

TL 9000 vs. CMMI

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CMMI to TL 9000 Mapping Subteam

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What is it and Where is it?

- Maps TL 9000 V5.0 Requirements to the CMMI-DEV v1.3 Maturity Level 2 & 3 Process Areas
- Posted to QuEST Forum Member's Area for member access

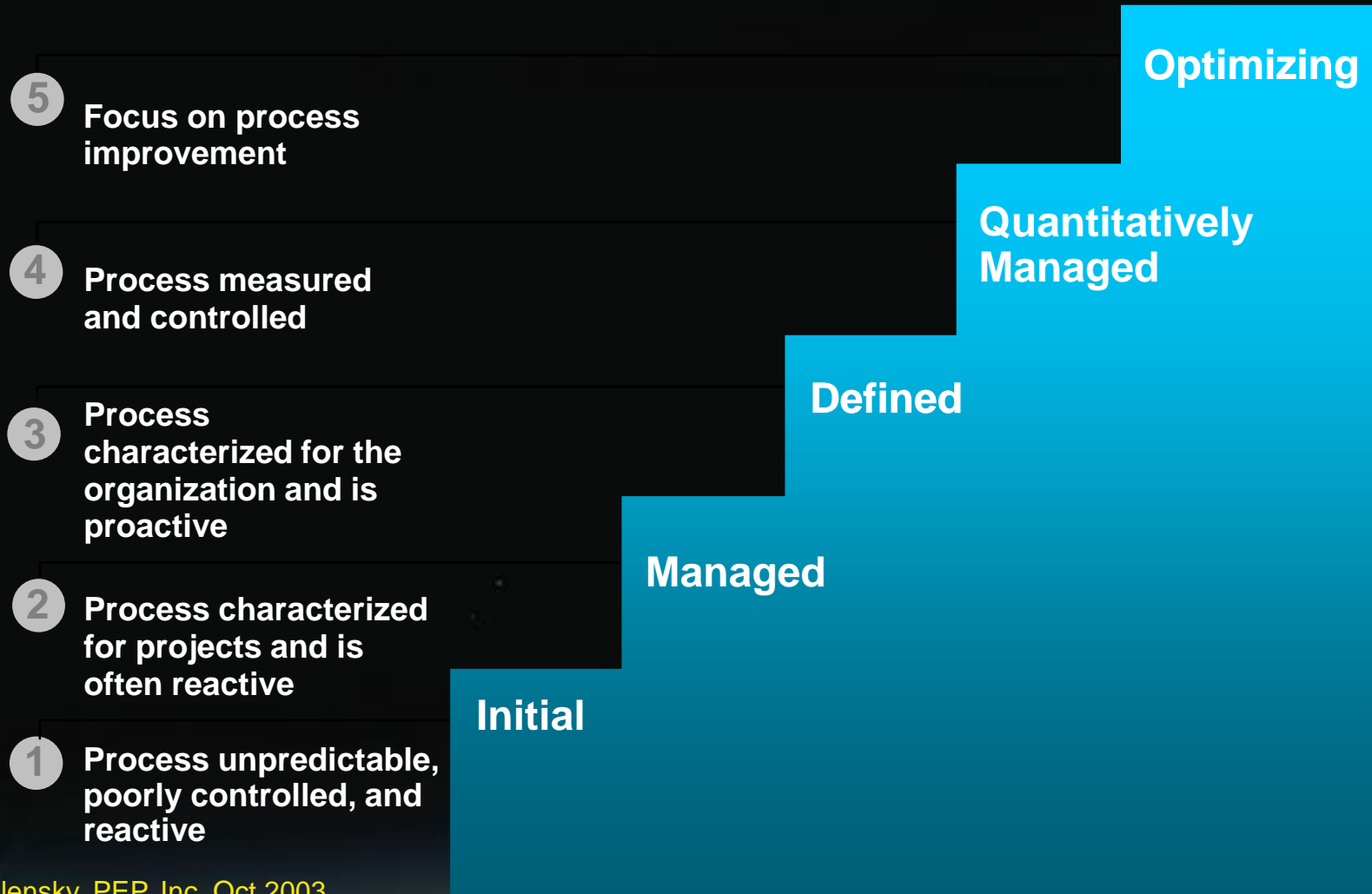
What is CMMI?

- **CMMI (Capability Maturity Model Integration) is a proven industry model of best practices**
 - Improves Quality through process improvement & behavior change
 - Leads to development & maintenance efficiency improvement
 - Improves customer satisfaction, time to market, & business profitability

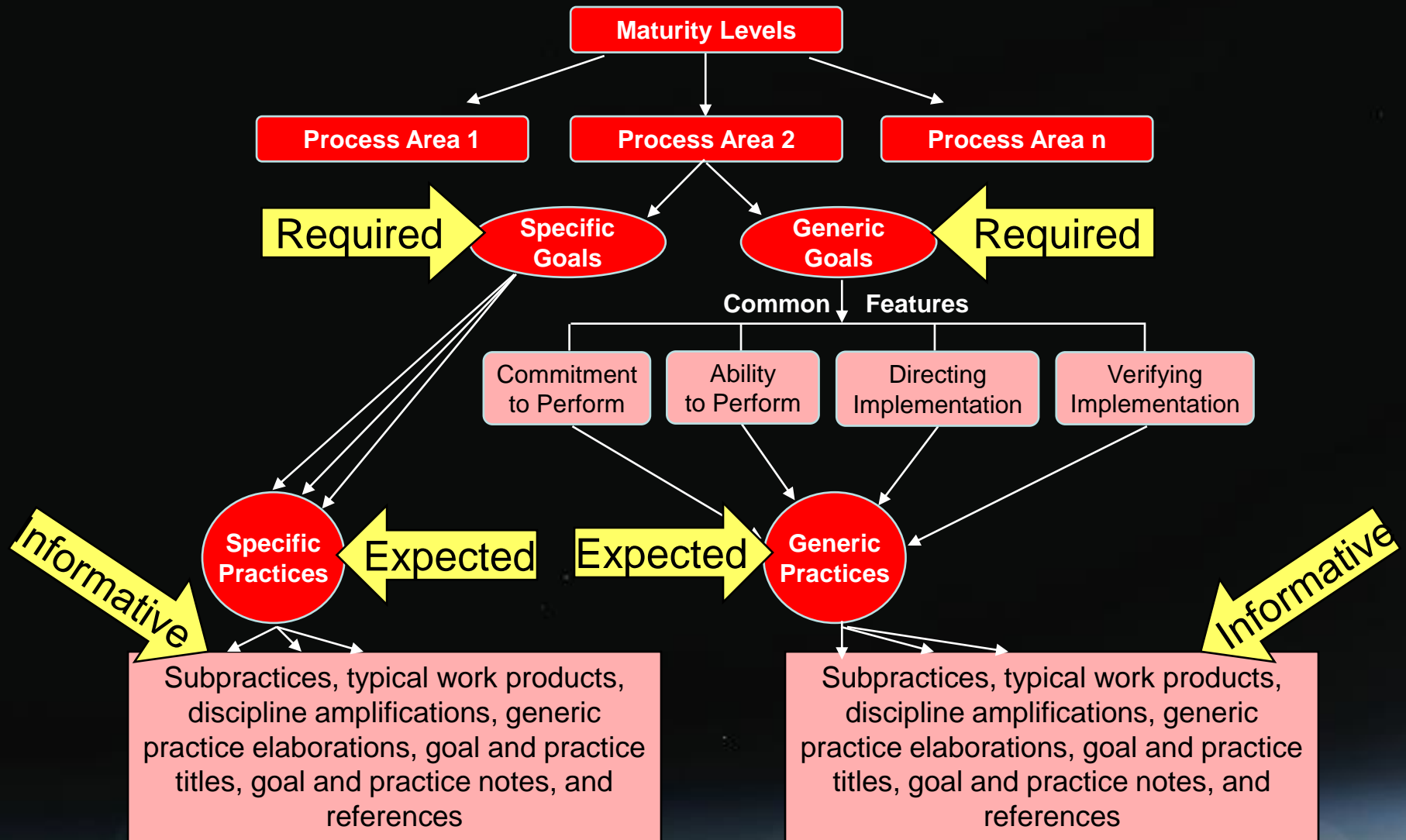
What is CMMI?

- **CMMI provides a direction in terms of what you need to do & measure, but does not tell you how to do it**
- **Developed by a consortium of industry, government and research experts led by the Software Engineering Institute at Carnegie Mellon University**

CMMI Staged Representation: Five Maturity Levels:



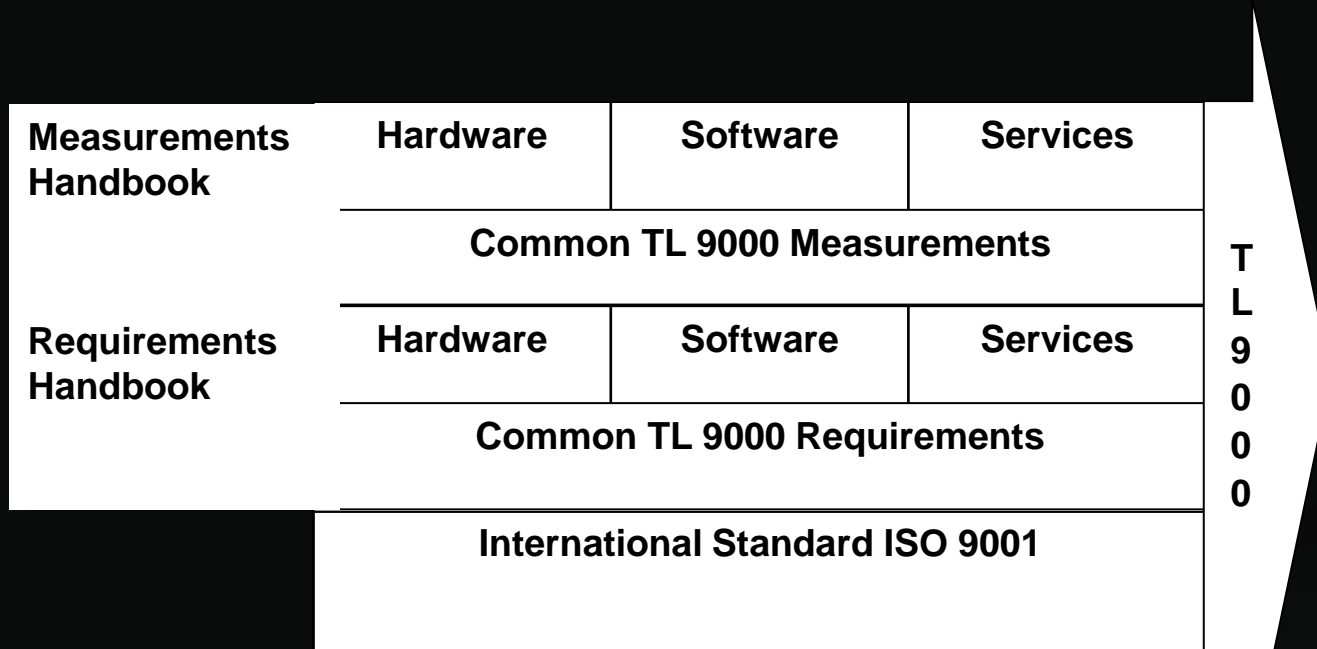
CMMI Model Component Categories



Reference Model Scope – CMMI - DEV V1.3 (Staged)

Level	Focus	Process Areas	
5 Optimizing	<i>Continuous Process Improvement</i>	Organizational Performance Management Causal Analysis and Resolution	<p>Quality & Productivity</p> <p>Risk & Rework</p>
4 Quantitatively Managed	<i>Quantitative Management</i>	Organizational Process Performance Quantitative Project Management	
3 Defined	<i>Process Standardization</i>	Requirements Development Technical Solution Product Integration Verification Validation Organizational Process Focus Organizational Process Definition + IPPD Organizational Training Integrated Project Management for IPPD Risk Management Decision Analysis and Resolution	
2 Managed	<i>Basic Project Management</i>	Requirements Management Project Planning Project Monitoring and Control Supplier Agreement Management Measurement and Analysis Process and Product Quality Assurance Configuration Management	
1 Initial			

What is TL 9000?



Based on ISO

ISO/TL 9000 vs. CMMI

- The TL 9000 model specifies detailed implementations as requirements
- CMMI requires that goals be met, expects that practices related to those goals are implemented, and provides suggestions for detailed implementation of the practices as informative, not required, material

Example

ISO 9001 / TL 9000

- **7.2.1 Determination of Requirements Related to the Product:**
 - The organization shall determine
 - a) requirements specified by the customer, including the requirements for delivery and post-delivery activities,
 - b) requirements not stated by the customer but necessary for specified or intended use, where known,
 - c) statutory and regulatory requirements applicable to the product, and
 - d) any additional requirements considered necessary by the organization.
- **7.2.2.C.1 Closure Tracking**
 - All actions resulting from requirements reviews shall be tracked to closure.

CMMI-SE/SW

- **Requirements Development Practice Area:**
 - SG1 Stakeholder needs, expectations, constraints, and interfaces are collected and translated into customer requirements
 - SP3.3 Analyze requirements to ensure that they are necessary and sufficient
 - SP3.4 Analyze requirements to balance stakeholder needs and constraints
 - SP3.5 Validate requirements to ensure the resulting product will perform as intended in the user's environment using multiple techniques as appropriate

Comparison

ISO/TL 9000	CMMI
TL 9000 adds specific telecom product and service requirements to the more generic practices specified by ISO 9001:2008	CMMI describes generic best practices for creating products and services in any domain
TL focuses on pre-deployment development and delivery, with post-deployment metrics	CMMI focuses primarily on pre-deployment best practices and measurement capabilities
TL 9000 gives specific instructions for customer involvement as stakeholders	CMMI expects the organization to identify and involve relevant stakeholders, but does not specify who they should be
In an ISO/TL audit, you must show how the organization fulfills the requirement	In CMMI assessment, you must demonstrate how the organization meets the goals and specific practices if they are applicable

The Bottom Line

- CMMI L3 Appraised software organization will meet ISO 9001/TL 9000 requirements with gaps in the following areas:
 - Post deployment support
 - Customer satisfaction surveys
 - Quality partnering
 - Disaster Recovery
- TL 9000 hardware (H) adders are not addressed in CMMI
- Doesn't count metrics

Mapping Example

ISO9001:2008 TL 9000 R5.0	Requirement Description	Summary		REQM_SG1	REQM _GG2	
7.2.2.C.1 Closure Tracking	All actions resulting from requirements reviews shall be tracked to closure.	Met by REQM SG1, RD SG3 and VER SG2; also supported by GG2 for REQM, RD and VER	M	SP 1.5-1 (Implied in sub practice 4) (from a design perspective)	X	



CMMI (SCAMPISM A*)

Appraisals

- Appraisal results are provided by an accredited SCAMPI Lead AppraiserSM
- Appraisal results are a snapshot of organization process maturity
- Appraisals are “verification-based” rather than “discovery-based”
- Team size varies usually 4 to 8 team members involving a readiness review usually 2 weeks and an appraisal usually 2 weeks
- 100% of the practices in every process area relevant to a maturity level are evaluated in a SCAMPI appraisal
- 100% of the practices in every representative project are evaluated in a SCAMPI appraisal

SM SCAMPI and SCAMPI Lead Appraiser are service marks of Carnegie Mellon University

* SCAMPI - Standard CMMI Appraisal Method for Process Improvement

Measurement & Analysis Process Example

- The purpose of the process area is to develop and sustain a measurement capability that is used to support management information needs.
- It all begins with an organizational policy for planning and performing the measurement and analysis process. (supports generic goal to institutionalize a process)
- The two specific goals of this process are (1) to align measurement objectives and activities with identified information needs and objectives and (2) provide measurement results that address information needs. These specific goals are supported by relevant specific practices
- A generic goal of this process within the model is institutionalizing the Measurement and Analysis process. This generic goal is supported by relevant generic practices.
- In order to do the alignment you need to first derive measurement objectives from identified information needs and then specify the measures to meet the objectives, how they will be collected, stored, analyzed and reported.
- Finally, you execute on the collection, storage, analysis and reporting you have defined.
- Note, your own business needs drives the specific mechanisms for satisfying the practices and goals, not a specific CMMI requirement.

Questions?

Best Practice Conferences

Americas Best Practices Conference

10 – 12 September 2012

Chicago, Illinois, USA

Face to Face Workgroup Meetings

Workgroups – OSWG, GBE and IGQ
13 – 14 September 2012
Chicago, IL

Workgroups – OSWG, GBE and IGQ
13 – 16 November 2012
Atlanta, GA

Thanks for attending!

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