



The CMMI[®] Product Suite and International Standards

Dave Kitson, Jeanie Kitson, Terry Rout and Pedro Sousa



© CMMI is registered in the US Patent & Trademark Office by Carnegie Mellon University

Sponsored by the U.S. Department of Defense

© 2006 by Carnegie Mellon University

This material is approved for public release.

Agenda

Evolution of Capability Maturity Models® and ISO/IEC 15504

ISO/IEC 15504 Overview and Status

CMMI Synergy with International Standards

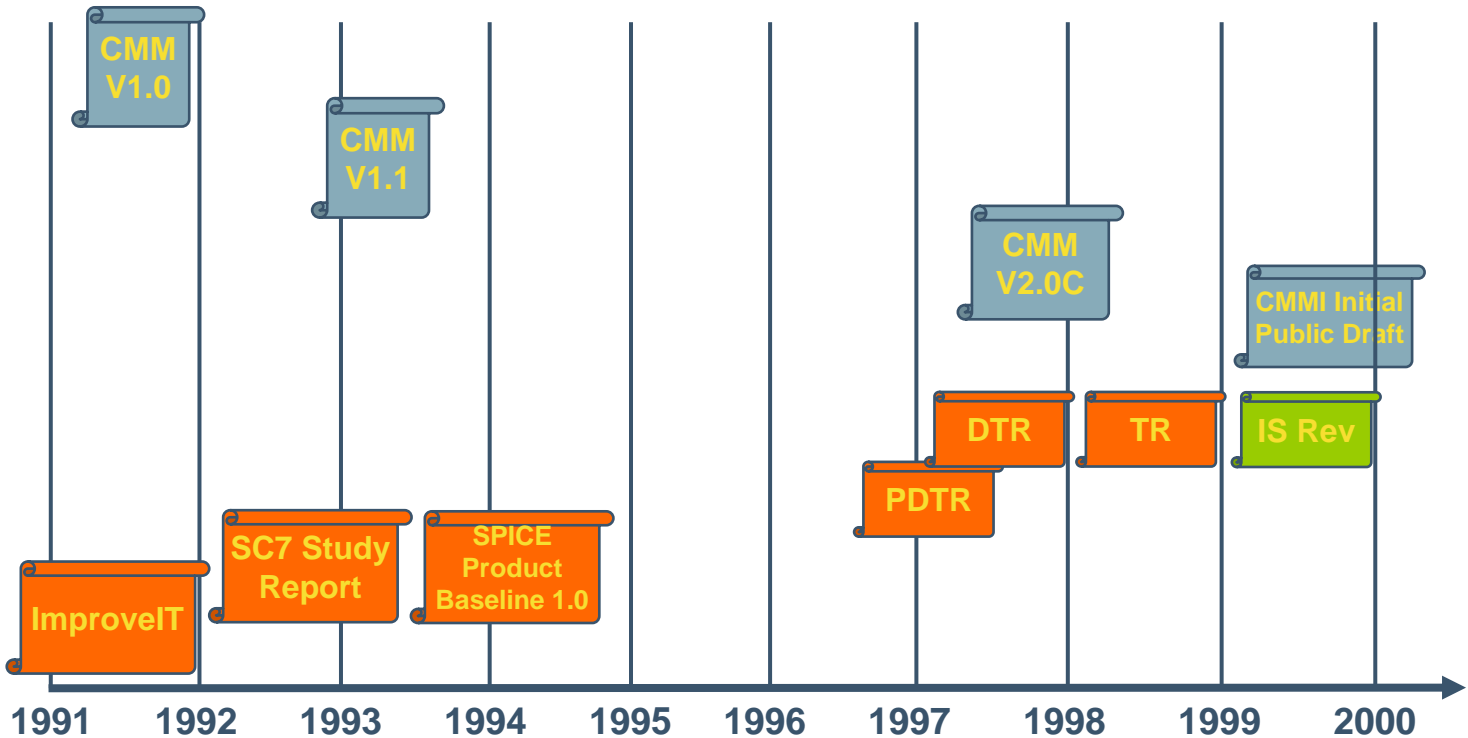
Work to be Done

Future Directions

® Capability Maturity Model is registered in the U.S. Patent and Trademark Office by Carnegie Mellon University



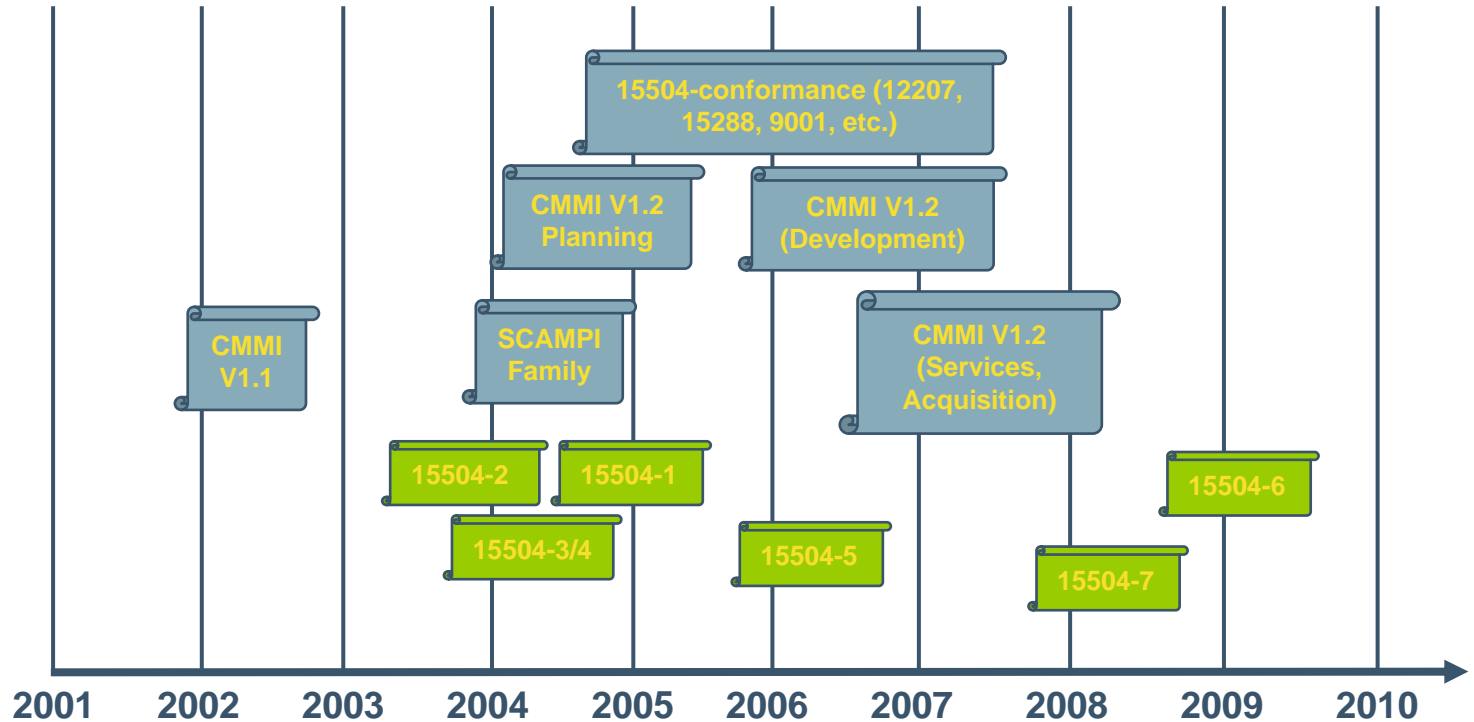
Progression of CMMs[®] and 15504 -1



® CMM is registered in the U.S. Patent and Trademark Office by Carnegie Mellon University



Progression of CMMs and 15504 -2



What EXACTLY is 15504?

ISO/IEC 15504 is an international standard being progressed by WG10 - a working group established by ISO/IEC/JTC1 SC7.

Prescribes requirements for process assessment; is a framework standard.

Consists of 5 documents (15504-1, ..., 15504-5); note that all parts are now published.

Not the same as ISO/IEC TR 15504 – this is a 9-part set of documents published as ISO Technical Reports in 1998.



Key Premise Underlying 15504

Assessments of process capability will yield results which are comparable as long as:

- **the process assessment model satisfies 15504 model compatibility requirements**
- **the assessment process satisfies 15504 assessment requirements**
- **the assessment contexts are similar**

Evolution of 15504 Specificity

1st generation (pre-Pilanesburg) - practices were HARD-WIRED into 15504 (as a normative component - BPG)

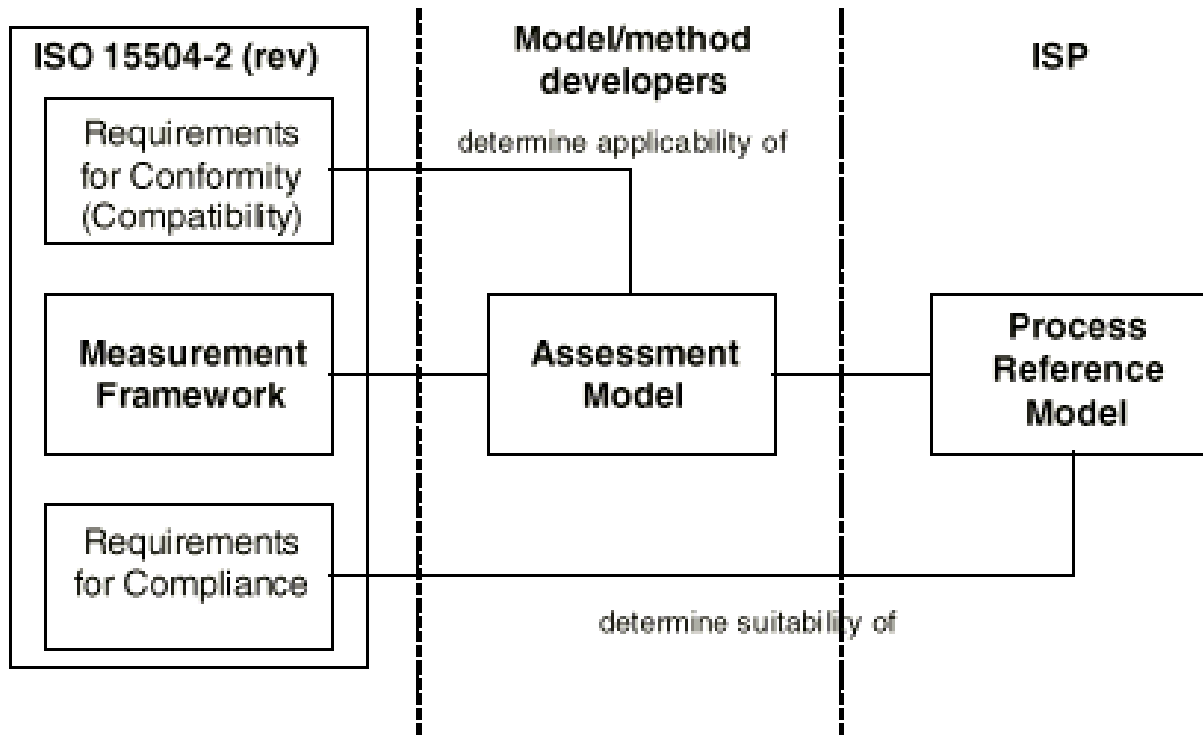
2nd generation (pre-IS) - process definitions were HARD-WIRED into 15504 (as a normative component - 15504-2)

3rd generation (IS) - compliance requirements for Process Reference Models (PRMs) HARD-WIRED into 15504 (as a normative component - 15504-2):

- **PRMs will be externally specified**
- **12207 includes as an amendment a PRM encompassing TR 15504-2 process definitions (and more)**



Architecture for 15504





CMMI and 15504

A-spec requirements relevant to international standards:

“2.3 Reference Documents

2.3.1 Applicable ISO/IEC documents, including ISO/IEC 12207 and ISO/IEC 15504.”

“3.1 Development User Requirements

3.1.6 The CMMI Product Suite shall be consistent and compatible with ISO/IEC 15504.”



Synergy With Selected International Standards -1

Identify areas where there are opportunities for synergy between key international standards and the CMMI Product Suite

Exploit these opportunities by developing appropriate work products and/or liaising with appropriate individuals and organizations

Synergy With Selected International Standards -2

Two of the key areas identified to date are the ISO 9000:2000 family of standards and the ISO/IEC 15504 standard

Note that 15504 provides a mechanism for establishing important relationships to other important process-related international standards such as ISO 9001:2000, 12207, 15288

Key Supplements Needed

Identification of suitable process reference models,

**Mappings between CMMI model (s) and PRM (s)
satisfying 15504 -2 requirements,**

Translation mechanism

Translation Mechanism

Purpose: for representing the results of an assessment as a set of process attribute ratings for each process selected from the specified Process Reference Model

How?:

- 1. direct translation of Process Assessment Model ratings into a process profile**
- 2. or the conversion of the data collected during the assessment (with the possible inclusion of additional information) through further judgment on the part of the assessor.**

Status

A detailed mapping has been developed from CMMI to:

- **the Measurement Framework in ISO/IEC 15504; and**
- **the Process Reference Model included in ISO/IEC 12207.**

A possible approach has been developed for verifiable conversion of results.



An Approach for Data Conversion - 1

For the Process Dimension:

- **Collect data and generate observations for all Specific Practices in Process Areas within the scope of the assessment.**
- **Using the mapping tables, assign the data observations to all Process Outcomes and Attributes indicated from the mapping.**
 - **Thus, if a Specific Practice maps to multiple Process Outcomes, assign the data to all of the possibilities.**
- **Review the assigned data and remove observations that are not relevant.**
- **Judge whether the remaining data is adequate to enable judgement of achievement of the outcomes.**

An Approach for Data Conversion - 2

Where adequate data is available, consolidate the data to the process level and rate the performance of the process (Process Attribute 1.1).

If the data is not adequate, either:

- Collect additional data; or
- Remove the process from the 15504 scope of the appraisal.

An Approach for Data Conversion - 3

Repeat the exercise for the Generic Practices and Process Attributes 2.1 – 5.2.

Additional data will need to be collected to address gaps in the mapping

- Most notably in Process Attribute 3.2

In some cases, evidence from Advanced Practices may also be relevant to a particular Process Attribute for a specific Process or set of Processes.

Tool Support

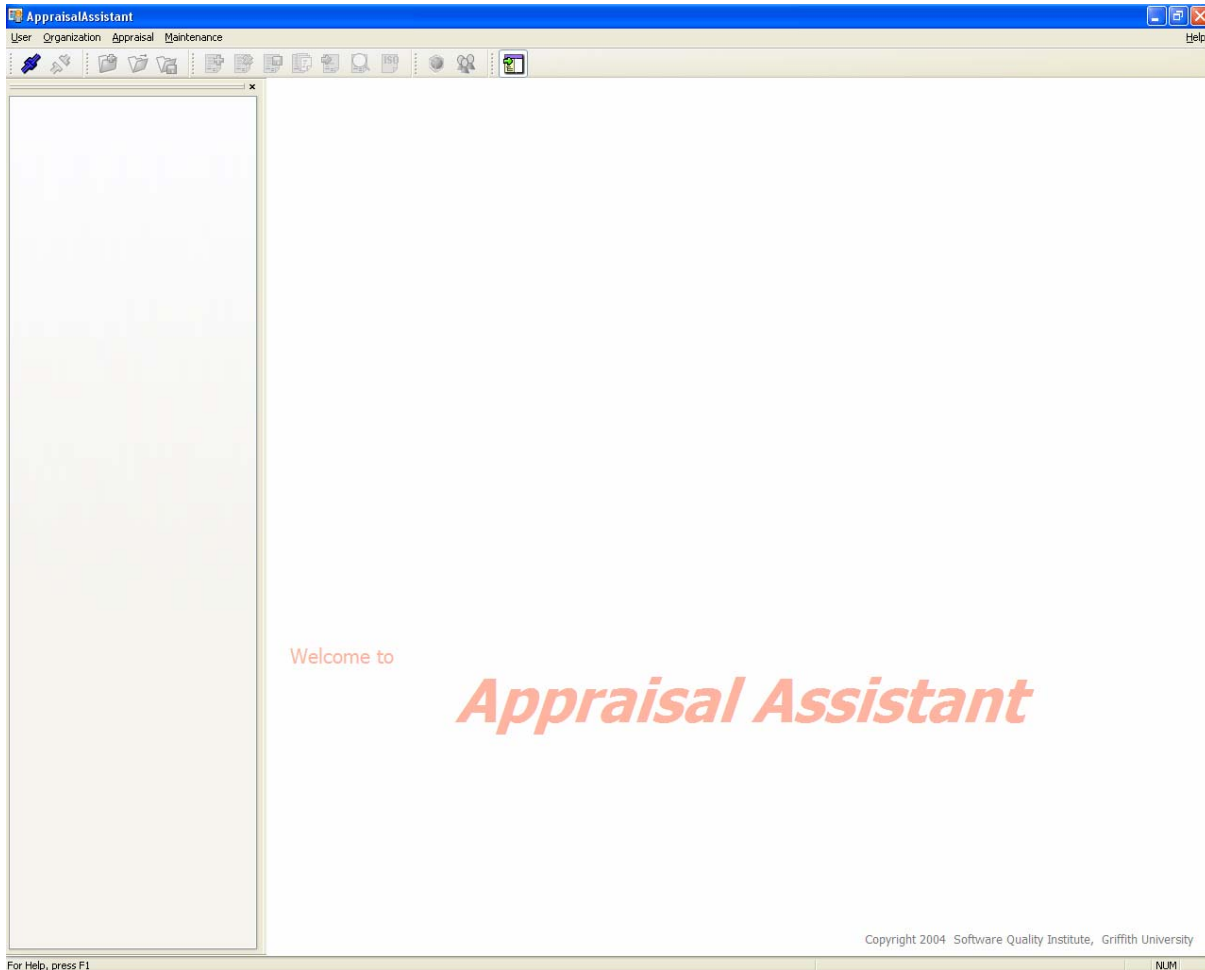
To achieve this form of conversion is complex and difficult, without tool support.

A tool (the Appraisal Assistant) has been developed for managing evidence and ratings in CMMI appraisals, with a specific focus on conversion of data to generate ISO15504 Process Profiles.

The tool automatically generates lists of data for a Process Attribute based upon detailed ratings tables.

- It permits de-selection of data judged to be not relevant.
- It highlights areas where there may be a lack of relevant evidence.

The Appraisal Assistant



Model Details

Standard Appraisal Model Editor

Process Specific Dimension | Generic Dimension

Name: Estimate the Scope of the Project

Acronym: SP1.1-1 **Capability:** Level 1

Group: **Maturity:** **C. Feature:** **P.I.I. Type:**

Practice Included in Stage Representation

Appraisal Consideration

- Determination of WBS usage for this practice must be based on top-level WBS only, not its fully elaborated and expanded form as referenced in subsequent practices of this PA
 - Top-level work breakdown structure should be driven by and linked to specified product requirements. (See Requirements Management PA)

Summary

Establish a top-level work breakdown structure (WBS) to estimate the scope of the project

Framework Selection

CMMI
 ISO12207/15504-5

Add Process Area
 Add Goal
 Add Practice
 Add P.I.I.
 Delete Subtree

Max. Capability Level

5

Delete All Mapping
 Import Mapping Table

Related ISO-12207 Process Outcomes/ISO-15504-2 Attribute Achievements

F.3.1.3/1 The scope of the work for the project is defined(Process specific)
 F.3.6/4 The reuse potential of each domain is assessed(Process specific)
 F.3.6/5 Reuse proposals are evaluated to ensure the reuse product is su

Add Mapping
 Delete Mapping
 Close

Process Specific Dimension Tree:

- [OT] Organizational Training
- [OPF] Organizational Process Focus
- [OPD] Organizational Process Definition
- [OPP] Organizational Process Performance
- [OID] Organizational Innovation and Improvement
- [PP] Project Planning
 - SG 1 Establish Estimates
 - SP1.1-1 Estimate the Scope**
 - Task descriptions
 - Work package descriptions
 - Work breakdown structure
 - Top-level WBS revision
 - SP1.2-1 Establish Estimates
 - SP1.3-1 Define Project Life Cycle
 - SP1.4-1 Determine Estimate
 - SG 2 Develop a Project Plan
 - SG 3 Obtain Commitment to the Project
- [PMC] Project Monitoring and Control
- [SAM] Supplier Agreement Management
- [IPM] Integrated Project Management
- [RSKM] Risk Management
- [IT] Integrated Teaming
- [QPM] Quantitative Project Management
- [REQM] Requirements Management
- [RD] Requirements Development
- [TS] Technical Solution
- [PI] Product Integration
- [ITSM] Integrated Supplier Management



Pilot Appraisal

**15504-conformant SCAMPI A appraisal conducted at
Critical Software, SA during February-March 2006**

- **Maturity level 3 scope**
- **Process reference model embedded in ISO/IEC 12207 (amended)**
- **Mapping between CMMI and 12207 provided by Software Quality Institute**
- **Appraisal team included 3 SCAMPI Lead appraisers , one ISO 9001 auditor and one SPICE assessor**
- **Support automation provided by Software Quality Institute – Appraisal Assistant**
- **Subset of 15504 process profiles generated as well as selected ISO 9001 outcomes.**

Project Management Process

Maps to elements from the following Process Areas:

- **Project Planning**
- **Project Monitoring and Control**
- **Supplier Agreement Management**
- **Requirements Management**
- **Integrated Project Management**
- **Quantitative Project Management**

With minor linkages to

- **Organizational Process Performance**
- **Risk Management**
- **Verification**



Project Management Process

ISO15504 Process Profiler

F.3.1.3 Project management
The purpose of the Project management process is to identify, establish, co-ordinate, and monitor the activities, tasks, and resources necessary for a project to produce a product and/or service, in the context of the project's requirements and constraints

PA1.1 | PA2.1 | PA2.2 | PA3.1 | PA3.2 | PA4.1 | PA4.2 | PA5.1 | PA5.2 | Process Summary | ISO 15504 Profile Summary

Process Attribute: PA1.1 Process Performance attribute

Process Attribute Achievement: Fully Achieved

Strength:

Weakness:

Outcome: 1) The scope of the work for the project is defined

Related Evidence

Evidence	Instantiation	QM Practice	Characteristic
<input checked="" type="checkbox"/> Analysis Phase Overview Presentation	GSSP2	PP-SG 1-SP1-2-1	Strength
<input checked="" type="checkbox"/> Architecture (deliverable)	SIGAI	PP-SG 1-SP1-2-1	Strength
<input checked="" type="checkbox"/> Audit Report	WOWEBS	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> CSW-2004-PRL-1960-sistemas-mice-tecnica.doc	SMICE	PP-SG 2-SP2-4-1	Strength
<input checked="" type="checkbox"/> csw-opf-open-project-form.doc	OPF	PP-SG 2-SP2-4-1	Strength
<input checked="" type="checkbox"/> CSW-QMS-2003-PCS-2206-project-life-cycles.pdf	WOWEBS	PP-SG 1-SP1-3-1	Strength
<input checked="" type="checkbox"/> CSW-SIGAI-2005-QAP-2002-ga-plan.doc	SIGAI	PP-SG 1-SP1-3-1	Strength
<input checked="" type="checkbox"/> CSW-SMICE-2004-DPL-2813-sistemas-mice-detailed-plan.mpp	SMICE	PP-SG 2-SP2-4-1	Strength
<input checked="" type="checkbox"/> Detailed Plan Analysis-phase	GSSP2	PP-SG 2-SP2-4-1	Strength
<input checked="" type="checkbox"/> Detailed Plan Modelling Phase	GSSP2	PP-SG 2-SP2-4-1	Strength
<input checked="" type="checkbox"/> Enterprise Architecture file (with used with Request@ - from Spansystems - for requirements change management)	WOWEBS	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> Exceptions and non-compliances	GSSP2	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> External Meeting minute with consortium	GSSP2	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> FAR Support Category	WOWEBS	PP-SG 2-SP2-1-1	Strength
<input checked="" type="checkbox"/> Financial maps	SIGAI	PP-SG 2-SP2-1-1	Strength
<input checked="" type="checkbox"/> Financial Proposal	SIGAI	PP-SG 2-SP2-1-1	Strength
<input checked="" type="checkbox"/> http://ftp.cbacl.pt/cmfiles/management/project-management/CSW-QMS-2003-PCS-1778-project-management.pdf	GSSP2	PP-SG 2-SP2-4-1	Strength
<input checked="" type="checkbox"/> Interview OPF Team	OPF	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> Interview PM	GSSP2	PP-SG 1-SP1-3-1	Strength
<input checked="" type="checkbox"/> Interview SMICE team	SMICE	PP-SG 1-SP1-3-1	Strength
<input checked="" type="checkbox"/> Management proposal	SIGAI	PP-SG 1-SP1-3-1	Strength
<input checked="" type="checkbox"/> Master Plan	GSSP2	PP-SG 2-SP2-4-1	Strength
<input checked="" type="checkbox"/> Meeting minutes (Technical)	OPF	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> Modeling Overview Presentation	GSSP2	PP-SG 1-SP1-2-1	Strength
<input checked="" type="checkbox"/> open-project-sistemas-mice.doc	SMICE	PP-SG 2-SP2-4-1	Strength
<input checked="" type="checkbox"/> OPF Team Interview	OPF	PP-SG 1-SP1-1-1	Strength
<input checked="" type="checkbox"/> Project Life Cycle Management Process	GSSP2	PP-SG 1-SP1-2-1	Strength
<input checked="" type="checkbox"/> Project Progress Reports	SIGAI	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> Proposal: partII technical-proposal	GSSP2	PP-SG 1-SP1-2-1	Strength
<input checked="" type="checkbox"/> Prototype presentation to the customer	SMICE	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> Requirements doubts meeting	SMICE	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> RID Forms	GSSP2	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> SIGAI - Master Plan.mpp	SIGAI	PP-SG 2-SP2-1-1	Strength
<input checked="" type="checkbox"/> Statement of work	GSSP2	PP-SG 1-SP1-3-1	Strength
<input checked="" type="checkbox"/> System requirements review report	SMICE	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> technical proposal	SIGAI	PP-SG 1-SP1-2-1	Strength
<input checked="" type="checkbox"/> User requirements review report	SMICE	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> Workshop with customer for presenting requirements for analysis	WOWEBS	REQM-SG 1-SP1-5-1	Strength
<input checked="" type="checkbox"/> WOWEBS PM Interview	WOWEBS	PP-SG 1-SP1-3-1	Strength

Evidence Description
Presentation - analysis overview

Reset Profile | Report

Close

PA 2.1 – Process Management

ISO15504 Process Profiler

Acronym Process Name
 F.1.1.1 Acquisition preparation
 F.1.1.2 Supplier selection
 F.1.1.3 Supplier monitoring
 F.1.1.4 Customer acceptance
 F.1.2.1 Supplier tendering
 F.1.2.3 Product release
 F.1.2.4 Product acceptance e...
 F.1.3.1 Requirements elicitation
 F.1.3.10 System testing
 F.1.3.11 Software installation
 F.1.3.2 System requirements...
 F.1.3.2 System architectural ...
 F.1.3.4 Software requiremen...
 F.1.3.5 Software design
 F.1.3.6 Software construction
 F.1.3.7 Software integration
 F.1.3.8 Software testing
 F.1.3.9 System integration
 F.1.5 Software and system...
 F.2.1 Documentation
 F.2.11 Change request man...
 F.2.2 Configuration manage...
 F.2.3 Quality assurance
 F.2.4 Verification
 F.2.5 Validation
 F.2.6 Joint review
 F.2.7 Audit
 F.2.8 Problem resolution m...
 F.3.1.1 Organizational aligm...
 F.3.1.3 Project management
 F.3.1.4 Quality management
 F.3.1.5 Risk management
 F.3.1.6 Measurement
 F.3.2 Infrastructure
 F.3.3.1 Process establishment
 F.3.3.2 Process assessment
 F.3.3.3 Process Improvement
 F.3.4 Human Resource Pro...
 F.3.4.1 Human resource man...
 F.3.4.2 Training
 F.3.4.3 Knowledge managem...
 F.3.5 Asset management
 F.3.6 Reuse program mana...

F.1.1.1 Acquisition preparation
 The purpose of the Acquisition preparation process is to establish the needs and goals of the acquisition and to communicate these with the potential suppliers

PA1.1 PA2.1 PA2.2 PA3.1 PA3.2 PA4.1 PA4.2 PA5.1 PA5.2 Process Summary ISO 15504 Profile Summary

Process Attribute: PA2.1 Performance management attribute

Process Attribute Achievement: Fully Achieved

Strength: Weakness:

Achievement: a) Objectives for the performance of the process are identified

Related Evidence

Evidence	Instantiation	CMMI Practice	Characteristic	Evidence Description
<input checked="" type="checkbox"/> Detailed project plan	SMICE	TS-GG 2-GP 2.2	Strength	See WPA-300 and WPB-300 "Software Requirements Engineering". This is the planned task and effort for performing the process.
<input checked="" type="checkbox"/> Engineering council meeting minutes	Organizatio...	TS-GG 2-GP2.10	Strength	
<input checked="" type="checkbox"/> FAR Process Management Category	Organizatio...	SAM-GG 2-GP 2.1	Strength	
<input checked="" type="checkbox"/> Master Plan	GSSP2	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> PMC Interview PH SMICE	SMICE	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> Project Plan	SGA1	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> Quality council meeting minutes	Organizatio...	TS-GG 2-GP2.10	Strength	
<input checked="" type="checkbox"/> Quality Manual	Organizatio...	TS-GG 2-GP 2.1	Strength	
<input checked="" type="checkbox"/> Quality Policies	Organizatio...	SAM-GG 2-GP 2.1	Weakness	
<input checked="" type="checkbox"/> SW Construction Process	Organizatio...	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> SW Design Process	Organizatio...	TS-GG 2-GP 2.2	Strength	

Reset Evidences Delete Unchecked

Achievement: b) Performance of the process is planned and monitored

Related Evidence

Evidence	Instantiation	CMMI Practice	Characteristic	Evidence Description
<input checked="" type="checkbox"/> Audit Report	WOWEBS	SAM-GG 2-GP 2.9	Strength	Report on audit of the project conducted as planned.
<input checked="" type="checkbox"/> Audit Report - 2006	OPF	SAM-GG 2-GP 2.9	Strength	
<input checked="" type="checkbox"/> Audit Report Jan 06	GSSP2	SAM-GG 2-GP 2.9	Strength	
<input checked="" type="checkbox"/> CSW-SIGA1-2005-QAP-2002-qa-plan.doc	SGA1	SAM-GG 2-GP 2.9	Strength	
<input checked="" type="checkbox"/> Detailed project plan	SMICE	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> Document Review Records	SMICE	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> Interview PH GSSP2	GSSP2	SAM-GG 2-GP 2.9	Strength	
<input checked="" type="checkbox"/> Interview PH SIGA1	SGA1	SAM-GG 2-GP 2.9	Strength	
<input checked="" type="checkbox"/> Master Plan	GSSP2	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> Meeting minutes (Technical)	OPF	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> milestone SQA report	SGA1	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> PDR milestone report	WOWEBS	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> PDR product assurance report	SMICE	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> PMC Interview PH SMICE	SMICE	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> Project Detailed Plan	SMICE	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> Project Plan	SGA1	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> Project SQA Plan	SMICE	SAM-GG 2-GP 2.9	Strength	
<input checked="" type="checkbox"/> Review records	OPF	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> SW Construction Process	Organizatio...	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> SW Design Process	Organizatio...	TS-GG 2-GP 2.2	Strength	

Reset Evidences Delete Unchecked

Reset Profile Report Close

PA 2.2 – Work Product Management

ISO15504 Process Profiler

Acronym Process Name

- F.1.1.1 Acquisition preparation
- F.1.1.2 Supplier selection
- F.1.1.3 Supplier monitoring
- F.1.1.4 Customer acceptance
- F.1.2.1 Supplier tendering
- F.1.2.3 Product release
- F.1.2.4 Product acceptance s...
- F.1.3.1 Requirements elicitation
- F.1.3.10 System testing
- F.1.3.11 Software installation
- F.1.3.2 System requirements...
- F.1.3.3 System architectural ...
- F.1.3.4 Software requiremen...
- F.1.3.5 Software design
- F.1.3.6 Software construction
- F.1.3.7 Software integration
- F.1.3.9 System integration
- F.1.5 Software and system...
- F.2.1 Documentation
- F.2.11 Change request man...
- F.2.2 Configuration manage...
- F.2.3 Quality assurance
- F.2.4 Verification
- F.2.5 Validation
- F.2.6 Joint review
- F.2.7 Audit
- F.2.8 Problem resolution m...
- F.3.1.1 Organizational alignm...
- F.3.1.3 Project management
- F.3.1.4 Quality management
- F.3.1.5 Risk management
- F.3.1.6 Measurement
- F.3.2 Infrastructure
- F.3.2.1 Process establishment
- F.3.2.2 Process assessment
- F.3.3.3 Process Improvement
- F.3.4 Human Resource Pro...
- F.3.4.1 Human resource man...
- F.3.4.2 Training
- F.3.4.3 Knowledge managem...
- F.3.5 Asset management
- F.3.6 Reuse program mana...

F.1.1.1 Acquisition preparation
The purpose of the Acquisition preparation process is to establish the needs and goals of the acquisition and to communicate these with the potential suppliers

PA1.1 | PA2.1 | **PA2.2** | PA3.1 | PA3.2 | PA4.1 | PA4.2 | PA5.1 | PA5.2 | Process Summary | ISO 15504 Profile Summary

Process Attribute: PA2.2 Work product management attribute

Process Attribute Achievement : Fully Achieved

Strength :

Weakness :

Achievement: a) Requirements for the work products of the process are defined

Related Evidence

Evidence	Instantiation	CMMI Practice	Characteristic	Evidence Description
<input checked="" type="checkbox"/> Detailed project plan	SMICE	TS-GG 2-GP 2.2	Strength	See WPA-300 and WPP-300 "Software Requirements Engineering". This is the planned task and effort for performing the process.
<input checked="" type="checkbox"/> Document Review Records	SMICE	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> Interview PM-OPF	OPF	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> Interview PM-SIGAI	SIGAI	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> Master Plan	GSSP2	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> Meeting minutes (Technical)	OPF	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> milestone SQA report	SIGAI	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> PDR milestone report	WOWEBS	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> PDR product assurance report	SMICE	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> PMC Interview PM SMICE	SMICE	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> Project Detailed Plan	SMICE	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> Project Plan	SIGAI	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> Project plan (QMS 3.0)	Organizatio...	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> Review records	OPF	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> SW Construction Process	Organizatio...	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> SW Design Process	Organizatio...	TS-GG 2-GP 2.2	Strength	

Reset Evidences Delete Unchecked

Achievement: b) Requirements for documentation and control of the work products are defined

Related Evidence

Evidence	Instantiation	CMMI Practice	Characteristic	Evidence Description
<input checked="" type="checkbox"/> CWR File Revisions	GSSP2	SAM-GG 2-GP 2.6	Strength	Work products are controlled using CVS.
<input checked="" type="checkbox"/> Detailed project plan	SMICE	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> Interview PM GSSP2	GSSP2	SAM-GG 2-GP 2.6	Strength	
<input checked="" type="checkbox"/> Interview PM SIGAI	SIGAI	SAM-GG 2-GP 2.6	Strength	
<input checked="" type="checkbox"/> Interview PM SMICE	SMICE	SAM-GG 2-GP 2.6	Strength	
<input checked="" type="checkbox"/> Interview PM-OPF	OPF	SAM-GG 2-GP 2.6	Strength	
<input checked="" type="checkbox"/> Interview PM-WOWEBS	WOWEBS	SAM-GG 2-GP 2.6	Strength	
<input checked="" type="checkbox"/> Interview SIGAI Team	SIGAI	TS-GG 2-GP 2.8	Strength	
<input checked="" type="checkbox"/> Master Plan	GSSP2	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> PMC Interview PM SMICE	SMICE	TS-GG 2-GP 2.6	Strength	
<input checked="" type="checkbox"/> Project Plan	SIGAI	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> SW Construction Process	Organizatio...	TS-GG 2-GP 2.2	Strength	
<input checked="" type="checkbox"/> SW Design Process	Organizatio...	TS-GG 2-GP 2.2	Strength	

Reset Evidences Delete Unchecked

Achievement: c) Work products are appropriately identified, documented, and controlled

Related Evidence

Evidence Description

Reset Profile Report Close

PA 3.1 – Process Definition

ISO15504 Process Profiler

Acronym Process Name

- ↓ F.1.1.1 Acquisition preparation
- ⊗ F.1.1.2 Supplier selection
- ⊗ F.1.1.3 Supplier monitoring
- ↓ F.1.1.4 Customer acceptance
- ⊗ F.1.2.1 Supplier tendering
- ⊗ F.1.2.2 Product release
- ⊗ F.1.2.4 Product acceptance s...
- ⊗ F.1.3.1 Requirements elicitation
- ⊗ F.1.3.10 System testing
- ⊗ F.1.3.11 Software installation
- ⊗ F.1.3.2 System requirements...
- ⊗ F.1.3.3 System architectural ...
- ⊗ F.1.3.4 Software requiremen...
- ⊗ F.1.3.5 software design
- ⊗ F.1.3.6 Software construction
- ⊗ F.1.3.7 Software integration
- ⊗ F.1.3.8 Software testing
- ⊗ F.1.3.9 System integration
- ↓ F.1.5 Software and system...
- ⊗ F.2.1 Documentation
- ↓ F.2.11 Change request man...
- ⊗ F.2.2 Configuration manage...
- ⊗ F.2.3 Quality assurance
- ⊗ F.2.4 Verification
- ⊗ F.2.5 Validation
- ⊗ F.2.6 Joint review
- ⊗ F.2.7 Audit
- ⊗ F.2.8 Problem resolution m...
- ↓ F.2.11 Organizational alignm...
- ⊗ F.3.1.3 Project management
- ⊗ F.3.1.4 Quality management
- ⊗ F.3.1.5 Risk management
- ↓ F.3.1.6 Measurement
- ⊗ F.3.2 Infrastructure
- ⊗ F.3.3.1 Process establishment
- ⊗ F.3.3.2 Process assessment
- ⊗ F.3.3.3 Process Improvement
- ↓ F.3.4 Human Resource Pro...
- ⊗ F.3.4.1 Human resource man...
- ⊗ F.3.4.2 Training
- ↓ F.3.4.3 Knowledge managem...
- ⊗ F.3.5 Asset management
- ↓ F.3.6 Reuse program mana...

F.1.1.1 Acquisition preparation
The purpose of the Acquisition preparation process is to establish the needs and goals of the acquisition and to communicate these with the potential suppliers

PA1.1 | PA2.1 | PA2.2 | PA3.1 | PA3.2 | PA4.1 | PA4.2 | PA5.1 | PA5.2 | Process Summary | ISO 15504 Profile Summary

Process Attribute: PA3.1 Process definition attribute

Process Attribute Achievement: Not Rated

Strength:

Weakness:

Achievement: (j) A standard process, including appropriate tailoring guidelines, is defined that describes the fundamental elements that must be incorporated into a defined process.

Related Evidence

Evidence	Instantation	CMMI Practice	Characteristic
<input checked="" type="checkbox"/> Interview PM-OPF	OPF	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> KOM minute	SMICE	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> KOM Presentation	SMICE	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Project Life Cycles	Organizatio...	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Project Management Process	Organizatio...	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Project Master Plan	OPF	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Project SQA Plan	SMICE	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Proposal	WOWEBS	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> QA Plan Template	Organizatio...	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Quality Assurance Plan	GSSP2	TS-GG 3-GP3.1	Strength

Evidence Description
Galileo Standards are integrated with Critical's own standards to give a coherent set to work from.

Reset Evidence(s) Delete Unchecked

Achievement: (j) The sequence and interaction of the standard process with other processes are determined

Related Evidence

Evidence	Instantation	CMMI Practice	Characteristic
<input checked="" type="checkbox"/> Interview PM-OPF	OPF	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> KOM minute	SMICE	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> KOM Presentation	SMICE	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Management proposal	OPF	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Project Life Cycles	Organizatio...	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Project Management Process	Organizatio...	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Project Plan	SIGAI	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Project Proposal	GSSP2	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Project SQA Plan	OPF	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> QA Plan Template	Organizatio...	TS-GG 3-GP3.1	Strength
<input checked="" type="checkbox"/> Quality Assurance Plan	GSSP2	TS-GG 3-GP3.1	Strength

Evidence Description
Galileo Standards are integrated with Critical's own standards to give a coherent set to work from.

Reset Evidence(s) Delete Unchecked

Achievement: (j) Required competencies and roles, for performing a process, are identified as part of the standard process

Related Evidence

Evidence	Instantation	CMMI Practice	Characteristic
<input type="checkbox"/>			

Evidence Description

Reset Evidence(s) Delete Unchecked

Reset Profile Report Close



PA 3.2 – Process Deployment

ISO15504 Process Profiler

Acronym Process Name
 ↓ F.1.1.1 Acquisition preparation
 ↓ F.1.1.2 Supplier selection
 ↓ F.1.1.3 Supplier monitoring
 ↓ F.1.1.4 Customer acceptance
 ↓ F.1.2.1 Supplier tendering
 ↓ F.1.2.3 Product release
 ↓ F.1.2.4 Product acceptance s...
 ↓ F.1.3.1 Requirements elicitation
 ↓ F.1.3.1.1 System testing
 ↓ F.1.3.1.1.1 Software installation
 ↓ F.1.3.2 System requirements...
 ↓ F.1.3.3 System architectural ...
 ↓ F.1.3.4 Software requiremen...
 ↓ F.1.3.5 Software design
 ↓ F.1.3.6 Software construction
 ↓ F.1.3.7 Software integration
 ↓ F.1.3.8 Software testing
 ↓ F.1.3.9 System integration
 ↓ F.1.5 Software and system...
 ↓ F.2.1 Documentation
 ↓ F.2.1.1 Change request man...
 ↓ F.2.2 Configuration manage...
 ↓ F.2.3 Quality assurance
 ↓ F.2.4 Verification
 ↓ F.2.5 Validation
 ↓ F.2.6 Joint review
 ↓ F.2.7 Audit
 ↓ F.2.8 Problem resolution m...
 ↓ F.3.1.1 Organisational alignm...
 ↓ F.3.1.3 Project management
 ↓ F.3.1.4 Quality management
 ↓ F.3.1.5 Risk management
 ↓ F.3.1.6 Measurement
 ↓ F.3.2 Infrastructure
 ↓ F.3.3.1 Process establishment
 ↓ F.3.3.2 Process assessment
 ↓ F.3.3.3 Process Improvement
 ↓ F.3.4 Human Resource Pro...
 ↓ F.3.4.1 Human resource man...
 ↓ F.3.4.2 Training
 ↓ F.3.4.3 Knowledge managemen...
 ↓ F.3.5 Asset management
 ↓ F.3.6 Reuse program mana...

F.1.1.1 Acquisition preparation
 The purpose of the Acquisition preparation process is to establish the needs and goals of the acquisition and to communicate these with the potential suppliers

PA1.1 PA2.1 PA2.2 PA3.1 PA3.2 PA4.1 PA4.2 PA5.1 PA5.2 Process Summary ISO 15504 Profile Summary

Process Attribute: PA3.2 Process deployment attribute

Process Attribute Achievement: Not Rated

Strength: Weakness:

Achievement: a) A defined process is deployed based upon an appropriately selected and/or Tailored standard process

Related Evidence

Evidence	Instantiation	CMMI Practice	Characteristic	Evidence Description
<input checked="" type="checkbox"/> PM Process Management Category	Organizatio...	TS-GG 3-GP3.1	Strength	The QMS provides support for most functions in projects within Critical.
<input checked="" type="checkbox"/> Follow-up Interviews	WOWERS	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Interview PM-OPF	OPF	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> KOM minute	SMICE	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> KOM Presentation	SMICE	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Project Life Cycles	Organizatio...	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Project Management Process	Organizatio...	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Project Master Plan	SMICE	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Project Plan	SIGAI	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Project Plan (PMP)	OPF	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Project Proposal	GSSP2	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Project SQA Plan	OPF	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Project Technical and Management proposal	SMICE	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Proposal	WOWERS	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> QA Plan Template	Organizatio...	TS-GG 3-GP3.1	Strength	
<input checked="" type="checkbox"/> Quality Assurance Plan	GSSP2	TS-GG 3-GP3.1	Strength	

Reset Evidences Delete Unchecked

Achievement: b) Required roles, responsibilities and authorities for performing the defined process are assigned and communicated

Related Evidence

Evidence	Instantiation	CMMI Practice	Characteristic	Evidence Description

Reset Evidences Delete Unchecked

Achievement: c) Personnel performing the defined process are competent on the basis of appropriate education, training, and experience

Related Evidence

Evidence	Instantiation	CMMI Practice	Characteristic	Evidence Description

Reset Evidences Delete Unchecked

Achievement: d) Required resources and information necessary for performing the defined process are made available, allocated and used

Related Evidence

Evidence	Instantiation	CMMI Practice	Characteristic	Evidence Description

Reset Profile Report Close



Pilot Appraisal Report

Result considered a successful demonstration of ability to fulfill 15504 requirements and generate 15504 process profile relative to a separate process reference model,

Demonstrated criticality of adequate supporting automation

Pilot Observations

Improvement opportunities were identified for support automation

Sample of 12207 processes were rated and a sample of 9001 clauses were examined

Observed consistency between CMMI findings and prior 9001 audit reports as well as prior SPICE assessments, given the expected progress of the improvement program at Critical.

Issues from the Pilot Appraisal

Model-related:

- Deficiencies previously identified in the relationship between CMMI Generic Practices and the 15504 Measurement Framework had a significant impact on assessment of Level 3 Process Attributes.

Technology-related:

- Significant issues in usability of the “translation” functions.
- Need to incorporate the ability to capture additional evidence where needed.

Further effort

Additional pilot appraisals are required to identify any additional issues and to raise confidence in the translation mechanism as well as the translation requirements of 15504.

Ideally a combined CMMI / SPICE assessment using two independent teams should be undertaken.

The ability to perform “bi-directional” translation would be useful (i.e. determine CMMI capabilities from a SPICE assessment) would be useful.

Beta-2 Release

Significant improvements to the Evidence Registry and to Ratings Generation.

CMMI – ISO 15504 mapping functions improved in line with findings from the Pilot Appraisal.

Available for download from

<http://www.sqi.gu.edu.au/AppraisalAssistant>

The SQI is committed to two further beta releases of the Appraisal Assistant in 2007.



Beta Test Programme

Initial release 2005

Beta 2 release 28 July 2006

503 registered beta testers

217 downloads of Beta 2 version

More Information

The Appraisal Assistant:

- <http://www.sqi.gu.edu.au/AppraisalAssistant>

Contact Details:

- David Kitson dhk@sei.cmu.edu
- Loretta Kitson kamoljk@mindspring.com
- Terry Rout T.Rout@griffith.edu.au