

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Telecom Sector Skill Council
2nd Floor, Plot NO: - 105, Sector – 44
Gurgaon – 122003 Ph.: 0124-4148029

Name and contact details of individual dealing with the submission

Name: Shiv Kumar Pandey
Position in the organisation: Manager
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List of documents submitted in support of the Qualifications File

1. [Qualification Pack](#)
2. [Assessment Criteria – Annexure in Qualification Pack](#)
3. [Occupational Mapping](#)
4. Skill Gap Report – [KPMG](#) & [JUXT](#)
5. [Industry Engagement Certificate](#)
6. [Affiliation Protocol – Assessment Agency & Assessor](#)
7. [Assessment Framework](#)

QUALIFICATION FILE SUMMARY

Qualification Title	TEL/Q6201		
Body/bodies which will assess candidates	Telecom Sector Skill Council		
Body/bodies which will award the certificate for the qualification.	Telecom Sector Skill Council		
Body which will accredit providers to offer the qualification.	Telecom Sector Skill Council		
Occupation(s) to which the qualification gives access	Core Engineer		
Proposed level of the qualification in the NSQF.	6		
Anticipated volume of training/learning required to complete the qualification.	Duration (350 Hr.)		
Entry requirements / recommendations.	Diploma/ Bachelor in Technology (Electronics, Computer Science, IT and related field)		
Progression from the qualification.	Will give access to Network System Support (NSS) Engineer		
Planned arrangements for RPL.	Anybody with 1 year experience wrt. the job role		
International comparability where known.			
Formal structure of the qualification			
Title of unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
TEL/N6204 (Perform preventive maintenance at Core nodes)	M	350 Hours	6
TEL/N6205 (Perform corrective maintenance/ fault management at Core nodes)	M		
TEL/N6206 (Undertake upgrade, capacity augmentation and configuration change activities at Core nodes)	M		
TEL/N6207 (Undertake Point of Interconnect testing)	M		

Please attach any document giving further detail about the structure of the qualification – eg a Curriculum or Qualification Pack. Give details of the document here: Qualification pack

SECTION 1

ASSESSMENT

Name of assessment body:

1. Aspiring Minds
2. Mettl
3. Multi Skills Assessment Guild (MSAG)
4. Independent Qualitative Assessors Guild (IQAG)
5. Cocubes Technologies Pvt. Ltd

Will the assessment body be responsible for RPL assessment?

Yes, assessing body is responsible for RPL assessment.

Mode of Assessment : Online

1. Theory: MCQ questions mapped with performance criteria of each NOS in a QP.
2. Viva : Scenario Based questions mapped with performance criteria of each NOS in a QP.
3. Practical: Practical test conducted wrt. Job role.

Describe the overall assessment strategy and specific arrangements which have been put in place to ensure that assessment is always valid, consistent and fair and show that these are in line with the requirements of the NSQF:

The Assessment Agency is affiliated through stringent measures and undergo QA process. The Assessors are certified before conducting any assessments. The Question Bank before being made online are scrutinized and validated for linkage with Performance Criteria and randomization during the assessment.

Mode of Assessment : Online

1. Theory: MCQ questions mapped with performance criteria of each NOS in a QP.
2. Viva : Scenario Based questions mapped with performance criteria of each NOS in a QP.
3. Practical: Practical test conducted wrt. Job role.

Please attach any documents giving further information about assessment and/or RPL.

Give details of the document(s) here:

ASSESSMENT EVIDENCE

Complete the following grid for each grouping of NOS, assessment unit or other component as per the assessment criteria. Insert the required number of rows.

Criteria for Assessing the Trainee

Job Role : Core Engineer
Qualification Pack : TEL/Q6201
Sector Skill Council : Telecom

1. Criteria for assessment for each Qualification Pack will be created by the Sector Skill Council. Each Performance Criteria (PC) will be assigned marks proportional to its importance in NOS. SSC will also lay down proportion of marks for Theory and Skills Practical for each PC.
2. The assessment for the theory part will be based on knowledge bank of questions created by the SSC.
3. Individual assessment agencies will create unique question papers for theory and skill practical part for each candidate at each examination/training center.
4. To pass the Qualification Pack , every trainee should score a minimum of 40% in every NOS and Overall 50% pass percentage.
6. In case of successfully passing only certain number of NOS's, the trainee is eligible to take subsequent assessment on the balance NOS's to pass the Qualification Pack.

Assessable Outcome	Assessment Criteria		Total Mark (400+100)	Total Sub-Element	Theory		Skills Practical
					Out Of		
1.TEL/N6204 (Perform preventive maintenance at Core	Obtain/ Plan schedule & notify NOC	PC1. obtain/ Plan the preventive maintenance schedule	100	20	5	5	0

nodes)		PC2. obtain the maintenance activity checklist from the supervisors	5	5	0
		PC3. assess the potential impact of the proposed maintenance on network and plan for possible outage or deferral of the activity	5	0	5
		PC4. ensure that Network Operating Centre (NOC) is notified prior to undertaking the maintenance activities	5	5	0
	Arrange for tools and spares	PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)	1	0	1
		PC2. ensure that equipment specific software like network manager, Citrix, traffic manager are installed in the laptop device	1	0	1
		PC3. ensure that the software versions are current and ready to use	1	0	1
		PC4. ensure availability of spare hardware equipments and raise request for spares, in case the same are not available as per company's process	1	1	0
		PC5. ensure that faulty equipments are sent to logistics team for repair and replacement	1	1	0
	Undertake maintenance activities	PC1. conduct periodic (monthly, quarterly, half yearly) maintenance activities	4	0	4
		PC2. ensure timely completion of physical maintenance tasks like checking temperatures, routing of Ethernet cables & optical fibers, cable ties, fan working condition, earthing, equipment grouting, distribution of cables	10	5	5
		PC3. conduct logical maintenance tasks like PM counter checking, checking alarm status, system availability parameters, logical redundancy	5	5	0
		PC4. ensure periodic back-ups of core node	5	5	0

	configuration, and maintenance of back-up media			
	PC5. ensure interconnectivity uptime and lease line uptime by coordinating with other vendors	6	6	0
	PC6. ensure environmental up-keep of sites and co-ordinate with core infrastructure team for maintenance of passive infrastructure at core nodes	4	4	0
	PC7. ensure timely completion of maintenance activity by monitoring activities performed by the technicians and field engineers	4	4	0
	PC8. ensure compliance to enterprise policy while escalating instances of delays	2	2	0
Test effectiveness & close activity	PC1. confirm effectiveness of the maintenance process, by monitoring site's alarm status in co-ordination with the NOC team	5	0	5
	PC2. ensure completion of administrative jobs like return of test equipments and follow activity closure procedures	5	0	5
Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms	2	2	0
	PC2. ensure that work is carried out in accordance to the level of competence and legal requirements	2	0	2
	PC3. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures	5	0	5
	PC4. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures	1	0	1
	PC5. use and maintain protective equipment	2	0	2
		10		
		15		

		according to work requirements						
		PC6. ensure availability of first aid box at site			1	0	1	
		PC7. ensure escalation of safety incidents to relevant authorities as per guidelines			2	2	0	
	Report & Record	PC1. ensure that all relevant parties (including NOC team, other supervisors) are notified of the results of the maintenance activities and the sign-off is obtained from relevant personnel		10		2	2	0
		PC2. ensure that relevant documents are identified				2	2	0
		PC3. ensure completion of routine maintenance logs, activity logs and spare tracker within stipulated timelines				3	3	0
		PC4. ensure that documents are available to all appropriate authorities to inspect				3	3	0
				100	62	38		
2. TEL/N6205 (Perform corrective maintenance/ fault management at Core nodes)	Respond to Network Alarm	PC1. obtain alarm information from the NOC team and determine alarm severity, SLAs and the affected network elements	100	20	7	2	5	
		PC2. ensure understanding of nature of alarm, and provide information to/ seek advice from relevant parties to identify the problem and root-cause of the alarm			10	4	6	
		PC3. prioritize actioning on alarms based on fault's service impact analysis			3	1	2	
	Arrange for tools and spares	PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)		5		1	0	1
		PC2. ensure that equipment specific software like network manager, Citrix, traffic manager are installed in the laptop device				1	0	1
		PC3. ensure that the software versions are current and ready to use				1	0	1
		PC4. ensure availability of spare hardware equipments and raise				1	1	0

		request for spares, in case the same are not available as per company's process			
		PC5. ensure that faulty equipments are sent to logistics team for repair and replacement	1	1	0
Identify & rectify faults		PC1. ensure that appropriate cables are used to login to the core node	4	4	0
		PC2. based on the alarm code/ other indicators determine the fault details	4	4	0
		PC3. ensure necessary diagnostic tests are carried out to identify the root cause of the alarm	8	4	4
		PC4. determine the options to rectify the fault and confirm with supervisors if required	5	0	5
		PC5. ensure rectification of network problem/ fault within the alarm SLAs	4	0	4
		PC6. ensure environmental up-keep of sites and co-ordinate with core infrastructure team for maintenance of passive infrastructure at core nodes	4	4	0
		PC7. ensure timely completion of maintenance activity by monitoring activities performed by the technicians and field engineers	3	0	3
		PC8. ensure compliance to enterprise policy while escalating unresolved faults/instances of delays	3	0	3
Obtain back-up, test effectiveness & close activity		PC1. ensure back-up of core nodes are taken both pre and post performance of corrective maintenance/ fault correction activities	5	5	0
		PC2. confirm effectiveness of the maintenance process, by monitoring site's alarm status in co-ordination with the NOC team	5	5	0
		PC3. ensure completion of administrative jobs like return of test equipments and follow activity closure	5	5	0
			35		
			15		

		procedures					
	Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms		15	2	2	0
		PC2. ensure that work is carried out in accordance to the level of competence and legal requirements			2	0	2
		PC3. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures			5	0	5
		PC4. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures			1	0	1
		PC5. use and maintain protective equipment according to work requirements			2	0	2
		PC6. ensure availability of first aid box at site			1	0	1
		PC7. ensure escalation of safety incidents to relevant authorities as per guidelines			2	2	0
	Report & Record	PC1. ensure all relevant parties (including NOC team, other supervisors) are notified of the results of the fault management/ corrective maintenance activities and the sign-off is obtained		10	2	2	0
		PC2. ensure that documents that are required to be updated are identified			2	2	0
		PC3. ensure completion of routine maintenance logs, activity logs and spare tracker within stipulated timelines			3	3	0
		PC4. ensure that documents are available to all appropriate authorities to inspect			3	3	0
					100	54	46
3. TEL/N6206 (Undertake upgrade, capacity augmentation and configuration change)	Determine change requirement	PC1. receive change requests from the relevant teams (NOC, change management, network planning team)	100	25	4	2	2

activities at Core nodes)		PC2. identify criticality, and timelines for carrying out the changes Develop work plan and identify dependencies if any	12	4	8	
		PC3. assess the potential impact of the proposed change activity on network and plan for possible outage or deferral of the activity	4	0	4	
		PC4. ensure that Network Operating Centre (NOC) is notified prior to undertaking the maintenance activities	5	0	5	
	Arrange for tools and spares	PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)	1	0	1	
		PC2. ensure that equipment specific software like network manager, Citrix, traffic manager are installed in the laptop device	1	0	1	
		PC3. ensure that the software versions are current and ready to use	1	0	1	
		PC4. ensure availability of spare hardware equipments and raise request for in case the same are not available as per company's processspares,	1	1	0	
		PC5. ensure that faulty equipments are sent to logistics team for repair and replacement	1	1	0	
	Carry out change and perform post change monitoring	PC1. ensure performance of pre-testing so that output of configuration changes can be observed prior to deployment in live environment	3	3		
		PC2. perform changes like traffic migrations, capacity augmentation, feature activations, routing configuration	6	0	6	
		PC3. implement configurations changes like routing plans, charging/ billing plans, short code definitions, HLR configuration as per requirements	5	5	0	
		PC4. ensure completion of the requested change task as per requestor's requirement	4	4		
			5			
			30			

		PC5. ensure continuous monitoring of progress of change and notify change requestor of problems encountered if any		4	2	2
		PC6. abort change and implement contingency plan should the change plan not be realized without major disruption to network		4	0	4
		PC7. ensure compliance with the defined SLA for carrying out changes		4	4	0
	Obtain back-up, test effectiveness & close activity	PC1. obtain back-up of core nodes both pre and post performance of change activities	15	5	5	0
		PC2. confirm effectiveness of the change process, by monitoring site's alarm status in co-ordination with the NOC team		5	5	0
		PC3. ensure completion of administrative jobs like return of test equipments and follow activity closure procedures		5	5	0
	Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms	15	2	2	0
		PC2. ensure that work is carried out in accordance to the level of competence and legal requirements		2	0	2
		PC3. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures		5	0	5
		PC4. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures		1	0	1
		PC5. use and maintain protective equipment according to work requirements		2	0	2
		PC6. ensure availability of first aid box at site		1	0	1
		PC7. ensure escalation of safety incidents to relevant authorities as per guidelines		2	2	0

	Report & Record	PC1. ensure all relevant parties (including BSS/ BTS support engineer, NOC team, other supervisors) are notified of the results of the change management activities and sign-off is obtained from relevant personnel			2	2	0
		PC2. ensure that documents that are required to be updated are identified		10	2	2	0
		PC3. ensure completion of routine maintenance logs, activity logs and spare tracker within stipulated timelines			3	3	0
		PC4. ensure that documents are available to all appropriate authorities to inspect			3	3	0
					100	55	45
4. TEL/N6207 (Undertake Point of Interconnect testing)	Prepare to undertake Point of Interconnect testing	PC1. obtain the POI testing checklist from the supervisors	100	20	10	10	0
		PC2. identify timelines for carrying out POI testing			5	5	0
		PC3. ensure availability of test equipments required for performing acceptance tests			5	5	0
	Undertake Point of Interconnect testing	PC1. carry out physical tests of the POI as per the checklist		50	10	4	6
		PC2. ensure checklist for performing site acceptance test is obtained from the supervisors			7	7	0
		PC3. ensure completion of logical tests (connectivity, redundancy, power levels) as per the checklist			10	10	0
		PC4. ensure performance of routing analysis, error rate/ quality analysis, congestion, signaling analysis			10	10	0
		PC5. ensure defining of new trunk groups			7	7	0
		PC6. co-ordinate with Interconnect vendors for carrying out configuration changes as required			6	6	0
	Report & Record	PC1. communicate status of tests to the client team and obtain sign-off		10	2	2	0

		PC2. ensure clear communication of the punch points that need to be addressed by the interconnect vendor prior to link integration/ commissioning			2	2	0
		PC3. ensure POI is approved for commissioning only once no punch points are observed during the testing			3	3	0
		PC4. ensure all relevant parties (including BSS/ BTS support engineer, NOC team, other supervisors and the projects) are notified of the test results			3	3	0
	Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms		20	3	3	0
		PC2. ensure that work is carried out in accordance to the level of competence and legal requirements			3	0	3
		PC3. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures			5	0	5
		PC4. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures			2	0	2
		PC5. use and maintain protective equipment according to work requirements			3	0	3
		PC6. ensure availability of first aid box at site			2	0	2
		PC7. ensure escalation of safety incidents to relevant authorities as per guidelines			2	2	0
							100

SECTION 2

EVIDENCE OF NEED

What evidence is there that the qualification is needed?

As per Industry requirement and recommendations, we TSSC have followed in order to prepare the qualification pack and got vetted by NSDC during the QRC. (Attached –Industry Engagement Certificate).

What is the estimated uptake of this qualification and what is the basis of this estimate?

Skills Gap analysis Reports for industry demand and secondary research data, though these do not lend to accurate demand projection. Feedback from industry for demand though again sample size may not lend to accurate figures and depends on Industry quarterly requirements. (Attached Skill Gap Study Report)

What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?

- NSDC list of Approved and Under-Development QPs was checked prior to commissioning the work
- NSDC QRC team also confirmed the same

What arrangements are in place to monitor and review the qualification(s)? What data will be used and at what point will the qualification(s) be revised or updated?

- Agencies have been appointed by the SSC to interact with training providers to gather feedback in implementation.
- Monitoring of results of assessments
- A formal review is scheduled in two year time

Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here: NA

SECTION 3**SUMMARY EVIDENCE OF LEVEL**

Level of qualification: NSQF Level 6

Summary of Direct Evidence (from learning outcomes):

Justification of NSQF Level 6: Requires wide specialized technical skills and knowledge in standard/non-standard practices. To find solutions to specific problems. He is also responsible not only for his own work but also of the team he leads.

Generic NOS is/are linked to the overall authority attached to the job role.

Core Engg - TEL/Q6201					
Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
The job holder requires wide specialized technical skills and knowledge in standard/non-standard practices. He/she have to perform various task such as : Preventive maintenance at Core Node. Taking corrective action/fault management at core	The job holder is expected to monitor equipment's and maintain hygiene as per guidelines, as mentioned in the assessment criteria. This demonstrates factual knowledge on the field. Adding more: he/she will have technical	Based on professional knowledge, the job holder is expected to operate various equipment's using his/her technical knowledge which will demonstrate his/her practical skills. Based on technical expertise the job holder will find solution to his problem faced at	The job holder is expected to handle all the technical issues raised at ground level and resolve it on basis of his professional knowledge. He/she need to be constantly interact with NOC team and O&M team. Analyse the report/log generated at NOC level and take up the necessary	The job holder is largely responsible for his/her own work as evidenced in the columns for professional knowledge/skills. Additionally he is expected to respond to situations (such as use of fire extinguisher, alarms generated at core nodes) which may demonstrate his/her ability for learning on	6

<p>nodes.</p> <p>Upgradation on time to time, capacity augmentation and configuration change activities at core nodes.</p> <p>Undertaking Point of Interconnect testing.</p> <p>Analysing the Core performance report of nodes and plan accordingly if any maintenance required.</p> <p>Skill in managing the team and rolling out on field.</p>	<p>knowledge of wide range of departments like MSC, MGW, HLR, and SDP.</p> <p>Functionality of data core nodes like GGSN, SGSN, GPRS</p> <p>Functionality of passive infrastructure equipment's like SMPS, Diesel generators,</p> <p>Various signalling protocol SS7/SIGTRAN - signalling protocols</p> <p>Basic knowledge of network topologies, login cables RJ45,RS232 at BTS end).IP back-haul networking</p> <p>Functionality test of equipment's like E1 tester, Ethernet tester, VSWR meter,</p> <p>Knowledge of software UNIX, LINUX and SOLARIS system and commands</p> <p>Optical meter</p> <p>Analyse critical logs from NOC team.</p>	<p>ground level.</p> <p>Adding more: the job holder will be skilled in various equipment operations, technical interpretation skills, problem solving skills and management skills.</p>	<p>action for maintenance.</p> <p>He/she to be reasonably good in mathematical calculation and communicate logically when explaining to higher authority.</p>	<p>the job as well as he/she responsible for task performed by his team.</p>	
<p>Level :- 6</p>	<p>Level :- 6</p>	<p>Level :- 6</p>	<p>Level :- 6</p>	<p>Level :- 6</p>	

Summary of other evidence (if used): NA

SECTION 4

EVIDENCE OF RECOGNITION OR PROGRESSION

What steps have been taken in the design of this or other qualifications to ensure that there is a clear path to other qualifications in this sector?

Horizontal and vertical mobility options have been articulated.

Please attach any documents giving further information about any of the topics above.

Give details of the document(s) here: NA