

Functional Area: Network Infrastructure & Operation (Planning & Design)

1. Title	Perform network infrastructure design	
2. Code	ITCSNO517A	
3. Range	Setting up a core network infrastructure requires a comprehensive number of tasks including network design, site acquisition, network installation, network to service deployment, etc. This UoC only concerns network coverage design of the core network. Network in this context could be data and/or voice (VOIP), wireline or mobile network.	
4. Level	5	
5. Credit	4	
6. Competency	<p>6.1 Possess the knowledge in the subject area</p> <p>6.2 Perform network infrastructure design</p>	<p><u>Performance Requirement</u></p> <ul style="list-style-type: none"> • Possess extensive knowledge of the organisation's business plan, interoperating challenges, services requirements and legal matters • Experienced in network capacity planning (current and growth forecast) • Possess knowledge of various types of wired and mobile network technologies and vendor related products • Possess extensive experience in network infrastructure planning, constructor drawings, rooftop structure mapping, facility requirement, such as cabling, termination systems, etc. • Extensively knowledgeable of various network architectures, network technologies (ATM, GSM, LTE, HSDPA, WiMAX, etc.) and its operating characteristics inclusive routing, transmission limits (RF), cables impedance, etc. • Knowledgeable of network security risk and contingency planning • Possess extensive experience in using appropriate tools for network design drawings, prototyping, simulation, etc. • Understand health and safety procedures and government regulations <p>Be able to:</p> <ul style="list-style-type: none"> • Work with colleagues to identify the type of networks or services to be constructed to conform to the organisation's business plan. Other factors include: type of services offered, traffic type, performance, coverage, budget, etc. • Collect geographical information (maps, building plans, site drawings, utilities maps, existing cabled networks, regulatory requirements, etc.) related to the planned network and determine any site or technical limitations which may affect the implementation of the network equipment • Identify locations most suitable for construction of transmission hub, antenna, switches, street cable, etc • Use various NDP (Network Design Platform) tools to simulate the constructed network to determine feasibilities of different scenarios and implementation options. Use the simulated results to formulate different design options • Select and document the network design options with network diagrams and network implementation details, such as network technology, protocol, cabling, traffic control/transmission equipment, transmission towers, switches, fall over and recovery plans, contingencies, etc. • Present and seek approval from stakeholders on the proposed design for deployment

	<p>6.3 Exhibit professionalism</p> <ul style="list-style-type: none"> • Produce network designs that fulfil the needs of the customers • Represent the organisation in a professional manner when dealing with external parties • Communicate with users at a correct level that can avoid misunderstanding
7. Assessment Criteria	<p>The integrated outcome requirements of this UoC are the abilities to:</p> <ol style="list-style-type: none"> i. work with stakeholders to understand the core network requirements ii. gather the necessary plans, documents, and related materials of the proposed designed network to understand any possible issues, legal requirements for the construction of the network iii. use appropriate tools to derive an optimum network design that meets the requirements iv. present various design options to stakeholders effectively v. make a recommended design with supported details and seek approval
Remark	