

**Functional Area: Network Infrastructure & Operation (Operation / Support & Maintenance)**

1. Title	Define KPIs for measuring quality of network performance and capacity
2. Code	ITCSNO526A
3. Range	For continuous monitoring and improvement of an operating network, it is essential to have metrics and KPIs (Key Performance Indicators) which are used as baseline. This UoC concerns defining KPIs for measuring the performance and capacity quality of telecom operators' networks, which may be wireline or wireless (mobile) network. KPIs may include: cut-off calls, call success rate, post call delay, session establishment rate, session disconnect failure, average call duration, average hops, latency and jitters, packet loss, error counts, bit rate, bit error rate, idle network time, network traffic and congestion, network coverage (% of land coverage, % of population covered), average fault identification time, average time to fix faults, etc.
4. Level	5
5. Credit	3
6. Competency	<p style="text-align: center;"><u>Performance Requirement</u></p> <p>6.1 Possess the knowledge in the subject area</p> <ul style="list-style-type: none"> <li>• Possess extensive knowledge of quality management standards such as ISO 9001 and quality frameworks and practices</li> <li>• Knowledgeable of the organisations' performance pledge and quality policies, customer Service Level Agreement (SLA), etc.</li> <li>• Possess extensive experience with network architecture, diagrams, network operating capacity, demographic layout of networks, performance characteristics of network components</li> <li>• Knowledgeable of network traffic management, queuing analysis, traffic modelling, traffic flow control, network media access control (MAC) protocol, etc.</li> <li>• Possess experience with the KPI definition cycle: define, apply, act, and review</li> </ul> <p>6.2 Define KPIs for measuring quality of network performance and capacity</p> <p>Be able to:</p> <ul style="list-style-type: none"> <li>• Investigate and comprehend current KPI metrics associated with current network capacity and performance, if any</li> <li>• Review current KPIs metrics with colleagues to determine whether the current KPIs require adjustment to achieve a better performance</li> <li>• Identify any new or obsolete KPIs needed to be added or removed</li> <li>• Formulate metrics for KPIs to reflect the new desirable performance</li> <li>• Define the measurement controls that can determine the effectiveness of each KPI and define the review schedules</li> <li>• Manage the documentation of KPIs in accordance with the organisation's standard KPI template</li> <li>• Disseminate and present the proposed KPIs to operation managers for implementation and capacity planning</li> </ul> <p>6.3 Exhibit professionalism</p> <ul style="list-style-type: none"> <li>• Always take into consideration and strike a proper balance among all related technological, political, social, environmental and legal factors</li> <li>• Always strike a proper balance between the organisation and all stakeholders</li> </ul>
7. Assessment Criteria	<p>The integrated outcome requirements of this UoC are the abilities to:</p> <ol style="list-style-type: none"> <li>i. use historical and current network information to formulate baseline for KPI measurement</li> <li>ii. determine the effectiveness of existing KPIs</li> <li>iii. define what/which KPI is necessary and add/delete/adjust KPI for quality control or improvement</li> <li>iv. work with other stakeholders to formulate acceptable and useful KPIs</li> </ol>
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