SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY
SKILLS MAP – HEAD OF SOFTWARE ENGINEERING

Sector	Infocomm Technology
Track	Software and Applications
Occupation	Software Engineer
Job Role	**Head of Software Engineering**
Job Role Description	The Head of Software Engineering defines the software development vision and strategy and ensure alignment with the organisation's architecture. He/She anticipates the impact of external technological developments on the organisation's software architecture and strategy, and ensures that the software development strategy and processes keeps 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 viability of recommended changes in software development methodologies, processes and standards for implementation. 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. 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 is able to communicate his ideas persuasively and engage with team members and other stakeholders.

	Critical Work Functions	**Key Tasks**
Critical Work Functions and Key Tasks	**Develop software development strategy**	Define software development vision and strategy and ensure alignment with the organisation's architecture
		Oversee the organisation's investments in software development
		Ensure that the software development strategy and processes keeps 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 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**		**Generic Skills and Competencies (Top 5)**	
	Agile Coaching	Level 5	Leadership	Advanced
	Agile Software Development	Level 5	Communication	Advanced
	Applications Development	Level 5	Resource Management	Advanced
	Applications Integration	Level 5	Developing People	Advanced
	Budgeting	Level 5	Interpersonal Skills	Advanced
	Business Innovation	Level 6		
	Business Needs Analysis	Level 5		
	Business Performance Management	Level 5		
	Emerging Technology Synthesis	Level 5		
	Enterprise Architecture	Level 4		
	IT Strategy	Level 5		
	Learning and Development	Level 6		
	Manpower Planning	Level 5		
	Networking	Level 5		
	Partnership Management	Level 5		
	People and Performance Management	Level 5		
	Performance Management	Level 5		
	Product Management	Level 6		
	Project Management	Level 6		
	Quality Standards	Level 5		
	Software Design	Level 6		
	Solution Architecture	Level 5		
	Stakeholder Management	Level 5		
	Strategy Implementation	Level 4		
	Strategy 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.