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

1. Title	Calculate the network capacity
2. Code	ITCSNO509A
3. Range	Coverage and capacity are two important factors when planning for a network to provide sufficient bandwidth to serve users without wasting the organisation resources. This UOC concerns calculating the network capacity for network planning. Network could be fixed or mobile.
4. Level	5
5. Credit	4
6. Competency	Performance Requirement 6.1 Possess the knowledge in the subject area • Critically understand the network requirements from either internal or external customers • Knowledgeable of the current network architecture and operating characteristics • Experienced with network capacity planning (current and growth forecast) • Be aware of current and emerging technologies and their applications • Extensive knowledge of network architecture, network technologies and their operating characteristics, inclusive routing, transmission, etc. • Experience in using network modelling and/or simulation tools. • Experience in analysing results and statistics from network elements or simulation tools • Knowledgeable of how network elements interact and perform under different environments and conditions • Knowledgeable of government regulations 6.2 Calculate the network capacity Be able to: • Work with the necessary departments to determine network requirement such as: type of services or traffics (voice, data, multimedia) to be offered, budgets for the installation of network, performance required, coverage, network plan, etc. • Use appropriate means or historical documents to estimate the expected number of users on the network. For mobile network this can be calculated from the number of cells to be erected • Use simulation tools or capacity planning tools to estimate the capacity requirements of the network to provide a satisfactory network services based on estimated number of users, bandwidth, peak hours, off peak hours, geographical segments and service mix, etc • Formulate the network "Available Node Capacity", "Available Link Capacity" report based on collected information about network elements, SLA (Service level Agreement) requirements and number of users, etc. • Package the capacity estimation reports with the statistics result of simulation or other calculation items and submit to network planners or appropriate stakeholders 6.3 Exhibit professionalism • Follow safety procedures at every step while using simulation tools • Always take into consideration and strike a proper balance among all related technological, political, social, environmental and legal factors

7. Assessment Criteria	The integrated outcome requirements of this UoC are the abilities to: i. work with colleagues effectively to determine the network requirements such as the network service type, SLA commitments ii. use simulation tools and/or historical data to calculate the network node and link capacity which can satisfy users' needs at different times of day while not wasting network resources iii. formulate and document the capacity estimation reports effectively with the necessary information that can assist network planning.
Remark	