QUALIFICATION FILE

Technician - Last Mile Active Network

☒ 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

Submitted By:

Submitting Body Name: Telecom Sector Skill Council

Submitting Body Contact Details:

Telephone: 0124-4148029

Email: tssc@tsscindia.com

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Section 1: Basic Details

1.	**Qualification Name**	Technician - Last Mile Active Network	
2.	**Sector/s**	Telecom	
3.	**Type of Qualification: ☒ New ☐ Revised ☐ Has Electives/Options** **☐OEM**	**NQR Code & version of existing/previous qualification:** *(change to previous, once approved)* QG-03-TL-00464-2023-V1.1-TSSC	**Qualification Name of existing/previous version:** Jr. Technician - Last Mile Active Network
4.	**a. OEM Name** **b. Qualification Name** (*Wherever applicable)*		
5.	**National Qualification Register (NQR) Code &Version** (*Will be issued after NSQC approval)*	QG-03-TL-00464- 2025-V2 -TSSC & v3.0	**6. NCrF/NSQF Level:** *4*
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 Technician – Last Mile Active Network is responsible for installing, maintaining, and troubleshooting the final segment of network connectivity to end users, ensuring uninterrupted and high-quality service delivery. The individual performs routine checks and technical diagnostics on fibre or copper lines and coordinates with field teams to resolve connectivity issues efficiently. The individual also adheres to safety protocols and company standards during installations and repairs and maintains accurate service records and updates system logs regularly.	
9.	**Eligibility Criteria for Entry for Student/Trainee/Learner/Employee**	**a. Entry Qualification & Relevant Experience:** ** Relevant experience in installation, maintenance, and troubleshooting of active network components (e.g., modems, routers, switches, fiber nodes) in last mile connectivity for broadband, fiber-to-the-home (FTTH), or telecom service networks.*	

*** Diploma in Electronics and Communication, Electrical, Telecom, CS/IT or any related field.*

S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)
1	12th grade pass	No experience required
2	Completed 2nd year of 3-year diploma** (after 10th)	No experience required
3	Previous relevant Qualification of NSQF Level 3.5	1.5 years of relevant experience*
4	Previous relevant Qualification of NSQF Level 3	3 years of relevant experience*

b. Age: NA

10.	**Credits Assigned to this Qualification, Subject to Assessment** *(as per National Credit Framework (NCrF))*	15	**11. Common Cost Norm Category (I/II/III)** *(wherever applicable)*: *I*
12.	**Any Licensing requirements for Undertaking Training on This Qualification** *(wherever applicable)*	NIL	
13.	**Training Duration by Modes of Training Delivery** *(Specify **Total Duration** as per selected training delivery modes and as per requirement of the qualification)*	**☒Offline ☐Online ☐Blended**	

Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)
Classroom (offline)	150:00	150:00	150:00	-	450:00
Online	-	-	-	-	-

(Refer Blended Learning Annexure for details)

14.	**Aligned to NCO/ISCO Code/s** *(if no code is available mention the same)*	NCO-2015/3114.6101
15.	**Progression path after attaining the qualification** *(Please show Professional and Academic progression)*	**Vertical Progression:** • NSQF Level 5 – Project Engineer- 5G Network
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:**
19.	**How Participation of Women will be Encouraged**	Yes, Women's engagement must be encouraged in order to advance gender equality and guarantee that they have equal opportunity in all spheres of society. In addition to training and development programs, it's critical to offer networking, mentoring, and knowledge. Women might be inspired and encouraged to seek jobs in this industry by flexible work arrangements and the promotion of successful women in this role. By implementing policies and procedures that promote work-life balance, equal compensation and advancement opportunities, and a polite and safe work environment, organizations may foster a culture of inclusion and diversity that will make women feel appreciated and accepted in these positions.
20.	**Are Greening/ Environment Sustainability Aspects Covered** *(Specify the NOS/Module which covers it)*	**☒ Yes ☐ No**
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** *(In case of CS or MS, provide details of both Lead AB & Supporting ABs)*	**Name: Praveen Sirohi** **Email: standards@tsscindia.com** **Contact No.: +91-90740 18901** **Website: https://www.tsscindia.com**

23.	**Final Approval Date by NSQC**: *19-08-2025*	**24. Validity Duration:** 3 years	**25. Next Review Date:** *30-06-2028*

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 **Man.**-Mandatory Training Rec.-Recommended Proj. -Project*

S. No	NOS/Module Name	NOS/Module Code & Version *(if applicable)*	Core/ Non-Core	NCrF/ NSQF 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.	Install the Local Area Network (LAN) and Wide Area Network (WAN) devices	TEL/N6109 & v3.0	Core	4	4	40:00	40:00	40:00	-	120:00	30	60	-	10	100	18
2.	Set up and Configuration of Network Switch and Router	TEL/N6110 & v3.0	Core	4	4	30:00	50:00	40:00	-	120:00	30	60	-	10	100	18
3.	Carry out Maintenance of Network Devices	TEL/N6111 & v3.0	Core	4	4	30:00	40:00	50:00	-	120:00	30	60	-	10	100	18
4.	Organise Work and Resources as per Health	TEL/N9101 & v3.0	Non-Core	4	1	10:00	10:00	10:00	-	30:00	30	60	-	10	100	18

	and Safety Standards															
5.	Interact Effectively with Team Members and Customers	TEL/N9102 & v3.0	Non-Core	4	1	10:00	10:00	10:00	-	30:00	40	50	-	10	100	18
6.	Employability Skills (30 Hours)	DGT/VSQ/N0101 & v1.0	Non-Core	4	1	30:00	-	-	-	30:00	20	30	-	-	50	10
Duration (in Hours) / Total Marks					**15**	**150:00**	**150:00**	**150:00**	**-**	**450:00**	**180**	**320**	**-**	**50**	**550**	**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)** *(as per NCVET guidelines)*	Diploma after 12th Class in Electronics and Communication / Telecom / Hardware & Networking / CS / IT with 3 years of relevant industry experience in field installation, configuration, and troubleshooting of last-mile active network components and 1 year of training experience in networking, telecom installation, or digital infrastructure. Or Graduation with specialization in Electronics and Communication / Telecom / Hardware & Networking / CS / IT with 1 years of relevant industry experience in field installation, configuration, and troubleshooting of last-mile active network components and 1 year of training experience in networking, telecom installation, or digital infrastructure.

2.	**Master Trainer's Qualification and experience in the relevant sector (in years)** *(as per NCVET guidelines)*	Diploma after 12th Class in Electronics and Communication / Telecom / Hardware & Networking / CS / IT with 6 years of relevant industry experience in field installation, configuration, and troubleshooting of last-mile active network components and 4 year of training experience in networking, telecom installation, or digital infrastructure. Or Graduation with specialization in Electronics and Communication / Telecom / Hardware & Networking / CS / IT with 4 years of relevant industry experience in field installation, configuration, and troubleshooting of last-mile active network components and 4 year of training experience in networking, telecom installation, or digital infrastructure.
3.	**Tools and Equipment Required for Training**	☒Yes ☐No (*If "Yes", details to be provided in Annexure)*
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)** *(as per NCVET guidelines)*	Diploma after 12th Class in Electronics and Communication / Telecom / Hardware & Networking / CS / IT with 3 years of relevant industry experience in field installation, configuration, and troubleshooting of last-mile active network components and 1 year of training experience in networking, telecom installation, or digital infrastructure. Or Graduation with specialization in Electronics and Communication / Telecom / Hardware & Networking / CS / IT with 1 years of relevant industry experience in field installation, configuration, and troubleshooting of last-mile active network components and 1 year of training experience in networking, telecom installation, or digital infrastructure.
2.	**Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Diploma after 12th Class in Electronics and Communication / Telecom / Hardware & Networking / CS / IT with 3 years of relevant industry experience in field installation, configuration, and troubleshooting of last-mile active network components and 1 year of training experience in networking, telecom installation, or digital infrastructure. Or

		Graduation with specialization in Electronics and Communication / Telecom / Hardware & Networking / CS / IT with 1 years of relevant industry experience in field installation, configuration, and troubleshooting of last-mile active network components and 1 year of training experience in networking, telecom installation, or digital infrastructure.
3.	**Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years)** *(as per NCVET guidelines)*	Diploma after 12th Class in Electronics and Communication / Telecom / Hardware & Networking / CS / IT with 6 years of relevant industry experience in field installation, configuration, and troubleshooting of last-mile active network components and 4 year of training experience in networking, telecom installation, or digital infrastructure. Or Graduation with specialization in Electronics and Communication / Telecom / Hardware & Networking / CS / IT with 4 years of relevant industry experience in field installation, configuration, and troubleshooting of last-mile active network components and 4 year of training experience in networking, telecom installation, or digital infrastructure.
4.	**Assessment Mode** *(Specify the assessment mode)*	Offline or Blended
5.	**Tools and Equipment Required for Assessment**	☒ Same as for training ☐ Yes ☐ No *(details to be provided in Annexure-if it is different for Assessment)*

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):** Yes
2.	**Latest Market Research Reports or any other source (not older than 2 years) (Yes/No):** Yes
3.	**Government /Industry initiatives/ requirement (Yes/No):** Yes
4.	**Number of Industry validation provided:** 5
5.	**Estimated nos. of persons to be trained and employed:** 35000

6.	**Evidence of Concurrence/Consultation with Line Ministry/State Departments:** If "No", why: **Approved**

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 *(Mandatory)*	Yes
2.	**Annexure:** List of tools and equipment relevant for qualification *(Mandatory, except in case of online course)*	Yes
3.	**Annexure:** Detailed Assessment Criteria *(Mandatory)*	Yes
4.	**Annexure:** Assessment Strategy *(Mandatory)*	Yes
5.	**Annexure:** Blended Learning *(Mandatory, in case selected Mode of delivery is "Blended Learning")*	No
6.	**Annexure:** Multiple Entry-Exit Details *(Mandatory, in case qualification has multiple Entry-Exit)*	Yes
7.	**Annexure:** Acronym and Glossary *(Optional)*	Yes
8.	**Supporting Document:** Model Curriculum *(Mandatory – Public view)*	Yes
9.	**Supporting Document:** Career Progression *(Mandatory - Public view)*	Yes
10.	**Supporting Document:** Occupational Map *(Mandatory)*	Yes

11.	**Supporting Document:** Assessment SOP *(Mandatory)*	Yes
12.	**Any other document you wish to submit:**	No

Annexure: 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	The Technician – Last Mile Active Network is required to possess specialized knowledge of networking components and processes involved in last-mile connectivity. This includes understanding LAN/WAN technologies, network devices such as switches, routers, and ONTs, along with structured cabling standards, basic cybersecurity measures, and diagnostic procedures. The role involves carrying out specialized but routine tasks such as installation, configuration, and maintenance of active network elements with clarity, precision, and adherence to safety norms. The individual must apply technical knowledge to resolve common connectivity issues, ensuring quality service delivery in both residential and enterprise environments, consistent with the NSQF Level 4 expectation of applying specialized knowledge to non-routine contexts with limited supervision.	The job role of Technician – Last Mile Active Network aligns with the NSQF Level 4 descriptor by requiring specialized theoretical knowledge and a clear understanding of structured networking processes, such as installation and configuration of LAN/WAN devices, IP addressing, and VLAN management. The individual applies this knowledge to execute routine and some non-routine tasks with precision, efficiency, and safety, using standard procedures and tools. This reflects the Level 4 expectation of independently applying theoretical knowledge to familiar yet occasionally unpredictable contexts, ensuring quality service delivery in active network installations.	4
Professional and Technical Skills/ Expertise/ Professional Knowledge	The Technician – Last Mile Active Network must demonstrate professional and technical expertise in installing, configuring, and maintaining network devices such as routers, switches, and access points used in last-mile connectivity. The role requires proficiency in using	The job role of Technician – Last Mile Active Network corresponds to the NSQF Level 4 descriptor by requiring well-developed professional and technical skills to install, configure, and maintain active network components such as routers, switches, and access	4

	tools for cable preparation, device setup, IP configuration, and basic troubleshooting using diagnostic commands and testers. The Technician – Last Mile Active Network must also possess practical knowledge of VLANs, routing protocols, and structured cabling standards, and be able to apply this knowledge effectively in real-world scenarios to ensure reliable service delivery. This aligns with NSQF Level 4, where the individual performs tasks requiring specialized technical skills with precision and minimal supervision.	points. The Technician – Last Mile Active Network demonstrates operational expertise in structured cabling, IP configuration, and basic network diagnostics, applying known techniques with accuracy and efficiency. These tasks require clarity in understanding and executing standard procedures, aligning with Level 4 expectations of performing tasks with precision in both routine and some non-routine settings, using specialized technical knowledge within a defined field.	
Employment Readiness & Entrepreneurship Skills & Mind-set / Professional Skill	The Technician – Last Mile Active Network is expected to demonstrate strong employment readiness and professional skills, including effective communication with customers and team members, time management, and adherence to safety and quality standards during fieldwork. The role demands the ability to follow structured workflows, interpret technical diagrams, and adapt to various network environments independently. The individual should exhibit a problem-solving mindset, maintain accurate service records, and show a basic understanding of digital tools, customer interaction, and documentation processes. These capabilities reflect entrepreneurial readiness, enabling the technician to manage tasks efficiently, contribute to service quality, and potentially explore self-employment opportunities in broadband or telecom network services.	The job role of Technician – Last Mile Active Network aligns with the NSQF Level 4 descriptor by requiring strong employment readiness and professional skills, such as effective communication, digital literacy, time management, and the ability to follow structured workflows independently. The indivudal in this role must demonstrate a problem-solving mindset, adapt to different network environments, and maintain service quality while interacting with customers and teams. These attributes reflect the entrepreneurial and self-directed approach expected at Level 4, enabling the individual to deliver consistent outcomes and, where applicable, pursue self-employment in telecom and broadband service domains.	4
Broad Learning Outcomes/Core Skill	The Technician – Last Mile Active Network must develop core skills in reading and interpreting technical documents, following standard procedures, and documenting work accurately using digital or manual formats. The role requires effective communication skills to interact with supervisors, team members, and customers, as well as basic numeracy for tasks like measuring cable lengths or	The job role of Technician – Last Mile Active Network aligns with the NSQF Level 4 descriptor for Broad Learning Outcomes and Core Skills by requiring the ability to read and interpret technical documents, wiring diagrams, and standard operating procedures, as well as to communicate clearly with supervisors,	4

	configuring IP settings. The Technician – Last Mile Active Network should be able to work independently or as part of a team, adapt to evolving technologies, and apply logical thinking to solve routine connectivity issues. These competencies align with the broad learning outcomes expected at NSQF Level 4, enabling the individual to perform consistently across varied network installation and maintenance scenarios.	team members, and customers. The role demands basic numeracy for tasks like IP addressing and cable measurements, alongside digital proficiency for documenting work and using diagnostic tools. These core skills enable the technician to perform tasks independently, solve routine problems, and ensure service quality—matching the Level 4 expectation of applying core skills in both familiar and occasionally unpredictable work contexts.	
Responsibility	The Technician – Last Mile Active Network is responsible for the quality and completion of their own work, particularly in installing, configuring, and maintaining network devices in the last-mile segment. The individual is expected to work independently with minimal supervision in routine and some non-routine field scenarios, ensuring service continuity and adherence to safety and quality standards. While not directly responsible for managing others, the Technician – Last Mile Active Network must coordinate with team members, escalate unresolved issues, and maintain accurate documentation, reflecting a clear sense of accountability for outcomes in their assigned tasks—consistent with NSQF Level 4 responsibility criteria.	The job role of Technician – Last Mile Active Network aligns with the NSQF Level 4 descriptor for Responsibility, as the individual is accountable for the quality and timely completion of their own work, including the installation, configuration, and maintenance of network devices in last-mile connectivity. The individual is expected to work with minimal supervision, adhere to safety and operational standards, and resolve common technical issues independently. While not responsible for managing others, the role requires coordination with teams and escalation of complex faults, reflecting the Level 4 standard of individual accountability with shared responsibility in routine and some non-routine tasks.	4

Annexure: 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.	Crimping tool	Handheld tool for crimping RJ45 connectors	1
2.	Cable tester/LAN tester	Tests Ethernet cable connectivity	1 Roll
3.	TDR meter	Time-domain reflectometer for cable fault detection	2
4.	Ethernet cables	Cat5e/Cat6 cables for networking	1 Roll
5.	Pigtail	Fiber optic pigtail for splicing	1 Roll
6.	Fibre optic cables	Single-mode/multimode fiber cables	1 Roll
7.	Patch panels	12-port/24-port patch panels for networking	2
8.	Switches	Managed/unmanaged switches for networking	3
9.	Routers	Wired/wireless routers for networking	1
10.	Access points	Wireless access points for networking	1
11.	Cable tags/Labels	Labels for cable management	1 Roll
12.	Zip ties	Cable ties for cable management	1 Roll
13.	Mounting brackets	Brackets for mounting equipment	1 Roll
14.	PPE (gloves, goggles, reflective vests, boots)	ISI-marked safety gear for lab/field use	2 sets

15.	Screwdrivers	Set of flathead/phillips screwdrivers	1
16.	Wire strippers	Tool for stripping insulation from wires	1 Roll
17.	Drills	Cordless drills for mounting equipment	1
18.	Network simulator	Software for simulating network environments	1 setup
19.	Punch-down tools	Tool for punching down cables	1
20.	Console cables	Serial/USB cables for console access	1
21.	Terminal emulator software	Software for terminal emulation (PuTTY, etc.)	1 license
22.	USB drives	16GB/32GB USB drives for data transfer	1
23.	TFTP/FTP server setup	Server setup for file transfer	1
24.	Power supply units/UPS/Battery backup units	Power supply units with UPS functionality	2 Units
25.	Power supply units/UPS/Battery backup units	Power supply units with UPS functionality	1
26.	Rack enclosures or wall-mounted trays	Enclosures for mounting equipment	1
27.	Pliers	Needle-nose pliers for gripping small objects	2
28.	Cable cutters	Tool for cutting cables	2
29.	Fibre cleaver, stripper	Tool for cleaving and stripping fiber optic cables	1 Roll
30.	Low-cost OTDR or Visual Fault Locator (VFL)	Tool for testing fiber optic cables	1

31.	Multimeter	Digital multimeter for measuring voltage/current	1 Setup
32.	Loopback plug	Plug for testing network ports	1
33.	ONT/ONU devices	Optical network terminals/optical network units	1 Unit
34.	ESD Wrist Straps	Anti-static wrist straps for protection	1
35.	First Aid Kit	Standard workplace first aid kit	1 kit
36.	Waste Bins (Recyclable, Non-recyclable, Hazardous)	Colour-coded bins (Green, Blue, Red/Yellow)	3 bins
37.	Fire Extinguisher	ABC or CO2 type (2–5 kg)	1 unit
38.	Feedback forms	Digital/printed forms (self, peer, trainer assessments)	30
39.	Digital Logbook or Task Management App	Online log or task tracking tool (e.g., Trello, Notion)	1 shared access
40.	Mobile/Tablet Device	Android/iOS device with internet for cloud/app access	2 units (shared)
41.	Sample E-waste Materials	Discarded electronics for e-waste awareness sessions	1 set (shared)
42.	Cleaning Supplies	Surface sanitizers, wipes, cloths	1 kit
43.	Tool Trolley	Mobile trolley with compartments	1 unit
44.	Lockout/Tagout equipment	Lock kits and tags for equipment safety	1 set
45.	Communication tools	Internet, intercom, WhatsApp, email	1 per lab/trainer

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Training Kit (Trainer Guide, Presentations)
2. Whiteboard
3. Markers
4. Notebooks
5. Pens
6. Laptop/Computer with an Internet connection
7. Speakers
8. Projector or Large screen.

Annexure: 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	Altruist Technologies Private Limited	Mr Manik Roy	-	Plot No.2, Sector-22,HSIIDC IT Park, · Panchkula, Haryana- 134109	0172-2970008	careers@altruistindia.com	-
2	Virtusa Consulting Services Private Limited	Mr. Sundararajan Narayanan	Chief People Officer & Global Head of Human Resource	Sy No. 115/Part, Plot No. 10, TSIIC Limited, SEZ, Nanakramguda Village, Serilingampalli Mandal, Ranga Reddy District, Hyderabad – 500 032	+91 404 452 8000 +91 402 341 2310	-	-
3	Esquare India Pvt.	MD ALI	Director Operation India	Park Landing 5AC-709,2nd Floor, 2nd Block, HRBR	+ 91 - 8660834187	sales@esquarei	-

	Ltd.		& Asia Pecific	Layout Extension, Outer Ring Rd, Bengaluru, Karnataka - 560043.		nfo.com	
4	Capital Numbers Infotech	Mrs. Paromita Biswas Panja	HR	Mani Casadona, Unit No 8E4, Action Area #2 F, New Town, Kolkata 700156, West Bengal, India	033 6799 2222	info@capitalnumbers.com	-
5	ESM Square Technologies Pvt.Ltd.	Mr Rakshid Gaud	-	334, 27th Main Rd, 2nd Sector, Sector 2, HSR Layout, Bengaluru, Karnataka 560102	080 3521 6856	hr@esquaredhr.com	-

Annexure: 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**

Data to be provided year-wise for next 3 years

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

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed
	2025	1080											
	2026	1512											
	2027	2116											

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: NA

1.
2.

Content availability for previous versions of qualifications: NA

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

Languages in which Content is available: NA

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools: NA

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	LCD, Projector, Laptop, MSOffice Suite, Flipchart, whiteboard, Markers, Wi-Fi connectivity	

	knowledge		
2	☐Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	LCD, Projector, Laptop, MSOffice Suite, various tools and software, computer camera, computer speakers, Wi-Fi connectivity	
3	☐Showing Practical Demonstrations to the learners	LCD, Projector, Laptop, MSOffice Suite, various tools and software, computer camera, computer speakers, Wi-Fi connectivity	
4	☐Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	Computer systems for all students, printers, Wi-Fi connectivity	
5	☐Tutorials/ Assignments/ Drill/ Practice	Learning management system	
6	☐Proctored Monitoring/ Assessment/ Evaluation/ Examinations	Online assessment portals, tablet for each student	
7	☐On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training	Access to industry partner in relevant field	

Annexure: 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/N6109: Install the Local Area Network (LAN) and	*Pre-set up activities*	**8**	**14**	**-**	**3**
	PC 1. receive work instructions and technical drawings from the supervisor or	2	3	-	-

Wide Area Network (WAN) devices	network engineers to plan for LAN/WAN installation.				
	PC 2. identify and select appropriate network devices (such as, routers, modems, switches, patch panels) based on network layout and capacity requirements.	2	3	-	1
	PC 3. interpret circuit diagrams, IP schemas, and cable routing plans before setting up the hardware.	2	4	-	1
	PC 4. unbox and inspect network hardware for physical damages or missing components as per BOM (Bill of Material).	2	4	-	1
	Set up LAN and WAN hardware components	**7**	**15**	-	**3**
	PC 5. connect routers, switches, and wireless access points as per standard layer 2 and layer 3 network architecture.	1	3	-	1
	PC 6. assign correct ports and label all connections (e.g., uplink/downlink, VLAN ID, WAN/LAN) for traceability.	2	2	-	1
	PC 7. configure basic network parameters such as ip address, subnet mask, default gateway, and dns settings on routers and switches.	2	4	-	1
	PC 8. install and configure access points (APS) with ssid, channel, and security settings in compliance with organisational standards.	1	3	-	-
	PC 9. establish uplinks to the Internet Service Provider (ISP) gateway and verify link synchronisation.	1	3	-	-
	Ensure proper network cabling and configuration	**9**	**17**	-	**3**
	PC 10. identify suitable cable types (cat5e, cat6, fibre optic) based on network bandwidth and distance requirements.	2	3	-	1
	PC 11. measure, cut, and crimp ethernet cables using appropriate tools (e.g., cable stripper, crimping tool, rj45 connectors).	2	4	-	**1**
	PC 12. install network cables in ducts, raceways, or conduits ensuring minimal	1	4	-	-

	bending and no physical strain on connectors.				
	PC 13. label both ends of each cable using cable tags or colour codes for easy fault diagnosis.	2	3	-	1
	PC 14. check grounding and bonding of racks and metal equipment to avoid electrical hazards.	2	3	-	-
	Test and verify network connectivity	**6**	**14**	**-**	**1**
	PC 15. power up the devices and verify boot status through indicator leds or diagnostic ports.	1	2	-	-
	PC 16. use basic network testing tools (e.g., lan tester, cable certifier, tdr meter) to ensure cable integrity and proper connectivity.	2	4	-	1
	PC 17. perform ping test, speed test, and bandwidth tests to confirm desired connectivity and speed.	2	4	-	-
	PC 18. Take photograph and record test results in the job sheet or digital installation report.	1	4	-	-
	NOS Total	**30**	**60**	**-**	**10**
TEL/N6110: Set up and Configuration of Network Switch and Router	*Take instructions and prepare for installation tasks*	**6**	**11**	**-**	**2**
	PC 1. verify availability of hardware such as managed/unmanaged switches, layer 2 or layer 3 routers, cables, connectors, and power supply.	2	4	-	-
	PC 2. ensure all tools required for the setup (such as, crimping tool, cable tester, punch-down tool, screwdrivers) are ready and functional.	2	3	-	1
	PC 3. assess network design documents or topology diagrams to understand IP allocation, switch roles, and VLAN structure.	2	4	-	1
	Install and physically set up network devices	7	14	-	2

	PC 4. mount the switch or router securely in racks or wall enclosures as per standard procedures.	1	3	-	-
	PC 5. connect network cables (Cat5e/Cat6 or fibre) to appropriate switch/router ports following the assigned port plan.	2	4	-	1
	PC 6. verify cable continuity using LAN cable testers and ensure colour coding or labelling of ports for traceability.	2	3	-	1
	PC 7. connect power cables, backup power sources (e.g., UPS), and confirm device boot-up through LED indicators or diagnostics.	2	4	-	-
	Configure network switches and routers	**9**	**21**	**-**	**4**
	PC 8. access the switch/router console via serial/USB port or IP-based terminal software (e.g., PuTTY, Tera Term).	1	3	-	1
	PC 9. assign static or dynamic IP addresses to devices based on DHCP settings or static routing plans.	1	2	-	1
	PC 10. configure basic settings such as hostname, domain name, password protection, and NTP synchronisation.	2	3	-	-
	PC 11. create and assign VLANs, configure trunk and access ports, and verify inter-VLAN routing if applicable.	1	3	-	-
	PC 12. enable port security features, MAC address filtering, and spanning tree protocol (STP) to avoid network loops.	1	3	-	1
	PC 13. configure routers with gateway IP, NAT/PAT settings, routing protocols (e.g., RIP, OSPF), and route summarisation.	1	4	-	1
	PC 14. set up access control lists (ACLs) to manage data flow and apply firewall rules to restrict unauthorised traffic.	2	3	-	-
	Test and validate device configuration	**8**	**14**	**-**	**2**

	PC 15. verify connectivity through ping and traceroute commands.	2	3	-	-
	PC 16. run interface status and routing table commands (e.g., show ip int brief, show vlan, show run) to confirm operational parameters.	2	4	-	1
	PC 17. troubleshoot configuration issues by checking log files, LED indicators, and loopback test results.	2	4	-	-
	PC 18. back up device configurations to external storage or network drive using TFTP/FTP or USB.	2	3	-	1
	Total	**30**	**60**	-	**10**
TEL/N6111: Carry out Maintenance of Network Devices	*Receive work instructions and prepare for maintenance*	**7**	**12**	-	**2**
	PC1. review the network layout diagram, device inventory, and location plan to identify devices due for inspection or servicing.	2	2	-	-
	PC2. ensure possession of all required tools and diagnostic equipment such as multimeters, LAN testers, OTDRs, crimping tools, and splicing kits.	2	3	-	-
	PC3. verify stock availability of spare parts like SFP modules, connectors, patch cords, power supplies, and batteries required for field replacement.	2	3	-	1
	PC4. perform a visual inspection of the assigned site for safety hazards and access points before starting work.	1	4	-	1
	Inspect, diagnose and troubleshoot network devices	**8**	**18**	-	**3**
	PC5. inspect active network devices (e.g., routers, switches, access points, ONU/ONT) for signs of wear, physical damage, loose connections, or overheating.	2	4	-	1
	PC6. run diagnostic tests to check device health indicators such as port activity, LED status, temperature logs, and fan operations.	1	4	-	1

	PC7. identify connectivity issues, signal degradation, or packet loss using ping tests, cable continuity checks, and loopback tests.	1	3	-	1
	PC8. assess power supply units and backup systems (e.g., UPS, PoE injectors) for consistent voltage output and battery health.	2	3	-	-
	PC9. check fibre patch panels and copper patch cords for proper insertion, labelling, and potential microbends or cable stress.	2	4	-	-
	Carry out maintenance tasks and replace faulty components	**8**	**15**	-	**2**
	PC10. clean optical ports, connectors, and device enclosures using standard cleaning kits and ESD-safe materials.	2	3	-	1
	PC11. tighten loose terminations, replace damaged connectors, and realign misconfigured port connections as per standard guidelines.	2	2	-	1
	PC12. update or reconfigure firmware/software settings on CPEs and switches, if required, using vendor-specific CLI/GUI interfaces.	2	3	-	-
	PC13. replace non-functional components such as power adaptors, SFP modules, fan units, or fuses with compatible spare parts.	1	3	-	-
	PC14. perform minor field-level splicing of fibre drop cables using hand tools or portable fusion splicers to restore link continuity.	1	4	-	-
	Test and validate network performance post-maintenance	**7**	**15**	-	**3**
	PC15. test the link throughput, signal strength, latency, and packet loss after repair using handheld testers or mobile apps.	1	3	-	1
	PC16. confirm network stability by checking interface up/down status, IP assignment, and device reachability via ping or traceroute.	2	2	-	1
	PC17. ensure customer or user devices (e.g., routers, STBs, IP phones) are synchronised with the network and receiving consistent bandwidth.	2	4	-	-

	PC18. record the maintenance activities, replaced items, and device health metrics in physical or digital logs as per organisational format.	1	3	-	1
	PC19. report completion status and any unresolved issues to the supervisor or escalate if specialised support is needed.	1	3	-	-
	Total	**30**	**60**	**-**	**10**
TEL/N9101: Organise Work and Resources as per Health and Safety Standards	*Maintain an organised, productive, and digitally compliant workspace*	**6**	**13**	**-**	**2**
	PC 1. maintain a clean, clutter-free, and ergonomically safe workspace aligned with 5S principles	1	2	-	-
	PC 2. follow designated workflow as per the organisational Standard Operating Procedures (SOPs)	2	3	-	-
	PC 3. digitally log work completed, including time stamps, material usage, and issues faced	1	3	-	1
	PC 4. track and update digital task checklists, inventories, or handovers through mobile/desktop apps	1	3	-	-
	PC 5. identify delays, workflow inefficiencies, or material constraints and escalate appropriately.	1	2	-	1
	Adhere to health, safety, and environmental guidelines	**13**	**24**	**-**	**5**
	PC 6. comply with organisational health, safety, and environment (HSE) policies at all times	1	3	-	1
	PC 7. use personal protective equipment (PPE) such as ESD wrist straps, gloves, masks, and safety footwear	1	3	-	-
	PC 8. report any breaches in safety protocols, near misses, or unsafe practices immediately to supervisor/concerned authorities	2	2	-	1

	PC 9. detect hazards, including spillage, loose wiring, excessive noise, or EMI sources and respond as per SOP	1	3	-	1
	PC 10. follow lockout/tagout procedures when working around electrical or moving parts	2	3	-	-
	PC 11. adhere to safe lifting techniques, workstation posture norms, and equipment handling procedures	2	3	-	-
	PC 12. handle tools, drones, or heavy components using trolleys or assistive equipment when needed	1	3	-	1
	PC 13. identify early signs of physical or mental fatigue and report for preventive action	2	2	-	1
	PC 14. inform supervisor of symptoms related to communicable diseases or unsafe coworker behaviour.	1	2	-	-
	Conserve energy and manage resources efficiently	**7**	**14**	**-**	**2**
	PC 15. minimise wastage of consumables, components, and materials by adhering to industry best practices	1	3	-	-
	PC 16. use electricity, lighting, and climate-control systems responsibly	1	3	-	-
	PC 17. power off equipment, tools, and terminals when not in use	1	2	-	-
	PC 18. ensure routine maintenance, cleaning, and calibration of machines/tools to improve performance	1	2	-	1
	PC 19. report leakages, overheating, or malfunctions immediately for rectification	2	2	-	1
	PC 20. use digital tools to monitor and reduce environmental footprint, where applicable.	1	2	-	-
	Implement safe and sustainable waste disposal practices	**4**	**9**	**-**	**1**

	PC 21. segregate and dispose of hazardous, recyclable, and general waste as per guidelines	2	3	-	-
	PC 22. deposit e-waste or used batteries at designated collection points following e-waste protocols	1	3	-	-
	PC 23. follow ESD-safe disposal procedures for sensitive electronic components	1	3	-	1
	Total	**30**	**60**	**-**	**10**
TEL/N9102: Interact Effectively with Team Members and Customers	*Interact effectively with supervisors and stakeholders*	**11**	**13**	**-**	**2**
	PC 1. receive and clarify work instructions, technical requirements, and priorities from supervisors or clients using appropriate communication tools (e.g., messaging apps, emails, virtual meetings)	3	3	-	-
	PC 2. inform supervisors or relevant stakeholders in a timely manner about any issues, risks, or deviations from planned tasks	2	3	-	-
	PC 3. contribute to team decisions by providing relevant data, suggestions, and professional feedback during team discussions	3	4	-	1
	PC 4. act promptly on constructive feedback and incorporate learnings to improve future work outcomes	3	3	-	1
	Collaborate effectively with team members and customers	**16**	**21**	**-**	**4**
	PC 5. follow organisational norms and digital etiquette when working in hybrid or remote teams	3	4	-	1
	PC 6. communicate respectfully and effectively using face-to-face, phone, email, or collaboration platforms (e.g., MS Teams, Zoom)	3	3	-	1
	PC 7. seek clarification and respond to queries from customers and team members accurately and promptly	3	3	-	1

	PC 8. identify and de-escalate conflicts tactfully to maintain a productive and harmonious work environment	2	4	-	-
	PC 9. demonstrate emotional intelligence in team settings by recognising and responding to others' perspectives and emotional states	2	3	-	-
	PC 10. align personal efforts with team and organisational goals to ensure shared success.	3	4	-	1
	Promote inclusivity, respect, and accessibility in the workplace	**13**	**16**	**-**	**4**
	PC 11. foster an inclusive workplace culture that respects gender, cultural, and socio-economic diversity	3	3	-	1
	PC 12. demonstrate respectful language and conduct toward colleagues and customers of all genders and backgrounds	2	3	-	-
	PC 13. support team members with disabilities by helping remove work-related barriers or by assisting them as needed	3	4	-	1
	PC 14. practice appropriate verbal and non-verbal communication while engaging with persons with disabilities (PwDs)	2	3	-	1
	PC 15. promote equal opportunity and participation for all in meetings, decision-making, and teamwork.	3	3	-	1
	Total	**40**	**50**	**-**	**10**
DGT/VSQ/N0101: Employability Skills (30 Hours)	*Introduction to Employability Skills*	**1**	**1**	**-**	**-**
	PC 1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
	Constitutional values – Citizenship	**1**	**1**	**-**	**-**
	PC 2. identify constitutional values, civic rights, duties, personal values, ethics and	-	-	-	-

	environmentally sustainable practices				
	Becoming a Professional in the 21st Century	**1**	**3**	**-**	**-**
	PC 3. explain 21st Century Skills such as Self-Awareness, Behaviour Skills, Positive attitude, self-motivation, problem-solving, creative thinking, time management, social and cultural awareness, emotional awareness, continuous learning mindset, etc.	-	-	-	-
	Basic English Skills	**2**	**3**	**-**	**-**
	PC 4. speak with others using some basic English phrases or sentences	-	-	-	-
	Communication Skills	**1**	**1**	**-**	**-**
	PC 5. follow good manners while communicating with others	-	-	-	-
	PC 6. work with others in a team	-	-	-	-
	Diversity & Inclusion	**1**	**1**	**-**	**-**
	PC 7. communicate and behave appropriately with all genders and PwD	-	-	-	-
	PC 8. report any issues related to sexual harassment	-	-	-	-
	Financial and Legal Literacy	3	4	-	-
	PC 9. use various financial products and services safely and securely	-	-	-	-
	PC 10. calculate income, expenses, savings, etc.	-	-	-	-
	PC 11. approach the concerned authorities for any exploitation as per legal rights and laws	-	-	-	-
	Essential Digital Skills	**4**	**6**	**-**	**-**
	PC 12. operate digital devices and use their features and applications securely and	-	-	-	-

	safely				
	PC 13. use internet and social media platforms securely and safely	-	-	-	-
	Entrepreneurship	**3**	**5**	**-**	**-**
	PC 14. identify and assess opportunities for potential business	-	-	-	-
	PC 15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
	Customer Service	**2**	**2**	**-**	**-**
	PC 16. identify different types of customers	-	-	-	-
	PC 17. identify customer needs and address them appropriately	-	-	-	-
	PC 18. follow appropriate hygiene and grooming standards	-	-	-	-
	Getting ready for apprenticeship & Jobs	**1**	**3**	**-**	**-**
	PC 19. create a basic biodata	-	-	-	-
	PC 20. search for suitable jobs and apply	-	-	-	-
	PC 21. identify and register apprenticeship opportunities as per the requirement	-	-	-	-
	Total	**20**	**30**	**-**	**-**
Grand Total		**180**	**320**	**-**	**50**

Annexure: Assessment Strategy

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.
- The 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 level 1 to 3 is for the unskilled & semi- skilled individuals, and level 4 and above are for the skilled, supervisor & higher management.
- An assessor must be ToA certified & the trainer must be ToT Certified.
- The 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:**

- A surprise visit to the assessment location.
- A 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.

Assessment Strategy (Employability Skills 30 hours)

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: 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

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