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| **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. |
| **Knowledge** |  |  | * Various types of ICT systems and how they work * System components and interfaces * Factors to consider when assessing compatibility among system interfaces * Utilisation of basic integration tools and techniques * Protocols for system component integration * Signs of incompatibility and integration errors * Methodologies for troubleshooting in an integration process | * Modes of interaction among system or components and their interfaces * Technical requirements for integration of systems or system components * Factors to consider when integrating multiple systems * System integration diagnosis and solution development * Features of system components and their interoperability * Processes and techniques in network integration for a wide range of network types and components * Utilisation of advanced integration tools | * Factors to consider when evaluating feasibility of integration * Downstream implications of system integration * Potential roadblocks or challenges that may hinder integration success * Process of designing an integration roadmap and approach * Range of available integration tools and techniques | * Technical and business impact of system integration in the short and long term * Financial and non-financial costs and potential gains of integration * Factors to consider in developing an integration strategy * New and advanced integration tools and techniques used in the market |
| **Abilities** |  |  | * Conduct basic compatibility assessment of specific components, sub-systems and their interfaces * Utilise basic integration tools to integrate selected system components, using protocols that are accepted at each interface * Test the selected system components or interfaces to identify any incompatibility issues * Identify integration errors and conduct basic troubleshooting * Propose potential changes or modifications to integration plan based on observed integration outcomes | * Determine how system components can interoperate with one another to exchange data and information or trigger an event * Synthesise technical architecture documents for the ICT systems and components to be integrated * Identify technical requirements and dependencies of integrating multiple networks based on the integration roadmap * Develop a integration solution or plan to address a specific organisation requirement * Utilise identified tools and techniques to carry out integration of multiple, complex network components and services across different platforms and carriers * Make modifications to integration plans based on feedback provided | * Develop a high-level view of the interoperability of various components, based on the envisioned architectural design * Review technical architecture documents for the Infocomm Technology systems and components to be integrated * Evaluate technical considerations, feasibility and implications of integrating multiple systems and components according to the integration strategy * Design an integration roadmap comprising a suite of system integration solutions * Identify suitable tools and techniques to facilitate system integration and interoperability of components * Manage outcomes of system integration * Provide expert advice on and direct high-level modifications to the integration plan, so as to optimise success and performance | * Establish a clear vision for an integrated Infocomm Technology architectural design to achieve desired outcomes * Evaluate business requirements to identify system integration objectives * Pre-empt risks and impact of integration to other networks and processes * Drive integration strategy to achieve integration objectives and desired impact * Introduce new or advanced tools that effectively address the integration requirements * Evaluate proposed integration approaches, taking into consideration business needs, and the associated costs, time and resources |
| **Range of Application** | Types of networks for integration may include but are not limited to: • LAN network (e.g., SOHO network, WLAN) • Radio network • Telecommunications network  • Next generation network (NGN)  • Wide area network (WAN) • Cloud based network  Types of platforms for integration may include but are not limited to: • Mobile Platforms (e.g., Android, IOS) • Operating system platform (e.g., Mac, Microsoft Windows, Linux ) • Enterprise Resource Platforms (e.g., SAP, Oracle) • Software platforms (e.g., Java,.NET Framework) | | | | | |