NSDA Reference
To be added by NSDA

Revision made by NSDA_25 May 2015

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
Tel number(s)
Ph.: 0124-4148029
E-mail address: spandey@tsscindia.com

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/Q6200
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	BSS Support 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 BSC Engineer and NOC Engineer
Planned arrangements for RPL.	Anybody with 1 year experience wrt. the job role
International comparability where known.	Mapped and equivalent to Australian Standards

Formal structure of the qualification

Title of unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
TEL/N6200 (Perform preventive maintenance at BSC locations)	M	350 Hours	6
TEL/N6201 (Perform corrective maintenance/ fault management at BSC locations	M		
TEL/N6202 (Undertake Change management at BSC locations)	M		
TEL/N6203 (Analyze BSS performance reports, suggest maintenance activities and assist on-field team during critical faults/ upgrades)	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 Guilde (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 Trainee

Job Role : BSS Engineer
Qualification Pack TEL/Q6200
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 ea 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 of Sub-Element	Out Of	Theory	Skills Practical
1. TEL/N6200 (Perform preventive maintenance at BSClocations)	Plan maintenance schedule and notify NOC	PC1. obtain network reports from OSS and review network performance on defined parameters	100	18	5	5	0
		PC2. plan the maintenance schedule in coordination with planning team to ensure effective O&M operations			6	0	6
		PC3. assess the potential impact of the proposed maintenance and plan for possible outage or deferral of maintenance			4	0	4
		PC4. ensure Network Operating Centre (NOC) is notified prior to			3	3	0

		undertaking the maintenance activities.					
	Arrange for tools and spares	PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)		10	2	0	2
		PC2. ensure that equipment specific software like network manager are installed in the laptop device.			2	0	2
		PC3. ensure availability of spare hardware equipments and raise request for spares,			3	0	3
		PC4. ensure that faulty equipments are sent to logistics team for repair and replacement			3	0	3
	Undertake Maintenance activities	PC1. conduct standard maintenance activities on periodic basis (monthly, quarterly, half yearly) as per the process		30	4	0	4
		PC2. ensure completion of physical maintenance tasks like checking temperatures, routing of Ethernet cables			6	0	6

		& optical fibers, cable ties, fan working condition, earthing, equipment grouting, distribution of cables at BSC locations					
		PC3. ensure completion of logical maintenance tasks like checking alarm status, system availability parameters, logical redundancy, BSC configuration back-up			8	0	8
		PC4. ensure that for 3rd party elements that require maintenance, tickets are raised to the respective vendors by the NOC team			4	4	0
		PC5. ensure timely escalation of emergency/ unresolved issues according to established Company's procedure			4	4	0
		PC6. ensure environmental up-keep of sites in coordination			4	0	4

		with infra engineer and technicians					
	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	3	0	3
		PC2. ensure completion of administrative jobs like site clearance, return of test equipments			2	0	2
	Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms		25	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 sites are periodically assessed for health and safety risk as per company's guidelines			4	2	2

		PC4. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures			5	0	5
		PC5. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures			1	0	1
		PC6. ensure periodic tool-box talk is carried out for the infra technicians and other third party vendors			2	0	2
		PC7. ensure that Personal protection equipments like anti-static bands, harness, belts and helmets are appropriately used as required			4	2	2
		PC8. ensure compliance to health and safety guidelines both			2	0	2

		contractually and on site by the third party vendors and infra technicians					
		PC9. ensure availability of first aid box at site			1	0	1
		PC10. 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 maintenance activities and the sign-off is obtained from relevant personnel		12	2	2	0
		PC2. ensure that documents that are required to be updated are identified			4	0	4
		PC3. ensure completion of routine maintenance logs, activity logs and spare tracker			4	2	2
		PC4. ensure that documents are available to all appropriate authorities to			2	2	0

		inspect					
					100	30	70
2. TEL/N6201 (Perform corrective maintenance/ faultmanagement at BSC locations)	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)		8	2	0	2
		PC2. ensure that equipment specific software like network manager are installed in			2	0	2

		the laptop device					
		PC3. ensure availability of spare hardware equipments and raise request for spares, in case the same are not available as per company's process			2	0	2
		PC4. ensure that faulty equipments are sent to logistics team for repair and replacement			2	0	2
	Fault identification & rectification	PC1. coordinate with Infra engineer/ technicians for rectification if the fault is due to passive infrastructure		25	5	0	5
		PC2. ensure login to BSS nodes, IDU (for microwave) using appropriate systems and determine fault details based on alarm/ other indicators			4	0	4
		PC3. ensure necessary diagnostic tests (hardware related) are carried out to			8	4	4

		identify the root cause of the alarm					
		PC4. determine the options to rectify the fault and confirm with supervisors if required			4	0	4
		PC5. ensure rectification of network problem/ fault within the alarm SLAs and monitor the activities performed by the Infra engineer and technicians			2	0	2
		PC6. ensure compliance to enterprise policy while escalating unresolved faults/ instances of delays			2	0	2
	Test effectiveness & close activity	PC1. confirm effectiveness of the maintenance process, by monitoring site's alarm status in co-ordination with the NOC team		10	5	0	5
		PC2. ensure completion of administrative jobs like site clearance, return of test equipments			5	0	5

	Health and Safety	PC1. ensure compliance with site risk control, OHS, environmental and quality requirements as per company's norms	25	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 sites are periodically assessed for health and safety risk as per company's guidelines		4	2	2
		PC4. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures		5	0	5
		PC5. ensure compliance with all organizational security arrangements (like using		1	0	1

		valid ID cards) and approved procedures				
		PC6. ensure periodic tool-box talk is carried out for the infra technicians and other third party vendors		2	0	2
		PC7. ensure that Personal protection equipments like anti-static bands, harness, belts and helmets are appropriately used as required		4	2	2
		PC8. ensure compliance to health and safety guidelines both contractually and on site by the third party vendors and infra technicians		2	0	2
		PC9. ensure availability of first aid box at site		1	0	1
		PC10. ensure escalation of safety incidents to relevant authorities as per guidelines		2	2	0
	Report & Record	PC1. ensure all relevant parties (including NOC	12	2	2	0

		team, other supervisors) are notified of the results of the fault management activities and the sign-off is obtained					
		PC2. ensure that documents that are required to be updated are identified			4	0	4
		PC3. ensure completion of routine maintenance logs, activity logs and spare tracker within stipulated timelines			4	2	2
		PC4. ensure that documents are available to all appropriate authorities to inspect			2	2	0
					100	25	75
3. TEL/N6202 (Undertake Change management at BSClocations)	Determine change requirement	PC1. receive change requests (hardware upgrade, software upgrade, capacity augmentation, configuration changes) from the NOC team or supervisors	100	25	4	2	2
		PC2. identify criticality, and			6	2	4

		timelines for carrying out the changes					
		PC3. develop work plan and identify dependencies if any			4	0	4
		PC4. assess the potential impact of the proposed activity and plan for possible outage condition or deferral of the activity			4	0	4
		PC5. ensure customer is informed and an approval is obtained in case of service impacting change activity			4	0	4
		PC6. ensure that Network Operating Centre (NOC) is notified prior to undertaking the activities			3	0	3
	Arrange for tools and spare	PC1. ensure availability of login cables (RJ45, RS232, Hi-speed USB)		10	2	0	2
		PC2. ensure that equipment specific software like network manager are installed in the laptop device			2	0	2

		PC3. ensure availability of spare hardware equipments and raise request for spares, in case the same are not available as per company's process			3	0	3
		PC4. ensure that faulty equipments are sent to logistics team for repair and replacement			3	0	3
	Carry out change and perform post change monitoring	PC1. implement changes like system/ software upgrade with global releases, capacity augmentation, configuration changes, migration, re-homing of BTS, LAC (Location Area Code) split		22	10	4	6
		PC2. ensure completion of the requested change task as per requestor's requirement			2	0	2
		PC3. ensure continuous monitoring of progress of change and notify change requestor of problems encountered if			3	0	3

		any					
		PC4. abort change and implement contingency plan should the change activity leads to major service disruption			4	0	4
		PC5. ensure compliance with the defined SLA for carrying out changes			3	0	3
	Obtain back-up, test effectiveness & close activity	PC1. obtain back-up of BSC configuration both pre and post performance of change activities		6	3	3	0
		PC2. confirm effectiveness of the change process, by monitoring site's alarm status in co-ordination with the NOC team			2	0	2
		PC3. ensure completion of administrative jobs like site clearance, return of test equipments			1	0	1
	Health and Safety	PC1. ensure compliance with site risk		25	2	2	0

		control, OHS, environmental and quality requirements as per company's norms				
		PC2. ensure that work is carried out in accordance to the level of competence and legal requirements		2	0	2
		PC3. ensure that sites are periodically assessed for health and safety risk as per company's guidelines		4	2	2
		PC4. ensure that hazards associated with the workplace that have not been previously controlled, are reported in accordance with appropriate procedures		5	0	5
		PC5. ensure compliance with all organizational security arrangements (like using valid ID cards) and approved procedures		1	0	1

		PC6. ensure periodic tool-box talk is carried out for the infra technicians and other third party vendors		2	0	2
		PC7. ensure that Personal protection equipments like anti-static bands, harness, belts and helmets are appropriately used as required		4	2	2
		PC8. ensure compliance to health and safety guidelines both contractually and on site by the third party vendors and infra technicians		2	0	2
		PC9. ensure availability of first aid box at site		1	0	1
		PC10. 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	12	2	2	0

		the change management activities and sign-off is obtained from relevant personnel					
		PC2. ensure that documents that are required to be updated are identified			4	0	4
		PC3. ensure completion of routine maintenance logs, activity logs and spare tracker within stipulated timelines			4	2	2
		PC4. ensure that documents are available to all appropriate authorities to inspect			2	2	0
					100	25	75
4. TEL/N6203 (Analyze BSS performance reports, suggestmaintenance activities and assist on-field team duringcritical faults/ upgrades)	Analyze BSS performance reports, BSS alarm details	PC1. obtain network reports from OSS and review network performance on defined parameters	100	59	5	5	0
		PC2. analyze reports for software error bugs, high temperature sites, SD block, TCH block and adherence to			10	5	5

		other performance KPIs					
		PC3. collect and analyze various logs like computer logs, black box logs from BSC			5	5	0
		PC4. ensure root cause analysis is undertaken for all faults related to BSS			10	5	5
		PC5. ensure tracking of false alarms records and co-ordinate for rectification of the same			10	5	5
		PC6. perform real time analysis of alarms to support field team in troubleshooting			10	0	10
		PC7. analyze alarm communication records to ensure that all the alarms are informed to field team with minimum delay			9	4	5
	Analyze customer complaints	PC1. ensure customer complaints pertaining to BSS are resolved within defined timelines		10	5	5	0

		PC2. escalate unresolved complaints/ instances of delay in resolution as per Company's policy			5	5	0
	Suggest actions to BSS field teams and assist in service delivery	PC1. suggest specific maintenance activities to field team to ensure the identified network or customer related issues are addressed			5	5	0
		PC2. ensure timely completion of activities by monitoring performance of the field teams			5	5	0
		PC3. assist field team in troubleshooting during maintenance and fault correction activities		31	8	2	6
		PC4. ensure coordination with Infra engineers in case of infra related alarms/ faults			9	5	4
		PC5. ensure periodic communication between zonal teams to			4	0	4

		facilitate sharing of good practices, typical alarm details of each zone					
					100	56	44

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):

Justify the NSQF level allocated to the QP by building upon the five descriptors of NSQF. Explain the reasons for allocating the level to the QP.

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.

Summary of other evidence (if used): Accepted by QRC, vetted by industry

BSS Engineer - TEL/Q6200					
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 of BSC location sites. Taking corrective action when a site is down. Upgradation on time to time whenever rehoming take place as per company norms. Analysing the BSS performance report and plan accordingly if any maintenance required. Skill in managing the team and rolling out on field.	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 knowledge of wide range of installed equipment till BSS level such as: Base Trans receiver Station (BTS) Transmission equipment's (i.e. Microwave). Telecom Tower Equipment's (i.e SMPS,DG,Battery Bank,PIU, Cable Connection,connectors,Electrical wiring connections)	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 ground level. Adding more : the job holder will be skilled in various equipment operations, technical interpretation skills and problem solving skills	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 action for maintenance. He/she to be reasonably good in mathematical calculation and communicate logically when explaining to higher authority.	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) which may demonstrate his/her ability for learning on the job as well as he/she responsible for task performed by his team.	6

	Basic knowledge of network topologies, login cables RJ45,RS232 at BTS end).IP back-haul networking Process of logging at BSC and BTS site equipment's. Analyse critical logs from BSC end.				
Level :- 6	Level :- 6	Level :- 6	Level :- 6	Level :- 6	

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