Bi-directional Mapping between CMMI and INCOSE SE Handbook

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Abstract

The complex normative context in the field of industrial areas like aerospace and defense require appropriate guidance to distinguish the purpose of the standards involved and specially the overlapping and borders among them.

The aim of this paper is to present a practical mapping between CMMI-DEV v1.2 (ML3) and INCOSE Systems Engineering Handbook v.3.1. Summaries with bi-directional mappings are provided as well as a detailed mapping.

Keywords: CMMI, INCOSE SE HB, ISO15288.

1. Introduction

Industry has a growing interest on standardization of those activities under the scope of the Systems Engineering discipline. Several initiatives have been put in place since late 60s from the Mil-Std-499 until last version of ISO/IEC15288:2008 [5] (see Fig. 1).

In parallel to this international standardization mainstream, the International Council on Systems Engineering (INCOSE) has produced a handbook [3] conceived as the practical guidance reference for Systems Engineers.

In addition to these initiatives, the Software Engineering Institute (SEI) has promoted over the last decade the *de facto* standard CMMI [1][2] (Capability-Maturity Model for Integration) as a reference framework to be used by organizations developing systems (embedding or not software) to measure their maturity as productive entities. Although CMMI comes from the software world, this version "for integration" considers general aspects of systems production, regardless they apply particularly to software. This movement towards system's world makes CMMI an interesting complement of SE standards to cover those process management aspects these other standards are lacking.

In such a complex normative context it is always difficult to know which are the borders among norms and references, and therefore practical mappings

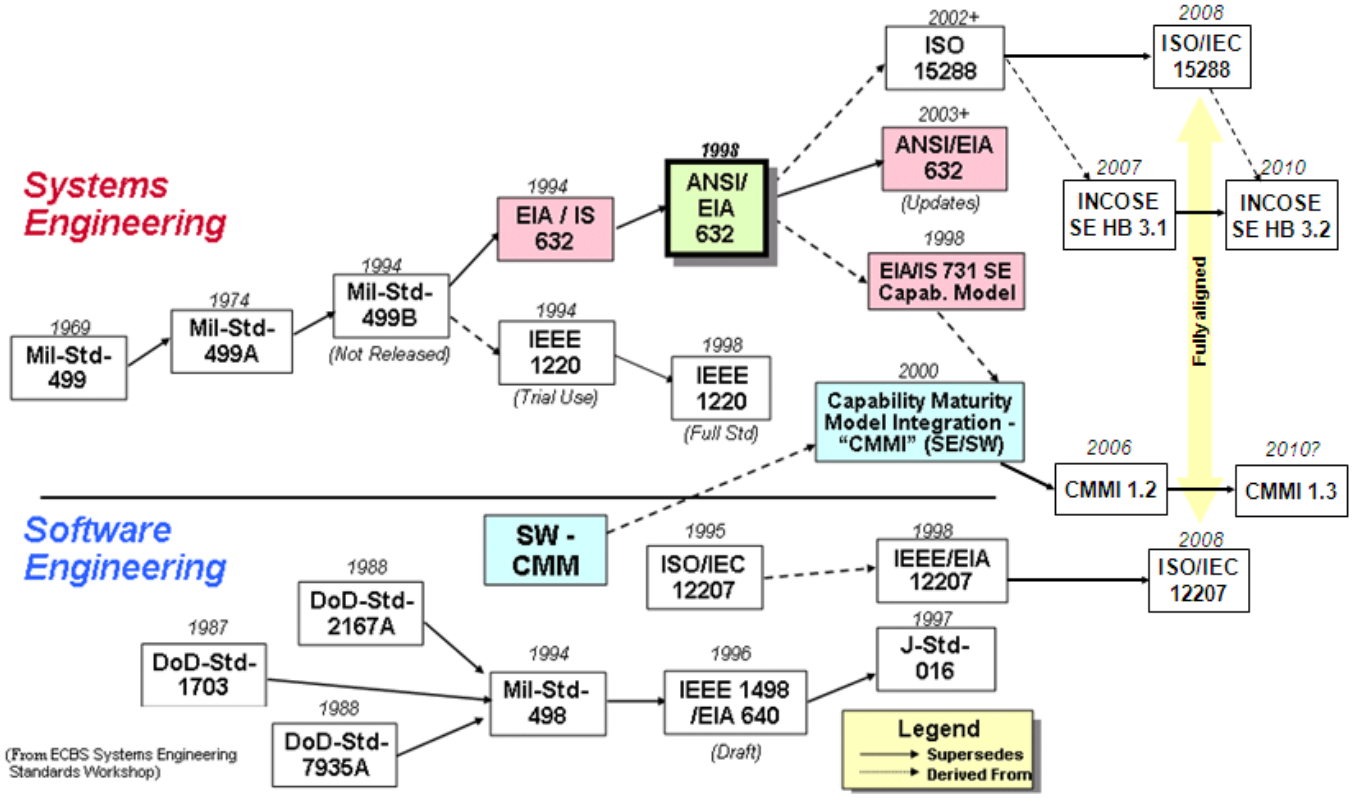


Figure 1. Systems and Software Engineering Standards.

are required to better understand their respective applicability and limits.

In this context, there are lots of mappings in the literature among CMMI and classical norms series (ISO 9XXX, ISO15504, etc.) But no or very few mappings are available between CMMI and INCOSE Handbook.

The main objective of this paper is to present a bi-directional mapping between CMMI for Development v1.2 (particularly, the specific practices required for Maturity Level 3) and the INCOSE Systems Engineering Handbook v3.1.

The two main questions aimed to be answered in the present paper are:

1. What is the amount of specific practices of the model CMMI (Maturity Level 3) covered by a quality system in line with the INCOSE handbook?
2. What is the amount of activities within the processes described in the INCOSE handbook covered by a quality system holding a CMMI ML3 accreditation?

This mapping is particularly useful for those organizations holding a quality system under INCOSE and aiming to achieve a maturity level, but can also be useful the other way round.

In addition to the mapping summary in both directions, a detailed mapping is provided in the annex, and those aspects not covered in one reference with respect to the other are also highlighted.

2. Assumptions

INCOSE SE HB v3.1 has no formal process-structure (like ISO12207 or ISO 15288). The handbook is organized in a documental way by processes and within each process there are no explicit subsections per activity. Activities are included in the process diagrams and described in a specific section with no additional breakdown.

The comparison has been made under the assumption that process diagrams included in the HB can be interpreted as follows: Process X uses inputs, produces outputs and has some main activities inside. The activities in the diagrams are the basic elements to be compared. The rest of elements used in the HB have been considered as informative. From CMMI side the model elements used for comparison purpose are the specific practices (SPs). Generic practices have not been considered explicitly as their main role is to handle the institutionalization of SPs.

The percentage values provided in the comparisons represent the number of atomic elements in one reference covered in the other with respect to the total number of elements within the aggregated element (process in the HB or SPs in CMMI).

It is also worth to mention that not all HB processes have counterparty in CMMI (e.g. Operation, Maintenance or Disposal). This partial mismatch is reasonable as long as both frameworks are conceived for different purposes.

The opposite statement is also true: CMMI considers additional aspects not taken into account in the HB (e.g. training, process improvement or measurement).

This mapping was performed against version 3.1 of SE Handbook. Version 3.2 [4] (published in January 2010) includes a high level mapping with CMMI for Development model not present in the previous version.

3. CMMI to INCOSE SE HB Mapping

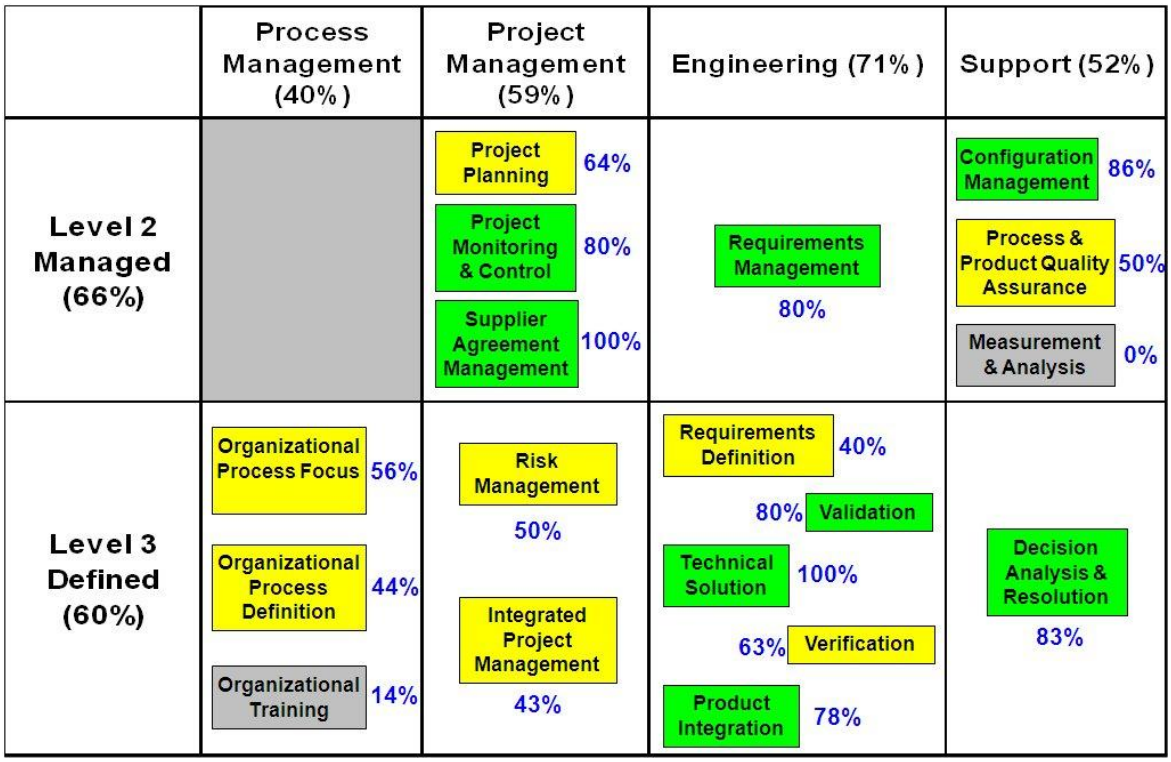
As a general summary, an organization holding a quality system aligned with the INCOSE SE HB will cover about **60%** of the CMMI L3 specific practices. With respect to the CMMI L2 practices, the coverage is slightly better: 66%.

A first observation from this mapping is that there are very few CMMI process areas for which all the specific practices are covered in the HB (only Supplier Agreement and Technical Solution are fully covered). This fact contrasts with the opposite mapping, where most of the processes in the HB are fully covered by CMMI practices.

The results per process area can be summarized as follows (see Table 1):

- Measurement and Analysis (MA) is not covered at all. In fact, there is no explicit measurement process in the handbook. The HB is not oriented to process improvement but to process definition.
- In Organizational Training (OT) only 14% of the practices are covered. Therefore the HB does not focus particularly on skills improvement.
- The following process areas are located within the intermediate band (between 20% and 70%):
  - Project Planning (PP): 64%
  - Verification (VER): 63%
  - Organizational Process Focus (OPF): 56%
  - Process and Product Quality Assurance (PPQA): 50%
  - Risk Management (RSKM): 50%
  - Organizational Process Definition (OPD): 44%
  - Integrated Project Management (IPM): 43%
  - Requirements Development (RD): 40%
- IPM, OPD and OPF can be considered as very CMMI-oriented process areas, and therefore they are expected to be only partially covered by the HB, but it seems odd to find process areas such as RD, RSKM or PPQA in this band.

Table 1. CMMI to INCOSE SE HB Mapping.



- Although PP and VER show a relatively high coverage rate, they should be in the upper band due to their impact in the project performance.
- The main reason why VER is not in the upper band is the lack of peer reviews in the HB. A special emphasis is given to this verification technique in CMMI.
- Concerning PP, the reason for its lack of coverage is that CMMI requires reviewing and tracking the plans.
- The rest of process areas are largely covered by the HB, and the discrepancies are only attributable to the particularities of CMMI:
  - Configuration Management (CM): 86%
  - Decision Analysis & Resolution (DAR): 83%
  - Project Monitoring & Control (PMC): 80%
  - Requirements Management (RM): 80%
  - Validation (VAL): 80%
  - Product Integration (PI): 78%

It is also worth to highlight the aggregated coverage level per process area types:

- Process Management: 40%
- Project Management: 59%
- Engineering: 71%
- Support: 52 %

As expected, the better coverage rate corresponds to the technical process areas and the worst to the process definition and organizational process areas.

High maturity process areas (Organizational Process Performance, Organizational Innovation & Deployment, Quantitative Project Management and Causal Analysis & Resolution) have been excluded from this analysis because they are very much concerned with the performance of an organization in contrast with the process orientation of the low maturity process areas.

4. INCOSE SE HB to CMMI Mapping

From the analysis performed, the main result extracted is that an organization with a CMMI accreditation of maturity level 3 covers **76%** of the activities included in the INCOSE SE handbook.

Taking into account this figure, it could be concluded that CMMI is wider than INCOSE HB, but it is also true that not all the processes in the HB are considered in CMMI.

Another interesting observation from the Table 2 is that most of handbook processes are fully covered by some practice of CMMI: 16 out of 25 processes.

The results per process type can be summarized as follows (see Table 2):

- Operation, Maintenance, Disposal and Supply are not treated in CMMI at all. The reason can be that these processes are typically related with the operation of a system once created. CMMI for Development is more focused in the production cycle, regardless the operation of the system.

Table 2. INCOSE SE HB to CMMI Mapping.

	ID	INCOSE SE Process	Coverage by CMMI	CMMI PAs
Technical Processes (64%)	4.2	Stakeholder Requirements Definition	100%	RD, REQM, IPM
	4.3	Requirements Analysis	100%	RD
	4.4	Architectural Design	100%	TS
	4.5	Implementation	100%	TS, VER, PI
	4.6	Integration	100%	PI
	4.7	Verification	100%	VER
	4.8	Transition	100%	TS, PI, VAL
	4.9	Validation	100%	VAL, PMC
	4.10	Operation	0%	N/A
	4.11	Maintenance	0%	N/A
	4.12	Disposal	0%	N/A
Project Processes (97%)	5.2	Project Planning	100%	PP
	5.3	Project Assessment	86%	PMC
	5.4	Control	100%	PMC
	5.5	Decision-making	100%	DAR, IPM
	5.6	Risk Management	100%	RSKM, PMC
	5.7	Configuration Management	100%	CM
	5.8	Information Management	100%	PP, PMC
Enterprise and Agreement Processes (77%)	6.2	Enterprise Environment Management	83%	OPD, OPF
	6.3	Investment Management	83%	IPM, PMC
	6.4	SLC Processes Management	100%	OPD, OPF
	6.5	Resource Management	88%	IPM, PP, OT
	6.6	Quality Management	100%	PPQA, OPD, OPF
	6.7	Acquisition	88%	IPM, SAM, VAL
	6.8	Supply	0%	N/A
		Average	**76%**	

- The rest of technical processes are fully covered. Although no explicit process area exist in CMMI for transition activities, they are covered in several practices of the PAs Technical Solution, Product Integration and Validation.
- Concerning Project Processes of the HB, the comment is that only one aspect of the Project Assessment is not considered in CMMI: monitoring of new technologies. The rest of aspects are fully covered.
- Main discrepancies fall on the Enterprise and Agreement Processes of the HB. Although percentages are diverse, the discrepancy is just one activity per process. The overall figure has been calculated with respect to the total number of activities within each process:
  - Resource Management: 88%
  - Acquisition: 88%
  - Enterprise Environment Management: 83%
  - Investment Management: 83%

Finally, it is interesting to remark that the coverage of the INCOSE SE HB by CMMI L3 is of **92%**, if the system operation aspects are excluded. This basically means that CMMI can be considered largely compatible with the system development part of the INCOSE SE HB.

5. Comparison with ISO15288

In Aerospace and Defense field, additional standards are required to be fulfilled in order to get systems certified for operation. Standards like SAE ARP4754 or RTCA DO-178B are some examples of such norms.

The quality systems of the organizations in this field must be compliant in addition with special regulations which include aspects related with the operation of the systems. Particularly the AQAP160 is a NATO norm, applicable at software level, which is composed by a combination of ISO12207, ISO9001 and specific military requirements, is largely compliant with ISO15288 requirements. The additional processes Supply, Operation, Maintenance and Disposal are present in this norm. Additionally, the Tailoring Process is used to instantiate the quality system to particular projects.

One of the main differences between versions 3.2 and 3.1 of the INCOSE SE HB is the one-to-one mapping in their sections (see Table 3). The last version of the HB has in fact the same process structure than the ISO15288 (and the ISO12207 as well).

Table 3. ISO15288 vs. INCOSE SE HB v3.2

ISO/IEC 15288:2008 System Life Cycle Process	INCOSE SE Handbook v3.2 Section
6.1 Agreement Processes	
6.1.1 Acquisition Process	6.1 Acquisition Process
6.1.2 Supply Process	6.2 Supply Process
6.2 Organizational Project-Enabling Processes	
6.2.1 Life Cycle Model Management Process	7.1 Life Cycle Model Management Process
6.2.2 Infrastructure Management Process	7.2 Infrastructure Management Process
6.2.3 Project Portfolio Management Process	7.3 Project Portfolio Management Process
6.2.4 Human Resource Management Process	7.4 Human Resource Management Process
6.2.5 Quality Management Process	7.5 Quality Management Process
6.3 Project Processes	
6.3.1 Project Planning Process	5.1 Project Planning Process
6.3.2 Project Assessment and Control Process	5.2 Project Assessment and Control Process
6.3.3 Decision Management Process	5.3 Decision Management Process
6.3.4 Risk Management Process	5.4 Risk Management Process
6.3.5 Configuration Management Process	5.5 Configuration Management Process
6.3.6 Information Management Process	5.6 Information Management Process
6.3.7 Measurement Process	5.7 Measurement Process
6.4 Technical Processes	
6.4.1 Stakeholder Requirements Definition Process	4.1 Stakeholder Requirements Definition Process
6.4.2 Requirements Analysis Process	4.2 Requirements Analysis Process
6.4.3 Architectural Design Process	4.3 Architectural Design Process
6.4.4 Implementation Process	4.4 Implementation Process
6.4.5 Integration Process	4.5 Integration Process
6.4.6 Verification Process	4.6 Verification Process
6.4.7 Transition Process	4.7 Transition Process
6.4.8 Validation Process	4.8 Validation Process
6.4.9 Operation Process	4.9 Operation Process
6.4.10 Maintenance Process	4.10 Maintenance Process
6.4.11 Disposal Process	4.11 Disposal Process
A Tailoring Process	
A.2 Tailoring Process	8.1 Tailoring Process

6. Conclusions

The main conclusion obtained is that CMMI and INCOSE SE HB are not competing but complementary approaches.

The INCOSE handbook fully covers all the activities relevant from the perspective of the Systems Engineer practitioner. It is not specially focused on process measurement or improvement.

On the other hand, CMMI is a reference framework for process improvement purposes.

A recommended approach could be to define a quality system according to the recommendations provided by the INCOSE HB and complement it with additional processes to cover the process improvement aspects. The alignment with CMMI is strongly recommended when a mature organization aims to improve its efficiency while creating their products. Nevertheless, CMMI can be counter-productive in very immature organizations as it involves many control activities which could make fail the whole productive process.

7. References

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[2] CMMI® for Development, Version 1.2. SEI Technical Report, CMU/SEI-2006-TR-008, August 2006.

[3] INCOSE Systems Engineering Handbook: A Guide for System Life Cycle Processes and Activities, v. 3.1, INCOSE-TP-2003-002-03.1, International Council on Systems Engineering, January 2007.

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[5] ISO/IEC 15288:2008, Systems and software engineering – System life cycle processes, Geneva: International Organization for Standardization, issued 1 February 2008.

8. Glossary

CM:	Configuration Management
CMMI:	Capability Maturity Model for Integration
DAR:	Decision Analysis & Resolution
HB:	Handbook
INCOSE:	International Council of Systems Engineering
IPM:	Integrated Project Management
MA:	Measurement and Analysis
OPD:	Organizational Process Definition
OPF:	Organizational Process Focus
OT:	Organizational Training
PA:	Process Area
PI:	Product Integration
PMC:	Project Monitoring & Control
PP:	Project Planning
PPQA:	Process and Product Quality Assurance
RD:	Requirements Development
RM:	Requirements Management
RSKM:	Risk Management
SAM:	Supplier Agreement Management
SE:	Systems Engineering
SEI:	Software Engineering Institute

SP: Specific Practice
TS: Technical Solution
VAL: Validation
VER: Verification

9. Annex

INCOSE SE HB v3.1 to CMMI-DEV v1.2 ML3 detailed mapping:

HB Process	HB Activity	CMMI Specific Practice
4.2 Stakeholder Requirements Definition	Identify legitimate stakeholders	IPM SP 2.1 – Manage Stakeholder Involvement
	Elicit Requirements	RD SP 1.1 – Elicit Needs
	Define Constraints	RD SP 1.2 – Develop the Customer Requirements
	Build scenarios and concept documents	RD SP 3.1 – Establish Operational Concepts and Scenarios
	Resolve Requirements problems	REQM SP 1.5 – Identify Inconsistencies
	Confirm and record Requirements	REQM SP 1.2 – Obtain Commitment to Requirements
	Establish and maintain traceability	REQM SP 1.4 – Maintain Bidirectional Traceability of Requirements
	Define functional boundary	RD SP 3.2 – Establish a Definition of Required Functionality
4.3 Requirements Analysis	Define performance Requirements	RD SP 3.2 – Establish a Definition of Required Functionality
	Identify architectural Constraints	RD SP 1.1 – Elicit Needs
	Define non-functional Requirements	RD SP 3.2 – Establish a Definition of Required Functionality
	Maintain traceability and baseline integrity	RD SP 3.2 – Establish a Definition of Required Functionality
4.4 Architectural Design	Define logical architecture	TS SP 2.1 – Design the Product or Product Component
	Partition System Requirements	TS SP 2.1 – Design the Product or Product Component
	Evaluate off-the-shelf system elements	TS SP 2.4 – Perform Make, Buy, or Reuse Analyses
	Evaluate alternative designs	TS SP 1.1 – Develop Alternative Solutions and Selection Criteria
	Document interfaces	TS SP 2.3 – Design Interfaces Using Criteria
4.5 Implementation	Define implementation strategy	TS SP 1.2 – Select Product Component Solutions
	Realize the system element	TS SP 3.1 – Implement the Design
	Provide evidence of compliance	VER SP 2.2 – Conduct Peer Reviews
	Package and store; supply	PI SP 3.4 – Package and Deliver the Product or Product Component
4.6 Integration	Define integration strategy	PI SP 1.1 – Determine Integration Sequence
	Schedule system elements and enabling systems per planned deliveries	PI SP 3.1 – Confirm Readiness of Product Components for Integration
	Integrate system elements	PI SP 3.2 – Assemble Product Components
	Record integration information	PI SP 2.1 – Review Interface Descriptions for Completeness
4.7 Verification	Define procedures for systems verification	VER SP 1.3 – Establish Verification Procedures and Criteria
	Create, maintain RVTM	VER SP 3.2 - Analyze Verification Results
	Conduct Verification to demonstrate compliance with requirements	VER SP 3.1 - Perform Verification
4.8 Transition	Prepare Installation procedures	TS SP 3.2 - Develop Product Support Documentation
	Prepare operational site	VAL SP 1.2 - Establish the Validation Environment
	Install the system	PI SP 3.4 - Package and Deliver the Product or Product Component
	Acceptance acknowledgement	VAL SP 2.1 - Perform Validation
	Document results; anomalies; recommendations	VAL SP 2.2 - Analyze Validation Results
4.9 Validation	Define validation procedures	VAL SP 1.3 - Establish Validation Procedures and Criteria
	Ensure system readiness	VAL SP 1.2 - Establish the Validation Environment
	Demonstrate conformance to stakeholder requirements	VAL SP 2.1 - Perform Validation
	Recommend corrective actions	PMC SP 2.2 - Take Corrective Action
	Attain stakeholder acceptance	VAL SP 2.1 - Perform Validation
4.10 Operation	Maintain qualified staff	
	Execute concept of operations	
	Obtain consumable materials	
	Monitor operations; assess performance	
	Determine appropriate actions	
	Collect operator and stakeholder satisfaction feedback	
4.11 Maintenance	Define maintenance strategy	
	Define design constraints imposed by maintenance	
	Implement maintenance and logistics	
	Support procedures; reporting	
	Perform Maintenance actions	
	Maintain documentation	
4.12 Disposal	Define disposal strategy	
	Impose disposal constraints on requirements	
	Deactivate the system (element)	
	Remove System (element) from operational environment	
	Maintain archival documentation of disposal; residual hazards	
5.2 Project Planning	Define Scope, Objectives, and Constraints	PP SG 1 - Establish Estimates
	Define WBS, Work Packages, Schedules & Budgets	PP SP 1.1 - Estimate the Scope of the Project
	Prepare Project Plans	PP SP 2.7 - Establish the Project Plan
	Establish Project Structure, Roles & Responsibilities	PP SP 2.4 - Plan for Project Resources
5.3 Project Assessment	Analyze Project Status	PMC SP 1.1 - Monitor Project Planning Parameters
	Assess project team	PMC SG 1 - Monitor Project Against Plan
	Assess project performance	PMC SP 1.1 - Monitor Project Planning Parameters
	Conduct management and technical reviews	PMC SP 1.6 - Conduct Progress Reviews
	Monitor critical tasks	PMC SP 1.3 - Monitor Project Risks
	Monitor new technologies	
	Analyze deviations from plan	PMC SP 2.1 - Analyze Issues
5.4 Control	Initiate corrective / preventive actions	PMC SP 2.2 - Take Corrective Action
	Problem resolution	PMC SP 2.2 - Take Corrective
	Decision to proceed	PMC SP 2.3 - Manage Corrective Action
5.5 Decision-making	Define strategy; success criteria	DAR SP 1.2 - Establish Evaluation Criteria
	Define and evaluate alternatives	DAR SP 1.5 - Evaluate Alternatives

HB Process	HB Activity	CMMI Specific Practice
	Involve relevant persons	IPM SP 2.1 - Manage Stakeholder Involvement
	Make and record decision	DAR SP 1.6 - Select Solutions
5.6 Risk Management	Identify risk items	RSKM SP 2.1 - Identify Risks - Identify and document the risks.
	Analyze and prioritize risk items	RSKM SP 2.2 - Evaluate, Categorize, and Prioritize Risks
	Specify strategy for each risk item	RSKM SP 3.2 - Implement Risk Mitigation Plans
	Communicate risk status and actions	PMC SP 2.3 - Manage Corrective Action
5.7 Configuration Management	Identify items for configuration management	CM SP 1.1 - Identify Configuration Items
	Assess and control changes to items	CM SP 2.2 - Control Configuration Items
	Communicate status of controlled items	CM SP 3.1 - Establish Configuration Management Records
	Maintain baseline currency	CM SP 3.1 - Establish Configuration Management Records
5.8 Information Management	Identify information to be managed	PP SP 2.3 - Plan for Data Management
	Define representations	PP SP 2.3 - Plan for Data Management
	Transform, maintain, publish information	PMC SP 1.4 - Monitor Data Management
6.2 Enterprise Environment Management	Establish Business Area Plans	
	Establish SLC Policies & procedures	OPD SP 1.2 - Establish Lifecycle Model Descriptions
	Define roles, responsibilities & authorities	OPD SP 1.1 - Establish Standard Processes
	Define business progress criteria	OPF SP 2.1 - Establish Process Action Plans
	Conduct periodic reviews of SLC	OPF SP 1.2 - Appraise the Organization's Processes
	Communicate policies & procedures	OPF SP 3.2 - Deploy Standard Processes
6.3 Investment Management	Establish new business opportunities	
	Define Projects (authority, outcomes, resources)	IPM SP 1.1 - Establish the Project's Defined Process
	Identify project interfaces	IPM SP 2.2 - Manage Dependencies
	Specify reporting, review schedule	PMC SP 1.7 - Conduct Milestone Reviews
	Authorize project execution – initiate, continue, cancel	PMC SP 1.1 - Monitor Project Planning Parameters
	Evaluate ongoing projects	PMC SG 1 - Monitor Project Against Plan
6.4 SLC Processes Management	Establish processes for each SLC stage	OPD SP 1.2 - Establish Lifecycle Model Descriptions
	Establish tailoring guidelines	OPD SP 1.3 - Establish Tailoring Criteria and Guidelines
	Identify appropriate methods & tools	OPD SP 1.6 - Establish Work Environment Standards
	Establish SLC process performance measures for assessment	OPD SP 1.4 - Establish the Organization's Measurement Repository
	Monitor execution of SLC processes	OPF SP 1.3 - Identify the Organization's Process Improvements
	Identify and implement improvements	OPF SP 2.2 - Implement Process Action Plans
	Communicate enterprise SLC guidelines	OPF SP 3.2 - Deploy Standard Processes
6.5 Resource Management	Collect resource needs from projects	IPM SP 1.3 - Establish the Project's Work Environment
	Provide resource infrastructure support	PP SP 2.4 - Plan for Project Resources
	Manage personnel to staff projects	IPM SP 3.2 - Establish the Integrated Team Structure
	Motivate staff	
	Establish training needs and schedule	OT SP 1.1 - Establish the Strategic Training Needs
	Manage non-personnel resources	IPM SP 1.3 - Establish the Project's Work Environment

HB Process	HB Activity	CMMI Specific Practice
	Allocate resources to ongoing Projects	IPM SP 3.3 - Allocate Requirements to Integrated Teams
	Manage conflicts in project requests	IPM SP 2.3 - Resolve Coordination Issues
6.6 Quality Management	Establish enterprise quality management policies, standards, procedures, goals, and objectives	OPD SG1 - Establish Organizational Process Assets
	Define Responsibilities and authority for quality management	OPD SG1 - Establish Organizational Process Assets
	Assess customer satisfaction	PPQA SP 1.2 - Objectively Evaluate Work Products and Services
	Evaluate Project Quality Plans	PPQA SP 1.2 - Objectively Evaluate Work Products and Services
	Identify and implement improvements	OPF SP 3.3 - Monitor Implementation
	Communicate enterprise QM guidelines	PPQA SP 2.1 - Communicate and Ensure Resolution of Noncompliance Issues
6.7 Acquisition	Establish an acquisition plan	IPM SP 1.4 - Integrate Plans
	Identify need in request for proposal	SAM SP 1.1 - Determine Acquisition Type
	Evaluation responses; select supplier	SAM SP 1.2 - Select Suppliers
	Negotiate agreement	SAM SP 1.3 - Establish Supplier Agreements
	Assess agreement execution	SAM SP 2.2 - Monitor Selected Supplier Processes
	Accept delivery of product or service	SAM SP 2.4 - Accept the Acquired Product
	Determine compliance with agreement	VAL SP 2.1 - Perform Validation
	Render payment	
6.8 Supply	Identify acquirer with request	
	Evaluate and respond to request	
	Negotiate agreement	
	Execute agreement (Project)	
	Deliver product or service	
	Transfer responsibility to acquirer	
	Receive and acknowledge payment	