ICTRFN804 Produce radio link budgets

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 7.0.

Application

This unit describes the skills and knowledge required to plan and calculate fixed and mobile radio link budgets.

It applies to individuals working as network engineers who take responsibility for establishing layout of a digital radio system to minimise transmission loss and optimise system performance.

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

ELEMENT	PERFORMANCE CRITERIA
Elements describe the essential outcomes.	*Performance criteria describe the performance needed to demonstrate achievement of the element.*
1. Analyse suitability of radio systems	1.1 Evaluate spectral efficiency of functional elements of mobile radio systems and determine optimal frequency utilisation 1.2 Analyse features of radio communication systems and evaluate effectiveness of required applications 1.3 Compare features and specifications of antennas used in radio systems to assist with radio link budgets 1.4 Report on suitability and ways to improve radio systems to relevant personnel
2. Calculate a radio link budget	2.1 Calculate path loss using variables in required propagation models and create power link budget 2.2 Evaluate power link budget against allowable power margin specifications

ELEMENT	PERFORMANCE CRITERIA
	2.3 Evaluate modulation types and spectral efficiency according to required standards
	2.4 Confirm radio power link budget achieves required criteria
3. Complete evaluation and planning documentations	3.1 Complete an evaluation report on performance of radio systems and recommend system improvements
	3.2 Document processes used to determine optimal power link budget for a radio system
	3.3 Communicate findings to relevant personnel

Foundation Skills

This section describes those language, literacy, numeracy and employment skills that are essential to performance but not explicit in the performance criteria.

SKILL	DESCRIPTION
Numeracy	• Analyses, synthesises and performs calculations using highly embedded mathematical information in a broad range of tasks and texts
Oral communication	• Liaises with personnel about technical, operational and commercial matters using specific and language, using relevant listening and questioning techniques
Writing	• Uses clear, specific and industry-related terminology to complete and update specific workplace documentation and when presenting recommendations to relevant personnel
Planning and organising	• Determines job priorities and works to perform clearly defined and familiar tasks • Uses systematic, analytical processes in complex situations, gathering required information and identifying and evaluating options against predetermined criteria
Problem solving	• Diagnoses faults in different situations, adapts procedures and modifies activities depending on operational contingencies, risk situations and environments
Technology	• Demonstrates sophisticated knowledge of principles, concepts, language and practices associated with the digital world and identifies consequences of new technology

Unit Mapping Information

Supersedes and is equivalent to ICTRFN801 Produce a radio link budget.

Links

Companion Volume Implementation Guide is found on VETNet -
https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=a53af4e4-b400-484e-b778-71c9e9d6aff2