



Australian Government

ICTRFN601 Monitor the capacity of and recommend changes to the cellular mobile network

Release: 1

ICTRFN601 Monitor the capacity of and recommend changes to the cellular mobile network

Modification History

Release	Comments
Release 1	This version first released with ICT Information and Communications Technology Training Package Version 2.0.

Application

This unit describes the skills and knowledge required to evaluate, analyse and make recommendations at the system design level on antenna installation specifications.

It applies to individuals working as technical officers and engineers who undertake mobile network performance measurements and report on mobile capacity enhancement to senior management.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Unit Sector

Telecommunications – radio frequency networks

Elements and Performance Criteria

Elements	Performance Criteria
<i>Elements describe the essential outcomes</i>	<i>Performance criteria describe the performance needed to demonstrate achievement of the element.</i>
1. Monitor capacity of cellular mobile network	1.1 Monitor traffic levels from network management system 1.2 Use approved enterprise plans to identify planned network growth 1.3 Obtain client forecast data from marketing 1.4 Apply identified data against capacity trigger criteria 1.5 Determine coverage and cell parameters
2. Make recommendations	2.1 Identify requirements for additional capacity 2.2 Recommend changes or additions to frequency parameters and

relating to capacity changes	submit to planning personnel 2.3 Assess capacity of transmission path, switch resources and recommend improvements, noting transmission medium 2.4 Manipulate traffic through switch parameter settings as a means of relieving traffic congestion 2.5 Determine cost of proposed changes and undertake studies of appropriate return on investment (RoI)
3. Assess capacity changes	3.1 Organise tests and studies to ensure that increased capacity adequately caters for traffic flow 3.2 Make recommendations for further change to network should increased capacity not meet need

Foundation Skills

This section describes language, literacy, numeracy and employment skills incorporated in the performance criteria that are required for competent performance.

Skill	Performance Criteria	Description
Reading	1.2	Recognises and interprets technical information from relevant sources to determine all specifications and frameworks
Writing	2.2, 2.3, 3.2	Uses clear, specific and industry related terminology to complete and update workplace documentation and when presenting recommendations to relevant personnel
Oral Communication	3.2	- Liaises with internal and external personnel about technical and operational matters using specific and relevant language and listening - Uses questioning techniques to confirm understanding
Numeracy	1.4, 2.3, 2.5	- Undertakes mathematical calculations to project costs and calculate returns on investments - Uses advanced mathematics methods to manipulate complex numerical data
Get the work done	1.1, 1.3-1.5, 2.1, 2.3, 2.4, 3.1	- Determines job priorities and works logically and systematically to undertake clearly defined and familiar tasks - Understands the ways in which digital systems and tools are used and recognises all operational applications

		• Takes responsibility for decision making by selecting from a range of predetermined options in routine situations, identifying and taking some situational factors into account • Diagnoses faults in different situations, adapts procedures and modifies activities depending on operational contingencies, risk situations and environments • Implements actions according to a predetermined plan, making slight adjustments if necessary and addressing some unexpected issues
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Unit Mapping Information

Code and title current version	Code and title previous version	Comments	Equivalence status
ICTRFN601 Monitor the capacity of and recommend changes to the cellular mobile network	ICTRFN6098B Monitor the capacity of and recommend changes to the cellular mobile network	Updated to meet Standards for Training Packages	Equivalent unit

Links

Companion Volume implementation guides are found in VETNet -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2>

Assessment Requirements for ICTRFN601 Monitor the capacity of and recommend changes to the cellular mobile network

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Performance Evidence

Evidence of the ability to:

- source and analyse relevant data to prepare a plan indicating growth potential and recommendations for meeting growth within timeframes
- use tools and software packages for forecasting and measurement
- identify site or channel capacity, relevant network growth and forecasting growth.

Note: If a specific volume or frequency is not stated, then evidence must be provided at least once.

Knowledge Evidence

To complete the unit requirements safely and effectively, the individual must:

- explain blocking, non-blocking and grade of service
- explain Erlang B measurements
- summarise features and operating requirements of test equipment
- outline field measurements for cell traffic capacity
- explain the information required to:
 - analyse and interpret statistical data as applied to teletraffic measurement
 - prepare and conduct a capacity measurement
- summarise legislation, codes of practice and other formal agreements that directly impact on radio communications site transmission
- outline the following including:
 - transmission lines
 - transmitter and receiver architecture and their impact on radio communications traffic
- outline switching architecture with specific reference to space and time switching
- outline the types of adjustments that need to be made to procedures to meet the requirements of particular sites and environmental conditions

- explain typical issues and challenges that occur in telecommunications cellular capacity design and how these may be addressed.

Assessment Conditions

Gather evidence to demonstrate consistent performance in conditions that are safe and replicate the workplace. Noise levels, production flow, interruptions and time variances should be typical of those experienced in the telecommunications – radio frequency networks field of work and include access to:

- sites with cellular mobile network
- capacity monitoring data and equipment.

Assessors of this unit must satisfy the requirements for assessors in applicable vocational education and training legislation, frameworks and/or standards.

Links

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