

SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – QUALITY ENGINEER		
Sector	Infocomm Technology	
Track	Strategy and Governance	
Sub-track	Quality Management	
Occupation	Quality Specialist	
Job Role	Quality Engineer	
Job Role Description	<p>The Quality Engineer identifies user requirements and expectations to inform quality standards for end-products, and analyses product development processes to identify relevant quality standards. He/She incorporates relevant and suitable international standards into product development processes, quality standards and testing processes. He identifies quality-testing types and variations based on business needs and requirements and develops testing processes. He identifies suitable measures of quality for testing, and contributes to the development of test scenarios and plans. He conducts various quality tests, and analyses data to identify operating and usage conditions in which performance of quality measures starts to decline. He also automates quality testing for applicable and suitable tests.</p> <p>He works in a team setting and is proficient in programming languages required by the organisation. He is familiar with international quality standards, test automation frameworks and tools, as well as applicable quality testing and analysis tools.</p> <p>The Quality Engineer possesses strong analytical ability with excellent communication and interpersonal skills. He is highly meticulous in nature, curious and is able to work in a dynamic environment.</p>	
Critical Work Functions and Key Tasks	Critical Work Functions	Key Tasks
	Develop quality standards	Analyse product development processes to identify quality standards at each stage of the process
		Identify user requirements and expectations to develop quality standards for end products
		Develop quality standards that incorporates international standards and best practices in quality
		Identify matrices to assess for quality
		Develop user guides on quality standards to define requirements, specifications, guidelines, and characteristics of processes and products
		Analyse compliance level to quality standards and identify areas for change
		Conduct assessments of existing quality standards against evolving user requirements, business needs and regulatory changes
	Develop quality testing processes	Identify quality testing types and variations for each phase of the product development process or lifecycle based on business needs and requirements
		Identify objectives of quality tests for each phase of the development process or lifecycle
		Outline steps in the quality test process required to achieve test objectives
		Identify applicable and relevant international standards and practices
		Develop quality testing processes for each phase of the development process or lifecycle
	Develop plans to execute quality testing	Identify suitable quality measures for testing based on product attributes valued most by users
		Develop test plans
		Develop quality testing approaches and steps to satisfy test objectives
		Create test scenarios that complies with established testing procedures and guidelines
		Work with relevant teams to plan for quality testing based on established testing procedures and guidelines

	Perform quality testing	Conduct quality tests across phases of the product development process or lifecycle to assess performance of quality measures under different operational and usage conditions		
		Analyse data from quality tests to determine optimal operational and usage conditions		
		Utilise tools to test and analyse factors leading to failure of quality standards		
		Identify operating and usage conditions in which performance of quality measures drops		
		Document quality testing outcomes		
		Provide suggestions to improve performance of quality measures		
		Develop tools to automate quality testing for suitable types of tests		
		Implement automated test cases and codes for quality testing		
		Conduct applicable security testing with relevant functional teams		
		Address quality issues and impediments to achieving quality standards in an Agile environment		
	Optimise quality processes	Identify opportunities to optimise time and cost spent on system quality processes		
		Propose improvements to optimise quality testing process and improve the quality systems		
		Conduct research on industry best practices and new methodologies, practices and tools to optimise quality processes		
Skills and Competencies	Technical Skills and Competencies		Generic Skills and Competencies	
	Agile Software Development	Level 3	Problem Solving	Intermediate
	Applications Development	Level 3	Communication	Basic
	Budgeting	Level 3	Teamwork	Basic
	Business Needs Analysis	Level 3	Decision Making	Basic
	Business Performance Management	Level 3	Digital Literacy	Intermediate
	Failure Analysis	Level 3		
	Networking	Level 3		
	Partnership Management	Level 3		
	Problem Management	Level 3		
	Process Improvement and Optimisation	Level 3		
	Process Validation	Level 3		
	Project Management	Level 3		
	Quality Engineering	Level 4		
	Quality Standards	Level 4		
	Software Design	Level 3		
	Software Testing	Level 2, Level 3		
	Stakeholder Management	Level 2, Level 3		
	Strategy Implementation	Level 3		
	Test Planning	Level 2, 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.