SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – ASSOCIATE SOFTWARE ENGINEER		
Sector	Infocomm Technology	
Track	Software and Applications	
Sub-track	Software Engineering	
Occupation	Software Engineer	
Job Role	**Associate Software Engineer**	
Job Role Description	The Associate Software Engineer applies subject matter knowledge in applications development, possessing well-developed skills in design, development, testing, debugging and implementing software applications or specialised utility programs in support of end users' needs on platforms. He/She supports regular updates and recommends improvements to existing applications. He works under limited supervision to effectively deal with unfamiliar issues, and follows recommended coding standards and secure-coding principles to avoid security vulnerabilities. He provides technical support to the quality testing teams. He works in a team setting and is proficient in programming languages required by the organisation. He is familiar with software development tools and standards, as well as the relevant software platforms on which the solution is deployed on. The Associate Software Engineer is a keen learner, and able to apply structured, analytical thinking to develop applications. He is a strong team player, who communicates his ideas and gets along with others easily.	
Critical Work Functions and Key Tasks	**Critical Work Functions**	**Key Tasks**
	Analyse user and business requirements	Participate in discussions with stakeholders to understand user requirements
		Conduct requirements analysis based on user requirements
		Prepare requirements documentation, descriptions of interfaces, and functional and non-functional requirements
		Assist in writing proposals and communication materials to pitch ideas
		Propose new technologies for cutting edge platform development
	Manage the design of software	Assist in the installation and use of tools for a project's designated design strategy and methodology
		Assist in architectural design tasks associated with use of standard notations, diagramming techniques, models, and patterns
		Apply selected software design pattern to the design of software components or modules
		Participate in software design reviews
		Carry out static analysis tasks to evaluate design quality
		Assist in development and use of simulation and prototypes to evaluate software design quality
	Manage software construction processes	Perform integration testing as part of the integration process
		Collect standard measures of code quality and size
		Generate codes and systems from models
		Create and execute unit tests for delivered codes
		Achieve test coverage goals set by project and organisation standards
	Oversee software testing	Identify unit and integration testing success and failure criteria
		Adhere to software test plans
		Assist with the development of the test plans and test cases
		Implement the test environment and unit test cases, and integration and system test cases

		Collect and analyse test execution results
	Oversee security provisions in software	Follow recommended coding standards and secure coding principles to avoid security vulnerabilities
		Adhere to project standards in the collection of security assessment metrics
		Perform code reviews to identify security vulnerabilities
	Manage software management configuration (SCM)	Assist in determining impact of constraints on SCM imposed by policies, contract, and software development life cycle
		Provides measurement data for SCM measures
		Assists in identifying software configuration items (SCIs)
		Generate, classify and manage problem reports

	Technical Skills and Competencies		**Generic Skills and Competencies**	
Skills and Competencies	Agile Software Development	Level 3	Computational Thinking	Intermediate
	Applications Development	Level 3	Problem Solving	Intermediate
	Applications Integration	Level 3	Lifelong Learning	Intermediate
	Applications Support and Enhancement	Level 1, Level 2	Communication	Basic
	Business Environment Analysis	Level 2	Teamwork	Intermediate
	Business Needs Analysis	Level 2		
	Configuration Tracking	Level 1, Level 2		
	Data Design	Level 3		
	Emerging Technology Synthesis	Level 3		
	Problem Management	Level 3		
	Project Management	Level 3		
	Software Configuration	Level 2		
	Software Design	Level 3		
	Software Testing	Level 2		
	Stakeholder Management	Level 2		
	System Integration	Level 3		
	Test Planning	Level 2		
	User Interface Design	Level 3		
Programme Listing	For a list of Training Programmes available for the ICT sector, please visit: www.skillsfuture.sg/skills-framework/ict			

The information contained in this document serves as a guide.