

## SwA Community's Assurance Process Reference Model - Mapping to Assurance Models

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Goal	Practice	AF CMMI	BSIMM	OSAMM	RMM
<b>Development – Engineering</b>					
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	EH1A	EF SG1 - SG2
	Develop customer assurance requirements.	AF RD SP 1.2.1	SR1.1	SR1A	RRD:SG1 - SG3
			SR1.2	SR1B	COMP:SG2
			SR1.3	SR2A	KIM:SG6
			SR2.3	SR2B	RRM:SG1
	Define product and product component assurance requirements	AF RD SP 2.1.1	SFD3.2	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	TA1A	RISK:SG1 - SG4
			AM1.3	TA1B	KIM:SG6
AM1.4			TA2A		
AM2.1					
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	PC2B	CTRL:SG2, KIM:SG2, EC:SG2	
Analyze assurance requirements.	AF RD SP 3.3.1	SR1.3	SR1B	RRD:SG3	
Balance assurance needs against cost benefits.	AF RD SP 3.4.1	SM1.5	SM3A - SM3B	FRM:SG4 - SG5, RRD:SG3	
Obtain Agreement of risk for Assurance level.		SM2.4	SM1A	RISK SG4, KIM SG3	
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	SA1A	RTSE:SG1 - SG2
	Architect for assurance.	AF TS SP 2.1.1	SFD1.2	SA1B	KIM:SG2, SG6
			SFD2.1	SA2A	RTSE:SG3
			SFD2.3	SA2B	
	Design for assurance.	AF TS SP 2.1.2	SFD2.1		
	Implement the assurance designs of the product components.	AF TS SP 3.1.1	AA3.2	SA1B	
Identify deviations from assurance coding standards. Implement appropriate mitigation to meet defined assurance objectives.	AF TS SP 3.1.2	CR1.4	CR2A	RTSE:SG2	
		CR2.3	CR2B	RTSE:SG3	
		CR3.1	CR3A		
DE 3 Verify and Validate an implementation for assurance	Establish and maintain the environment for assurance validation.	AF VAL SP 1.3.1			
	Analyze the results of assurance validation activities.	AF VAL SP 2.2.1			
	Establish and maintain verification procedures and criteria for the assurance of selected work products.	AF VER SP 1.3.1	ST1.1 - ST1.2	ST1A	RTSE:SG3
			ST2.1	ST1B	
			ST3.1	ST2A	
				ST2B	
Conduct peer reviews according to assurance standards and guidelines	TS AF 3.1.2	AA1.1 - AA1.3	DR1B	-	
Analyze the results of assurance verification activities	AF VER SP 3.2.1	SFD3.1			

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<b>Development – Project</b>					
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	VM1A - VM1B	RISK:SG1
	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	VM3A	RISK:SG5
	Determine root causes of mission and assurance defects that are identified during development and operations.		CMVM3.1 - 3.2	VM3A	VAR:SG2 - SG4, MON:SG2
	Identify and document risks associated with the identified threats, vulnerabilities, and hazards.	RSKM AF 2.1.1 , PP AF 2.2.1	CMVM1.2		RISK:SG3
	<u>Prioritize risks according to a defined methodology.</u>	PP AF 2.2.1			RISK:SG4
	<u>Identify mitigation controls and strategies.</u>	PP AF 2.2.1	CMVM2.1	VM2A, TA3B	RISK:SG1, CTRL:SG2
	<u>Implement corrective action.</u>		CMVM3.1		RISK:SG5
	Monitor assurance risk.	PMC AF 1.3.1	CMVM2.2	VM3B	RISK:SG6
	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	TA1A - TA1B	RISK:SG1 - SG4, KIM:SG3
			SM1.1	SM1B	RTSE:SG2 - SG3 MON:SG1
DP 2 Establish and maintain assurance support from the project.	Plan for assurance	PP AF 1.1.1			
	Manage for assurance	AF PMC 1.3.1	CP2.3 CP3.3	PC3A	RTSE:SG2 COMP:SG3 - 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	EG2B	HRM:SG1
	Establish and maintain the technical infrastructure to support information and mission assurance	AF IPM 1.3	SE1.1 - SE3.2	EH1A - EH3B	KIM:SG5
	Communicate and coordinate all assurance decisions and recommendations.	PP AF 2.2.1			COMM:SG1 - SG4
	Identify, understand, and mitigate risks to the assurance objectives.	RD AF 3.1.1	AM1.1 - AM3.2	TA1A - TA3B	RISK:SG2 - SG5
	Measure effectiveness of project assurance objectives.	MA AF 1.2.1	SM1.5 SM2.1	SM1B PC3B	MA:SG2 MON:SG2

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DP 3 Protect project and organizational assets.	Properly configure and use assurance controls.	OPD + IPP SP4.3.1]			CTRL:SG2, RISK:SG5, KIM:SG2
	Detect and track both internal and external assurance related events.	OPD + IPP SP4.3.2]	CMVM1.1, CMVM1.2	VM2A	IMC:SG2
	Respond to incidents according to organizational policy.	OPD + IPP SP4.3.3	CMVM2.1-CMVM3.2	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	EH2B	ADM:SG3
	Plan for continuous availability of project and organizational environment.	IPM + IPPD SP4.3.5, SP4.3.5.1			SC:SG1 - SG7
	Properly maintain process and organizational information labeled with the appropriate assurance classifications.	MA AF 2.3.1			KIM:SG4 - SG5
<b>Development – Organization</b>					
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	SM3A	RTSE:SG3.SP1
			CP1.1	SM3B	COMP:SG2
			CP1.2	PC1A	MON:SG1 - SG2
	Establish organizational processes to achieve the assurance business objectives.	AF OPD +IPPD SP 1.1	CP1.3	PC2A	RTSE:SG2
			CR1.1		COMP:SG1
			CP3.2		KIM:SG6
Establish acceptable deviations and alternatives for assurance processes and policy	AF OPD +IPPD SP 1.3		CR1A	VAR:SG2	
Establish and maintain the technical infrastructure to support information and mission assurance	AF OPD SP 1.6		CP3.3	PC3A	CTRL:SG3
Establish and implement an assurance roadmap as part of the plan for the organization	OPD +IPPD AF 1.1.1			EH1A - EH3B	EF:SG1 - SG4
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	SM1.1	SM1B	OPF:SG2
	Monitor for effective implementation and expected results of the assurance processes	OPD + IPPD SP4.3.4	SM2.2		OPF:SG3
	Establish and maintain collaborations with external organizations promoting assurance.	OPF SP1.2.4	SM3.1		?
	Identify , document, and manage IT assets during their lifecycle to ensure sustained assurance	RD AF 1.1.1	SM3.2	CMVM2.3, SE 1.1 - 1.2	EH1A - EH3B

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<b>Enterprise - Assurance Support</b>						
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	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	EG1A	OTA:SG1 - SG2
				T1.3 - T1.4	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		EF:SG1 - SG3, SC:SG1	
	Identify, track, and resolve concerns about effective delivery of assurance capabilities		CR3.2		MON:SG1 - SG3, EF:SG4	
	Establish, deliver, and maintain effective delivery of assurance capabilities		CR3.2		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.				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	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.				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	VM1A - 2B	IMC:SG1 - SG5	
	Proactively manage changes to the assurance requirements for services and associated IT assets			SR1.2 *IMPLIED*	SR1A - SR1B *IMPLIED*	RRM:SG1

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<b>Acquisition and Supplier Management</b>						
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		EXD:SG1 - SG2	
			CP3.2	SR3A	EXD:SG3	
			SR2.1, SR2.5		RISK:SG3 - SG6	
					RRD:SG2 - SG3	
	Document supplier agreements for assurance.	AF SAM SP 1.3	CP2.5		EXD:SG3	
			CP3.2	SR3A		
	Monitor supplier work processes and work products.			PC2B	EXD:SG4	
	Evaluate supplier deliverables against assurance acceptance criteria	AF SAM SP 2.4	CP2.3	PC3A	EXD:SG4	