

SwA Community's Assurance Process Reference Model - Initial Mappings

In the following table, all references to "assurance" are intended to include system and software assurance, information assurance, and cybersecurity in support of the business/mission functions supported by systems and software.

Goal	Practice	AF CMMI	BSIMM	CMMI-ACQ	CMMI-DEV	CMMI-SVC	OSAMM	RMM
Development – Engineering								
DE 1 Establish assurance requirements	Understand the operating environment and define the operating constraints for assurance within the environments of system deployment.	AF RD SP 1.1.1	SM1	PP SG1	IPPD SG1		EH1A	EF SG1 - SG2
	Develop customer assurance requirements.	AF RD SP 1.2.1	SR1.1	ARD SG1, SG3	RD SG1		SR1A	RRD:SG1 - SG3
			SR1.2	REQM SG1			SR1B	COMP:S G2
			SR1.3				SR2A	KIM:SG6
			SR2.3				SR2B	RRM:SG 1
	Define product and product component assurance requirements	AF RD SP 2.1.1	SFD3.2	CM SG1	RD SG2		SA3A	KIM:SG2
	Identify operational concepts and associated scenarios for intended and unintended use and associated assurance considerations.	AF RD SP 3.1.1	AM1.1	RSKM SG1 - SG2	RD SG3		TA1A	RISK:SG 1 - SG4
			AM1.3				TA1B	KIM:SG6
			AM1.4				TA2A	
			AM2.1					
			AM2.2					
	Identify appropriate controls for integrity and availability of the system in support of organizational objectives.	AF PP SP 1.1.1, 1.1.2	CP2.3	RSKM SG1	RSKM SG1		PC2B	CTRL:SG 2, KIM:SG2, EC:SG2
	Analyze assurance requirements.	AF RD SP 3.3.1	SR1.3	ARD SG3	RD SG3		SR1B	RRD:SG3
Balance assurance needs against cost benefits.	AF RD SP 3.4.1			RD SG3		SM3A - SM3B	FRM:SG4 - SG5, RRD:SG3	
Obtain Agreement of risk for Assurance level.			SM1.5	ARD SG3			RISK SG4, KIM SG3	
			SM2.4	RSKM SG2	RSKM SG2		SM1A	
DE 2 Create IT solutions with integrated business objectives and assurance	Develop alternative solutions and selection criteria for assurance.	AF TS SP 1.1.1	SFD1.1	ATM SG2	TS SG1		SA1A	RTSE:SG 1 - SG2
			SFD1.2	AVAL SG2			SA1B	KIM:SG2, SG6
	Architect for assurance.	AF TS SP 2.1.1	SFD2.1	ATM SG2	TS SG2		SA2A	RTSE:SG 3
			SFD2.3	AVAL SG2	TS SG2		SA2B	
	Design for assurance.	AF TS SP 2.1.2	SFD2.1		TS SG2			
	Implement the assurance designs of the product components.	AF TS SP 3.1.1	AA3.2		TS SG3		SA1B	
	Identify deviations from assurance coding standards. Implement appropriate mitigation to meet defined assurance objectives.	AF TS SP 3.1.2	CR1.4	AVER SG3	TS SG3		CR2A	RTSE:SG 2
CR2.3						CR2B	RTSE:SG 3	
CR3.1						CR3A		

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DE 3 Verify and Validate an implementation for assurance	Establish and maintain the environment for assurance validation.	AF VAL SP 1.3.1		AVAL SG1	VAL SG1			
	Analyze the results of assurance validation activities.	AF VAL SP 2.2.1		AVAL SG2	VAL SG2			
	Establish and maintain verification procedures and criteria for the assurance of selected work products.	AF VER SP 1.3.1	ST1.1 - ST1.2	AVER SG3	VER SG3		ST1A	RTSE:SG 3
			ST2.1				ST1B	
			ST3.1				ST2A	
	Conduct peer reviews according to assurance standards and guidelines	TS AF 3.1.2	AA1.1 - AA1.3	ATM SG1	VAL SG1 - SG2		DR1B	-
SFD3.1			AVAL SG1 - SG2					
Analyze the results of assurance verification activities	AF VER SP 3.2.1		AVER SG3	VER SG3				
Development – Project								
DP 1 Identify and manage risks due to vulnerabilities throughout the product and system lifecycle.	Define/select strategy for management of risk due to vulnerabilities.	RSKM AF 1.3.1	CMVM1.1	RSKM SG1	RSKM SG1		VM1A - VM1B	RISK:SG 1
	Identify assurance defects and effectiveness of corrective actions in other products/systems/operations (and apply to past, present, and future activities).	TS AF 1.1.1	CMVM1.2	RSKM SG3	RSKM SG3		VM3A	RISK:SG 5
	Determine root causes of mission and assurance defects that are identified during development and operations.		CMVM3.1 - 3.2	PMC	PMC		VM3A	VAR:SG2 - SG4, MON:SG 2
	Identify and document risks associated with the identified threats, vulnerabilities, and hazards.	RSKM AF 2.1.1 , PP AF 2.2.1	CMVM1.2	RSKM SG2	RSKM SG2			RISK:SG 3
	Prioritize risks according to a defined methodology.	PP AF 2.2.1		RSKM SG2	RSKM SG2			RISK:SG 4
	Identify mitigation controls and strategies.	PP AF 2.2.1	CMVM2.1	RSKM SG1	RSKM SG1		VM2A, TA3B	RISK:SG 1, CTRL:SG 2
	Implement corrective action.		CMVM3.1	RSKM SG3	RSKM SG3			RISK:SG 5
	Monitor assurance risk.	PMC AF 1.3.1	CMVM2.2		PMC SG1		VM3B	RISK:SG 6
	Identify, analyze and mitigate risks to IT assets that could adversely affect the operation and delivery of services		AM 1.1, 1.3, 2.3	RSKM SG1 - SG2	RSKM SG1 - SG2		TA1A - TA1B	RISK:SG 1 - SG4, KIM:SG3

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DP 2 Establish and maintain assurance support from the project.	Plan for assurance	PP AF 1.1.1	SM1.1	PP SG2 - SG3	PP SG1		SM1B	RTSE:SG 2 - SG3
					PP SG2			MON:SG 1
					PP SG3			
	Manage for assurance	AF PMC 1.3.1	CP2.3				PC3A	RTSE:SG 2
			CP3.3	PMC	PMC	PMC		COMP:S G3 - SG4
	Plan for team members with appropriate levels of assurance knowledge	OT AF 1.1.1 , PP AF 2.4.1	T1.3 - T1.4, T2.4 - T2.5	PP SG2	PP SG2		EG2B	HRM:SG 1
	Establish and maintain the technical infrastructure to support information and mission assurance	AF IPM 1.3	SE1.1 - SE3.2	CM SG3	IPP SG1		EH1A - EH3B	KIM:SG5
	Communicate and coordinate all assurance decisions and recommendations.	PP AF 2.2.1			IPP SG1			COMM:S G1 - SG4
	Identify, understand, and mitigate risks to the assurance objectives.	RD AF 3.1.1	AM1.1 - AM3.2	RSKM SG2 - SG3	PP SG2		TA1A - TA3B	RISK:SG 2 - SG5
						RSKM SG2		
				RSKM SG3				
Measure effectiveness of project assurance objectives.	MA AF 1.2.1		SM1.5	MA SG1 - SG2	MA SG1		SM1B	MA:SG2
			SM2.1	PMC SG1	MA SG2		PC3B	MON:SG 2
					PMC SG1			
DP 3 Protect project and organizational assets.	Properly configure and use assurance controls.	OPD + IPP SP4.3.1]						CTRL:SG 2, RISK:SG 5, KIM:SG2
				RSKM SG3	RSKM SG3			
	Detect and track both internal and external assurance related events.	OPD + IPP SP4.3.2]	CMVM1.1, CMVM1.2	RSKM SG3	RSKM SG3		VM2A	IMC:SG2
	Respond to incidents according to organizational policy.	OPD + IPP SP4.3.3	CMVM2.1- CMVM3.2	RSKM SG3	RSKM SG3		VM2A- VM3B	IMC:SG2 - SG5
	Identify changes to the operational assurance posture of the project and organizational environments and ensure they are addressed in accordance with the assurance objectives.	OPD + IPP SP4.3.4	SE2.3, CMVM2.3	CM SG2	CM SG2		EH2B	ADM:SG3
	Plan for continuous availability of project and organizational environment.	IPM + IPPD SP4.3.5, SP4.3.5.1			OPD SG1	ODP SG1		SC:SG1 - SG7
Properly maintain process and organizational information labeled with the appropriate assurance classifications.	MA AF 2.3.1			OPD SG1	ODP SG1		KIM:SG4 - SG5	

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Goal	Practice	AF CMMI	BSIMM	CMMI-ACQ	CMMI-DEV	CMMI-SVC	OSAMM	RMM	
Development – Organization									
DO 1 Establish the assurance resources to achieve key business objectives.	Establish and maintain the description of the assurance context and objectives for the organization.	OPF AF 1.1.1	SM1.5	PMC SG2	OPF SG1		SM3A	RTSE:SG 3.SP1	
			CP1.1	OPF SG1			SM3B	COMP:S G2	
			CP1.2				PC1A	MON:SG 1 - SG2	
	Establish organizational processes to achieve the assurance business objectives.	AF OPD +IPPD SP 1.1	CP1.3	OPF SG2 - SG3	OPF SG2		PC2A	RTSE:SG 2	
			CR1.1		OPF SG3			COMP:S G1	
			CP3.2						KIM:SG6
							CR1A	VAR:SG2	
	Establish acceptable deviations and alternatives for assurance processes and policy	AF OPD +IPPD SP 1.3	CP3.3	OPF SG3	OPF SG3		PC3A	CTRL:SG 3	
Establish and maintain the technical infrastructure to support information and mission assurance	AF OPD SP 1.6		CM SG3	CM SG3		EH1A - EH3B	EF:SG1 - SG4		
Establish and implement an assurance roadmap as part of the plan for the organization	OPD +IPPD AF 1.1.1	SM1.1	PP SG2	PP SG2		SM1B	OPF:SG2		
DO 2 Establish the environment to sustain the assurance program within the organization.	Integrate and maintain process assets for assurance across the organization in conjunction with the other system development processes.	IPM AF 1.3.1							
	Monitor for effective implementation and expected results of the assurance processes	OPD + IPPD SP4.3.4	SM2.2	OPF SG2 - SG3	OPD SG1			OPF:SG3	
	Establish and maintain collaborations with external organizations promoting assurance.	OPF SP1.2.4	SM3.1	PPQA SG1	PPQA SG1			?	
	Identify , document, and manage IT assets during their lifecycle to ensure sustained assurance	RD AF 1.1.1	SM3.2	OPF SG3	OPF SG3			OPF:SG3	
			CMVM2.3, SE 1.1 - 1.2	CM SG1 - SG3	CM SG1 - SG3		EH1A - EH3B	ADM:SG1 - SG3, KIM:SG1 - SG5	

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Enterprise - Assurance Support								
ES 1 Establish and maintain organizational culture where assurance is an integral part of achieving the mission.	Coordinate organizational mission and strategy while defining the role of assurance in the engineering and related processes.		SM1.1	PP SG3	PP SG3		SM1A	EF:SG4
	Communicate the plan for assurance.		SM3.2					COMM:SG1 - SG4
	Establish and maintain the strategic assurance training needs of the organization	AF OT SP 1.1.1	T1.1	OT SG2	OT SG1		EG1A	OTA:SG1 - SG2
			T1.3 - T1.4		OT SG2		EG2A	OTA:SG3 - SG4
			T2.1				EG1B - EG2B	OTA:SG2
			T2.4 - T2.5				EG3A	OTA:SG4
T3.4					EG3B			
ES 2 Establish and maintain the ability to support continued delivery of assurance capabilities	Plan for effective delivery of assurance capabilities		CR3.2			CAM SG1, SC SG1 - SG2		EF:SG1 - SG3, SC:SG1
	Identify, track, and resolve concerns about effective delivery of assurance capabilities		CR3.2			CAM SG2, IRP SG2, SC SG3		MON:SG1 - SG3, EF:SG4
	Establish, deliver, and maintain effective delivery of assurance capabilities		CR3.2			SC SG2, SD SG1 - SG3		SC:SG1 - SG7, EC:SG4
ES 3 Monitor and improve enterprise support to IT assets	Establish, monitor, analyze, and manage an internal control system that ensures the effectiveness and efficiency of operations through assuring mission success of high-value services and the IT assets that support them.			MA SG1 - SG2	MA SG1 - SG2	MA SG1 - SG2		MON:SG1 - SG2
	Ensure awareness of and compliance with an established set of relevant internal and external guidelines, standards, practices, policies, regulations, and legislation, and other obligations related to managing IT assets that support the mission		CP1.1 - 3.3	OPF SG1 - SG3	OPF SG1 - SG3	OPF SG1 - SG3	PC1A - 3B	COMP
	Ensure the continuity of essential operations of services and related IT assets if a disruption occurs as a result of an incident, disaster, or other disruptive event.					CAM SG1 - SG2		SC:SG1 - SG6
	Identify, analyze, and manage IT vulnerabilities in the operating environment		CMVM1.1 - 3.2				VM1A - 2B	VAR:SG1 - SG2
	Determine root causes of mission and assurance defects that are identified during development and operations.		CMVM3.1 - 3.2				VM3A	VAR:SG4
	Establish processes to identify and analyze events, detect incidents, and determine an appropriate organizational response.		CMVM1.1			IRP SG1 - SG3	VM1A - 2B	IMC:SG1 - SG5
	Proactively manage changes to the assurance requirements for services and associated IT assets		SR1.2 *IMPLIED*	REQM SG1	REQM SG1	REQM SG1	SR1A - SR1B *IMPLIED*	RRM:SG1

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Acquisition and Supplier Management								
AM 1 Select, manage, and use effective suppliers and third party applications based upon their assurance capabilities.	Select suppliers based on an evaluation of their ability to meet specified assurance requirements and established criteria	AF SAM SP 1.2	CP2.4	RSKM SG2	SAM SG1			EXD:SG1 - SG2
			CP3.2	REQM SG1			SR3A	EXD:SG3
			SR2.1, SR2.5	SSAD SG1				RISK:SG3 - SG6
				SSAD SG2				RRD:SG2 - SG3
				SSAD SG2				
				SSAD SG3				
	Document supplier agreements for assurance.	AF SAM SP 1.3	CP2.5	AM SG1	SAM SG1			EXD:SG3
			CP3.2	SSAD SG3			SR3A	
	Monitor supplier work processes and work products.			AM SG1	SAM SG2		PC2B	EXD:SG4
	Evaluate supplier deliverables against assurance acceptance criteria	AF SAM SP 2.4	CP2.3	AM SG1	SAM SG2		PC3A	EXD:SG4