



Function Description IT-RD-026S

Position Information

Job Family: Network/Communications Engineer – Senior
Job grade: Paterson: DL (D Lower) Peromnes: 7
 Task: 13-14 Hay: 401 – 500
 JE Manager: 130-140

Reports to: Manager: Second-level Support

Span of Control:

F	EU	EM	EL	DU	DM	DL	CU	CM	CL	BU	BL/BM

Role Purpose: The production of network designs and design policies, strategies, architectures and documentation, covering voice, data, text, e-mail, facsimile and image, to support the requirements and strategy of an organisation's business. This may incorporate all aspects of the communications infrastructure, internal and external, mobile, public and private, Internet/Intranet and call centres.

- Role Outcomes:**
- Network environment that is operational according to service level requirements.
 - Network environment that is secure in accordance with the organisation's and IT's security guidelines.
 - Networks that optimise the work flow required.

- Role Responsibilities:**
- Installing, maintaining and supporting the organisation's communication networks within the organisation and/or between organisations as necessary
 - Designing networks that optimize the work flow of the business applications.

- Key Performance Criteria:**
- Number of hours lost per month due to network down time
 - Number of hours lost per month due to lack of network capacity
 - Percentage of peaks where target network utilisation is exceeded
 - % of response time Service Level Agreements not met
 - Network transaction failure rate

- Key Characteristics:**
- Knowledge and skills of the different types of network used by The organisation and the advantages and disadvantages of each.
 - Problem solving.
 - Understand the performance needs from the company's network.
 - Understanding of the security policies and procedures of The organisation

Significance of Job in The organisation: Facilitate consistent and efficient workflow by ensuring that the organisation's network infrastructure is appropriate to the needs of the organisation and operational.

Level Descriptors

Job Range:	DL
Autonomy, Responsibility and Authority	Works under broad direction. Has technical responsibility for work performed and decisions taken.
Extent of Decision-making	Interpretative or probabilistic decisions
Influence	Provides advice and guidance on technical matters. May supervise the work of others.
Complexity of Work	Performs work that requires the application of a significant range of fundamental principles in a variety of contexts.
Essential Skills	Takes a structured and effective approach to own work and demonstrates leadership potential. Is able to analyse, diagnose, design, plan, execute and evaluate work to time, cost and quality targets, exhibiting thorough familiarity with available methods, procedures, tools, equipment and standards associated with own area of specialisation and making correct choices from alternatives. Is able to communicate effectively, both orally and in writing, with clients, customers, colleagues and subordinates.
Context	Develops an understanding of the relationship of own specialisation or area of responsibility to the employing organisation as a whole and takes customer requirements fully into account when making proposals and/or carrying out work.
Skills Development	Takes initiative to keep skills up to date and maintain awareness of developments in the ICT industry.
Professional Development	Commencement of professional certification, and entry to professional practice and technical specialism and/or managerial occupations

Scope of Role:

	DL
Number of Nodes / Users	51 – 200
Number of Switches	3 - 5
Network Types (e.g.: LAN, WLAN, WAN, GAN, VOIP, Wireless, Mobile networks, Satellite networks)	2 - 3

Please note: these are guidelines rather than definitive.

Tasks and Activities:

Primary Tasks

DL

- Within the scope of the role:
 - install, support and maintain new server hardware and software infrastructure,
 - allocate network resources,
 - monitor network usage,
 - ensure the most cost-effective and efficient use of servers,
 - suggest and provide communication solutions to business and management problems,
 - ensure that all network hardware and software complies with industry standards,
 - analyse and resolve serious faults,
 - undertake routine preventative security measures and implement, maintain and monitor network security, particularly if the network connects to the internet,
 - provide training and technical support for first-level support staff,

DL

- work closely with other departments/organisations and collaborate with other IT staff,
- plan and implement future network developments and undertake project work,
- keep networks up and running.
- Manage the provision of agreed quantities and quality of service and support, particularly the integrity and confidentiality of information delivered to and sent by users, the levels of service performance such as throughput, availability and response time, and the timely and effective handling of enquiries and requests for guidance or action on problems.
- Ensure that network traffic, and the performance and quality of service provided by the network and its constituent hardware, software, transmission services and support functions are monitored and reviewed.
- Control usage of established methods, hardware and software tools and procedures used for planning, installing, configuring, commissioning, monitoring and investigating the network, and initiates and evaluates improvements.
- Within the scope of the role:
 - produce outline system designs and specifications covering objectives, scope, features, facilities, reliability, resilience, constraints (such as performance, resources and cost), hardware, network and software environments, main system functions and information flows, traffic volumes, data load and implementation strategies, phasing of development, requirements not met, and alternatives considered.
 - specify user/system interfaces, including reports, validation and error correction procedures, processing rules, access, security and audit controls, recovery routines and contingency procedures.
 - translate logical designs into physical designs taking account of the target environment, performance requirements, existing systems, regulatory constraints, budgets, power supply requirements, fire protection and any potential safety-related aspects.
 - document all work using required standards, methods and tools, including prototyping tools where appropriate.
 - review aspects of network costs against public tariffs and new developments and initiate proposals to change network design when appropriate. Obtain and evaluate proposals from suppliers of equipment, software, transmission services and other services for communication networks.
 - review network statistics, identifying trends in traffic flow and levels of service. Propose capacity changes and contingency arrangements as required.
 - provide advice and guidance to management in the planning phases of ICT projects, to ensure that communications requirements (particularly network response times, volumetric information and security requirements) are reflected in the overall specification.
 - take technical responsibility for communications strategy and standards for significant projects or major application areas.
 - plan network upgrades and modifications.

Other Tasks

DL

Within the scope of the role:

- Produces logical network designs showing for example: processes, objects, topologies, components. Identifies and applies common processes.
- Updates or provides input to cost benefit analyses, risk analyses and development plans to take account of design decisions.
- Assists in the assessment and selection of suitable networking solutions to meet all or parts of specified requirements, including the design and establishment of call centre telecommunications systems and services.
- Reviews and maintains network topology configuration databases, records and representations, assessing effectiveness, and advising on optimum configuration.
- Takes responsibility for all stages of the life cycle for software/hardware and transmission media development of communication systems, including investigation, analysis, specification, design,

construction, testing, maintenance, upgrade and migration.

- Provides advice to support the development of service level agreements.

System/Technology Environments:

System	Technology

Functional (Technical) Competencies – (DL):

Area	Description	Competency Level			
		Aware of	Familiar with	Proficient in	Expert in
Configuration Management	The control and management of ICT assets (or configuration items) including hardware, software, documentation, services, suppliers and network facilities by the use and application of strict change management and recording.			x	
Networking and Communications	The planning and management of the interaction between two or more networking systems, computers or other "intelligent" devices. E.g.: ISDN, ATM, Ethernet, TCP/IP.			x	
Telecommunications Protocols	Rules for the inter-operation of networking components. E.g.: TCP/IP, Q931, DASS, QSIG, xDSL.			x	
Third Party Products and Services	The products and/or services supplied to own organisation by external suppliers. E.g.: Maintenance of ICT infrastructure, maintenance of IS applications, hardware, systems software, internet connectivity services, system development, applications software products.			x	
Network Traffic Analysis	Methods and techniques for the capture of traffic information and the analysis of this information into its constituent elements.			x	
Product Evaluation and Selection	The analytical comparison of ICT products against specified criteria to determine the best solution to the business need.			x	
Communications Modelling Tools	Tools and techniques (manual or automated) that can be used to plan or document an understanding of the design, structure, relationships and usage of networks. E.g.: usage, resilience, capacity, traffic flows, call handling, resourcing.			x	
National/International Standards	Standards associated with ICT practice. E.g.: Sarbanes-Oxley, PRINCE, SSADM, IEEE802.3, ITU(T), ETSI, IEC, BSI, ISO9000.		x		
Industry and Professional Standards	Standards associated with the role. E.g.: IEEE, CobIT, IT Infrastructure Library (ITIL), TickIT.		x		
Business Continuity Planning	A methodology used to create a plan for how an organisation will resume partially or completely interrupted critical function(s) within a predetermined time after a disaster or disruption including methods and techniques for risk management, business impact analysis, countermeasures and contingency arrangements relating to the serious disruption of ICT services. E.g.: fallback location/services, mobile back-up, diversity.		x		

Professional (Business) Competencies – (DL):

Area	Description	Competency Level			
		Aware of	Familiar with	Proficient in	Expert in
Service Delivery Economics	The economics of service delivery such as the cost of hardware, software, and manpower used to deliver the service.			x	
Project Management Methodologies	Principles, methods, techniques and tools for the effective management of projects from initiation through to implementation. E.g.: PRINCE. PMBoK			x	
Corporate, Standards	Standards applicable in the employing organisation. E.g.: safety standards, programming standards, network performance standards, help desk procedures, corporate quality and change management processes.			x	
Customer Service Techniques	Techniques for ensuring that full account is taken of customers' real and stated needs in the delivery of products and services.			x	
Desktop Software	The use of workplace productivity desktop software. E.g.: word processing, spreadsheets, graphics.			x	
Project Planning and Control Techniques	Methods and techniques associated with planning and monitoring progress of projects. E.g.: product/work breakdown structures, critical path analysis, earned value, resource analysis, conflict resolution.		x		
Risk Management	The total process of identifying, controlling, and mitigating information system-related risks including risk assessment; cost-benefit analysis; and the selection, implementation, test, and security evaluation of safeguards taking into consideration both effectiveness and efficiency, including impact on the mission and constraints due to policy, regulations, and laws.		x		

Life Skills (Behavioural) Competencies – (DL):

Analytical Thinking	Acquiring understanding of a problem or situation by breaking it down systematically into its component parts and identifying the relationships between these parts.
Attention to Detail	Applying quality standards to all tasks undertaken and ensuring that nothing is overlooked.
Conceptual Thinking	Acquiring understanding of the underlying issues in complex problems or situations by correctly relating these to simpler or better understood concepts, models or previous experiences.
Creativity	Taking innovative approaches to problem solving and devising inventive and creative solutions.
Customer Focus	Understanding the needs of the internal or external customer and keeping them in mind when taking actions or making decisions.
Follow-up and Monitoring	Checking progress against targets, reporting as necessary and taking action to resolve exceptions.
Planning and Organisation	Determining a course of action by breaking it down into smaller steps and by planning and resourcing each of these, making allowance for potential problems.
Strategic Perspective	Keeping overall objectives and strategies in mind, and not being deflected by matters of detail.
Teamwork	Working co-operatively (rather than competitively) with others to achieve a common goal.

Qualification/Experience Requirements:

Qualifications: Relevant qualification/certification, e.g.:

- BSc Computer Science, and
- Network certifications

or equivalent knowledge and skills.

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Experience: EITHER:

2 - 3 Years experience as Network Engineer (CU)

OR:

Prior Knowledge and Skills

5 – 6 Years comprehensive experience in the administration, operation and support of communications networks in line with the scope of the level.

Has broad and up-to-date knowledge of communications services, systems and practices, particularly those in common use within the employing organisation, and a detailed knowledge of communications concepts and applications.

Has a broad understanding of the technical and operational aspects of working with external telecommunications service suppliers.

Has overall understanding of business needs plus specific knowledge of key network technologies and network design techniques and processes.

Has a comprehensive knowledge of a range of network and communications systems, software, hardware, protocols, interfaces, routing and supplier services, media, services, facilities and other specialist devices such as firewalls and gateways.

Has a detailed knowledge of external service suppliers' technology and services.

Has an understanding of the business and is proficient in the organisation's quality management system.

Demonstrates above average inter-personal skills in handling contacts with users, other staff and suppliers, including appraisal of staff.

Agreed:

Performer

Promoter

Human Resources

Date

Date

Date