

QUALIFICATION FILE

Optical Network Terminal Technician

☒ 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	Optical Network Terminal Technician																				
2.	Sector/s	Telecom																				
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: (2022/TEL/TSSC/07011 , V4.0)		Qualification Name of existing/previous version: Grass Root Telecom Provider																		
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-04080-2025-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	An Optical Network Terminal Technician is responsible for ensuring the continuous 24x7 operation of Optical Network Terminal (ONT) sites. The role involves performing routine maintenance, troubleshooting and repairing basic faults at ONT sites, promoting digital adoption among the local population, and delivering telecom services efficiently.																				
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 and Communication Engineering/ Telecommunication Engineering/ Networking Technology</td> <td></td> </tr> <tr> <td>3.</td> <td>10th grade pass</td> <td>3-years of experience in telecom network operation and maintenance</td> </tr> <tr> <td>4.</td> <td>Previous relevant Qualification of NSQF Level 3.0</td> <td>3-years of experience in telecom network operation and maintenance</td> </tr> <tr> <td>5.</td> <td>Previous relevant Qualification of NSQF Level 3.5</td> <td>1.5-years of experience in telecom network operation and maintenance</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 and Communication Engineering/ Telecommunication Engineering/ Networking Technology		3.	10th grade pass	3-years of experience in telecom network operation and maintenance	4.	Previous relevant Qualification of NSQF Level 3.0	3-years of experience in telecom network operation and maintenance	5.	Previous relevant Qualification of NSQF Level 3.5	1.5-years of experience in telecom network operation and maintenance
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 and Communication Engineering/ Telecommunication Engineering/ Networking Technology																					
3.	10th grade pass	3-years of experience in telecom network operation and maintenance																				
4.	Previous relevant Qualification of NSQF Level 3.0	3-years of experience in telecom network operation and maintenance																				
5.	Previous relevant Qualification of NSQF Level 3.5	1.5-years of experience in telecom network operation and maintenance																				

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 (wherever applicable)	NA																						
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 <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>150</td> <td>210</td> <td>150</td> <td></td> <td>510</td> </tr> <tr> <td>Online</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> (Refer Blended Learning Annexure for details)					Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)	Classroom (offline)	150	210	150		510	Online					
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																			
Classroom (offline)	150	210	150		510																			
Online																								
14.	Aligned to NCO/ISCO Code/s (if no code is available mention the same)	NCO-2015/7422.0202																						
15.	Progression path after attaining the qualification (Please show Professional and Academic progression)	Optical Network Terminal Technician (NSQF Level 4) → Cluster In-Charge (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 Optical Network Terminal Technician 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 (Specify the NOS/Module which covers it)	☒ Yes ☐ No NOS: TEL/N9109																						
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: Mr. Praveen Sirohi Email: ceo@tsscindia.com Website: www.tsscindia.com Contact No.: 0124-4148029																						

23.	Final Approval Date by NSQC: 08-05-2025	24. Validity Duration: 3 years	25. Next Review Date: 30-04-2028
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NSQC Approved

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.	Maintain Site Security and Hygiene	TEL/N6226, v5.0	Core	4.0	5	50	70	30	-	150	30	50	-	20	100	25
2.	Perform Preventive Maintenance of Optical Network Terminal (ONT) Components	TEL/N6227, v5.0	Core	4.0	6	30	60	90	-	180	30	50	-	20	100	25
3.	Promote use of Devices and Provide Services	TEL/N6228, v5.0	Core	4.0	4	30	60	30	-	120	30	50	-	20	100	25
4.	Follow sustainable practices in telecom infrastructure management	TEL/N9109, 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	150	210	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 Optical Fiber/ONT Domain. 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 Optical Fiber/ONT. 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 Optical Fiber/ONT. 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 Optical Fiber/ONT. 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: Minimum 8 years of experience after Graduation in Optical Fiber/ONT.

		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: 1400
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>)	<i>NA</i>
6.	Annexure: Multiple Entry-Exit Details (<i>Mandatory, in case qualification has multiple Entry-Exit</i>)	<i>Yes</i>
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	Prepare for ONT Installation and Maintenance - Interpret site layout, blueprints, and technical specifications for ONT setup. - Assess site conditions to ensure feasibility and adherence to safety standards. - Coordinate tools, equipment, and logistics for seamless installation and maintenance. - Verify optimal placement of ONT components for efficient network performance. - Adhere to health, safety, and regulatory guidelines during all site activities. Install, Configure, and Test ONT Equipment - Mount and secure Optical Network Terminals (ONT), routers, and power units. - Install and terminate fiber optic cables, patch cords, and electrical wiring. - Configure ONT devices, modems, and network parameters as per service provider protocols. - Perform power and connectivity checks to validate installation quality. - Ensure installation aligns with industry best practices and performance standards. Perform Preventive Maintenance and Troubleshooting - Conduct regular inspections and diagnostic tests on ONT components. - Monitor system performance using real-time remote tools to detect potential faults.	An Optical Network Terminal (ONT) Technician at NSQF Level 4 is responsible for installing, configuring, and maintaining ONT components and related digital devices. The role involves performing site assessments, setting up equipment like routers and modems, and ensuring proper network connectivity. Technicians carry out preventive maintenance, diagnose faults, and troubleshoot issues related to hardware, software, and network performance. They adhere to health, safety, and environmental standards while ensuring secure handling of user data and promoting sustainable practices, such as efficient energy use and proper e-waste management. With expertise in ONT setup and maintenance, the technician ensures reliable service delivery and supports digital adoption in line with industry standards.	4.0

	- Identify and replace defective units in CCU, SPV panels, battery banks, and wiring. - Document maintenance activities and report major faults through appropriate channels. - Apply corrective measures to maintain network uptime and service quality. Promote Digital Device Adoption and Support Users - Educate users on the benefits and functionalities of digital devices. - Install, configure, and troubleshoot smartphones, tablets, and e-terminals for network access. - Assist in setting up accounts, applications, and security measures. - Address user concerns and ensure smooth onboarding onto digital platforms. Manage Payments and Records - Collect service usage payments and issue receipts to users. - Maintain transaction records, rent agreements, and electricity bill documentation. - Ensure timely submission of financial records to supervisors. Follow Sustainable and Hygienic Practices - Maintain site cleanliness, ensuring secure access to ONT equipment. - Manage recyclable, reusable, and hazardous materials responsibly. - Follow proper waste disposal and recycling protocols. - Optimize energy efficiency and ensure compliance with environmental regulations.		
Professional and Technical Skills/ Expertise/ Professional Knowledge	- Knowledge of site assessment techniques to evaluate feasibility and ensure compliance with safety standards. - Understand the installation and configuration processes for Optical Network Terminals (ONT), routers, modems, and related network equipment. - Knowledge of fiber optic cable handling, termination procedures, and best practices for cable management. - Understand the principles of preventive maintenance	An ONT Technician requires knowledge of optical fiber networks, ONT components, and the processes for installing and configuring digital devices. They are skilled in performing preventive maintenance, diagnosing network faults, and ensuring optimal connectivity. The technician understands security protocols, device configuration, and best practices for handling user data. They apply troubleshooting techniques for network disruptions and provide technical support to end-users. Ensuring compliance	4.0

	for ONT components, including power units, battery banks, and wiring. • Knowledge of troubleshooting techniques to identify and resolve hardware, software, and connectivity issues in ONT systems. • Understand the procedures for promoting digital device adoption, providing user support, and addressing device-related concerns. • Knowledge of billing processes, payment collection methods, and maintaining accurate records of transactions and site agreements. • Understand the importance of site hygiene, secure equipment access, and adherence to environmental and safety regulations.	with safety guidelines, maintaining service records, and promoting sustainable practices are key aspects of this role, reflecting the technical competence expected at NSQF Level 4.	
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	• Demonstrate effective communication skills to interact with customers, supervisors, and team members. • Learn problem-solving abilities to identify, analyze, and resolve technical issues promptly. • Exhibit time management skills to prioritize tasks and ensure timely completion of maintenance and service activities. • Apply critical thinking to assess network performance and implement corrective actions when needed. • Showcase adaptability to work with evolving technologies, tools, and industry practices. • Display customer service skills to promote digital literacy and assist users with device adoption. • Practice attention to detail when documenting maintenance activities, service reports, and payments. • Foster a proactive mindset to identify opportunities for improving service delivery and network efficiency.	Employment readiness for an ONT Technician emphasizes problem-solving, customer engagement, and technical adaptability. Technicians must efficiently manage tools, perform installations, and resolve connectivity issues while ensuring customer satisfaction. A strong understanding of industry standards, digital literacy promotion, and safety practices is crucial for career growth. Developing skills in proactive maintenance, decision-making, and service delivery enables technicians to explore entrepreneurial opportunities in digital connectivity services. At NSQF Level 4, this role highlights independent execution, adherence to safety norms, and sustainable practices.	4.0
Broad Learning Outcomes/Core Skill	• Understand Network Infrastructure: Gain knowledge of Optical Network Terminal (ONT) components, their installation, configuration, and maintenance processes.	The ONT Technician role at NSQF Level 4 demands skills in installing, configuring, and maintaining ONT systems and related devices. Technicians must handle customer inquiries, troubleshoot network issues, and ensure compliance with technical guidelines.	4.0

	• Improve Technical Proficiency: Acquire skills to perform preventive maintenance, troubleshoot faults, and ensure optimal performance of ONT systems. • Apply Safety and Compliance Protocols: Learn to follow health, safety, and regulatory guidelines during installation and maintenance activities. • Enhance Communication and Customer Support Skills: Build the ability to assist users with device adoption, provide technical support, and promote digital literacy. • Demonstrate Record-Keeping and Reporting Abilities: Learn to document maintenance activities, manage service records, and report technical issues accurately.	They develop problem-solving abilities, enhance communication skills, and support digital literacy through user training. The role also focuses on implementing preventive maintenance, ensuring data security, and promoting environmentally sustainable practices. Working within structured processes, the technician applies practical knowledge independently, aligning with the expectations of NSQF Level 4.	
Responsibility	The responsibilities are: • Coordinate activities for site security, hygiene, and environmental compliance • Ensure renewable energy integration • Perform preventive maintenance and maintain records • Monitor equipment, use advanced testing tools, and report issues • Facilitate Adoption of Digital Devices • Install, configure, and troubleshoot devices • Manage revenue collection and site payments • Document work and clean the site • Manage hazardous and e-waste at telecom sites • Follow waste reduction strategies • Ensure compliance with environmental regulations	An Optical Network Terminal Technician is responsible for ensuring the continuous 24x7 operation of Optical Network Terminal (ONT) sites. The role involves performing routine maintenance, troubleshooting and repairing basic faults at ONT sites, promoting digital adoption among the local population, and delivering telecom services efficiently.	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.	Standard GPS device	No	6
2.	OLT Unit	No	1
3.	OLT cards	No	1
4.	GPS device to calibrate	No	6
5.	GPON :SPV	No	2
6.	GPON :Splitters	No	6
7.	GPON :ONT unit	No	6
8.	GPON :CCU	No	2
9.	GPON : Patchcords	No	6
10.	GPON : OLT unit	No	2
11.	GPON : Cat5 cable	Bundle	6
12.	GPON : Cables/fiber & Ethernet	Bundle	6
13.	Access to GPON installation connectivity for demonstration	No	1
14.	Standard GPS device	No	6

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	avadhmac@gmail.com	
12.	Ranitronics	Yakama Vijayasree Kumar	Founder & Technical Consultant	Villa 302, Namaha Rhythm, Road No. 1, Kavya Avenue,	info@ranitronics.com	

				Bachupally, Hyderabad - 500090, Telangana		
13	Eco Works	Deepali Sinha Khatriwal	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	10 th 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 Address: UTC031, DLF The Ultima, Sector 81, Gurugram, HR 122004	udit.kau@gmail.com	
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	420	294	21	11	21	11
2026	420	294	21	11	21	11
2027	560	392	28	14	28	14

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
4.0	April 2023 to March 2024	180	133	130									
4.0	April 2024 to March 2025	944	452	434									

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/N6226: Maintain Site Security and Hygiene	<i>Coordinate activities for site security, hygiene, and environmental compliance</i>	14	24	-	8
	PC1. perform custodial functions for an Optical Network Terminal (ONT) site, ensuring security, hygiene, and proper functioning	3	5	-	2
	PC2. communicate with Optical Line Terminal (OLT) and Network Operation Center (NOC) supervisors to report issues or request technological upgrades	3	6	-	2

	PC3. coordinate with Gram Panchayat officials and other local authorities for the smooth operation and security of the ONT site	4	6	-	2
	PC4. follow eco-friendly site management practices, to ensure adherence to environmental compliance standards	4	7	-	2
	<i>Monitor equipment and ensure renewable energy integration</i>	<i>16</i>	<i>26</i>	<i>-</i>	<i>12</i>
	PC5. check the functionality of Charge Controller Unit (CCU), Solar Photovoltaic (SPV) system, Telephone Junction Box (TJB), battery bank, and other components	2	3	-	1
	PC6. maintain hygiene and operational standards for ONT site equipment, including renewable energy solutions	2	4	-	1
	PC7. check all cable connectors for secure connections and detect any signs of damage	2	2	-	2
	PC8. perform necessary steps for the repair or replacement of damaged cables, ensuring compliance with safety protocols	2	3	-	1
	PC9. monitor solar-powered energy sources and battery banks to optimize performance and ensure uninterrupted power supply	2	4	-	2
	PC10. report faults that cannot be rectified to the supervisor for further action	2	3	-	1
	PC11. use fire extinguishers and follow emergency protocols in case of fire or other hazards	2	4	-	2
	PC12. record faults, maintenance activities, and energy efficiency parameters in the prescribed format	2	3	-	2
	Total Marks	30	50	-	20
TEL/N6227: Perform Preventive Maintenance of Optical Network Terminal (ONT) Components	<i>Perform preventive maintenance and keep record</i>	<i>18</i>	<i>23</i>	<i>-</i>	<i>10</i>
	PC1. read and follow preventive maintenance guidelines for Charge Controller Unit (CCU), Solar Photo Voltaic (SPV) System, Telephone Junction Box (TJB), battery bank, and fire extinguisher	3	5	-	2
	PC2. conduct scheduled preventive maintenance of CCU, SPV, TJB, and battery bank using the prescribed checklists	5	6	-	2
	PC3. ensure the availability of required equipment, including spectrum analyzers, OTDRs, and network testers	4	4	-	2
	PC4. perform routine diagnostic checks using real-time remote monitoring tools to detect faults in ONT components	3	4	-	2
	PC5. document maintenance activities in the preventive maintenance report form in the specified format	3	4	-	2
	<i>Monitor equipment, use advanced testing tools, and report issues</i>	<i>12</i>	<i>27</i>	<i>-</i>	<i>10</i>
	PC6. observe the CCU panel, interpret alarms, and take corrective actions as per standard operating procedures	2	4	-	2
	PC7. inspect battery bank cells and SPV panels for premature ageing and replace defective units as per manufacturer guidelines	2	5	-	2
	PC8. examine and test patch cords, pigtails, and electrical wiring for damage and replace faulty components	3	7	-	2
	PC9. conduct interference analysis using spectrum analyzers and OTDRs to identify signal loss and network degradation issues	3	5	-	2

	PC10. report major equipment faults and alarm triggers to the OLT/NOC supervisor through the designated escalation matrix	2	6	-	2
	Total Marks	30	50	-	20
TEL/N6228: Promote use of Devices and Provide Services	<i>Facilitate adoption of digital devices</i>	<i>10</i>	<i>17</i>	<i>-</i>	<i>6</i>
	PC1. identify and engage target groups to introduce digital devices and their benefits	3	4	-	1
	PC2. promote and recommend relevant devices based on user requirements and digital literacy levels	2	4	-	2
	PC3. conduct on-site demonstrations of device functionalities to enhance user confidence and adoption	2	5	-	1
	PC4. address concerns and misconceptions related to device usability, security, and affordability	3	4	-	2
	<i>Install, configure, and troubleshoot devices</i>	<i>10</i>	<i>19</i>	<i>-</i>	<i>9</i>
	PC5. set up and install necessary equipment such as routers, modems, UPS, and cables at designated locations	2	3	-	2
	PC6. configure smartphones, tablets, and e-terminals as per service provider guidelines	2	4	-	2
	PC7. assist users in setting up accounts, applications, and network connectivity on digital devices	2	4	-	2
	PC8. perform basic troubleshooting for common issues related to hardware, software, and network connectivity	2	4	-	1
	PC9. guide users on security measures, software updates, and device maintenance to ensure long-term usability	2	4	-	2
	<i>Manage revenue collection and site payments</i>	<i>10</i>	<i>14</i>	<i>-</i>	<i>5</i>
	PC10. distribute bills for service usage as per billing cycles	2	3	-	1
	PC11. collect payments and issue receipts and maintain transaction records	3	4	-	1
	PC12. maintain and update rent agreements and electricity bill records for ONT sites	2	3	-	2
	PC13. coordinate rent, electricity, or service fees payments with the supervisor to avoid disruptions	3	4	-	1
	Total Marks	30	50	-	20
TEL/N9109: Follow sustainable practices in telecom infrastructure management	<i>Manage hazardous and e-waste at telecom sites</i>	<i>8</i>	<i>15</i>	<i>-</i>	<i>5</i>
	PC1. identify, segregate, and categorize e-waste (batteries, cables, outdated equipment) and hazardous waste (lead-acid batteries, diesel residues, etc.)	2	4	-	2
	PC2. dispose of or recycle waste following the applicable e-waste management guidelines	2	4	-	1
	PC3. follow safe handling procedures for hazardous materials, including protective gear usage	2	4	-	1
	PC4. maintain logs and records of disposed, recycled, or repurposed telecom waste	2	3	-	1
	<i>Adopt green energy and resource efficiency practices</i>	<i>6</i>	<i>10</i>	<i>-</i>	<i>5</i>
	PC5. optimize power usage through energy-efficient telecom equipment (e.g., LED lighting, smart cooling systems)	2	4	-	2
	PC6. assist in adopting solar-powered telecom towers and integration of hybrid energy systems (e.g. solar power and battery backup)	2	3	-	2

	PC7. monitor and minimize fuel consumption in Diesel Generators (DG) sets through load balancing and regular maintenance	2	3	-	1
	<i>Follow waste reduction strategies</i>	8	15	-	5
	PC8. reduce packaging waste by promoting the reuse of telecom materials and accessories	3	5	-	2
	PC9. follow rainwater harvesting and wastewater reuse practices in telecom cooling systems	3	5	-	1
	PC10. promote structured cabling to reduce cable waste and optimize resource utilization	2	5	-	2
	<i>Ensure compliance with environmental regulations</i>	8	10	-	5
	PC11. follow Central Pollution Control Board (CPCB) guidelines for telecom site waste disposal	3	4	-	2
	PC12. assist in conducting periodic environmental audits to ensure sustainability compliance	3	3	-	2
	PC13. guide co-workers on eco-friendly practices and waste management policies at telecom sites	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
ONT	Optical Network Terminal
OLT	Optical Line Terminal
NOC	Network Operation Center
CCU	Charge Controller Unit
SPV	Solar Photovoltaic
TJB	Telephone Junction Box
OTDR	Optical Time Domain Reflectometer
UPS	Uninterruptible Power Supply
DG	Diesel Generators
CPCB	Central Pollution Control Board

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