



QUALIFICATION FILE

Smart Devices Installation Operator

☒ 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:

Telecom Sector Skill Council
Estel House, 3rd Floor,
Plot No: - 126, Sector - 44,
Gurugram, Haryana 122003

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Section 1: Basic Details

1.	Qualification Name	Smart Devices Installation Operator				
2.	Sector/s	Telecom Sector Skill Council				
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: QG-03-TL-00463-2023-V1.1-TSSC	Qualification Name of existing/previous version: AI-Devices Installation Operator			
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-00463-2025-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	The Smart Devices Installation Operator is responsible for the installation, configuration, and basic troubleshooting of smart devices in residential, commercial, or industrial settings. The role involves interpreting installation plans, following safety procedures, and ensuring connectivity and optimal functioning of smart systems. The operator works closely with clients and technical teams to ensure seamless deployment and customer satisfaction. All activities must comply with prescribed quality and operational standards.				
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <i>*Diploma in Electronics and Telecommunication, IT, CS, Data Science or AI/ML related fields</i> <i>** Relevant experience in installation, basic configuration, and testing of smart devices or platforms.</i> <i># Pre-requisite Training: Basic knowledge of Python and Data Structures</i> <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> </tbody> </table>		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)
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		<table border="1"> <tr> <td>1.</td><td>Grade 12 pass</td><td>No experience required</td></tr> <tr> <td>2.</td><td>Completed 2nd year of 3-year diploma (after 10th) *</td><td>No experience required</td></tr> <tr> <td>3.</td><td>Previous relevant Qualification of NSQF Level 3.5</td><td>1.5 years**</td></tr> <tr> <td>4.</td><td>Previous relevant Qualification of NSQF Level 3.0</td><td>3 years**</td></tr> </table>	1.	Grade 12 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**	4.	Previous relevant Qualification of NSQF Level 3.0	3 years**							
1.	Grade 12 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**																			
4.	Previous relevant Qualification of NSQF Level 3.0	3 years**																			
		Age: NA																			
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	13	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>120:00</td><td>120:00</td><td>150:00</td><td>-</td><td>390:00</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)	120:00	120:00	150:00	-	390:00	Online	-	-	-	-	-
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																
Classroom (offline)	120:00	120:00	150:00	-	390:00																
Online	-	-	-	-	-																
14.	Aligned to NCO/ISCO Code/s (if no code is available mention the same)	NCO-2015/7421.6102																			
15.	Progression path after attaining the qualification (Please show Professional and Academic progression)	Vertical Level 5: Machine Learning Architect																			

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 DGT/VSQ/N0101	
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.	Prepare for Installation of Smart Devices	TEL/N6615 & V3.0	Core	4	3	30:00	30:00	30:00	-	90:00	50	40	-	10	100	18
2.	Install Smart Devices as per Business Requirement	TEL/N6616 & V3.0	Core	4	4	20:00	40:00	60:00	-	120:00	30	60	-	10	100	18
3.	Troubleshooting and Maintenance of Smart Devices	TEL/N6612 & V3.0	Core	4	3	20:00	30:00	40:00	-	90:00	30	60	-	10	100	18
4.	Organise Work and Resources as per Health and Safety Standards	TEL/N9101 & V3.0	Non-Core	4	1	10:00	10:00	10:00	00:00	30:00	30	60	-	10	100	18
5.	Interact Effectively with Team Members and Customers	TEL/N9102 & V3.0	Non-Core	4	1	10:00	10:00	10:00	00:00	30:00	40	50	-	10	100	18
6.	Employability Skills (30 Hours)	DGT/VSQ/N010 1 & V1.0	Non-Core	4	1	30:00	-	-	-	30:00	20	30	-	-	50	10

S. No	NOS/Module Name	NOS/Module Code & Version <i>(if applicable)</i>	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 (%) <i>(if applicable)</i>
Duration (in Hours) / Total Marks					13	120:00	120:00	150:00	-	390:00	200	300	-	50	550	100

Elective NOS/s: Not Applicable

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.																
Duration (in Hours) / Total Marks																

Optional NOS/s: Not Applicable

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.																
Duration (in Hours) / Total Marks																

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 pass with specialization in Science/Electronics/Telecom /IT and AI/ML related domains and 4 years of relevant industry experience in Active Networks/IoT Domain OR Graduate with specialization in Science/Electronics/Telecom /IT and 1 year of relevant industry experience in Active Networks/IoT Domain
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Diploma after 12th pass with specialization in Science/Electronics/Telecom /IT and AI/ML related domains and 7 years of relevant industry experience in Active Networks/IoT Domain OR Graduate with specialization in Science/Electronics/Telecom /IT and 4 year of relevant industry experience in Active Networks/IoT Domain
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 pass with specialization in Science/Electronics/Telecom /IT and AI/ML related domains and 4 years of relevant industry experience in Active Networks/IoT Domain OR Graduate with specialization in Science/Electronics/Telecom /IT and 1 year of relevant industry experience in Active Networks/IoT Domain
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma after 12th pass with specialization in Science/Electronics/Telecom /IT and AI/ML related domains and 4 years of relevant industry experience in Active Networks/IoT Domain OR Graduate with specialization in Science/Electronics/Telecom /IT and 1 year of relevant industry experience in Active

		Networks/IoT Domain
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma after 12th pass with specialization in Science/Electronics/Telecom /IT and AI/ML related domains and 7 years of relevant industry experience in Active Networks/IoT Domain OR Graduate with specialization in Science/Electronics/Telecom /IT and 4 year of relevant industry experience in Active Networks/IoT Domain
4.	Assessment Mode (Specify the assessment mode)	Can be either in the classroom or online
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): No
4.	Number of Industry validation provided:
5.	Estimated nos. of persons to be trained and employed: 1000
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: Yes 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 (Mandatory)	Present
2.	Annexure: List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Present

3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	<i>Present</i>
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	<i>Present</i>
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is "Blended Learning")</i>	<i>Present</i>
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	<i>Present</i>
7.	Annexure: Acronym and Glossary <i>(Optional)</i>	<i>Present</i>
8.	Supporting Document: Model Curriculum <i>(Mandatory – Public view)</i>	<i>Present</i>
9.	Supporting Document: Career Progression <i>(Mandatory - Public view)</i>	<i>Present</i>
10.	Supporting Document: Occupational Map <i>(Mandatory)</i>	<i>Present</i>
11.	Supporting Document: Assessment SOP <i>(Mandatory)</i>	<i>Present</i>
12.	Any other document you wish to submit:	<i>Present</i>

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 AI-Device Installation Operator must possess a sound understanding of technical concepts such as data throughput, power requirements, and connectivity standards (e.g., LAN, WAN, Zigbee, MQTT). The individual is required to interpret technical specifications shared by customers and assess environmental conditions such as ambient temperature and interference sources to determine feasibility. The role demands familiarity with theoretical concepts behind IoT communication protocols, device behavior	The job role fits the Level 4 descriptor as it requires application of factual and theoretical knowledge in a specific domain. The operator uses defined procedures to assess site conditions, verify device compatibility, and interpret structured technical documentation, all of which require a conceptual understanding of AI device technology and installation standards.	4

	under varying workloads, and AI-driven functionalities like predictive alerts or voice command responses.		
Professional and Technical Skills/ Expertise/ Professional Knowledge	The role requires a range of professional and technical skills including handling testing tools like multimeters, cable testers, and crimping tools; performing diagnostics using mobile apps or open-source software; validating device communication protocols; and documenting network and power compatibility. Additionally, the operator must demonstrate ability to collect and validate data such as device usage statistics, workflow patterns, and failure logs. Familiarity with AI concepts like edge-device tuning and real-time monitoring, and skills in using planning tools and network mapping software, are essential.	The job involves selecting and applying appropriate tools, processes, and techniques to perform device installation, configuration, and troubleshooting. These activities fall within the NSQF Level 4 descriptor, which expects cognitive and practical skills to complete tasks in a predictable and structured context. The operator's ability to collect and analyze operational data, and to carry out routine calibration and configuration, aligns with this level.	4
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	The AI-Device Installation Operator must demonstrate a responsible, safety-first approach with the ability to work independently or under supervision. They are expected to maintain detailed performance and installation records, follow SOPs and safety standards, and coordinate with supervisors and customers. The individual should also exhibit readiness to adapt to evolving AI technologies and IoT innovations, as well as initiative in identifying site-level issues or customer needs. A customer-oriented mindset and a willingness to continuously upskill are important aspects of this role.	The NSQF Level 4 expectations are met as the job demands a combination of self-management and some responsibility for coordinating with others. The operator is responsible for delivering quality work outcomes and supporting the broader team goals. The level also recognizes the individual's readiness to take ownership of technical tasks and to adopt entrepreneurial thinking in handling customer-specific AI deployment challenges.	4
Broad Learning Outcomes/Core Skill	The operator must demonstrate effective communication skills to explain AI device functions and layout recommendations to customers using diagrams or apps. Core skills include basic numeracy for interpreting specifications and measuring parameters, documentation skills for maintaining reports and logs, and digital literacy to use software tools like Wireshark, mobile apps, and AI dashboards. The role also includes structured thinking to interpret customer requirements, record network configurations, and suggest viable installation strategies.	At Level 4, the NSQF describes individuals who can communicate clearly in routine and non-routine situations, maintain records, and apply basic mathematical and digital skills. The AI-Device Installation Operator meets this level by using appropriate tools and platforms to present solutions, record operational data, and assist customers in understanding AI system layouts and benefits.	4
Responsibility	The operator is responsible for end-to-end activities in the installation lifecycle—interpreting technical data, assessing site and hardware compatibility, coordinating with customers and supervisors, collecting and validating performance data, and documenting final solution architectures. They are expected to	The responsibility assigned aligns with NSQF Level 4 as it involves independent completion of work with minimal supervision and responsibility for managing specific job functions. The operator's role in providing accurate installations, conducting validations, and communicating	4

	follow predefined workflows while ensuring safety, accuracy, and customer satisfaction. The role includes alerting supervisors of any site-specific issues, and supporting customers during onboarding and troubleshooting. The individual must be dependable and accountable for the correct functioning of the installed AI systems.	clearly with stakeholders reflects the level of responsibility and autonomy expected at this level.	
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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.	Low-cost digital multimeter	Voltage: 0–600V AC/DC; Resistance: up to 20 MΩ; Continuity buzzer; Battery-powered	1
2.	Cable tester	Supports RJ45, RJ11; LED status indicators; Battery-operated	1
3.	Screwdriver set	Includes flat-head, Phillips, Torx; Magnetized tips; Insulated handles	2
4.	Wire stripper	Adjustable gauge: 10–22 AWG; Built-in cutter; Ergonomic grip	5
5.	Insulation tape	Width: 18 mm; Length: 10 m; Flame-retardant; PVC-based	5
6.	Label maker	Thermal printing; Tape width: 6–12 mm; Battery/USB powered	2
7.	Measuring tape	Length: 3–5 meters; Metric/Imperial scale; Lock mechanism	3
8.	Safety gloves	Material: Nitrile/latex-coated; Cut-resistant; Size: M/L	5 pairs
9.	Voltage detector	Non-contact; Voltage range: 90–1000V AC; LED indicator; Pocket clip	1
10.	Laptop with open-source planning tools	Minimum: Intel i5, 8GB RAM, 256GB SSD; Ubuntu/Windows with tools like Fritzing, QElectroTech	1
11.	Drill machine (basic)	Power: 500–700W; Chuck size: 10mm; Speed: 0–3000 RPM	3

12.	Wall plugs and screws	Size: 6mm x 40mm (standard); Nylon or plastic plugs; Zinc-coated screws	1
13.	RJ45 crimping tool	Supports 8P8C connectors; Built-in wire cutter/stripper	2
14.	Network cables	CAT5e/CAT6; UTP; Length: 1–10 meters; Pre-crimped or roll	5
15.	Mounting brackets	Material: Mild steel/plastic; Adjustable slots; Wall/ceiling compatible	5
16.	Basic CCTV installation kit	Includes power adapter, connectors, BNC cables, mounting hardware	1
17.	Wi-Fi router	Dual-band 2.4GHz/5GHz; 300–1200 Mbps; 2–4 LAN ports; WPA2 security	1
18.	Power extension board	4–6 sockets; Surge protector; 220–250V; 10A rated	2
19.	Plastic conduit	Diameter: 16–25 mm; Material: PVC; Flexible or rigid	2
20.	Cable ties	Length: 100–200 mm; Material: Nylon; Tensile strength: 8–15 kg	5
21.	Thermal scanner (low-cost handheld)	Temp range: -20°C to 380°C; IR resolution: 80×60 px; Battery-powered	1
22.	Vibration sensor kits (DIY)	Type: Piezo or SW-420 module; Output: Digital/Analog; 3.3V–5V input	1
23.	Arduino or Raspberry Pi with sensors	Raspberry Pi 3/4 or Arduino Uno; Includes motion, temp, and proximity sensors	2
24.	Mobile app for device health check	Android/iOS; Supports BLE/Wi-Fi device scan; Alerts and logs	1
25.	Basic analytics software (open-source)	Examples: Grafana, Prometheus; Data visualization; CSV/log input support	1
26.	Cleaning kit	Includes microfiber cloths, air blower, brush	2
27.	Contact cleaner spray	Quick-drying; Non-conductive; 250–400ml aerosol can	5
28.	Open-source network monitoring software	Tools like Wireshark, Nagios; Supports SNMP, TCP/UDP, packet	1

		capture	
29.	Mobile/tablet with monitoring apps	Android/iOS; Minimum: 3GB RAM; Preinstalled diagnostics apps	1
30.	Inexpensive IoT diagnostic tools	BLE/Wi-Fi dongles; USB interface; Diagnostic LED indicators	1
31.	Performance log sheet	Format: Printed or digital; Fields: Date, device ID, test result	1
32.	Portable UPS	Capacity: 600–1000 VA; Backup: 15–30 min; Input: 220V AC	2
33.	Power analyzer (basic)	Measures: Voltage, Current, Power Factor; LCD display; Clamp or plug-in type	2
34.	Smartphone with communication apps	Android/iOS; 4G capable; Apps like WhatsApp, MS Teams, Google Meet	1
35.	Headset with mic	Wired/Wireless; Noise-cancellation mic; 3.5mm jack or USB	2
36.	Notepad	A5 size; Ruled/unruled; Spiral or bound	5
37.	Printed checklist templates	A4 sheets; Task-specific; Includes installation, verification, handover steps	2
38.	Basic presentation board	Whiteboard or easel with sheets; Size: A2 or larger; Marker-compatible	2

Classroom Aids

The aids required to conduct sessions in the classroom are:

1. Laptops
2. Whiteboards and markers
3. Projector
4. Screen
5. Chart paper
6. AV equipment
7. Stationery

8. Telephone connection

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,HSI IDC 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, TSIC Limited, SEZ, Nanakramguda Village, Serilingampalli Mandal, Ranga Reddy District, Hyderabad – 500 032	+91 404 452 8000 +91 402 341 2310	-	-
3	Esquare India Pvt. Ltd.	MD ALI	Director Operation India & Asia Pacific	Park Landing 5AC-709,2nd Floor, 2nd Block, HRBR Layout Extension, Outer Ring Rd, Bengaluru, Karnataka -560043.	+ 91 - 8660834187	sales@esquareinfo.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

2025	1200				
2026	1680				
2027	2352				

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

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: 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	LCD, Projector, Laptop, MSOffice Suite, Flipchart, whiteboard, Markers, Wi-Fi connectivity	
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
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TEL/N6615: Prepare for Installation of Smart Devices	Analyse customer requirements and environment	15	13	-	4
	PC1. interpret customer-provided technical specifications, including device type, data throughput, power requirements, and connectivity standards.	3	2	-	1
	PC2. identify and document smart device functionalities requested by the customer, such as predictive alerts, voice command responsiveness, or real-time monitoring.	3	2	-	1
	PC3. conduct site feasibility assessments including structural compatibility, network availability (LAN/WAN/IoT protocols), and power sources.	3	3	-	1
	PC4. verify location-specific environmental constraints such as interference sources, ambient temperature, and physical obstructions.	3	2	-	-
	PC5. assess customer's existing hardware ecosystem (e.g., routers, sensors, hubs) for compatibility with proposed smart devices.	2	2	-	1
	PC6. report any site-level technical issues or constraints to the supervisor.	1	2	-	-
	Collect and review data for smart device installation	20	12	-	2
	PC7. collect operational datasets such as workflow patterns, device usage statistics, sensor inputs, and legacy system logs.	5	2	-	-
	PC8. validate collected data against technical benchmarks to determine latency tolerance, bandwidth needs, and device capacity limits.	5	2	-	-
	PC9. collect performance data and reports of existing devices (e.g., sensors, biometrics, etc.) if any, installed at the premises.	5	2	-	-
	PC10. identify anomalies or inconsistencies in historical performance or failure logs that impact device integration.	2	2	-	-
	PC11. record data formats, transmission protocols (e.g., MQTT, Zigbee, Bluetooth Mesh), and existing communication layers.	2	1	-	1

	PC12. collate and structure data to support smart device configuration and parameter tuning.	1	2	-	1
	<i>Suggest solution options to the customer</i>	15	15	-	4
	PC13. analyse customer's business processes and automation requirements to recommend suitable smart device applications (e.g., facial recognition for access control, sensor-based automation).	3	2	-	1
	PC14. map customer KPIs (e.g., energy savings, surveillance coverage, asset uptime) with smart device capabilities and integration endpoints.	3	1	-	1
	PC15. explain standard smart device features and use-cases (e.g., motion detection, voice activation) to the customer.	2	2	-	-
	PC16. suggest appropriate placement or usage scenarios for smart devices, based on customer environment and supervisor direction.	2	2	-	-
	PC17. recommend devices that address common customer needs like remote monitoring, home automation, or energy management.	1	2	-	1
	PC18. communicate predefined smart device use-case benefits (e.g., safety alerts, appliance control) to customers in simple terms.	1	2	-	1
	PC19. respond to basic customer queries about smart device functionality using product manuals or FAQs.	1	2	-	-
	PC20. assist customers in visualizing and explaining the recommended device layout using printed diagrams or app-based interfaces.	1	2	-	-
	PC21. document final solution architecture with detailed block diagrams, device lists, and logical data workflows for customer validation.	1	2	-	-
	Total	50	40	-	10
TEL/N6616: Install Smart	<i>Perform pre-installation checks and preparation</i>	5	6	-	1

Devices as per Business Requirement	PC1. inspect and verify the hardware against the Bill of Materials (BoM), including smart sensors, controllers, adaptors, mounting kits, and user manuals.	2	3	-	-
	PC2. validate device model, firmware version, and compatibility with customer infrastructure and integration requirements.	3	3	-	1
	<i>Install smart devices as per business model requirements</i>	23	49	-	8
	PC3. identify mounting zones based on coverage needs, field-of-view angles, lighting conditions, and device range requirements (e.g., motion sensors, smart cameras).	2	2	-	1
	PC4. recognize the components used in smart devices such as embedded processors, microcontrollers, and wireless communication modules.	2	2	-	1
	PC5. identify microprocessor boards (e.g., Raspberry Pi, Arduino, ESP32) used at the site and validate their suitability for deployment.	2	3	-	-
	PC6. assess the appropriate placement of environmental or occupancy sensors to meet business objectives like energy optimization or automated lighting.	1	3	-	1
	PC7. use hand and power tools such as rotary drill, stud finder, and fish tape to mount devices on walls, ceilings, or partitions.	-	3	-	-
	PC8. route and connect communication cables (e.g., Cat6, coaxial) into appropriate ports ensuring secure termination and minimal signal interference.	-	3	-	1
	PC9. establish and verify power supply using adaptors or PoE switches, and test voltage output and grounding with a multimeter.	-	3	-	-
	PC10. perform firmware updates via local interface or cloud console and verify checksums to ensure secure installation.	1	3	-	1
	PC11. initiate device provisioning through mobile apps or web portals,	2	3	-	-

	configuring parameters like MAC address, IP settings, and firmware sync.				
	PC12. connect devices to cloud platforms (e.g., AWS IoT, Azure IoT, or proprietary systems) using valid SSID and credentials.	2	3	-	-
	PC13. run diagnostics to verify smart features such as gesture recognition, environmental sensing, or command execution.	2	3	-	-
	PC14. test responsiveness of actuators and sensors using loopback commands, ping tests, and API calls.	1	3	-	1
	PC15. align visual devices like IP cameras or smart displays ensuring coverage for surveillance or facial/gesture control use cases.	2	3	-	-
	PC16. check wireless signal strength using tools (e.g., NetSpot, WiFi Analyzer) and ensure optimal connectivity with minimal loss.	1	3	-	1
	PC17. install add-ons like weatherproof covers, filters, or enclosures based on the deployment environment.	2	3	-	-
	PC18. verify performance of smart modules like temperature, humidity, accelerometer, gyroscope, and ensure data accuracy.	1	3	-	-
	<i>PC19.</i> conduct field tests for real-time functionality like motion-triggered alerts, voice control, or remote switching operations.	2	3	-	1
	<i>Perform routing and document smart device installation</i>	2	5	-	1
	PC20. lay structured cabling for power and data as per standards, ensuring segregation, safe routing, secure fastening, proper labeling, and inspection for damage, grounding issues, or missing surge protection.	-	3	-	1
	PC21. capture geotagged photos of installed devices, annotate them on digital layouts, and conduct a final walkthrough with the customer and supervisor to verify installation quality and compliance with the design plan.	2	2	-	-

	Total	30	60	-	10
TEL/N6612: Troubleshooting and Maintenance of Smart Devices	<i>Perform Pre-Installation Checks and Preparation</i>	8	14	-	3
	PC1. monitor telemetry and device analytics logs from smart devices or gateways (e.g., Raspberry Pi, ESP32, Arduino) to detect early signs of component degradation.	1	2	-	1
	PC2. execute scheduled diagnostics via OEM dashboards or smart device management platforms (e.g., AWS IoT Core, Azure IoT Central) to identify potential failures.	2	3	-	-
	PC3. analyze sensor data and operational usage trends to forecast potential wear and failure points in smart devices.	1	2	-	1
	PC4. track real-time smart device performance metrics such as response latency, connectivity loss, or signal interference and flag anomalies.	1	3	-	-
	PC5. assist in identifying high-risk or aging components based on Mean Time Between Failures (MTBF) and device usage logs for proactive servicing.	1	2	-	-
	PC6. interpret auto-generated alerts (e.g., battery low, sensor drift, signal drop) from smart devices and escalate/report as per defined protocols.	2	2	-	1
	<i>Troubleshoot Faults in Smart Devices and Run System Health Checks</i>	9	20	-	3
	PC7. use diagnostic tools or interfaces (e.g., serial logs, REST API queries, mobile app diagnostics) to isolate smart device faults.	1	3	-	1
	PC8. perform firmware re-installation, hard resets, or bootloader-level updates on embedded smart device platforms.	1	2	-	-
	PC9. help isolate issues in sensors, actuators, or modules (e.g., Zigbee, BLE, Wi-Fi) using diagnostic tools such as multimeters or logic analyzers.	1	2	-	-
	PC10. calibrate smart sensors (e.g., temperature, motion, air quality) using OEM software or configuration utilities.	1	3	-	1

PC11. test data transmission integrity across communication protocols (e.g., Wi-Fi, Zigbee, LoRa) for signal drops, delays, or jitter.	2	2	-	-
PC12. simulate smart device triggers (e.g., motion alerts, voice commands) to validate expected response and automation execution.	1	3	-	1
PC13. run diagnostics for memory faults, storage wear, or overheating using system monitoring tools or mobile applications.	1	3	-	-
PC14. decommission, reset, or replace non-functional or poorly performing smart device components following standard procedures.	1	2	-	-
<i>Optimize Smart Device Performance</i>	6	12	-	2
PC15. adjust detection thresholds, operational settings, or update reporting intervals to improve device responsiveness and efficiency.	1	3	-	-
PC16. update smart device firmware, drivers, or configuration files to fix bugs and enhance feature compatibility.	1	3	-	-
PC17. reduce network congestion by optimizing data flow through techniques such as selective data transmission or compression.	1	2	-	-
PC18. implement self-learning or adaptive configuration features that optimize performance based on usage history.	1	2	-	1
PC19. train users or support staff on recognizing device health indicators, running diagnostics, and basic troubleshooting.	2	2	-	1
<i>Maintain Documentation and Log Incident Requests</i>	4	9	-	2
PC20. maintain digital maintenance logs using tools such as CMMS, Excel macros, or ticketing systems like Jira/Freshdesk.	1	2	-	-
PC21. update asset metadata and smart platform health records on cloud dashboards or configuration systems.	1	2	-	1

	PC22. create structured incident reports including timestamps, error codes, log snapshots, and resolution notes.	1	3	-	-
	PC23. document detailed service and maintenance records aligned with audit and compliance requirements.	1	2	-	1
	<i>Implement virtual assistants and smart interfaces</i>	3	5	-	0
	PC24. configure alerts and automation workflows using smart assistants (e.g., Alexa, Google Assistant) or rule-based scripting tools (e.g., IFTTT, Node-RED).	1	3	-	-
	PC25. monitor interaction logs from voice-command or app-based smart interfaces to identify recurring errors or misconfigurations.	2	2	-	-
	Total	30	60	-	10
TEL/N9101: Interact Effectively with Team Members and Customers	<i>Maintain an organised, productive, and digitally compliant workspace</i>	6	13	-	2
	PC1. maintain a clean, clutter-free, and ergonomically safe workspace aligned with 5S principles	1	2	-	-
	PC2. follow designated workflow as per the organisational Standard Operating Procedures (SOPs)	2	3	-	-
	PC3. digitally log work completed, including time stamps, material usage, and issues faced	1	3	-	1
	PC4. track and update digital task checklists, inventories, or handovers through mobile/desktop apps	1	3	-	-
	PC5. identify delays, workflow inefficiencies, or material constraints and escalate appropriately.	1	2	-	1
	<i>Adhere to health, safety, and environmental guidelines</i>	13	24	-	5

PC6. comply with organisational health, safety, and environment (HSE) policies at all times	1	3	-	1
PC7. use personal protective equipment (PPE) such as ESD wrist straps, gloves, masks, and safety footwear	1	3	-	-
PC8. report any breaches in safety protocols, near misses, or unsafe practices immediately to supervisor/concerned authorities	2	2	-	1
PC9. detect hazards, including spillage, loose wiring, excessive noise, or EMI sources and respond as per SOP	1	3	-	1
PC10. follow lockout/tagout procedures when working around electrical or moving parts	2	3	-	-
PC11. adhere to safe lifting techniques, workstation posture norms, and equipment handling procedures	2	3	-	-
PC12. handle tools and heavy components using trolleys or assistive equipment when needed	1	3	-	1
PC13. identify early signs of physical or mental fatigue and report for preventive action	2	2	-	1
PC14. inform supervisor of symptoms related to communicable diseases or unsafe coworker behaviour.	1	2	-	-
<i>Conserve energy and manage resources efficiently</i>	7	14	-	2
PC15. minimise wastage of consumables, components, and materials by adhering to industry best practices	1	3	-	-
PC16. use electricity, lighting, and climate-control systems responsibly	1	3	-	-
PC17. power off equipment, tools, and terminals when not in use	1	2	-	-
PC18. ensure routine maintenance, cleaning, and calibration of	1	2	-	1

	machines/tools to improve performance				
	PC19. report leakages, overheating, or malfunctions immediately for rectification	2	2	-	1
	PC20. use digital tools to monitor and reduce environmental footprint, where applicable.	1	2	-	-
	<i>Implement safe and sustainable waste disposal practices</i>	4	9	-	1
	PC21. segregate and dispose of hazardous, recyclable, and general waste as per guidelines	2	3	-	-
	PC22. deposit e-waste or used batteries at designated collection points following e-waste protocols	1	3	-	-
	PC23. 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	<i>Interact Effectively with Superiors</i>	11	13	-	2
	PC1. receive work requirements from superiors and customers and interpret them correctly.	3	3	-	-
	PC2. inform the supervisor and/or concerned person about any unforeseen disruptions or delays.	2	3	-	-
	PC3. participate in decision making by providing facts and figures, giving/accepting constructive suggestions.	3	4	-	1
	PC4. rectify errors as per feedback and ensure the errors are not repeated.	3	3	-	1
	<i>Interact Effectively with Colleagues and Customers</i>	16	21	-	4
	PC5. comply with organization's policies and procedures for working with	3	4	-	1

	team members.				
	PC6. communicate professionally using appropriate modes of communication such as face-to-face, telephonic, and written.	3	3	-	1
	PC7. respond to queries and seek/provide clarifications if required.	3	3	-	1
	PC8. coordinate with the team to integrate work as per requirements.	2	4	-	-
	PC9. resolve conflicts within the team/with customers to achieve smooth workflow.	2	3	-	-
	PC10. recognize emotions accurately in self and others to build good relationships.	3	4	-	1
	PC11. prioritize team and organizational goals above personal goals.	13	16	-	4
	<i>Respect Differences of Gender and Ability</i>	3	3	-	1
	PC12. maintain a conducive environment for all genders at the workplace.	2	3	-	-
	PC13. encourage appropriate behavior and conduct with people across genders.	3	4	-	1
	PC14. assist team members with disabilities in overcoming any challenges faced in work.	2	3	-	1
	PC15. promote equal opportunity and participation for all in meetings, decision-making, and teamwork.	3	3	-	1
	NOS Total	40	50	-	10
DGT/VSQ/ N101 Employability Skills (30 Hrs)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC 1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
	<i>Constitutional values – Citizenship</i>	1	1	-	-

PC 2. identify constitutional values, civic rights, duties, personal values, ethics and environmentally sustainable practices	-	-	-	-
<i>Becoming a Professional in the 21st Century</i>	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.	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC 4. speak with others using some basic English phrases or sentences	-	-	-	-
<i>Communication Skills</i>	1	1	-	-
PC 5. follow good manners while communicating with others	-	-	-	-
PC 6. work with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	1	-	-
PC 7. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC 8. report any issues related to sexual harassment	-	-	-	-
<i>Financial and Legal Literacy</i>	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	-	-	-	-
<i>Essential Digital Skills</i>	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	-	-	-	-
	<i>Entrepreneurship</i>	3	5	-	-
	PC 14. identify and assess opportunities for potential business	-	-	-	-
	PC 15. identify sources for arranging money and associated financial and legal challenges	-	-	-	-
	<i>Customer Service</i>	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	-	-	-	-
	<i>Getting ready for apprenticeship & Jobs</i>	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		200	300	-	50

Annexure: 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 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:

- Check the Assessment location, date and time
- 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.

3. Assessment Quality Assurance levels/Framework:

- Question bank is created by the Subject Matter Experts (SME) are verified by the other SME
- Questions are mapped to the specified assessment criteria
- Assessor must be ToA certified & trainer must be ToT Certified

4. Types of evidence or evidence-gathering protocol:

- Time-stamped & geotagged reporting of the assessor from assessment location
- Centre photographs with signboards and scheme specific branding

5. Method of verification or validation:

- Surprise visit to the assessment location

6. Method for assessment documentation, archiving, and access

- Hard copies of the documents are stored

On the Job:

1. Each module (which covers the job profile of Automotive Service Assistant Technician) will be assessed separately.
2. The candidate must score 60% in each module to successfully complete the OJT.
3. Tools of Assessment that will be used for assessing whether the candidate is having desired skills and etiquette of dealing with customers, understanding needs & requirements, assessing the customer and perform Soft Skills effectively:
 - Videos of Trainees during OJT
 -

4. Assessment of each Module will ensure that the candidate is able to:

- Effective engagement with the customers
- Understand the working of various tools and equipment
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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

NSQC Approved