

QUALIFICATION FILE

Technician 5G - Active Network Installation

☒ Short Term Training (STT) ☐ Long Term Training (LTT) ☒ Apprenticeship

☒ Upskilling ☐ Dual/Flexi Qualification ☒ For ToT ☒ For ToA

☐ General ☐ Multi-skill (MS) ☐ Cross Sectoral (CS) ☒ Future Skills ☐ OEM

NCrF/NSQF Level: 4.0

Submitted By:

Telecom Sector Skill Council

3rd Floor, Plot No 126, Sector - 44 Gurgaon - 122003

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Section 1: Basic Details

1.	Qualification Name	Technician 5G - Active Network Installation																				
2.	Sector/s	Telecom																				
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: (QG-04-TL-00083-2023-V1.1-TSSC, V2.0)		Qualification Name of existing/previous version: Technician 5G - Active Network Installation																		
4.	a. OEM Name b. Qualification Name (Wherever applicable)																					
5.	National Qualification Register (NQR) Code &Version (Will be issued after NSQC approval)	QG-04-TL-04089-2025-V2-TSSC	6. NCrf/NSQF Level: 4.0																			
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other (Wherever applicable specify multiple entry/exits also & provide details in annexure)	Certificate																				
8.	Brief Description of the Qualification	A 5G Technician – Active Network Installation is responsible for installing 5G network equipment at the rack level and performing active network installations. The role also involves identifying and rectifying faults or malfunctions that may arise during the installation process.																				
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <table border="1"> <thead> <tr> <th>S. No.</th> <th>Academic/Skill Qualification (with Specialization - if applicable)</th> <th>Required Experience (with Specialization - if applicable)</th> </tr> </thead> <tbody> <tr> <td>1.</td> <td>12th grade Pass</td> <td></td> </tr> <tr> <td>2.</td> <td>Completed 2nd year of the 3-year diploma after 10th in Electronics Engineering / Electrical Engineering/ Mobile and Wireless Communication/ Networking and Telecom Systems</td> <td></td> </tr> <tr> <td>3.</td> <td>10th grade pass</td> <td>3-years of experience in the telecom infrastructure domain</td> </tr> <tr> <td>4.</td> <td>Previous relevant Qualification of NSQF Level 3.0</td> <td>3-years of experience in the telecom infrastructure domain</td> </tr> <tr> <td>5.</td> <td>Previous relevant Qualification of NSQF Level 3.5</td> <td>1.5-years of experience in the telecom infrastructure domain</td> </tr> </tbody> </table> b. Age: NA			S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1.	12th grade Pass		2.	Completed 2nd year of the 3-year diploma after 10th in Electronics Engineering / Electrical Engineering/ Mobile and Wireless Communication/ Networking and Telecom Systems		3.	10th grade pass	3-years of experience in the telecom infrastructure domain	4.	Previous relevant Qualification of NSQF Level 3.0	3-years of experience in the telecom infrastructure domain	5.	Previous relevant Qualification of NSQF Level 3.5	1.5-years of experience in the telecom infrastructure domain
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)																				
1.	12th grade Pass																					
2.	Completed 2nd year of the 3-year diploma after 10th in Electronics Engineering / Electrical Engineering/ Mobile and Wireless Communication/ Networking and Telecom Systems																					
3.	10th grade pass	3-years of experience in the telecom infrastructure domain																				
4.	Previous relevant Qualification of NSQF Level 3.0	3-years of experience in the telecom infrastructure domain																				
5.	Previous relevant Qualification of NSQF Level 3.5	1.5-years of experience in the telecom infrastructure domain																				
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	17	11. Common Cost Norm Category (I/II/III) (wherever applicable): I																			

12.	Any Licensing requirements for Undertaking Training on This Qualification <i>(wherever applicable)</i>	NA																						
13.	Training Duration by Modes of Training Delivery <i>(Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)</i>	☐ Offline ☐ Online ☒ Blended <table border="1"> <thead> <tr> <th>Training Delivery Modes</th> <th>Theory (Hours)</th> <th>Practical (Hours)</th> <th>OJT Mandatory (Hours)</th> <th>OJT Recommended (Hours)</th> <th>Total (Hours)</th> </tr> </thead> <tbody> <tr> <td>Classroom (offline)</td> <td>180</td> <td>180</td> <td>150</td> <td></td> <td>510</td> </tr> <tr> <td>Online</td> <td>180</td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <i>(Refer Blended Learning Annexure for details)</i>					Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	180	180	150		510	Online	180				
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																			
Classroom (offline)	180	180	150		510																			
Online	180																							
14.	Aligned to NCO/ISCO Code/s <i>(if no code is available mention the same)</i>	NCO-2015/7422.0802																						
15.	Progression path after attaining the qualification <i>(Please show Professional and Academic progression)</i>	Technician 5G - Active Network Installation (NSQF Level 4) → Project Supervisor - 5G Networks (NSQF Level 5)																						
16.	Other Indian languages in which the Qualification & Model Curriculum are being submitted	Hindi																						
17.	Is similar Qualification(s) available on NQR-if yes, justification for this qualification	☐ Yes ☒ No URLs of similar Qualifications:																						
18.	Is the Job Role Amenable to Persons with Disability	☒ Yes ☐ No If "Yes", specify applicable type of Disability: <i>Motor Impairment, Hearing Impairments, Speech and Language Disorders</i>																						
19.	How Participation of Women will be Encouraged	Encouraging the participation of women in the role of Technician 5G - Active Network Installation in the telecom sector can be achieved through strategies that foster diversity, inclusivity, and gender equality. This can include offering targeted training and skill development programs for female candidates interested in these roles. Additionally, creating a workplace culture that is safe, respectful, and inclusive, and free from harassment or discrimination, is crucial for ensuring equal opportunities for women in the telecom sector.																						
20.	Are Greening/ Environment Sustainability Aspects Covered <i>(Specify the NOS/Module which covers it)</i>	☒ Yes ☐ No NOS: TEL/N9105																						
21.	Is Qualification Suitable to be Offered in Schools/Colleges	Schools ☐ Yes ☐ No Colleges ☒ Yes ☐ No																						
22.	Name and Contact Details of Submitting / Awarding Body SPOC <i>(In case of CS or MS, provide details of both Lead AB & Supporting ABs)</i>	Name: Mr. Praveen Sirohi Email: ceo@tsscindia.com Contact No.: 0124-4148029 Website: www.tsscindia.com																						
23.	Final Approval Date by NSQC: 08-05-2025	24. Validity Duration: 3 years		25. Next Review Date: 30-04-2028																				

Section 2: Module Summary

NOS/s of Qualifications

(In exceptional cases these could be described as components)

Mandatory NOS/s:

Specify the training duration and assessment criteria at NOS/ Module level. For further details refer curriculum document.

Th.-Theory **Pr.**-Practical **OJT**-On the Job Training **Man.**-Mandatory **Rec.**-Recommended **Proj.**-Project

S. No	NOS/Module Name	NOS/Module Code & Version (if applicable)	Core/Non-Core	NCrF/NS QF Level	Credits as per NCrF	Training Duration (Hours)					Assessment Marks					
						Th.	Pr.	OJT-Man.	OJT-Rec.	Total	Th.	Pr.	Proj.	Viva	Total	Weightage (%) (if applicable)
1.	Carry out Rack Level Installation	TEL/N6104, v2.0	Core	4.0	5	50	60	40	-	150	30	50	-	20	100	25
2.	Carry out 5G active network installation	TEL/N6105, v2.0	Core	4.0	7	70	70	70	-	210	30	50	-	20	100	25
3.	Follow the Occupational Health and Safety Instructions during Tower Climbing	TEL/N6246, v2.0	Core	4.0	3	20	30	40	-	90	30	50	-	20	100	25
4.	Follow sustainable practices in telecom infrastructure installation	TEL/N9105, v1.0	Core	4.0	1	10	20	-	-	30	30	50	-	20	100	15
5.	Employability Skills (30 Hours)	DGT/VSQ/N 0101, v1.0	Non-Core	2.0	1	30	-	-	-	30	20	30	-	-	50	10
Duration (in Hours) / Total Marks					17	180	180	150	-	510	140	230	-	80	450	100

Assessment - Minimum Qualifying Percentage

Please specify **any one** of the following:

Minimum Pass Percentage – Aggregate at qualification level: 70 % (Every Trainee should score specified minimum aggregate passing percentage at qualification level to successfully clear the assessment.)

Minimum Pass Percentage – NOS/Module-wise: - % (Every Trainee should score specified minimum passing percentage in each mandatory and selected elective NOS/Module to successfully clear the assessment.)

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) <i>(as per NCVET guidelines)</i>	Educational Qualification: Graduate in any discipline, preferably Electronics and Communication /Telecom/ Information Technology/ Computer Science and other relevant fields. Industry & Training Experience: 6 years of experience after Graduation in Telecom Infrastructure - 5G Networks. Certification: "Trainer" mapped to the Qualification Pack "MEP/Q2601, v3.0". Minimum accepted score is 80% aggregate.
2.	Master Trainer's Qualification and experience in the relevant sector (in years) <i>(as per NCVET guidelines)</i>	Educational Qualification: Graduate in any discipline, preferably Electronics and Communication /Telecom/ Information Technology/ Computer Science and other relevant fields. Industry & Training Experience: 8 years of experience after Graduation in Telecom Infrastructure - 5G Networks. Certification: "Master Trainer" mapped to the Qualification Pack "MEP/Q2602, v3.0". Minimum accepted score is 90% aggregate.
3.	Tools and Equipment Required for Training	☐ Yes ☐ No <i>(If "Yes", details to be provided in Annexure)</i>
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	NA

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) <i>(as per NCVET guidelines)</i>	Educational Qualification: Graduate in any discipline, preferably Electronics and Communication /Telecom/ Information Technology/ Computer Science and other relevant fields. Industry & Training Experience: 6 years of experience after Graduation in Telecom Infrastructure - 5G Networks. Certification: "Assessor" mapped to the Qualification Pack "MEP/Q2701, v3.0". Minimum accepted score is 80% aggregate.
2.	Proctor's Qualification and experience in relevant sector (in years) <i>(as per NCVET guidelines)</i>	Educational Qualification: Graduate in any discipline, preferably Electronics and Communication /Telecom/ Information Technology/ Computer Science and other relevant fields. Industry & Training Experience: 6 years of experience after Graduation in Telecom Infrastructure - 5G Networks. Certification: "Assessor" mapped to the Qualification Pack "MEP/Q2701, v3.0". Minimum accepted score is 80% aggregate.
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) <i>(as per NCVET guidelines)</i>	Educational Qualification: Graduate in any discipline, preferably Electronics and Communication /Telecom/ Information Technology/ Computer Science and other relevant fields. Industry & Training Experience: 8 years of experience after Graduation in Telecom Infrastructure - 5G Networks.

		Certification: "Lead Assessor" mapped to the Qualification Pack "MEP/Q2702, v3.0" Minimum accepted score is 90% aggregate.
4.	Assessment Mode (<i>Specify the assessment mode</i>)	Offline/Online
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☐ Yes ☐ No (<i>details to be provided in Annexure-if it is different for Assessment</i>)

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

1.	Latest Skill Gap Study (not older than 2 years) (Yes/No): NA
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): NA
3.	Government /Industry initiatives/ requirement (Yes/No): NA
4.	Number of Industry validation provided: 21
5.	Estimated nos. of persons to be trained and employed: 21440
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: <i>Approved</i> If "No", why:

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors (<i>Mandatory</i>)	<i>Annexure 1</i>
2.	Annexure: List of tools and equipment relevant for qualification (<i>Mandatory, except in case of online course</i>)	<i>Annexure 2</i>
3.	Annexure: Detailed Assessment Criteria (<i>Mandatory</i>)	<i>Annexure 6</i>
4.	Annexure: Assessment Strategy (<i>Mandatory</i>)	<i>Annexure 7</i>
5.	Annexure: Blended Learning (<i>Mandatory, in case selected Mode of delivery is "Blended Learning"</i>)	NA
6.	Annexure: Multiple Entry-Exit Details (<i>Mandatory, in case qualification has multiple Entry-Exit</i>)	Yes
7.	Annexure: Acronym and Glossary (<i>Optional</i>)	<i>Annexure 8</i>
8.	Supporting Document: Model Curriculum (<i>Mandatory – Public view</i>)	<i>Attached</i>

9.	Supporting Document: Career Progression (Mandatory - Public view)	Attached
10.	Supporting Document: Occupational Map (Mandatory)	Attached
11.	Supporting Document: Assessment SOP (Mandatory)	Attached
12.	Any other document you wish to submit:	NO

Annexure 1: Evidence of Level

NCRf/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCRf/NSQF level descriptor	NCRf/NSQF Level
Professional Theoretical Knowledge/Process	Carry out Rack Level Installation - Prepare for the installation of racks and equipment for 5G networks - Install and secure racks and equipment for 5G networks - Conduct post-installation verification and troubleshooting Carry out 5G active network installation - Carry out power, earthing, and RF cabling - Install, configure, and commission backhaul connectivity. Follow the Occupational Health and Safety Instructions during Tower Climbing - Conduct pre-climb tower inspection - Check safety equipment and assess work site conditions - Execute tower operations following health and safety protocols. Follow Sustainable Practices - Segregate recyclable and refurbishable components - Dispose of waste - Use Energy-Efficient Methods - Follow environmental standards and compliance guidelines - Guide team members.	A Technician 5G - Active Network Installation at NSQF Level 4 installs, configures, and maintains 5G infrastructure, including racks, cabling, and backhaul. This involves site preparation, equipment installation, safety checks for tower climbs, and post-installation verification. They ensure safety and sustainability through proper waste disposal, energy efficiency, and adherence to environmental standards, delivering high-quality 5G service. With expertise in 5G network rack installation, active network setup, tower safety, troubleshooting, and adherence to sustainable practices, this role ensures high-quality service delivery while maintaining industry standards.	4.0
Professional and Technical Skills/ Expertise/ Professional Knowledge	Know how to install and configure 5G network infrastructure, including rack systems, cabling, and backhaul.	A Technician 5G - Active Network Installation requires both theoretical knowledge and hands-on expertise to deploy, maintain, and troubleshoot 5G networks. Responsibilities	4.0

	- Understand site preparation procedures and equipment installation techniques for 5G deployments. - Know how to conduct pre-climb tower inspections and verify safety equipment. - Know how to conduct safety checks for tower climbs and adhere to strict safety protocols. - Understand post-installation verification and troubleshooting procedures for 5G networks. - Know how to ensure safety and sustainability through proper segregation of recyclable components. - Know how to ensure safety and sustainability through proper waste disposal and energy-efficient practices. - Understand environmental standards and compliance guidelines for 5G installations. - Know how to guide team members in sustainable practices. - Know how to deliver high-quality 5G service through effective installation and maintenance. - Understand RF cabling principles and best practices. - Know how to install and configure backhaul connectivity. - Know how to perform power and earthing installations for 5G equipment. - Understand the principles of 5G network architecture. - Know how to use testing equipment to verify network performance.	include interpreting documentation, configuring equipment, and installing racks, cabling, and backhaul. The technician diagnoses faults, optimizes performance, and implements corrective actions. They handle devices, ensure secure installations, and perform updates. Technicians ensure safety during installations, optimize efficiency, and implement sustainable practices. This role, aligned with NSQF Level 4, emphasizes independent execution within guidelines.	
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	- Develop effective troubleshooting strategies for 5G network issues. - Design and implement safe work practices for tower climbing and equipment installation. - Demonstrate proficiency in using testing equipment for network verification. - Apply knowledge of environmental standards to ensure sustainable installation practices. - Exhibit strong communication skills when guiding team	Employment readiness for a 5G Technician focuses on problem-solving, safety, and technical efficiency. They must utilize testing tools, troubleshoot 5G issues, and ensure seamless deployment. Understanding safety, environmental standards, and 5G technology is crucial. Analyzing challenges, proactive maintenance, and optimization ensure reliability.	4.0

	members. • Develop adaptability in managing varied installation site conditions. • Design and follow structured workflows for efficient 5G network deployment. • Demonstrate a proactive approach to identifying and resolving potential network problems. • Apply critical thinking to optimize network performance and resource utilization. • Exhibit adherence to safety protocols and regulatory compliance. • Develop a customer-centric approach to minimize service disruptions.	Developing critical thinking and adaptability contributes to telecom growth. This Level 4 role emphasizes independent work and adherence to safety and regulations.	
Broad Learning Outcomes/Core Skill	The Broad Learning Outcomes/Core Skill are: • Proficiency in 5G network installation and configuration. • Ability to perform rack-level installations and active network deployments. • Competence in power, earthing, and RF cabling. • Skill in configuring and commissioning backhaul connectivity. • Expertise in conducting pre-climb tower inspections and ensuring safety. • Adherence to occupational health and safety protocols during tower operations. • Ability to troubleshoot and resolve network issues. • Knowledge of environmental standards and sustainable practices. • Skill in segregating recyclable and refurbishable components. • Competence in using testing equipment for network verification. • Effective communication and teamwork skills. • Ability to follow technical documentation and specifications.	Technician 5G - Active Network Installation at NSQF Level 4 needs expertise in installing, configuring, and troubleshooting 5G networks, ensuring safety and environmental compliance. They must demonstrate problem-solving, teamwork, and communication skills for efficient service delivery, including maintenance and sustainable practices. Working under defined procedures, this Level 4 role emphasizes practical knowledge, troubleshooting, and independent execution.	4.0

	• Problem-solving and critical thinking skills. • Adaptability to changing technologies and work environments. • Commitment to continuous learning and professional development.		
Responsibility	The responsibilities are: • Prepare for the installation of racks and equipment for 5G networks • Install and secure racks and equipment for 5G networks • Conduct post-installation verification and troubleshooting • Carry out power, earthing, and RF cabling • Install, configure, and commission backhaul connectivity. • Conduct pre-climb tower inspection • Check safety equipment and assess work site conditions • Execute tower operations following health and safety protocols. • Segregate recyclable and refurbishable components • Dispose of waste • Use Energy-Efficient Methods • Follow environmental standards and compliance guidelines • Guide team members.	A Technician 5G - Active Network Installation installs, configures, and tests CPE (modems, routers, switches) for broadband access. The individual ensures seamless connectivity between CPE and end-user devices (CPU, laptop, tablets, Smart/IP TV) at customer premises and troubleshoot connectivity, cable, and equipment issues in coordination with the NOC.	4.0

Annexure 2: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1.	Earthing Cable	Ft	10
2.	Radio Frequency Scanner	Pieces	1

3.	Carabiners Connectors	Pieces	1
4.	Radio Frequency Monitor	Pieces	1
5.	Tower Climbing Kits	Pieces	1
6.	Radio Frequency Connectors	Pieces	1
7.	Fibre Optic Cable	Ft	10
8.	Radio Frequency Cable	Ft	10
9.	Signal Analysis Software	Pieces	1
10.	Patch Panel	Pieces	1
11.	Power Over Ethernet Switch	Pieces	1
12.	Fiber Cable Port	Pieces	2
13.	Harnesses	Pieces	5
14.	Personal Protective Equipment Kit (Safety Kit)	Pieces	30

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Whiteboard
2. Projector
3. Computer/Laptop
4. Chairs
5. Tables
6. Whiteboard marker
7. Duster

Annexure 3: Industry Validations Summary

Provide the summary information of all the industry validations in table. This is not required for OEM qualifications.

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1.	Ibus Network and infrastructure Pvt.Ltd.	TK Narayanan	Deputy General Manager Commercial	7th Floor Tower B, Vatika Towers Golf Crouse Road Sector 54 Gurugram, Haryana India 122011		tk.narayanan@ibusnetworks.com	
2.	ICAI Computer & IT Skill Enhancement Institute (ICSE)	Er. Kamaljeet Kumar Sharma	Managing Director	#2266 (Site No. 24), Phase 7/Sector 61, S.A.S Nagar (Mohali) 160062, Punjab (India)		contact@icseinstitute.com kksmhl@gmail.com	

3.	JRS Global Networks Pvt.Ltd.	Arvind Yadav	Asst. Account Manager Telecom	A 22, Sector-65 Noida, UP-201307		account3@jrsgl.com	
4.	Expert Consultant & Coach for Telecom Fibre Optics, FTTx and Broadband	Dr. Anuj Shrivastava	Ex Executive Director Indian Telecom Services	Ghaziabad, UP		srianujkumar@gmail.com	
5.	Jio Platforms Limited (Jio)	Abhijay Singh Sisodia	Senior Manager	Office-101, Saffron, Nr.Centre Point, Panchwati 5 Rasta, Ambawadi, Ahmedabad-380006 Gujarat		abhijay.sisodia@ril.com	
6.	Vodafone India Shared Service Private Limited	Manmohan Sharma	Deputy General Manager	0-4th floor, Cluster D, Wing 3, EON Free Zone, Kharadi, Pune, Maharashtra 411014		manmohan.sharma@vodafone.com	
7.	Teoco	Naman Khosla Abhijay Singh Sisodia	Technical Consultant	Infotech Center -6th floor, 14/2 Old Delhi Gurgaon Road, Dundahera, Gurgaon – 122016, India		naman.khosla@teoco.com	
8.	Global Logic	Rashid Muhammad	Associate Manager	Plot No.7, Oxygen Business Park SEZ, Tower, 3, Noida-Greater Noida Expy, Sector 144, Noida, Uttar Pradesh 201304		rashid.muhammad@globallogic.com	
9.	Mahendra Technical Institute	Mahendra Brmukh	Chairman and Managing Director	1st Floor, 3/B M B Classic, Telco Road, Near Kailash Dairy, Chinchwad Station, Pune – 411019 Maharashtra, India		info.mtipune@gmail.com	
10.	Amazon	Anshul Gupta	Program Manager	Bangalore		anshlg@amazon.com	
11.	Stealth Mode Startup Company	Avadh Gupta	Founder, Co-Founder & Investor	Pune		avadhma@gmail.com	
12.	Ranitronics	Yakama Vijayasree Kumar	Founder & Technical Consultant	Villa 302, Namaha Rhythm, Road No. 1, Kavya Avenue, Bachupally, Hyderabad – 500090, Telangana		info@ranitronics.com	

13	Eco Works	Deepali Sinha Khetriwal	Founder & CEO	C-601, Kalpataru Regency Phase 1, Kalyani Nagar, Pune 411006	deepali@ecowork.international	
14	Himachal Futuristic Communications Limited (HFCL)	Amit Agarwal	VP PLM	8, Commercial Complex, Masjid Moth, Greater Kailash - 11, New Delhi - 110048, India	amit.agarwal@hfcl.com	
15	Tata Communication	Alka Asthana	Head of Regulatory Affairs	Next Gen Tower Outer Ring Road, GK-1, New Delhi - 110048	alka.asthanatelecom@gmail.com	
16	Reckitt Benckiser	Sachin Sharma	Demand Manager	Udyog Vihar, Phase V, Gurgaon, Haryana	sachin.sharma@rb.com	
17	Sycamore Informatics	Rahul Kumar Kaushik	Product Manager	No. 6, 2nd Floor, 2nd Main, Arekere, Off Bannerghatta Road, Bangalore 560076	rahul.kaushik@sycamoreinformatics.com	
18	Nokia	Saurabh Singh	Software Quality Engineer	L5 and L6 Building Manyata Embassy Business Park Outer Ring Road, Nagawara 560045	saurabh.9.singh@nokia.com	
19	Edge Telecom	Arun Singh	Senior Project Engineer	9th floor, ILD Trade Centre, 904, main, Badshahpur Sohna Rd Hwy, near Subhash Chowk, Gurugram, Haryana 122018	arun.singh@edgetelecom.org	
20	Conduent	Prince Jain	Sr. Business Analyst	Plot No. 20, Candor Tech Space, Noida 201304	prince.jain@conduent.com	
21	Artificial Intelligence Technologies	Rohit Kumar Sharma	Manager - Development	A-21, sector 4, Block A, Kailash Colony, Greater Kailash, New Delhi,	rohit.sharma@aituniversal.com	
22	Ecom Express.in	Shekhar Poswal	Senior QA L1	10th Floor, Ambience Corporate Tower II, Ambience Island, Gurugram 122001	Shekhar.p@ecomexpress.in	
23	Paarminder Electronics Process Consultancy	Paarminder Singh	Consultant	New Delhi	singhpaarminder@gmail.com	
24	Senryaku Consulting	Udit Kaushik	Co-founder	Senryaku Management Private Limited	udit.kau@gmail.com	

				Address: UTC031, DLF The Ultima, Sector 81, Gurugram, HR 122004			
25	Sopra Steria	Rikan Singh Tomar	Team Leader	Plot No. 20 & 21, Seaview Special Economic Zone, Building 4, Sector 135, Noida, Uttar Pradesh 201304		rikan.singh@soprasteria.com	

Annexure 4: Training & Employment Details

Training and Employment Projections:

Year	Total Candidates		Women		People with Disability	
	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities	Estimated Training #	Estimated Employment Opportunities
2025	6432	3216	322	161	322	161
2026	6432	3216	322	161	322	161
2027	8576	4288	429	215	429	215

Data to be provided year-wise for next 3 years

Training, Assessment, Certification, and Placement Data for previous versions of qualifications:

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed
2.0	April 2023 to March 2024	255	242	231									
2.0	April 2024 to March 2025	16895	7226	6518									

Applicable for revised qualifications only, data to be provided year-wise for past 3 years.

List Schemes in which the previous version of Qualification was implemented:

- 1.
- 2.

Content availability for previous versions of qualifications:

☐ Participant Handbook ☐ Facilitator Guide ☐ Digital Content ☐ Qualification Handbook ☐ Any Other:

Languages in which Content is available:

Annexure 5: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools:

Refer NCVET "Guidelines for Blended Learning for Vocational Education, Training & Skilling" available on:

<https://ncvet.gov.in/sites/default/files/Guidelines%20for%20Blended%20Learning%20for%20Vocational%20Education,%20Training%20&%20Skilling.pdf>

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline : Online Ratio
1	☒ Theory/ Lectures - Imparting theoretical and conceptual knowledge	LMS Portal- TSSC Telco Learning Portal will be utilized with online content/virtual lectures (Telcolearning.com)	100:100
2	☒ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	LMS Portal- TSSC Telco Learning Portal will be utilized with online content/virtual lectures (Telcolearning.com)	100:100
3	☐ Showing Practical Demonstrations to the learners		
4	☐ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training		
5	☐ Tutorials/ Assignments/ Drill/ Practice		
6	☐ Proctored Monitoring/ Assessment/ Evaluation/ Examinations		
7	☐ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training		

Annexure 6: Detailed Assessment Criteria

Detailed assessment criteria for each NOS/Module are as follows:

NOS/Module Name	Assessment Criteria for Performance Criteria/Learning Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
TEL/N6104: Carry out Rack Level Installation	<i>Prepare for the installation of racks and equipment for 5G networks</i>	10	20	-	7
	PC1. assess the designated installation area to verify space availability, load-bearing capacity, and future expansion feasibility	1	3	-	1
	PC2. check facility entry points, door heights, and floor strength to facilitate safe movement and installation of racks and equipment	2	3	-	1

PC3.	identify and select appropriate rack types (open frame, enclosed, wall-mount) based on the equipment to be installed and ease of cable and device management	2	3	-	1
PC4.	ensure power supply circuits provide the required voltage, amperage, and redundancy for uninterrupted operation of 5G network equipment	1	3	-	0.5
PC5.	verify the absence of heat sources in and around the installation area to prevent thermal risks	1	2	-	0.5
PC6.	assess the adequacy of active or passive cooling systems, including ducts, dropped ceilings, or Computer Room Air Conditioners (CRACs), to manage heat dissipation	1	2		1
PC7.	develop a layout plan for rack placement, considering power distribution, ventilation pathways, and future equipment scalability	1	2	-	1
PC8.	confirm the availability of proper grounding and earthing systems to prevent electrical hazards	1	2	-	1
	<i>Install and secure racks and equipment for 5G networks</i>	<i>12</i>	<i>20</i>	<i>-</i>	<i>8</i>
PC9.	arrange racks in a hot-aisle/cold-aisle configuration to enhance cooling efficiency and reduce energy consumption	2	3	-	1
PC10.	position and secure equipment inside racks, ensuring optimal space utilization, accessibility for maintenance, and future expansion	2	3	-	1
PC11.	inspect received gNodeB and other 5G network components for physical damage or defects before installation	2	2	-	1
PC12.	report and coordinate with vendors or support teams for the replacement or repair of damaged/faulty gNodeB and other components	1	2	-	1
PC13.	mount and secure gNodeB and associated 5G equipment using appropriate fasteners while adhering to rack load ratings	1	2	-	1
PC14.	position heavier equipment at the lower sections of racks to maintain stability and prevent top-heavy tipping hazards	1	2	-	1
PC15.	distribute high-density and high-wattage equipment across multiple racks to minimize thermal hotspots	1	2	-	1
PC16.	follow manufacturer guidelines and safety protocols for assembling and installing blade servers and power distribution units (PDUs)	1	2	-	0.5
PC17.	connect power, network, and grounding cables following structured cabling best practices to ensure safety and organization	1	2	-	0.5
	<i>Conduct post-installation verification and troubleshooting</i>	<i>8</i>	<i>10</i>	<i>-</i>	<i>5</i>
PC18.	perform post-installation inspection to confirm proper mounting, cabling, and power connectivity of installed equipment	2	2	-	1
PC19.	identify and rectify common installation errors, such as improper cable routing, loose connections, or incorrect equipment placement	2	2	-	1
PC20.	run initial power-on and basic operational tests for installed 5G network equipment	1	2		1
PC21.	troubleshoot hardware and connectivity issues following manufacturer guidelines and escalate unresolved problems to relevant teams	1	2		1
PC22.	configure operating system and virtual machine (VM) settings as per standard deployment procedures	1	1		0.5

	PC23. document installation details, including rack layout, power consumption, and network configurations, for future reference	1	1		0.5
	Total Marks	30	50	-	20
TEL/N6105: Carry out 5G active network installation	<i>Carry out power, earthing and RF cabling</i>	<i>15</i>	<i>25</i>	<i>-</i>	<i>10</i>
	PC1. ensure the availability of required installation materials as per the installation document, including terminal connectors, thimbles, surge protectors, and cable ties	2	2	-	1
	PC2. assess the power requirements of the gNodeB and associated equipment, ensuring compatibility with the available power supply	2	2	-	1
	PC3. select appropriate power, earthing, and RF cables based on specifications, load requirements, and environmental conditions	2	2	-	1
	PC4. inspect all cables for any physical damage or manufacturing defects and coordinate replacements, if necessary	2	3	-	1
	PC5. install and secure power cables from the power source to the equipment, ensuring compliance with safety and regulatory standards	2	3	-	1
	PC6. establish proper earthing connections, measuring and maintaining earth resistance values within permissible limits	1	3	-	1
	PC7. install RF cables between the gNodeB, other radio equipment, and antennas, ensuring minimal signal loss	1	3	-	1
	PC8. route and terminate cables correctly to omnidirectional and sector antennas while allowing flexibility for maintenance and upgrades	1	3	-	1
	PC9. conduct continuity and performance tests on installed cables using industry-standard tools and rectify issues if detected	1	2	-	1
	PC10. implement shielding and grounding techniques to mitigate electromagnetic interference (EMI) and ensure optimal signal transmission	1	2	-	1
	<i>Install, configure, and commission backhaul connectivity</i>	<i>15</i>	<i>25</i>	<i>-</i>	<i>10</i>
	PC11. coordinate with relevant personnel to establish high-throughput Ethernet or fiber-optic backhaul connectivity	2	2	-	1
	PC12. deploy fiber optic solutions for backhaul connectivity, ensuring proper termination and splicing techniques	2	2	-	1
	PC13. validate and configure backhaul connectivity, ensuring seamless communication between gNodeB and the central office	2	2	-	1
	PC14. implement Centralised Unit–Distributed Unit (CU-DU) split architecture for optimized network functionality	2	3	-	1
	PC15. configure gNodeB settings to enable integration with the Centralised Unit (CU) and core network	2	3	-	1
	PC16. ensure gNodeB visibility in the central unit for remote commissioning, monitoring, and control	1	3	-	1
	PC17. install and integrate environmental alarm systems with the central monitoring unit to enable proactive site management	1	3	-	1
	PC18. deploy and configure the required Operating System (OS) and Virtual Machine (VM) environments for network operations	1	3	-	1
	PC19. verify network synchronization and timing configurations to align with industry standards and optimize performance	1	2	-	1

	PC20. conduct functional tests, including throughput and latency checks, to validate end-to-end connectivity and network performance	1	2	-	1
	Total Marks	30	50	-	20
TEL/N6246: Follow the Occupational Health and Safety Instructions during Tower Climbing	<i>Conduct pre-climb tower inspection</i>	<i>6</i>	<i>10</i>	<i>-</i>	<i>6</i>
	PC1. conduct a visual assessment of the tower using binoculars to check for loose or missing hardware, rust, or structural damage, and ensure necessary repairs are completed before climbing	1	2	-	1
	PC2. identify and mitigate climbing obstructions and hazards, such as bird nests, insect infestations, or external attachments	1	2	-	1
	PC3. inspect turnbuckles for proper installation and ensure guy wires are tensioned within recommended limits for guyed towers	1	2	-	1
	PC4. examine guy preforms, thimbles, and anchor points for signs of corrosion, fraying, or mechanical damage	1	2	-	1
	PC5. verify the tower's verticality using a plumb line or inclinometer to detect structural misalignment due to environmental or load stress	1	1	-	1
	PC6. report identified tower defects to the relevant authority and confirm corrective actions are implemented before proceeding with climbing tasks	1	1	-	1
	<i>Check safety equipment and assess work site conditions</i>	<i>12</i>	<i>20</i>	<i>-</i>	<i>5</i>
	PC7. inspect ladders, hoisting and rigging equipment, and essential tools to confirm operational readiness and compliance with safety standards	2	3	-	0.5
	PC8. check the condition and availability of Personal Protective Equipment (PPE), including a full-body harness, lanyards, climbing helmets, gloves, and anti-slip boots	2	3	-	0.5
	PC9. verify that a fully stocked first aid kit is accessible at the work site	1	3	-	0.5
	PC10. measure radio frequency (RF) exposure levels using an RF detector to ensure compliance with regulatory limits	1	2	-	0.5
	PC11. identify potential electrical hazards, including proximity to high-voltage power lines, and coordinate necessary precautions	1	2	-	0.5
	PC12. collaborate with relevant personnel to conduct a Job Hazard Analysis (JHA) and formulate an Emergency Action Plan (EAP)	1	2	-	0.5
	PC13. identify and report unsafe conditions at the work site to the appropriate authority and document corrective actions taken	1	2	-	0.5
	PC14. assess weather conditions using meteorological data and avoid work during thunderstorms, high winds, or adverse environmental conditions	1	1	-	0.5
	PC15. measure wind velocity using an anemometer and ensure work is conducted within permissible wind speed limits	1	1	-	0.5
	PC16. ensure vehicles, machinery, and equipment are positioned at a safe distance from tower structures and live power lines	1	1	-	0.5
	<i>Execute tower operations following health and safety protocols</i>	<i>12</i>	<i>20</i>	<i>-</i>	<i>9</i>
	PC17. register at the work site and adhere to safety guidelines before commencing tower climbing	1	2	-	0.5
	PC18. secure a full-body harness to designated anchor points and maintain 100% tie-off at all times	1	2	-	0.5

	PC19. utilize a safety cable climb system or double lanyards while ascending, descending, and moving on the tower	1	3	-	0.5
	PC20. use appropriate PPE as per manufacturer guidelines to ensure maximum protection	1	3	-	0.5
	PC21. follow standard tower climbing procedures to prevent falls, slips, or unexpected incidents	1	3	-	0.5
	PC22. maintain continuous communication with the ground crew using a two-way radio	1	1	-	0.5
	PC23. report any health impairments, such as dizziness or fatigue, and cease tower work if under the influence of medication that may affect concentration	1	1	-	1
	PC24. work at a safe distance from live power lines or coordinate with authorities to de-energize electrical lines when necessary	1	1	-	1
	PC25. place appropriate warning signs near live electrical zones to alert coworkers and prevent accidents	1	1	-	1
	PC26. ensure compliance with industry safety regulations and worksite protocols throughout the climbing operation	1	1	-	1
	PC27. administer basic first aid for injuries and medical emergencies at the worksite	1	1	-	1
	PC28. assist in preparing incident reports by providing accurate details about workplace hazards, injuries, or accidents	1	1	-	1
	Total Marks	30	50	-	20
TEL/N9105: Follow sustainable practices in telecom infrastructure installation	<i>Segregate recyclable and refurbishable components</i>	<i>6</i>	<i>12</i>	<i>-</i>	<i>6</i>
	PC1. identify telecom components suitable for recycling or refurbishment	2	4	-	2
	PC2. sort electronic and non-electronic waste based on disposal protocols	2	4	-	2
	PC3. label and store recyclable and refurbishable components separately	2	4	-	2
	<i>Dispose of waste</i>	<i>6</i>	<i>10</i>	<i>-</i>	<i>5</i>
	PC4. follow approved procedures for the safe disposal of hazardous and non-hazardous waste	2	4	-	2
	PC5. coordinate with authorized e-waste recycling units or certified disposal agencies	1	3	-	2
	PC6. handle batteries, cables, and electronic circuits safely to prevent environmental hazards	1	3	-	1
	<i>Use Energy-Efficient Methods</i>	<i>6</i>	<i>10</i>	<i>-</i>	<i>3</i>
	PC7. select and use energy-efficient tools and equipment during telecom installations	2	4	-	1
	PC8. apply best practices to minimize energy consumption	2	3	-	1
	PC9. position and install telecom infrastructure to optimize efficiency and sustainability	2	3	-	1
	<i>Follow environmental standards and compliance guidelines</i>	<i>8</i>	<i>12</i>	<i>-</i>	<i>4</i>
	PC10. adhere to national and international environmental regulations for telecom infrastructure installation	2	3	-	1
	PC11. maintain records of waste disposal, recycling, and sustainability measures	2	3	-	1
	PC12. assist in periodic audits to assess compliance with green standards	2	3	-	1
	PC13. follow workplace sustainability protocols and report non-compliance	2	3	-	1

	<i>Guide team members</i>	4	6	-	2
	PC14. guide team members on sustainable telecom installation guidelines and practices	2	3	-	1
	PC15. encourage environmentally responsible work habits	2	3	-	1
	Total Marks	30	50	-	20
DGT/VSQ/N0101: Employability Skills (30 Hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	PC2. identify constitutional values, civic rights, duties, personal values and ethics and environmentally sustainable practices	-	-	-	-
	<i>Becoming a Professional in the 21st Century</i>	1	3	-	-
	PC3. explain 21st Century Skills such as Self- Awareness, Behavior Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset etc.	-	-	-	-
	<i>Basic English Skills</i>	2	3	-	-
	PC4. speak with others using some basic English phrases or sentences	-	-	-	-
	<i>Communication Skills</i>	1	1	-	-
	PC5. follow good manners while communicating with others	-	-	-	-
	PC6. work with others in a team	-	-	-	-
	<i>Diversity & Inclusion</i>	1	1	-	-
	PC7. communicate and behave appropriately with all genders and PwD	-	-	-	-
	PC8. report any issues related to sexual harassment	-	-	-	-
	<i>Financial and Legal Literacy</i>	3	4	-	-
	PC9. use various financial products and services safely and securely	-	-	-	-
	PC10. calculate income, expenses, savings etc.	-	-	-	-
	PC11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
	<i>Essential Digital Skills</i>	4	6	-	-
	PC12. operate digital devices and use its features and applications securely and safely	-	-	-	-
	PC13. use internet and social media platforms securely and safely	-	-	-	-
	<i>Entrepreneurship</i>	3	5	-	-
	PC14. identify and assess opportunities for potential business	-	-	-	-
	PC15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
	<i>Customer Service</i>	2	2	-	-
	PC16. identify different types of customers	-	-	-	-
	PC17. identify customer needs and address them appropriately	-	-	-	-
	PC18. follow appropriate hygiene and grooming standards	-	-	-	-
	<i>Getting ready for apprenticeship & Jobs</i>	1	3	-	-
	PC19. create a basic biodata	-	-	-	-
	PC20. search for suitable jobs and apply	-	-	-	-
	PC21. identify and register apprenticeship opportunities as per requirement	-	-	-	-

	Total Marks	20	30	-	-
Grand Total		140	230	-	80

Annexure 7: Assessment Strategy

This section includes the processes involved in identifying, gathering, and interpreting information to evaluate the Candidate on the required competencies of the program.

Mention the detailed assessment strategy in the provided template.

1. Assessment System Overview:

- Batches assigned to the assessment agencies for conducting the assessment on SDSM/SIP or email
- Assessment agencies send the assessment confirmation to VTP/TC looping SSC
- Assessment agency deploys the ToA certified Assessor for executing the assessment
- SSC monitors the assessment process & records

2. Testing Environment:

- Confirm that the centre is available at the same address as mentioned on SDMS or SIP
- Check the duration of the training.
- Check the Assessment Start and End time to be as 10 a.m. and 5 p.m.
- If the batch size is more than 30, then there should be 2 Assessors.
- Check that the allotted time to the candidates to complete Theory & Practical Assessment is correct.
- Check the mode of assessment—Online (TAB/Computer) or Offline (OMR/PP).
- Confirm the number of TABs on the ground are correct to execute the Assessment smoothly.
- Check the availability of the Lab Equipment for the particular Job Role.

3. Assessment Quality Assurance levels / Framework:

- Question papers created by the Subject Matter Experts (SME)
- Question papers created by the SME verified by the other subject Matter Experts
- Questions are mapped with NOS and PC
- Question papers are prepared considering that levels 1 to 3 are for the unskilled & semi-skilled individuals, and level 4 and above are for the skilled, supervisor & higher management
- Assessor must be ToA certified & trainer must be ToT Certified
- Assessment agency must follow the assessment guidelines to conduct the assessment

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location

- Center photographs with signboards and scheme specific branding
- Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period
- Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos

5. Method of verification or validation:

- Surprise visit to the assessment location
- Random audit of the batch
- Random audit of any candidate

6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored
- Soft copies of the documents & photographs of the assessment are uploaded / accessed from Cloud Storage
- Soft copies of the documents & photographs of the assessment are stored in the Hard Drives

The trainee will be tested for the acquired skill, knowledge and attitude through formative/ summative assessment at the end of the course and as this NOS and MC is adopted across sectors and qualifications, the respective AB can conduct the assessments as per their requirements.

Annexure 8: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register
NSQF	National Skills Qualifications Framework
OJT	On the Job Training
TSSC	Telecom Sector Skill Council
TRAI	Telecom Regulatory Authority of India
LAN	Local Area Network
WAN	Wide Area Network
GI	Galvanized Iron
RCC	Reinforced Cement Concrete
PLB	Permanently Lubricated Duct
OTDR	Optical Time-Domain Reflectometer

OHS	Occupational Health and Safety
EPR	Earth Potential Rise
AT	Acceptance Testing
NOC	Network Operations Center
OFCs	Optical Fiber Cables
STMs	Synchronous Transport Modules
VFL	Visual Fault Locator
POPs	Points of Presence
NOC	Network Operation Center
TAT	Turn Around Time
SLAs	Service Level Agreements
KPIs	Key Performance Indicators
WDM	Wavelength Division Multiplexing
FRP	Fiber Reinforced Plastic

Glossary

Term	Description
National Occupational Standards (NOS)	NOS define the measurable performance outcomes required from an individual engaged in a particular task. They list down what an individual performing that task should know and also do.
Qualification	A formal outcome of an assessment and validation process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards
Qualification File	A Qualification File is a template designed to capture necessary information of a Qualification from the perspective of NSQF compliance. The Qualification File will be normally submitted by the awarding body for the qualification.
Sector	A grouping of professional activities on the basis of their main economic function, product, service or technology.
Long Term Training	Long-term skilling means any vocational training program undertaken for a year and above. https://ncvet.gov.in/sites/default/files/NCVET.pdf