

SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY SKILLS MAP – HEAD OF SOFTWARE ENGINEERING		
Sector	Infocomm Technology	
Track	Product Development	
Sub-track	Software Development	
Occupation	Software Engineer	
Job Role	Head of Software Engineering	
Job Role Description	<p>The Head of Software Engineering defines the software development vision and strategy. He/She also ensures alignment with the organisation's architecture. He anticipates the impact of external technological developments on the organisation's software architecture and strategy, ensuring that the software development strategy and processes keep pace with the latest data protection and cyber security practices and guidelines. He maintains oversight on the organisation's software deployment strategy, facilitates the seamless implementation and integration of software, and oversees the translation of business requirements to software development initiatives and projects. He also evaluates the viability of recommended changes in software development methodologies, processes and standards for implementation.</p> <p>He works in a team setting and is proficient in programming languages required by the organisation. He is familiar with the relevant platforms and embedded systems on which the software solution is deployed on. He is also knowledgeable of microprocessor and microcontroller-based hardware components.</p> <p>The Head of Software Engineering liaises and negotiates with external suppliers and sets operating policies. He displays a forward-looking perspective, inspirational and decisive in envisioning the future of software and applications. He is an influential leader who communicates his ideas persuasively and engages with his team members and other stakeholders.</p>	
Critical Work Functions and Key Tasks	Critical Work Functions	Key Tasks
	Develop software development strategy	Define software development vision and strategy in alignment with the organisation's architecture
		Oversee the organisation's investments in software development
		Ensure that the software development strategy and processes keep pace with the latest data protection and cyber security practices and guidelines
		Anticipate the impact of external technological developments on the organisation's software architecture and strategy
		Define the organisation's DevOps strategy, guidelines and standards
	Oversee software development	Explore new methodologies in software development
		Facilitate the seamless implementation and integration of software
		Evaluate processes and design methodologies to be used in software design
		Act as a subject matter expert in software design, development, and deployment
		Maintain oversight on the organisation's software deployment strategy
		Forecast new and emerging software requirements and changes to software based on evolving business requirements
		Oversee the translation of business requirements to software development initiatives and projects
		Direct commercial discussions and negotiations with partners and vendors involved in the development of software products
		Drive the adoption of new and novel methodologies in software design and development
	Establish standards and governance for software engineering	Formulate the organisation's software development governance framework and processes
		Establish Key Performance Indicators (KPIs) and Service Level Agreements (SLAs) for the implementation and monitoring of software
		Evaluate the suitability of best practices in software development for implementation in the organisation
		Evaluate the viability of recommended changes in software development methodologies, processes and standards for implementation

	Manage people and organisation	Review operational strategies, policies and targets across teams and projects		
		Develop strategies for resource planning and utilisation		
		Review the utilisation of resources		
		Oversee the development of learning roadmaps for teams and functions		
		Establish performance indicators to benchmark effectiveness of learning and development programmes against best practices		
		Implement succession planning initiatives for key management positions		
		Advise stakeholders toward reaching compromises and agreeing on expectations		
Skills and Competencies	Technical Skills and Competencies		Critical Core Skills	
	Agile Coaching*	Level 5	Communication	Advanced
	Agile Software Development*	Level 6	Decision Making	Advanced
	Applications Development*	Level 5	Developing People	Advanced
	Applications Integration*	Level 5	Problem Solving	Advanced
	Budgeting*	Level 5	Transdisciplinary Thinking	Advanced
	Continuous Integration and Continuous Deployment*	Level 5		
	Enterprise Architecture*	Level 4, Level 5		
	Infrastructure Design*	Level 5		
	IT Strategy*	Level 5		
	Learning and Development*	Level 5, Level 6		
	Manpower Planning*	Level 4, Level 5		
	Networking*	Level 5		
	Partnership Management*	Level 5		
	People and Performance Management*	Level 4, Level 5		
	Performance Management*	Level 5		
	Quality Standards*	Level 5, Level 6		
	Software Design*	Level 6		
	Stakeholder Management*	Level 5		
	Strategy Planning*	Level 5		
	System Integration*	Level 6		
	Business Environment Analysis	Level 4		
	Business Innovation	Level 6		
	Business Needs Analysis	Level 5		
	Business Negotiation	Level 5		
	Business Performance Management	Level 5		
	Business Requirements Mapping	Level 5		

	Change Management	Level 5	
	Emerging Technology Synthesis	Level 5	
	Organisational Analysis	Level 5	
	Product Management	Level 6	
	Project Management	Level 6	
	Service Level Management	Level 6	
	Software Testing	Level 4	
	Solution Architecture	Level 5	
	Strategy Implementation	Level 4	
	Test Planning	Level 5	
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.

Note: Technical Skills and Competencies (TSCs) with an asterisk () refer to Priority Skills (i.e., TSCs to be prioritised for this role).