



Australian Government

Assessment Requirements for ICTRFN802

Analyse a cellular mobile network system

Release: 1

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Modification History

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

Performance Evidence

Evidence of the ability to:

- plan a frequency allocation for a cellular network
- analyse techniques to increase system capacity for a fixed spectrum bandwidth
- develop a plan for integration of emerging cellular technologies
- analyse the interfaces between a mobile network and clients
- research and report the interfacing of major subsystems to other network subsystems
- produce an analytical report on cellular mobile convergence with a plan for cellular mobile system integration to existing networks.

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:

- evaluate allocations and bandwidth requirements of cellular systems
- investigate efficiency and system capacity given the spectrum allocation, number of channels required and grade of service
- describe equipment subsystem diagnosis and repair procedures
- summarise features and differences between major frequency bands and their allocation of licences
- compare features and operating requirements of cellular test equipment
- outline key features of cellular mobile radio systems
- summarise major element functions of a mobile radio system
- explain major frequency bands and their allocation of licences
- describe a microcellular system
- explain minimising latency

- outline network components and their functions
- provide a detailed summary of transmission lines, transmitter and receiver architecture
- summarise radio spectrum in use, specifying restrictions and characteristics
- describe radio frequency (RF) and electromagnetic energy (EME) hazards
- investigate and evaluate antenna performance and mobile components, and their impact on mobile spectrum interference
- explain spectrum efficiency
- describe system configuration procedures
- outline testing network components
- summarise the types of adjustments that need to be made when measuring cellular transmission
- outline the types of networks that will influence the transmission on the radio path and/or transmission line.

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 on which cellular network analysis, research and simulation may be conducted
- test equipment currently used in industry
- manufacturer's and enterprise technical documentation.

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

Links

Companion Volume implementation guides are found in VETNet -

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