

# SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT

TSC Category	Development and Implementation					
TSC Title	System Integration					
TSC Description	Develop and implement a roadmap and specific integration solutions to facilitate integration of various ICT components and optimise inter-operability of systems and their interfaces. This includes the integration of various architectural components such as networks, servers, system platforms and their interfaces					
TSC Proficiency Description	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
			ICT-DIT-3016-1.1	ICT-DIT-4016-1.1	ICT-DIT-5016-1.1	ICT-DIT-6016-1.1
			Perform basic compatibility assessments and integrate selected system components according to a plan	Determine interoperability of system components and develop a system integration plan	Design a feasible integration roadmap, monitor system integration outcomes and drive enhancements to integration plans	Establish an integration strategy and a clear vision for an integrated ICT architectural design.
<b>Knowledge</b>			<ul style="list-style-type: none"> <li>Various types of ICT systems and how they work</li> <li>System components and interfaces</li> <li>Factors to consider when assessing compatibility among system interfaces</li> <li>Utilisation of basic integration tools and techniques</li> <li>Protocols for system component integration</li> <li>Signs of incompatibility and integration errors</li> <li>Methodologies for troubleshooting in an integration process</li> </ul>	<ul style="list-style-type: none"> <li>Modes of interaction among system or components and their interfaces</li> <li>Technical requirements for integration of systems or system components</li> <li>Factors to consider when integrating multiple systems</li> <li>System integration diagnosis and solution development</li> <li>Features of system components and their interoperability</li> <li>Processes and techniques in network integration for a wide range of network types and components</li> <li>Utilisation of advanced integration tools</li> </ul>	<ul style="list-style-type: none"> <li>Factors to consider when evaluating feasibility of integration</li> <li>Downstream implications of system integration</li> <li>Potential roadblocks or challenges that may hinder integration success</li> <li>Process of designing an integration roadmap and approach</li> <li>Range of available integration tools and techniques</li> </ul>	<ul style="list-style-type: none"> <li>Technical and business impact of system integration in the short and long term</li> <li>Financial and non-financial costs and potential gains of integration</li> <li>Factors to consider in developing an integration strategy</li> <li>New and advanced integration tools and techniques used in the market</li> </ul>
<b>Abilities</b>			<ul style="list-style-type: none"> <li>Conduct basic compatibility assessment of specific components, sub-systems and their interfaces</li> </ul>	<ul style="list-style-type: none"> <li>Determine how system components can interoperate with one another to exchange data and information or trigger an event</li> </ul>	<ul style="list-style-type: none"> <li>Develop a high-level view of the interoperability of various components, based on the envisioned architectural design</li> </ul>	<ul style="list-style-type: none"> <li>Establish a clear vision for an integrated Infocomm Technology architectural design to achieve desired outcomes</li> </ul>

## SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT

			<ul style="list-style-type: none"> <li>Utilise basic integration tools to integrate selected system components, using protocols that are accepted at each interface</li> <li>Test the selected system components or interfaces to identify any incompatibility issues</li> <li>Identify integration errors and conduct basic troubleshooting</li> <li>Propose potential changes or modifications to integration plan based on observed integration outcomes</li> </ul>	<ul style="list-style-type: none"> <li>Synthesise technical architecture documents for the ICT systems and components to be integrated</li> <li>Identify technical requirements and dependencies of integrating multiple networks based on the integration roadmap</li> <li>Develop a integration solution or plan to address a specific organisation requirement</li> <li>Utilise identified tools and techniques to carry out integration of multiple, complex network components and services across different platforms and carriers</li> <li>Make modifications to integration plans based on feedback provided</li> </ul>	<ul style="list-style-type: none"> <li>Review technical architecture documents for the Infocomm Technology systems and components to be integrated</li> <li>Evaluate technical considerations, feasibility and implications of integrating multiple systems and components according to the integration strategy</li> <li>Design an integration roadmap comprising a suite of system integration solutions</li> <li>Identify suitable tools and techniques to facilitate system integration and interoperability of components</li> <li>Manage outcomes of system integration</li> <li>Provide expert advice on and direct high-level modifications to the integration plan, so as to optimise success and performance</li> </ul>	<ul style="list-style-type: none"> <li>Evaluate business requirements to identify system integration objectives</li> <li>Pre-empt risks and impact of integration to other networks and processes</li> <li>Drive integration strategy to achieve integration objectives and desired impact</li> <li>Introduce new or advanced tools that effectively address the integration requirements</li> <li>Evaluate proposed integration approaches, taking into consideration business needs, and the associated costs, time and resources</li> </ul>
<b>Range of Application</b>	<p>Types of networks for integration may include but are not limited to:</p> <ul style="list-style-type: none"> <li>• LAN network (e.g., SOHO network, WLAN)</li> <li>• Radio network</li> <li>• Telecommunications network</li> <li>• Next generation network (NGN)</li> <li>• Wide area network (WAN)</li> <li>• Cloud based network</li> </ul> <p>Types of platforms for integration may include but are not limited to:</p> <ul style="list-style-type: none"> <li>• Mobile Platforms (e.g., Android, IOS)</li> <li>• Operating system platform (e.g., Mac, Microsoft Windows, Linux )</li> </ul>					

## SKILLS FRAMEWORK FOR INFOCOMM TECHNOLOGY TECHNICAL SKILLS & COMPETENCIES (TSC) REFERENCE DOCUMENT

	<ul style="list-style-type: none"> <li>• Enterprise Resource Platforms (e.g., SAP, Oracle)</li> <li>• Software platforms (e.g., Java,.NET Framework)</li> </ul>
--	---