



QUALIFICATION FILE

Drone Monitoring and Maintenance Associate

☒ 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: 3

Submitted By:

Submitting Body Name: Telecom Sector Skill Council

Submitting Body Contact Details:

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Section 1: Basic Details

1.	Qualification Name	Drone Monitoring and Maintenance Associate							
2.	Sector/s	Telecom							
3.	Type of Qualification: ☐ New ☒ Revised ☐ Has Electives/Options ☐ OEM	NQR Code & version of existing/previous qualification: (change to previous, once approved) QG-03-TL-00466-2023-V1.1-TSSC	Qualification Name of existing/previous version: Drone Monitoring and Maintenance Associate						
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-00466-2025-V2 -TSSC & version 3.0	6. NCrf/NSQF Level: 3						
7.	Award (Certificate/Diploma/Advance Diploma/ Any Other (Wherever applicable specify multiple entry/exits also & provide details in annexure)	Certificate							
8.	Brief Description of the Qualification	A Drone Monitoring and Maintenance Associate is responsible for supporting the operation, monitoring, and upkeep of 5G-enabled drone systems used in telecom applications. The individual manages and analyses real-time drone data, performs routine maintenance and basic troubleshooting of drone hardware and software, and ensures the safe and compliant deployment of drones.							
9.	Eligibility Criteria for Entry for Student/Trainee/Learner/Employee	a. Entry Qualification & Relevant Experience: <i>*Relevant experience in drone operations, electronics or hardware maintenance, IT/hardware support, telecom field work, and technical assistance.</i> <i>The relevant experience would include work, internship, or apprenticeship after completing relevant educational qualifications.</i> <table border="1" data-bbox="952 1257 2110 1426"> <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>Grade 10 pass</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	Grade 10 pass	No experience required
S. No.	Academic/Skill Qualification (with Specialization - if applicable)	Required Experience (with Specialization - if applicable)							
1	Grade 10 pass	No experience required							

		2	9th Grade pass	1-year of relevant experience*																			
		3	Previous relevant Qualification of NSQF Level 2.5	1.5 years of relevant experience*																			
		4	Previous relevant Qualification of NSQF Level 2	3 years of relevant experience*																			
		b. 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)	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>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-2015/1330.6217																					
15.	Progression path after attaining the qualification (Please show Professional and Academic progression)	Vertical Progression: NSQF Level 4 - Drone Technician																					
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.	Manage and Analyse Drone Data	TEL/N6258 & v3.0	Core	3	5	40:00	50:00	60:00	-	150:00	30	60	-	10	100	22
2.	Operate and Maintain the Drone System	TEL/N6259 & v3.0	Core	3	5	30:00	50:00	70:00	-	150:00	30	60	-	10	100	22
3.	Organise Work and Resources as per Health and Safety Standard	TEL/N9101 & v3.0	Non-Core	3	1	10:00	10:00	10:00	-	30:00	30	60	-	10	100	22
4.	Interact Effectively with Team Members and Customers	TEL/N9102 & v3.0	Non-Core	3	1	10:00	10:00	10:00	-	30:00	40	50	-	10	100	22
5.	Employability Skills (30 Hours)	DGT/VSQ/N0101 & v1.0	Non-Core	3	1	30:00	-	-	-	30:00	20	30	-	-	50	11
Duration (in Hours) / Total Marks					13	120:00	120:00	150:00	-	390:00	150	260	-	40	450	100

Assessment - Minimum Qualifying Percentage

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

Minimum Pass Percentage – Aggregate at qualification level: 50 % (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 Telecom, Electronics, IT, Computer Science or UAV-related fields with 2 years of industry experience in Drone operations, Telecom infrastructure deployment, UAV-based monitoring or other relevant domains and 1 year of training experience Or Graduation in Telecom, Electronics, IT, Computer Science or UAV-related fields with 1 years of industry experience in Drone operations, Telecom infrastructure deployment, UAV-based monitoring or other relevant domains and 1 year of training experience
2.	Master Trainer's Qualification and experience in the relevant sector (in years) (as per NCVET guidelines)	Diploma after 12th Class in Telecom, Electronics, IT, Computer Science or UAV-related fields with 5 years of industry experience in Drone operations, Telecom infrastructure deployment, UAV-based monitoring or other relevant domains and 4 years of training experience Or Graduation in Telecom, Electronics, IT, Computer Science or UAV-related fields with 4 years of industry experience in Drone operations, Telecom infrastructure deployment, UAV-based monitoring or other relevant domains and 4 years of training experience
3.	Tools and Equipment Required for Training	☒ Yes ☐ No (If "Yes", details to be provided in Annexure)
4.	In Case of Revised Qualification, Details of Any Upskilling Required for Trainer	NA

Section 4: Assessment Related

1.	Assessor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma after 12th Class in Telecom, Electronics, IT, Computer Science or UAV-related fields with 2 years of industry experience in Drone operations, Telecom infrastructure deployment, UAV-based monitoring or other relevant domains and 1 year of training experience Or
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		Graduation in Telecom, Electronics, IT, Computer Science or UAV-related fields with 1 years of industry experience in Drone operations, Telecom infrastructure deployment, UAV-based monitoring or other relevant domains and 1 year of training experience
2.	Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma after 12th Class in Telecom, Electronics, IT, Computer Science or UAV-related fields with 2 years of industry experience in Drone operations, Telecom infrastructure deployment, UAV-based monitoring or other relevant domains and 1 year of training experience Or Graduation in Telecom, Electronics, IT, Computer Science or UAV-related fields with 1 years of industry experience in Drone operations, Telecom infrastructure deployment, UAV-based monitoring or other relevant domains and 1 year of training experience
3.	Lead Assessor's/Proctor's Qualification and experience in relevant sector (in years) (as per NCVET guidelines)	Diploma after 12th Class in Telecom, Electronics, IT, Computer Science or UAV-related fields with 5 years of industry experience in Drone operations, Telecom infrastructure deployment, UAV-based monitoring or other relevant domains and 4 years of training experience Or Graduation in Telecom, Electronics, IT, Computer Science or UAV-related fields with 4 years of industry experience in Drone operations, Telecom infrastructure deployment, UAV-based monitoring or other relevant domains and 4 years of training experience
4.	Assessment Mode (Specify the assessment mode)	Offline or Blended
5.	Tools and Equipment Required for Assessment	☒ Same as for training ☐ Yes ☐ No (details to be provided in Annexure-if it is different for Assessment)

Section 5: Evidence of the need for the Qualification

Provide Annexure/Supporting documents name.

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

6.	Evidence of Concurrence/Consultation with Line Ministry/State Departments: If “No”, why: Approved
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Section 6: Annexure & Supporting Documents Check List

Specify Annexure Name / Supporting document file name

1.	Annexure: NCrf/NSQF level justification based on NCrf level/NSQF descriptors (Mandatory)	Yes
2.	Annexure: List of tools and equipment relevant for qualification (Mandatory, except in case of online course)	Yes
3.	Annexure: Detailed Assessment Criteria (Mandatory)	Yes
4.	Annexure: Assessment Strategy (Mandatory)	Yes
5.	Annexure: Blended Learning (Mandatory, in case selected Mode of delivery is “Blended Learning”)	No
6.	Annexure: Multiple Entry-Exit Details (Mandatory, in case qualification has multiple Entry-Exit)	Yes
7.	Annexure: Acronym and Glossary (Optional)	Yes
8.	Supporting Document: Model Curriculum (Mandatory – Public view)	Yes
9.	Supporting Document: Career Progression (Mandatory - Public view)	Yes
10.	Supporting Document: Occupational Map (Mandatory)	Yes
11.	Supporting Document: Assessment SOP (Mandatory)	Yes
12.	Any other document you wish to submit:	No

Annexure: Evidence of Level

NCrF/NSQF Level Descriptors	Key requirements of the job role/ outcome of the qualification	How the job role/ outcomes relate to the NCrF/NSQF level descriptor	NCrF/NSQF Level
Professional Theoretical Knowledge/Process	The individual in the role of a Drone Monitoring and Maintenance Associate is expected to possess operational knowledge of drone systems and their components, including a defined range of standard procedures related to inspection, maintenance, flight readiness, and basic data handling. The role involves applying familiar theoretical concepts—such as battery safety, sensor calibration, 5G transmission basics, and workplace safety norms—within predictable operational settings. The job demands a working understanding of routine maintenance processes, SOPs, and regulatory practices, allowing the individual to carry out tasks independently with limited supervision and identify common issues using known responses.	The job role of "Drone Monitoring and Maintenance Associate" aligns with the NSQF Level 3 descriptor for Professional Theoretical Knowledge/Process by requiring the individual to perform tasks based on a well-defined body of factual and operational knowledge. The role involves following standard procedures for routine drone maintenance, inspection, and data handling in predictable settings. The individual applies basic theoretical understanding of components such as 5G modules, sensors, and flight systems to support operations, troubleshoot issues, and ensure safe and efficient drone performance—demonstrating competence in familiar, task-oriented work environments typical of Level 3.	3
Professional and Technical Skills/ Expertise/ Professional Knowledge	The key requirements with respect to Professional and Technical Skills/Expertise/Professional Knowledge for "Drone Monitoring and Maintenance Associate" at NSQF Level 3, include the ability to carry out familiar and routine technical tasks related to drone inspection, basic maintenance, sensor alignment, battery handling, and 5G module connectivity. The individual is expected to use a limited range of practical skills, demonstrate precision in executing procedures as per standard operating guidelines, and apply domain-specific knowledge to identify and report common faults. These skills are exercised in a structured	The job role of "Drone Monitoring and Maintenance Associate" aligns with the NSQF Level 3 descriptor for Professional and Technical Skills/Expertise/Professional Knowledge as it requires the individual to apply a limited range of practical and operational skills to carry out routine drone maintenance, inspection, and data monitoring tasks. The individual demonstrates proficiency in handling drone components, using basic diagnostic tools, updating firmware, and adhering to safety and SOP guidelines. These skills are exercised within a structured environment, using appropriate tools and	3

	environment under close supervision, using appropriate tools, basic digital systems, and safety practices, with accountability for the quality and accuracy of assigned tasks.	methods, and reflect a sound understanding of the technical aspects necessary to ensure operational efficiency and compliance, as expected at Level 3.	
Employment Readiness & Entrepreneurship Skills & Mind-set/Professional Skill	The key requirements with respect to Employment Readiness & Entrepreneurship Skills and Mind-set/Professional Skill for the job role "Drone Monitoring and Maintenance Associate" at NSQF Level 3, include the ability to perform routine, repetitive, and clearly defined tasks with consistency and attention to quality. The individual is expected to follow instructions, apply problem-solving skills to resolve commonly occurring operational issues, and use basic communication and digital tools to interact with supervisors and team members. A disciplined work approach, willingness to learn, adherence to safety norms, and time management are essential, along with a positive and responsible attitude towards workplace conduct and collaborative teamwork.	The job role of "Drone Monitoring and Maintenance Associate" aligns with the NSQF Level 3 descriptor for Employment Readiness & Entrepreneurship Skills and Mind-set/Professional Skill as it involves performing clearly defined, routine, and predictable tasks with consistency and responsibility. The individual is expected to follow instructions, manage time effectively, maintain discipline, and use basic digital and communication tools to support team operations. Problem-solving is limited to familiar situations, and the role encourages the development of a positive work attitude, accountability, and adaptability—key attributes for employability and future upskilling in the drone and telecom sectors.	3
Broad Learning Outcomes/Core Skill	The key requirements with respect to Broad Learning Outcomes/Core Skills for the job role "Drone Monitoring and Maintenance Associate" at NSQF Level 3 include the ability to read and understand basic work instructions, operating procedures, and safety guidelines related to drone operations. The individual should be able to write simple log entries, maintenance records, and digital task updates, as well as perform basic arithmetic calculations related to battery voltage, signal strength, and component usage. Effective oral communication, ability to follow instructions, use of basic ICT tools, and working collaboratively in a team are	The job role of "Drone Monitoring and Maintenance Associate" aligns with the NSQF Level 3 descriptor for Broad Learning Outcomes/Core Skill by requiring foundational communication, numeracy, and digital literacy skills to perform work tasks effectively. The individual is expected to read and follow simple instructions, maintain records, use basic math for interpreting drone telemetry and battery readings, and operate digital tools for task logging and reporting. These core skills support the execution of routine tasks, enhance team coordination, and ensure adherence to safety and quality standards in structured and	3

	essential to support smooth and compliant drone monitoring and maintenance operations.	predictable work settings, consistent with Level 3 expectations.	
Responsibility	The key requirements with respect to Responsibility for the job role "Drone Monitoring and Maintenance Associate" at NSQF Level 3, include carrying out assigned tasks under supervision while taking ownership for the quality and timeliness of one's own work. The individual is responsible for following safety procedures, adhering to operational checklists, maintaining tools and equipment, and escalating issues beyond their scope. They are expected to work with limited autonomy in predictable work environments, support team objectives, and demonstrate accountability in handling drones, performing maintenance, and managing routine documentation.	The job role of "Drone Monitoring and Maintenance Associate" aligns with the NSQF Level 3 descriptor for Responsibility as it involves carrying out assigned tasks under supervision while demonstrating responsibility for the quality, safety, and timeliness of one's own work. The individual is accountable for following standard operating procedures in drone maintenance, data handling, and workplace safety. While working in structured and predictable settings, the individual must report deviations, support team objectives, and ensure compliance with basic operational and regulatory requirements—reflecting the limited autonomy and task ownership typical of Level 3 roles.	3

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.	Drone with 5G capability	Quadcopter drone with integrated 5G, 25–30 min flight time, 1.5kg payload (e.g., Garuda Aerospace Drone, DJI)	2
2.	RGB camera	12MP+ with gimbal stabilisation (e.g., DJI Zenmuse X5)	1
3.	Thermal sensor	320x240 resolution thermal camera (e.g., FLIR Vue TZ20)	1

4.	LiDAR unit	16-channel, 100m range (e.g., Livox Mid-40)	1
5.	SD cards	32GB, Class 10/UHS-I (e.g., SanDisk Extreme)	2
6.	External SSD	512GB USB 3.1 SSD (e.g., Samsung T7)	1
7.	5G CPE/Modem/Dongle	Portable 5G modem (e.g., ZTE 5G MU5001)	1
8.	Ground Control Station (GCS)	Laptop/tablet, Windows OS, 8GB RAM	1
9.	Mission planning software	QGroundControl, Pix4Dcapture, DJI GS Pro (pre-installed)	1 licenses
10.	GPS module	GNSS module (e.g., Ublox NEO-M8N)	2
11.	Drone diagnostic tools	Motor, ESC, IMU health checks (e.g., DroneDiag Kit)	1
12.	Internet connectivity	5G router with 4G fallback (e.g., JioFi 5G)	1 connection
13.	SIM cards with data plans	Airtel/Jio, 5G SIMs with 2GB/day	2
14.	Field signal tester/analyser	Handheld RF signal analyser (e.g., RF Explorer)	1
15.	PPE Kit	Gloves, goggles, reflective vests, boots (IS-certified)	10 kits
16.	Fire extinguisher	ABC-type, 2kg	1 unit
17.	Data visualisation software	QGIS, Google Earth, OpenDroneMap	Installed on 2 systems
18.	Drone flight logbooks	Printed with structured flight formats	2

19.	Spare propellers	Compatible with training drone	6 sets
20.	Drone battery packs	4S 5200mAh Li-Po (or compatible with drone model)	2
21.	Battery charging station	Multi-bay smart charger (e.g., ISDT D2 Mark II)	1
22.	Ground control software (tablet/laptop)	Windows 10, 8GB RAM	2
23.	Firmware update cables (USB/OTG)	USB-A to Micro USB/Type-C	2
24.	Multimeter	Digital, e.g., Meco 108B+	2
25.	Compass/IMU calibration tools	Software-based calibration tools (e.g., DJI Assistant 2)	2 kits
26.	Screwdriver set	Precision set (e.g., Stanley/Taparia 31-in-1)	5 sets
27.	Hex key set	Metric Allen key (e.g., Taparia HKM8)	5 sets
28.	Cleaning brush	Anti-static brush	5
29.	Lint-free cloth	Microfiber cloths 10"x10"	5
30.	Compressed air canister	350ml air duster	5
31.	Maintenance logbook	Printed drone maintenance formats	1
32.	Weather monitoring application	Mobile apps (e.g., Windy, UAV Forecast)	1
33.	First aid kit	Standard kit with antiseptic, bandages, gloves	1

34.	ESD Wrist Straps	Adjustable with grounding cord	5
35.	Waste Bins (Recyclable/Non-recyclable/Hazardous)	Color-coded, 20L with lid	1 each
36.	Digital Logbook/Task Management App	Google Sheets, Trello, or custom MIS	2 accounts
37.	Mobile/Tablet Device	3GB+ RAM, GPS-enabled	2
38.	Sample E-waste Materials	Used wires, PCBs, batteries	Assorted set
39.	Cleaning Supplies	Disinfectants, cloths, gloves	As required
40.	Tool Trolley	Metal trolley with drawers (e.g., Tata Agrico)	2
41.	Lockout/Tagout equipment	Safety LOTO padlocks and tags	2 kits
42.	Feedback forms	Printed or digital	30
43.	Communication tool	Installed apps (e.g., WhatsApp, MS Teams)	Pre-installed
44.	UPS	1KVA backup UPS (e.g., APC BX1100C-IN)	2
45.	Scanner cum Printer	All-in-one device (e.g., HP Ink Tank 416)	1

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	Daksha Drones	Mr. Ramanathan Narayanan	CEO	Ambattur, Chennai, Tamil Nadu 600098	7200897222	sales@dhaksha.murugappa.com	-
2	NewSpace Research and Technologies	Mr. Kamal Sheikh	Head – Tech Department	Sanjeevini Nagar, Bengaluru, Karnataka 560092	8023625557	info@newspace.co.in	-
3	DreamzTech Sollutions	Kaushiki Mazumder	Senior Marketing Manager	Bidhannagar, Kolkata, West Bengal 700091	80818 91494	marketing@dreamztech.com	https://www.linkedin.com/in/kaushiki-mazumder-3b2a21a7/
4	Dronacharya Aerial Innovations	Sudip Roy	Co-founder	Bavdhan, Pune, Maharashtra 411021	98900 03590	info@droneacharya.com	-
5	Senrysa Technologies Private Limited	Triparna Mukherjee	HR Business Partner & Leadership Acquisition	Bidhannagar, Kolkata, West Bengal 700091	033 6621 2222	mail@senrysa.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	1180					
2026	1652					
2027	2313					

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	Smart classroom, projector, whiteboard, drone models (non-flying), reference books, learner handbooks, digital presentations, videos	60:40
2	☐ Imparting Soft Skills, Life Skills, and Employability Skills /Mentorship to Learners	Role-play scripts, digital communication platforms (MS Teams, Zoom), e-learning content, feedback forms	50:50
3	☐ Showing Practical Demonstrations to the learners	Live drones (with controller), maintenance toolkits, safety gear (PPE), open demo space, visualizer camera, LCD screen for close-up demonstrations	70:30
4	☐ Imparting Practical Hands-on Skills/ Lab Work/ workshop/ shop floor training	Real drones (multirotor), drone diagnostics software, battery charging stations, firmware update kits, maintenance toolkits	100:00
5	☐ Tutorials/ Assignments/ Drill/ Practice	Worksheets, online quizzes, drone maintenance logs, drone inspection checklists	40:60
6	☐ Proctored Monitoring/ Assessment/ Evaluation/ Examinations	Assessment sheets, LMS platforms with proctoring capability, MCQ questionnaire	50:50
7	☐ On the Job Training (OJT)/ Project Work Internship/ Apprenticeship Training	Industrial-grade drones, field operation area, maintenance workbench, PPE, inspection reports, logbook, observation checklist	100.00

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/N6258: Manage and Analyse Drone Data	<i>Set up and operate 5G-enabled drone data collection tools</i>	11	20	-	4
	PC 1. identify the appropriate payload sensors (e.g., camera, thermal, LiDAR) based on the mission objective and ensure proper physical and digital integration with the drone.	2	3	-	1
	PC 2. mount and calibrate data collection sensors according to standard manufacturer and organisational procedures.	1	3	-	-
	PC 3. connect and configure the 5G communication module (e.g., CPE, 5G modem) for real-time transmission from the drone to the ground station.	2	4	-	-
	PC 4. verify SIM credentials, network permissions, and 5G signal strength before take-off using diagnostic apps or interfaces.	2	3	-	1
	PC 5. perform a pre-flight test to confirm stable real-time data streaming and GPS synchronisation between drone and remote controller/monitoring device.	2	4	-	1
	PC 6. ensure storage redundancy by enabling onboard SD card or SSD backups in parallel with 5G streaming.	2	3	-	1
	<i>Transmit and verify drone data integrity</i>	10	19	-	3
	PC 7. activate data recording and 5G transmission through ground control software or flight app interface.	2	3	-	-
	PC 8. monitor key telemetry indicators (e.g., signal strength, frame drop rate, latency) on the Ground Control Station (GCS) during data collection.	1	3	-	1

PC 9. detect and respond to signs of data transmission loss, interference, or compression errors in real time.	2	3	-	1
PC 10. validate that transmitted data (e.g., video feeds, sensor readings) is being received in the correct format (e.g., MP4, CSV, GeoTIFF) at the server or base station.	2	3	-	-
PC 11. take corrective action such as repositioning the drone, adjusting antenna orientation, or switching to fallback communication modes when transmission degrades.	1	3	-	1
PC 12. log data transmission status and any incidents of data corruption or signal loss in flight records or mission reports.	2	4	-	-
Retrieve and interpret drone-generated data	9	21	-	3
PC 13. download and extract flight logs, imagery, and telemetry data from the drone's onboard storage (e.g., SD card, SSD) after landing.	1	3	-	-
PC 14. use basic analysis tools (e.g., QGIS, Mission Planner, Pix4Dcapture, or drone OEM software) to open and inspect the quality and completeness of captured data.	2	4	-	1
PC 15. identify relevant features or anomalies in data, such as signal drop areas, object detection, vegetation health variation, or asset damage indicators.	1	3	-	-
PC 16. perform time-stamp matching between video, GPS, and telemetry layers to validate consistency and flight integrity.	1	3	-	-
PC 17. tag data files using mission ID, location, and sensor type for traceability and structured archiving.	1	3	-	-
PC 18. prepare a brief summary report containing observations, flight metadata, data issues, and suggested follow-ups.	2	3	-	1
PC 19. share findings and highlight abnormal patterns or errors with the technical supervisor or analysis team, following standard data handover protocols.	1	2	-	1
NOS Total	30	60	-	10

TEL/N6259: Operate and Maintain the Drone System	<i>Perform visual inspection and preventive maintenance</i>	10	23	-	4
	PC 1. inspect the drone frame for visible cracks, structural deformation, or corrosion.	1	2	-	1
	PC 2. check motor mounts and arms for secure attachment and signs of wear.	1	2	-	-
	PC 3. examine propellers for nicks, warping, and proper alignment.	1	2	-	1
	PC 4. clean dust and debris from vents, propellers, and sensor housings using lint-free cloth and compressed air.	1	2	-	-
	PC 5. inspect wiring for fraying, loose connections, and damage.	1	2	-	-
	PC 6. test motors using onboard diagnostic tools to detect abnormal vibrations or RPM mismatch.	1	3	-	-
	PC 7. verify sensor alignment and perform basic calibration of IMU, compass, and gimbal.	1	2	-	1
	PC 8. replace worn-out or damaged components (e.g., propellers, landing gear, vibration dampeners) using standard tools.	1	3	-	-
	PC 9. check drone battery for swelling, leakage, or charging irregularities.	1	2	-	-
	PC 10. apply firmware updates for both drone and payload modules using approved OTA or USB interfaces.	1	3	-	1
	<i>Assist in the deployment and calibration of 5G-Enabled drones</i>	10	19	-	3
	PC 11. connect and configure the 5G communication module prior to take-off.	1	2	-	-
	PC 12. validate GPS lock, compass health, and satellite count before mission launch.	1	2	-	1
	PC 13. conduct health diagnostics of flight controllers, sensors, and communication modules through ground control software.	2	3	-	1
	PC 14. monitor real-time system readiness indicators, including RC signal strength, video feed status, and battery voltage.	1	2	-	-

PC 15. ensure compatible payloads are mounted and properly powered before launch.	1	2	-	1
PC 16. report recurring calibration errors, firmware glitches, or initialisation failures to the supervisor.	1	2	-	-
PC 17. assist in setting up virtual Geofencing and flight boundary restrictions based on operational requirements.	1	2	-	-
PC 18. prepare drones for launch by verifying take-off zone is clear of obstructions and EMI sources.	1	2	-	-
PC 19. perform a return-to-home (RTH) test and validate the emergency stop function pre-flight.	1	2	-	-
Ensure safe operations and compliance protocols	10	18	-	3
PC 20. check daily weather reports and wind speed limits for safe drone operation.	1	2	-	-
PC 21. validate drone airframe and batteries meet required safety thresholds as per SOP.	1	2	-	1
PC 22. ensure drone is flown only within permitted airspace zones and geo-fence boundaries.	1	2	-	-
PC 23. record pre-flight and post-flight checks in drone logbook accurately.	1	2	-	1
PC 24. store batteries in fireproof containers and charge them only using certified charging stations.	1	2	-	-
PC 25. ensure drone takes off and lands only from designated take-off and landing pads.	1	2	-	-
PC 26. wear appropriate PPE (e.g., gloves, goggles) while handling drone hardware and batteries.	1	2	-	1
PC 27. report safety non-compliance, incidents, or near-misses to the designated authority.	2	2	-	-

	PC 28. follow all organisational SOPs related to take-off, landing, emergency procedures, and no-fly conditions.	1	2	-	-
	Total	30	60	-	10
TEL/N9101: Organise Work and Resources as per Health and Safety Standards	<i>Maintain an organised, productive, and digitally compliant workspace</i>	6	13	-	2
	PC 1. maintain a clean, clutter-free, and ergonomically safe workspace aligned with 5S principles	1	2	-	-
	PC 2. follow designated workflow as per the organisational Standard Operating Procedures (SOPs)	2	3	-	-
	PC 3. digitally log work completed, including time stamps, material usage, and issues faced	1	3	-	1
	PC 4. track and update digital task checklists, inventories, or handovers through mobile/desktop apps	1	3	-	-
	PC 5. identify delays, workflow inefficiencies, or material constraints and escalate appropriately.	1	2	-	1
	<i>Adhere to health, safety, and environmental guidelines</i>	13	24	-	5
	PC 6. comply with organisational health, safety, and environment (HSE) policies at all times	1	3	-	1
	PC 7. use personal protective equipment (PPE) such as ESD wrist straps, gloves, masks, and safety footwear	1	3	-	-
	PC 8. report any breaches in safety protocols, near misses, or unsafe practices immediately to supervisor/concerned authorities	2	2	-	1
	PC 9. detect hazards, including spillage, loose wiring, excessive noise, or EMI sources and respond as per SOP	1	3	-	1
	PC 10. follow lockout/tagout procedures when working around electrical or moving parts	2	3	-	-

PC 11. adhere to safe lifting techniques, workstation posture norms, and equipment handling procedures	2	3	-	-
PC 12. handle tools, drones, or heavy components using trolleys or assistive equipment when needed	1	3	-	1
PC 13. identify early signs of physical or mental fatigue and report for preventive action	2	2	-	1
PC 14. inform supervisor of symptoms related to communicable diseases or unsafe coworker behaviour.	1	2	-	-
<i>Conserve energy and manage resources efficiently</i>	7	14	-	2
PC 15. minimise wastage of consumables, components, and materials by adhering to industry best practices	1	3	-	-
PC 16. use electricity, lighting, and climate-control systems responsibly	1	3	-	-
PC 17. power off equipment, tools, and terminals when not in use	1	2	-	-
PC 18. ensure routine maintenance, cleaning, and calibration of machines/tools to improve performance	1	2	-	1
PC 19. report leakages, overheating, or malfunctions immediately for rectification	2	2	-	1
PC 20. use digital tools to monitor and reduce environmental footprint, where applicable.	1	2	-	-
<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>	<i>1</i>	<i>1</i>	<i>-</i>	<i>-</i>
	PC 1. understand the significance of employability skills in meeting the job requirements	-	-	-	-
	<i>Constitutional values – Citizenship</i>	<i>1</i>	<i>1</i>	<i>-</i>	<i>-</i>
	PC 2. identify constitutional values, civic rights, duties, personal values, ethics and environmentally sustainable practices	-	-	-	-
	<i>Becoming a Professional in the 21st Century</i>	<i>1</i>	<i>3</i>	<i>-</i>	<i>-</i>
	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>	<i>2</i>	<i>3</i>	<i>-</i>	<i>-</i>
	PC 4. speak with others using some basic English phrases or sentences	-	-	-	-
	<i>Communication Skills</i>	<i>1</i>	<i>1</i>	<i>-</i>	<i>-</i>
	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		150	260	-	40

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.

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

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

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
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