



QUALIFICATION FILE

AI & ML – Jr. Telecom Data Analyst

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

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

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

NCrF/NSQF Level: 4

Submitted By:

Submitting Body Name: Telecom Sector Skill Council

Submitting Body Contact Details:

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Table of Contents

Section 1: Basic Details	3
Section 2: Module Summary	6
NOS/s of Qualifications	6
Mandatory NOS/s:	6
Assessment - Minimum Qualifying Percentage	6
Section 3: Training Related	7
Section 4: Assessment Related	7
Section 5: Evidence of the need for the Qualification	8
Section 6: Annexure & Supporting Documents Check List	8
Annexure: Evidence of Level	10
Annexure: Tools and Equipment (Lab Set-Up)	12
Annexure: Industry Validations Summary	16
Annexure: Training & Employment Details	16
Annexure: Blended Learning	18
Annexure: Detailed Assessment Criteria	19
Annexure: Assessment Strategy	30
Annexure: Acronym and Glossary	32

Section 1: Basic Details

1.	Qualification Name	AI & ML - Jr. Telecom Data Analyst										
2.	Sector/s	Telecom										
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: QG-04-TL-00467-2023-V1.1-TSSC	Qualification Name of existing/previous version: AI & ML – Jr. Telecom Data Analyst									
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-00467-2025-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	An AI & ML – Jr. Telecom Data Analyst supports the implementation of artificial intelligence solutions within telecom operations by collecting, organizing, and analyzing large-scale telecom datasets. The individual in this role assist in developing insights using AI/ML models to improve network performance, customer experience, and operational efficiency.										
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <i>*Relevant experience in basic data handling, data annotation or labeling data validation, formatting, cleaning, or pattern identification), basic programming exposure (e.g., Python, SQL), experience working with telecom reports, customer logs, or usage data in support or MIS roles.</i> <i>**Diploma in Computer Science, IT, Electronics and Communication, Data Science/AI & ML, Applied Statistics or Mathematics.</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> <tr> <td>1</td> <td>12th grade 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> </tbody> </table>		S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)	1	12th grade pass	No experience required	2	Completed 2nd year of 3-year diploma** (after 10th)	No experience required
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)										
1	12th grade pass	No experience required										
2	Completed 2nd year of 3-year diploma** (after 10th)	No experience required										

		3	11th Grade Pass	1 year relevant experience*																			
		4	Previous relevant Qualification of NSQF Level 3.5	1.5 years of relevant experience*																			
		5	Previous relevant Qualification of NSQF Level 3	3 years of relevant experience*																			
		b. Age: NA																					
10.	Credits Assigned to this Qualification, Subject to Assessment (as per National Credit Framework (NCrF))	15	11. Common Cost Norm Category (I/II/III) (wherever applicable): I																				
12.	Any Licensing requirements for Undertaking Training on This Qualification (wherever applicable)	NIL																					
13.	Training Duration by Modes of Training Delivery (Specify Total Duration as per selected training delivery modes and as per requirement of the qualification)	☒ Offline ☐ Online ☐ Blended <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>150:00</td><td>150:00</td><td>150:00</td><td>-</td><td>450:00</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)	150:00	150:00	150:00	-	450:00	Online	-	-	-	-	-
Training Delivery Modes	Theory (Hours)	Practical (Hours)	OJT Mandatory (Hours)	OJT Recommended (Hours)	Total (Hours)																		
Classroom (offline)	150:00	150:00	150:00	-	450:00																		
Online	-	-	-	-	-																		
14.	Aligned to NCO/ISCO Code/s (if no code is available mention the same)	NCO-2015/2523.6602																					
15.	Progression path after attaining the qualification (Please show Professional and Academic progression)	Vertical Progression: ● NSQF Level 4.5 – AI & ML- Telecom Data Analyst ● NSQF Level 5 – Machine Learning (ML) Engineer																					
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 <i>(Specify the NOS/Module which covers it)</i>	☒ 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 <i>(In case of CS or MS, provide details of both Lead AB & Supporting ABs)</i>	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/N SQF 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.	Collect Data Using AI Tools	TEL/N6607 & v3.0	Core	4	4	30:00	40:00	50:00	-	120:00	30	60	-	10	100	18
2.	Analyse Data using AI Tools and Utilize Data in Business Productivity	TEL/N6608 & v3.0	Core	4	4	30:00	40:00	50:00	-	120:00	30	60	-	10	100	18
3.	Support Implementation of AI Solutions in Telecom Operations	TEL/N6609 & v3.0	Core	4	4	40:00	50:00	30:00	-	120:00	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	-	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	-	30:00	40	50	-	10	100	18
6.	Employability Skills (30 Hours)	DGT/VSQ/N0101 & v1.0	Non-Core	4	1	30:00	-	-	-	30:00	20	30	-	-	50	10
Duration (in Hours) / Total Marks					15	150:00	150:00	150:00	-	450:00	180	320	-	50	550	100

Assessment - Minimum Qualifying PercentagePlease specify **any one** of the following:

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

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

Section 3: Training Related

1.	Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Diploma after 12th Class in Computer Science, Electronics, IT or Telecommunications with 2 years of relevant industry experience in AI/ML model development or deployment, Telecom data analysis or telecom OSS/BSS environments and 1 year of training experience Or Graduate in Computer Science, Electronics, Telecommunications, IT or Applied mathematics / statistics with 2 years of relevant industry experience in AI/ML model development or deployment, Telecom data analysis or telecom OSS/BSS environments. Or MCA with specialization in Data Science/Artificial Intelligence/Machine Learning
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Diploma after 12th Class in Computer Science, Electronics, IT or Telecommunications with 5 years of relevant industry experience in AI/ML model development or deployment, Telecom data analysis or telecom OSS/BSS environments and 4 years of training experience Or Graduate in Computer Science, Electronics, Telecommunications, IT or Applied mathematics / statistics with 5 years of relevant industry experience in AI/ML model development or deployment, Telecom data analysis or telecom OSS/BSS environments. Or MCA with specialization in Data Science/Artificial Intelligence/Machine Learning
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) <i>(as per NCVET guidelines)</i>	Diploma after 12th Class in Computer Science, Electronics, IT or Telecommunications with 2 years of relevant industry experience in AI/ML model development or deployment, Telecom data analysis or telecom OSS/BSS environments and 1 year of assessment experience Or Graduate in Computer Science, Electronics, Telecommunications, IT or Applied mathematics / statistics with 2 years of relevant industry experience in AI/ML model development or deployment, Telecom data analysis or telecom OSS/BSS environments. Or MCA with specialization in Data Science/Artificial Intelligence/Machine Learning
2.	Proctor's Qualification and experience in relevant sector (in years) <i>(as per NCVET guidelines)</i>	Diploma after 12th Class in Computer Science, Electronics, IT or Telecommunications with 2 years of relevant industry experience in AI/ML model development or deployment, Telecom data analysis or telecom OSS/BSS environments and 1 year of assessment experience Or Graduate in Computer Science, Electronics, Telecommunications, IT or Applied mathematics / statistics with 2 years of relevant industry experience in AI/ML model development or deployment, Telecom data analysis or telecom OSS/BSS environments. Or MCA with specialization in Data Science/Artificial Intelligence/Machine Learning
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) <i>(as per NCVET guidelines)</i>	Diploma after 12th Class in Computer Science, Electronics, IT or Telecommunications with 5 years of relevant industry experience in AI/ML model development or deployment, Telecom data analysis or telecom OSS/BSS environments and 4 years of relevant industry experience Or Graduate in Computer Science, Electronics, Telecommunications, IT or Applied mathematics / statistics with 5 years of relevant industry experience in AI/ML model development or deployment, Telecom data analysis or telecom OSS/BSS environments. Or MCA with specialization in Data Science/Artificial Intelligence/Machine Learning
4.	Assessment Mode <i>(Specify the assessment mode)</i>	Offline or Blended
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): Yes
2.	Latest Market Research Reports or any other source (not older than 2 years) (Yes/No): Yes
3.	Government /Industry initiatives/ requirement (Yes/No): Yes
4.	Number of Industry validation provided: 5
5.	Estimated nos. of persons to be trained and employed: 35000
6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: If "No", why: Approved

Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors <i>(Mandatory)</i>	Yes
2.	Annexure: List of tools and equipment relevant for qualification <i>(Mandatory, except in case of online course)</i>	Yes
3.	Annexure: Detailed Assessment Criteria <i>(Mandatory)</i>	Yes
4.	Annexure: Assessment Strategy <i>(Mandatory)</i>	Yes
5.	Annexure: Blended Learning <i>(Mandatory, in case selected Mode of delivery is "Blended Learning")</i>	No
6.	Annexure: Multiple Entry-Exit Details <i>(Mandatory, in case qualification has multiple Entry-Exit)</i>	Yes
7.	Annexure: Acronym and Glossary <i>(Optional)</i>	Yes
8.	Supporting Document: Model Curriculum <i>(Mandatory – Public view)</i>	Yes
9.	Supporting Document: Career Progression <i>(Mandatory - Public view)</i>	Yes

10.	Supporting Document: Occupational Map <i>(Mandatory)</i>	Yes
11.	Supporting Document: Assessment SOP <i>(Mandatory)</i>	Yes
12.	Any other document you wish to submit:	No

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	The AI & ML – Jr. Telecom Data Analyst, aligned to NSQF Level 4, demonstrates specialized knowledge and understanding of telecom datasets and AI/ML concepts relevant to the domain. The individual possesses proficiency in data various types along with a working understanding of Python programming, AI tools, machine learning algorithms, and data visualization techniques using platforms like Tableau or Excel. The job role demands time and quality management, data interpretation, and a basic understanding of CI/CD, containerization (Docker), API integration, and model deployment protocols under supervision. This knowledge enables the individual to assist in the end-to-end AI model lifecycle — from data preparation to performance monitoring — supporting productivity improvements across telecom operations.	The job role of AI & ML – Jr. Telecom Data Analyst aligns with NSQF/NCrF Level 4 in terms of professional theoretical knowledge by equipping the individual with specialized conceptual understanding of AI/ML fundamentals, telecom data types, and standard tools such as Python, SQL, Docker, and REST APIs. The role involves applying established techniques for data preparation, model evaluation, and system integration in defined but dynamic telecom contexts. This corresponds to Level 4, which emphasizes clear theoretical knowledge of processes, enabling the individual to execute tasks with precision while understanding the broader application of AI in telecom operations.	4
Professional and Technical Skills/ Expertise/ Professional Knowledge	The AI & ML – Jr. Telecom Data Analyst at NSQF Level 4 possesses professional and technical skills to independently carry out data-related tasks using AI tools and Python-based libraries. The individual is proficient in	The job role of AI & ML – Jr. Telecom Data Analyst relates to NCrF/NSQF Level 4 in terms of professional and technical skills by requiring the individual to apply domain-specific knowledge and tools to perform data	4

	data cleaning, transformation, and analysis using tools like Pandas, NumPy, Scikit-learn, and SQL. They support model deployment processes through basic containerization (Docker), REST API configuration, and data pipeline integration. The role also requires the ability to interpret ML model outputs using standard evaluation metrics and visualize insights through dashboards, ensuring accuracy, consistency, and regulatory compliance. These skills align with Level 4, reflecting the ability to perform technical, procedural tasks with precision in familiar and defined contexts, with limited supervision.	handling, model monitoring, and basic AI integration tasks in telecom environments. The individual demonstrates expertise in using Python libraries, ML algorithms, containerization tools, and visualization platforms to execute clearly defined technical procedures. This aligns with Level 4, which emphasizes the ability to carry out specialized tasks with technical precision, using a combination of procedural understanding and domain-relevant tools under limited supervision.	
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	The AI & ML – Jr. Telecom Data Analyst at NSQF Level 4 demonstrates employment readiness through the ability to follow structured processes, meet deadlines, and adapt to evolving telecom technologies and AI tools. The individual applies problem-solving and analytical thinking to interpret data and generate insights, while maintaining quality and efficiency. With a focus on continuous learning, they show initiative in handling assigned tasks, documenting findings, and collaborating within teams. The role nurtures a professional mindset with emerging entrepreneurial skills such as solution orientation, data-driven decision-making, and digital fluency, aligning with NSQF Level 4 expectations of independent work, guided decision-making, and process adherence.	The job role of AI & ML – Jr. Telecom Data Analyst aligns with NCrF/NSQF Level 4 for employment readiness and professional skills by preparing individuals to work independently on defined tasks, apply AI tools in real-world telecom scenarios, and adapt to evolving technologies. The role develops a solution-oriented mindset, effective collaboration, and time management—key traits for workplace readiness. It also fosters emerging entrepreneurial abilities such as problem-solving, innovation, and data-driven decision-making. This matches Level 4 expectations, where individuals demonstrate competence in routine and non-routine tasks, professional conduct, and readiness for both employment and entrepreneurial pathways	4
Broad Learning Outcomes/Core Skill	The AI & ML – Jr. Telecom Data Analyst at NSQF Level 4 demonstrates core skills by applying foundational mathematical and analytical reasoning to telecom datasets, using tools like Python, Excel, and SQL. The individual interprets technical data, visualizes patterns,	The job role of AI & ML – Jr. Telecom Data Analyst aligns with NCrF/NSQF Level 4 core skills by equipping the learner with the ability to interpret telecom data, apply mathematical reasoning, and use digital tools like Python, Excel, and SQL for structured data analysis.	4

	and communicates findings effectively through reports and dashboards. They follow standard operating procedures and comprehend work-related documents, model logs, and configuration files with clarity. These learning outcomes align with NSQF Level 4, which emphasizes the application of basic facts, principles, and processes in familiar settings, alongside effective written and oral communication, data interpretation, and digital literacy for professional tasks.	The role involves reading and understanding technical documents, creating dashboards, and presenting findings in clear, user-friendly formats. This reflects Level 4 expectations where individuals use basic facts, principles, and processes in familiar contexts, supported by sound communication, numeracy, and digital literacy skills.	
Responsibility	The AI & ML – Jr. Telecom Data Analyst at NSQF Level 4 is responsible for executing defined tasks such as data collection, preprocessing, model monitoring, and basic analysis with accuracy and accountability. The individual works under limited supervision and takes ownership of maintaining data integrity, documenting processes, and supporting model deployment activities in alignment with project timelines and quality standards. This reflects Level 4 responsibility criteria, where individuals are independently accountable for their own work, contribute to team outcomes, and are capable of handling routine and non-routine tasks within clearly defined parameters.	The qualification outcomes of AI & ML – Jr. Telecom Data Analyst match NSQF Level 4 responsibility descriptors as the individual is expected to take responsibility for their own work, maintain data accuracy, follow defined procedures, and assist in AI model deployment and monitoring. While working under limited supervision, they contribute to team outcomes, identify errors or anomalies, and ensure process compliance. This level of responsibility fits NSQF Level 4, which emphasizes individual accountability and participation in collaborative tasks with clarity and precision.	4

Annexure: Tools and Equipment (Lab Set-Up)

List of Tools and Equipment

Batch Size: 30

S. No.	Tool / Equipment Name	Specification	Quantity for specified Batch size
1.	NumPy Library	Latest stable version installed in Python environment	2 (user licenses/installations)
2.	API Access Keys	Secure, individual API keys for data access (e.g., REST, telecom APIs)	2 (shared)
3.	Cloud Storage Platforms (Google Drive, AWS, Azure)	15 GB Google Drive / Free-tier AWS/Azure accounts with basic storage access	2 (shared)
4.	JSON Files	Sample JSON datasets (telecom structured/unstructured data)	2 sets (shared)
5.	Telecom Data Samples (CDRs, CRM Logs, QoS logs)	Anonymized datasets in CSV/JSON/XML format	2 sets (shared)
6.	Natural Language Query Tool	Licensed or open-source NLQ tools (e.g., Power BI Q&A, ChatGPT API)	2 (shared)
7.	AI-enabled Data Collection Tools	Installed versions of Talend Open Studio / RapidMiner / Knime	2 (shared)
8.	Data Cleaning Scripts	Pre-written Python scripts with Pandas/NumPy for data preprocessing	2 sets (shared)
9.	Python IDE (Jupyter/Google Colab)	Pre-configured Jupyter Notebook or Google Colab access	2 (shared)
10.	MS Excel	MS Office 2016 or later with Excel installed	2 (shared)
11.	Tableau	Tableau Public or Desktop (Free or Trial Version)	2 (shared)

12.	Power BI	Power BI Desktop / Power BI Service (Free/Pro licenses)	2 (shared)
13.	AI/ML Sandbox Platforms	Google Cloud AutoML / IBM Watson Studio free-tier accounts	2 (shared)
14.	NLQ/NLG tool demo (Power BI Q&A)	Configured Power BI dashboards with Q&A enabled	2 (shared)
15.	Data storyboarding templates	Digital templates in PPT/Canva/Word	2 sets (shared)
16.	Docker	Docker Desktop/Engine installed and configured	2 (shared)
17.	Kubernetes	Minikube or lightweight Kubernetes setup for testing	2 (shared)
18.	MLFlow	MLFlow server setup with local or remote tracking URI	2 setups
19.	Git	Installed Git client (v2.30+)	2
20.	GitLab or GitHub	Accounts for version control and repository access	2
21.	VS Code	Latest stable version with Python, Git, Docker, and Jupyter extensions	2
22.	REST API testing tool (Postman)	Postman v10+ installed	2 (shared)
23.	Grafana	Grafana OSS installed and connected to metrics source	2 setups
24.	Prometheus	Prometheus server configured to capture system/model metrics	2 setups
25.	Python Libraries/Frameworks	Pandas, Scikit-learn, TensorFlow, PyTorch, ONNX installed via pip	2

26.	DVC	Data Version Control tool (DVC) CLI installed	2 (shared)
27.	SQL engine (MySQL/PostgreSQL)	Local/PostgreSQL/MySQL setup (v12+) with sample telecom DB	2 (shared)
28.	YAML/JSON editors	Online/offline editors (e.g., VS Code, JSONLint, YAML Formatter)	2 (shared)
29.	Network simulator (for testbed environment)	Lightweight emulator (e.g., GNS3, Cisco Packet Tracer)	1 setup
30.	Telecom OSS/BSS integration sandbox	Simulated OSS/BSS test environment or dataset mockup	1 setup
31.	Feedback forms	Digital/printed forms (self, peer, trainer assessments)	30
32.	UPS	600–1000VA backup for lab systems	2 units
33.	Scanner cum Printer	All-in-one scanner-printer (Laser or Inkjet)	1 unit
34.	ESD Wrist Straps	Anti-static wrist bands for safe handling of electronic equipment	5
35.	PPE (gloves, goggles, reflective vests, boots)	ISI-marked safety gear for lab/field use	2 sets (for demos)
36.	First Aid Kit	Standard workplace first aid kit	1 kit
37.	Waste Bins (Recyclable, Non-recyclable, Hazardous)	Colour-coded bins (Green, Blue, Red/Yellow)	3 bins
38.	Fire Extinguisher	ABC or CO2 type (2–5 kg)	1 unit
39.	Digital Logbook or Task Management App	Online log or task tracking tool (e.g., Trello, Notion)	1 shared access
40.	Mobile/Tablet Device	Android/iOS device with internet for cloud/app access	2 units (shared)

41.	Sample E-waste Materials	Discarded electronics for e-waste awareness sessions	1 set (shared)
42.	Cleaning Supplies	Surface sanitizers, wipes, cloths	1 kit
43.	Tool Trolley	Mobile trolley with compartments	1 unit
44.	Lockout/Tagout equipment	Lock kits and tags for equipment safety	1 set
45.	Communication tools	Internet, intercom, WhatsApp, email	1 per lab/trainer

Classroom Aids

The aids required to conduct sessions in the classroom are:

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

Annexure: Industry Validations Summary

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

S. No	Organization Name	Representative Name	Designation	Contact Address	Contact Phone No	E-mail ID	LinkedIn Profile (if available)
1	Altruist Technologies Private Limited	Mr. Manik Roy	-	Plot No.2, Sector-22, HSIIDC IT Park, Panchkula, Haryana-134109	0172-2970008	careers@altruistindia.com	-
2	Virtusa Consulting Services Private Limited	Mr. Sundararajan Narayanan	Chief People Officer & Global Head of Human Resource	Sy No. 115/Part, Plot No. 10, TSIIIC Limited, SEZ, Nanakramguda Village, Serilingampalli Mandal, Ranga Reddy District, Hyderabad – 500 032	+91 404 452 8000 +91 402 341 2310	-	-
3	Esquire 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@esquireinfo.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	1661					
2026	2325					
2027	3255					

Data to be provided year-wise for next 3 years

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

Qualification Version	Year	Total Candidates				Women				People with Disability			
		Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed	Trained	Assessed	Certified	Placed

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

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

- 1.
- 2.

Content availability for previous versions of qualifications: NA

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

Languages in which Content is available: NA

Annexure: Blended Learning

Blended Learning Estimated Ratio & Recommended Tools: NA

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

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

S. No.	Select the Components of the Qualification	List Recommended Tools – for all Selected Components	Offline: Online Ratio
1	☐ Theory/ Lectures - Imparting theoretical and conceptual knowledge		
2	☐ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners		
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: 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/N6607: Collect Data Using AI Tools	<i>Define scope and identify data requirements</i>	4	8	-	1
	PC 1. interpret telecom business problems to define the scope and objectives for data collection.	1	3	-	-
	PC 2. identify relevant telecom data types and formats (e.g., CDRs, logs, CRM data) aligned with AI/ML use cases.	1	2	-	-
	PC 3. determine the type, structure, and source of data required to address the defined scope.	2	3	-	1
	<i>Collect data using AI tools and technologies</i>	9	20	-	3
	PC 4. load datasets from various sources (e.g., CSV, Excel, APIs, real-time feeds) using AI-enabled tools or scripts.	2	4	-	-
	PC 5. access and extract fields from telecom datasets using Python libraries such as Pandas and NumPy.	2	4	-	1
	PC 6. collect data from cloud servers, telecom APIs, and structured databases using automated AI tools.	2	4	-	-
	PC 7. extract information from datasets in an intuitive format using Natural Language Query (NLQ) tools.	1	4	-	1
	PC 8. store, organise, and share collected telecom data using cloud platforms (e.g., Google Drive, AWS, Azure).	2	4	-	1
	<i>Clean, transform, and prepare data for analysis</i>	9	18	-	4
	PC 9. identify and correct missing values, duplicates, and corrupted records using appropriate AI tools or scripts.	1	3	-	1
	PC 10. normalise and format datasets through encoding, renaming, or transforming data columns.	2	4	-	1

	PC 11. remove outliers or anomalies in network data using statistical or AI-based techniques.	2	3	-	-
	PC 12. write Python scripts to automate basic data cleaning and transformation tasks.	2	4	-	1
	PC 13. apply Natural Language Generation (NLG) and AI-based methods to categorise or summarise data.	2	4	-	1
	<i>Validate and structure data for ML applications</i>	8	14	-	2
	PC 14. select appropriate attributes or features from the dataset relevant to the defined ML objective.	2	3	-	-
	PC 15. convert files (e.g., JSON to CSV) to ensure compatibility with downstream ML workflows.	2	3	-	1
	PC 16. validate the completeness and usability of the final dataset using AI-based validation tools.	2	3	-	-
	PC 17. ensure telecom data handling complies with regulatory and ethical guidelines (e.g., TRAI).	1	2	-	-
	PC 18. create structured, analysis-ready datasets for applications.	1	3	-	1
	NOS Total	30	60	-	10
TEL/N6608: Analyse Data using AI Tools and Utilize Data in Business Productivity	<i>Prepare and analyse telecom data using AI tools</i>	8	13	-	3
	PC 1. identify trends and anomalies in telecom datasets using statistical or AI tools.	1	2	-	1
	PC 2. classify telecom data using machine learning algorithms like decision trees and logistic regression.	2	2	-	-
	PC 3. perform clustering using K-means or similar techniques to segment customer or usage data.	2	3	-	1
	PC 4. analyse telecom data using AI-based tools to generate meaningful insights for business planning.	1	3	-	-
	PC 5. evaluate datasets using model metrics such as accuracy, precision, recall, and F1-score.	2	3	-	1
	<i>Generate and present business insights using visualisation tools</i>	7	17	-	2
	PC 6. create dashboards to represent telecom KPIs such as dropped calls, ARPU, and customer churn.	1	3	-	-

PC 7. use visualisation tools (e.g., Excel, Tableau) to plot data and highlight patterns for stakeholders.	2	3	-	1
PC 8. apply NLQ and NLG tools to extract and narrate data-driven insights in user-friendly language.	2	4	-	-
PC 9. interpret AI-generated patterns to support marketing, customer service, or operational decisions.	1	4	-	-
perform predictive analytics based on past data to anticipate network behaviour or customer actions.	1	3	-	1
<i>Create and automate business intelligence outputs</i>	<i>8</i>	<i>16</i>	<i>-</i>	<i>3</i>
PC 10. automate the generation of business reports using augmented analytics tools.	1	3	-	1
PC 11. design and structure business intelligence reports using storytelling techniques and clear visuals.	2	3	-	-
PC 12. use AI-assisted platforms to perform trend analysis across various geographic or service parameters.	1	4	-	-
PC 13. conduct full-cycle analysis from data extraction through insights to business recommendations.	2	3	-	1
PC 14. classify and structure data for business intelligence in a format suitable for downstream use.	2	3	-	1
<i>Apply AI analytics for productivity and decision support</i>	<i>7</i>	<i>14</i>	<i>-</i>	<i>2</i>
PC 15. identify opportunities for improving telecom operations using AI-based insights.	2	2	-	-
PC 16. collaborate with stakeholders to validate insights and align them with business needs.	1	3	-	1
monitor and improve ongoing marketing, service, or operational programs using AI analytics.	1	3	-	-
PC 17. apply business logic to interpret findings and support data-driven decisions.	1	3	-	-
PC 18. present strategic recommendations based on AI-enabled telecom analytics.	2	3	-	1
Total	30	60	-	10
<i>Maintain an organised, productive, and digitally compliant workspace</i>	<i>6</i>	<i>13</i>	<i>-</i>	<i>2</i>

TEL/N9101: Organise Work and Resources as per Health and Safety Standards	PC 1. maintain a clean, clutter-free, and ergonomically safe workspace aligned with 5S principles	1	2	-	-
	PC 2. follow designated workflow as per the organisational Standard Operating Procedures (SOPs)	2	3	-	-
	PC 3. digitally log work completed, including time stamps, material usage, and issues faced	1	3	-	1
	PC 4. track and update digital task checklists, inventories, or handovers through mobile/desktop apps	1	3	-	-
	PC 5. identify delays, workflow inefficiencies, or material constraints and escalate appropriately.	1	2	-	1
	<i>Adhere to health, safety, and environmental guidelines</i>	<i>13</i>	<i>24</i>	<i>-</i>	<i>5</i>
	PC 6. comply with organisational health, safety, and environment (HSE) policies at all times	1	3	-	1
	PC 7. use personal protective equipment (PPE) such as ESD wrist straps, gloves, masks, and safety footwear	1	3	-	-
	PC 8. report any breaches in safety protocols, near misses, or unsafe practices immediately to supervisor/concerned authorities	2	2	-	1
	PC 9. detect hazards, including spillage, loose wiring, excessive noise, or EMI sources and respond as per SOP	1	3	-	1
	PC 10. follow lockout/tagout procedures when working around electrical or moving parts	2	3	-	-
	PC 11. adhere to safe lifting techniques, workstation posture norms, and equipment handling procedures	2	3	-	-
	PC 12. handle tools, drones, or heavy components using trolleys or assistive equipment when needed	1	3	-	1
	PC 13. identify early signs of physical or mental fatigue and report for preventive action	2	2	-	1
	PC 14. inform supervisor of symptoms related to communicable diseases or unsafe coworker behaviour.	1	2	-	-
	<i>Conserve energy and manage resources efficiently</i>	<i>7</i>	<i>14</i>	<i>-</i>	<i>2</i>
	PC 15. minimise wastage of consumables, components, and materials by adhering to industry best practices	1	3	-	-

	PC 16. use electricity, lighting, and climate-control systems responsibly	1	3	-	-
	PC 17. power off equipment, tools, and terminals when not in use	1	2	-	-
	PC 18. ensure routine maintenance, cleaning, and calibration of machines/tools to improve performance	1	2	-	1
	PC 19. report leakages, overheating, or malfunctions immediately for rectification	2	2	-	1
	PC 20. use digital tools to monitor and reduce environmental footprint, where applicable.	1	2	-	-
	<i>Implement safe and sustainable waste disposal practices</i>	4	9	-	1
	PC 21. segregate and dispose of hazardous, recyclable, and general waste as per guidelines	2	3	-	-
	PC 22. deposit e-waste or used batteries at designated collection points following e-waste protocols	1	3	-	-
	PC 23. follow ESD-safe disposal procedures for sensitive electronic components	1	3	-	1
	Total	30	60	-	10
TEL/N9102: Interact Effectively with Team Members and Customers	<i>Interact effectively with supervisors and stakeholders</i>	11	13	-	2
	PC 1. receive and clarify work instructions, technical requirements, and priorities from supervisors or clients using appropriate communication tools (e.g., messaging apps, emails, virtual meetings)	3	3	-	-
	PC 2. inform supervisors or relevant stakeholders in a timely manner about any issues, risks, or deviations from planned tasks	2	3	-	-
	PC 3. contribute to team decisions by providing relevant data, suggestions, and professional feedback during team discussions	3	4	-	1
	PC 4. act promptly on constructive feedback and incorporate learnings to improve future work outcomes	3	3	-	1
	<i>Collaborate effectively with team members and customers</i>	16	21	-	4
	PC 5. follow organisational norms and digital etiquette when working in hybrid or remote teams	3	4	-	1
	PC 6. communicate respectfully and effectively using face-to-face, phone, email, or collaboration platforms (e.g., MS Teams, Zoom)	3	3	-	1

	PC 7. seek clarification and respond to queries from customers and team members accurately and promptly	3	3	-	1
	PC 8. identify and de-escalate conflicts tactfully to maintain a productive and harmonious work environment	2	4	-	-
	PC 9. demonstrate emotional intelligence in team settings by recognising and responding to others' perspectives and emotional states	2	3	-	-
	PC 10. align personal efforts with team and organisational goals to ensure shared success.	3	4	-	1
	<i>Promote inclusivity, respect, and accessibility in the workplace</i>	13	16	-	4
	PC 11. foster an inclusive workplace culture that respects gender, cultural, and socio-economic diversity	3	3	-	1
	PC 12. demonstrate respectful language and conduct toward colleagues and customers of all genders and backgrounds	2	3	-	-
	PC 13. support team members with disabilities by helping remove work-related barriers or by assisting them as needed	3	4	-	1
	PC 14. practice appropriate verbal and non-verbal communication while engaging with persons with disabilities (PWDs)	2	3	-	1
	PC 15. promote equal opportunity and participation for all in meetings, decision-making, and teamwork.	3	3	-	1
	Total	40	50	-	10
DGT/VSQ/N0101: Employability Skills (30 Hours)	<i>Introduction to Employability Skills</i>	1	1	-	-
	PC 1. identify employability skills required for jobs in various industries	-	-	-	-
	PC 2. identify and explore learning and employability portals	-	-	-	-
	<i>Constitutional values – Citizenship</i>	1	1	-	-
	PC 3. recognise the significance of constitutional values, including civic rights and duties, citizenship, responsibility towards society etc. and personal values and ethics such as honesty, integrity, caring and respecting others, etc.	-	-	-	-
	PC 1. follow environmentally sustainable practices	-	-	-	-
	<i>Becoming a Professional in the 21st Century</i>	2	4	-	-

PC 4. recognise the significance of 21st Century Skills for employment	-	-	-	-
PC 5. practice the 21st Century Skills such as Self- Awareness, Behaviour Skills, time management, critical and adaptive thinking, problem-solving, creative thinking, social and cultural awareness, emotional awareness, learning to learn for continuous learning, etc. in personal and professional life	-	-	-	-
<i>Basic English Skills</i>	2	3	-	-
PC 6. use basic English for everyday conversation in different contexts, in person and over the telephone	-	-	-	-
PC 7. read and understand routine information, notes, instructions, mails, letters etc., written in English	-	-	-	-
PC 8. write short messages, notes, letters, e-mails, etc. in English	-	-	-	-
<i>Career Development & Goal Setting</i>	1	2	-	-
PC 9. understand the difference between job and career	-	-	-	-
PC 10. prepare a career development plan with short- and long-term goals, based on aptitude	-	-	-	-
<i>Communication Skills</i>	2	2	-	-
PC 11. follow verbal and non-verbal communication etiquette and active listening techniques in various settings	-	-	-	-
PC 12. work collaboratively with others in a team	-	-	-	-
<i>Diversity & Inclusion</i>	1	2	-	-
PC 13. communicate and behave appropriately with all genders and PwD	-	-	-	-
PC 14. escalate any issues related to sexual harassment at workplace according to POSH Act	-	-	-	-
<i>Financial and Legal Literacy</i>	2	3	-	-
PC 15. select financial institutions, products and services as per requirement	-	-	-	-
PC 16. carry out offline and online financial transactions, safely and securely	-	-	-	-

PC 17. identify common components of salary and compute income, expenses, taxes, investments, etc.	-	-	-	-
PC 18. identify relevant rights and laws and use legal aids to fight against legal exploitation	-	-	-	-
<i>Essential Digital Skills</i>	3	4	-	-
PC 19. operate digital devices and carry out basic internet operations securely and safely	-	-	-	-
PC 20. use e- mail and social media platforms and virtual collaboration tools to work effectively	-	-	-	-
PC 21. use basic features of word processor, spreadsheets, and presentations	-	-	-	-
<i>Entrepreneurship</i>	2	3	-	-
PC 22. identify different types of Entrepreneurship and Enterprises and assess opportunities for potential business through research	-	-	-	-
PC 23. develop a business plan and a work model, considering the 4Ps of Marketing Product, Price, Place and Promotion	-	-	-	-
PC 24. identify sources of funding, anticipate, and mitigate any financial/ legal hurdles for the potential business opportunity	-	-	-	-
<i>Customer Service</i>	1	2	-	-
PC 25. identify different types of customers	-	-	-	-
PC 26. identify and respond to customer requests and needs in a professional manner.	-	-	-	-
PC 27. follow appropriate hygiene and grooming standards	-	-	-	-
<i>Getting ready for apprenticeship & Jobs</i>	2	3	-	-
PC 28. create a professional Curriculum vitae (Resume)	-	-	-	-
PC 29. search for suitable jobs using reliable offline and online sources such as Employment exchange, recruitment agencies, newspapers, etc. and job portals, respectively	-	-	-	-
PC 30. apply to identified job openings using offline/online methods as per requirement	-	-	-	-
PC 31. answer questions politely, with clarity and confidence, during recruitment and selection	-	-	-	-

	PC 32. identify apprenticeship opportunities and register for them as per the guidelines and requirements	-	-	-	-
	Total	20	30	-	-
Grand Total		180	320	-	50

Annexure: Assessment Strategy

1. Assessment System Overview:

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

2. Testing Environment:

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

3. Assessment Quality Assurance levels / Framework:

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

4. Types of evidence or evidence-gathering protocol:

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

- Biometric or manual attendance sheet (stamped by TP) of the trainees during the training period.
- Time-stamped & geotagged assessment (Theory + Viva + Practical) photographs & videos.

5. Method of verification or validation:

- A surprise visit to the assessment location.
- A random audit of the batch.
- Random audit of any candidate.

6. Method for assessment documentation, archiving, and access:

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

7. Assessment Strategy (Employability Skills 60 hours)

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

Annexure: Acronym and Glossary

Acronym

Acronym	Description
AA	Assessment Agency
AB	Awarding Body
ISCO	International Standard Classification of Occupations
NCO	National Classification of Occupations
NCrF	National Credit Framework
NOS	National Occupational Standard(s)
NQR	National Qualification Register

NSQF	National Skills Qualifications Framework
OJT	On the Job Training

Glossary

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