

# CMMI Level 2 for Practitioners: A Focused Course for Your Level 2 Efforts

Software Engineering Institute  
Carnegie Mellon University  
Pittsburgh, PA 15213

Mary Beth Chrissis  
May 27, 2009



# Report Documentation Page

Form Approved  
OMB No. 0704-0188

Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

1. REPORT DATE <b>27 MAY 2009</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2009 to 00-00-2009</b>	
4. TITLE AND SUBTITLE <b>CMMI Level 2 for Practitioners: A Focused Course for Your Level 2 Efforts</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Carnegie Mellon University, Software Engineering Institute, Pittsburgh, PA, 15213</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			

# About the presenter: Mary Beth Chrissis

---



Mary Beth Chrissis is a senior member of the technical staff at the Software Engineering Institute (SEI). Since joining the SEI in 1988, Chrissis has coauthored the Capability Maturity Model for Software (SW-CMM) and the Capability Maturity Model Integration® (CMMI ®) model.

Currently, Chrissis is a member of the CMMI v1.3 core development team, manages the CMMI training team, chairs the CMMI Configuration Control Board (CCB), is a member of the IEEE Software and Systems Engineering Standards Executive Committee, and is an instructor of various CMMI model-related courses at the SEI.

Prior to joining the SEI, Chrissis worked at GTE Government Systems in Rockville, MD developing a voice information processing system.



# Polling question

---

**Do you work for an organization that has already reached CMMI maturity level 2?**

- Yes
- No



# Today's topic: CMMI Level 2 for Practitioners

---

A new SEI course that prepares you for the challenges you'll face on your maturity level 2 journey

For more information

**[www.sei.cmu.edu/cmmi/level2](http://www.sei.cmu.edu/cmmi/level2)**



# Agenda

---

**Why a focused approach?**

**Meeting your level 2 needs: CMMI Level 2 for Practitioners**

**Sneak preview**

**Next steps**

**Questions**



---

# Why a focused approach?



# Why a focused approach?

---

Introduction to CMMI provides an overview of the entire model; students receive a large amount of information quickly.

Intermediate Concepts of CMMI provides advanced information for SCAMPI Lead Appraisers and CMMI Instructors.

A focused approach serves the needs of the many practitioners who are working at or toward levels 2 and 3.

Because CMMI implementation happens step by step, a focus on the challenges at specific levels is a natural fit and can provide practitioners with the tools they need to effectively implement CMMI at levels 2 and 3.



---



# Meeting your level 2 needs: CMMI Level 2 for Practitioners



# About CMMI Level 2 for Practitioners

---

CMMI Level 2 for Practitioners can improve your understanding of the CMMI for Development (CMMI-DEV), v1.2 model at Maturity Level 2. This course reviews some fundamental CMMI concepts and focuses on Generic Goal 2 (Institutionalize a Managed Process) and the following process areas:

- Requirements Management (REQM)
- Project Planning (PP)
- Project Monitoring and Control (PMC)
- Supplier Agreement Management (SAM)
- Configuration Management (CM)
- Process and Product Quality Assurance (PPQA)
- Measurement and Analysis (MA)



# Who can benefit from the course?

---

The audience for CMMI Level 2 for Practitioners includes the following:

- anyone interested in learning more about CMMI
- SCAMPI team members
- practitioners and those responsible for improvement efforts who are trying to understand and implement CMMI



# What you'll learn in CMMI Level 2 for Practitioners

---

At the end of the course, you will

- have a better understanding of CMMI Maturity Level 2
- be able to use CMMI Maturity Level 2 in an appraisal
- understand how to apply CMMI Level 2 concepts effectively

During the course, students will be able to share, learn, and exchange ideas with other course participants and the instructors.



# What to expect in the CMMI Level 2 for Practitioners course

---

2.5 days

Interactive instruction - limited amount of lecture time mixed with questions that encourage participation

Small-group exercises

Real-world scenarios



# Class schedule

## Day 1

**Module 1:**  
Course Introduction

**Module 2:**  
Context for Maturity Level 2

Lunch

*Exercise 1*

**Module 3:**  
Generic Goals and Practices

**Module 4:**  
Product Development I

## Day 2

**Module 5:**  
Managing the Project  
(PP)

*Exercise 2*

**Module 5:**  
Managing the Project  
(PMC)

Lunch

**Module 5:**  
Managing the Project  
(SAM)

**Module 6: Supporting the  
Project and Organization  
(CM, PPQA)**

*Exercise 3*

## Day 3

**Module 6: Supporting the  
Project and Organization  
(MA)**

*Exercise 4*

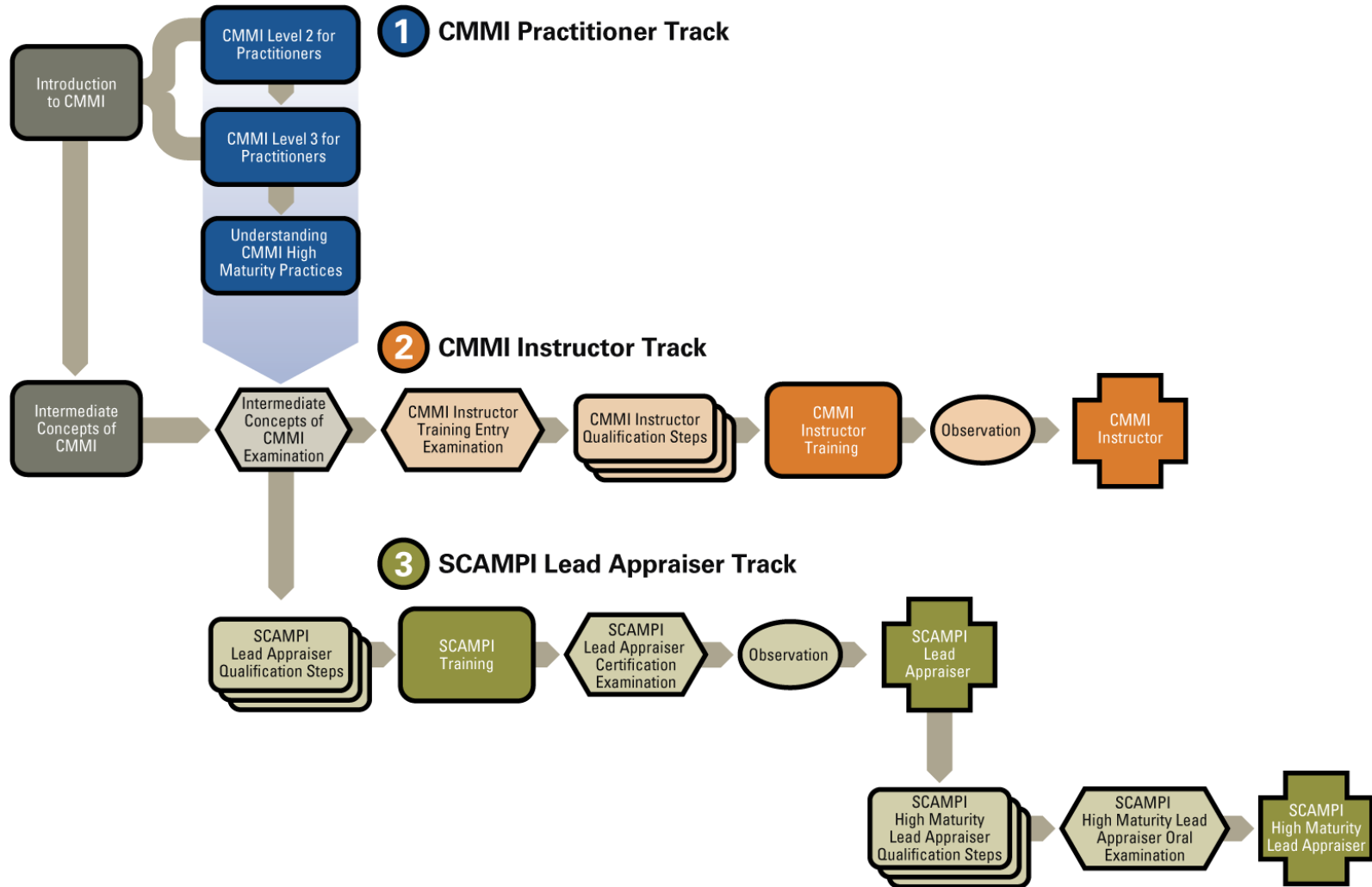
**Module 7: Process Area  
to Generic Practice  
Relationships**

**Module 8:**  
SCAMPI

**Module 9:**  
Course Summary



# CMMI training: The big picture



# Polling questions

---

**Do you understand how CMMI Level 2 for Practitioners fits with other CMMI training?**

- Yes
- No

**Do you understand how CMMI Level 2 for Practitioners can benefit you?**

- Yes
- No



---



# Sneak preview





# Product Development I

## Module 4



# Format for discussing each process area (PA)

---

- What does this PA involve?
- Value
- Dependencies on other PAs
- Ordering of specific practices
- Selected specific practices
- Selected generic practices
- PA implementation considerations



# Requirements Management Process Area

---

The purpose of Requirements Management (REQM) is to manage the requirements of the project's products and product components and to identify inconsistencies between those requirements and the project's plans and work products.



# REQM involves...

---

## Managing the requirements as the product evolves

- understanding requirements
- obtaining commitment to requirements
- recognizing and receiving requirements changes and making decisions about how to handle them
- ensuring customer requirements, project work, and products are consistent with product requirements



# Value of REQM

---

## Requirements management processes

- prevent inconsistencies between the approved requirements and the project's plans and work products
- assess which requirements, work products, and product components are affected by a proposed change
- ensure customer requirements, project work, and products are consistent with product requirements



# REQM depends on...

---

## Requirements Development

- for establishing and maintaining customer, product, product component, and interface requirements

## Configuration Management

- for controlling changes to requirements

## Project Monitoring and Control

- for taking action to correct identified inconsistencies among requirements, project plans, and work products



# PAs that depend on REQM

---

## Project Planning

- for managing requirements needed for planning and replanning

## Supplier Agreement Management

- for managing the requirements that will be satisfied by external sources
- for managing the traceability of requirements for products acquired from suppliers

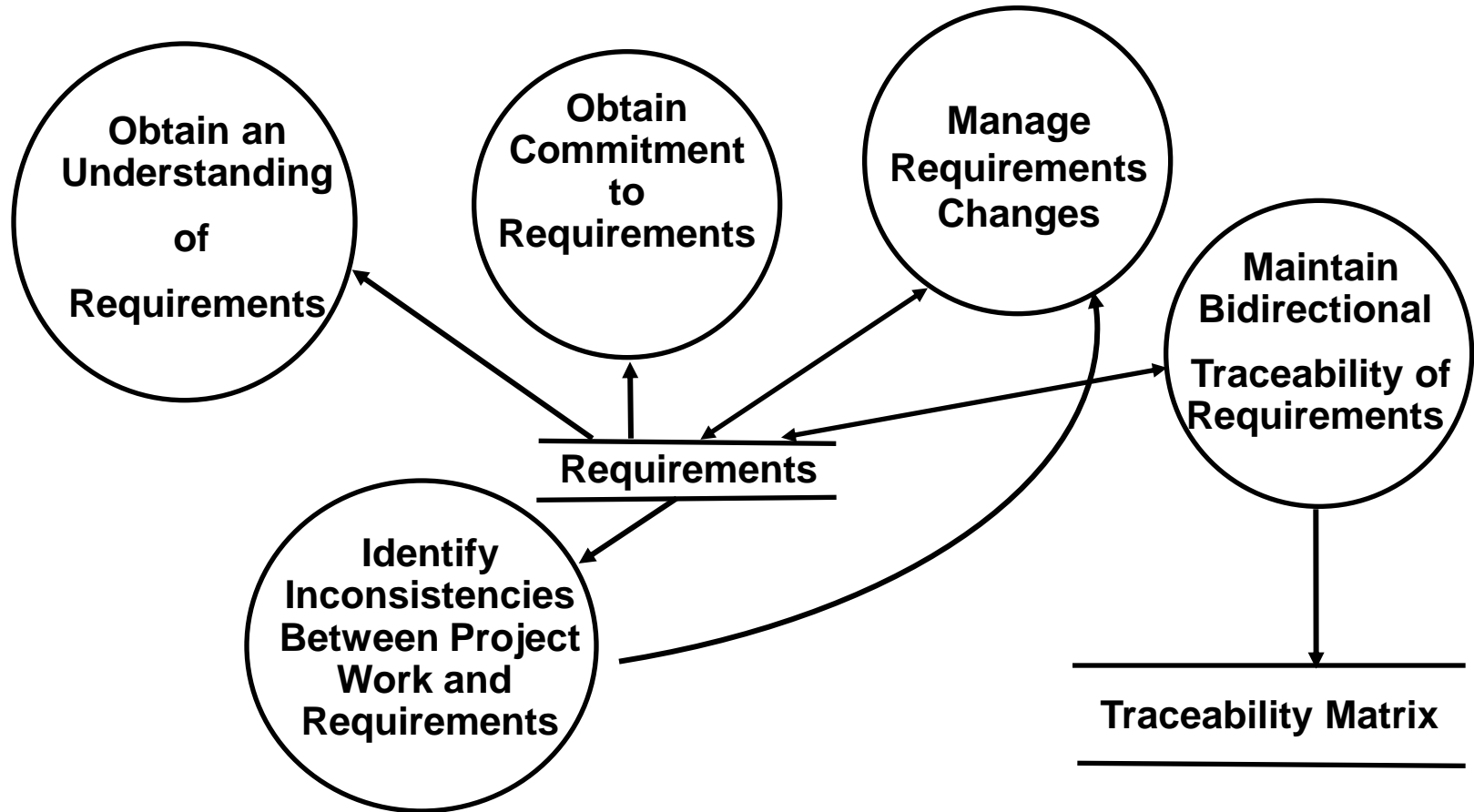
## Requirements Development

- for managing customer, product, and product component requirements; obtaining agreement with the requirements provider; obtaining commitments from the requirements implementers; and maintaining traceability



# REQM context

## Manage Requirements



# Polling questions

---

**How do you feel about the information you're receiving in this webinar?**

- Too technical
- Not technical enough
- Just Right

**Is the information you're receiving relevant to your organization or job?**

- Yes
- No
- Don't Know



# SP 1.1 Understand Requirements

---

**Develop an understanding with the requirements providers on the meaning of the requirements.**

It is important to understand what the project is building.

- *subpractice 1:*  
Establish criteria for distinguishing appropriate requirements providers.
- *subpractice 4:*  
Reach an understanding of the requirements with the requirements provider so that the project participants can commit to them.

Typical work products

- lists of criteria for distinguishing appropriate requirements providers
- criteria for evaluation and acceptance of requirements
- results of analyses against criteria
- an agreed-to set of requirements



# SP 1.2 Obtain Commitment to Requirements

---

## Obtain commitment to the requirements from the project participants.

Project participants must commit to the approved requirements and the resulting changes to their project work.

- *subpractice 1:*  
Assess the impact of requirements on existing commitments.

## Typical work products

- requirements impact assessments
- documented commitments to requirements and requirements changes



# SP 1.3 Manage Requirements Changes

---

**Manage changes to the requirements as they evolve during the project.**

Requirements change! It is important to effectively manage these changes.

- *subpractice 1:*  
Document all requirements and requirements changes that are given to or generated by the project.
- *subpractice 3:*  
Evaluate the impact of requirements changes from the standpoint of relevant stakeholders.

## Typical Work Products

- requirements status
- requirements database
- requirements decision database



# SP 1.4 Maintain Bidirectional Traceability of Requirements

---

**Maintain bidirectional traceability among the requirements and work products.**

It is important to identify which work products are affected by a proposed change.

- *subpractice 2:*  
Maintain requirements traceability from a requirement to its derived requirements and allocation to functions, interfaces, objects, people, processes, and work products.
- *subpractice 3:*  
Generate the requirements traceability matrix.

Typical work products

- requirements traceability matrix
- requirements tracking system



# SP 1.5 Identify Inconsistencies Between Project Work and Requirements

---

**Identify inconsistencies between the project plans and work products and the requirements.**

It is important to know when something is moving “out of synch” with the currently approved requirements.

- *subpractice 1:*  
Review the project’s plans, activities, and work products for consistency with the requirements and the changes made to them.
- *subpractice 4:*  
Initiate corrective actions.

Typical work products

- documentation of inconsistencies including sources, conditions, and rationale
- corrective actions



# REQM Implementation Considerations

---

Applying REQM to existing products and product components imposes limitations and requires interpretation regarding the following:

- how to document pre-existing requirements
- the amount of traceability needed
- how you address the requirements

The identification of relevant stakeholders may be limited by the type of organization and contract.

Does the size or duration of the project have an impact on the way you would implement Requirements Management?

Are there changes that cannot be accepted?



---



# Next steps



# What's coming up?

---

## **CMMI Level 2 for Practitioners**

SEI public courses available June 2009

Licensing available December 2009

## **CMMI Level 3 for Practitioners**

Partner Pilots July 2009 – September 2009

SEI public courses available August 2009

Licensing available December 2009



# SEI public courses: CMMI Level 2 for Practitioners

---

June 23-25, 2009 (SEI Pittsburgh, PA)

July 27-29, 2009 (SEI Frankfurt, Germany)

September 28-30, 2009 (SEI Arlington, VA)



# More information

---

**Email** [customer-relations@sei.cmu.edu](mailto:customer-relations@sei.cmu.edu)

**Phone** 412-268-5800

**Web** [www.sei.cmu.edu/cmmi/level2](http://www.sei.cmu.edu/cmmi/level2)



---



# Questions





**Software Engineering Institute**

**Carnegie Mellon**



**Software Engineering Institute**

**Carnegie Mellon**

CMMI Level 2 for Practitioners Webinar  
Mary Beth Chrissis May 27, 2009  
© 2009 Carnegie Mellon University