement Data
BP 18.03 Store Data and Results	-
BP 18.04 Analyze Measurement Data	BP18.02 Collect and Analyze Measurement Data
BP 18.05 Communicate Results	BP18.03 Communicate Quantitative Status
<i>PA 20 Process Definition</i>	<i>PA 20 Organization Process Definition</i>
1. The set of standard processes is established and maintained.	1. The organization's set of standard processes is established and maintained.
2. Guides for tailoring the standard processes are established and maintained.	2. Guides for tailoring the organization's standard processes are established and maintained.
3. Goals, performance data, and other assets that support the processes are collected, maintained, and communicated.	3. Goals, performance data, and other assets for the organization's processes are collected, maintained, and communicated.
BP 20.01 Establish Standard Processes	BP 20.03 Establish Standard Processes BP 21.02 Change the standard process
BP 20.02 Develop Tailoring Guidelines	BP 20.04 Develop Tailoring Guidelines
BP 20.03 Maintain Process Assets	BP 20.05 Maintain Process Assets
BP 20.04 Coordinate and Communicate Process Definition	BP 20.06 Coordinate and Communicate Process Definition
<i>PA 21 Process Improvement</i>	<i>PA 20 Organization Process Definition; PA 21 Organization Process Improvement</i>
1. Goals for processes improvement are established and progress towards them is evaluated.	
2. Process improvement activities are coordinated across projects and the organization.	PA 20 4. Process definition and improvement activities are coordinated across the organization.
3. Improvements are deployed, monitored, and sustained within the project and organization.	PA 21 1. The set of standard processes and projects' defined processes are improved continuously
BP 21.01 Identify Process Improvement Goals	BP 20.02 Identify Process Goals
BP 21.02 Establish Process Improvement Program	BP 21.01 Establish process improvement program
BP 21.03 Appraise Process	BP 20.01 Appraise Processes
BP 21.04 Establish an Action Plan	-

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
BP 21.05 Implement Improvements	-
BP 21.06 Confirm Improvements	-
BP 21.07 Sustain and Deploy Improvement Gains	-
BP 21.08 Monitor Performance	-
<i>PA 22 Training</i>	<i>PA 22 Training</i>
1. Training needs are solicited and identified.	1. Training needs are solicited and identified.
2. Required training is provided	2. Required training is provided.
3. Training effectiveness is assessed	-
BP 22.01 Identify Training Needs	BP 22.01 Identify Strategic Needs BP 22.02 Identify Unique Training Needs
BP 22.02 Establish Training Plan	-
BP 22.03 Establish Training Mechanism	BP 22.04 Obtain Training
BP 22.04 Train Individuals	BP 22.03 Train Individuals
BP 22.05 Establish and Maintain Records	BP 22.05 Establish and Maintain Records
BP 22.06 Assess Training Effectiveness	BP 22.06 Assess Training Effectiveness
BP 22.07 Establish Learning Environment	-
<i>PA 23 Innovation</i>	<i>PA 23 Innovation; PA 10 Product Evolution</i>
1. Agile adaptation to change is driven by the organization's knowledge of its products, processes, technologies, and core competencies.	PA 23 1. Agile adaptation to change is driven by the organization's profound knowledge of its products, processes, technologies, and core competencies.
2. The organization's products, services, processes, and work environment are continually evaluated for suitability to use identified improvements and innovations.	-
3. Selected technologies are deployed to relevant parts of the organization in accordance with the organization's objectives and goals.	PA 23 2. The organization environment is updated in a planned, controlled manner while minimizing disruptions to users.
BP 23.01 Maintain New Technology Awareness	BP 23.01 Maintain New Technology Awareness BP 10.02 Identify New Product Technologies
BP 23.02 Select New Technologies	BP 23.02 Select New Technologies BP 10.02 Identify New Product Technologies
BP 23.03 Prepare for Infusion	BP 23.03 Prepare for Infusion BP 10.04 Ensure Critical Component Availability
BP 23.04 Infuse New Technologies	BP 23.04 Infuse New Technologies BP 10.03 Adapt Development Processes BP 10.05 Insert Product Technology
BP 23.05 Manage Innovation:	BP 23.05 Support Innovation
<i>FAA-iCMM v2.0 Capability Levels and Generic Practices</i>	<i>FAA-iCMM v1.0 Capability Levels and Generic Practices</i>
Capability Level 0	
Capability Level 0: Incomplete One or more of the goals of the process area are not achieved. (No goal or generic practices at this level)	No level 0 – called “not implemented”
Capability Level 1	
Capability Level 1: Performed L1 Goal: The process achieves the goals of the process area.	Capability Level 1 - Initial: Performed Informally (no goal)
1.1 Identify Work Scope	-
1.2 Perform the Process	1.1 Perform the Process

Table 2: FAA-iCMM v2.0 to FAA-iCMM v1.0	
<i>FAA-iCMM v2.0</i>	<i>FAA-iCMM v1.0</i>
Capability Level 2	
Capability Level 2: Managed: Planned and Tracked L2 Goal: The process is institutionalized as a managed (planned and tracked) process.	Capability Level 2: Repeatable: Planned and Tracked Level 2 Goal: The activities for the process are institutionalized to support a repeatable process.
2.1 Establish Organizational Policy	2.1 Establish Policy
2.2 Document the Process	2.5 Document the Process
2.3 Plan the Process	2.6 Plan the Process
2.4 Provide Adequate Resources	2.2 Allocate Adequate Resources
2.5 Assign Responsibility	2.3 Assign Responsibility
2.6 Ensure Skill and Knowledge	2.4 Ensure Training
2.7 Establish Work Product Requirements	-
2.8 Consistently Use and Manage the Process	2.7 Use a Repeatable Process
2.9 Manage Work Products	2.8 Manage Configurations
2.10 Objectively Assess Process Compliance.	2.9 Assess Process Compliance
2.11 Objectively Verify Work Products	2.10 Verify Work Products 3.3 Perform Reviews with Peers
2.12 Measure Performance	2.11 Measure Process
2.13 Review Performance with Higher-level Management	2.12 Review Status
2.14 Take Corrective Action	2.13 Take Corrective Action
2.15 Coordinate with Stakeholders	2.14 Coordinate Within the Project 3.4 Coordinate with Affected Groups
Capability Level 3	
Capability Level 3: Defined Level 3 Goal: The process is institutionalized as a defined process.	Capability Level 3: Defined; Well Defined Level 3 Goal: The activities of the process are institutionalized to support a defined process.
3.1 Standardize the Process	3.1 Standardize the Process
3.2 Establish and Use a Defined Process	3.2 Use Defined Process
3.3 Improve Processes	5.1 Perform Continual Process Improvement on the Organizational Standard and Tailored Processes 5.2 Implement Improved Processes
Capability Level 4	
Capability Level 4: Quantitatively Managed Level 4 Goal: The process is institutionalized as a quantitatively managed process.	Capability Level 4: Managed; Quantitatively Controlled Level 4 Goal: The activities of the processes are institutionalized to support quantitative management of defined processes.
4.1 Stabilize Process Performance	4.1 Establish Quality Objectives for Product and Process 4.2 Select Processes for Measurement. 4.3 Select Measures for the Process 4.4 Determine Quantitative Process Capability 4.5 Use Quantitative Process Capability
Capability Level 5	
Capability Level 5: Optimizing Level 5 Goal: The process is institutionalized as an optimizing process	Capability Level 5: Optimizing; Continuously improving Level 5 Goal: Continually improving processes are deployed throughout the organization.
5.1 Pursue Process Optimization	(CL5 GPs moved to CL3)