Top-Level Standards Map

ISO 12207, ISO 15504 (Jan 1998 TR), Software CMM v1.1 and v2 Draft C

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The mapping between ISO 12207 and ISO 15504 comes from Annex A in ISO 15504. This mapping is at the process level (although a more detailed mapping of the development process subprocesses is included because of the potential impact on Software CMM v2). Items in (parentheses) indicate a judgmental or inferential relationship, rather than a direct relationship processes and key process areas.

This mapping shows how a set of topics in one document "lie on top" of the equivalent topics in another. Topics are typically not isomorphic but are highly correlated. Anyone adequately implementing, for example, the Configuration Management Process in ISO 12207 or ISO 15504 could reasonably expect to have satisfied the Software Configuration Management key process area in the Software CMM. Topics are not usually isomorphic because of extensions that may be added (e.g., in ISO 15504 in comparison to ISO 12207) or different levels of abstraction that may have been chosen (e.g., the Development Process in ISO 12207 addresses the same set of concerns as the Software Product Engineering key process area in the Software CMM; the Maintenance Process in ISO 12207 is addressed as a subpractice in Software CMM v2C since maintenance is considered a project environment where all of the CMM key process areas are appropriately implemented).

ISO 12207	ISO 15504	SW-CMM v1.1	SW-CMM v2 Draft C
5. Primary life cycle processes			
5.1 Acquisition process	CUS.1 Acquisition process	Software Subcontract Management	Software Acquisition Management
5.2 Supply process	CUS.2 Supply process[1]	(Software Project Planning; Software Project Tracking & Oversight; Software Product Engineering)	(Software Project Planning; Software Project Control; Software Product Engineering)
	CUS.3 Requirements elicitation process		Software Product Engineering, Activity 2
5.3 Development process	ENG.1 Development process	Software Product Engineering	Software Product Engineering
5.3.1 Process implementation	*ENG.1 Development process*	*Software Product Engineering*	*Software Product Engineering*
5.3.2 System requirements analysis	*ENG.1.1 System requirements analysis and design process*		*(Software Product Engineering, Activity 2)[2]*
5.3.3 System architectural design	*ENG.1.1 System requirements analysis and design process*		*(Software Product Engineering, Activity 2)[3]*
5.3.4 Software requirements analysis	*ENG.1.2 Software requirements analysis process*	*Software Product Engineering, Activity 2*	*Software Product Engineering, Activity 3*

[1] The Supply Process deals with providing software to the customer that meets the agreed requirements. Establishing a contract, developing the software, and delivering it to the customer, which are the issues for this process, are addressed in various KPAs, although the Supply Process itself is not explicitly specified in the SW-CMM.

[2] Although not explicitly called out as system requirements analysis, PE.AC.2 will frequently be implemented as such.

[3] Although not explicitly called out as system requirements analysis, PE.AC.2 will frequently be implemented as such.

ISO 12207	ISO 15504	SW-CMM v1.1	SW-CMM v2 Draft C
5.3.5 Software architectural design	*ENG.1.3 Software design process*	*Software Product Engineering, Activity 3*	*Software Product Engineering, Activity 4*
5.3.6 Software detailed design	*ENG.1.3 Software design process*	*Software Product Engineering, Activity 3*	*Software Product Engineering, Activity 4*
5.3.7 Software coding and testing	*ENG.1.4 Software construction process*	*Software Product Engineering, Activity 4*	*Software Product Engineering, Activity 5*
5.3.8 Software integration	*ENG.1.5 Software integration process*	*Software Product Engineering, Activity 6*	*Software Product Engineering, Activity 6*
5.3.9 Software qualification testing	*ENG.1.6 Software testing process*	*Software Product Engineering, Activity 7*	*Software Product Engineering, Activities 7 and 8*
5.3.10 System integration	*ENG.1.7 System integration and testing process*	*(Software Product Engineering, Activity 6)*	*(Software Product Engineering, Activity 6)*
5.3.11 System qualification testing	*ENG.1.7 System integration and testing process*	*(Software Product Engineering, Activity 7)*	*(Software Product Engineering, Activities 7 and 8)*
5.3.12 Software installation	*CUS.2 Supply process*		*Software Product Engineering, Activity 10*
5.3.13 Software acceptance support	*CUS.2 Supply process*		*Software Product Engineering, Activities 10 and 11*
5.4 Operation process	CUS.4 Operational use process		Software Product Engineering,

ISO 12207	ISO 15504	SW-CMM v1.1	SW-CMM v2 Draft C
			Activity 11
5.5 Maintenance process	ENG.2 System and software maintenance process		(Software Product Engineering, Activity 11)[4]
6. Supporting life cycle processes			
6.1 Documentation process	SUP.1 Documentation process	Software Product Engineering, Activity 8	Software Product Engineering, Activity 9
6.2 Configuration management process	SUP.2 Configuration management process	Software Configuration Management	Software Configuration Management
6.3 Quality assurance process	SUP.3 Quality assurance process	Software Quality Assurance	Software Quality Assurance
6.4 Verification process	SUP.4 Verification process	(Peer Reviews; Software Product Engineering, Activities 5 and 6)	(Peer Reviews; Software Product Engineering, Activities 6 and 7)
6.5 Validation process	SUP.5 Validation process	Software Product Engineering, Activity 5	Software Product Engineering, Activities 7 and 8
6.6 Joint review process	SUP.6 Joint review process	Software Project Tracking & Oversight, Activity 13	(Software Project Control, Activity 10)
6.7 Audit process	SUP.7 Audit process	(Software Quality Assurance)[5]	(Software Quality Assurance)

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[4] In general, the SW-CMM considers maintenance to be a particular environment in which all of the KPAs are implemented as appropriate. Maintenance is, however, specifically addressed in the subpractices of PE.AC.11 (as is retirement) to provide a complete picture of the support key practice.

[5] SQA covers both quality assurance and audits. To large degree, audits add the attribute of independence to QA. The SQA KPA can be implemented as an independent function or not; the requirement is objective verification rather than independent verification. SQA may, or may not, therefore cover the Audit Process in a particular environment.

ISO 12207	ISO 15504	SW-CMM v1.1	SW-CMM v2 Draft C
6.8 Problem resolution process	SUP.8 Problem resolution process	Software Configuration Management, Activity 5	Software Configuration Management, Activity 4
7. Organizational life cycle processes			
7.1 Management process	MAN.1 Management process[6]	(Software Project Planning; Software Project Tracking & Oversight; Integrated Software Management)	(Software Project Planning; Software Project Control; Integrated Software Management)
	MAN.2 Project management process	Software Project Tracking & Oversight; Integrated Software Management	Software Project Planning; Software Project Control; Integrated Software Management
	MAN.3 Quality Management Process	Software Quality Management	(Statistical Process Management)[7]
	MAN.4 Risk Management Process	Software Project Planning, Activity 13; Software Project Tracking & Oversight, Activity 10; Integrated Software Management, Activity 10	Software Project Planning, Activity 11; Software Project Tracking & Oversight, Activity 8; Integrated Software Management, Activities 6 and 7

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[6] This is the generic planning and management process that is to be applied to any process, rather than specifically to the project.

[7] The process and product issues at level 4 that were separated in v1.1 were combined in SPM in v2.

ISO 12207	ISO 15504	SW-CMM v1.1	SW-CMM v2 Draft C
	ORG.1 Organizational alignment process[8]		(Organization Process Focus; Organization Software Asset Commonality)
7.2 Infrastructure process	ORG.4 Infrastructure process	Organization Process Definition	Organization Process Definition
7.3 Improvement process	ORG.2 Improvement process	Organization Process Definition	Organization Process Definition
7.4 Training process	ORG.3 Human Resource management process	Training Program	Organization Training Program
	ORG.5 Measurement process	Measurement and Analysis (common feature)	Measurement and Analysis (common feature); (Organization Process Performance)
	ORG.6 Reuse process		Organization Software Asset Commonality
		Requirements Management	Requirements Management
		Intergroup Coordination	Project Interface Coordination
		Peer Reviews	Peer Reviews
		Quantitative Process Management	Statistical Process Management
			Organization Process Performance

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[8] The purpose of the Organizational Alignment Process is to ensure that individuals share a common vision, culture, and understanding of business goals.

ISO 12207	ISO 15504	SW-CMM v1.1	SW-CMM v2 Draft C
		Defect Prevention	Defect Prevention
		Technology Change Management	Organization Process & Technology Innovation
		Process Change Management	Organization Improvement Deployment