

Revision made by NSDA_25 May 2015

QUALIFICATION FILE – CONTACT DETAILS OF SUBMITTING BODY

Name and address of submitting body:

Telecom Sector Skill Council
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Gurgaon – 122003 Ph.: 0124-4148029

Name and contact details of individual dealing with the submission

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

1. [Qualification Pack](#)
2. Assessment Criteria
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/Q2302		
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	Board Bring-Up Engineer		
Proposed level of the qualification in the NSQF.	3		
Anticipated volume of training/learning required to complete the qualification.	Duration (225Hr.)		
Entry requirements / recommendations.	Class X (pass)		
Progression from the qualification.	Will give access to Board Bring-Up Engineer Level 2		
Planned arrangements for RPL.	Anybody with 6 months experience wrt job role		
International comparability where known.	NA		
Formal structure of the qualification			
Title of unit or other component (include any identification code used)	Mandatory/ Optional	Estimated size (learning hours)	Level
TEL/N2307 (Telecom PCB Assembly and Testing)	M	225 Hours	3
TEL/N2308 (Hardware-Software Bring-Up)	M		
TEL/N2309 (Telecom PCB Repair and Maintenance)	M		
TEL/N4121 (Maintain a Healthy, Safe and Secure Working Environment)	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 Assessment of Trainee

Job Role : Telecom Board Bring-UP En
Qualification Pack TEL/Q2302
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.
5. 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.
6. Individual assessment agencies will create unique evaluations for skill practical for every student at each examination/training center based on this criteria.

Assessable outcome	Assessment Criteria		Total Mark (100+100)	Total of Sub-Element	Out Of	Theory	Skills Practical		
1. TEL/N2307 (Telecom PCB Assembly and Testing)	PCB Assembly	PC1. use PCB test plans provided by development team	100	70	10	5	5		
		PC2. construct jigs and fixtures for bare boards			10	2	8		
		PC3. correlate BOM required for PCB assembly with actual components			4	2	2		
		PC4. follow standard soldering practices			10	5	5		
		PC5. read PCB schematics and PCB layouts			10	3	7		
		PC6. operate equipment used for assembly and testing of PCB board			10	0	10		
	Test and Debug	PC1. interpret test plans and procedures			30	10	10	2	8
		PC2. perform tests for communication interfaces and protocols					10	4	6
		PC3. perform functional, electrical and parametric testing of					10	4	6

		assembled PCB						
		PC4. do fault detection and repair of PCB			16	6	10	
					100	33	67	
2.TEL/N2308 (Hardware-Software Bring-Up)	Hardware Validation	PC1. develop or Implement hardware validation methodology for a board	100	60	10	5	5	
		PC2. operate tools used in hardware board bring-Up			20	5	15	
		PC3. test set-ups for hardware validation of telecom boards			20	10	10	
		PC4. undertake tasks related to functional, parametric, electrical & environmental tests			10	5	5	
	Software Validation	PC1. develop or Implement software validation methodology for a board		40	10	2	8	
		PC2. operate tools used in software bring-up			15	5	10	
		PC3. flash firmware codes & download FPGA image			5	2	3	
		PC4. ensure use case & what-if scenario testing			10	2	8	
					100	36	64	
3.TEL/N2309 (Telecom PCB Repair and Maintenance)	Printed Circuit Board (PCB) Repair and Rework	PC1. review all the Design supporting documents provided by development team	100	75	10	5	5	
		PC2. section wise debugging for fault detection			20	5	15	
		PC3. mark all the faulty sections for disassembly			10	5	5	
		PC4. repair burnt laminate, solder mask damage, and connector			10	5	5	
		PC5. add wires to test the circuit and debug faults			10	2	8	

		PC6. read PCB schematics and PCB layouts			10	3	7
		PC7. operate equipment used for repair and rework of PCB board			5	2	3
	Printed Circuit Board (PCB) Maintenance	PC1. ensure best maintenance practice for longer life of equipment		25	5	2	3
		PC2. compile list of parts and requisition parts as needed			10	3	7
		PC3. ensure board quality assurance			10	2	8
					100	34	66
3.TEL/N2310 (Maintain a healthy, safe and secure working environment)	Emergency procedure	PC1. ensure that work is carried out in accordance to the level of competence and legal requirements	100	100	10	6	4
		PC2. ensure that sites are assessed for health and safety risk as per company's guidelines prior to commencement of work			12	6	6
		PC3. ensure environmental conditions and hazards like Earth Potential Rise (EPR) are considered while carrying out the work			15	9	6
		PC4. identify and correct any hazards that you can deal with safely, competently and within the limits of your			15	10	5

	authority				
	PC5. report any hazards that you are not competent to deal with to the relevant person in line with organizational procedures and warn other people who may be affected		12	7	5
	PC6. follow your organization's emergency procedures promptly, calmly, and efficiently		12	6	6
	PC7. Identify and recommend opportunities for improving health, safety, and security to the designated person		14	8	6
	PC8. complete any health and safety records legibly and accurately		10	5	5
			100	57	43

SECTION 2

EVIDENCE OF NEED

<p>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).</p>
<p>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)</p>
<p>What steps were taken to ensure that the qualification(s) does/do not duplicate already existing or planned qualifications in the NSQF?</p> <ul style="list-style-type: none"> • NSDC list of Approved and Under-Development QPs was checked prior to commissioning the work • NSDC QRC team also confirmed the same
<p>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?</p> <ul style="list-style-type: none"> • 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 3

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 3: Member of a team operating in his limited scope of work under supervision. He is responsible for his own work.

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

Telecom Board Bring-Up Engineer - TEL/Q2302					
Process required	Professional Knowledge	Professional Skills	Core Skills	Responsibility	Level
Job holder is expected to perform limited task which is being monitored accordingly by his supervisor.	Job holder is expected to have basic knowledge which are crucial to the occupation such as knowledge	Based on his/her knowledge the splicer will run the soldering machines, process and	Jobholder is expected to communicate and deliver the desire output under high work pressure and communicate the same to his subordinates and supervisors.	Job holder performs PCB assembly and testing which is one	3

<p>Responsible for performing routine and predictable task. Maintain and performing the Board Bring-Up operation on the site:</p> <ul style="list-style-type: none"> • PCB Assembly and Testing • Ensure the availability of the tools • PCB Repair and Maintenance • PCB Repair and Maintenance 	<p>of PCB Assembly, Testing, and Repair and rework meter.</p> <p>The jobholder should also be aware of the principles such as to why the flux and wick are used.</p> <p>Knowledge of process involved such as method for Soldering and De-Soldering.</p>	<p>demonstrate the practical skills (either by manual or automatic soldering). The tasks performed during preparation, ensuring availability of tools, test effectiveness, etc are routine and repetitive in nature.</p>	<p>This is expected to be carried out in a manner which show a basic understanding of the social and professional environment of working.</p> <p>Furthermore, the jobholder is required to Interpret data sheet (i.e. component, component replacing). All of this requires application of basic arithmetic principles.</p>	<p>of the component required in board bring-up.</p> <p>This requires him/her to be under close supervision of a supervisor.</p> <p>Therefore, he is responsible for his work but in a limited area of working.</p>	
Level :- 3	Level :- 3	Level :- 3	Level :- 3	Level :- 3	

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